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PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of June 1965

Examiner affirmed	280
Examiner affirmed in part	47
Examiner reversed	91
Total	418

Adjudicated Patents

(C.A. Ill.) Holley Patent No. 2,536,642 (123—41.09), for METHOD OF AND MEANS FOR CONTROLLING THE CONTENT OF MARINE INTERNAL COMBUSTION ENGINES. Claim 3 *Held* valid and infringed. *Holley* v. *Outboard Marine Corp.*, 345 F.2d 351; 145 USPQ 305.

(C.A. La.) Shea Patent No. 2,775,549 (208—52), for PRODUCTION OF COKE FROM PETROLEUM HYDROCARBON. Claims 1, 2 and 9 to 11 *Held* not infringed. *Great Lakes Carbon Corp.* v. *Continental Oil Co.*, 345 F.2d 175; 145 USPQ 513.

Annual Index of Patents

The 1964 edition of the Annual Index of Patents has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $6.75.

Revision of "Discontinuance of Deposit Account Service for Sale of Patent Copies"

In view of the difficulties experienced by many of its customers, the Patent Office is revising the Notice appearing in the December 1, 1964, issue of the *Official Gazette of the U.S. Patent Office*. This Notice—Discontinuance of Deposit Account Service for Sale of Patent Copies—is revised to except certain types of patent copy orders.

The Patent Office will now accept lists of fifty (50) or more numbers arranged in numerical sequence to be charged to Deposit Accounts. Service charges, such as Special Handling and Air Mail postage for these orders, may also be charged to Deposit Accounts.

C. A. KALK,
Director of Administration.

July 15, 1965.

New Applications Received June 1965

Patents	8657
Designs	456
Plant Patents	7
Reissues	28
Total	9148

Issue—August 3, 1965

Patents	1334	No. 3,197,784 to	No. 3,199,117, incl.
Designs	76	No. 201,784 to	No. 201,859, incl.
Plant Patents	1	No. 2,546	
Reissues	7	No. 25,826 to	No. 25,832, incl.
Total	1418		

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF JUNE 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	3- 3-58
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	12- 7-62	9-15 58
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	6-20-60
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	9- 4-62	5-18-59
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Manager. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	1- 6-60
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	7-20-62	8-21-59
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	8-10-59
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12-18-62	1- 5-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	6-20-60
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-27-62	5-12-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	1-19-60
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	10-30-58
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager. Semi-Conducter and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 2-62	2- 2-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager. Optics; Radiant Energy; Measuring.	9-10-62	2-11-59
ELEMENTS, GROUP 270—E. J. SAX, Manager. Conductors; Switches; Miscellaneous.	1-25-63	7- 6-60

Total number of pending applications (excluding Designs)	198,522
Total number of Design applications pending	5,223
Total number of applications awaiting action (excluding Designs)	146,049
Total number of Design applications awaiting action	1,905
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	March 3, 1958

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during July 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to abortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents ..... Numbers 2,444,412 to 2,446,164, inclusive

Plant Patents ..... Numbers 799 to 804, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager. Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6-18-63	6-30-61
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Founding; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	10-26-62	10-14-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	3- 5-63	9-29-59
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	5- 3-61
FLUID HANDLING, GROUP 360—E. PAUL, Manager. Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	2- 4-63	8-29-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Manager. Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	4- 1-63	6- 7-60
HEAT GENERATION, TRANSFER AND UTILIZATION, GROUP 380—P. L. PATRICK, Manager. Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation; Refrigeration; Drying; Ventilation; and Illumination.	4- 8-63	8-25-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	4- 1-63	7-18-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager. Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 5-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-28-63	6-27-60
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Manager. Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Manager. Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-21-63	9-21-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager. Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	5-14-63	5-22-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager. Printing; Typewriters; Stationery; Material Treatment.	7-20-62	12-31-58
DESIGNS, GROUP 490—J. A. MANIAN, Manager. Industrial Arts; Household, Personal and Fine Arts.	8-12-64	5-11-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE FREDERICK C. FOSTER

No. 7106. Decided April 15, 1965

[52 CCPA —; 343 F.2d 980; 145 USPQ 166]

1. REJECTION—BASIS—35 U.S.C. 102, 103.

Where appellant contended that the words "unpatentable over" mean that the statutory basis for rejection is section 103, and that the word "anticipated" indicates reliance on section 102(b), and argued that, since there was no rejection on the ground of "anticipation," the statutory basis must be section 103, *Held* that "* * * we are not convinced that there is any 'magic' to the particular words used or that they can only mean reliance on section 103"; that the "words 'unpatentable over' do not *necessarily* mean reliance on section 103 *alone*"; and that the "statements of the rejections are sufficient for us to consider the rejections on both sections 102(b) and 103."

2. PATENTABILITY—ANTICIPATION—*In re Von Bramer* DISTINGUISHED.

Held that the rejection below, predicated on full disclosure by the Binder reference publication and in reliance on *In re Von Bramer*, 29 CCPA 1018, 127 F.2d 149, 53 USPQ 345, could not be sustained for the reasons given in *Phillips Petroleum Company* v. *Ladd*, 219 F.Supp. 366, 138 USPQ 421, with respect to the same prior art disclosure.

3. REJECTION—BASIS—ANTICIPATION—STATUTORY BAR—35 U.S.C. 102(a), (b).

"It is assumed by both parties—and it is unquestionably true—that when a reference fully discloses in every detail the subject matter of a claim, the statutory basis of a rejection on that reference is 35 U.S.C. 102(a) if the reference date is before the applicant's *date of invention*, thereby establishing want of novelty, and section 102(b) if the reference date is more than one year prior to the actual United States *filing date*, thereby establishing a so-called 'statutory bar,' more accurately, a one-year time-bar which results in loss of right to a patent, regardless of when the invention was made. In either of these situations, it is often said that the invention is 'anticipated' by the reference and the reference is termed as 'anticipation.'"

4. PATENTABILITY—REFERENCES—AFFIDAVIT UNDER RULE 131—STATUTORY NOVELTY—35 U.S.C. 102(a), (b).

"Proofs submitted in this case under Patent Office Rule 131 with respect to a reference not before us (because it was overcome thereby) have established that the applicant's invention date was prior to December 26, 1952. The Binder reference is the August 1954 issue of a periodical. It is seen, therefore, that it is subsequent to the date of invention but more than one year prior to the filing date, which was August 21, 1956. * * * Since the date of invention is earlier than the reference date, section 102(a) is necessarily inapplicable because the printed publication was not 'before the invention thereof by the applicant' and there is statutory novelty. This leaves paragraph (b) of section 102 as the only paragraph of that section having possible relevancy."

5. SAME—STATUTORY BASIS FOR REJECTION—35 U.S.C. 101, 102, 103.

"Sections 101, 102 and 103, generally speaking, deal with two different matters: (1) the factors to be considered in determining whether a patentable invention has been *made*, i.e., novelty, utility, unobviousness, and the categories of patentable subject matter; and (2) 'loss of right to patent' as stated in the heading of section 102, even though an otherwise patentable invention has been made."

6. SAME—SAME—STATUTORY BAR—OBVIOUSNESS—35 U.S.C. 102(b).

"It [section 102(b)] presents a sort of statute of limitations, formerly two years, now one year, within which an inventor, even though he has made a patentable invention, must act on penalty of loss of his right to patent. What starts the period running is clearly the availability of the invention *to the public* through the categories of disclosure enumerated in 102(b), which include 'a printed publication' anywhere describing the invention. There appears to be no dispute about the operation of this statute in 'complete anticipation' situations but *the contention seems to be that 102(b) has no applicability where the invention is not completely disclosed in a single patent or publication*, that is to say where the rejection involves the addition to the disclosure of the reference of the ordinary skill of the art or the disclosure of another reference which indicates what those of ordinary skill in the art are presumed to know, *and to have known for more than a year before the application was filed*. Upon a complete reexamination of this matter, we are convinced that the contention is contrary to the policy consideration which motivated the enactment by Congress of a statutory bar. On logic and principle we think this contention is unsound, and we also believe it is contrary to the patent law as it has actually existed since at least 1898."

7. SAME—SAME—SAME—SAME—SAME.

"First, as to principle, since the purpose of the statute has always been to require filing of the application within the prescribed period after the time the public came into possession of the invention, we cannot see that it makes any difference *how* it came into such possession, whether by a public use, a sale, a single patent or publication, or by combinations of one or more of the foregoing. In considering this principle *we assume*, of course, that by these means *the invention has become obvious* to that segment of the 'public' having ordinary skill in the art. Once this has happened, the purpose of the law is to give the inventor only a year within which to file and this would seem to be liberal treatment. Whenever an applicant undertakes, under Rule 131, to swear back of a reference having an effective date more than a year before his filing date, he is automatically conceding that he made his invention more than a year before he filed. If the reference contains enough disclosure to make his invention obvious, the principle of the statute would seem to require denial of a patent to him. The same is true where a combination of two publications or patents makes the invention obvious and they both have dates more than a year before the filing date."

8. SAME—SAME—SAME—CONSTRUCTION OF SECTION 102(b).

"As to dealing with the express language of 102(b), for example, 'described in a printed publication,' technically, we see no reason to so read the words of the statute as to preclude the use of more than one reference; nor do we find in the context anything to show that 'a printed publication' cannot include two or more printed publications."

9. SAME—SAME—SAME—SAME—STATUTORY LANGUAGE IN THE SINGULAR APPLICABLE TO THE PLURAL—1 U.S.C. 1.

"The construction of section 102(b) is subject to the provision of 1 U.S.C. 1 which provides in pertinent part: 'In determining the meaning of any act of Congress, unless the context indicates otherwise, words importing the singular include and apply to several persons, parties, or things * * *.'"

10. SAME—SAME—STATUTORY TIME-BAR—ACTUAL DATE OF INVENTION IRRELEVANT WHERE TIME-BAR EXISTS IN EITHER ANTICIPATION OR OBVIOUSNESS SITUATIONS.

"It would seem that the practical operation of the prior law was that references having effective dates more than a year before applicant's filing date were always considered to be effective as references, regardless of the applicant's date of invention, and that rejections were then predicated thereon for 'lack of invention' without making the distinction which we now seem to see as implicit in sections 102 and 103, 'anticipation' or no novelty situations under 102 and 'obviousness' situations under 103. But on further reflection, we now feel bound to point out that of equal importance is the question of *loss of right* predicated on a one-year *time-bar* which, it seems clear to us, has never been limited to 'anticipation' situations, involving only a single reference, but has included as well 'no invention' (now 'obviousness') situations. It follows that where the time-bar is involved, *the actual date of invention become irrelevant* and that it is not in accordance with either the letter or the principle of the law, or its past interpretation over a very long period, to permit an applicant to dispose of a reference having a date more than one year prior to his filing date by proving his actual date of invention."

11. SAME—SAME—SAME—*In re Palmquist* OVERRULED.

With respect to *In re Palmquist*, 51 CCPA 839, 319 F.2d 547, 138 USPQ 234, *Held* that "to the extent that it permitted a reference, having a publication date more than one year prior to the United States filing date to which the applicant was entitled, to be disposed of by proof of a date of invention earlier than the date of the reference, that decision is hereby overruled."

12. SAME—SAME—SAME—OBVIOUSNESS—35 U.S.C. 102(b), 103.

"We wish to make it clear that this ruling is predicated on our construction of section 102(b) and has no effect on the statements in *Palmquist* respecting the determination of obviousness under section 103 when a statutory time-bar is not involved. The existence of unobviousness under that section, as a necessary prerequisite to patentability, we reiterate, must be determined as of 'the time the invention was made' without utilizing after-acquired knowledge."

13. SAME—SAME—SAME—SAME—SAME.

"The determination of unobviousness * * * relates to the determination of whether a patentable invention has been *made*. Whether there has been a *loss of right to a patent* on such invention is a distinct and separate issue, with which section 103 per se has nothing whatever to do. Its legislative history, which is well known and uncomplicated, shows that section 103 had but a single purpose which was to add to the statute a provision to take the place of the judge-made 'requirement for invention.' In doing that, the history also shows, the words 'at the time the invention was made' were included for the sole purpose of precluding the use of hindsight in deciding whether an invention is obvious. We are sure Congress had no intent thereby to modify the law respecting *loss of right* based on the existence of a time-bar. We have therefore concluded that we were wrong in accepting the appellants' contentions in *Palmquist* that those words enabled Palmquist and Erwin to dispose of a reference relied on to establish a one-year bar by showing a date of invention earlier than the date of the reference. The wrong in such a construction of the statute—beside giving it a meaning that was never intended—is that it permits an inventor to sleep on his rights more than a year after the invention has become entirely obvious to the public, whereby the public has potential possession of it, and still obtain a patent which will take the invention from the public, a result Congress could not possibly have intended in view of its express indication that section 102(b) is merely a continuation of the prior law."

14. SAME—PARTICULAR SUBJECT MATTER—"BUTADIENE POLYMERS AND COPOLYMERS THEREOF."

The decision of the Board of Appeals, refusing the claims in an application entitled "Butadiene Polymers and Copolymers Thereof" as unpatentable over the prior art, is reversed as to certain claims and affirmed as to the others.

APPEAL from the Patent Office. Serial No. 605,440.

MODIFIED.

Mary Helen Sears, *Edward S. Irons*, *Stanley M. Clark* for appellant.

Clarence W. Moore (*Raymond E. Martin* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals affirming the rejection of the claims in appellant's patent application.[1]

The invention relates to elastomeric synthetic polymers said to combine the desirable properties of natural Hevea rubber and the presently employed synthetic rubbers. These properties are described in the specification:

Hevea natural rubber is characterized by excellent tack, especially after milling; thus being ideal for tire building operations. Hevea produces vulcanizates having excellent resilience and low hysteresis properties, high tensile strength, and good flexibility at low temperatures. Gum vulcanizates formed from Hevea also possess high tensile strength. Hevea natural rubber is characterized by a crystallinity of at least about 40% and displays a crystalline X-ray diffraction pattern when stretched.

Heretofore, the synthetic rubbers, in comparison with Hevea rubber, have exhibited low tack and no crystalline properties while their vulcanizates have

[1] Serial No. 605,440, filed August 21, 1956, for "Butadiene Polymers and Copolymers Thereof."

been characterized by undesirably low tensile strengths and resilience, and undesirably high hysteresis. The synthetic rubbers, particularly the butadiene/-styrene copolymer (GR-S), have been greatly superior to natural rubber in resisting crack initiation in service but have been markedly inferior to Hevea in resisting crack and cut growth. The undesirably high hysteresis of the synthetic rubbery polymers has prevented their use in any substantial quantity in the production of such articles as the large tires employed on trucks, buses, and large off-the-road vehicles.

Infrared analysis of Hevea rubber has shown that the polymer consists of about 97.8% *cis*-1,4-structure. That is, the units of the rubber molecules are connected to each other in 1,4-addition to produce a linear chain with the spatial arrangement of the units in what is called the *cis*, as opposed to the *trans*, stereospecific configuration.[2]

In contrast, the specification notes that "The butadiene portion of a typical GRS emulsion copolymer contains about 64% *trans*-1,4-structure, 18% *cis*-1,4-structure and 18% 1,2-structure."

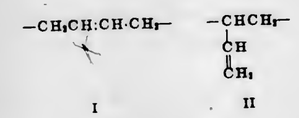
By increasing the amount of *cis*-1,4-structure butadiene, the properties of the synthetic rubber are greatly improved.

All of the claims are drawn to synthetic polymer products, although some contain limitations as to how the polymer is formed (e.g., "by solution polymerization"). A wide variety of combinations is claimed, but broadly three groups emerge. Some of the claims[3] specify a certain amount of *cis*-1,4-structure polymer, as, for example, claim 12, which reads:

A synthetic polymer selected from the group consisting of rubbery homopolymers of butadiene-1,3 and rubbery copolymers of butadiene-1,3 and styrene;

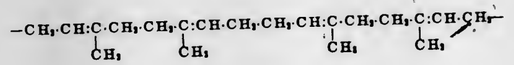
[2] The various polymer configurations which may result from the polymerization of conjugated diene are explained in Whitby, Synthetic Rubber, at 289, 290 (1954):

In a butadiene polymer the two units that may occur in the chain are the 1,4-unit (I) and the 1,2-unit (II).

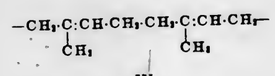


I II

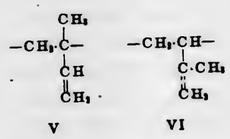
When a monosubstituted butadiene such as isoprene is polymerized the possibilities are greater, for the 1,4-units may be united "head-to-head and tail-to-tail" (III) and head-to-tail (IV), and, further, addition may occur 1,2 at the substituted double bond to produce the 1,2-unit (V) or 3,4 at the unsubstituted double bond to produce the 3,4 unit (VI).



III



IV



V VI

It should be noted that structures I, III, and IV are capable of existing in *cis* and *trans* configurations at each double union, and that structures II, V, and VI have asymmetric carbon atoms which make optical isomerism possible.

[3] Claims 12, 13, 17, 18, 29, 30, 32, 33, 34, 35, 36, 39 and 40.

said synthetic polymer being characterised by a *cis* 1,4-structure of at least 23% and a 1,2-structure not in excess of 15% of the polymeric butadiene present in the polymer.

Other claims[4] merely specify that the head-to-tail structure be present (a type of 1,4-structure) without denomination as *cis-* or *trans-*. Representative of these is claim 25:

A synthetic polymer selected from the group consisting of rubbery homopolymers of butadiene-1,3 and rubbery copolymers of butadiene-1,3 and styrene; said synthetic polymer being characterized in that at least 85 percent of the butadiene monomer units thereof are joined in a head-to-tail relationship.

Finally, there is claim 28:

Products comprising conjugated polyolefin hydrocarbon polymers and copolymers in which the conjugated polyolefin monomer units are present in 1,4 addition polymer structure.

Although the specification, the original claims, the decision of the Board, the briefs on appeal, and the oral arguments stress the importance of the high percentage of *cis*-1,4-stereoconfiguration, as contrasted with *trans*-1,4, and the low percentage of 1,2-structure in producing the results obtained (counsel for appellant characterized the invention as a "breakthrough"), we note that the second and third groups of claims outlined above are not limited to the *cis*-stereoconfiguration. Nevertheless, no issue was raised on whether the invention is properly defined without specifying the *cis*-configuration, our attention being directed to other issues raised in the 415 pages of printed record.

The Examiner and the Board of Appeals rejected all of the claims on the basis of the Binder reference. The record indicates that Binder, an employee of appellant's assignee, wrote an article in the magazine "Industrial and Engineering Chemistry."[5] The article reports analyses of the microstructures of polybutadiene homopolymers and copolymers with styrene. The portions particularly relied upon by the Patent Office are:

1. Table V which lists polymer "39–1" as having 22.7% *cis*-1,4; 60.0% *trans*-1,4; and 17.3% 1,2 structures of butadiene. It is noted that the catalyst employed was a peroxide.

2. Conclusion: "The results of the analyses reported here show that while the amount of *cis*-1,4 addition increases with increasing temperature of polymerization, a polybutadiene containing 100% *cis*-1,4 or *trans*-1,4 addition cannot be made at any practical temperature."

It also should be noted that the Binder report at the outset states: "During the past 2 years, a large number of polybutadienes and butadiene-styrene copolymers have been prepared in these laboratories, in which various changes were made in the recipes with the object, mainly, of increasing the amount of *cis*-1,4 addition."

One of the issues presented is: What is the statutory basis of the rejection on prior art? Appellant contends it is 35 U.S.C. 103 and the Solicitor contends it is both section 103 and section 102. Neither the Examiner nor the Board mentioned any statute section.

The Examiner rejected the claims "as unpatentable over Binder" in the final rejection, the first office action printed in the record on appeal. Appellant submitted a number of papers which the Examiner found failed "to place the case in condition for allowance." The Examiner repeated the "unpatentable over Binder" rejection, but

[4] Claims 22, 23, 25 and 26.
[5] Vol. 46, No. 8, pp. 1727–1730, August 1954.

added in the same paragraph "The claimed polymer only differs in degree and not in kind from the prepared polymer of Binder and is *anticipated* by the disclosure of 100% cis 1,4 polybutadiene on page 1730 of the article." [Emphasis supplied.] Appellant responded that the word "anticipated" raised a new issue and a new rejection and sought to amend the application. The Examiner refused to enter the amendment, but repeated the statement that "a polymer containing the claimed structure is anticipated by Binder." Appellant then petitioned to the Commissioner of Patents whose decision stated:

Under all the circumstances and in view of the facts now brought out in the petition, it is concluded that it would be advisable to enter the appellant's proposed claims 39 and 40 and to permit the Examiner in his answer to the appeal to rely on the Binder patent either as an anticipation or as a basis for a rejection on lack of invention, or both, as he may see fit.

The Examiner then wrote his answer which was divided into several headings. Under "The Reference," the Examiner concluded with the statement:

Note that Binder does *not* say that 100% cis 1,4 polybutadiene *cannot* be made. Binder merely states that cis-1,4 polybutadiene cannot be made in the *particular emulsion systems* discussed at any practical temperature. Hence, the naming of 100% *cis*-1,4 polybutadiene by Binder is deemed to be a full disclosure of said polymer. *In re Von Bramer et al.*, 542 O.G. 183.

Immediately below this, under "The Rejection," the Examiner stated that the "claims 22, 23, 25, 26 and 28 which read upon a butadiene polymer characterized by possessing a 100% cis 1,4 or 100% trans 1,4 structure are deemed unpatentable over" Binder, with no mention of "anticipation."

It is appellant's contention that the words "unpatentable over" mean that the statutory basis is section 103 and the word "anticipated" indicates reliance on section 102(b). Since there was no *rejection* on the ground of "anticipation," appellant argues that the statutory basis must be section 103.

We agree that the language employed is confusing and that it is not clear what section of the statute is intended. [1] On the other hand, we are not convinced that there is any "magic" to the particular words used or that they can only mean reliance on section 103. The words "unpatentable over" do not *necessarily* mean reliance on section 103 *alone*. The statements of the rejections are sufficient for us to consider the rejections on both sections 102(b) and 103.

[2] Considering first the rejection on the ground that Binder contains a full disclosure, we note that the Examiner and the Board relied on *In re Von Bramer*, 29 CCPA 1018, 127 F.2d 149, 53 USPQ 345, to support the proposition that the statement in Binder that "100% *cis*-1,4 * * * cannot be made" precludes issuance of a patent on the appealed claims.

We find persuasive the reasoning set forth in *Phillips Petroleum Company* v. *Ladd*, 219 F.Supp. 366, 138 USPQ 421 (D.D.C. 1963), the facts of which are strikingly similar to the present facts relevant to the issue of "anticipation." In that case the claims were drawn to include a rubbery 100% *cis*-1,4-polybutadiene. The Solicitor there, as here, argued that the claims were anticipated by the conclusion in the same Binder article that the rubber could not be made. The court[6] said:

[6] Jackson, J., retired associate judge of the Court of Customs and Patent Appeals, who, incidentally, was the author of the *Von Bramer* opinion.

With respect to the so-called disclosure in the Binder patent [sic], the position of counsel for defendant is that since 100% cis is mentioned, it is such a disclosure as would deny patentability to the claims herein. Based upon the evidence, and a thorough analysis of Binder, it seems clear to the court that defendant's contention amounts to nothing more than a vague negative hypothesis.

With respect to products, distinguishing them from mere names, the involved polymers are defined by critical limitations, were not predictable, differed in kind from the prior art products, had not been made, and probably could not have been attained, until the present inventors made their discovery.

Counsel for the defendant relied principally upon the case of *In re Von Bramer*, 127 F.2d 149, 29 CCPA 1018. In the opinion of the court the *Von Bramer* case differs in its facts from the instant case. In that case, as maintained by counsel for plaintiff, the prior art disclosure was what is known as the "Geneva" name of a chemical compound defining molecular structure. The properties claimed in the *Von Bramer* case differed only in degree from those admittedly disclosed in the prior art. As far as the predictable properties of the *Von Bramer* case is concerned, they were found in any similar compound, and those compounds were capable of synthesis by recognized classical organic reactions.

Furthermore, in that case there were statements in a number of prior art references that the compound relied upon as anticipatory had been made and used, and that the five carbon atom alkyl limitation in that case contradicted the statement of the invention in the specification as an arbitrary and meaningless distinction from the prior art.

* * * Polymers in the instant case differ in kind from the properties of polybutadienes of the prior art, and likewise, have properties which are unpredictable in light of the prior art. Those polymers had not been made by any method of synthesis by skilled workers in the art, including Dr. Binder who made that admission in the reference, although many highly skilled scientists in the art had been working on these projects.

Dr. Binder stated that he knew of no way to make 100% cis 1,4 polybutadiene at any practical temperature, and there is a lack of any prior art statement that any such cis polybutadiene had ever been made * * *.

Regarding the rejection predicated on full disclosure by Binder and reliance on the *Von Bramer* decision, we cannot sustain that rejection for the reasons given in the *Phillips* case with respect to the same prior art disclosure.

Considering the rejection on the ground of "unpatentability over" Binder, appellant points out that the Board withdrew a rejection based on a patent to Greene after appellant submitted an affidavit under Rule 131. Appellant argues that the affidavit establishes a date of invention prior to the publication date of the Binder reference, and that this court's decision in *In re Palmquist*, 51 CCPA 839, 319 F.2d 547, 138 USPQ 234, compels a finding that Binder cannot be considered in establishing obviousness of the claimed invention under 35 U.S.C. 103.[7]

The Solicitor points out that the *Palmquist* decision did not overrule *In re Wenzel*, 24 CCPA 1050, 88 F.2d 501, 33 USPQ 30, and states that *Bros Inc.* v. *Browning Mfg. Co.*, 317 F.2d 413, 137 USPQ 624, "appears to be contra to the Palmquist case." The Solicitor also argues that the polymers listed on Binder Table V and the claimed polymer "are only so slightly *different* from the latter structure as to be of no legal significance" [emphasis present] and that * * * the slight differences in the amount of cis-1,4 and 1,2 structure between the polymer of the claims and that of Binder does not come within the purview of the requirement for unobviousness of section 103 to justify allowance of a patent. Even under the Palmquist case it is doubted that this difference would be acceptable.

[7] In view of the fundamental nature and relative simplicity of the invention here in issue, we assume that the Greene patent, which is not in the record before this court, discloses approximately the same information as the Binder article. No issue has been raised as to the showing that the proofs accepted for withdrawal of the Greene patent are sufficient to establish a date of invention prior to the effective date of the Binder reference.

[3] It is assumed by both parties—and it is unquestionably true—that when a reference fully discloses in every detail the subject matter of a claim, the statutory basis of a rejection on that reference is 35 U.S.C. 102(a) if the reference date is before the applicant's *date of invention*, thereby establishing want of novelty, and section 102(b) if the reference date is more than one year prior to the actual United States *filing date*, thereby establishing a so-called "statutory bar," more accurately, a one-year time-bar which results in loss of right to a patent, regardless of when the invention was made. In either of these situations, it is often said that the invention is "anticipated" by the reference and the reference is termed an "anticipation."

[4] Proofs submitted in this case under Patent Office Rule 131 with respect to a reference not before us (because it was overcome thereby) have established that the applicant's invention date was prior to December 26, 1952. The Binder reference is the August 1954 issue of a periodical. It is seen, therefore, that it is subsequent to the date of invention but more than one year prior to the filing date, which was August 21, 1956. This is the same relationship of dates which existed in *Palmquist* as regards the Van Boskirk reference. Since the date of invention is earlier than the reference date, section 102(a) is necessarily inapplicable because the printed publication was not "before the invention thereof by the applicant" and there is statutory novelty. This leaves paragraph (b) of section 102 as the only paragraph of that section having possible relevancy.

It is appellant's position, as stated in his reply brief, that

The *only* issue on this appeal is whether the claims define subject matter which is obvious in view of the reference and hence unpatentable under 35 U.S.C. § 103. * * *

Deeming that to be the sole issue, appellant further contends that the assumed rejection under section 103 is not before the court because, under *Palmquist*, the Binder reference has been disposed of by the proof of an invention date prior to the date of Binder and this reference is not before us. Disposing of the sole reference in this manner of course disposes of the "unpatentable over" rejection.

There is a difference in the facts in this case from the facts in *Palmquist* in that there is only one reference here, there being differences between the claimed subject matter and the reference disclosure which the Patent Office contends would be obvious to one of ordinary skill in the art, whereas in *Palmquist* the claims were rejected on various combinations of two or three references, each combination involving one reference which had a date subsequent to the date of invention but more than one year prior to applicant's filing date. The Patent Office seeks to distinguish *Palmquist* on the basis of the differences in the factual situations. As will appear from what follows, we consider this difference to be of no legal significance.

Because of the importance of the question to the law of patents, we have deemed it desirable to reconsider what is the statutory basis of this "unpatentable over" or obviousness type of rejection, such as we have here and had before us in *Palmquist*, under the circumstance that *the reference or references have effective dates more than one year prior to the filing date of the applicant.* More specifically, we have reconsidered the result again urged on us here, as allegedly authorized by section 103, that a reference having a date more than a year prior to the filing date may be disposed of by showing an

invention date prior to the reference date, contrary to the express provision in Patent Office Rule 131.[8]

[5] Sections 101, 102 and 103, generally speaking, deal with two different matters: (1) the factors to be considered in determining whether a patentable invention has been *made*, i.e., novelty, utility, unobviousness, and the categories of patentable subject matter; and (2) "loss of right to patent" as stated in the heading of section 102, even though an otherwise patentable invention has been made. On the subject of loss of right, appellant's brief contains a helpful review of the development of the statutory law since 1793. It says:

> In 1897 the patent laws were amended to make the * * * two-year bar period apply to all public uses, publications and patents *regardless of the source* from which they emanated. The change was a consequence, primarily, of greatly improved communications within the country which had rendered inventors easily able to acquire knowledge of the public acts of others within their own fields. It was reasoned that any inventor who *delayed in filing* a patent application for more than two years after a public disclosure of the invention would obtain *an undeserved reward in derogation of the rights of the public* if he were granted a patent.
>
> In 1939, in recognition of further improvements in communications, Congress reduced the two-year bar period to one year. * * *
>
> That 1939 Act was carried over unchanged in the 1952 recodification of the patent laws as 35 U.S.C. § 102(b). * * *
>
> Manifestly, section 102(b) from its earliest beginnings has been and was intended to be directed toward the encouragement of *diligence* in the filing of patent applications and the protection of the public from monopolies on subject matter which had already been fully disclosed to it.

[6] These statements are in accord with our understanding of the history and purposes of section 102(b). It presents a sort of statute of limitations, formerly two years, now one year, within which an inventor, even though he has made a patentable invention, must act on penalty of loss of his right to patent. What starts the period running is clearly the availability of the invention *to the public* through the categories of disclosure enumerated in 102(b), which include "a printed publication" anywhere describing the invention. There appears to be no dispute about the operation of this statute in "complete anticipation" situations but *the contention seems to be that 102(b) has no applicability where the invention is not completely disclosed in a single patent or publication*, that is to say where the rejection involves the addition to the disclosure of the reference of the ordinary skill of the art or the disclosure of another reference which indicates what those of ordinary skill in the art are presumed to know, *and to have known for more than a year before the application was filed*. Upon a complete reexamination of this matter, we are convinced that the contention is contrary to the policy consideration which motivated the enactment by Congress of a statutory bar. On logic and principle we think this contention is unsound, and we also believe it is contrary to the patent law as it has actually existed since at least 1898.

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[8] *131. Affidavit of prior invention to overcome cited patent or publication.* (a) When any claim of an application is rejected on reference to a domestic patent which substantially shows or describes but does not claim the rejected invention, or on reference to a foreign patent or to a printed publication, and the applicant shall make oath to facts showing a completion of the invention in this country before the filing date of the application on which the domestic patent issued, or before the date of the foreign patent, or before the date of the printed publication, then the patent or publication cited shall not bar the grant of a patent to the applicant, *unless the date of such patent or printed publication be more than one year prior to the date on which the application was filed in this country.* [Emphasis ours.]

The italicized clause at the end of the foregoing paragraph or its equivalent has been present in the rule and its predecessor Rule 75 since January 1, 1898, when the rule was amended to include:

> * * * unless the date of such patent or printed publication is more than two years prior to the date on which application was filed in this country.

[7] First, as to principle, since the purpose of the statute has always been to require filing of the application within the prescribed period after the time the public came into possession of the invention, we cannot see that it makes any difference *how* it came into such possession, whether by a public use, a sale, a single patent or publication, or by combinations of one or more of the foregoing. In considering this principle *we assume*, of course, that by these means *the invention has become obvious* to that segment of the "public" having ordinary skill in the art. Once this has happened, the purpose of the law is to give the inventor only a year within which to file and this would seem to be liberal treatment. Whenever an applicant undertakes, under Rule 131, to swear back of a reference having an effective date more than a year before his filing date, he is automatically conceding that he made his invention more than a year before he filed. If the reference contains enough disclosure to make his invention obvious, the principle of the statute would seem to require denial of a patent to him. The same is true where a combination of two publicatoins or patents makes the invention obvious and they both have dates more than a year before the filing date.

[8] As to dealing with the express language of 102(b), for example, "described in a printed publication," technically, we see no reason to so read the words of the statute as to preclude the use of more than one reference; nor do we find in the context anything to show that "a printed publication" cannot include two or more printed publications.[9] We do not have two publications here, but we did in *Palmquist*, and it is a common situation.

As to what the law has been, more particularly what it was prior to 1953, when the new patent act and its section 103 became effective, there is a paucity of direct precedents on the precise problem.[10] We think there is a reason for this. Under the old law (R.S. 4886, where 102(b) finds its origin) patents were refused or invalidated on references dated more than a year before the filing date because the invention was anticipated or, if they were not, then *because there was no "invention,"* the latter rejection being based either on (*a*) a single nonanticipatory reference plus the skill of the art *or* (*b*) *on a plurality of references*. There was no need to seek out the precise statutory basis because it was R.S. 4886 in any event, read in the light of the Supreme Court's interpretation of the law that there must always be "invention." This issue was determined on the disclosures of the references relied on and if they had dates more than one year before the filing date, it was assumed they could be relied on to establish a "statutory bar." There was an express prohibition in Rule 131 and in its predecessor Rule 75 against antedating a reference having a date more than a year prior to the filing date and there was no basis on which to contest it. The accepted state of law is exemplified by the following sentences in McCrady's Patent Office Practice, 4th ed. (1959), sec. 127, p. 176:

> Prior art specified by 35 U.S.C. 102, which has an effective date more than one year prior to the effective filing date of an application, constitutes a bar under the language of that statute. Until 1940 the period was two years.
>
> * * * * * * * *
>
> Procedurally, the significance of the statutory bar lies in the fact that it

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[9] The construction of section 102(b) is subject to the provision of 1 U.S.C. 1 which provides in pertinent part:

> In determining the meaning of any Act of Congress, unless the context indicates otherwise—words importing the singular include an apply to several persons, parties, or things; * * *.

[10] For an attempt to relate prior decisions to the problem, see 32 Geo. Wash. L. Rev. 656.

cannot be antedated by evidence of applicant's earlier invention, as by affidavits under Rule 131, or by evidence presented in an infringement suit.

Our decision in *Palmquist* appears to have been the first to hold otherwise.

The various editions of Walker on Patents from an early time have included this statement, quoted from the 2nd Deller edition, § 141 (§ 87 in 1st Dell. ed.);

> Precise identity between the thing covered by the patent and the thing which the inventor allowed to be in public use or on sale more than the statutory period before he applied for the patent is not necessary to constitute constructive abandonment of the invention covered by the latter. It is enough * * * if the advance from one to the other did not amount to invention [*Int'l Tooth Crown Co.* v. *Gaylord*, 140 U.S. 55 (1891)].

Thus the "statutory bar" has not been limited to "complete anticipation" fact situations where the complete disclosure of the invention is to be found in a single reference. At least the skill of the art has been added to the disclosure of the reference or the thing in public use in finding a bar to the grant of a valid patent, utilizing the standard pre-1953 terminology of "no invention."

[10] It would seem that the practical operation of the prior law was that references having effective dates more than a year before applicant's filing date were always considered to be effective as references, regardless of the applicant's date of invention, and that rejections were then predicated thereon for "lack of invention" without making the distinction which we now seem to see as implicit in sections 102 and 103, "anticipation" or no novelty situations under 102 and "obviousness" situations under 103. But on further reflection, we now feel bound to point out that of equal importance is the question of *loss of right* predicated on a one-year *time-bar* which, it seems clear to us, has never been limited to "anticipation" situations, involving only a single reference, but has included as well "no invention" (now "obviousness") situations. It follows that where the time-bar is involved, *the actual date of invention becomes irrelevant* and that it is not in accordance with either the letter or the principle of the law, or its past interpretation over a very long period, to permit an applicant to dispose of a reference having a date more than one year prior to his filing date by proving his actual date of invention.

[11] Such a result was permitted by our decision in *Palmquist* and to the extent that it permitted a reference, having a publication date more than one year prior to the United States filing date to which the applicant was entitled, to be disposed of by proof of a date of invention earlier than the date of the reference, that decision is hereby overruled.

[12] We wish to make it clear that this ruling is predicated on our construction of section 102(b) and has no effect on the statements in *Palmquist* respecting the determination of obviousness under section 103 when a statutory time-bar is not involved. The existence of unobviousness under that section, as a necessary prerequisite to patentability, we reiterate, must be determined as of "the time the invention was made" without utilizing after-acquired knowledge.

[13] The determination of unobviousness, however, relates to the determination of whether a patentable invention has been *made*. Whether there has been a *loss of right to a patent* on such invention is a distinct and separate issue, with which section 103 per se has nothing whatever to do. Its legislative history, which is well known and uncomplicated, shows that section 103 had but a single purpose

which was to add to the statute a provision to take the place of the judge-made "requirement for invention." In doing that, the history also shows, the words "at the time the invention was made" were included for the sole purpose of precluding the use of hindsight in deciding whether an invention is obvious. We are sure Congress had no intent thereby to modify the law respecting *loss of right* based on the existence of a time-bar. We have therefore concluded that we were wrong in accepting the appellants' contentions in *Palmquist* that those words enabled Palmquist and Erwin to dispose of a reference relied on to establish a one-year bar by showing a date of invention earlier than the date of the reference. The wrong in such a construction of the statute—beside giving it a meaning that was never intended—is that it permits an inventor to sleep on his rights more than a year after the invention has become entirely obvious to the public, whereby the public has potential possession of it, and still obtain a patent which will take the invention from the public, a result Congress could not possibly have intended in view of its express indication that section 102(b) is merely a continuation of the prior law.

Since we must reject Foster's contention that he can dispose entirely of Binder by showing an earlier invention date, it becomes necessary for us to consider whether there was a loss of right to a patent, i.e., whether the invention became obvious to the public at the time of the Binder publication. Appellant has fully argued this issue in his briefs.

The Solicitor contends that all claims were rejected over the Binder disclosure of polymer "39–1" which contains 22.7% *cis*-1,4 and 60.0% *trans*-1,4 structures. We cannot agree. Our analysis of the record indicates that polymer "39–1" was never employed in the rejection of claims 22, 23, 25, 26 and 28. Those claims specify a minimum 1,4 content and were rejected only as being anticipated by the 100% *cis*-1,4-disclosure of Binder. Although the Solicitor argues that claims such as 25 which calls for a polymer having 85% head-to-tail structure are obvious in view of the "39–1" polymer which has 82.7% 1,4-structure, we do not feel that we can properly consider that argument since appellant was not afforded a proper opportunity to meet these arguments which were made neither by the Examiner nor by the Board.

The "39–1" polymer, as well as others from Table V of Binder, did clearly form the basis of rejecting the remaining claims. Since the *cis*-1,4 content formed the basis of the Examiner's comparison of the appellant's polymers with those of Binder, we shall group the claims for discussion on the basis of the *cis*-1,4 content specified. Claim 34 calls for "at least about twenty-nine percent of said monomer units being present in *cis*-1,4 structure." Claim 35 calls for "from about thirty to about fifty-seven percent of said butadiene monomer units being present in *cis*-1,4 structure."

After a rejection based upon the "39–1" polymer and a polymer containing 22.4% *cis*-1,4, 60.5% *trans*-1,4 and 17.1% 1,2 which was designated by Binder as polymer "1140," appellant submitted an affidavit comparing his "Diene rubber," a polybutadiene containing 29.1% *cis*-1,4; 61.3% *trans*-1,4; and 9.6% 1,2 with ten polymers disclosed by Binder. This affidavit by Dr. Bernard L. Johnson, an em-

ployee of Firestone, indicated that precise duplication of the Binder polymerization methods was possible because all of the Binder work had been done at Firestone and Binder's original data was still available. Furthermore, Binder determined the microstructures and properties of the reproduced polymers. Despite this assistance, however, Johnson was unable to reproduce several polymers including the "1140" polymer. Instead, he obtained a fluid containing 19.2% *cis*-1,4; 61.1% *trans*-1,4 and 19.1% 1,2-structure. All of the other reproduced polymers were rubbery solids. The Board stated that the "1140" polymer was the closest prior art and thus could not accept appellant's showing as being a comparison with the closest Binder polymer.

The Solicitor has pointed out what he considers to be another defect in the affidavit. The "Diene rubber," a butadiene homopolymer, was compared with various butadiene homopolymers and butadiene-styrene copolymers, but was not compared with "FR 89–2," the closest butadiene homopolymer disclosed by Binder. We note that although "Diene rubber" was not compared with "FR 89–2" which contained 21.9% *cis*-1,4, it was compared with "FR 89–1" which contained 20.5% *cis*-1,4. The criticisms raised by the Board and the Solicitor may bear on the weight to be given the affidavit, but they do not preclude our consideration of the affidavit.

Several of the Binder polymers are as good as or better than "Diene rubber" with regard to strength as measured by dynamic modulus and static modulus. However, the "Diene rubber" is clearly superior with regard to several other properties. Heat build up, as evidenced by relative energy absorption at constant force, is from about 53% to over 540% higher in the Binder polymers. The rebound value of the "Diene rubber" is from 40% to over 100% greater at room temperature and when cured in a tread stock from about 40% to 170% greater at room temperature and from 18% to about 200% greater at 212° F. than the rebound values of the Binder polymers. The "Diene rubber" resistance to low temperatures, as evidenced by Young's Bending Modulus, is from 20% to 170% greater than that of the Binder polymers. It should be noted that in all of these tests the Binder "FR 89–1" butadiene homopolymer containing 20.5% *cis*-1,4 performed the best or close to the best of all of the Binder polymers tested. We are convinced, however, that appellant's "Diene rubber" containing 29.1% *cis*-1,4-polybutadiene has properties superior to and is patentable over the Binder polymers, all of which contain less than 23% *cis*-1,4-structure.

We have considered the Solicitor's argument that because natural rubber contains 97.8% *cis*-1,4-structure, it would be obvious to increase the *cis*-1,4 content of the Binder polymers to obtain the properties achieved by appellant in his "Diene rubber." We cannot agree with this position. Natural rubber contains isoprene units, not butadiene units. Thus, appellant has discovered that his "Diene rubber" (polybutadiene) has properties similar to or better than natural rubber (polyisoprene). We, accordingly, *reverse* the rejection of claims 34 and 35.

Another group of claims, 12, 13, 29 and 39, specifies a *cis*-1,4 content of as low as 23%, only a fraction of a percent more than the Binder

polymers have. The Board held that the affidavit failed to show a difference between the Binder polymers and the claimed 23% *cis*-1,4 polymers. Appellant has not introduced evidence to show that the 23% *cis*-1,4 containing polymer has properties differing in any way from the Binder polymers. Neither has he shown that the 23% *cis*-1,4 containing polymers are more closely related to his 29.1% *cis*-1,4 containing "Diene rubber" than to the Binder polymers. He has also failed to present arguments that the small percentage differences in the total 1,4 content are significant. Thus, we agree with the Board that the mere difference of a fraction of a percent does not render the claims unobvious in view of Binder.

Claims 17 and 18 are drawn to sulfur-cured vulcanizates of the 23% *cis*-1,4 containing polymers. Appellant has not argued that sulfur curing would be an unobvious treatment of the products. We thus agree with the Solicitor that these claims must fall with the polymer claims.

Product claims 30, 32, 33, 36 and 40 contain limitations specifying the method of forming the 23% *cis*-1,4 containing polymer, e.g., "said synthetic polymer being formed in the presence of an ionic catalyst in a substantially nonaqueous system * * *." While it is appellant's position that high *cis*-1,4 contents cannot be achieved by Binder's polymerization process, he has not argued in his brief that there is an unobvious difference between the claims based upon the method limitation. Because appellant has not shown that polymers containing 23% *cis*-1,4-structure produced according to his claims must differ significantly from the Binder polymers, we agree with the Board.

[14] We, accordingly, *reverse* the decision of the Board of Appeals with regard to claims 22, 23, 25, 26, 28, 34 and 35. The rejection of claims 12, 13, 17, 18, 29, 30, 33, 36, 39 and 40 having been *affirmed* because the appellant has lost his right to these claims, the decision is *modified*.

MODIFIED.

WORLEY, *Chief Judge*, concurring.

Had not circumstances prevented my participation in *Palmquist*, I doubtless would have joined my colleagues in adopting appellants' then plausible intrepretation of section 103. There can be no doubt that the language therein, when interpreted *literally* and standing *alone*, supports *Palmquist*. But, as the majority makes so clear here, we misinterpreted Congressional intent there. No court is infallible, and the margin for error becomes greater in the complexities of patent law, increasing with the heavy case load [11] the court is attempting to carry. It is comforting to note that on those happily rare occasions when mistakes are made the court has not hesitated to set the record straight and prevent bad law from becoming precedent for more bad law.

That Palmquist was new law [12] is evident from *In re Wensel*, 24

[11] In 1958 patent appeals to this court totaled 83; six years later the number had reached 245, a 200% increase.

[12] In this connection, it is not without interest to note that Foster did not argue at any time before the Board that his Rule 131 affidavit removed the Binder publication as a reference. The Board's decision on reconsideration is dated Sept. 17, 1962. This court rendered its decision in *Palmquist* on June 28, 1963.

CCPA 1050, 88 F.2d 501, 33 USPQ 30; *In re Ruscetta*, 45 CCPA 968, 255 F.2d 687, 118 USPQ 101; *Ex parte Austin*, 72 USPQ 384. That the result there was also foreign to Congressional intent and policy is equally clear. For example, the statute is designed to *encourage* early filings so the public may the sooner benefit, yet *Palmquist* discouraged that goal. Indeed, it placed a premium on late filing, and created a virtual open season on the public by permitting "obvious" subject matter already in the public domain for more than one year to be patented.[13] I am confident neither the court nor Congress intended such a result. Nor could either have intended to shroud the validity of issued patents in perennial doubt, or encourage the danger of legal harassment for which *Palmquist* might well have become a potent source. It is well that we close the door here on those possibilities.

RICH, *J.*, concurring.

In view of the opening remarks of Judge Smith's dissent and because of the unusually long time the decision in this case has been gestating, I merely wish to record the fact that last August I first developed the tentative view that we committed an error of law in *Palmquist* and became firmly convinced of it and of its exact nature in early October after reviewing the *Palmquist* record. I regret that until then I had not fully appreciated the explicit and detailed reliance by the Examiner in that case on the existence of a one-year bar and on 35 U.S.C. 102(b) as the basis of his rejection.

SMITH, *J.*, dissenting.

Less than two years ago I spoke for a unanimous court in the *Palmquist* case. Today I find myself the lone dissenter from a decision which overrules it. What has happened in the interim to convince three of the original participants in that short-lived decision that it should be overruled?

The answer emerges from the opinions of the majority and from various commentaries on the *Palmquist* case.[14] Very simply this answer is that neither section 102 or 103 of the Patent Act of 1952 cover the situation presented here or in *Palmquist*. To plug the "hole" which has been shown to exist in the Patent Act of 1952, the majority rests its opinion upon the unsupportable premise that sound patent policy dictates that an inventor shall lose his right to a patent in every case in which his invention becomes obvious at any time prior to one year before he files his patent application.

I am convinced and shall point out in this opinion: (1) that no such broad patent policy exists and (2) even if it did, that this court

[13] In further consideration of the record before us here, it seems to me that the subject matter of claims 25, 26 and 28, as broadly stated, is unpatentable under 35 U.S.C. 102(b) alone, because the subject matter was described in toto in the Binder printed publication more than one year prior to appellant's filing date. In concentrating upon the rejection of those claims over the "conclusion" portion of Binder, the Patent Office appears to have overlooked several polymers of butadiene and copolymers of butadiene-styrene disclosed by Binder which have "at least 85%" of the butadiene units joined in head-to-tail or 1,4 addition polymer structure as called for in the claims. Those polymers, appearing in Tables 1 and 2 of Binder, are identified, for example, as Polymer Nos. 995, 1076, 1060 and 1113. However, the jurisdiction of this court being limited under 35 U.S.C. 141–144, we cannot enter a new ground of rejection. *In re Thomson*, 52 CCPA 770, 336 F.2d 604, 143 USPQ 21. I comment no further on the patentability of those claims without the benefit of the views of the Patent Office and appellant.

[14] See Sobel, Prior Art and Obviousness, 47 J. Pat. Off. Soc'y 79 (1965), a substantial portion of which is given over to a discussion of *Palmquist* and related cases. *Palmquist* is noted in 13 Am. U.L. Rev. 211 (1964) and 32 Geo. Wash. L. Rev. 656 (1964).

is not justified in reaching so far to correct a legislative oversight. I shall also point out some of the very undesirable consequences I see flowing from today's decision.

I. *Is there a pervasive patent policy which dictates today's decision?* The answer, of course, is no. There are at least two, and perhaps more situations wherein an invention, unobvious when made, later becomes obvious sometime prior to one year before the application is filed and yet the applicant does *not* lose his right to patent. The following examples will make this clear.

First: At page 11 of the instant majority opinion we find the statement: "Proofs submitted in this case under Patent Office Rule 131 with respect to a reference not before us (because it was overcome thereby) have established that the applicant's invention date was prior to December 26, 1952." What the majority opinion does *not* state is that December 26, 1952 is the *filing* date of this "reference not before us," which is the Greene U.S. Patent 2,762,790 issued a few weeks subsequent to the date on which appellant filed his application. Thus, Greene's application was co-pending with appellant's, and Greene's filing date was something over *three* years prior to appellant's.[15]

In *In re Harry*, 51 CCPA 1541, 333 F.2d 920, 142 USPQ 164 we held that 35 U.S.C. 102(e) operates not only in situations where the invention is described in a single patent, but also in situations where the invention is obvious in view of a combination of patents. Thus in considering the Greene patent as a reference, appellant's invention would, under the *Harry* case, have become obvious as of the filing date of the Greene application. Since that date is considerably more than one year prior to appellant's filing date, it follows logically from the majority view here that appellant should have been denied his patent because as a matter of law Greene made the invention obvious more than one year prior to the filing date of the Foster application. This is the necessary result it seems to me of the rationale of the majority that an applicant loses his right to a patent under section 102(b) if he fails to file his application for patent within a year after the invention became obvious.

What the Patent Office did here as to the Greene reference is consistent with its past position that the right to patent has not been lost in such situations. The Patent Office applies the reasoning of the majority *only* where the *issue* date of the patent is more than one year prior to the applicant's filing date. I am frankly unable to reconcile this anomaly (an example of which occurred in the *Palmquist* case as well) with the majority's fundamental proposition that there is an established policy of refusing patents for inventions which have become obvious more than a year prior to filing the application therefor. No such policy is expressed either in section 102(b) or section 103. On the contrary, what the courts and Congress have said is that, if and when under *certain express conditions* the invention becomes vested in the public more than one year prior to filing the application, then and *only* then is there a loss of right to patent. These conditions are stated in section 102(b) and clearly require that

[15] The underlying condition specified in Rule 131(a) is that the invention be substantially shown or described, but not claimed, in the domestic patent used as the reference. In accepting the affidavits under this rule and removing the Greene patent as a reference, we must assume that the Patent Office considered that this underlying condition of Rule 131 had been met and that Greene did describe Foster's invention.

the invention be *patented*, or *described* in a printed publication, or that it be *in public use* or *on sale*.[16]

Second: Another example from which it can be seen that there is no such broad policy as stated by the majority, arises from a consideration of section 102(a) and what is meant by the term "known" as used therein. The case law indicates that for an invention to be "known," the "knowledge" of it must be of a very special kind and quality in order to be effective as an anticipation. This court held, in *In re Schlittler*, 43 CCPA 986, 234 F.2d 882, 110 USPQ 304, that such knowledge must be *available to the public* and, moreover, that it must be knowledge of a *reduction to practice* of the invention against which it is cited.

It seems clear that this kind of knowledge—the kind required for anticipation under section 102(a)—certainly puts the invention in the possession of the public. And yet, section 102(b) does not base a *loss of right to patent* on such knowledge unless it has been "packaged," as it were, in a patent or a publication or in something which has gone into public use or on sale, prior to one year before the filing date of the application.

These examples seem to me to show the incorrectness of the majority position that there is a broad policy which demands a forfeiture of the right to patent in every case in which the public has possession of the invention for more than a year prior to filing of the application.

II. *Even if there were such a pervasive policy, it is an usurpation of the legislative function for this court to rewrite the statute.* In

[16] I have found no case law which sanctions the forfeiture of the right to a patent except in those situations where the invention is "described" in a prior patent or printed publication or has gone into public use or on sale. This exception is explicitly stated in 35 U.S.C. 102(b) and is supported by such landmark cases as *Bates* v. *Coe*, 98 U.S. 31 (1878) and *Parks* v. *Booth*, 102 U.S. 96 (1880). In *Bates* v. *Coe*, the patent in suit related to a hand drill and screw cutter consisting of five elementary parts. The defense pleaded that the invention was old and the proofs consisted of several prior patents, each of which disclosed certain of the elementary parts of the patented combination. In rejecting this defense, the court stated:

> Where the thing patented is an entirety, consisting of a single device or combination of old elements, incapable of division or separate use, the respondent cannot escape the charge of infringement by alleging or proving that a part of the entire thing is found in one prior patent or printed publication or machine, and another part in another prior exhibit, and still another part in a third one, and from the three or any greater number of such exhibits draw the conclusion that the patentee is not the original and first inventor of the patented combination. [98 U.S. at 48.]

While the primary issue in *Bates* v. *Coe* was whether the patentee was the first inventor, it is clear that the court intended the stated principle to apply to the other statutory defenses as well.

In *Parks* v. *Booth*, the defendant offered proofs that the patentee was not the original and first inventor of the improvement patented, which proof consisted of twelve patents or specifications. The court, in denying this defense, stated:

> • • • Suffice it to say in that regard that all of them have been carefully examined to the extent of the means furnished by the transcript, and the court is of the opinion that no one of the documents is of acharacter to sustain the issue that the complainant is not the original and first inventor of the improvement.
>
> Most or all of the inventions described in those publications bear more or less resemblance to that claimed by the complainant, and it may be that if it were allowable to test the validity of the invention in question by comparing the same with the whole as if embodied in a single exhibit, the evidence might be sufficient to support the views of the respondents in respect to the defense under consideration. Were that allowable it might well be suggested that the screen is found in one, the box in another, and the means to produce the lateral shake in a third, and so on to the end; but it would still be true that neither the same combination in its entirety nor the same mode of operation is described in any one of the patents or printed publications given in evidence.
>
> Attempt is scarcely made in argument to show that any one of these exhibits embodies the entire invention of the complainant, but it is insisted that every feature of the patented improvement is found in some one or more of those publications. Suppose that is so, still it is clear that such a concession, if made, could not benefit the respondents, unless they can be allowed to extend the same comparison to two or more exhibits, as they do not contend that the entire invention is superseded by any one of their exhibits.
>
> Where the thing patented is an entirety, consisting of a separate device or of a single combination of old elements incapable of division or separate use, the respondent cannot make good the defence in question by proving that a part of the entire invention is found in one prior patent, printed publication, or machine, and another part in another, and so on indefinitely, and from the whole or any given number expect the court to determine the issue of novelty adversely to the complainant. *Bates* v. *Coe*, 98 U.S. 31.
>
> Common justice forbids such a defence, as it would work a virtual repeal of so much of the Patent Act as gives to inventors the right to a patent consisting of old elements, where the combination itself is new and produces a new and useful result. New elements in such a patent are not required, and if such a defence were allowed, not one patent of the kind in a thousand of modern date could be held valid. Nor is such a defence consistent with the regulations enacted by Congress in respect to the procedure in litigations in respect to patent-rights. [102 U.S. at 103–04.]

Sturges v. *Crowninshield*, 4 Wheat. (17 U.S.) 122 (1819), Chief Justice Marshall was moved to comment upon the need for a zealous judiciary to exercise restraint concerning inadequate legislative enactments. His eloquent words, written nearly a century and a half ago, are a remarkably current and valid summary of my views regarding the instant case; thus:

> • • • although the spirit of an instrument, especially of a constitution, is to be respected not less than its letter, yet the spirit is to be collected chiefly from its words. It would be dangerous in the extreme, to infer from extrinsic circumstances, that a case for which the words of an instrument expressly provide, shall be exempted from its operation. Where words conflict with each other, where the different clauses of an instrument bear upon each other, and would be inconsistent, unless the natural and common import of the words be varied, construction becomes necessary, and a departure from the obvious meaning of words, is justifiable. But if, in any case, the plain meaning of a provision, not contradicted by any other provision in the same instrument, is to be disregarded, *because we believe the framers of the instrument could not intend what they say*, it must be one in which the absurdity and injustice of applying the provision to the case, would be so monstrous, that all mankind would, without hesitation, unite in rejecting the application. This is certainly not such a case. • • • [Emphasis added.]

Current validation of this point of view is supplied by Crawford's *The Construction of Statutes* at p. 249 which states:

> • • • if the language is unambiguous and the statute's meaning is clear, the statute must be accorded the expressed meaning without deviation, since any departure would constitute an invasion of the province of the legislature by the judiciary.

The language of sections 102(b) and 103 is unambiguous, its meaning is clear, and I see no valid basis for deviation from it in deciding the present case.[17]

Yet, the majority decision amounts to an interpretation of section 102(b) as though it contained the following underscored words:

> A person shall be entitled to a patent unless—
> • • • (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country *or unless the invention became obvious* more than one year prior to the date of the application for patent in the United States • • •.

Thus, within the rationale of the majority opinion and its construction of section 102, it is no longer necessary for a patent or a publication to "describe" the invention to lay the basis for the loss of right to a patent under section 102(b). It is sufficient that a patent or a publication be found, or that some combination of the same can be put together after the applicant's date of invention and with the accuracy characteristic of perfect hindsight which make the invention "obvious" more than one year prior to the date of filing the patent application. Thus, in addition to changing the wording of section 102(b) as above suggested, the majority must also intend to rewrite

[17] Webster's New International Dictionary (2d ed. 1954), defines "describe" in pertinent part as "2. To represent by words written or spoken • • • to state in detail the particulars of; • • • now esp., to give a mental image of; to depict verbally; as to *describe* a view, a person." The same source defines "obvious" as "2. Easily discovered, seen, or understood; plain; evident • • •."

Thus it would appear that the choice of language in section 102(b) requiring, as it does, that *the invention* be *described*, has carried into the statute the legal concepts expressed in *Bates* v. *Coe* and *Parks* v. *Booth*, supra note 16, i.e. that "anticipation" within the purview of section 102 requires that a description of the entire invention, not just some part of it, must be found in the patent or printed publication relied upon. This view is supported also by the express language of section 103, which is to apply when "the invention is not *identically disclosed or described* as set forth in section 102 • • •." [Emphasis added.] Under section 103 it is sufficient if the invention be "obvious" from the prior art. The section also includes the safeguard that this determination must be made "at the time the invention was made" and thus negates the "hindsight" and "piecemeal" reconstruction of the prior art which the Supreme Court recognized as a danger in *Parks* v. *Booth*. *Quaere*: If an invention is "obvious" under section 103 (although not "at the time the invention was made"), and the majority equates it with a "described" invention under section 102, do "obvious" and "described" now mean the same thing in the field of patent law?

section 103 so that the phrase "at the time the invention was made" now is to be limited by a proviso which reduces this time to a period of one year prior to the filing of the application.

Thus it becomes pertinent to inquire whether such was the intent of the drafters of the Patent Act of 1952 or of the Congress in enacting it. While I think it was not, I speak here simply as a minority of one in expressing this point of view. However, I think these considerations support my position that such effects should be accomplished *only* by legislation, and not by a judicially imposed statutory construction.

A patent statute, like a patent claim, should be more than a mere "nose of wax which may be turned and twisted in any direction." Cf. *White* v. *Dunbar*, 119 U.S. 47, 51 (1886). Often a particularly loosely worded statutory provision can come very near to being all things to all people. But all statutes have an elastic limit, and stretching them beyond that point results in a flaccid collection of words, vulnerable and open to attack from all sides and a far cry from the legislative instrument that was intended. I am not persuaded by the majority opinion that this court should undertake by "interpretation" to rewrite key provisions of sections 102(b) and 103 according to judicial fiat. I think it is the Congress and not this court which should correct the oversight, if any, which may be present in the statute.

In the previous discussion, I have indicated something of the complexities of the problems here involved. Such problems lie peculiarly within the province of the Congress, where the instruments of investigation, public hearings and exhaustive debate can measure and determine the public interest and state the proper public policy far more accurately than it can be done in this court.[18]

III. *Some logical problems and the undesirable consequences of the majority viewpoint.* In concluding, I shall comment on some of the undesirable consequences of today's decision. Others will undoubtedly perceive different problems, and the passage of time will surely create even more, but in the following paragraphs I shall outline some of the matters that have been and are troubling me.

Consider what the majority has done in its opinion. One would have supposed, in view of the fact that the issue appears to be "loss of right to patent" under section 102(b), that the majority would have decided this issue. Thus, one would have supposed the majority would first determine whether there was a right to a patent. I think the record is clear that Foster met every statutory standard to establish patentability of his invention on its merits. Clearly, the invention is new and unobvious under sections 102(a) and 103, respectively, since neither the Binder nor the Greene references were *in existence* at the time the invention was made. On the present record Foster *had* a right to a patent. Thus the only remaining question is whether he *lost* that right, under the provisions of section 102(b). And the majority's answer to this is (after overruling *Palmquist*): Yes, he

[18] For a further exposition of these considerations, see the dissenting opinions of Justices Frankfurter and Harlan in *Baker* v. *Carr*, 369 U.S. 186, 266, 330 (1962).

With respect to the instant majority's characterization of section 102(b) as presenting "a sort of statute of limitations," see *Eclipse Lumber Co.* v. *Iowa Loan & Trust Co.*, 38 F.2d 608, 610 (8th Cir. 1930):

> While the general rule is that statutes of limitation are to be given a liberal construction as statutes of repose * * * [citing cases], they are not to be extended to cases not within their provisions. * * * [Citing cases.]
>
> A statute limiting the time to bring an action to enforce a mechanic's lien cannot be extended, by construction, to include within its terms the equitable action, authorized by section 3103, given to persons who can have no mechanic's liens. Where the language of a statute is plain, there is no room for construction. * * * [Citing cases.]

lost his right to patent, since the Binder reference made the invention obvious more than a year before Foster filed his application.

Contrary to this simple approach and what might be supposed from these considerations, the majority opinion does not decide this issue. In overruling *Palmquist*, the majority gives lip service to the truism that "section 103 has nothing whatever to do" with the issue of loss of right to patent, but then proceeds to decide the case as one of obviousness using Binder as *prior art* under section 103, which it most emphatically is not, since it *did not exist* "at the time the invention was made."[19]

If the four members of the majority of this court cannot make clear which section of the statute or which underlying rationale they are applying, I hesitate to guess what an applicant in the future will face in the way of indefinite and evasive rejections from the Patent Office. Today's decision destroys any meaningful differences that may have existed in the past between sections 102 (a) and (b) and section 103. This is evident from the way in which the majority opinion vacillates between sections 102 and 103 to support its affirmance of a rejection of the claims as "unpatentable over" the Binder reference.

Despite my past hopes that the Patent Office would adopt a policy of articulation regarding the statutory ground of rejection, it now seems clear that the majority is satisfied with a simple "unpatentable over" rejection. And since such a rejection can be for the reason that the claimed invention is old, or obvious, or for the reason that the right to patent has been lost, the applicant is put in the position of guessing as to which ground is intended and arguing against each of these reasons, without knowing which one the Office really means or which one will be relied upon in the event of appeal.

The many powerful implications in the term "due process" apply to the patent law as well as they do to other fields. I am frankly unable to reconcile the procedural due process requirements of 35 U.S.C. 132 with the failure of the Patent Office here to comply with the notice requirements of this section.[20] Certainly one needs look no further than the majority opinion to see that the words "unpatentable over" do not impart such information as to enable an applicant to "judge of the propriety of continuing the prosecution of his application" as contemplated by section 132.[21]

[19] "The language of section 103 seems to leave no doubt that the date an applicant made an invention is the point of reference regardless of the existence of the statutory one-year bars. Such bars must be considered alone and not as part of the general knowledge to be imputed to the 'person having ordinary skill,' if later than said date of invention." Woodcock, "What is Prior Art?" in *Dynamics of the Patent System* 309 (1960).

[20] A rejection so vaguely stated may well amount to a denial of the procedural safeguards provided in 35 U.S.C. 132. The affirmed rejection of claims as "unpatentable over" Binder may be a rejection for the reason that Foster's invention was "described" by Binder within the meaning of section 102; or that the statutory bar of section 102(b) has resulted in a loss of right to patent; or that the Foster invention was obvious in view of Binder under the conditions specified in section 103. A rejection so vaguely stated does not discharge the statutory duty imposed on the Commissioner of Patents by section 132. Certainly, it does not provide "such information [to the applicant] * * * as may be useful in judging of the propriety of continuing the prosecution of his application." It furnishes, instead, a constantly shifting ground so that the statutory basis for the rejection by the Examiner may well differ from that the Board of Appeals, even as it affirms the Examiner's rejection. Under such circumstances, what issue may then be assigned as error for appeal to this court under 35 U.S.C. 142 and be relied on by us for decision under 35 U.S.C. 144? The burden on an applicant is quite different in meeting rejections made under sections 102 and 103. A rejection under section 102 involves a comparison between the subject matter disclosed by the reference and that claimed by the applicant, in order to determine whether the claimed invention is "described" in the reference. See, e.g., *In re Sheppard*, 52 CCPA 859, 339 F.2d 238, 144 USPQ 42. Section 103, on the other hand, requires consideration of the differences between the claimed invention and the prior art, for the purpose of determining whether the claimed subject matter as a whole would have been "obvious" to one of ordinary skill in the art. Thus, the issues arising under the two sections are vastly different, and call for the production and introduction of quite different types of evidence.

[21] Another aspect of procedural due process which continues to concern me in the present case arises where the rejection appears now to be predicated upon section 103. The Commissioner of Patents has failed to provide a procedure by which an applicant can establish his date of invention as contemplated by section 103. Unless the date of invention be within one year from the filing date of the application, there is no remedy. If the date be within one year from the filing date there is a partial remedy under Rule 131. By its context, however, Rule 131 precludes an applicant from using it to establish a date of invention more than one year prior to his filing date.

Most disturbing of all is the fact that from this day forward obviousness under section 103 will be tested, *not as of the time the invention was made*, but *as of one year prior to the filing date of the application.*

Prior to the enactment of section 103, the determination of "invention" and the evaluation of the prior art relevant thereto always was made as of the time the invention was made. To now change the meaning of section 103 so that obviousness is tested as of one year prior to the filing date of the application, as it seems to me is required by the rationale of the majority, I think we should have some definite indication that such a change was within the contemplation of Congress in enacting section 103. Certainly, such a change should require more than an inaccurately stated principle of an alleged public policy to engraft the forfeiture provisions of section 102(b) onto section 103.

The majority in its construction of section 103 clearly embraces the historically rejected "hindsight" reconstruction of the prior art for all times except one year before the filing date of the application, a result I feel certain Congress intended to preclude by the very precise wording of section 103.

A recent writer in observing that "hindsight" is one of our best-developed "faculties" [22] has given current expression to the ancient observation recorded in *Ecclesiastes* 1:9, 10.[23] I had supposed, very naively as it now appears, that section 103 was bottomed on an awareness of the most human of all failings and that Congress had for this reason required that the determination of obviousness was to be made "at the time the invention was made." Instead, I now learn from the majority opinion that the clear language of this section does not mean what it says. Make no mistake about it, hindsight now is an accepted technique for rejection of an application under section 103 unless the effective date of the reference or combination of references is less than one year prior to the filing date of the application.

[22] Eugene S. Ferguson "The Origins of the Steam Engine," Scientific American, vol. 210, pp. 98, 107 (January 1964).

[23] "9. The thing that hath been, it is that which shall be; and that which is done is that which shall be done: and there is no new thing under the sun.
"10. Is there anything whereof it may be said, See, this is new? It hath been already of old time, which was before us."

United States Court of Appeals
District of Columbia Circuit

HAZELTINE RESEARCH, INC., ET AL., APPELLANTS
v.
DAVID L. LADD, COMMISSIONER OF PATENTS, APPELLEE

No. 18,563. Decided November 25, 1964

APPEAL from the United States District Court for the District of Columbia.

AFFIRMED.

Mr. Edward A. Ruestow (*Mr. George R. Jones* of counsel) for appellants.

Mr. C. W. Moore (*Mr. S. William Cochran* of counsel) for appellee.

Before BASTIAN, WRIGHT and MCGOWAN, *Circuit Judges*

PER CURIAM:

The question involved in this case is whether a copending patent is part of the "prior art" within the meaning of that term as used in 35 U.S.C. § 103, and whether a copending patent is a bar to a patent application only if it actually describes the invention for which patent is sought.

Having been unsuccessful in the Patent Office in their application for patent, appellants [plaintiffs] filed suit in the District Court to obtain a judgment authorizing appellee [defendant], Commissioner of Patents, to issue the patent applied for by them. The District Court, after a full hearing, rendered an opinion finding for appellee and against appellants, and dismissing the complaint. *Hazeltine Research, Inc.* v. *Ladd*, 226 F. Supp. 459 (D.D.C. 1964).

We are in agreement with the opinion of the District Court. Accordingly, it follows that the judgment of the District Court must be and is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,342,076, H. M. Herbener, COMBINED BUST SUPPORTER AND FILLER; 2,563,241, same, ARTIFICIAL BUST; 2,725,574, S. J. Block et al., BRASSIERE PAD, filed Feb. 26, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–308–PH, *Forms, Incorporated* v. *F. W. Woolworth Co.*

2,400,048, B. Jones, DIFFERENTIAL PRESSURE RESPONSIVE DEVICE; 2,500,224, same, TEMPERATURE COMPENSATED MEANS FOR MEASURING DIFFERENTIAL PRESSURES; 2,632,474, same, DAMPENER FOR DIFFERENTIAL PRESSURE INDICATORS; 2,664,749, same, FLUID PRESSURE RESPONSIVE EQUIPMENT; 2,917,681, C. B. Nolte, VENTED SEAL, filed Aug. 14, 1962, D.C., S.D. Calif. (Los Angeles), Doc. 62–1131–K, *Barton Instrument Corporation* v. *American Meter Company, Inc.* Stipulation and consent judgment that parties settle claims under license agreement for past infringement; defendant's counterclaim dismissed with prejudice Mar. 12, 1965.

2,410,321, W. S. Watts, ELECTRICAL CONNECTOR; 2,429,585, J. Rogoff, PRESSED INSULATED CONNECTOR, filed July 28, 1952, D.C. Conn. (New Haven), Doc. 3924, *William S. Watts et al.* v. *Burndy Engineering Co., Inc.* Stipulation for dismissal Mar. 15, 1965.

2,429,585. (See 2,410,321.)

2,435,902, F. C. Reggio, FUEL METERING DEVICES; 2,672,556, same, ENGINE FUEL CONTROL, filed Apr. 19, 1963, D.C. Conn. (New Haven), Doc. 9779, *The United States of America* v. *Niles-Bement-Pond Company, Inc. et al.* Stipulation for dismissal Mar. 9, 1965.

2,445,322, M. C. Fridolph, BODY GARMENT; 2,849,068, C. W. Hine, same, filed Oct. 28, 1963, D.C., S.D.N.Y., Doc. 63/3176, *Serong, Inc.* v. *Neatform Co., Inc.* Consent judgment of discontinuance of action and counterclaim Mar. 8, 1965.

2,467,694, D. T. Peden, ABRASIVE ARTICLE, filed Oct. 24, 1962, D.C., N.D. Ill. (Freeport), Doc. 62c56, *Micromatic Hone Corporation* v. *Barnes Drill Company.* Cause dismissed Mar. 19, 1965.

2,480,966, W. Kimel et al., PROCESS OF NITRATING FURAN DERIVATIVES; 2,548,173, R. E. Raffauf, PROCESS OF MAKING 5-NITRO-2-FURALDEHYDE SEMICARBAZONE; 2,812,282, V. R. Ellis, STABILIZED AQUEOUS SOLUTION OF NITROFURAZONE; 2,866,795, G. Swain, PREPARATION OF 5-NITRO-2-FURALDEHYDE SEMICARBAZONE; 2,866,285, J. G. Michels, NITRATING AN N-(2-FURYL) ALKYLIDENE HYDRAZINE COMPOUND; 2,927,-110, Gever and O'Keefe, PROCESS FOR THE PREPARATION OF AZOMETHINES OF 5-NITRO-2-FORMYL FURAN WITH HYDRAZINE COMPOUNDS; Reg. No. 483,279 (FURACIN), The Norwich Pharmacal Company, Antiseptics and germicides; Reg. No. 641,715, same, Eaton Laboratories, Inc., Antibacterial preparations, filed Aug. 17, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C310(1), *The Norwich Pharmacal Company* v. *Performance Products Company.* Final consent judgment; patents and trademarks held valid; defendant enjoined Mar. 1, 1965.

2,500,629, A. J. Crookston, SHINGLING AND ROCK LATHING TOOL, filed July 7, 1964, D.C., N.D. Ill. (Freeport), Doc. 64c30, *James R. Crookston* v. *Estwing Manufacturing Company.* Stipulation and order of dismissal Mar. 19, 1965.

2,548,173. (See 2,490,006.)

2,563,241. (See 2,342,076.)

2,580,387, G. R. Robinson, SHEET SEPARATING DEVICES; 2,893,729(a), T. R. Persentka, SHEET SEPARATING MECHANISM FOR DUPLICATORS; 2,946,607, P. A. Stephenson, PAPER FEED TRAY FOR DUPLICATING MACHINES, filed June 11, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1018, *A. B. Dick Company et al.* v. *General Binding Corporation.* Order of dismissal without prejudice Mar. 15, 1965.

2,500,224. (See 2,400,048.)

2,506,115, H. M. Dodge, RESILIENT MOUNTING; Re. 24,758, L. F. Thiry, RUBBER BUSHING FOR PIVOTAL SUSPENSION SYSTEMS, filed Apr. 10, 1964, D.C., S.D.N.Y., Doc. 64/1119, *General Tire & Rubber Company* v. *H. O. Canfield Co. et al.* Consent judgment; defendants enjoined Mar. 24, 1965.

2,612,342, J. E. Terry, THROTTLE VALVE FOR PNEUMATIC TOOLS, filed May 29, 1962, D.C., E.D. Mo. (St. Louis), Doc. 62C208(1), *Superior Pneumatic & Mfg., Inc.* v. *Foster Mfg. Co., Inc. et al.* Stipulation dismissing case with prejudice Mar. 1965 (notice Apr. 13, 1965).

2,632,474. (See 2,400,048.)

2,637,998, G. Shaw, ARTIFICIAL FILAMENT, filed Mar. 23, 1965, D.C. Vt. (Burlington), Doc. 4223, *Gilbert Shaw* v. *E. B. & A. C. Whiting Company.*

2,661,543, Tyndall and Maeser, APPARATUS FOR AND METHODS OF DRYING LEATHER, filed Mar. 31, 1965, D.C. Mass. (Boston), Doc. 65–249–C, *John White Footwear Holdings, Ltd. et al.* v. *United Shoe Machinery Corporation.*

2,664,624, W. E. Bassett, NAIL CLIPPER; 3,738,795, same; Des. 185,590, W. E. Bassett, incapable, by E. L. Lyon, Jr., Conservator, same, filed Dec. 30, 1960, D.C., S.D.N.Y., Doc. 60/5113, *W. E. Bassett Company* v. *Revlon, Inc.* Amended complaint deleting charge of infringement of Patent No. 2,477,782 May 15, 1963. Consent order dismissing complaint and counterclaims Aug. 21, 1964.

2,664,749. (See 2,400,048.)

2,672,850, Grates and McAuley, SPROCKET CHAIN, filed Mar. 23, 1965, D.C., E.D. Tenn. (Chattanooga), Doc. 4484, *Big Dutchman, Inc.* v. *Cumberland Ossc Company.*

2,672,556. (See 2,435,902.)

2,686,720, S. La Rosa, LASAGNA STRANDS, filed Apr. 1, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–337, *V. La Rosa & Sons, Inc.* v. *Prince Macaroni Co., Inc.* Consent judgment for injunction (notice Mar. 25, 1965).

2,701,163, Teller and Germain, METERING AEROSOL BOTTLE, filed Apr. 27, 1962, D.C. Conn. (New Haven), Doc. 9303, *The Risdon Manufacturing Co.* v. *VCA Incorporated et al.* Stipulation for dismissal Mar. 16, 1965.

2,711,768, A. A. Tolbert, BILLFOLD, filed Mar. 3, 1964, D.C., S.D.N.Y., Doc. 64/664, *Tandy Corporation* v. *C. F. Rumpp & Sons*. Stipulation and order dismissing action with prejudice Mar. 31, 1965.

2,715,214, A. I. Appleton, DETACHABLE TERMINAL ASSEMBLY FOR ELECTRICAL LIGHTING FIXTURE; **2,900,436**, same, ELECTRICAL CONDUIT UNION AND EXPANSION COUPLING, filed Mar. 28, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c704, *Arthur I. Appleton* v. *Crouse-Hinds Co. et al.* Stipulation and order of dismissal with prejudice Mar. 16, 1965.

2,725,574. (See 2,342,076.)

2,738,301, E. A. Kaczka et al., HYDROXY ANALOG OF VITAMIN B_{12} AND PROCESSES FOR PREPARING THE SAME, filed Mar. 23, 1965, D.C.N.J. (Newark), Doc. 306–65, *Merck & Co., Inc.* v. *Paul Bottone*.

2,738,795. (See 2,664,624.)

2,742,327, T. Marks, FULLY AUTOMATIC MACHINE FOR MAKING BRUSHES, filed Mar. 29, 1965, D.C., M.D. Pa. (Scranton), Doc. 8889, *American Technical Machinery Corp.* v. *Masterpiece, Inc.* Same, filed May 26, 1965, D.C., S.D.N.Y., Doc. 65/1612, *American Technical Machinery Corp.* v. *Flowerised Presentations, Inc.* Same, filed June 10, 1965, D.C., N.D. Ga. (Atlanta), Doc. 9514, *American Technical Machinery Corp.* v. *Production Engineering Co.*

2,755,144, J. D. Simmons, FOLDING TRESTLE, filed Mar. 4, 1965, Ct. Cls., Doc. 69–65, *James D. Simmons et al.* v. *The United States*.

2,772,661, J. M. Sellers, APPARATUS FOR DISSEMINATING INSECTICIDES, filed Mar. 8, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–372–TC, *Joseph M. Sellers* v. *Transland Aircraft, Inc.*

2,778,943, I. S. Blonder, TUNABLE ELECTRIC CIRCUIT ELEMENTS, filed Mar. 26, 1965, D.C., S.D.N.Y., Doc. 65/904, *Isaac S. Blonder* v. *Channel Master Corp. et ano.*

2,790,696, E. Nyyssonen, POLYPHASE SYNCHRONOUS MACHINE; **2,790,131**, same, POLYPHASE TRANSFORMER SYSTEM, filed Aug. 16, 1963, C.C.A., 1st Cir., Doc. 6189, *Einard Nyyssonen* v. *Bendix Corporation*. Judgment of District Court affirmed (notice Mar. 10, 1965).

2,790,131. (See 2,790,098.)

2,796,370, Ostrander and Congiundi, COMPOSITION AND METHOD FOR PRODUCING CORROSION RESISTANT PROTECTIVE COATING ON ALUMINUM AND ALUMINUM ALLOYS, filed Mar. 5, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c337, *Allied Research Products, Inc. et al.* v. *Heatbath Corporation et al.*

2,800,252, E. A. Wahl, POWDER-FEEDING APPARATUS, filed Mar. 13, 1963, D.C., S.D. Ind. (Indianapolis), Doc. 63–C–19, *Eugene A. Wahl et al.* v. *Carrier Manufacturing Co., Inc.* Claims 14, 15 and 17 of Patent No. 2,800,252 held valid and infringed; defendant enjoined Mar. 23, 1965.

2,801,510, R. R. Colburn, TRACTOR MOUNTED ROTARY DISC MOWER; **2,869,304**, same, COMBINED TRACTOR AND POWER MOWER, filed Nov. 23, 1964, D.C., S.D. Ind. (Evansville), Doc. EV 64–C–100, *Richard R. Colburn et al.* v. *Hahn-Eclipse Co.* Stipulation dismissing cause without prejudice Mar. 29, 1965.

2,813,262. (See 2,490,006.)

2,825,956, J. C. Shoemaker, CONCRETE-FORM LOCKING MEANS; **2,866,630**, same; **2,920,371**, same, TIE-WIRES FOR CONCRETE FORMS; **3,010,175**, same, TIE-WIRE FOR CONCRETE FORMS; **2,955,976**, Van Helden and Schoffmann, CONCRETE FORM LOCKING MEANS, filed Feb. 28, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c10, *Simplex Forms System, Inc.* v. *Durable Form, Inc.* Final consent judgment; patents held valid and infringed; defendant enjoined; counterclaim dismissed Mar. 30, 1965.

2,828,194, Hopkins and Easley, ETCHING, filed Mar. 30, 1965, D.C., N.D. Ala. (Birmingham), Doc. 65–236–J, *The Dow Chemical Company* v. *Haleyville Advertiser et al.*

2,947,655, W. F. Matheny et al., APPARATUS FOR FORMING AND SPIRALLY WINDING A FIN STRIP ON AN ADVANCING TUBE; **2,956,335**, same, METHOD OF ROMING FINNED TUBING, filed Mar. 12, 1965, D.C., N.D. Okla. (Tulsa), Doc. 6156, *Yuba Consolidated Industries, Inc.* v. *Cooling Products, Inc. et al.* Same, Doc. 6157, *Yuba Consolidated Industries, Inc.* v. *Air-X-Changers, Inc. et al.*

2,849,068. (See 2,445,322.)

2,860,885, K. H. Schweitzer, CHILD'S SEAT FOR NESTING CARRIERS, filed Mar. 11, 1965, D.C. Colo. (Denver), Doc. 9045, *Blake Hiester* v. *Miller's Super Markets, Inc.* Same, Doc. 9046, *Blake Hiester* v. *Red Owl Stores, Inc.* Same, Doc. 9047, *Blake Hiester* v. *Safeway Stores, Inc.*

2,866,795. (See 2,490,006.)

2,869,304. (See 2,801,510.)

2,884,631, O'Hare and Kline, TELEVISION ANTENNAE; **Des. 195,261**, R. J. McAuley, ULTRA HIGH FREQUENCY TELEVISION AND RADIO INDOOR ANTENNA, filed Mar. 15, 1965, D.C., S.D.N.Y., Doc. 65/758, *Parker Metal Goods Co.* v. *R.M.S. Electronics, Inc.*

2,893,729(e). (See 2,569,387.)

2,893,729(b), T. R. Perzentka, SHEET SEPARATING MECHANISM FOR DUPLICATORS, filed Nov. 26, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c2139, *A. B. Dick Co.* v. *Ditto, Incorporated*. Cause dismissed without prejudice Sept. 8, 1964.

2,896,284, M. Bishaf, SAFETY BELT AND BUCKLE STRUCTURE, filed Mar. 26, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c473, *Pontonier, Inc.* v. *Jeffrey-Allan Industries, Inc.* Same, filed Sept. 14, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1551, *Pontonier, Inc.* v. *Rupert Parachute Co., Inc.* Consent decree; Patent held valid and infringed; defendant enjoined Apr. 6, 1965.

2,898,335. (See 2,490,006.)

2,898,659. (See 2,825,956.)

2,900,436. (See 2,715,214.)

2,917,061. (See 2,400,048.)

2,920,371. (See 2,825,956.)

2,927,110. (See 2,490,006.)

2,933,223, Kravig and Johnson, DECORATIVE BOWS AND METHOD AND MACHINE FOR FABRICATING THE SAME; **3,112,240**, same, DECORATIVE BOWS, filed Mar. 31, 1965, D.C., N.D.N.Y. (Utica), Doc. 65–CV–134, *Minnesota Mining and Manufacturing Company* v. *Aranac Ribbon Mills, Inc. et al.*

2,947,545, H. De Place, SKI BINDER CABLE SAFETY TIGHTENER, filed Mar. 30, 1965, D.C. Mass. (Boston), Doc. 65–243–S, *Societe Anonyme Francois Salomon & Fils* v. *Hanover Sports, Inc.*

2,950,798, W. G. Axtell, LUGGAGE CASE, filed Apr. 11, 1963, D.C., E.D.N.Y. (Brooklyn), Doc. 63C–403, *Schwayder Bros., Inc.* v. *Eastern Case Co.* Consent decree for injunction (notice Mar. 17, 1965).

2,956,335. (See 2,847,055.)

2,968,283, E. B. Hilker et al., FORCE BALANCE SYSTEM, filed Mar. 23, 1965, D.C., E.D. Mich. (Detroit), Doc. 28693, *Holley Carburetor Company* v. *The Bendix Corporation*.

2,979,119, H. Kramer, WEB-TO-TUBE FASTENINGS; **3,042,113**, same; **3,092,177**, same, filed Mar. 31, 1965, D.C., S.D.N.Y., Doc. 65/968, *Hy Kramer Enterprises* v. *Living Aluminum, Inc. et al.*

3,010,175. (See 2,825,956.)

3,042,113. (See 2,979,119.)

3,046,607. (See 2,569,387.)

3,055,076. (See 2,825,956.)

3,092,177. (See 2,979,119.)

3,112,240. (See 2,933,223.)

Re. 23,189, F. B. Porges, MECHANICAL SEAL, filed Mar. 5, 1964, D.C., Dist. of Columbia, Doc. 558–64, *Sealol Corporation* v. *Flexibox Corporation et al.* Judgment in favor of plaintiff; Re. Patent No. 23,189 held invalid; defendant's counterclaim dismissed June 16, 1965.

Re. 24,758. (See 2,598,115.)

Des. 185,500. (See 2,664,624.)

Des. 195,261. (See 2,884,631.)

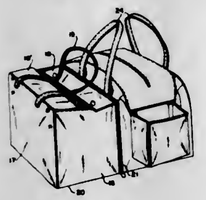
REISSUES

AUGUST 3, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,826
COLLAPSIBLE BAG

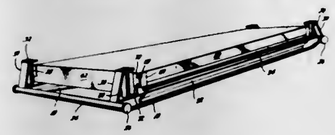
Charles W. Ward, 608 Oakland Ave., Sandusky, Ohio
Original No. 3,122,225, dated Feb. 25, 1964, Ser. No. 258,732, Feb. 15, 1963. Application for reissue Apr. 17, 1964, Ser. No. 373,119
7 Claims. (Cl. 190—52)



5. In a flat rigid portable handbag, the combination of a principal bag having a bottom and a plurality of outer walls and an opening therein, carrying means operatively associated with the principal bag and adapted to be gripped for carrying the bag, a collapsible exterior compartment on said principal bag comprising a rigid bottom, flexible side and end walls and having an opening therein, said rigid bottom of said compartment being movable from an open position extending outwardly from and generally parallel to said flat rigid bottom of the principal bag to a collapsed position lying along a wall of said principal bag, said flexible walls being moved to a collapsed position upon movement of said rigid bottom to its said collapsed position, and strap means extending across said rigid bottom when in its collapsed position and having holding means thereon to attach with holding means on the principal bag to retain said compartment in its collapsed position.

25,827
PORTABLE BUILDING AND APPARATUS FOR THE TRANSPORTATION AND ERECTION OF THE SAME

Floyd E. Bigelow, Jr., 6614 Lindyann, Houston, Tex.
Original No. 3,095,616, dated July 2, 1963, Ser. No. 26,234, May 2, 1960. Application for reissue Sept. 16, 1963, Ser. No. 309,362
6 Claims. (Cl. 52—122)



3. A portable building comprising,
a base frame,
a floor secured to said frame,
a plurality of walls lying flat in superposed relationship on said floor,
a roof superposed above and covering said walls,
a plurality of upwardly extending posts on said frame spaced outside the periphery of said floor walls and roof and extending above said roof with the roof and walls lying flat in superposed relationship on said floor,
said posts adapted to engage another such base frame to support same above said roof,
said walls adapted to be erected to vertical position and to extend above the periphery of said floor and spaced inwardly from said posts,
and means for securing the walls together and to the frame, said roof shaped to be positioned over the upper edge of said erected walls.

25,828
PAPER ROLL DISPENSER

Philip A. Wooster, 266 Beach Road, Belvedere, Calif.
Original No. 3,032,283, dated May 1, 1962, Ser. No. 830,247, July 29, 1959. Application for reissue Apr. 20, 1964, Ser. No. 374,553
4 Claims. (Cl. 242—55.2)



1. In apparatus for dispensing web material in the form of a roll having an axial opening, a device for engaging and supporting one end of the roll, *said device including four angularly spaced fin like spurs forming two pairs of spurs, the spurs of each pair being parallel and offset on diametrically opposite sides of the axis of rotation of said device*, means for supporting said device for axial rotation, [said device including at least three angularly spaced fin like spurs,] said spurs being disposed along the axis of rotation, the dimensioning of the spurs in the direction of said axis being a minor fraction of the radial distance from the outer ends of the spurs to said axis, a roll of web material having *four like angularly spaced spurs* [at least three slots of like angular spacing] in said one end of the roll *for accommodating the four spurs*, said fin like spurs being accommodated within said slots and engaging the side surfaces of the slots to align the roll with the axis of said device, said device comprising a substantially flat body to which said spurs are secured, the edges of the spurs facing said roll lying in a plane substantially at right angles to said axis of rotation.

25,829
PROCESS OF USING A METAL OXIDE FLAME SPRAY STICK

Harold C. Wagner, St. Joseph, Mich., assignor to Laboratory Equipment Corporation, St. Joseph, Mich., a corporation of Michigan
Original No. 2,997,413, dated Aug. 22, 1961, Ser. No. 69,460, Nov. 15, 1960. Application for reissue May 28, 1962, Ser. No. 199,563
8 Claims. (Cl. 117—105.2)

6. In a flame spray coating process the use of a long thin cylindrical stick composed of a bonded quantity of refractory particles and having one or more passages extending longitudinally therethrough from end to end, said passages having a diameter within the range in which the passages do not become obstructed by molten refractory material when one end of the stick is in molten condition and the remainder of the stick is in solid condition, the

stick being fed longitudinally at a substantially uniform rate into a high temperature zone so as to melt the advancing end of said stick progressively, atomizing liquid



particles from the melted end of said stick with an air blast, and projecting the liquid particles thus produced against a surface to be coated while simultaneously producing a flow of air through the passages.

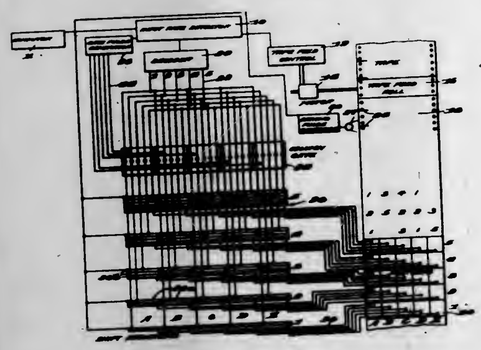
25,830

HIGH SPEED PRINTERS FOR COMPUTERS

Stanley Arthur Shull, Ithaca, N.Y., assignor to Xerox Corporation, Rochester, N.Y.

Original No. 3,072,046, dated Jan. 8, 1963, Ser. No. 816,281, May 27, 1959. Application for reissue Sept. 8, 1964, Ser. No. 406,648

15 Claims. (Cl. 101—93)



1. An arrangement for controlling a plurality of elements arranged in columns and rows, to operate on a member moved past such elements in the direction of such columns, all the elements in each row performing the same function, and the elements in different rows performing different functions, in response to signals differing for each of such functions and being produced in sets each signal of which corresponds to a different column, there being at least as many rows as there are different functions, comprising a plurality of storing devices one connected to each of the elements, the storing devices for each row storing signals for different periods of time which vary with the distance through which the member moves from a predetermined point in order to come opposite the elements in the various rows, means controlled by release of a signal from a storing device to actuate the element to which it is connected, a decoder having outlets each corresponding to one of said functions and comprising means to determine the function of a signal supplied there to and to supply a control signal to the proper outlet, means for connecting each outlet of the decoder to all the storing devices of the corresponding row, and means controlled in synchronism with the successive signals of each set for successively rendering the connecting means operative so as to supply each control signal to the storing device of the proper column and row.

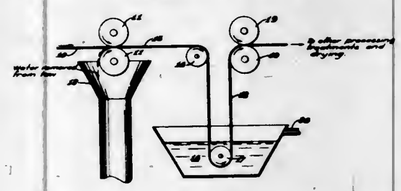
25,831

METHOD FOR DYEING ACRYLONITRILE POLYMER FIBERS

John Moore, Williamsburg, Va., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Original No. 3,113,827, dated Dec. 10, 1963, Ser. No. 246,150, Dec. 20, 1962. Application for reissue Oct. 29, 1964, Ser. No. 422,478

5 Claims. (Cl. 264—78)



1. In the method of producing dyed acrylonitrile polymer fibers of an ethylenically unsaturated monomeric material containing at least about 80 weight percent polymerized acrylonitrile, wherein [a solution of] said polymer is dissolved in a solvent for said polymer and is extruded into an aqueous coagulating bath to form gel filaments of said polymer, said filaments being subsequently washed essentially free of said solvent with an aqueous solution and at least partially oriented, said washed and oriented gel filaments containing at least about 300 weight percent of said aqueous solution in the gel structure, based on the dry weight of the gel filament, the improvement comprising

(a) mechanically reducing the aqueous solution content of said washed and oriented filament to between about 100 and 200 weight percent, based on the dry weight of the filament;

(b) immersing said filament having a reduced solution content in an aqueous dye bath;

(c) removing excess dye solution from the dyed filament;

(d) and, subsequently, irreversibly drying said filament to a dyed textile filament.

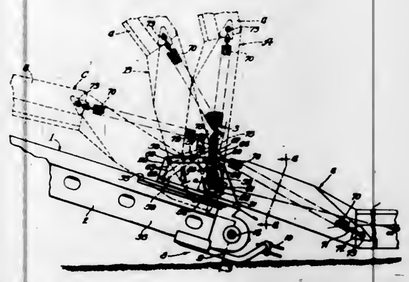
25,832

BALANCED CONVEYOR HOPPER

Russell L. Mighell, Kewanee, Ill., assignor to Kewanee Machinery & Conveyor Company, Kewanee, Ill., a corporation of Illinois

Original No. 3,059,754, dated Oct. 23, 1962, Ser. No. 106,741, May 1, 1961. Application for reissue Sept. 14, 1964, Ser. No. 410,337

25 Claims. (Cl. 198—98)



1. In a conveyor, an elevator unit, a hopper unit, pivotal means to support said hopper unit for swinging movement relative to said elevator unit about one axis, and counterbalancing means to hold said hopper unit in balance during the raising and lowering thereof about said pivotal means comprising a link mechanism swingably connected with one of said units and having operative swingable connection with said pivotal means on another axis offset with respect to said one axis, spring means connected with said hopper unit and with a given part of said link mechanism, said hopper unit being connected to cause rotation of said pivotal means during the swinging movement of the hopper unit, said link mechanism providing apparatus to actuate said part thereof in a predetermined relation with respect to the axis of the pivotal means to automatically vary the effective pull of said spring means through the link mechanism to keep said hopper unit in balance during the different angular positions assumed thereby during its swing.

PLANT PATENTS

GRANTED AUGUST 3, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,546

ROSE PLANT

Gysbert Verbeek, Aalsmeer, Netherlands, assignor to Carlton Rose Nurseries, Carlton, Oreg., a corporation of Oregon

Filed Apr. 27, 1964, Ser. No. 363,033

1 Claim. (Cl. Plt.—20)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of glossy Green, disease resistant foliage, abundant flower production, well-formed blooms of good longevity, and a distinctive and attractive general tonality of the flowers corresponding to Cherry color.

PATENTS

GRANTED AUGUST 3, 1965

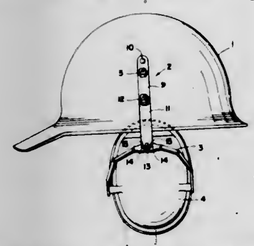
GENERAL AND MECHANICAL

3,197,784
SEGMENTED HELMET
Richard Sheldon Carlisle, Thornwood, N.Y., assignor to Carlisle Research and Development Corporation, Elmsford, N.Y., a corporation of New York
Filed Sept. 4, 1962, Ser. No. 221,201
3 Claims. (Cl. 2—3)



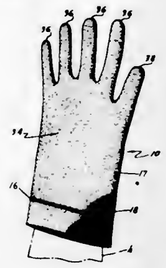
1. A helmet comprising a large number of radially extending, outwardly expanding elongated members each having longitudinal sides, outer ends, and inner and outer layers; the inner ends of which are joined integrally by a web; the longitudinal sides being concave relative to each other; the inner layer being cushioned and the outer layer being resilient; a strap passed laterally through each elongated member and adjustable in length whereby to retain the members in a domed shape of a size adapted to be adjusted to a given head; whereby to constitute an adjustable protective head covering having minute cracks between the elongated members for ventilation.

3,197,785
EAR PROTECTOR ATTACHMENT IN COMBINATION WITH A SAFETY CAP
Jack N. Simpson and William R. Bohner, Reading, Pa., assignors to The Electric Storage Battery Company, Philadelphia, Pa.
Filed May 18, 1964, Ser. No. 368,047
3 Claims. (Cl. 2—3)



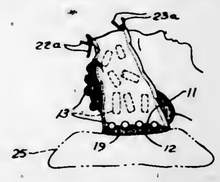
1. In combination with a safety headgear, a pair of suspensions pivotally connected to opposite sides of the outer surface thereof, each suspension comprising a pair of links having ends pivotally connected together, both of said pair of links being pivotally movable to adjust the angle therebetween, a yoke pivotally connected to the bottom of said pair of links, and a noise-suppressing ear cup pivotally connected to said yoke, whereby said cup may be adjustably moved laterally or raised vertically by changing the angle between said pair of links.

3,197,786
PLASTIC GLOVES
Stamatis G. Velonis, Opportunity, Wash., Herbert S. Schnitzer, Longmeadow, Mass., and Henry M. Richardson, Somers, Conn., assignors to Galen Enterprises, Inc., Spokane, Wash., a corporation of Washington
Original application May 31, 1961, Ser. No. 113,962, now Patent No. 3,148,235, dated Sept. 8, 1964. Divided and this application Jan. 15, 1964, Ser. No. 337,945
5 Claims. (Cl. 2—167)



1. Seamless ambidextrous glove made of synthetic plastic material and comprising a metacarpal receiving portion, and finger and thumb receiving stalls extending from said metacarpal receiving portion, the longitudinal axes of said finger and thumb receiving stalls being parallel and lying in a common plane which is the plane of symmetry of said glove.

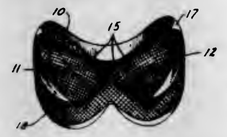
3,197,787
PROTECTIVE HEAD COVERING
Victor A. Tognan and Catherine R. Tognan, both of 86—72 Bay 16th St., Brooklyn 14, N.Y.
Filed Jan. 23, 1963, Ser. No. 253,449
2 Claims. (Cl. 2—171)



1. In a protective head covering of the character described, the combination of an elongated band of predetermined length and width to extend across the back and along the sides of a coiffure set with hair curlers and leave the top portion of the head exposed for ventilation, said band having opposed layers of soft pliable material secured together along their marginal edge portions to provide a closed compartment having pliable walls, granular filling material in said compartment in such quantity and particle size as to be shiftable in said compartment and form therewith a pliable cushion adapted to be molded in place on the coiffure by manipulation of the outer wall of said compartment to provide

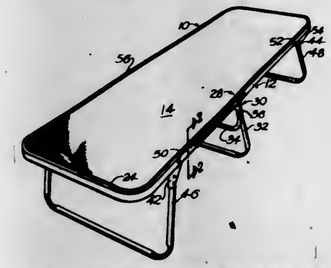
cushioning areas of relatively thick cross section corresponding to and registering with the areas of the coiffure between hair curlers and areas of relatively thin cross section corresponding to and registering with the areas of the coiffure set with hair curlers, whereby to protect the wearer's head when reclining against the pressure of the hair curlers and prevent relative movement of the air curlers, and means for securing said band in place on the wearer's head and maintaining said filling material in proper relative position in said compartment.

3,197,788
PROSTHETIC VALVE FOR CARDIAC SURGERY
Franz-Josef Segger, San Francisco, Calif., assignor to The Institute of Medical Sciences, a non-profit corporation of California
Filed Apr. 23, 1962, Ser. No. 189,399
1 Claim. (Cl. 3—1)



In a valve adapted for insertion into a human heart, mounting means comprising a strip-like rim formed of flexible material and having a serpentine form as viewed in directions lateral of its axis whereby the rim in radial projection forms substantia ly equally connected arcuate portions, said rim also being formed whereby normally its outer peripheral surface is generally coincident with the surface of a cone whereby the area enclosed by one edge of the rim is smaller than the area enclosed by the other edge of the rim, and valve means carried by said rim, said valve means comprising three membranes each formed of resilient plastic material, each membrane normally conforming generally to a segment of a sphere and having one edge thereof attached to the corresponding arcuate portion of the rim, said three membranes being dimensioned and disposed whereby inwardly extending marginal portions of the same are urged together into valve closing contacts in three regions extending radially from said axis to the rim and displaced at substantially equal angles with respect to each other, the convex sides of said membranes facing in a direction toward said smaller area.

3,197,789
FOLDING FURNITURE
Joseph A. Ashkouti, 3036 Slaton Drive NW., and George M. Bright, 525 Page Ave., both of Atlanta, Ga.
Filed July 17, 1961, Ser. No. 124,471
4 Claims. (Cl. 5—110)

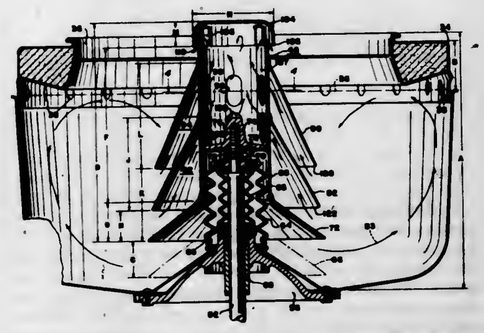


1. In a cot construction, a continuous cot frame, a front foldable support frame on the underside of said cot foldable from an upward to a downward position, a rear foldable frame on said cot foldable from an upward to a downward position, and an intermediate support frame on said cot frame foldable from an upward to a downward position, said upper frame being divided substantially in the center thereof to be folded upon itself, a bracket on each side of said cot frame connecting said divided frame for movement, each of said brackets comprising a pair of bracket plates, there being one plate secured on each of the adjacent end portions of said divided cot frame at the point of division at the side of said frame, one of said plates having an end thereon and the other of said plates having a stop pin protruding therefrom for abutment with said other plate end, both of said bracket plates being connected together by means of a pivot pin located above said cot frame, and a flexible cover on said cot frame stretched from side to side and end to end on said frame.

3,197,790
PROCESS FOR IMPARTING DURABLE LOFT AND WARMTH TO CELLULOSIC FABRICS
Nelson F. Getchell, Great Falls, Va., assignor to Cotton Producers Institute of The National Cotton Council of America, Memphis, Tenn., a corporation of Tennessee
No Drawing. Continuation of application Ser. No. 180,330, Mar. 16, 1962. This application May 6, 1964, Ser. No. 365,486
4 Claims. (Cl. 8—116)

1. A process for imparting to a cellulosic fabric the desirable characteristic of maintaining its appearance even after repeated launderings and for increasing its thickness, compressibility, and insulating properties, comprising applying to said cellulosic fabric a crosslinking reagent capable of reacting with the cellulosic molecules of said fabric and forming crosslinkages with said molecules, lofting the fabric by mechanical agitation to increase the thickness of the fabric and increase the ratio of the volume of entrapped air to the volume of cellulosic fibers and then curing the crosslinking reagent on said lofted fabric while said fabric has an increased thickness and has the volume of entrapped air to the volume of cellulosic fibers increased.

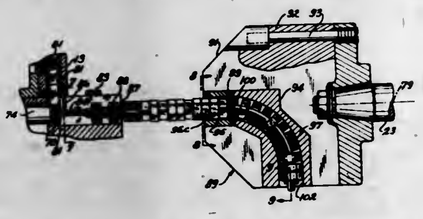
3,197,791
METHOD OF AGITATING CLOTHES
Richard R. Walton, Boston, Mass., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application July 18, 1963, Ser. No. 295,952, now Patent No. 3,132,502, dated May 12, 1964. Divided and this application Jan. 29, 1964, Ser. No. 341,047
4 Claims. (Cl. 8—159)



1. The method of vertically reciprocatingly agitating clothes in a fluid without tangling comprising the steps of, initiating a toroidal circulation of said fluid, introducing clothes to said toroidal circulation of fluid along the inner diameter of said toroidal circulation, ratchetingly sub-

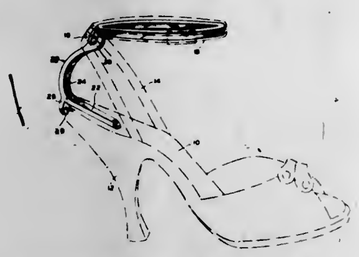
merging said clothes in said fluid at the inner diameter of said toroidal circulation, and substantially completely venting directly to atmosphere those pressures at the point where said clothes are being ratchetingly submerged for maintaining the continuous ratcheting submergence of said clothes and the homogeneous toroidal circulation thereof.

3,197,792
FLOATING TAP TYPE NUT TAPPER
Francis P. Haeling, Tiffin, Ohio, assignor to The National Machinery Company, Tiffin, Ohio, a corporation of Ohio
Filed Feb. 24, 1961, Ser. No. 91,378
7 Claims. (Cl. 10—139)



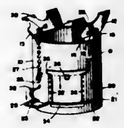
1. A tap assembly operable to tap nuts having a periphery with at least four corners and a central axial passage comprising a tap having a cutting end and a shank formed with a first portion coaxial with said cutting end and a second portion extending laterally therefrom, a pair of guide blocks rotating about a first axis each having a semi-circular cross-section groove with a radius of curvature equal to the radius at least as great as the radius of the nut periphery and a center of curvature, one of said blocks being mounted so that the center of curvature at one end of its groove is coaxial with said first axis, the other of said blocks being mounted with the center of curvature of its groove parallel to and spaced from the center of curvature of said one block.

3,197,793
DISPLAY DEVICE FOR SHOES
Max Walters, 881 Randolph Place, Union, N.J.
Filed Jan. 28, 1965, Ser. No. 428,723
8 Claims. (Cl. 12—1)



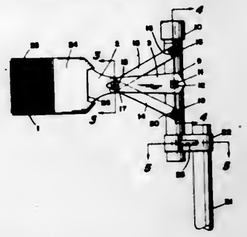
1. A display device for use with a shoe having a heel portion, said heel portion having a back support extending about said heel portion and said back support having attached thereto an ankle strap extending forwardly to go around the ankle of the wearer and requiring support for display purposes to hold it in normal wearing position, said display device comprising an ankle strap support formed as a rigid endless loop lying in a flat plane, said endless loop having an integral projection operative to engage a supporting member to hold said endless loop at an acute angle to the plane of the heel portion of the shoe.

3,197,794
DUST MOP CLEANER
Joseph Fallek, 1990 Bay Drive, Miami Beach, Fla.
Filed July 22, 1963, Ser. No. 296,544
1 Claim. (Cl. 15—142)



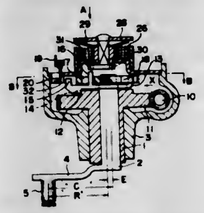
A dust mop cleaner comprising,
(a) a container adapted to receive therein a mop head with the mop handle extending outwardly therefrom,
(b) a plurality of impact members extending inwardly from the inner surface of said container and adapted to be struck by the strands of the mop head when the mop handle is rotated, thereby to dislodge dust therefrom,
(c) sectional cover means for closing the upper end of said container, including
(1) a pair of hingedly mounted plate members disposed in abutting relation when in closed position and movable away from each other to open position, and
(2) opposed recesses in the abutting edges of said plate members to provide an opening through which the mop handle may extend when said plate members are in closed position,
(d) an opening in the side of said container through which dislodged dust may pass when emptying said container,
(e) movable closure means for said opening in the side of said container, and
(f) treadle means on the side of said container connected to said sectional cover means and operable when depressed to move said cover means to open position,
(g) the means connecting said treadle means with said plate members including
(1) vertically slidable rods at opposite sides of said container,
(2) means connecting the upper end of each rod to the adjacent plate member, and
(3) means connected the lower end of each rod with said treadle member.

3,197,795
PAINT BRUSH WITH ELONGATED, ADJUSTABLE HANDLE
James A. Forte, 2639 E. 51st St., Cleveland, Ohio
Filed Feb. 21, 1964, Ser. No. 346,539
2 Claims. (Cl. 15—160)



1. In combination, a tubular member, an extension handle in spaced parallel relation to said tubular member, means for removably clamping said tubular member to said extension handle, a paint brush having a handle extending perpendicularly to said tubular member, means securing said paint brush handle to said tubular member, and brace members extending from said tubular member angularly to the handle of said brush, said brace members removably secured to said tubular member and to the handle of said brush.

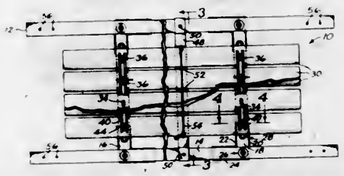
3,197,796
DRIVING DEVICE FOR A WINDOW WIPER
Masumi Kato, Aichi-gun, Aichi-ken, and Yasuhiko Amano, Toyota-shi, Aichi-ken, Japan, assignors to Nippon Denso Kabushiki Kaisha, Aichi-ken, Japan
Filed July 30, 1963, Ser. No. 298,661
Claims priority, application Japan, Aug. 10, 1962, 37/33,042
6 Claims. (Cl. 15—250.17)



1. Driving mechanism for an oscillatably mounted motor vehicle windshield wiper, said driving mechanism comprising, in combination, a rotatable driving gear; a motor driving said gear; a source of potential; a crank shaft rotatably mounted in said gear with its axis radially displaced by a preset eccentricity from the axis of said gear, and including a crank arm having a crank pin on its outer end coupled to the wiper to oscillate the latter; a clutch plate mounted on said gear for rotation coaxially of said gear and displacement radially thereof between a first position, in which said clutch plate is coupled to said gear to rotate therewith, and a second position, in which said clutch plate is uncoupled from said gear; means coupling said crank shaft and said clutch plate for conjoint rotation and relative radial displacement, said crank arm, when said clutch plate is coupled to said gear, having an effective radius equal to the spacing of the axes of said crank shaft and crank pin less said preset eccentricity; whereby, when said clutch plate is coupled to said gear, the wiper is oscillated through a first preset angle; electromagnetically operated cam means operable, when energized, to engage said clutch plate and displace it radially to said second position; a control switch having an on position connecting said motor to said source, and an off position disconnecting said motor from said source and connecting said electromagnetically operated cam means to said source through normally closed switch means; and stop means engageable by said clutch plate in its second position and effective to arrest rotation of said clutch plate and said crank shaft at a predetermined angular position thereof; whereby, upon continued rotation of said gear, said crank shaft is shifted diametrically of said gear to move the wiper through an additional angle proportional to said preset eccentricity to park the wiper in a position outside said first preset angle; said clutch plate, as said crank shaft nears its limit of such shifting, opening said switch means to de-energize said electromagnetically operated cam means.

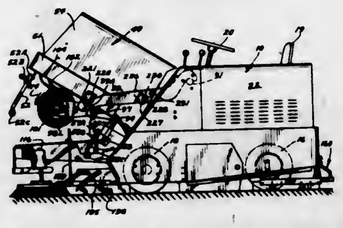
3,197,797
RACK FOR VENETIAN BLINDS
Ulysses H. Stanley, 2144 NE. Schuyler St., Portland, Oreg.
Filed Jan. 23, 1964, Ser. No. 339,673
6 Claims. (Cl. 15—268)

1. A rack for supporting a Venetian blind, where said blind includes a rail at the top end thereof and multiple slats dependently supported from said rail, said rack comprising
a pair of elongated, substantially parallel bars of rectangular cross section extending across top and bottom ends of the rack,
a pair of elongated, substantially parallel bars also of rectangular cross section extending along opposite sides of the rack, and defining with said end bars a rack of substantially rectangular outline,



a bracket for each corner of the rack, including a pair of channel-shaped legs disposed at right angles to each other, connecting the bars at each corner of the rack, with each leg of the bracket snugly fitting against three sides of a bar,
fastener means detachably connecting each leg of each bracket to the bar lodged therein, and
means for holding a Venetian blind on said rack with the blind stretched between said top and bottom end bars, said means includings
mounting elements for detachably mounting the rail of the blind on said top end bar with said rail next to and paralleling the bar, and
means adapted to extend from the bottom end of the blind to the bottom end bar for connecting said bottom end of the blind to said bottom end bar.

3,197,798
SCRUBBING MACHINE
Neil F. Brown, Mac W. Lutz, and Harlie J. Kimmerle, Minneapolis, Minn., assignors to G. H. Tennant Company, Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 28, 1963, Ser. No. 254,180
28 Claims. (Cl. 15—320)



16. A sweeping machine including a wheel supported sweeper frame, said sweeper frame having a rotary floor maintenance implement enclosure that is open at the bottom and has an unobstructed ejection opening, a rotary floor maintenance implement mounted in said enclosure, a scrubbing attachment, means on the sweeper frame for lifting and detachably carrying said attachment adjacent said unobstructed opening, said attachment including an attachment frame, a dirty water collection tank mounted on said attachment frame, means connected to the attachment frame and extending adjacent to said unobstructed opening for collecting liquid from the surface scrubbed by said implement, suction applying means fluidly connected to the collection tank for applying a suction thereto, conduit means connected to the collection tank and extending adjacent to the collection means for withdrawing liquid from the collection

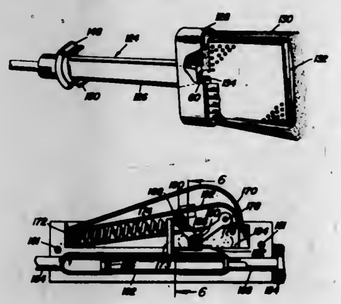
means and returning it to the collection tank, and power means on the sweeper frame drivingly connected to said implement for rotating it.

3,197,799
SHOE BRUSH
Christopher F. La Corata, Albany Post Road, Coldspring, N.Y.
Filed June 6, 1962, Ser. No. 200,550
5 Claims. (Cl. 15—529)



1. In combination with a shoe brush having a generally rectangular body and a plurality of polishing bristles depending thereform, means internally lengthwise of said body for receiving a container for liquid shoe polish, said container having an applicator tip, aperture means defined by an end portion of said body permitting said applicator tip to protrude therefrom, adjusting means for urging said container and applicator tip in a direction from the end of said body and spring means internally of said body urging said container in an opposite direction.

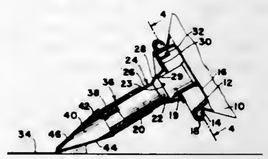
3,197,800
COMBINED PAINT APPLICATOR AND HANDLE PUMP
Henry E. Karkut, Baldwinsville, N.Y., assignor to Henry E. Karkut, Inc., a corporation of New Jersey
Original application Aug. 31, 1961, Ser. No. 135,230, now Patent No. 3,135,005, dated June 2, 1964. Divided and this application Mar. 19, 1964, Ser. No. 353,655
5 Claims. (Cl. 15—547)



1. A paint applicator including an elongated tubular handle portion and an applicator portion carried by one end of said handle portion, said applicator portion including a paint reservoir, paint applicator means, and means for evenly distributing paint from said reservoir to said applicator means, said reservoir including an inlet, a paint conduit extending through said handle portion and having one end communicated with said inlet and the other end adapted to be communicated with a suitable supply of paint, said tubular handle portion including pump actuator means, said paint conduit including a pair of sections including axially spaced and aligned adjacent ends disposed in said handle portion and a piston sleeve disposed between and slidingly telescopingly engaged with said adjacent ends in fluid sealing engagement therewith, flap valve means disposed in said piston sleeve for permitting the flow of paint through said sleeve toward said reservoir and preventing a reverse flow of paint through said sleeve, said actuator means including means operatively connected to said sleeve and operable to effect reciprocation of the latter.

5. A paint applicator including an elongated tubular handle portion and an applicator portion carried by one end of said handle portion, said applicator portion including a paint reservoir, paint applicator means, and means for evenly distributing paint from said reservoir to said applicator means, said reservoir including an inlet, a paint conduit extending through said handle portion and having one end communicated with said inlet and the other end adapted to be communicated with a suitable supply of paint, said applicator comprising a brush, said handle portion and applicator means comprising the handle and brush head portions of said brush, respectively, the other end of said handle portion including a tapered terminal end portion, a generally cylindrical coupling member including one end portion adapted to be removably secured to one end of a tubular extension handle, the other end portion of said cylindrical coupling member including detent means cooperable with said tapered terminal end portion, removably securing the other end of said cylindrical coupling member to said tapered end portion in tight frictional engagement therewith, said conduit projecting axially outwardly of said other end of said handle portion and through said cylindrical coupling member.

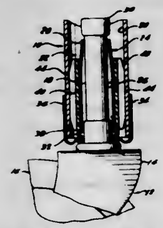
3,197,801
APPLICATOR ATTACHMENT FOR PRESSURE DISPENSER
George B. Diamond, Glen Gardner, N.J., assignor to Glen Gardner Corporation, Glen Gardner, N.J., a corporation of New Jersey
Filed Aug. 13, 1963, Ser. No. 301,739
9 Claims. (Cl. 15—552)



8. An applicator attachment for a pressure can, said can including a body having an opening, a normally closed outlet valve set into said opening, an outlet nozzle mounted over said valve, said valve operable for opening by the tilting of said nozzle, said applicator attachment including an inner section adapted to fit over the base of said nozzle, said section having a lateral extension normally engaged against a portion of said body to inhibit tilting of said nozzle in the direction of said extension, and a second section, including a closed-end tubular portion fitted over the end of said nozzle, said tubular portion including an opening formed therein on the side thereof facing said extension and a surface for working the material dispensed through said opening provided on the side thereof opposite the said opening.

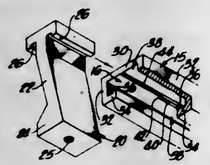
3,197,802
UNIVERSAL SOCKET ADAPTOR
Frank J. Fontana and Michael Kramcsak, Jr., Bridgeport, Conn., assignors to Stewart-Warner Corporation, a corporation of Virginia
Filed May 4, 1962, Ser. No. 192,385
7 Claims. (Cl. 16—43)

3. In a caster having a pintle adapted for connection to a tubular leg within a receiving opening therein, the improvement being a mounting arrangement for the pintle, comprising a socket having a bore for the pintle, means on the socket and the pintle for retaining releasably the pintle within the bore, a cup secured to the socket, said cup being open to the leg and of internal dimension immediately adjacent the open end slightly in excess of the exterior dimension of the leg and of internal dimension spaced from the open end slightly less than the exterior dimension of the leg, and a hollow plastic spacer having a through-bore received snugly over the socket and having an irregularly shaped outer periphery defined by a plurality of longitudinally extending spaced ribs projecting from the main body of the spacer, said plastic spacer being received snugly over the socket and at least



in part being directly opposite the cup, and at least the end of the spacer being tapered at each of the ribs to an external dimension slightly less than the receiving opening so that the spacer and socket can be freely positioned within the receiving leg initially until at least some of the ribs engage the inner periphery of the receiving opening and thereafter can be forced against the leg with sufficient force to wedge the spacer between the leg and socket and to force the leg against the cup operable to secure frictionally the socket to the leg.

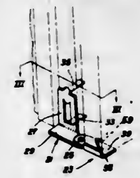
3,197,803
HANDLE
Glenn E. Williamson, Oxnard, Calif., assignor to Analytic Systems Company, Pasadena, Calif., a corporation of California
Filed July 24, 1963, Ser. No. 297,313
10 Claims. (Cl. 16—111)



1. A handle structure including:
an elongated handle element defining a channel therealong and a longitudinal slot along one side and opening from said channel, said element defining a bottom and side walls of said channel and having a rib upstanding from the bottom of said channel between said side walls;
a spacer having a base mounted against said rib and in said channel and having a shank outstanding from said base through said slot; and
means carried by said handle structure for mounting such structure on an object.

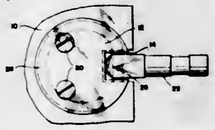
3,197,804
HINGES
James W. Ennis, 1384 Black Bass Cove, Memphis, Tenn.
Filed Apr. 18, 1963, Ser. No. 273,951
3 Claims. (Cl. 16—128)

1. A hinge for attaching two members together; said hinge comprising a pair of hinge portions; one of said hinge portions including a vertical first plate portion, a horizontal second plate portion attached to said vertical first plate portion having a portion extending laterally beyond the vertical side edge of said vertical portion, and at least one attaching means attached to said vertical first plate portion for attaching said vertical first plate portion to one of said members; the other of said hinge portions including a third plate portion having a portion overlapping said laterally extending portion of said second plate portion, a single attaching means attached to said third plate portion for butt mounting said third plate portion to the other of said members, and flange means attached to



said third plate portion and extending outwardly therefrom in substantially the same direction as said vertical first plate portion for engagement with the face of said other of said members to prevent pivot of said other of said hinge portions about said single attaching means; and means engageable with said overlapping portions of said third plate portion and said second plate portion for pivotally connecting said pair of hinge portions so that said flange means will be contiguous with said first plate portion and said second and third plate portions will be contiguous when the hinge is in a folded condition.

3,197,805
FLUSH TOP RECESSED HINGE
Walter L. McNemar, Beatrice, Nebr., assignor to F. D. Kees Manufacturing Company, Beatrice, Nebr., a corporation of Nebraska
Filed Jan. 16, 1964, Ser. No. 338,172
7 Claims. (Cl. 16—128)

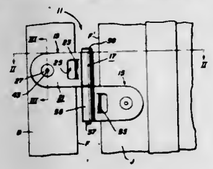


1. A flush-top recessed hinge comprising:
(A) a coverplate having a notch removed from one side thereof;
(B) a combination plate spacer and hinge pin attached to and located beneath said coverplate, said combination plate spacer and hinge pin being made from wire; and
(C) an arm pin pivoted on said combination plate spacer and hinge pin within said notch of said coverplate, said notch limiting pivoting of said arm pin.

3,197,806
HINGE
James W. Ennis, 1384 Black Bass Cove, Memphis, Tenn.
Filed Feb. 19, 1963, Ser. No. 259,563
3 Claims. (Cl. 16—159)

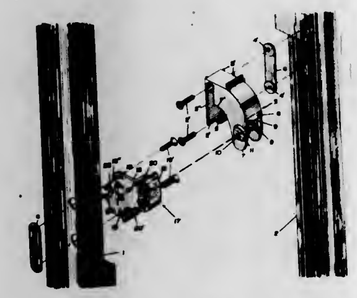
1. A hinge for pivotally attaching a door member to a jamb member comprising a pair of hinge portions adapted for butt mounting respectively to said members, means engaging said hinge portions for pivotally holding said hinge portions together; each of said hinge portions including a barrel portion, a plate portion fixedly attached to said barrel portion and extending outwardly therefrom, only a single attaching means attached to

said plate portion and extending substantially perpendicularly outwardly therefrom for engagement with one of said members in a hole therein and with the weight of said door member urging pivoting movement of said plate portion about the axis of said single attaching means, said single attaching means comprising expandable means for expanding into said one of said members, and a flange at-



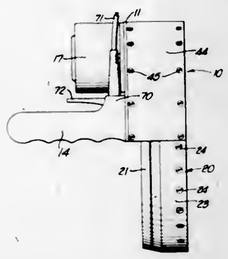
tached to said plate portion and extending substantially perpendicularly outwardly therefrom in substantially the same direction as said attaching means in substantially parallel relationship to the axis of said barrel portion for unattached engagement with the face of said one of said members and extending a sufficient distance outwardly to prevent said pivoting movement of said plate portion about said attaching means.

3,197,807
HINGE DEVICE FOR WINDOWS
Sven Eric Persson, Stow, Ohio
(Erikslustvagen 23, Malmo 20, Sweden)
Filed Dec. 12, 1962, Ser. No. 244,067
4 Claims. (Cl. 16—172)



1. In a window having a frame and a sash, a hinge device for mounting the sash for pivotal movement about a horizontal axis in said frame, comprising a frame hinge leaf on each side of said frame substantially intermediate the upper and lower portions thereof, said frame hinge leaves each including a mounting element for securing the hinge leaf to the frame, means carried by the mounting element outwardly of the frame and providing at its upper edge a pivot bearing and abutting portion, a U-shaped member carried by the mounting element inwardly of the window frame, said U-shaped member having one upwardly and downwardly extending leg of arcuate curved formation having its center of curvature at said pivot bearing portion, and a second similar leg more remote from said pivot bearing portion and providing an arcuate slot between the legs open at the top and closed at the bottom and having as its center of curvature the pivot bearing portion, and a vent hinge leaf mounted on each side of said sash substantially intermediate the upper and lower portions thereof, said vent hinge leaf including a mounting element for securing the hinge leaf to the sash, means carried by said last-mentioned mounting element outwardly of the sash and providing at its lower edge a pivot bearing and abutting portion, a pair of spaced parallel plates carried by the mounting element of said vent hinge leaf and extending inwardly of the sash, and a pivot pin carried by said plates and having its axis spaced from the pivot bearing portion of the vent hinge leaf a distance equal to the radial distance between the pivot bearing portion of the frame hinge leaf and the portion of the slot intermediate the legs of the U-shaped member, said sash being mounted in the frame with the pivot pins of the vent hinge leaves disposed in the slots of the frame hinge leaves, the relative vertical locations of the pivot bearing portion and the slots of the frame hinge leaves on one hand and the relative vertical locations of pivot bearing portions and the pivot pins of the vent hinge leaves on the other hand being such that with the pivot pins in the bottoms of the slots and the pivot bearing portions of the vent hinge leaves bearing on the pivot bearing portions of the frame hinge leaves, the sash will be in partly open position, and when the sash is in closed position the pivot pins will be disposed above the bottoms of the slots.

3,197,808
POWER OPERATED LOIN KNIFE
K. D. Mears, 6911 Emil Ave., Bell Gardens, Calif.
Filed May 27, 1963, Ser. No. 283,207
1 Claim. (Cl. 17—1)



A power operated loin knife comprising in combination:

a housing having a pair of handles at opposite sides thereof;

an arcuate guard attached to the bottom of said housing and projecting downwardly therefrom in a generally vertical plane;

an annular, endless blade enclosed partly within said housing and partly within said guard, the cutting edge of said blade projecting forwardly from the front edge of said guard;

said blade being necked down near its back edge to form shallow, lengthwise-extending grooves on opposite sides of the blade;

a bearing block seated within said guard and engaging the back edge of said blade, siad bearing block having ridges which project down into said grooves so as to retain said blade within said guard;

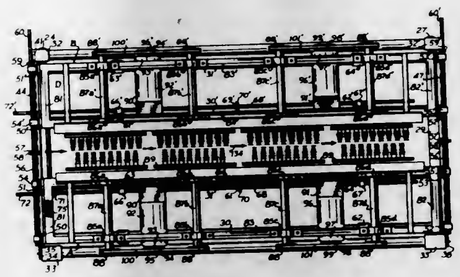
an electric motor mounted on said housing and having a sprocket wheel mounted on the drive shaft thereof, said sprocket wheel meshing with sprocket holes in said blade;

a back-up block mounted on said housing directly above said sprocket wheel, said back-up block having two spaced-apart bearing ridges which bear against said blade on opposite sides of the line of sprocket holes therein, to hold said blade down against the sprocket wheel;

a pair of strip heaters mounted on said housing on opposite sides of said sprocket wheel and extending parallel to said blade closely adjacent thereto; and

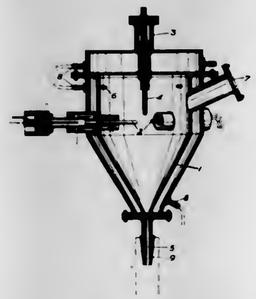
switch means for energizing said electric motor and said electric heater.

3,197,809
CHICKEN PICKING MACHINE
Charles Vernon Corn and James De Lay, Gainesville, Ga., assignors to Gainesville Machine Company, Inc., Gainesville, Ga., a corporation of Georgia
Filed Aug. 20, 1963, Ser. No. 303,284
8 Claims. (Cl. 17—11.1)



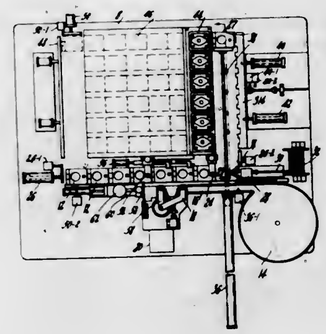
2. In a poultry picking machine, a picking frame, a plurality of finger supports mounted on said picking frame and rotatable about axes of rotation oriented toward poultry carried along a predetermined path, means for rotating said plurality of finger supports about their axes of rotation, flexible fingers mounted on each of said finger supports and bendable away from the axis of rotation of each of said finger supports by centrifugal force to engage said poultry while oriented across a circle concentric with said axis for picking feathers from poultry carried along the said predetermined path.

3,197,810
METHOD AND AN APPARATUS FOR MANUFACTURING BALL-SHAPED PARTICLES
Hubert Bildstein, Vienna, Austria, assignor to Österreichische Studiengesellschaft für Atomenergie Ges.m.b.H., Vienna, Austria
Filed Sept. 26, 1962, Ser. No. 226,239
Claims priority, application Austria, Oct. 9, 1961, A 7,578/61
7 Claims. (Cl. 18—1)



1. Apparatus for making ball-shaped particles from granular material comprising: a double-walled cylindrical vessel having a conical bottom portion and an inlet port at the top portion of said vessel, said inlet port including sealing means for the hermetic sealing of the interior of said vessel from the outside atmosphere, said inlet port being adapted for receiving the granular material from whence it drops by gravity through said cylindrical vessel to said conical bottom portion; means for introducing a coolant between the two walls of said vessel; electrode means for producing a granular material melting temperature arranged within said cylindrical vessel between said inlet port and said conical bottom portion for and forming an electric arc within said cylindrical vessel located within said vessel below said inlet port; a hollow graphite nozzle extending from said inlet port to the region near where said arc is formed for directing the gravitating granules to said arc region whereby, each granule is melted as it gravitates through said region; said vessel being sufficiently elongated to provide a cooling region below said electric arc region to cool said molten granules and to cause rehardening into ball-shaped particles as they further gravitate toward said bottom portion; and, a discharge port in said bottom portion for extracting the ball-shaped particles from said vessel.

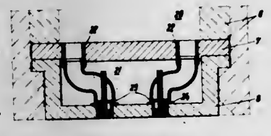
3,197,811
APPARATUS FOR THE MANUFACTURING OF COMPOSITE ARTICLES
Woodrow I. Workman, Hill, N.H., assignor to International Packings Corporation, Bristol, N.H., a corporation of Massachusetts
Filed Mar. 1, 1961, Ser. No. 92,520
7 Claims. (Cl. 18—4)



1. Apparatus for molding articles which comprises a base housing a heated flat surface, a plurality of molds positioned on said surface, mold loading and unloading devices located respectively at mold loading and unloading stations disposed adjacent one side of said surface, and molded article forming devices at a plurality of forming stations disposed along a second adjacent side of said surface, the central portions of said heated flat surface providing a molded article curing station, means adjacent said surface defining a closed path system along said surface for said molds including a single path adjacent said side of said surface adjacent said mold loading and unloading stations, and a plurality of paths, one passing through each of said molded article forming stations passing across the central portion of said flat surface through said curing station, and means imparting stepped increments of movement to said molds along said first path to position a following mold at each of said unloading and loading stations, and successively along different ones of said plurality of paths around said closed path system for positioning molds successively at said article forming stations whereby said molds are moved through said unloading and loading stations along said single path at a rate

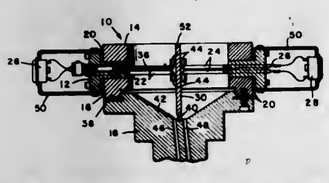
higher than their rate of movement through said article forming stations along each of said plurality of paths by a factor equal to the number of said plurality of paths.

3,197,812
SPINNING HEAD WITH PLURAL NOZZLES
Hans-Joachim Dietzsch, Chemin de Bonne Esperance 10, Lausanne, Switzerland, and Otto Dietzsch, Degerfeld 642, Stein am Rhein, Germany
Filed Apr. 30, 1962, Ser. No. 190,852
8 Claims. (Cl. 18—8)



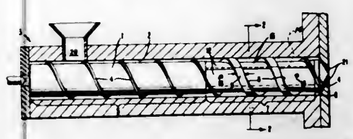
1. A spinning head having a front plate and individual inverse multiple nozzles inserted in said front plate, comprising a core nozzle having a central channel and at least one ring nozzle consisting of a jacket tube surrounding the core nozzle to form an annular channel, and means for forming separate feeding spaces for the spinning materials fed through the individual nozzles of the inverse multiple nozzles, the core tube being directed to the outside through the jacket tube of the ring nozzle, and the feeding space for the core nozzles joining directly at the front plate so that the feeding spaces for the ring nozzles are separated from said front plate by the feeding space for the core nozzles.

3,197,813
DUAL TEMPERATURE MELTING APPARATUS
Richard D. Le Grand, Cary, N.C., assignor to Monsanto Company, a corporation of Delaware
Filed Dec. 18, 1962, Ser. No. 245,568
4 Claims. (Cl. 18—8)



4. In a spinning apparatus for use in the melt spinning of a conjugated filament composed of at least two separate spinnable mediums of possibly differing melting points, the combination of a dual-temperature melting grid and a dual-channeled pump-block, said grid comprising a melt block having a relatively large opening extending therethrough, said opening being divided along its lengthwise dimension by a partition means of thermal insulating properties to thereby define at least two discrete melting zones within said melt block, independently operable heating means occupying a major portion of each of said zones, said pump-block having a depression formed in one end thereof to register with said opening to thereby define a melt pool chamber, said partition means extending to the bottom of said depression in fluid-tight engagement therewith to thereby define at least two discrete melt pool zones, at least two discrete feeder passages communicating through said pump block to register with said melt pool on opposite sides of said partition means, whereby separate spinnable mediums may be transformed into their liquid state according to the melting points of each of such mediums.

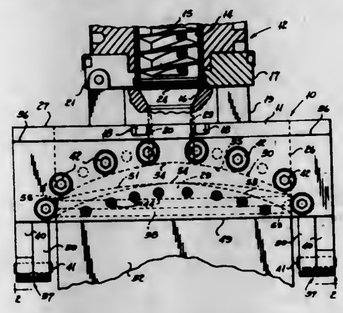
3,197,814
SCREW CONSTRUCTION FOR EXTRUSION APPARATUS AND THE LIKE
James Clarence Bond, Jr., Orange, and William Dale Snelling, Port Neches, Tex., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 9, 1962, Ser. No. 208,249
2 Claims. (Cl. 18—12)



1. An improved extrusion apparatus for applying pressure to and moving a mass of material in an elongated passageway from a first position to a second position axially spaced from said first position, said apparatus comprising, in combination, a housing member, the structure of said housing member defining an elongated passageway having an interior surface of a circular transverse cross section, an elongated extrusion screw member mounted and aligned for rotation about an axis relative to the passageway in said housing member about an axis, said extrusion screw member comprising a first axially extending portion positioned in said passageway, said first portion provided with at least one integrally formed substantially helical material engaging and impelling surface extending longitudinally thereof, the outer periphery of said helical surface of said first portion along its length having an external diameter less than the corresponding internal diameter of said passageway in which said extrusion screw member is positioned, said extrusion screw member further comprising at least one other axially extending portion in a given zone in said passageway, said other portion comprising a radially extending and radially enlarged rotary bearing means in engagement with the interior surface of said passageway in said given zone for maintaining a predetermined radial clearance between said first portion of said screw member and the corresponding interior surface of said passageway, and for reducing frictional forces between said housing member and said extrusion screw member, said other portion defining at least one channel for movement of material longitudinally along said screw member and through said given zone in said passageway, said bearing means comprising at least one peripherally extending contact surface for engagement with the interior surface of said passageway, the material defining said contact surface of said bearing means having wear characteristics inferior to those of the material defining interior surface of said passageway, said contact surface of said rotary bearing means comprising a helical configuration smoothly joined with the substantially helical material impelling surface of said screw member first portion to assist in moving material through said given zone, the helical configuration of said rotary bearing contact surface having a pitch smaller than the helical portion of said first portion of said screw member.

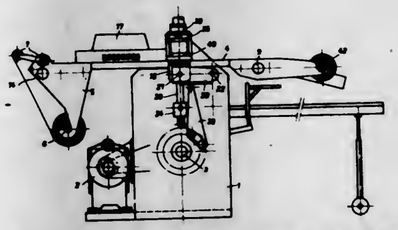
3,197,815
PLASTIC MATERIAL EXTRUSION HEAD
Jurian W. Van Riper, 208 Beechwood Road, Ridgewood, N.J.
Filed Jan. 14, 1963, Ser. No. 251,396
13 Claims. (Cl. 18—12)

1. A plastic material extrusion head for extruding plastic material in laterally extended sheet form, comprising spaced parallel plates having flat generally parallel confronting surfaces forming two sides of a plenum chamber, an end member and side members closing the rear end and the opposite sides, respectively, of the space between the plates and defining the rear end and the sides of the plenum chamber, the forward ends of the plates and the forward ends of the side members defining an elongated die orifice extending between the side members, the inner, plenum chamber defining surface of the end closure member being substantially in the form of a part of a right circular cylinder having its axis lying on a transverse plane through the die orifice, a flow-controlling block disposed between the plates and generally interposed between the plenum chamber and the die orifice, the flow-controlling block being affixed to one of the plates and spanning



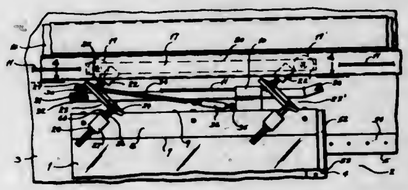
the distance between the side members, the flow-controlling block having a rear edge which is located in contact with the inner surface of the plate to which the flow-controlling block is attached, said rear edge of the flow-controlling block being substantially in the form of a part of a circle having its center lying in the same transverse plane through the die orifice as that on which the center of the circular cylindrical inner surface of the end closure member lies, means for introducing plastic material under pressure to the plenum chamber, and means for securing the plates, end and side members, and flow-controlling block together.

3,197,816
MACHINE FOR THE MANUFACTURE OF DEEP-DRAWN HOLLOW ARTICLES FROM THERMOPLASTIC SYNTHETIC MATERIAL
Willi Hiberle, Oelidorf, Itzehoe, Kalkberg, Germany, assignor to Firma Dolpo A.G., Graubuenden, Switzerland
Filed Sept. 19, 1963, Ser. No. 310,074
Claims priority, application Switzerland, Sept. 20, 1962, 11,116/62
9 Claims. (Cl. 18—19)



6. Apparatus for manufacturing deep-drawn hollow articles from strip plastics material comprising, in combination, means for transporting a strip of plastics material along a working path; heating means along said path to heat and soften selected areas of the strip; an article forming, severing and removing station along said path beyond said heating means; a tool support block at said station; at least one first forming member carried by said block, at least one second forming member at said station reciprocable substantially normal to said strip to cooperate with said first forming member to deform a portion of the strip to form an article; at least one stationary severing member at said station cooperable with said support block to sever a formed article from the strip; said tool support block being movable between an article forming position, in which a first forming member on said block is aligned with a second forming member and cooperates with a severing member to clamp a strip therebetween, and an article removing position in which a first forming member on said block faces laterally outwardly of said path and substantially normal to the direction of reciprocation of said second forming member; a support pivotally mounting said tool support block; means pivotally mounting said support for swinging movement of said block, in an arcuate path, about the pivot axis of said support; a guide arm connected to said block and cooperating with said support, during movement of said block from said article forming position to said article removing position, first to move said block and a first forming member thereon normally away from the strip, and then to pivot said block in said support to face the first forming member thereon laterally outwardly of said path, and to retrace such movement, in the reverse sequence, during return of said block to the article forming position; means operable, when said block is in the article forming position, to move said second forming member into cooperating relation with said first forming member to form the article in the strip; said first forming member having limited displacement relative to said block; and means operable, during cooperation of said first and second forming members, to move said block relative to the first forming member thereon and relative to said severing member, to sever the formed article from the strip for transport, in contact with the first forming member, to the article removal position.

3,197,817
SLIDING DOOR ASSEMBLY
Donald R. Voris, 333 Way Ave., Kirkwood 22, Mo.
Filed June 5, 1963, Ser. No. 285,777
8 Claims. (Cl. 20—19)



1. In combination with a wall having an opening therein, said opening having a header, parallel side portions and a base member, a flat closure for said opening, a rail element presented above said opening and upwardly and above said closure, a mobile member disposed on said rail member for traverse therealong for effecting movement of said closure into and from occluding disposition with respect to said opening, at least one crank assembly interengaging said mobile member and said closure for suspension of the latter, said crank assembly having first and second crank arms, said first crank arm being pivotally engaged to said mobile member, said second crank arm being pivotally engaged in the upper end portion of said closure, said first crank arm being disposed upwardly and inwardly of said second crank arm, a cross member having upper and lower ends, respectively engaged to said first and second crank arms and being disposed in inclined relationship to the vertical whereby said first and second crank arms may be simultaneously pivoted, a

cam surface presented above said closure, a cam follower mounted on said crank assembly for coaction with said cam surface during travel of said closure, resilient means biasing the upper end of said cross member into full upward relationship, said cam surface incorporating a detent portion for arresting travel therealong of said cam follower whereby upon such development said resilient means are stressed for effecting a downward and inward swinging of said cross member for causing said closure to be moved downwardly and inwardly toward the plane of said wall.

3,197,818
AWNING WINDOW
William C. Sargent, Miami Springs, and Robert B. Arnold, Key Biscayne, Fla., assignors to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Sept. 23, 1960, Ser. No. 57,918
6 Claims. (Cl. 20—42)



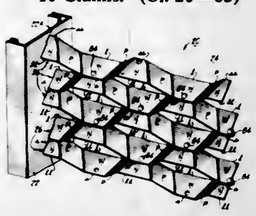
1. An awning window comprising a frame including a pair of spaced parallel jambs and defining a window opening, an actuator bar supported on one jamb for slidable movement, means for moving said actuator bar longitudinally along said jamb, a sash dimensioned to close said window opening, said sash being pivotally connected adjacent one end thereof to said actuator bar, a balance arm, means pivotally connecting the opposite ends of said balance arm to said sash and one of said jambs, respectively, means associated with said balance arm providing rectilinear movement of said sash relative to said jambs when said sash is positioned in closed position, cooperating cam and cam follower means on said sash and one of said jambs, said cam having a portion extending generally transversely of the jamb and inclined toward the pivotal connection of the sash to the actuator bar, said cam and cam follower means being engageable prior to closing of said sash to force said sash into the window-closing position upon movement of said actuator bar in one direction, and lock means on one of said jambs engageable with said sash upon rectilinear movement thereof in the closed position through further movement of said actuator bar in said one direction.

3,197,819
SELF-LOCKING AUTOMATICALLY-RELEASING SASH BALANCE FOR REMOVABLE SASH WINDOWS
Donald M. Trout, 15373 Greenfield, Apt. 4, Detroit 27, Mich.
Filed Mar. 25, 1963, Ser. No. 267,678
8 Claims. (Cl. 20—52.2)

1. A self-locking automatically-releasing sash balance for a removable sash window, comprising
an elongated hollow sash balance casing having a wall structure with an elongated opening therein,
a resilient sash balancing member anchored to said casing and disposed therein,
a lock carrier reciprocably mounted in said casing in guided relationship therewith and having a fulcrum thereon spaced inwardly away from said opening, and an approximately T-shaped locking member disposed substantially in its entirety within said hollow casing and having a fulcrum rest tiltably engaging said fulcrum, a trigger arm extending from said fulcrum rest toward said opening and terminating substantially adjacent said opening, and a preponderant locking arm having a lower arm portion of heavier weight than said trigger arm extending downwardly away from said fulcrum rest toward one of said walls and having an upper arm portion disposed above said fulcrum rest with a locking edge thereon normally urged by the preponderant weight of said lower arm portion into locking engagement with the wall structure at a location spaced away from said opening.



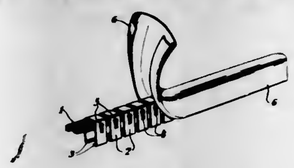
3,197,820
SUN SHADE
Theodore F. Au Claire, Sr., and Raymond M. Becker, Petoskey, Mich., assignors to Permalum Industries, Inc., Harbor Springs, Mich., a corporation of Michigan
Filed Sept. 6, 1963, Ser. No. 307,118
10 Claims. (Cl. 20—63)



1. A sun shade comprising a plurality of joined together, longitudinally extending strips having longitudinal axes arranged in parallel relation to one another, each of said strips formed of a piece of flat material and having bends therein at a plurality of positions along the length thereof on axes generally transverse of said longitudinal axis, said transverse axes including pairs of adjacent axes extending in non-parallel relation to one another to form trapezoidal shaped segments in said strips, said strips positioned relative to one another so that segments in adjacent strips partially overlie one another and are partially offset from one another.

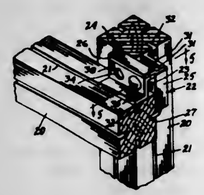
3,197,821
SEALING STRIPS, BEADINGS OR MOULDINGS
Robert G. Bright, Leamington Spa, England, assignor to Bright Manufacturing Company Limited, Coventry, England
Filed Feb. 1, 1962, Ser. No. 170,468
Claims priority, application Great Britain, Oct. 13, 1961, 36,833/61
5 Claims. (Cl. 20—69)

1. A sealing strip, beading or moulding comprising in combination: a longitudinally flexible spine, a plurality of separate spaced U-shaped clips straddling the spine and spaced along the length thereof, each of said clips having legs extending beyond the spine, a tang extending inwardly from each of said legs between the ends thereof and



positioned beneath the spine to retain the latter in position and a covering material enclosing the clips and their associated spine and extending longitudinally of the latter.

3,197,822
STRUCTURAL ASSEMBLIES
William Herrschaft, 90 La Salle St., New York 27, N.Y.
Filed Aug. 10, 1961, Ser. No. 130,611
5 Claims. (Cl. 20—92)



1. In a structural assembly, the combination of first and second rectangular bars each provided at least in two adjacent sides thereof with longitudinal grooves, and a clip for connecting said bars together at selected points along their length, said clip comprising a substantially rectangular intermediate plate unit interposed between said bars, a flange provided at one edge of said plate unit and projecting to one side thereof into the groove in one side of the first bar, a clamp member juxtaposed to said one side of said intermediate plate unit and having a plate portion spaced from said one side of the plate unit, a flange provided on said plate portion of said clamp member and seated in the groove in the adjacent side of the first bar, a second flange provided on the plate portion of said clamp member opposite and remote from the groove seated flange thereof, said second flange of the clamp member having an edge bearing against said one side of said plate unit, a flange provided at another edge of said plate unit and projecting to the opposite side thereof into the groove in one side of the second bar, a second clamp member juxtaposed to said opposite side of said intermediate plate unit and having a plate portion spaced from said oposite side, a flange provided on said plate portion of said second clamp member and seated in the groove in the adjacent side of the second bar, a second flange provided on the plate portion of said second clamp member opposite and remote from the groove seated flange thereof, said second flange of the second clamp member having an edge bearing against said opposite side of said plate unit, and a clamping bolt extending through registering apertures formed in said intermediate plate unit and in the plate portions of said first and second clamp members, said bolt traversing the spaces between said plate portions of the first and second clamp members and said intermediate plate unit.

3,197,823
CLIP FOR SECURING DOOR JAMBS
James W. Ennis, 1384 Black Bass Cove, Memphis, Tenn.
Filed Dec. 17, 1962, Ser. No. 245,126
1 Claim. (Cl. 20—92)

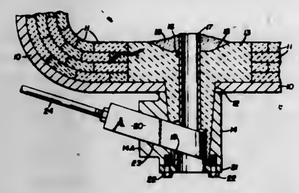


A clip for attaching a door jamb to a stud comprising a body member, a pair of spaced parallel tabs fixedly attached to said body member adjacent opposite ends thereof and extending substantially perpendicularly therefrom for engaging the opposite side edges of the stud, said tabs respectively being provided with holes therethrough for receiving nails and the like for attaching said tabs to the stud, a pair of prongs fixedly attached to said body member adjacent opposite ends thereof and extending angularly away from said body member in generally the opposite direction of extension of said tabs from said body member, said prongs respectively including pointed portions adapted to extend into opposite side edges of a door jamb and connecting portions interconnecting said pointed portions and said body member, said body member including a first member and a second member, said second member including an elongated groove along the length thereof, said groove being provided with a plurality of spaced indentations along opposite sides of said groove, said indentations all extending in the same general direction, one of said tabs and an adjacent one of said prongs being attached to said first member, and the other of said tabs and the other of said prongs being attached to said second member, said first member having a rib along the length thereof adapted to be slidably engaged in said groove, said rib having a plurality of spaced and rounded protrusions along opposite sides of said rib with said protrusions all extending in the same general outward direction and adapted to mate with said indentations, said first member being in sliding telescopic engagement both in extending and retracting directions with said second member and with said rib being in sliding engagement with said groove to maintain alignment of said first and second members, at least one of said protrusions being removably engaged in at least one of said indentations to hold said first and second members in a selected place relative to one another, and at least a pair of resilient holding members attached to said first member and slidably contacting said second member on opposite sides of said groove for urging said second member and said first member together into close fitting engagement with one another when said first and second members are in a selected place relative to one another and for yielding to permit slight movement of the adjacent surfaces of said first and second members away from one another during movement of said first and second members to a different place relative to one another.

3,197,824
NOZZLE BLOCK FOR LADLES
George Dolenic, 126 S. Jackson St., and William Edward Flickinger, Sr., 232 S. Garland Ave., both of Youngstown, Ohio
Filed July 23, 1962, Ser. No. 211,517
1 Claim. (Cl. 22—84)

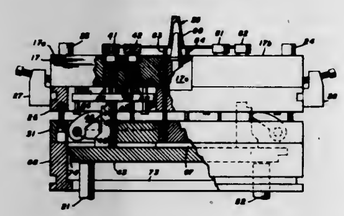
The combination of an apertured metal pouring ladle having a refractory lining and a nozzle block having a vertical passageway defining a pouring orifice, an apertured body member on said ladle about said aperture in said ladle, said nozzle block having an enlarged portion positioned within said ladle in the manner of said lining

and a depending portion extending through said aperture in said ladle and into said apertured body member and defining a pouring orifice and a replaceable tubular liner disposed in the pouring orifice of said nozzle block and defining a hot metal passageway therethrough, the passageway in said nozzle block being vertical and having two superimposed cylindrical portions one of which is larger than the other and the larger of which is adjacent the lower end of the depending portion thereof, the tubular



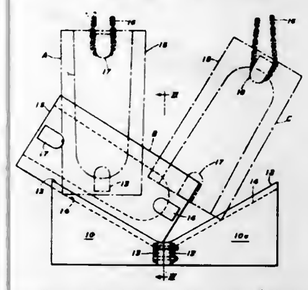
liner having two superimposed cylindrical portions one of which is larger than the other and the larger of which is adjacent the lower end thereof and wherein the lower cylindrical portion of said passageway and the lower cylindrical portion of said tubular liner have registering openings in their respective sides for the reception of a transversely movable valve element said valve element being of a width equal to said larger cylindrical portion of said tubular liner.

3,197,825
CORE-PULLING MECHANISM FOR CASTING DIES
Leonard W. Hammond, 4085 Lester NE., Grand Rapids, Mich.
Filed Sept. 7, 1961, Ser. No. 136,546
7 Claims. (Cl. 22—93)



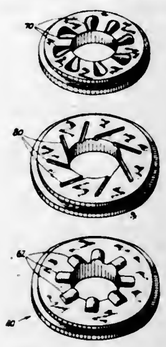
7. A core-pulling mechanism for a casting die having a molding cavity, and also including core means having a portion thereof normally disposed within said cavity and withdrawable therefrom along a particular path of movement, said mechanism comprising: an intermediate member disposed adjacent to said die member and movable toward and away from said die member in a direction parallel to said path of withdrawing movement, said intermediate member being secured to said core means to control the movement thereof; guide means maintaining the path of movement of said intermediate member with respect to said die member; a base member secured to said intermediate member; an actuating plate moveably mounted with respect to said base member; projection means secured to said actuating plate; and a cam means rotatably mounted on said intermediate member, said cam means having a portion thereof disposed within the path of relative movement of a portion of said projection means whereby movement of said projection means induces rotation of said cam means, said cam means also having a portion disposed to bear on said die member to induce separation thereof from said intermediate member on rotation of said cam means.

3,197,826
SUPPORT FOR ASSISTING IN INVERTING ARTICLES
Luis T. Sanchez, Bay Village, Ohio, assignor to United States Steel Corporation, a corporation of New Jersey
Filed May 21, 1963, Ser. No. 282,052
1 Claim. (Cl. 22—95)



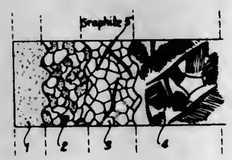
In combination, a big-end-up ingot mold having a first pair of lugs projecting from opposite sides near the big end and a second pair of lugs projecting from opposite sides near the other end, chains engageable with said first lugs for supporting said mold in upright position and with said second lugs for supporting said mold in inverted position, and a support for assisting in turning said mold from one position to the other, said support comprising a cast metal body, and a pair of opposed upwardly extending flanges along opposite edges of said body defining a shallow trough on the upper surface of the body, said trough sloping downwardly from both ends toward the middle where the trough has a low point, said trough receiving said mold when said chains support the mold in either position with the lower edge of the mold engaging the trough near one of the upper ends of the trough, said trough guiding the mold as said chains lower it into a tilted position in which the lower edge of the mold is at said low point where said chains can engage the lugs near the other end, said trough also guiding the mold as said chains apply a lifting force to the latter lugs.

3,197,827
END CORE DESIGN FOR USE AS A CLOSURE ON CENTRIFUGAL CASTING MOLDS
Paul F. Haughton, Ringgold, Ga., and James H. Espy, Chattanooga, Tenn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 1, 1961, Ser. No. 156,225
7 Claims. (Cl. 22—113.5)



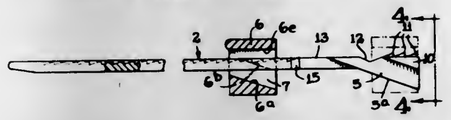
1. Apparatus to be used for centrifugal casting including a substantially horizontally positioned hollow cylindrical mold, said mold having a first pouring end and a second nonpouring end, means for rotating the mold, means for introducing a molten material into the mold through the first end, an end core secured to the second end, irregularities on the surface of the second end core which comes in contact with the molten material being cast, said irregularities being positioned such, and being of such configuration that they act as a pump impellor while the mold and end core are rotating to give the molten material which tends to run down the end core surfaces additional spin.

3,197,828
CAST IRON PROTECTION
Henri Cartoux and Francis Dubrous, both of Chedde, France, assignors to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France
Filed Jan. 2, 1962, Ser. No. 165,711
Claims priority, application France, Jan. 3, 1961, 848,647
2 Claims. (Cl. 22—216.5)



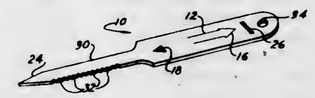
1. A process for casting molten metalliferous materials other than aluminum and aluminum base allows into protected cast iron ingot moulds, said molds being initially characterized by a raw cast iron surface, said process comprising the steps of casting into said molds at least one metal selected from the group consisting of aluminum and a ferroaluminum containing from 30 to 40 percent aluminum, holding the metal in said mold for at least about 20 minutes at a temperature range from at least about 50° C. higher than the melting point of said metal, withdrawing after solidification the metal cast into said mold, repeating the process of casting said metal into said mold for from three to 15 times, and thereafter casting a metal or alloy other than an aluminum base metalliferous material into the moulds thus protected.

3,197,829
BINDER STRAP
Jack E. Caveney, Chicago, and Roy A. Moody, Riverdale, Ill., assignors to Panduit Corporation, Tinley Park, Ill., a corporation of Illinois
Filed Mar. 8, 1962, Ser. No. 178,331
6 Claims. (Cl. 24—16)



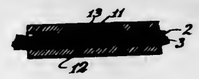
3. A binder strap comprising: a flexible free strap length, said length being joined at one end to a connector portion, a connector sleeve surrounding said strap length, said strap length having a projection thereon which restricts passage of the sleeve off one end of the binder strap, the connector portion having a projection thereon which restricts passage of the sleeve off the other end of the binder strap, the free end of said strap length being bent back upon itself into a loop and inserted forwardly through said connector sleeve toward said connector portion, said connector portion being wedge shaped and adapted to engage an internal wedge shaped recess in the connector sleeve to urge the portion of said strap length extending through said connector sleeve tightly against said connector portion as the connector sleeve is moved toward said connector portion.

3,197,830
KEEPER FOR ELECTRICAL CORDS
Robert Bruce Hoadley, R.F.D. 3, Amherst, Mass.
Filed May 1, 1964, Ser. No. 364,192
3 Claims. (Cl. 24—16)



3. A keeper comprising a one-piece, flexible strap-like member having intermediate its length an internal tongue extending longitudinally thereof and foldable to be wrapped around a single strand of electrical cord disposed transversely to and at the base of said tongue, a triangularly-shaped aperture adjacent the base of said tongue with the near side thereof parallel with the tongue base, said tongue having an arrow-shaped head adapted to be projected through said triangularly-shaped aperture to secure the free end of the tongue to the strap-like member to thereby secure the keeper to the cord, said strap-like member having an opening formed adjacent one end thereof, the opposite end of said strap-like member being pointed to facilitate its insertion through said opening whereby the opposite end portion may be drawn through said opening to form a closed loop of variable dimension sufficient to constrain a bundle of strands of electrical cord when it is folded into one or more flat loops, one side edge of said opposite end portion being notched to assist in releasably maintaining said opposite end portion in a given position relative to said opening.

3,197,831
LIGATURE JOINT AND SEAL THEREFOR
Hollinshead T. Martin, Evanston, Arvid L. Ericsson, Wheeling, and Ilmar J. Vilcins, Oak Park, Ill., assignors to Signode Corporation, a corporation of Delaware
Filed June 4, 1962, Ser. No. 199,847
13 Claims. (Cl. 24—16)

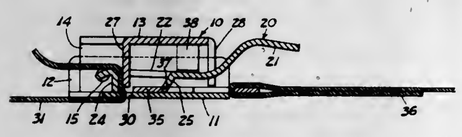


1. A seal for joining and securing a pair of overlapping straps of plastic material which comprises: a body of sheet material having a hardness which exceeds the hardness of the plastic strap to be secured thereby, said body including a center wall and a pair of flange walls located on the same side of said center wall, said center wall and said flange walls being interconnected by a pair of longitudinally extending substantially parallel bends, said center wall having an irregular formation provided by said body on its strap contacting surface and both of said flange walls having irregular formations on their strap contacting surfaces, said formations on said strap contacting surfaces of said body being of a depth and hardness effective to deform and securely grip the plastic strap when the seal is closed thereabout and pressed into firm engagement therewith.

3,197,832
SEAT BELT BUCKLE

Herbert J. McCauley, 86 Dana Road, Buffalo, N.Y.

Filed June 22, 1964, Ser. No. 376,842
5 Claims. (Cl. 24—78)

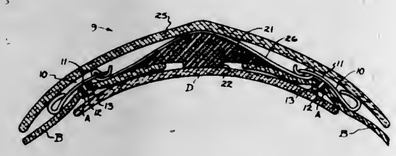


1. In a safety seat belt buckle, a casing comprising upper and lower walls and connecting side walls forming a tubular generally rectangular housing, said lower wall having a slot adjacent to one end of said housing for receiving a belt end upwardly therethrough, a flange depending from said upper wall adjacent to said slot, a locking member comprising a pair of spaced parallel bars extending across said tubular housing, one of said bars being disposed at the side of said flange toward said one end of said housing whereby said belt end passes between said flange and said one bar, the other of said bars being disposed toward the other end of said housing and having a flange directed toward said lower wall, a connecting member fixed to a second belt end and having a bar portion at the leading end thereof, said connecting member being adapted to be inserted at said other end of said housing between said other bar and said lower wall whereby the flange of said other bar engages behind said connecting member bar portion to retain said connecting member, whereby tension on said connecting member pulls said locking member to grip said first belt end between said flange of said upper wall and said one bar of said locking member, said locking member having a handle portion projecting from said other end of said housing and liftable to free said connecting member from said locking member.

3,197,833
FASTENER

William L. Puthuff, 808 East 3rd South, Apt. 1, Salt Lake City, Utah

Filed Mar. 12, 1963, Ser. No. 264,628
11 Claims. (Cl. 24—146)

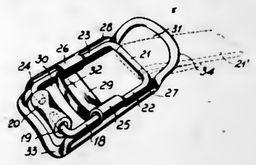


1. A fastener for joining the adjacent free sides of two flaps, each of said flaps having a front and a back surface and a plurality of openings therein comprising: a plurality of hook members of resilient material each constructed and arranged to remain in place on said flap front surface over one of said openings each of said hook members having a curved main body portion, a hook portion projecting from the central portion of the concave side of said curved main body portion and provided with a hook on the end thereof, and a handle portion connected to said main body portion on the convex side thereof, said curved main body portion of said hook members of said resilient material providing a spring action to hold said hook member over one of said openings when said hook portion projects through said one opening and only said hook bears against said back surface of said flap, said spring action firmly urging said hook against the back surface of said flap and portions of said concave side of said main body portion against the front surface of said flap; and means for joining together hook members on said adjacent sides of said flaps.

3,197,834
BUCKLE HAVING SLIDING MEMBER AND ROLLER

Adalberto Steinberg Sussman, Milan, Italy, assignor to Società in Accomandita Semplice A.C.F.A.-Accessori Calzature Fibbie Affini di Adalberto Steinberg Sussman & C., Milan, Italy, a corporation of Italy

Filed Feb. 1, 1963, Ser. No. 255,552
Claims priority, application Italy, June 13, 1962, Patent 670,248; July 7, 1962, 13,512/62; July 27, 1962, 3,800/62
4 Claims. (Cl. 24—194)



1. A sliding frame buckle, comprising,
a movable frame provided with side bars,
a first end bar and a second end bar connecting said side bars, and a cross bar intermediate said end bars and having a lip portion upwardly projecting therefrom, said side bars having their edges in the form of relative guide ways,
a constrained frame provided with side rods, an end rod near said second end bar and connecting said side rods and adapted to be fastened to a clothing portion supporting means on the ends of said side rods opposite to said end rod, and a roller member near said first end bar and supported by said supporting means and extending transverse to said side rods,
said movable frame having a width exceeding the width of said constrained frame, said relative guideways having laterally bent wall portions outwardly shielding said side rods and surrounding at least a part of each and slidably receiving said side rods thereby to allow said movable frame to slide with said relative guideways thereof along said side rods from an end position to another end position thereof,
said cross-bar being arranged intermediate said end rod and said roller member to leave a first passage for a strap portion between said cross-bar and said roller member in an intermediate position of said movable frame and to clamp said strap portion between said roller member and said cross-bar with said lip portion thereof in an end position of said movable frame when said strap portion is pulled in a direction directed from said end rod towards said roller member.

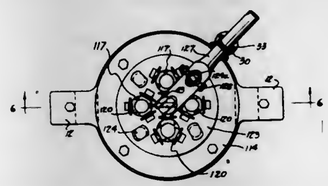
3,197,835
POWER-OPERATED ELEVATOR DEVICES FOR WELL PIPE

Cicero C. Brown, P.O. Box 19236, Houston, Tex.

Filed July 2, 1962, Ser. No. 208,178
15 Claims. (Cl. 24—263)

11. An elevator device for handling a plurality of pipes including, a body adapted to be suspended within a well derrick and having a plurality of vertical openings extending therethrough, each opening being adapted to have a pipe extending therethrough, a set of pipe supporting members associated with each opening and having irregular gripping surfaces engageable with the pipe projecting through said opening for supporting the same; means

mounting at least one of said supporting members of each set for movement in a lateral direction with respect to the pipe, whereby the gripping surfaces of all supporting members of said set may be engaged with or



disengaged from pipe, and power operated means having operative connection with the mounting means to act thereon to thereby control the engagement and disengagement of each set of pipe supporting members with the pipe extending through its associated opening.

3,197,836
GARMENT FASTENER

Elton W. Burch, Savage, Minn., assignor to Thin-Flex, Inc., Savage, Minn., a corporation of Minnesota

Filed Mar. 14, 1963, Ser. No. 265,145
9 Claims. (Cl. 24—263)



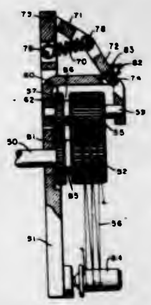
1. A garment fastener comprising in combination; an elongated body member having a longitudinal axis, top and bottom ends and front and rear major surfaces, said body member being comprised of deformable material exhibiting substantial resilience characteristics, having support engaging means at the top end thereof, and a pair of journal portions extending forwardly of the front major surface thereof, one of said journals being positioned at the bottom end and the other of said journals being positioned intermediate said top and bottom ends; and a slide member comprised of like material, slidably journaled on the body member, and having a garment engaging end adapted to engage and hold a garment in the journal on the bottom end of the body and a further end slidably journaled in the other journal on said body member.

3,197,837
YARN CRIMPING APPARATUS

William H. Hills and Don E. Fisher, both of Pensacola, Fla., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware

Original application Nov. 17, 1960, Ser. No. 70,038, now Patent No. 3,116,531, dated Jan. 7, 1964. Divided and this application Jan. 3, 1964, Ser. No. 335,464
4 Claims. (Cl. 28—1)

1. A device for crimping a tow, comprising a frame, a first crimping gear rotatably mounted on the frame, a yoke, a second crimping gear rotatably mounted on the yoke, said yoke being pivotally attached to the frame at a point adjacent to one end of the second gear so that movement of said yoke pivots said second gear toward the first gear, a first link pivotally attached to the yoke adjacent to the other end of said second gear, a second link pinned at the ends thereof to the frame and to the

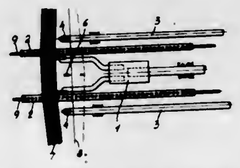


first link, and means connected between the frame and the links for urging the yoke toward the first gear.

3,197,838
APPARATUS FOR SEPARATING SINGLE THREADS FROM A LEASE

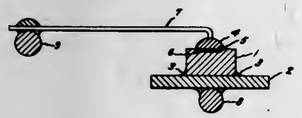
Frederik Valdemar Hans Jensen Fauring, 9 Maglekildevej, Copenhagen, Denmark

Filed July 8, 1963, Ser. No. 292,591
Claims priority, application Denmark, July 20, 1962, 3,243/62
1 Claim. (Cl. 28—43)



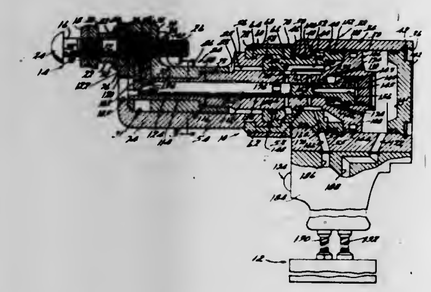
Apparatus for separating single threads from a lease, comprising
a pair of parallel spaced lease tubes adapted to support intercrossed lease threads in such a manner that alternate threads of the lease extend with opposite slants over and under, and under and over, said lease tubes, respectively;
a pair of parallel, spaced separator elements arranged on opposite sides of, and coplanar and parallel with, said lease tubes, each of said separator elements extending at one end between the lease thread layers and terminating in a generally planar leaf portion, said separator elements being axially rotatable to displace said leaf portions between first and second positions parallel with and normal to the lease axis, respectively;
axially reciprocatory and oscillatory fork means arranged between, spaced from and parallel with said lease tubes, said fork means being operable to engage the end of the lease layer having a slant opposite the slant of the end thread when the separator element leaf portions are in the second position and to laterally displace the lease threads in one direction away from said end thread, said end thread being maintained against displacement in said one direction by said leaf portions; and
finger means operable to laterally displace said end thread in the opposite direction relative to said lease threads, whereby upon retraction of said fork means from said lease threads and upon return of the lease threads to their initial position, said end thread is laterally spaced from said lease threads.

3,197,839
METHOD OF FABRICATING SEMICONDUCTOR DEVICES
Jerome J. Tiemann, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 9, 1960, Ser. No. 74,815
8 Claims. (Cl. 29—25.3)



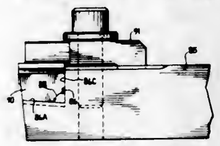
1. The method of fabricating a tunnel diode device having a restricted junction area which comprises: providing a degenerate semiconductor body of one-conductivity type; placing an impurity material capable of imparting to said semiconductor body degenerate opposite-conductivity type on a portion of one surface of said body; heating and cooling said impurity material in contact with said body to form a recrystallized region of degenerate opposite-conductivity type therein and a narrow P-N junction separating said recrystallized region from the remainder of said body; connecting a first electrode to said body and a second electrode to said recrystallized region, said first electrode having an area very large as compared to the cross-sectional area of said body and said second electrode having an area at least as great as the cross-sectional area of said restricted P-N junction; and subjecting the unit so formed to a controlled and monitored electrolytic etching treatment for a time sufficient to preferentially shape said device and achieve predetermined electrical characteristics by making said P-N junction region thereof small compared to the remainder of the body while maintaining said electrodes at least as large as the small P-N junction.

3,197,840
CLEARANCE ATTACHMENT TOOL
George J. Van Hecke, Detroit, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 9, 1963, Ser. No. 314,924
27 Claims. (Cl. 29—34)



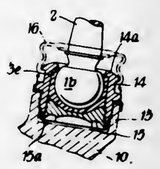
1. In a tool for applying a relative axial force between a pin member and a cooperating surface, said tool comprising: gripping means actuable for gripping the pin, engaging means for engaging the cooperating surface, pull means actuable for applying a relative force between said engaging means and said gripping means and means selectively actuable for actuating said gripping means and for actuating said pull means for and responsively to actuation of said gripping means.

3,197,841
REPLACEABLY MOUNTED INSERT
Horace A. Frommelt, Philadelphia, Pa., and Robert E. Watling, Salem, Ind., assignors to Ferraloy, Inc., a corporation of Indiana
Original application Oct. 5, 1960, Ser. No. 60,653. Divided and this application Sept. 9, 1963, Ser. No. 315,102
4 Claims. (Cl. 29—96)



4. A tool holder comprising a shank having a recess in a corner thereof formed by three faces, two of said faces being perpendicular to each other and a third of said faces being at an angle of approximately 85 degrees to each of said two faces, a tool carrying insert received in said recess and having a complementary shape mating with said three faces, a clamp having an arched shape and having on the feet thereof serrations mating with the serrations on said shank and overlying said recess for engagement with said insert, a fastener threadedly received in said shank and securing said clamp to said shank, said fastener resiliently deforming the arch of said clamp toward said shank, the axis of said fastener being parallel to said two faces whereby said clamp is urged in a direction parallel to said two faces and toward said third face whereby said insert is held against all three faces.

3,197,842
METHOD OF MAKING BALL JOINTS
Robert William Parker, Clevedon, Somerset, England, assignor to Engineering Productions (Clevedon) Limited, Clevedon, Somerset, England, a British company
Filed Feb. 5, 1962, Ser. No. 170,956
9 Claims. (Cl. 29—149.5)

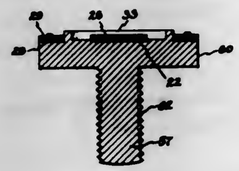


1. A method of making a ball joint which comprises the steps of moulding a socket of synthetic plastic material having low friction and good wearing characteristics closely around a substantially spherical ball head on a stud, press-fitting said socketed ball head into an open-ended housing collar having one end inwardly shouldered to form a reduced mouth through which said stud is projected, and finally securing a closure member over the open end of said housing collar remote from the mouth to exert axial pressure on said socket and thereby maintain the latter pressed against said housing shoulder.

3,197,843
METHOD OF FORMING A MOUNT FOR SEMICONDUCTORS
Paul W. Nippert, Worthington, Ohio, assignor to The Nippert Electric Products Company, Columbus, Ohio, a corporation of Ohio
Filed May 19, 1961, Ser. No. 111,343
2 Claims. (Cl. 29—155.5)

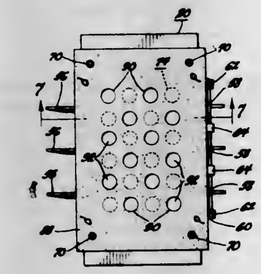
1. The steps in the method of forming a mount for a solid state semiconductor, said method comprising,

forming a metal piece that includes a lower surface and an upper surface from a malleable metal having high electrical and high thermal conductivities characteristics; thereafter brazing a metal element to said upper surface to form an assembly and which brazing causes annealing of the metal piece, said metal element having the characteristic of being capable of being bonded to a piece of metal and thereafter by a single step applying pressure to the assembly while in a confining die, the die having a substantially flat surface and a recess therein, which recess, at the junction with said surface of said



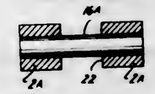
die, is at right angles to said surface of said die, to cause the metal of said metal piece to be pressed against said die surface to cause the metal of said metal piece to flow and form a flat lower surface on said metal piece and to cause the metal on said metal piece to flow directly therefrom to form a stem extending from said flat lower surface of said metal piece, immediately at right angles with said flat lower surface of the piece and of substantially uniform diameter throughout the length thereof, said flow of metal serving to work-harden said metal piece.

3,197,844
MANUFACTURE OF THERMOELECTRIC DEVICES
Arthur T. Bassett, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 29, 1962, Ser. No. 183,670
4 Claims. (Cl. 29—155.5)



1. The method of making a thermoelectric array which includes placing and holding a first set of metal connectors in spaced relation in a predetermined pattern, placing and holding a first type of thermoelectric elements in a first pattern of predetermined positions in contact with said first set of connectors while blocking the location of the first type elements in any other positions, placing and holding a second type of thermoelectric elements in a second pattern of predetermined positions in contact with said connectors while the first type elements and the connectors are being held in said patterns, and while said elements and said first set of connectors are being held in said patterns bonding at substantially the same time the first and second types of elements to the connectors with which they are in contact, placing and holding a second set of metal connectors in spaced relation in a predetermined pattern and while maintaining the spacing and the pattern bonding said second set of connectors at substantially the same time to the first and second type elements.

3,197,845
METHOD OF FORMING THERMOELECTRIC UNITS WITH ATTACHED CONTACT TERMINALS
Josef Intrater, New York, N.Y., and Lawrence R. Hill, Short Hills, N.J.; said Intrater assignor to Electronics & Alloys, Inc., Ridgefield, N.J., and said Hill assignor to General Instrument Corporation, Newark, N.J., both corporations of New Jersey
Filed Sept. 13, 1962, Ser. No. 223,871
30 Claims. (Cl. 29—155.5)



1. The method of forming an electrical unit which comprises (a) forming an assembly of a body of material closely contained within a sheath, said material comprising a plurality of elements of such compositions and present in such amounts as to be capable of forming intermetallic compounds with one another, said sheath comprising physically workable, electrically conductive material compatible with said intermetallic compound; (b) raising the temperature of said material and physically reducing the thickness of said assembly to a degree sufficient to cause said elements to form said intermetallic compound, thereby producing a core of said intermetallic compound in intimate physical and electrical contact with said sheath, and (c) removing said sheath from a portion of said core, the remaining portion of said sheath constituting a terminal in good electrical connection with said intermetallic compund.

3,197,846
PROCESS FOR MANUFACTURING A WATCH-DIAL WITH HOUR-SIGNS APPLIED IN RELIEF
André Vogt, 20 Rue Jolimont, La Chaux-de-Fonds, Neuchatel, Switzerland
Filed Jan. 29, 1959, Ser. No. 789,913
Claims priority, application Switzerland, Feb. 18, 1958, 55,988
9 Claims. (Cl. 29—177)



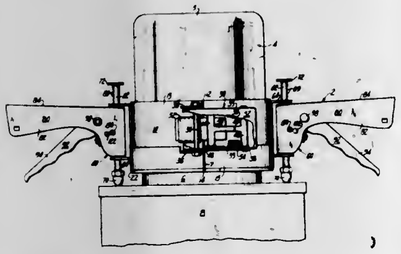
1. A method of manufacturing a small watch dial having indicia in relief on the face of the dial comprising, providing a dial having a major surface corresponding to the face of the dial, finishing said major surface to substantially finished state, making a holding tool comprising a holding portion having a plurality of integral mirror-image indicia in relief thereon to be secured to said dial face, positioning said holding tool on said major surface of said dial with said indicia in contact with said major surface, bonding said indicia to said major surface while maintaining said substanially finished state of all exposed portions of said major surface of the dial, and mechanically removing said holding portion from said indicia thereby to leave only said indicia bonded to said dial major surface.

3,197,847
CLAD MATERIALS AND PROCESS OF FABRICATING THE SAME
Donald R. Kerstetter, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware
No Drawing. Filed Apr. 27, 1961, Ser. No. 105,892
5 Claims. (Cl. 29—182.3)

1. A laminated structure comprised of a base metal and an overlying pliable cast film strip comprising a binder and a metal powder with contiguous particles, the particles being homogeneously distributed in the binder.

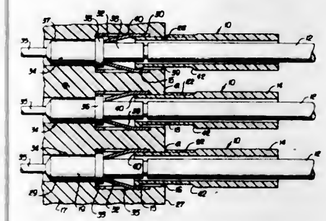
2. The process of forming a laminated metal fabric comprising the step of applying a self-supporting pliable film strip embodying metal powder in a combustible binder to a metal base, the metal powder film strip having particles in contiguous relationship in the binder and homogeneously distributed throughout the binder, and the step of sintering the powder particles to each other and to the metal base.

3,197,848
TOOL FOR ELECTRIC METERS
Harold F. Eichacker, 23 Churchill Road, Wethersfield, Conn.
Filed Oct. 25, 1963, Ser. No. 318,953
10 Claims. (Cl. 29—203)



1. A tool for installing and removing electric meters and the like with respect to an associated socket comprising a hollow open-ended holder dimensioned to receive the meter from one end for removing the meter and to receive the meter from the other end for installing the meter, said holder having means for releasably securing the meter therein; and at least one jack connected to the holder externally thereof comprising an elongated jack rod disposed parallel to the axis of the holder and mounted for longitudinal and rotational movement, said jack rod having a ratchet edge formed thereon, a jack operating mechanism including a handle mounted for pivotal movement about the jack rod axis, a ratchet pawl engageable with the ratchet edge and an actuating grip pivotally connected to the handle and operatively connected to the ratchet pawl for forwardly advancing the jack rod longitudinally of the holder, a locking pawl mounted on the handle engageable with the ratchet edge, the forward end of said jack rod being engageable with a supporting structure adjacent the socket when the tool is employed for removing the meter and the rear end of the jack rod having fixed thereto a transversely extending shoe engageable with a flange on the socket when the tool is employed for installing the meter, and stop means on the handle engageable with the ratchet pawl for retaining the ratchet pawl in engagement with the ratchet edge whereby the jack rod can be rotated by pivotal movement of the handle to operatively position the shoe.

3,197,849
TOOL FOR INSERTING AND EXTRACTING REMOVABLE ELECTRICAL CONTACTS
George Stanford Johnson, Canoga Park, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Jan. 31, 1964, Ser. No. 341,605
14 Claims. (Cl. 29—203)



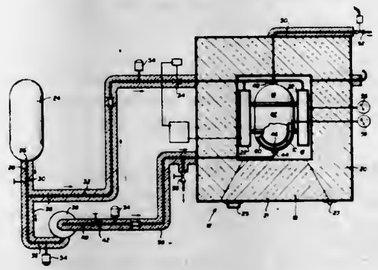
1. A spaghetti type tool designed for retention on an insulated wire conductor attached to a contact terminal member and being adaptable to function as a generally cylindrical probe to push a flanged contact terminal member into place in the bore of an electrical connector insulator block or to displace a resilient locking element in the latter to free the contact terminal member for removal from said bore, said tool comprising an elongated tubular member having a bore extending entirely therethrough from a forward end to a rearward end, said bore having a diameter of such size as to loosely embrace said insulated wire and a contact terminal section extending therefrom, the outside surface of the forward end portion of said tubular member having a protruding major diameter near said forward end and a minor diameter, said tubular member being substantially rigid axially but resilient diametrically and deformable by manual effort to push the tool forwardly into the bore of the insulator block whereby the surfaces of the major diameter portions make an interference fit with the wall of the bore, frictional force of the interference fit being of a magnitude whereby the tool will be retained at the position in the bore where it is left but the tool may be manually moved axially either way in the bore.

3,197,850
FEEDER FOR PRODUCING STOCK MATERIAL
Martin M. Gracer, 71 Laurel Drive, Massapequa Park, N.Y.
Original application July 9, 1959, Ser. No. 825,954, now Patent No. 3,129,220, dated Apr. 7, 1964. Divided and this application Mar. 8, 1962, Ser. No. 178,407
5 Claims. (Cl. 29—243.5)



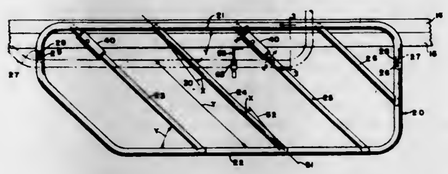
1. A feeder for apparatus for simultaneously and continuously attaching metal strips to a web of fabric at its opposite margins by successive pairs of folding rolls successively to bend the metal strips and fabric into engagement, the combination having means to direct the metal strips in spaced position at a predetermined width and in overlapping contact, comprising bed means having lateral guides and aligning rolls for urging said strips into contact, with said lateral guides engaging the outer edges of said strips.

3,197,851
METHOD OF FORMING A HIGH TENSILE STRENGTH PRESSURE VESSEL
Benjamin J. Aleck, Jackson Heights, N.Y., assignor to Arde-Portland, Inc., South Portland, Maine, a corporation of Maine
Filed Mar. 28, 1962, Ser. No. 183,149
15 Claims. (Cl. 29—421)



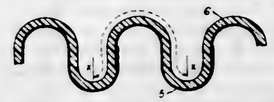
1. The method of forming a high tensile strength pressure vessel from a metallic material having a true stress v. true strain curve with a concave upward portion therein, comprising the steps of forming a vessel blank from said metallic material, and then stretching said vessel blank at least to strain said material within the concave upward region of said curve.

3,197,852
METHOD OF MAKING SAFETY SIDE RAILS
Philip C. Johnson, Cincinnati, Ohio, assignor to F. & F. Koenigkramer Company, Cincinnati, Ohio, a corporation of Ohio
Original application May 28, 1959, Ser. No. 816,535, now Patent No. 3,104,402, dated Sept. 24, 1963. Divided and this application Feb. 4, 1963, Ser. No. 255,827
7 Claims. (Cl. 29—446)



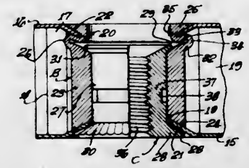
1. The method of making a safety side including the steps of providing two complementary rim-forming portions, providing a plurality of cross-members, providing for each cross-member a pair of cross-member receiving apertures, one aperture of each pair of cross-member receiving apertures being provided in each of said rim-forming portions, each pair of said apertures being for receiving portions of a respective cross-member and being non-aligned when said rim forming portions are in rim forming relation, inserting respective end portions of said cross-members in respective cross-member receiving apertures provided in said rim-forming portions while said rim forming portions are in non-rim forming relation with said pairs of cross member receiving apertures in alignment, shifting said rim-forming portions into rim-forming relation to stress said rim-forming and cross members, and securing said rim-forming members in rim-forming relation, whereby a safety side having parallel cross-members in non-perpendicular relation to said rim-forming members may be made.

3,197,853
METHOD OF MAKING FLEXIBLE TUBING
Felix Waldt, 9 Long-rig, Locks Common, Porthcawl, Glamorgan, Wales
Filed May 28, 1962, Ser. No. 198,272
2 Claims. (Cl. 29—450)



1. A method of making a helically grooved flexible tube of the kind which has a sleeve of flexible elastic material disposed around an inner flexible helically grooved metal tube of the type formed by helically winding metal strip and having the marginal portions of adjacent turns overlapping each other so as to permit limited relative movement between said portions, said method comprising the steps of forming a tube of said flexible elastic material, forming on said elastic tube helically extending portions which are relatively inelastic compared to the rest of said elastic tube, expanding said elastic tube and placing the expanded elastic tube over the metal tube and allowing the expanded elastic tube to contract and grip the metal tube with the relatively inelastic portions of the elastic tube disposed in the grooves of the outer surface of the metal tube, said helically extending portions being formed in said elastic tube with a pitch length substantially equalling the pitch length of a turn of said metal tube.

3,197,854
METHOD OF INSTALLING SANDWICH PANEL SPACER WITH TORQUE-RESISTANT MECHANICAL ANCHORAGE
Frederick W. Rohe, 5191 S. Bradford, Placentia, Calif., and Charles S. Phelan, Tustin, Calif.; said Phelan assignor to said Rohe
Filed Jan. 2, 1963, Ser. No. 248,969
6 Claims. (Cl. 29—455)



1. A method of fabricating a sandwich panel and spacer-type fastener assembly, comprising: providing a hole extending through a low density core of the panel and terminating in apertures in respective skin sheets of the panel; inserting through the aperture of one of said skin sheets a spacer sleeve having an outer end provided with a head engageable against the outer face of the one skin sheet around said aperture and a tubular weakened section joining said head to its main sleeve body, and having an inner end provided with a countersink; inserting through the aperture of the other skin sheet and into the spacer sleeve a plug having an outer end provided with a head having a fluted under face and an inner end provided with a thinned tubular tip defined by a counterbore therein, said thinned tubular tip of the plug being located adjacent the weakened section of said spacer sleeve; and successively applying opposed compressive forces to the respective outer end heads and to said tip so as to sequentially effect (1) dimpling of said plug head into the outer surface of said other skin sheet around its said aperture (2) clamping of said other skin sheet between said countersink and said plug head (3) em-

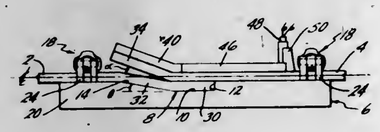
bedding said fluted underface into the dimple thus formed (4) upon completion of said embedding, increasing the compression in the fastener and thereby causing said weakened sleeve section to collapse outwardly adjacent the inner face of said one skin sheet around its aperture, to provide an annular bulge, and (5) continuing the collapse of said weakened section to develop said bulge into a secondary head and to flare said thinned tubular tip outwardly into engagement with the spacer sleeve at the weakened section thereof, and crowding said secondary head toward and into clamping engagement with said inner face, whereby to clamp said one skin sheet between said secondary head and said outer end head of the spacer sleeve.

3,197,855

METHOD OF EXPLOSIVELY FORMING A SCARF TYPE JOINT

William A. Carter and William C. Keathley, North Palm Beach, and Jerry L. Price, Lake Park, Fla., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Dec. 28, 1962, Ser. No. 248,002
11 Claims. (Cl. 29—470.1)



1. Method of joining metal plate ends capable of being explosively joined:

(a) forming a first plate end with an offset portion having an angular connecting portion;

(b) forming a second plate end with an angular extending portion;

(c) placing said second plate end on the offset portion of said first plate end with the angular portion forming an angle with the angular connecting portion of the first plate end;

(d) supporting the first plate end under the offset portion, angular connecting portion, and adjacent plate portion;

(e) placing an explosive charge over the face of the angular portion of said second plate end remote from said first plate end to move said angular portion of said second plate end into joining engagement with the angular connecting portion of said first plate end;

(f) fixing said plate ends in position; and

(g) igniting said explosive charge.

3,197,856

EXPLOSIVELY JOINING METALS TO FORM A CONTINUOUS SHEET

Frederick C. Polhemus, Jr., Lake Park, and George D. Lewis, North Palm Beach, Fla., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Jan. 2, 1963, Ser. No. 249,068
6 Claims. (Cl. 29—470.1)

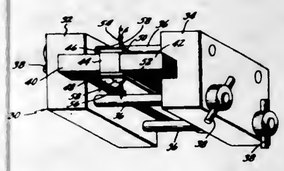
1. Method of filling a hole in a metal plate with a metal plug wherein the metals are capable of being explosively joined:

(a) placing a metal plug in the hole so as to fit snugly said plug being thicker than the plate;

(b) positioning said plug so that it extends on each side of said plate a small amount;

(c) placing a driver plate on each end of said plug;

(d) placing an explosive charge on each open face of each driver plate; and



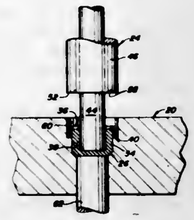
(e) igniting said charges simultaneously to cause the side surfaces of the plug to effect a joint.

3,197,857

METHOD OF PRODUCING CUP-SHAPED CONDUCTIVE SEMI-CONDUCTOR HOUSING

Paul W. Nippert, Worthington, Ohio, assignor to The Nippert Electric Products Company, Columbus, Ohio, a corporation of Ohio

Filed Dec. 21, 1962, Ser. No. 246,496
15 Claims. (Cl. 29—480)



5. The steps in the method of forming a cupped and rimmed mount for a semiconductor which method comprises forming a metal billet that includes a bottom surface and top portion provided with an upstanding annular projection surrounded by an annular weld ring supporting surface; locating a ring of fusing material on said supporting surface; locating a metal weld ring on said ring of fusing material to form a composite work piece; heating said work piece to fuse said weld ring to the top portion of said billet; positioning said composite work piece in a confining die having an inner recess of smaller diameter and an outer recess of larger diameter; applying pressure to said billet centrally of said annular projection with a male die means while the bottom surface of the billet is held stationary to back-flow metal of said billet from said smaller recess to said larger recess and thereby cup and work harden said billet and form thereon an inner bottom surface and an annular rim portion supporting said weld ring; and applying pressure next to said weld ring and rim portion, while maintaining pressure within the cup, to flow metal of said rim portion into conformity with said larger recess and thereby shape and further work harden said rim portion.

3,197,858

PROCESS FOR DIFFUSION-BONDING

William Feduska, Emsworth, and Walter L. Horigan, Jr., Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed July 28, 1961, Ser. No. 127,484
5 Claims. (Cl. 29—494)

1. In diffusion-bonding process for joining alloy members into structures suitable for use at elevated temperatures, the steps comprising, positioning a thin metal sheet containing at least one highly diffusible element selected from the group consisting of carbon, boron and silicon, carbon, when present, amounting to from 0.2% to 1%, by weight; boron, when present, amounting to from 0.2% to 2%, by weight; silicon, when present, amounting to from 0.2% to 10%, by weight, between and in intimate contact with the alloy members at closely conforming faying surfaces to be joined, the base metal of said metal sheet being capable of forming a solid solution with said diffusible element, heating the assembled members and the sheet in contact with each other to a temperature of at least 900° C. and below the melting point of said alloy sheet for a period of at least 20 seconds, whereby the diffusible element diffuses into the adjacent contacting surfaces of the members and thereby promotes formation of a strong metallurgical bond between the members.

3,197,859

METHODS OF BRAZING

Arthur T. Cape, Monterey, Calif., assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware

No Drawing. Filed Feb. 9, 1965, Ser. No. 431,460
5 Claims. (Cl. 29—501)

1. In the brazing of parts of stainless steel and super alloys, the step of brazing the parts by interposing between the parts to be brazed a brazing alloy consisting essentially of from about 40% to about 75% copper, from about 3% to about 18% cobalt, and the remainder essentially all manganese but in an amount not less than about 20%, and heating the parts and brazing alloy to a brazing temperature range of from about 1600° F. to about 1900° F., whereby the parts are brazed to each other, and the cobalt is effective to greatly increase the strength of the brazed joint.

3,197,860

METHOD FOR PRODUCING STOCK MATERIAL

Martin M. Gracer, 71 Laurel Drive, Massapequa Park, N.Y.

Application Mar. 8, 1962, Ser. No. 178,407, which is a division of application Ser. No. 825,954, July 9, 1959, now Patent No. 3,128,220, dated Apr. 17, 1964. Divided and this application Oct. 29, 1964, Ser. No. 413,673
13 Claims. (Cl. 29—509)



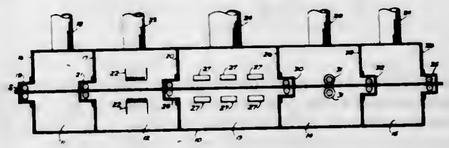
1. A method of making flexible connector stock comprising a pair of extended metal strips and a substantially coextensive length of duct sealing fabric web which consists in continuously feeding said metal strips in synchronism with the edge of one metal strip in substantial edge contact with one of the opposite side edges of the fabric web, with a weakened line of fold formed in the metal strip engaging portions of said fabric and continuously rolling a fold of each of said strips about each opposite edge of said fabric web by pressure rolling to clinch the metal strips and said fabric into engagement with each other.

3,197,861

PRODUCTION OF NON-POROUS VACUUM METALLIZED COATINGS ON STRIP MATERIAL

Robert M. Brick, Hinsdale, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed June 1, 1960, Ser. No. 33,267
16 Claims. (Cl. 29—528)



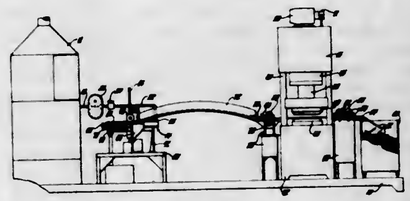
1. A process of forming a non-porous metal coating on a substrate comprising the steps of vacuum depositing a porous metal coating on the substrate with the coating metal being somewhat softer than the substrate, and rolling the metal coated substrate to close the pores in the metal coating while maintaining the metal coating in a non-oxidizing condition at all times between the depositing step and the rolling step.

3,197,862

METHOD AND APPARATUS FOR PRODUCING A FINE-GRAIN SOLDER

Douglas J. Harvey, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 8, 1963, Ser. No. 250,463
13 Claims. (Cl. 29—528)



1. A method of producing a fine-grained, lead-base solder which comprises forming a molten alloy consisting essentially of about 4.5% to 6% antimony, 0.3% to 0.6% arsenic, 0.25% to 3.5% tin and the balance substantially all lead, pouring said molten alloy into a mold, cooling said alloy in said mold at a rate or more than 20° F. per second above the liquidus temperature of said alloy and at a rate in excess of 6° F. per second in the temperature range between the liquidus and solidus temperatures of said alloy, and thereafter working the resultant casting to reduce its cross-sectional area at least 75%.

3,197,863

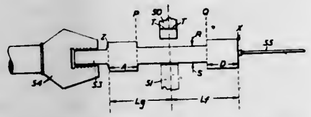
FORGING

Peter Norris Baker, deceased, late of Sheffield, England, by Raymond Baker, administrator, Sheffield, England, assignor to The British Iron and Steel Research Association, London, England, a British association

Filed Oct. 30, 1961, Ser. No. 151,133
Claims priority, application Great Britain, Nov. 3, 1960, 37,810/60; Nov. 16, 1960, 39,317/60; Nov. 17, 1960, 39,493/60
23 Claims. (Cl. 72—11)

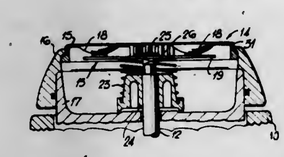
3. In a forging press operation on an elongate workpiece supported by a manipulator, which operation includes successively squeezing the workpiece along its length by moving the workpiece longitudinally inter-

mediate press squeezing operations, the method of controlling the manipulator movement which method comprises monitoring the position of the press tools relative to both ends of the workpiece, and controlling the



manipulator movement for longitudinal workpiece movement relative to the press tools in response to the current monitored press tools position and the required press tools position relative to the ends of the workpiece.

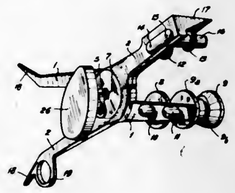
3,197,864
CUTTER MEMBERS FOR DRY SHAVERS
Norman Thomas Sanders, Studley, England, assignor to Needle Industries Limited, Birmingham, England, a British company
Filed July 16, 1963, Ser. No. 295,417
Claims priority, application Great Britain, July 18, 1962, 27,519/62
2 Claims. (Cl. 30—43.6)



1. In a shaver comprising a body, a thin-walled apertured guard member thereon, and a cutter member movable in contact with said guard member over its inner face; the improvement comprising the provision in said cutter member of a carrier member having at least one locally raised portion for the mounting of a blade element, a blade element in the form of a curved cup-shaped shell having inner and outer faces and having an open mouth at its concave side bounded by a contact face contacting said guard member and in combination with said outer face defining a cutting edge, said blade element having a hole therein at a position centrally of said blade element at its end remote from said mouth, a fastening element extending from said raised portion and through said hole with lateral clearance, and abutment means on said fastening element at a distance above said raised element greater than the wall thickness of said blade element adjacent to said hole whereby said blade element can both rock and float relatively to said carrier member.

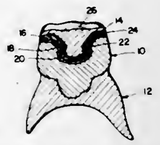
3,197,865
PINCER TYPE TOOL WITH SECURING MEANS
Lucien Bourdier, 8 Rue des Carrieres, Charenton, France
Filed Dec. 12, 1963, Ser. No. 330,022
Claims priority, application France, Dec. 19, 1962, 919,137
7 Claims. (Cl. 30—91)

1. A tool including a pair of crossed interpivoted members having forwardly extending jaws adapted to engage work therebetween, and securing means engaging both members and movable between a limiting position in which said members are limited against relative movement in an opening direction while remaining freely relatively movable in a closing direction, and a release position in which said members are released for free relative movement in both directions, including means for moving the securing means between its said positions, said securing means comprising an arcuate slot in one of said members generally concentric with the pivot axis of said members, a pin projecting from the other member into and through said slot, an upstanding rim surrounding said slot and sloping downwardly in an arcuate direction towards that



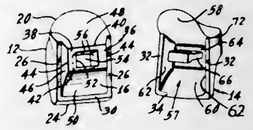
end of the slot which is foremost when said one member is moved in an opening direction relative to the other member, an element carried by said pin and engageable with said sloping rim surface, and means for clamping said element into firm engagement with said surface.

3,197,866
DENTAL PROSTHETIC APPLIANCE
Joseph B. Barron, 64 Beethoven Ave., Newton, Mass.
Filed Nov. 1, 1962, Ser. No. 234,702
2 Claims. (Cl. 32—5)



1. A partial plate for dental prosthesis and the like, comprising a plurality of artificial crowns having the general coloring and configuration of natural teeth and integrally joined in side by side relation, said crowns being formed with an intercommunicating central cavity open across the biting portions of said teeth, a stratum of jacket-adhering material lining the walls of said cavity, a stratum of resilient material overlying said first mentioned stratum and adhering thereto and an elongated one-piece cap filling the remainder of said cavity and adhering to said second mentioned stratum.

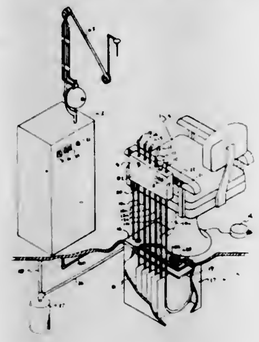
3,197,867
RESTORATION TOOTH AND TOOTH UNIT
Irving Neustadter, 246 Bay 19th St., Brooklyn, N.Y.
Filed Dec. 1, 1961, Ser. No. 156,310
11 Claims. (Cl. 32—10)



1. A restoration tooth, comprising:
(a) a tooth-shaped body adapted to interfit with a complementary backing member,
(b) said body having shoulders at its lingual side laterally spaced from each other in a mesial and distal direction,
(c) each of said shoulders extending from the gingival edge of said body to the incisal edge of said body,
(d) another shoulder extending along the incisal edge of said body at the lingual side thereof laterally in a mesial and distal direction, and

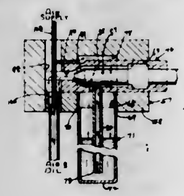
(e) a part positioned between said laterally spaced shoulders and having a recess open at the lingual side of said body for receiving a companion part of said backing member for the securement of said body to said member.

3,197,868
DENTAL INSTRUMENT UNIT
Niles F. Guichet, 320 Olympia Place, Anaheim, Calif.
Filed Sept. 5, 1961, Ser. No. 135,869
13 Claims. (Cl. 32—22)



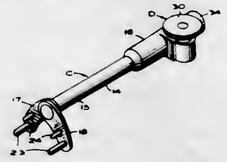
1. In a dental evacuation system, the combination of a holder, a retractable cuspidor cup means and a retractable oral evacuation means removably mounted upon said holder, a first flexible hose coupled to said retractable cuspidor cup means, a second flexible hose coupled to said retractable oral evacuation means, a first vacuum branch line and second vacuum branch line, said vacuum branch lines connecting said first and second flexible hoses to said main vacuum line, a vacuum supply means connected to said main vacuum line, first normally closed valve means in said first vacuum branch line, second normally closed valve means in said second vacuum branch line, and control means for each of said valves, said control means being responsive to the removal of said retractable cuspidor cup means and said retractable oral evacuation means from said holder to open respectively said first valve means and said second valve means.

3,197,869
SELF-LUBRICATING AND SELF-CLEANING DENTAL HANDPIECES
Martin Staunt, Des Plaines, Ill., assignor, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill, a corporation of Illinois
Filed Jan. 8, 1957, Ser. No. 633,067
The portion of the term of the patent subsequent to Apr. 19, 1980, has been disclaimed
18 Claims. (Cl. 32—26)



1. In a self-lubricating and self-cleaning handpiece, the combination of a dental handpiece provided with an outer sheath and an inner spindle, said spindle having a chuck and ball bearings for supporting said spindle in said sheath, a contra angle having a drive shaft gripped by said chuck and driven by said spindle, said contra angle including a housing and a transverse tool shaft, ball bearings in said contra angle housing for rotatably supporting said tool shaft, a combined air and oil conduit extending into said contra angle housing rearwardly of said ball bearings and a source of air and oil under pressure for supplying air and oil to the interior of said contra angle housing for lubricating the ball bearings and constantly cleaning the ball bearings by excluding foreign material and permitting the air and oil to escape from the tool end of the ball bearing, said source including a lubricant reservoir and air conduits including a nozzle for the air and a conduit for placing pressure on the lubricant to be driven into the air stream.

3,197,870
DENTAL SEPARATOR
Benjamin F. Toffiemire, Lafayette, Calif.
Filed Jan. 31, 1963, Ser. No. 256,194
9 Claims. (Cl. 32—64)

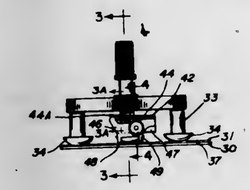


8. In a dental separator:
(a) a single elongated instrument handle defining a forward end;
(b) a pair of arms disposed at the forward end of the handle and mounted for swinging movement toward and away from one another in planes extending substantially at right angles relative to the longitudinal axis of the handle;
(c) a teeth-spreading wedge removably anchored to each of the arms, with each wedge being fashioned with a bevelled inner edge;
(d) operating means operable from a rear end of the handle for moving the arms toward and away from one another to move the wedges therewith;
(e) and the handle being provided with an annulus having a forward face against which fingers of an operator may be engaged, with the fingers straddling the handle, and the handle having a rear end against which the thumb of the operator's same hand may be engaged, whereby the dental separator may be firmly supported in one hand of the operator;
(f) the wedges having concavely shaped inner surfaces which face one another and being substantially rigid.

3,197,871
SCRIBING INSTRUMENTS
Charles H. Stein, Westwood, and William R. Krause, Secaucus, N.J., assignors to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey
Filed Apr. 20, 1961, Ser. No. 104,482
10 Claims. (Cl. 33—18)

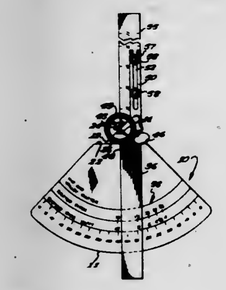
1. A device for cutting one side of a laminated material to permit stripping of the portion of the ply between cuts, comprising a cross-shaped body of transparent material, legs extending downwardly from the stem and arms of the body the foot ends of the legs providing for guidance over a surface and defining a reference plane, an externally threaded tubular guide perpendicular to said reference plane mounted adjacent the end of the head of the body, a shaft extending through said tubular guide, a first

mounting plate including the axis of said shaft fixed to the lower end of said tubular guide, a second mounting plate transverse to and fixed to said shaft and first plate, a compression spring surrounding the upper end of said shaft engaging the upper end of said tubular guide and a shoulder on said shaft for urging said shaft upwardly, a cap threaded on said tubular guide for engagement with the upper end of said shaft for limiting the upward movement of said shaft, a pivot pin spaced laterally of the axis of said shaft and downwardly of said second plate and extending perpendicularly through and fixed to said first plate, a leaf spring mounted on the end of said second plate adjacent said pivot pin, said leaf spring having a leaf portion positioned with clearance on each side of said shaft, a sofa-shaped cutter positioned on each side of said



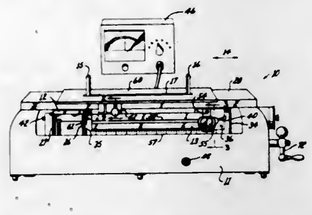
first plate, each sofa-shaped cutter having a foot leg and a head portion above said head leg, each sofa-shaped cutter being mounted on said pivot pin adjacent the foot leg of the sofa-shaped cutter and between the foot and head legs thereof, the head portion of each sofa-shaped cutter extending above the upper surface of the second plate and engaging the associated leaf portion of the spring, the foot end portion of each cutter being engageable with the under surface of the second plate for limiting the rotational movement caused by said leaf spring about said pivot, the head leg of each cutter being chisel sharpened with the bevel of the head leg adjacent one head of the other, the foot leg of each cutter being smoothly rounded to prevent damage to a surface, said device forming parallel slits in a surface, the cap adjustment providing for control of the depth of the slits.

3,197,872
INSTRUMENT FOR DETERMINING ANGLES
Carl E. Johnson, Detroit Lakes, Minn.
(4457 Linden N., Seattle, Wash.)
Filed Oct. 10, 1963, Ser. No. 315,185
8 Claims. (Cl. 33—75)



1. An instrument for determining angles and cuts for rafters, mitre joints, and sidings comprising, an arcuate scale plate having at least one reference side attached thereto, a cylindrical hub attached to the scale plate with a portion of the hub removed at the connection of the hub to the scale plate such that an extension of the reference side is aligned to pass through the axis of said hub, a rule carrying member having a cylindrical hub adapted to fit over the hub on the scale plate and be journalled thereon, said hub having a portion removed at its connection to the rule carrying member, a slot in said rule carrying member for mounting a rule, a rule with flange members attached thereto mounted in the slot in said rule carrying member and secured therein such that the scale edge of the rule extends to the axial center of the hubs on said rule carrying member and said scale plate at the portions removed therefrom, a first flange associated with said scale plate bearing a predetermined relationship to the reference side of said scale plate, the flexible clamping means included in the hub of said rule carrying member and adapted to clamp the hub of said rule carrying member on the hub attached to the scale plate for a fixed angular relationship therebetween after adjustment.

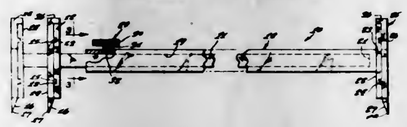
3,197,873
GAGING DEVICE
Willis Fay Aller, Dayton, Ohio, assignor to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware
Filed Dec. 16, 1963, Ser. No. 330,868
10 Claims. (Cl. 33—147)



1. A gage for measuring dimensions of a workpiece comprising,
a base,
a first support,
means mounting said first support on said base for limited yielding movements in a gaging direction,
a first gaging element fixed to said first support for movement therewith,
a second elongated support which is readily accessible from one side throughout its length,
means mounting said second support on said base for limited yielding movements in said gaging direction and relative to said first support,
a second gaging element,
a carrier on said second support mounting said second gaging element for movement in said gaging direction relative to said first gaging element,
means for clamping said carrier at a selected position along said elongated second support for gaging workpieces of different sizes associated with said first and second gaging elements,
a workpiece supporting table on said base for carrying a workpiece in gaging association with said gaging elements,
first gaging means cooperating between one of said supports and said base providing a gaging signal infinitely responsive to the position of said one support and of the gaging element carried thereby with respect to said base,
second gaging means cooperating between said first and second supports providing a gaging signal infinitely responsive to the relative positions of said supports and the dimension of a workpiece engaged by said gaging elements,

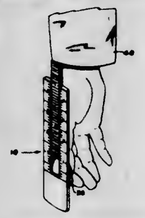
indicating means operatively responsive to said gaging means providing an indication infinitely responsive thereto,
and control means for placing said indicating means in operative connection with said first gaging means for indicating the reference position of said first gaging element and with said second gaging means for indicating the workpiece dimension.

3,197,874
MARKING GAUGE
Harold J. Fox, 3311 Wood Lane, Bakersfield, Calif.
Filed July 24, 1963, Ser. No. 297,381
3 Claims. (Cl. 33—158)



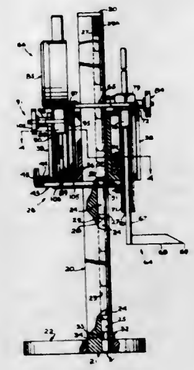
1. In a marking gauge the combination of a longitudinally extending slide bar element and a longitudinally extending sleeve element, said sleeve element being in slidable engagement with said slide bar element, a pair of marking heads, means at one end of said slide bar for engaging one of said marking heads, means at one end of said sleeve for engagement with the other of said marking heads, means for securing said slide bar relative to said sleeve is a selected relative position, said means for securing the first said marking head comprising a plate secured to one end of said slide bar, said plate forming an end plate, said end plate having a plurality of keyways for engagement with said first marking head, said means for mounting the second said marking head on said sleeve comprising an end plate affixed securely to one end of said sleeve, said end plate having a plurality of keyways for engagement with the second of said marking heads, said marking heads comprising elements having a plurality of keys, said keys being engageable with said keyways of said end plates, screw fastening means extending through said marking heads for securement to said end plates, one edge of said marking head having an anvil, said anvil having a linear edge extending in a transverse direction marking a marker line, the opposite edge of said marking head forming a hammer head for receiving the blow of a hammer thereupon to impress said marker line upon an object to be marked, and said hammer heads extending upwardly beyond all the other elements comprising the marking gauge.

3,197,875
SLEEVE MEASURING DEVICE
Edward P. D'Azzo, College Point, N.Y., assignor to H. Daroff & Sons, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 19, 1962, Ser. No. 167,258
3 Claims. (Cl. 33—169)



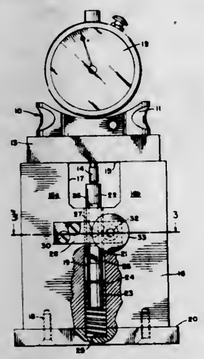
1. A sleeve measuring device comprising a bar, said bar having a longitudinally extending rectangular recess formed in the top surface thereof, and having a pair of parallel legs on opposite sides of said recess, at least one of said legs being calibrated, said recess being open at one end and terminating in a vertical wall at the opposite end, a shoulder fixedly and perpendicularly secured in the rear face of said bar for supporting the tip of a thumb thereon, with one wall of said shoulder lying in the same plane as said vertical wall of said recess, and a calibrated rod slidably mounted within said recess.

3,197,876
LINEAR MEASURING DEVICE
Lloyd A. Smith, 13411 Riverside Drive, Apt. B, Sherman Oaks, Calif.
Filed May 14, 1962, Ser. No. 194,459
1 Claim. (Cl. 33—169)



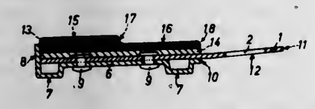
A linear measuring device comprising:
base means;
vertical support means secured in an upright position to said base means;
housing means mountable about said support means in vertically slidable relationship thereto;
said support means including incremental reference means parallel thereto and directly referable to a workpiece;
selectively engageable means for securing said housing means to said reference means for vertical support thereby at any selected increment thereof;
dial means mounted on said housing means;
said support means having registration means corresponding to said incremental reference means;
selectively disengageable pinion means intercoupling said dial means with said registration means whereby said dial means is settable to zero initial reference and relative incremental vertical movement of said housing means with respect to said support means causes corresponding changes in the visible indicia of said dial means;
pointer means slidably mounted on said housing means for vertical movement;
a removable dial indicator secured to said housing means and having vertically operable deflectible means; and
a cross member selectively securable to said pointer means and having projection means engageable with said deflectible means whereby relative movement of said pointer means with respect to said housing means causes actuation movement of said deflectible means.

3,197,877
ADJUSTABLE SETTING MASTER FOR DIAL DEPTH GAGES
David H. Aldeborgh, Poughkeepsie, N.Y., assignor to Standard Gage Company, Inc., Poughkeepsie, N.Y., a corporation of New York
Filed Feb. 15, 1963, Ser. No. 258,882
9 Claims. (Cl. 33—169)



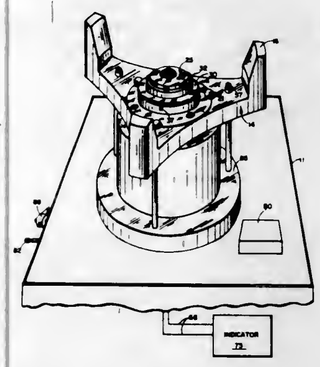
1. In a setting master for dial depth gages, in combination, a block having a flat finished surface thereon, means supporting said block with said flat finished surface facing upwardly, a recess in said surface, a bore through said block extending perpendicular to said flat surface and terminating in said recess, a setting plunger having a flat face parallel to said flat surface mounted in said bore for reciprocation only, said plunger being reciprocable to an extent such that its flat face lies in the plane of said flat surface, spring means for urging said plunger toward said surface, and means for clamping said plunger in an adjusted position whereby said plunger may be set by means of gage blocks to a position with its face placed a predetermined distance from said flat surface and a dial depth gage thereafter set to a desired measurement by placing its contact surface in engagement with said flat surface and its contact point in engagement with said plunger face.

3,197,878
TRACING STENCIL
Curt Riesebeck, Villa Reitzenstein, Darching, Upper Bavaria, Germany
Filed June 27, 1961, Ser. No. 119,879
Claims priority, application Germany, June 28, 1960, R 28,224
6 Claims. (Cl. 33—174)



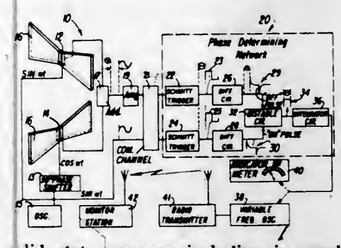
1. A tracing stencil for the application of lettering especially letters, figures, mathematical and other symbols for the lettering of drawings, documents, placards and the like, by means of a tubular pen and liquid ink, comprising a stencil plate of transparent material having apertures for signs conforming to lettering characters, a supporting device for holding the stencil plate in adjacent spaced relationship above the lettering surface, and support means for holding and moving the tracing stencil on the lettering area by means of the user's hand, said support means being secured to the surface of the stencil plate and on the supporting device, and formed from material with a surface having a greater co-efficient of friction than the material of the stencil and the supporting device.

3,197,879
GAUGE FOR LOCATING THE EQUATOR OF A SPHERICAL CAVITY
Richard M. Chapman, Arcadia, Calif., assignor to North American Aviation, Inc.
Filed Aug. 23, 1961, Ser. No. 133,461
5 Claims. (Cl. 33—174)



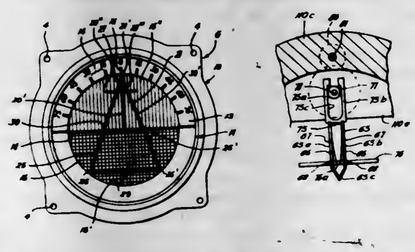
1. A gauge for determining the deviation of a surface of a gauged member from the position of the true equator of a spherical cavity formed in said member comprising a stand; a plurality of balls, defining a plane fixedly attached to said stand, said balls being adapted to be contiguous with the surface of said gauged member; plunger means slidably supported in said stand, said plunger means including a plurality of balls fixedly attached to the outer surface thereof and defining a spherical surface, said balls being adapted to contact the sides of said spherical cavity; detector means operatively connected to said plunger means for detecting motion of said plunger relative to said stand; and indicator means responsive to the output of said detector means for indicating the displacement of said plunger means relative to said support stand, whereby said indicator means indicates deviation of the flat surface of said member from the equator position of said cavity.

3,197,880
SOLID STATE COMPASS
Daniel J. Rice, Park Ridge, Ill., Peter G. Bartlett, Indianapolis, Ind., and Billy T. Mayberry, Champaign, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed June 15, 1961, Ser. No. 117,443
8 Claims. (Cl. 33—204)



1. A solid state compass including in combination, first and second Hall effect generators each having mutually orthogonal x, y and z axes, said second generator being maintained in spaced relationship to said first generator with the plane containing the y and z axes of said second generator being substantially parallel to the plane containing the y and z axes of said first generator, said second generator having its z axis rotated 90° with respect to the z axis of said first generator, means to position said generator in the earth's magnetic field, means concentrating the magnetic flux along said z axis connected to said generator, means providing an alternating reference current, first circuit means connecting said reference current means to said first generator to cause said reference current to flow along the x axis thereof, second circuit means shifting said reference current 90° in phase and connecting said reference current means to said second generator to cause said phase shifted current to flow along the x axis thereof, signal output means connected to said generator and responsive to the current flow along the y axis thereof to form output signals from said generator, signal combining means connected to said output means and responsive thereto to provide a sum signal having a phase relative to said reference signal proportional to the angle of orientation of the compass with respect to the direction of said field, and phase determining means connected to said signal combining means to provide a direct current signal having an amplitude proportional to said angle of orientation.

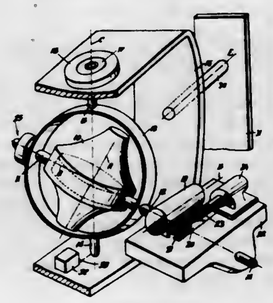
3,197,881
GYROSCOPIC PRESENTATION
Fremont W. Burger, P.O. Box 26325, Houston, Tex.
Filed July 13, 1961, Ser. No. 124,313
3 Claims. (Cl. 33—204)



1. A gyro apparatus for indicating rotational movement of an aircraft about its longitudinal axis including, a gyroscope adapted to maintain a predetermined position, indicator means connected to said gyroscope for indicating the real horizon, an instrument face, said face having numerically designated calibrations thereon to indicate rotational movement of the aircraft about its longitudinal axis, arms connected to said gyroscope to move in a plane parallel to said calibrations to indicate the rotational movement of the aircraft about its longitudinal axis, arms connected to said gyroscope to move in a plane parallel to said calibrations to indicate the rotational movement of the aircraft about its longitudinal axis in relation to said calibrations, said arms being connected to each other adjacent said calibrations and diverging therefrom and in the same plane, a visual representation of a cross on said instrument face, said cross simulating the aircraft and being in fixed relationship with said instrument face, said cross having a body and a cross arm, said body depending downwardly and in the same visual plane as said arms, and marks on said diverging arms to visually indicate the relationship of said diverging arms to said cross as an indication of the amount of aircraft roll.

3. An indicator apparatus for aircraft, comprising a housing adapted to be connected to an aircraft, an instrument face on said housing, a horizon bar visible at said instrument face and having connections with a gyro mechanism for holding said horizon bar in a predetermined position as the aircraft moves, a longitudinal scale secured to said housing and depending downwardly from the top of said instrument face, and said scale having a pair of parallel arms joined together at the lower end thereof to form an opening therebetween and having level flight, climb and glide indicator marks calibrated thereon, a movable marker member having a lateral bar therewith extending perpendicularly from said scale in a plane parallel to said parallel scale arms, and means for moving said marker member longitudinally relative to said scale to locate the lateral bar opposite a selected mark on said scale whereby alignment of said lateral bar and said horizon bar indicates the pitch of the aircraft.

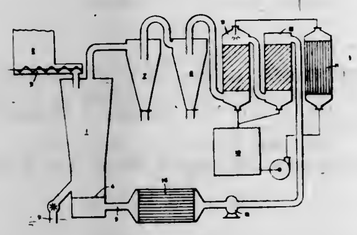
3,197,882
DIRECTIONAL GYROSCOPIC INSTRUMENT
Johannes Hintze, Kiel, Germany, assignor to Anschutz & Co. G.m.b.H., Kiel-Wik, Germany, a limited-liability company of Germany
Filed July 31, 1961, Ser. No. 127,977
Claims priority, application Germany, Aug. 5, 1960, A 35,301
3 Claims. (Cl. 33—222)



1. A directional gyroscopic instrument comprising a support, a gyroscope rotor rotatably mounted on said support, a gimbal, means mounting said support on said gimbal for rotation about a horizontal axis disposed at right angles to the axis of said rotor and intersecting the axis of said rotor, a frame, means mounting said gimbal on said frame for rotation about a vertical axis intersecting said axes in their point of intersection, a reversible torque producer mounted on said frame and connected to the second-named mounting means for exerting a torque about said vertical axis thereby to cause a precessional movement varying the inclination of the axis of said rotor, control means mounted to move independently of said gimbal about said horizontal axis and responsive to any departure of the axis of rotation of said rotor from a selected inclination and connected to said torque producer to control the same in response to said departure to maintain constant said selected inclination, a motor and means connecting said motor with said support and said control means for variably adjusting said control means about said horizontal axis relative to said support independently of said gimbal, said support and the parts rotatable therewith being in neutral equilibrium about said horizontal axis, whereby the axis of said rotor may be maintained selectively either inclined at the geographical latitude or in a horizontal position.

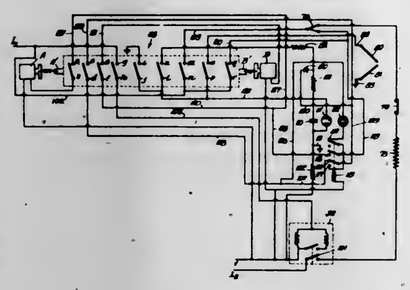
3. A directional gyroscope as claimed in claim 1 wherein a second torque producer is mounted coaxial with said horizontal axis to exert a torque between said gimbal and said support, and said second torque producer is a motor having reversing phase windings and is adapted to be controlled by a magnetic compass so that the axis of said rotor will perform a precessional movement into the plane of the meridian.

3,197,883
DRYING OF WET SOLID SODIUM CYANIDE
Erwin Hartert and Hans Georg Schwarz, both of Ludwigshafen am Rhine, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhine, Germany
Filed Oct. 24, 1961, Ser. No. 147,142
Claims priority, application Germany, Oct. 29, 1960, B 59,917
5 Claims. (Cl. 34—10)



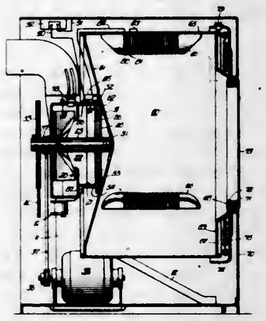
1. A continuous process for drying moist, solid sodium cyanide which comprises suspending in a drying zone water-moist, solid sodium cyanide in the form of fine particles in a heated air stream having a temperature in the range of 100–500° C., withdrawing fine particles of essentially anhydrous, solid sodium cyanide from said zone, also adding more moist, solid sodium cyanide to said zone to replace the withdrawn essentially anhydrous sodium cyanide, and controlling the rate of withdrawal of essentially anhydrous sodium cyanide and rate of addition of moist, solid sodium cyanide to maintain in said drying zone an average water content of the sodium cyanide suspended therein below 0.5%.

3,197,884
CONTROL SYSTEM FOR FABRIC DRYING APPARATUS
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Mar. 20, 1961, Ser. No. 96,855
6 Claims. (Cl. 34—45)



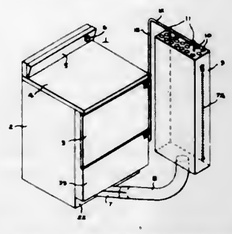
3. In a fabric conditioning machine having a drying operation and at least one sequential operation comprising, means for initiating said sequential operation, timing circuit means having charging capacitor means for regulating at least a portion of the period of at least one of said sequential operations, and means for charging said capacitor means over a timed period after initiating said sequential operation.

3,197,885
CONTROL DEVICE FOR DRIERS
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Jan. 11, 1963, Ser. No. 251,470
10 Claims. (Cl. 34—45)



1. In an apparatus for drying fabrics, a revoluble drum for drying fabrics, means for rotating said drum to tumble the fabrics, heating means for drying fabrics in said drum, at least one baffle member mounted on the interior surface of said drum for engaging the fabrics, at least one pair of elongated, narrow electrodes positioned within said drum for contact by the fabrics, circuit means connected to said electrodes for controlling the apparatus, and at least one electrically insulative ridge means projecting between and beyond said pair of electrodes for selectively permitting shorting by the fabrics and preventing shorting by rigid metallic objects across said pair of elongated electrodes.

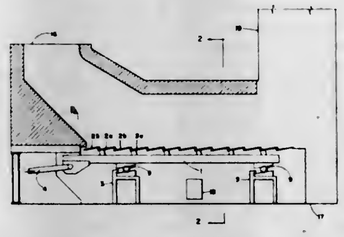
3,197,886
CLOTHES DRYER WITH OPTIONAL ADDITIONAL DRYING MEANS
Gordon R. Brame, Valley Station, and Glenn R. Chafee, Jr., Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed June 14, 1962, Ser. No. 202,419
9 Claims. (Cl. 34—90)



1. A fabric dryer comprising a first fabric chamber, duct means for guiding air into and out of said chamber, blower means arranged to pass air into and out of said chamber through said duct means, heating means for heating air passed into said chamber, said duct means having an opening formed therein downstream of said blower means and said heating means, a closure member biased to a closed position blocking said opening, and latch means for locking said closure member in closed position; a drying chamber external to said dryer; a conduit connected to said second fabric chamber and removably engageable with said duct means opening, said conduit having an end portion formed to join with said opening and form a connection therewith,

said end portion including unlocking means engageable with said latch means when said end portion is moved to a first position adjacent said opening so as to disable said latch means, said end portion including opening means effective to open and retain open said closure member as movement of said end portion toward said opening is continued, and means for releasably retaining said end portion in connection with said opening.

3,197,887
CEMENT CLINKER COOLER COMPRISING ROLLER-BEARING SUPPORTED VIBRATING GRATES
Karl-Heinz Kayatz, Hamburg-Niendstedten, Germany, assignor to Fuller Company, a corporation of Delaware
Filed July 27, 1962, Ser. No. 212,982
2 Claims. (Cl. 34—164)



1. A cooler for hydraulic cement clinker comprising a casing having a material inlet and a material discharge outlet, a grate assembly arranged to pass material from the material inlet toward the discharge outlet and having movable grates alternating with fixed grates, a fixed frame, a movable frame in engagement with the movable grates, at least one bearing in supporting engagement between the fixed frame and the movable frame, the bearing comprising a lower track engaging the fixed frame and an upper track fixed to the movable frame, said tracks being parallel to each other and aligned parallel with the direction of motion of the movable frame, said fixed frame carrying an elongated rod aligned with the direction of motion of the movable frame, a recess in the lower track for receiving a portion of the rod whereby the lower track may shift laterally about the axis of the rod in a direction transverse to the direction of motion of the movable frame, a spherical member positioned in rolling engagement between the first and second tracks, means for moving the movable frame to pass the material to be cooled toward the discharge outlet, means for passing a cooling gas through the grate assembly to cool the material passing thereon, and a vent for discharging the used cooling gas from the casing.

3,197,888
METHOD FOR TEACHING MANUAL SKILLS
Richard A. Held, Rte. 1, Box 90–B3, Ramona, Calif.
Filed Sept. 4, 1962, Ser. No. 221,242
1 Claim. (Cl. 35—29)

The method of preparing material for teaching a student a manual skill requiring coordination in time and position of parts of the body, which method consists in:
(A) Selecting certain frames of a motion picture film depicting the coordinated movement of an expert in a certain field;
(B) placing the frames of the selected set in a set of windows arranged longitudinally in an elongated strip of opaque material, and with the views of the expert in upright positions;
(C) selecting certain frames of a motion picture film depicting the coordinated movements of the student, which frames correspond in action to the first-mentioned set of frames;
(D) placing the second mentioned selected set of frames in a second set of windows arranged longitudinally in the elongated strip and at right angles, from longitudinal, with the windows of the first



mentioned set, and with the views of the student in upright positions;
(E) inserting the strip in a viewer of that type which when the strip is viewed with only one eye of a pair of eyes of the student, only one of the frames of one of the sets can be seen, and, when the strip is viewed with only the other eye of the student, only one frame of the other set can be seen.

3,197,889
METHOD OF FORMING LETTERS AND NUMBERS READABLE BY THE BLIND
Evangelia A. Micropoulou, Kalithea, near Athens, Greece (118 S. Valley Road, Paoli, Pa.)
Filed Sept. 21, 1960, Ser. No. 57,551
4 Claims. (Cl. 35—35)

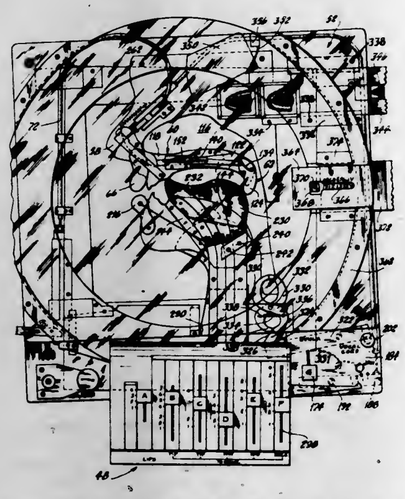


1. A method of forming a Roman alphabet of letters readable by the blind, comprising forming the thirteen most frequently used letters by upsetting from a surface base patterns consisting of projections in permutations and combinations of four, the projections being disposed on a pattern of positions in the shape of a square, and forming the remaining thirteen letters by upsetting from the surface a first set of said base patterns of projections and forming a first auxiliary pattern of projections immediately preceding each pattern of said set of base patterns of projections by upsetting from the surface a pattern of projections, the projections being disposed on a pattern of positions in the shape of a square, said first auxiliary pattern consisting of a single projection disposed at the same corner of the square, in each first auxiliary pattern the said first auxiliary pattern being different from the permutations and combinations of projections forming said base patterns.

3,197,890
ANIMATED TRANSPARENCY FOR TEACHING FOREIGN LANGUAGES DEMONSTRATOR
Ben Lorenz, Katonah, and James W. Barry, Roslyn, N.Y., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 3, 1962, Ser. No. 228,208
19 Claims. (Cl. 35—35)

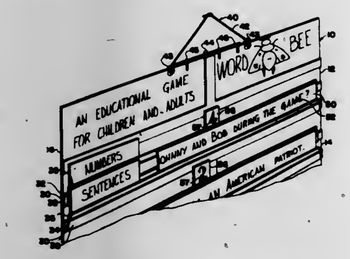
1. In a language demonstrator adapted to be used for overhead projection,
support means,

vocal organ simulating means secured to said support means, said vocal organ simulating means comprising,
an upper jaw member,
an upper lip member pivotally secured to said upper jaw member, said upper lip member and said upper jaw member lying in different planes,
upper palate means secured to said upper jaw member,
a lower jaw member,



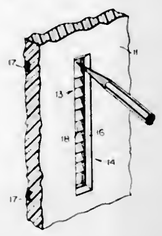
a lower lip member pivotally secured to said lower jaw member, said lower lip member and said lower jaw member lying in different planes,
tongue means, said tongue means being adjustable to assume various positions,
and control means individually controlling the vocal organ simulating means, whereby an infinite number of positions of the vocal organs may be artificially reproduced to visually demonstrate any sound.

3,197,891
EDUCATIONAL WORD GAME MEANS
Duane T. Pierce, 3211 Chatfield, Wichita, Kans.
Filed Apr. 1, 1963, Ser. No. 269,639
5 Claims. (Cl. 35—35)



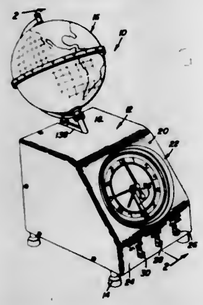
1. A game apparatus combination for playing an educational lotto-type game of skill comprising, in combination, a foldable master board comprised of four rectangular rigid relatively thin panels, arranged to form a large composite rectangular panel with a horizontal joint and a vertical joint, hinge means hingedly joining said panels at the horizontal and vertical joints thereof, said hinge means comprised of flexible elongated thin material adhered at its opposite edges to adjacent panel edges, five sets of horizontally disposed pocket means arranged on one side of said master board in parallel relation, each of said sets of pocket means comprised of upper and lower pockets, elongated flat relatively rigid strips slightly shorter than said panels and flexible tapes adhered in part on said strips and in part to said board to secure said strips to said board along the bottom and side edges thereof forming said upper and lower pockets, a hanger means for said master board to support same in a vertical unfolded operative position, a means to maintain the board in unfolded position, a plurality of relatively rigid, elongated flat sign strips having indicia arranged in sentences printed thereon, said sign strips of a length slightly shorter than the unfolded width of said master board and adapted to be disposed in the lower pockets of said sets of pocket means with a major portion of said sign strips with the indicia protruding above and out of said lower pocket, a series of small flat rectangular sign blocks having numeral indicia printed thereon and adapted to be disposed in said upper pocket of said pocket means with the portion of said sign block having indicia protruding above and out of said upper pocket, a plurality of playing cards, ruled markings on each of said cards forming twenty-five rectangular printed squares with indicia printed therein arranged to set out grammatical parts of speech, a series of small flat rectangular playing blocks for each playing card of a size slightly smaller than the printed squares on said playing cards and having numeral indicia corresponding to the indicia on said series of sign blocks, the sign strips and sign blocks adapted to be randomly selected and arranged on said master board in the pocket means thereof to convey a signal to be interpreted and utilized to draw conclusions as to the parts of speech of various indicated words, which conclusions are recorded on said playing cards by a proper selection and placement of said playing blocks requiring skill, and the random selection continuing until a winning playing card is determined by a proper and correct arrangement of said playing blocks.

3,197,892
EDUCATIONAL DEVICE
Raymond E. Hancy, 360 Fairwood Circle, Berea, Ohio
Filed May 23, 1963, Ser. No. 282,676
5 Claims. (Cl. 35—37)



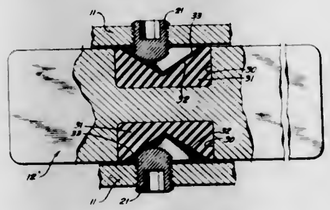
1. In an educational device for teaching children penmanship, a body member having grooves with bottom and side walls forming characters therein, the grooves providing means for guiding a writing implement along a path defining said characters, the improvement wherein at least portions of the bottoms of said grooves are formed as toothed surfaces comprising a series of unidirectional ratchet teeth and wherein at least one member of said series is located on said path between any junctures and crossings that are included in the path forming a character whereby the writing implement can be tracked in the groove in only one direction.

3,197,893
SOLAR ORIENTATED GLOBE DEVICE
Anthony Mariotti, 16198 Merrill Ave., Fontana, Calif.
Filed Dec. 20, 1962, Ser. No. 246,129
4 Claims. (Cl. 35—45)



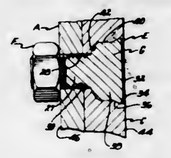
4. An illuminated solar orientated globe device comprising, supporting frame means, mounting rod means fixedly secured to said frame means and projecting upwardly therefrom at a rearward inclination, globe means rotatably mounted about an upper portion of said mounting rod means, time positioning means rotatably mounted about said rod means in engagement with said globe means for imparting movement thereto about an inclined axis extending through said rod means, bracket means fixed to an upper end of said rod means within said globe means, illumination means movably mounted by said bracket means, and solar orientating means journalled within said rod means and projecting upwardly therefrom into engagement with said movable illumination means for displacement thereof with respect to the globe means; said illumination means comprising a circular reflector disk rotatably mounted by the bracket means about a horizontal axis perpendicular to and intersecting said inclined axis, bulb means mounted on said disk, lens means secured to said disk in alignment with the bulb means adjacent to an internal surface of said globe means, and spring means adjustably connecting the bracket means to the disk for biasing thereof to one position.

3,197,894
DIGGING TOOTH WITH SCREWS SET INTO RESILIENT POCKETS
Thomas A. Ratkowski, Chicago Heights, Ill., assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed July 26, 1962, Ser. No. 212,509
5 Claims. (Cl. 37—142)



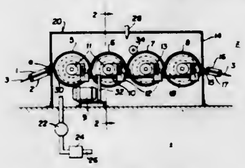
1. In a tooth assembly of the kind described, a holder and a replaceable point supported thereby, and means detachably securing the point to the holder including screws having tapered ends disposed in openings in spaced wall portions of the point with the heads thereof disposed outward of said openings and the tapered ends thereof seated in corresponding resilient pockets in the holder.

3,197,895
CUTTING EDGE MEMBER
Edgar Olin Cooke, Lynwood, Calif. (9634 Washburn Road, Downey, Calif.)
Filed Mar. 18, 1963, Ser. No. 265,966
1 Claim. (Cl. 37—143)



A cutting edge member adapted to be held on a moldboard by a plurality of bolts having heads, which member comprises an elongate rigid metal body having a plurality of longitudinally spaced metal zones that have been cold worked, but with said metal after said cold working possessing sufficient elasticity that it expands three-dimensionally to place said metal under compression whereby said zones are resistant to development of cracks therein, with each of said zones being at least partially defined by a recessed ring-shaped surface, a tapered surface that extends rearwardly in said body from said ring-shaped surface, a square bore that extends rearwardly from said tapered surface, a bore of circular cross section that extends rearwardly from said bore of square cross section, and four circumferentially spaced body shoulders in said body adjacent a junction between said bores of square and circular cross section, with said ring-shaped surfaces, tapered surfaces, square bores, circular bores, and body shoulders being of such dimensions as to permit snug engagement thereof by said heads when said bolts are extended therethrough, and with said body shoulders serving to hold said bolts in said body, even after that portion of said body forwardly of said body shoulders and a substantial portion of said head has been worn away.

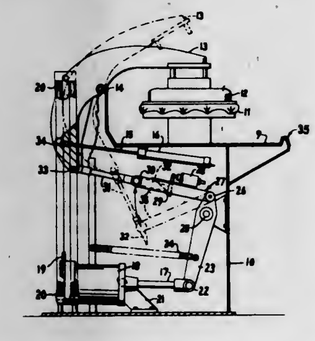
3,197,896
APPARATUS FOR TREATING TEXTILE MATERIALS
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Fleissner G.m.b.H., Egelsbach, Germany, a German firm
Filed Dec. 8, 1960, Ser. No. 74,707
2 Claims. (Cl. 38—14)



1. A device for moving and flattening combed textile materials comprising a housing having an inlet at one end and an outlet at an opposite end, means for providing a controlled fluid atmosphere in said housing, a row of perforated drums disposed side-by-side in said housing and extending between said inlet and said outlet, means for rotating said drums in a manner to transfer said textile materials thereon on a portion of the surface of the first drum in the row and then to a portion of the surface of the next drum in the row and continuing in like manner until all the materials are transported to said outlet, means for rotating said drums in a manner to transfer materials over a portion of the surface thereof from one drum in a row to the next, and to rotate each succeeding drum in the row at a faster speed than the previous one

to produce a tensioning of the materials transported thereon, baffle means in each drum disposed to cover a substantial portion of the cylindrical surface of said drum with the remaining portion of the surface being free, means for maintaining suction at the interior of each of said drums and a flow of fluid through the perforations of said drum and the materials thereon which is effective on the free portion of the surface of the drums for holding the textile materials to each drum as the materials are transported thereon, and means disposed adjacent said outlet to receive the combed textile materials from the last drum in the row and convey it through said outlet.

3,197,897
PRESSING MACHINE
Vincent W. Tucker, South Portland, Maine, Wallace F. Gayring, Minoa, N.Y., Robert G. Kaelber, Brussels, Belgium, and Albert Kagi, Syracuse, N.Y., assignors, by mesne assignments, to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 2, 1959, Ser. No. 856,682
3 Claims. (Cl. 38—41)



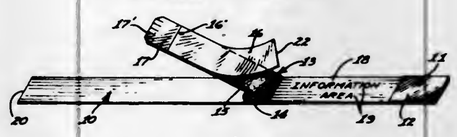
1. A pressing machine including a frame and a relatively movable pressing head, first power means for moving said pressing head to a zero pressure position, second power means for moving said pressing head against a pressing member with full pressure, and means operatively connecting said second power means with said pressing head, said connecting means comprising, in part, toggle means, a lever, and a rod, said toggle means including a toggle arm and a toggle latch support, said arm and said support movable into alignment with each other in response to movement of said pressing head into a zero pressure position for forming a power transmitting means between said second power means and said pressing head, and a latch means mounted on said toggle latch support for engaging said toggle arm when said support and said arm are in alignment.

3,197,898
LABEL
Matthew B. Blish, Box 151, Oak Park, Ill.
Original application Dec. 12, 1962, Ser. No. 244,177. Divided and this application July 22, 1964, Ser. No. 384,405
4 Claims. (Cl. 40—2)

1. In a label comprising a body portion, an integrally formed intermediate section having a portion cut out and foldably joined outwardly of the body portion at one side edge, an integrally formed projecting portion joined outwardly of the intermediate section at one side edge; the cut-out of the intermediate section disposed in alignment with an adhesive coated surface of the label upon folding the intermediate section to overlay a portion of one side surface of the body portion and upon folding the projecting portion to overlay the intermediate section, whereby a portion of the projecting portion is aligned into contact with the adhesive coating through the cut-out of the intermediate section thereby disposing the opposing side surface of the projecting portion securely raised substantially horizontal above the intermediate section and one side surface of the body portion.

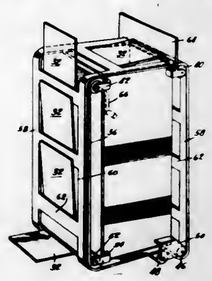


3,197,899
IDENTIFICATION BAND
Max E. Twentier, Phoenix, Ariz., assignor, by mesne assignments, to Avery Products Corporation, San Marino, Calif., a corporation of California
Filed Sept. 17, 1962, Ser. No. 224,141
3 Claims. (Cl. 40—21)



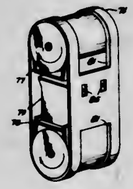
1. An identification band comprising a strip of flexible material having a surface area receptive to data markings, a strip of flexible transparent material secured to said surface area by an adhesive to protect said markings, opposite ends of said band secured in overlapping relation and an end of said transparent strip overlapping said overlapping ends of said band.

3,197,900
ANIMATION DEVICE
Ronald D. Alleman, 561st Eng. Co. (Port Construction), Fort Baker, Calif.
Original application Feb. 5, 1962, Ser. No. 171,321, now Patent No. 3,144,726, dated Aug. 18, 1964. Divided and this application June 9, 1964, Ser. No. 382,677
2 Claims. (Cl. 40—78)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A device for viewing in succession a series of indicia-bearing cards, said device comprising:
(a) a card-holding magazine for a stack of indicia-bearing cards, said magazine having a card exit portal and a card entry portal,
(b) successive card withdrawal means at said exit portal, including an outer endless belt having a plurality of card shaped windows along its length, said outer belt being rotatable about said magazine and disposed to contact the outermost card at said exit portal,
(c) card conveyor means between said exit portal and said entry portal, including said outer endless belt and an inner endless belt disposed to move in contact with said outer belt and to hold a card between said inner and outer belts,
(d) rotatable roller suspension means for said belts,
(e) turning means for one of said rollers; and
(f) a viewing area through said window of said outer belt so disposed that each newly deposited card can be viewed through said belt when said window is over said entry portal.

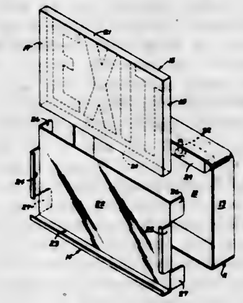
3,197,901
ANIMATION DEVICE
Ronald D. Alleman, 561st Eng. Co. (Port Construction), Fort Baker, Calif.
Original application Feb. 5, 1962, Ser. No. 171,321. Divided and this application June 9, 1964, Ser. No. 382,678
2 Claims. (Cl. 40—78)
(Granted under Title 35, U.S. Code (1952), sec. 266)



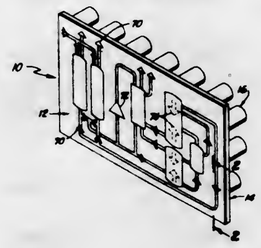
1. A device for viewing in succession a series of indicia bearing cards comprising a removable open top card-holding magazine for stacks of indicia bearing cards, said magazine having a slotted exit side and a slotted entry side, said entry side being flared outwardly to receive incoming cards; individual successive card withdrawal means at said exit side of said magazine and card conveyor means between said exit side of said magazine and said entry side of the same magazine; an enclosing case enclosing said conveyor means and said magazine; and at least one viewing aperture in said case so disposed as to allow views of successive cards.

3,197,902
LIGHT RESPONSIVE SIGN
Morris M. Buzan, St. Louis County, Mo., assignor, by mesne assignments, to Emerson Electric Co., a corporation of Missouri
Filed Aug. 22, 1962, Ser. No. 218,670
2 Claims. (Cl. 40—130)

2. A dual contrast light reflective device comprising: a transparent panel having a front and rear face and bounding edges, indicia having a side in optical contact with the rear face of said panel and visible through the front face thereof, said indicia including a layer containing daylight fluorescent pigment and a back-up opaque coating rendering said pigment opaque to the passage therethrough of light and redirecting light through the front face of said panel, and said indicia being highly reflective under conditions of illumination from inside the device dominating over external illumination, liner means adjacent said rear face of said panel and having areas unobscured by said indicia and visible through the front face of said panel, said liner means having portions abutting the layer of pigment and back-up coating and being obscured from view through the front face of said panel and other portions constituting said unobscured areas comprising a layer of material diffusely reflective to conditions of light passing through the front face of said panel from outside the device, said unobscured area being reflective under conditions of illumination passing through said front face of said panel from outside said device and dominating over internal illumination, and a source of internal illumination adjacent at least one bounding edge of said panel to project its light into said panel and cause said indicia to reflect said light, said indicia at times appearing brighter than said unobscured liner areas when said internal illumination dominates over external illumination, and said liner areas at times appearing brighter than said indicia when the external illumination dominates over internal illumination.



3,197,903
DEAD FRONT DISPLAY
Gerald A. Walley, 6320 Salter Ave., Temple City, Calif.
Filed May 28, 1963, Ser. No. 283,842
1 Claim. (Cl. 40—130)



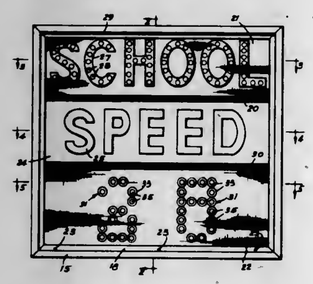
A dead front display device, said dead front display device comprising:
a polymer composition front layer having a front surface and rear surface, said front surface being adapted to be positioned so as to be visible, said polymer composition front layer being flexible and being capable of transmitting light therethrough from said rear surface through said front surface, said front layer having a thickness between substantially .010 and .030 inch, said front surface of said front layer being free of applied material and being treated in such a manner as to be substantially uniformly non-reflective, said front surface being smooth except for its non-reflective character and being arranged to be directed toward a viewer;
a continuous, substantially uniform layer of translucent color applied to the entire rear surface of said front layer;
a layer of opaque material selectively arranged upon

the rear of said translucent color layer in such a manner as to outline bits of information;

a perforated support having a front side and a rear side, said perforated support being secured to said front layer adjacent the rear surface thereof with the front side of said support directed toward the rear surface of said front layer, a plurality of openings in said perforated support, said openings being positioned with respect to said bits of information so that light passing through one of said openings illuminates one of said bits of information;

a plurality of lamp means secured to said perforated support on the rear side thereof, each of said lamp means being associated with one of said openings in said perforated support, each of said lamp means comprising a lamp tube, each of said lamp tubes having a front end and a rear end, each of said lamp tubes having a flange on the front end thereof, and flanges being secured to said perforated support so as to space said lamp tubes away from said perforated support so that air may circulate between each of said lamp tubes and said perforated support so as to cool the interior of each of said lamp tubes, a lamp in each of said lamp tubes, each of said lamps being removable from the rear end of its respective lamp tube, said lamps being arranged so that upon illumination of any one of said lamps, said adjacent portion of said translucent color layer non-opacified by said opaque layer is illuminated and the light produced by said lamp is visible at the front surface of said front layer while bits of information corresponding to non-illuminated lamps are invisible from the front of said front layer.

3,197,904
SPEED ZONE SIGN
John E. Holcomb, Spokane, Wash., assignor to American Sign & Indicator Corporation, Spokane, Wash., a corporation of Washington
Filed June 28, 1963, Ser. No. 291,498
3 Claims. (Cl. 40—130)



1. In a speed zone sign:

an upright framework having top, bottom and side members joined to one another in a rectangular configuration;

first and second parallel intermediate transverse members fixed across the side members of said framework parallel to the top and bottom members thereof, said intermediate members having front edges recessed within said framework relative to the front edges of the remaining framework members;

an outer frame fixed to the front edges of the top, bottom and side members of the framework including recessed inwardly facing ledges having front surfaces that are coplanar with the front edges of said intermediate members;

first, second and third sheets of light transmitting material bounded by a common frame and mounted within said outer frame against the front surfaces of said ledges and said front edges of said first and second intermediate members, each of said sheets being extended over an individual open area bounded by said framework members and said intermediate members;

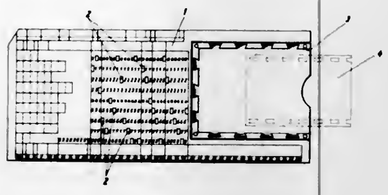
first electrically lighted display means mounted within the framework immediately behind said first sheet of light transmitting material comprising an electrically lighted display formed by lamps mounted within channels formed in a fixed letter display;

second electrically lighted display means mounted within the framework immediately behind said second sheet of light transmitting material comprising a changeable numerical display formed by lamps mounted within open ended cylinders;

said third sheet of light transmitting material being made of translucent planar material having a dark lettered display mounted thereon;

and lamp means mounted on said framework rearward of said third sheet of light transmitting material.

3,197,905
PERFORATED FILM CARD
Ernst Witte and Rolf Weihe, Iserlohn, Westphalia, Germany, assignors to Brause & Co., Iserlohn, Westphalia, Germany, a corporation of Germany
Filed July 23, 1963, Ser. No. 297,050
11 Claims. (Cl. 40—158)



1. A perforated card for card indexes comprising

a card having a rectangular aperture,

said card having impressions surrounding said rectangular aperture and forming a rectangular frame of lesser thickness than that of said card,

rectangular transparent foils of a size complementary to said frame, engaging the opposing faces of said impressions and covering said aperture,

said rectangular frame having a plurality of notches open towards said apertures,

said opposing foils being joined together through said notches on three sides thereof and open at the fourth side to form a pocket adapted to receive a film, and

said impressions jointly with said foils having a total thickness not greater than the thickness of said card.

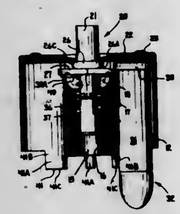
3,197,906
FIRING MECHANISM INCLUDING A UNITARY SPRING WITH THREE ARMS
Louis Elkas, Agawam, and Thomas J. Davies, Springfield, Mass., assignors to Emhart Corporation, a corporation of Connecticut
Filed Sept. 19, 1963, Ser. No. 309,991
5 Claims. (Cl. 42—69)

5. Firing mechanism for a rifle or the like comprising a pivotable hammer, a trigger, and a sear interengageable with the hammer and trigger for retaining and releasing said hammer from cocked condition in response to trigger actuation, and a unitary spring coiled about the pivot of said hammer and having three arms extending radially therefrom, one of said arms being in the form of a loop engaged with said hammer, said spring including a second arm engaged with said sear and a third arm engaged with the trigger, said second arm urging



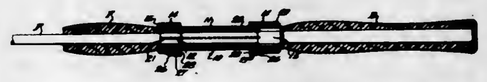
with maximum spring pressure, said sear into cocking engagement with said hammer when said hammer is cocked and said third arm providing maximum spring pressure on said trigger.

3,197,907
REVOLVER CARTRIDGE CLIP
Ole N. Olson, Minneapolis, Minn., assignor, by direct and mesne assignments, of 33.93% to James J. Salinas, 33.93% to Arthur J. Pasmas, 17.86% to Central Indiana Real Estate & Development Corporation, 7.14% to Johnston Container Corp., and 7.14% to Harlan B. Livengood
Filed Sept. 26, 1963, Ser. No. 311,877
1 Claim. (Cl. 42—89)



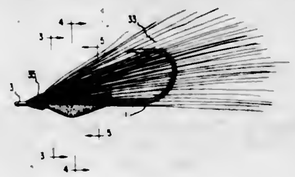
A device for loading cartridges into revolvers comprising a cylindrical body element having a plurality of cylindrical chambers in parallel spaced relationship to one another and in a circular pattern, said chambers all opening at one end of said body element, said body element having axially projecting portions at said one end of said body element, said axially projecting portions having radially outwardly facing surfaces coextensive with said chambers and being formed at their distal ends to engage the revolver for loading, said axially projecting portions being spaced radially inwardly of the cylindrical surface of said body, said body element having a further central chamber which is flared out into a cup shape at the opposite end of said body element, a plunger reciprocably received in said further chamber, a cap secured to said body element at said opposite end, said plunger having an end portion projecting through said cap and an enlarged portion abutting said cap, a flat resilient cylindrical washer received on said plunger in engagement with said enlarged portion, said washer extending radially outwardly into said plurality of chambers for engaging the flanges of cartridges received in said chambers, said central chamber being counterbored adjacent the cup shape, a compression spring received in said counterbore and acting between said resilient washer and the shoulder of said counterbore to retain said washer in engagement with said enlarged portion, said plunger being depressible against the urging of said spring to move said washer out of said plurality of chambers and into said cup shape for release of the cartridges, said body element having a plurality of grooves therein, said grooves extending in said cup shape from the opposite end of said body element toward said counterbore, said grooves being spaced at equal intervals with one between each adjacent pair of said plurality of chambers, whereby said grooves produce folds in said washer at equal intervals when said washer is moved into said cup shape.

3,197,908
REEL SEAT FOR FISHING RODS
Walter F. Hirsch, Miami, Fla. (781–783 W. 18th St., Hialeah, Fla.)
Filed Nov. 8, 1962, Ser. No. 236,352
5 Claims. (Cl. 43—22)



1. A reel seat for tapered fishing rods comprising, in combination, a tubular body member having a front end and a back end, a sleeve-like resilient front bushing within the front end of said body member and a sleeve-like resilient rear bushing within the back end of said body member, means preventing mutual axial rotation between each of said bushings and said body member, means for securing said bushings to a back-to-front tapered fishing rod extending through said bushings, and means for removably securing a fishing reel upon said body member, said bushings securing means comprising back-to-front tapered axial openings in each of said bushings, the wall thickness of said bushings prior to assembly of said rod being greater than the annular space at said bushings between said rod and said body member, said means preventing mutual axial rotation between said bushings and said body member comprising a plurality of longitudinally-extending ribs arcuately spaced about the interior wall of said body member and integrally formed therewith, said ribs being keyed in a plurality of peripheral wall openings in each of said bushings, and said ribs extending continuously between said bushings to strengthen said body member.

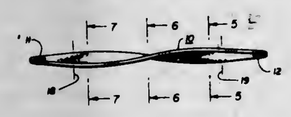
3,197,909
FISHING DEVICE
Ul Adams, 1755 S. Fremont, Springfield, Mo.
Filed July 9, 1963, Ser. No. 293,807
1 Claim. (Cl. 43—42.37)



A fish hook comprising a shank, a hook formed on one end of the shank and extending to one side of the shank and an eye at the other end of the shank, a weight on the shank contiguous to the eye and remotely spaced from the hook end of the shank, the weight having spaced portions, the center of gravity of the weight being disposed on the side of the shank opposite the hook so that the opposite side is the lower side of the fish hook in an equilibrium rest position of the fish hook, the spaced portions of the weight being the lowermost portions of the weight relative to the shank and constituting two support points widely spaced apart one on either side of the center of gravity of the weight on the side of the shank opposite the hook and being disposed below the center of gravity of the weight a distance substantially less than

the distance between said lowermost portions, the weight having an intermediate portion between but above said lowermost portions, the shank adjacent the eye being fixedly embedded in said intermediate portion, the lower surfaces of the weight receding continuously upwardly from the two support points and away from a plane defined by the two support points and a third point located on the lower side of the hook end of the shank, the third point being the point at which the plane is tangent to the lower side of the hook end of the shank, the spacing of the center of gravity of the weight from the hook end of the shank and the shape of the underside of the weight being such that said two support points of the weight and said third point form three points of support for the hook in said equilibrium rest position, and flexible artificial bait fastened to the shank between the weight and the eye and extending toward the hook along the upper surface of the weight.

3,197,910
FISHING LURE
Monte V. Colangelo, P.O. Box 941, Raton, N. Mex.
Filed Oct. 3, 1963, Ser. No. 313,659
4 Claims. (Cl. 43—42.51)



1. A fish lure comprising a body made from a flat piece of sheet metal of elongated generally elliptical configuration, each of the end portions of said body being flat and extending a substantial distance of about twenty percent of the length of the body, said end portions being turned with respect to one another by twisting them from the common plane of the flat piece to an acute angle about the central longitudinal axis of the body to twist the body intermediate the ends and provide a slightly twisted portion between said flat end portions, said acute angle being sufficiently large to render said flat end portions in cooperation with said twisted portion effective to produce swaying of said body with a wobbling motion when said body is drawn through the water, means for attaching a line to one end of said body, and means for attaching a fishhook to the other end thereof.

3,197,911
SPINNING FISH BAIT LURE AND LURE HARNESS
Selmer O. Rolfsness, 6122 Avalon Drive, Eureka, Calif., and Gary A. Rolfsness, P.O. Box 56, Cutten, Calif.
Filed Apr. 27, 1964, Ser. No. 362,821
5 Claims. (Cl. 43—44.2)



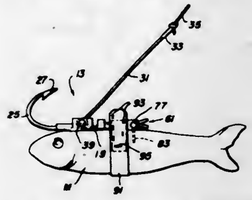
1. A spinning fish bait lure comprising a U-shaped muzzle encompassing both lips of the mouth of a fish bait, a narrow shaft extending through one eye of the fish bait into the body thereof, said shaft extending integrally from the end of one U-leg of said muzzle, and a spinner blade extending integrally from one side edge of one U-leg of said muzzle.

3,197,912
BAIT HOLDING FISH HOOK
Ernest H. Kramer, 5708 E. Haskell Place, Tulsa, Okla.
Filed Jan. 18, 1963, Ser. No. 252,448
1 Claim. (Cl. 43—44.4)



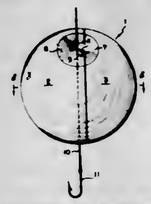
A fish hook device comprising a fish hook means including an elongated substantially straight portion having an eye member at one end thereof and a curved portion at the opposite end thereof, a barb member provided on the outer extremity of the curved portion, a single leader member having one end only thereof securely fastened to the straight portion in the proximity of the eye member, the opposite end of said leader member being completely independent of any connection with the fish hook means and being slidably secured to the leader member itself to form an adjustable loop which is completely independent of any connection with the fish hook means, said loop being provided for receiving a live bait therein, said loop being oppositely disposed from said curved portion and adjacent thereto, and said adjustable loop being responsive to the weight of the bait secured therein for tightening around the bait during movement of the bait to substantially preclude accidental loss of the bait from the fish hook device.

3,197,913
LIVE BAIT HOLDING AND FISH CATCHING MEANS
Horace S. Rainey, 4674 Quince, Memphis, Tenn.
Filed Dec. 29, 1961, Ser. No. 163,130
2 Claims. (Cl. 43—44.8)



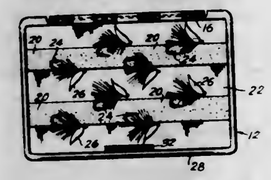
1. A fishing device comprising a fishhook including a shank portion, a bend portion having a terminal barb, and pivot means freely pivotally joining said bend portion and said shank portion for free pivotal movement of said fishhook between a substantially closed position in which said barb is adjacent said shank and open positions in which said barb is spaced from said shank; said pivot means including a member having a lower surface for contacting a minnow carried by said fishing device, means substantially rigidly joining said member and said bend portion, said member and said bend portion extending in substantially opposite directions away from said pivot means and said member having an area offering a greater resistance to the water than said bend portion whereby downward pivot of said member responsive to pull on said fishhook through the water is effective to cause upward pivot of said bend portion towards said closed position, said member extending in front of said shank portion to provide a stop for stopping said fishhook in said closed position, a flexible member attached adjacent one end thereof to said member adjacent one side thereof and extending therebeneath, means for adjustably and removably coupling the opposite end of said flexible member to said first mentioned member for holding a minnow, an impaling pin coupled to said first mentioned member and extending laterally relative thereto in position to pierce a minnow held by said first mentioned member, and said pin being spaced rearwardly of said flexible member.

3,197,914
FISHING FLOAT
Rene V. Beverly, 2509 Metairie Court Parkway, Metairie, La.
Filed Mar. 30, 1964, Ser. No. 355,648
3 Claims. (Cl. 43—44.91)



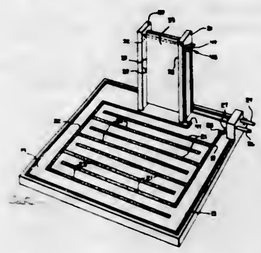
1. A separable spherical shaped fishing line float comprising: first and second hemispherically shaped buoyant members; a mortise on said first buoyant member, the lateral thickness of said first buoyant member being greater than the lateral thickness of said second buoyant member by an amount substantially equal to the depth of said mortise in said first buoyant member, the bottom of said mortise extending along a diameter of the assembled first and second members; and a tenon on said second buoyant member, said mortise and tenon providing means for assembly and disassembly of said spherically shaped float.

3,197,915
MAGNETIC BOX FOR FERROUS ITEMS
Edward F. Staver, Westport, N.Y., assignor to Staver Westport Incorporated, Westport, N.Y., a corporation of New York
Filed Jan. 2, 1964, Ser. No. 335,146
2 Claims. (Cl. 43—57.5)



2. A fly tackle box comprising a body and a cover hinged on said body, the bottom of said box including ferrous sheet metal, and a plastic permanently magnetized material in the form of bars resting on the ferrous bottom of the box, said material being flexible and loaded with a ferromagnetic powder, said bars being disposed in well-spaced parallel relation, whereby steel fish hooks for fly fishing may be held in spaced-apart position in the box by simply resting the hooks flat on the permanently magnetized material with the wings or feathers disposed in the open space between the bars, said bars being magnetized in vertical direction with adjacent areas oppositely polarized, whereby a large number of minute closed magnetic loops are completed through the ferrous bottom beneath the bar and through the fish hook on top of the bar.

3,197,916
ELECTRIC ANIMAL TRAP
Samuel L. Cole, Jr., R.R. 2, and Albert F. Spurgeon, 3746 S. Adams, both of Marion, Ind., and Raymond L. Kiger, 509 W. Virginia, Kokomo, Ind., and Robert L. King, R.R. 1, Jonesboro, Ind.
Filed Feb. 11, 1963, Ser. No. 257,448
3 Claims. (Cl. 43—66)



1. An animal trap comprising a housing having an upstanding wall with an opening therein, a door pivotally suspended on said housing for movement from a closed position covering the opening in said housing to an inward, open position whereby the opening is uncovered in response to an inward pressure of an animal against the outer surface of the door and wherein the door returns to a closed position when the animal has entered the housing, bare electrically conductive strips on the floor of the housing, an electrical input means, and switch means for connecting said conductive strips to said electrical input means when said door is in a closed position and for disconnecting said conductive strips from said electrical input means when said door is pivoted inwardly from said closed position, said switch means comprising a conductor connected to a portion of said electrically conductive strips, a second conductor connected to the electrical input means, and a connecting means supported by said door for non-sliding contact with the conductors when said door is in the closed position.

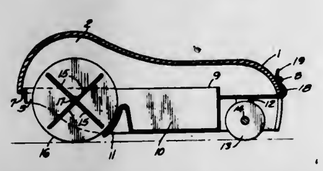
3,197,917
FLY SWATTING GUN
Louis L. Schroeder, 7517 Kenwood Ave., Wauwatosa, Wis.
Filed Mar. 5, 1964, Ser. No. 349,683
12 Claims. (Cl. 43—135)



1. An insect swatting gun comprising a handle having bearing surfaces providing a way, a slide reciprocable upon the way between advanced and retracted positions, means for actuating the slide toward its advanced position, a swatting vane, means including a transverse pintle pivotally connecting the vane with the slide, the vane normally lying substantially parallel with the direction of slide reciprocation during slide actuation toward its advanced position, and means for rotating said vane as the slide approaches said advanced position, the slide actuating means comprising spring means for which the slide and handle have respective anchorages, the handle having an elongated upper end with laterally spaced apertures providing said bearing surfaces, the slide compris-

ing laterally spaced wires in said apertures and front and rear transversely extending means for connecting said wires, and blocks detachably mounted on the rear connecting means and having lateral projections constituting said spring anchorages of the slide.

3,197,918
ANIMATED WHEELED EATING TOY
Charles Henry Coggeshall, 1412 Augusta Blvd., Chicago, Ill.
Filed Feb. 20, 1962, Ser. No. 174,523
2 Claims. (Cl. 46—103)



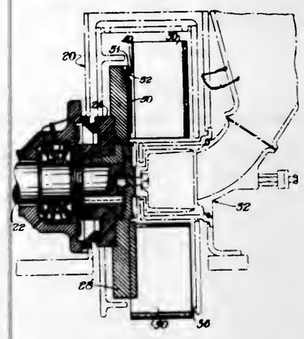
1. An animated wheeled toy, adapted to devour a plurality of objects comprising a hollow body member having a head and face on the forward end, an open mouth in said head, a pair of wheels, an axle pivotally mounting said wheels on the forward end of said body member for supporting the body member on a surface, four large equally spaced paddles fixed to and extending between the said wheels, a frame having a retaining tray pivotally mounted at the forward end on said axle, said tray being enclosed by said hollow body member, a retaining slide fixed to the forward portion of said tray, the slide having a curvature juxtaposed to the perimeters of the rear of the wheels and extending parallel to said paddles whereby said objects may be captured by the paddles, the paddles propelling the objects to the top of the slide thence into the said tray.

3,197,919
SWINGING SUPPORT SYSTEM WITH REINFORCED CONCRETE COLUMNS FOR CULTIVATING HOP
Mihály Pásztor, Budapest, Hungary, assignor to Licencia Talalmanyokat Ertekesito Vallalat, a firm
Filed May 16, 1962, Ser. No. 195,182
1 Claim. (Cl. 47—46)



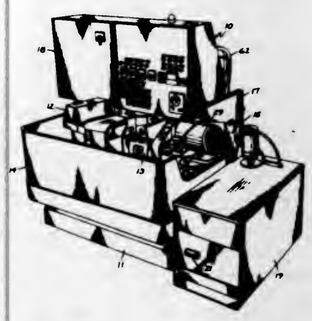
Support system for cultivating hops, comprising, in combination, upright columns having lower ends standing free on the ground whereby said columns can swing away from the vertical position, a network of crossing wires having intersections supported by said columns and made of wires freely engaging the top ends of said columns, each wire having free sliding movement, longitudinally of itself, with respect to the top of each column supporting the same, and with respect to each wire intersecting the same, and means restraining each wire against movement, laterally of itself, relative to the top of each column supporting the same, whereby said columns are relieved of bending stresses and subjected only to compression stresses, said retaining means comprising a wire square made of four wires and surrounding the crossing point of two wires of the network, the sides of the square extending diagonally relative to the wires of the network, and the corners of the square being clamped in juxtaposition with the respective network wires.

3,197,920
THROWING WHEEL AND PARTS THEREFOR
Ralph W. Moore, Hagerstown, Md., and Joseph E. Bowling, Jr., Waynesboro, Pa., assignors, by mesne assignments, to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed May 18, 1962, Ser. No. 195,698
14 Claims. (Cl. 51—9)



2. A particle throwing wheel assembly having radially extending vanes for projecting outwardly a stream of particles fed to the inner ends of the vanes as the wheel rotates, the wheel including a rotor with a set of grooves in which the individual vanes are received, the grooves being of the dovetail type and the vanes having mounting flanges shaped to fit within the grooves so that each vane can be mounted on the wheel by sliding the vane inwardly from the outer end of a groove, the floor of each groove having a recess which at its radially outward end defines a retainer stop, a removable retainer gib in each groove and having a wedge block secured to that end of the gib lying adjacent the outer periphery of the wheel which abuts said stop and is held thereby against radially outward movement, the gib having a longitudinally tapered wedging face facing the vane in the same slot, and each vane flange having a correspondingly tapered wedging bevel engaging said wedging face and locking the vane against radially outward movement in the groove.

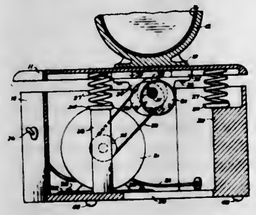
3,197,921
GRINDING MACHINE
Frederick A. Hohler, Holden, and Robert S. Hahn, Northboro, Mass., assignors to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Aug. 17, 1962, Ser. No. 217,683
12 Claims. (Cl. 51—103)



12. A grinding machine for finishing a surface of revolution of a workpiece, comprising
(a) a lower base,

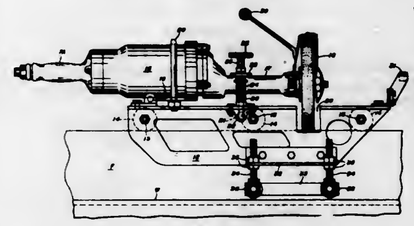
(b) a workhead table and a wheelhead table mounted on the base,
(c) means bringing about relative movement between the tables along an imaginary line and along a line at a right angle to the said line,
(d) a first swivel member mounted on the workhead table and having a means to lock it in an angularly adjusted position,
(e) a workhead mounted on the first swivel member and carrying the workpiece,
(f) a second swivel member mounted on the wheelhead table and having a means to lock it in angularly adjusted position,
(g) a wheelhead mounted on the second swivel member and carrying an abrasive wheel,
(h) means bringing about the said relative sliding movement of the workhead and wheelhead tables to bring about engagement of the wheel and workpiece for a grinding operation,
(i) a feed mechanism causing the grinding operation to take place in a rough grind with both swivel members positioned at substantial angles to the said line and in a finish grind in which only the first swivel member is so positioned to compensate for wheel spindle deflection, and
(j) means separate from the said feed mechanism for adjusting the position of the workhead table along a line extending at an acute angle to the said line in order to retain the workpiece to the line after the first swivel member has been angularly adjusted.

3,197,922
APPARATUS FOR AGITATING AND POLISHING MATERIALS
Edward Earl Smith, 411 W. Main St., New London, Iowa
Filed Apr. 22, 1963, Ser. No. 274,474
3 Claims. (Cl. 51—163)



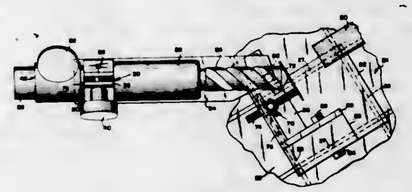
1. A vibratory polishing machine for minerals, gem stones and the like comprising a base housing, a drive motor positioned within said housing, two spaced pairs of sound insulated support springs mounted in rectangular arrangement within said housing, a horizontal platform positioned above said housing and resiliently supported by said springs, a rotatable shaft carried in bearings on the underside of said platform, said shaft being positioned horizontally to one side of the centerline between said two pairs of support springs, a pair of eccentric weights on each end of said shaft, the two weights of each pair being rotatable with respect to each other for varying the degree of unbalance of said shaft from a position of shaft rotary balance to a position of maximum off-center weighting and maximum unbalance of said shaft, pair of elastic drive belts interconnecting said drive motor and said shaft for rotating said shaft and exerting downward pressure on said platform for maintaining said platform in position on said support springs, and an open top container of substantially cylindrical cross-section for receiving a load of rough material positioned on the upper surface of said platform, said container having an inner lining of abrasion resistant material integrally bonded thereto.

3,197,923
APPARATUS FOR GRINDING FLANGES ON STRUCTURAL MEMBERS
Leon J. Kaczmarek, Chicago, Ill., assignor to United States Steel Corporation, a corporation of New Jersey
Filed July 17, 1963, Ser. No. 295,692
3 Claims. (Cl. 51—170)



1. An apparatus for grinding the edge of the flange on a structural member and thereby producing a flange of predetermined width, which member has a web extending perpendicularly to its flange, said apparatus comprising a pair of spaced-apart frame members, wheels journaled between said frame members and adapted to ride along the edge of the flange while said frame members lie on opposite sides thereof, a grinder mounted on the top of said frame members and having a grinding wheel positioned to contact the edge of the flange, and means adjustably mounted on the lower portion of one of said frame members adapted to engage the web of the structural member when the flange has been ground to a predetermined width.

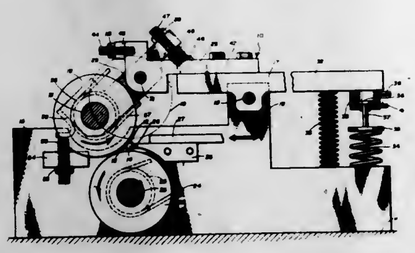
3,197,924
TWIST DRILL SHARPENER
Ebb V. Mitchell, Box 849, Midland, Tex.
Filed May 9, 1963, Ser. No. 279,273
2 Claims. (Cl. 51—219)



1. Apparatus for supporting a twist drill for grinding by a grinding wheel mounted for rotation on a predetermined axis comprising a base mounted for lateral bodily shifting movement toward and away from the periphery of said wheel in a plane substantially parallel with the axis of said wheel, a support member mounted on said base for pivotal movement about an axis fixed with respect to the support member, said axis being parallel to the axis of said wheel and at substantially the same elevation as the axis of said wheel, an arm carried by said support member, said arm being swingable about an axis essentially normal to the pivotal axis of said support member, a chuck adapted to releasably carry a twist drill coaxially thereof, a first collar rigid with said arm for supporting said chuck for rotation about an axis parallel to said arm and for movement axially of said arm with respect to said first collar, means for clamping said chuck in said first collar in predetermined axial and rotated position to position said drill to be ground by said wheel when said chuck, arm and sup-

port member are swung about the pivotal axis of the latter, a second collar carried solely by said chuck for free rotation and axial movement on said chuck, means for clamping said second collar in predetermined adjusted position on said chuck, and cooperating means on said first and second collars to permit said chuck to be rotated within said first collar to predetermined angularly related position, 180° apart.

3,197,925
WORKPIECE SUPPORT
Carl H. Westberg, Webster, Mass., assignor to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Jan. 16, 1963, Ser. No. 251,944
4 Claims. (Cl. 51—236)



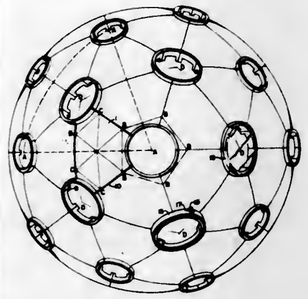
1. Apparatus for supporting a workpiece having a surface of revolution, comprising
(a) a base,
(b) a first member mounted on the base adapted to contact a position on the surface of the workpiece,
(c) a second member mounted on the base adapted to contact the surface of the workpiece at a position substantially spaced from the position of contact of the first member,
(d) a third member mounted on the base adapted to contact the surface of the workpiece at a first position substantially opposite the midpoint between the position of contact of the first member and the position of contact of the second member, and
(e) an articulated arm having two hinged portions spring-biased relative to each other and also to the base supporting the third member in such a manner that, on occasion, it contacts the surface of the workpiece at a second position which is substantially opposite the position of contact of the second member and is movable radially away from the said second position.

3,197,926
HANGER MEANS FOR SHEET METAL SECTIONAL ROOFING AND FLOORING
Lucky J. Shumaker, Pittsburgh, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 17, 1963, Ser. No. 252,249
2 Claims. (Cl. 52—39)



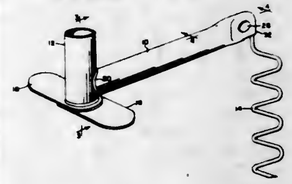
1. In a sheet metal sectional flooring or roofing section having a generally rectangular configuration including engageable lip means along the opposed side edges thereof including a male lip comprising a generally vertical surface of sheet metal along a first side edge and also including a U-shaped channel, open at the bottom, with the sides thereof being generally vertical along the opposed side edge thereof, whereby a said male lip of one said section is engageable in the said channel of an adjacent one of said sections to secure said sections in side-by-side relation, the improvement in said section comprising:
a plurality of slits in the said male lip extending from the upper edge of said lip vertically through the said male lip, whereby a pair of said slits define a peninsular segment of the said male lip, each said peninsular segment being adapted to be bent downwardly to serve as a hanger site, and the other unbent ones of said peninsular segments being adapted to engage with a said female lip of an adjacent one of said sections.

3,197,927
GEODESIC STRUCTURES
Richard Buckminster Fuller, 407 S. Forest St., Carbondale, Ill.
Filed Dec. 19, 1961, Ser. No. 160,450
7 Claims. (Cl. 52—81)



1. A structure of generally spherical form comprising a framework including a plurality of six sided panel members, three sides of which are straight and three sides curved, said curved sides terminating in upturned flanges projecting radially in respect of the sphere on which the structure is predicated, the curved sides of adjacent members forming a circular opening bounded by said upturned flanges, said panel members being interconnected and drawn together by a tension ring disposed around the circular opening and having a clamping engagement with the upturned flanges.

3,197,928
FOLDING GROUND ANCHOR
Norman V. Frye, R.R. 4, Davenport, Iowa
Filed Feb. 19, 1962, Ser. No. 174,107
4 Claims. (Cl. 52—157)



1. A ground anchor, comprising: an elongated relatively narrow member adapted to lie normally on the ground and having first and second opposite terminal end portions; coupling means carried by and rising from said first end portion; an operatively vertical ground-penetrating screw in depending relation to the second end portion of the member and having an upper end proximate to said second end portion and a lower free end adapted to enter the ground; connection means permanently connecting said upper end to said second end portion and constraining the two for rotation together about the axis of the screw whereby the member serves as a horizontal lever arm and the coupling means as an upright handle to afford a crank for turning the screw into the ground; and said connection means including a transverse horizontal pivot enabling swinging of the screw relative to the member to a folded position out of the ground and lying lengthwise along the member with its free end adjacent to the first end of the member.

3,197,929
PREFABRICATED WALL UNITS WITH EXPANSIBLE CONNECTING MEANS
Oddvar S. Halbostad, Skoyenasveien 21, Bryn, Norway
Filed Sept. 19, 1962, Ser. No. 224,659
1 Claim. (Cl. 52—241)



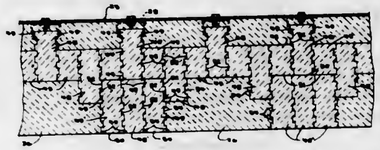
A lightweight unit wall of the non-supporting type comprising prefabricated panel-shaped units placed in a consecutive row in spaced relation to provide a space between opposite vertical side edges of adjacent units, an upper and a lower support for said row of units, clamping means at the upper edge of each unit engaging said upper support and securing the units in position between said upper and lower supports, expansive sealing means arranged within each of said spaces and extending in the whole height thereof, said expansive sealing means comprising a lath having a wedge-shaped cross-section at right angles to the wall, a bevelled surface on at least one of said opposing unit side edges co-operating with said lath, displacing means for displacing said lath relative to said bevelled surface in the direction at right angles to the wall so as to exert pressure against the opposite vertical side edges of said adjacent units, and covering laths closing the space at both sides of the wall, said displacing means including screws which pass freely through the covering lath adjacent the narrower edge of said wedge shaped lath and are screwed into said edge.

ERRATUM

For Class 52—298 see:
Patent No. 3,198,296

3,197,930
COMPOSITE REFRACTORY WALL
Kenneth T. Kinnalinger, Skokie, and Walker T. Meyer, Hazel Crest, Ill., assignors to M. H. Detrick Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 21, 1961, Ser. No. 132,760
4 Claims. (Cl. 52—378)

1. A composite wall having an inner heat exposed face and an outer face, comprising a rigid outer metallic wall, a core of prefired refractory members mounted in spaced relation to said metallic wall, the refractory members of said core being interlocked with each other against relative movement transversely of said core, a monolithic zone of cast-in-situ refractory material extending from said core to the inner heat exposed face of said wall and a zone of heat insulating material between said core and said metallic wall, said core having a main body portion and stepped tapering portions projecting laterally inwardly from said main body portion into said monolithic refractory zone and interlocked with the monolithic refractory material of said monolithic zone against relative movement transversely of said wall, said stepped tapering portions being spaced longitudinally of said core and comprising groups of interlocked prefired refractory members interlocked with adjacent refractory members of said core against relative movement transversely of said core, said groups including prefired refractory members extending to the heat exposed face of said wall and prefired refractory members terminating in spaced relation to said heat exposed face, said prefired refractory members that terminate in spaced relation to said heat exposed face being interlocked with the refractory members that extend to said heat exposed face against relative movement transversely of said wall, said core having portions projecting outwardly from said main body portion thereof toward said metallic wall, said projecting portions comprising prefired refractory members mounted in the main body portion of said core and interlocked with adjacent refractory members of said core against movement transversely of said core, and metallic bracket members secured to said core and engaging said prefired members of the outwardly projecting portions of said core to secure said core to said metallic wall.



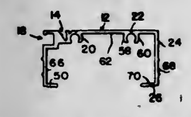
3,197,931
DECORATIVE SCREENS AND RAILS
Robert F. Seery, Louisville, Ky., assignor to Julius Blum & Co., Inc., a corporation of New York
Filed Mar. 27, 1962, Ser. No. 182,905
4 Claims. (Cl. 52—455)



1. A decorative structure comprising a pair of spaced parallel mullions each substantially rectangular in cross section and defining the vertical side edges of the structure, a plurality of parallel mullions each substantially rectangular in cross section extending transversely between said pair of vertical mullions in spaced relation, means releasably securing said transverse mullions at

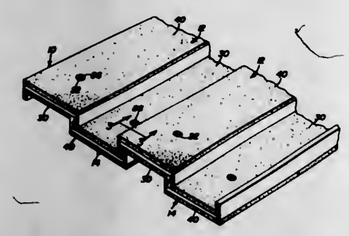
their extremities to the vertical mullions, each of said pair of mullions in its inner and outer faces and each of said plurality of transverse mullions in their top and bottom faces having a plurality of longitudinal grooves, each groove extending the length of the associated mullion and being approximately circular in cross section with its open side at the faces of the associated mullion being of reduced width relative to the diameter of the generally circular conformation, the longitudinal grooves in the confronting faces of the adjacent transverse mullions being staggered with respect to each other, a plurality of spacer elements each comprising a rectangular panel having a pair of end wings at right angles thereto, each of said end wings having an outstanding protuberance of size and shape complementary to the grooves in the mullions, the protuberances on the wings of each panel being spaced from the panel by a distance corresponding to the positions of the staggered grooves in the confronting faces of adjacent transverse mullions, where said panels may be mounted in place between adjacent pairs of transverse mullions with the protuberances of the panels slidably engaging the associated grooves in the transverse mullions.

3,197,932
BUILDING PARTITION STRUCTURE
Edmund A. Nida, Detroit, Mich., assignor to Advance-craft Aluminum Industries, Inc., a corporation of Michigan
Filed June 27, 1960, Ser. No. 39,085
14 Claims. (Cl. 52—474)



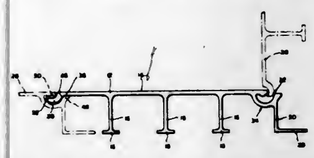
1. A structural member for framing building partitions comprising a hollow channel including a connecting wall between two walls extending perpendicular to said connecting wall, said connecting wall having a pair of longitudinally extending adjacent recesses therein forming a rib therebetween, and means within one of said recesses cooperable with said rib for securing the edge of a panel therein.

3,197,933
INTERLOCKING CONCRETE DECKING
John N. Burns, 10730 5th Ave. Gulf, and Jose M. Fernandez, P.O. Box 2614, both of Marathon Shores, Fla.
Filed Dec. 18, 1961, Ser. No. 160,092
5 Claims. (Cl. 52—538)



1. A concrete decking construction comprising a plurality of monolithic, precast and prestressed reinforced concrete channel members, each member including an elongated web with marginal side walls, said members being disposed in upper and lower sets of laterally spaced members, the members of the upper set staggered and inverted and in overlying relation to those of the lower set, the side walls of each upper set member embracingly engaging in side-by-side relation the adjacent side walls of a pair of adjacent lower set members thereby providing a continuous decking, the side walls of each upper set member having a base portion resting upon the elongated webs of two adjacent lower set members and the side walls of the lower set being of less height than those of the upper set whereby the entire weight of the upper set members will be directly carried by the webs of the lower set members, a layer of lightweight thermally insulating cement bonded to the face of each web between its side walls, said layer terminating in spaced relation to said side walls and providing spaces therebetween receiving the side walls of the associate channel members of the other set, said layer retaining said engaging side walls against lateral displacement.

3,197,934
JOINT FOR METAL FLOOR SECTIONS AND THE LIKE
Thoburn C. Brown, Lake Forest, Ill., assignor to Clark Equipment Company, a corporation of Michigan
Filed Apr. 10, 1962, Ser. No. 186,375
1 Claim. (Cl. 52—595)



For use in connecting first and second elongated members each having a horizontal portion of approximately uniform thickness with a flat upper surface and a plurality of longitudinally extending ribs projecting downwardly from the horizontal portion adapted to rest on a supporting surface, a joint comprising a continuously inwardly tapered, downwardly, inwardly and upwardly curved opening with its entrance along one edge of the horizontal portion of the first member and which opening in transverse profile extends from the said entrance downwardly and inwardly of the first member and has a re-entrant portion extending part way back up to the surface of the first member, the outer margin of the said entrance terminating below the surface of the first member an amount equal to the thickness of the horizontal portion of the first and second members, the inner portion of the said entrance comprising a horizontally extending lip with a downwardly extending part thereon, and a projection with upper and lower surfaces on one edge of the horizontal portion of the second member mating with the said opening so that a part of the horizontal portion of the second member overlies the said outer margin, the said projection having a similar curvature to said opening such that said upper surface of said projection when fully inserted into said opening contacts the surface of said opening along a longitudinally extending area on the said lip and the said lower surface can contact the surface of said opening only along a longitudinally extending area adjacent said outer margin.

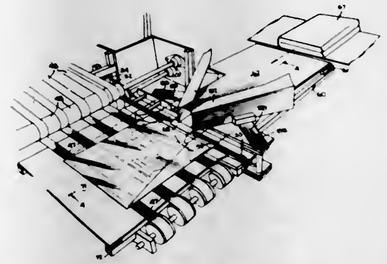
3,197,935
TRIM MOLDING FASTENER
Robert J. Clancy, Birmingham, and Royden E. Elliott, Royal Oak, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 5, 1961, Ser. No. 143,244
2 Claims. (Cl. 52—718)

1. In combination
a hollow trim molding strip of inverted substantially V-shaped contour,
a motor vehicle body having an outstanding pinch weld flange,
and a non-metallic fastener contained within and securing said trim molding strip to said pinch weld flange;
said fastener having a first pair of leg portions with an outer cross sectional contour resiliently conformed substantially complementarily to the inner cross sectional contour of said molding strip,
inturned flange means on said molding strip engaged with terminal end portions of said first pair of leg portions preventing withdrawal of said fastener from said molding strip,



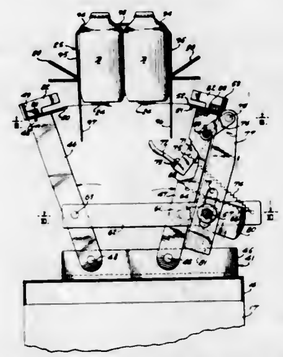
said fastener having a second pair of leg portions interposed between said first pair of leg portions with the major portion of each of said second pair of leg portions being spaced from the respective adjacent one of said first pair of leg portions for flexure independently thereof,
said second pair of leg portions resiliently straddling said pinch weld flange,
said pinch weld flange having an aperture therein and at least one of said second pair of leg portions having a part thereof projecting laterally through said aperture and interlocking said fastener to said flange thereby holding said molding strip on said body.

3,197,936
METHOD AND APPARATUS FOR CONDITIONING BAGS FOR LOADING
Edwin E. Messmer, 62 Arbor Lane, Roslyn Heights, N.Y.
Filed Oct. 6, 1961, Ser. No. 143,392
26 Claims. (Cl. 53—29)



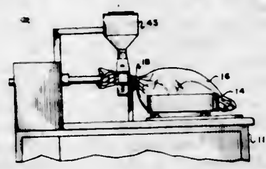
25. A method of conditioning plastic bags for loading, each bag having a mouth with a protruding lip, comprising: arranging the bags in a row with the bag bodies in a single horizontal plane and the protruding lips projecting in the same direction and having their inner faces upward, gripping said lips and advancing them in the direction of said row in order to present said bags successively to a loading station, and there maintaining said grip to hold the lip against movement and blowing air into the bag mouth to open it upwardly.

3,197,937
MANUALLY OPERATED PACKAGING MACHINE FOR USE WITH WRAP-AROUND TYPE BOTTLE CARRIERS
Robert H. Ganz, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 12, 1961, Ser. No. 158,695
21 Claims. (Cl. 53—48)



12. In a packaging machine for use with a wraparound type bottle carrier of the type including side walls and a pair of bottom flaps having overlapping portions with interlocking tabs and openings, bottom flap folding and locking means comprising a pair of swingable flap folding members disposed in opposed relation, actuating means for swinging said flap folding members in unison for folding carrier bottom flaps to positions underlying bottles within the carrier, tab interlocking members for pushing locking tabs of one bottom flap through associated openings in the other bottom flap to interlock the bottom flap to form a carrier bottom wall, and means connecting said tab interlocking members to said actuating means for movement thereby in timed sequence to the movement of said flap folding members, each of said flap folding members having a generally upstanding support having a point of pivotal mounting adjacent the lower end thereof, and said actuating means including an oscillatable shaft having a cam thereon, and cam followers connected to said supports and engaged with said cam for moving said supports towards one another, said shaft being disposed outwardly of said supports with one of said cam followers being directly mounted on the associated one of said supports and the other of said cam followers being carried by a link connected to the other of said supports and crossing said one support.

3,197,938
APPARATUS FOR FORMING CLOSURES ON PACKAGES
Jacob Lasoff, Lexington, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed Jan. 31, 1962, Ser. No. 170,076
4 Claims. (Cl. 53—135)



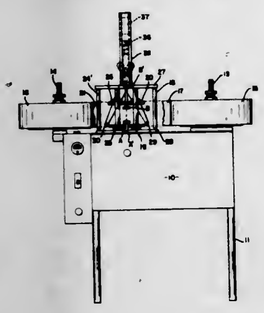
1. A machine of the class described adapted to form a plastic retainer about the neck of a package, having a die

comprising inner and outer arcuate elements, the inner element being fixed and normally presenting an open-faced die chamber with open side walls, the outer element forming the end and side walls of the chamber and being movable between positions in which the chamber is open and closed, power means to move the outer element into either of said positions, means to force a charge of molten plastic into the die chamber and means to cool the die.

3,197,939
MACHINE FOR ENVELOPING AND SEALING ARTICLES

Raymond J. Dwyer, 54 Poinsetta, Toledo, Ohio

Filed Jan. 21, 1963, Ser. No. 252,678
2 Claims. (Cl. 53—180)



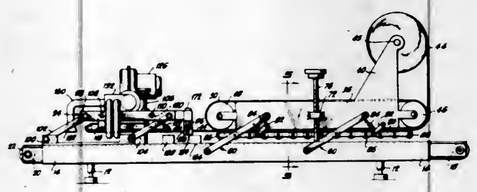
1. An article enveloping machine comprising two sets of relatively narrow driven rubber rimmed pull rolls, each set having a pair of pull rolls on a common axis and spaced from each other and the rolls of one set bearing respectivley against the rolls of the other set, a drive shaft common to each set of pull rolls, there being substantial space in a radial direction between the rolls of each set and said drive shaft to accommodate articles to be enveloped, and a coarsely knurled metal idler retainer roll for each set of pull rolls and pressing respectively thereagainst, said knurled rolls being of a length greater than the longitudinal distance between a set of pull rolls, whereby a pair of latex coated webs of sheet material may be fed between the retainer rolls and the sets of pull rolls respectively and then pass directly between the pull rolls so that an article fed to the bight of the pull rolls is wrapped by the cohesive engagement of the webs and afford transverse movement of the webs between the bight of the pull rolls to accommodate an article, the knurled retainer rolls holding the webs in flat condition at all times as they pass to the bight of the pull rolls despite such transverse movement thereof.

3,197,940
APPARATUS FOR APPLYING COVERS TO CONTAINERS

Sterling A. Spangler, York, Pa., assignor to Jedco Corporation, King of Prussia, Pa., a corporation of Pennsylvania

Filed Apr. 12, 1962, Ser. No. 186,977
3 Claims. (Cl. 53—329)

1. An apparatus for applying heat shrinkable film covers to peripheral flanges of containers comprising a conveyer frame, a moving conveyor on said frame for moving a container along a longitudinal path, a film feed mechanism mounted on said frame and being superimposed over said conveyor for feeding a strip of heat shrinkable film along a longitudinal path in spaced parallel relation to the peripheral flange of the moving container, adjustment means moving said feed mechanism relative to said moving conveyor to adjust a clearance between the strip and the peripheral flange, pressure means for forcing the strip into engagement with the peripheral flange of the moving container, cutting means for severing the strip engaging the peripheral flange into a single covering sheet, means disposed on opposite sides of said conveyor frame for transversely applying heat across the covering

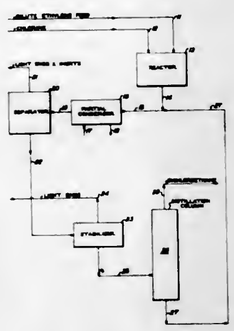


sheet whereby edge portions of the covering sheet are heat shrunk under the peripheral flange, means disposed above said conveyor frame for perpendicularly applying heat to the covering sheet whereby portions of the covering sheet intermediate its edge portions are heat shrunk into covering contact with the peripheral flange of the container.

3,197,941
CHEMICAL PROCESS FOR THE RECOVERY OF DICHLOROETHANE

John White Colton, Pelham Manor, and Martin Barry Sherwin, Brooklyn, N.Y., assignors to Halcon International, Inc., a corporation of Delaware

Filed June 27, 1960, Ser. No. 38,788
5 Claims. (Cl. 55—48)

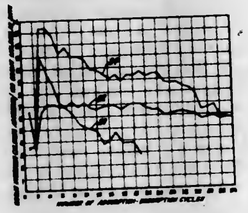


1. A process for recovering 1,2-dichloroethane from a dilute mixture of 1,2-dichloroethane, inert gas and higher boiling material, said dilute mixture being obtained by the chlorination of ethylene, which comprises: contacting said mixture with an additional higher boiling material selected from the group consisting of hydrocarbons and chlorohydrocarbons having a boiling point greater than 1,2-dichloroethane and being formed in said chlorination and cooling said mixture to a temperature between −29° to 15° C., said contacting and cooling steps serving to partially condense said dilute mixture; separating said condensate containing said higher boiling material and said 1,2-dichloroethane from the non-condensed material containing said inert gas; fractionating said condensate; recovering said 1,2-dichloroethane as a distillate and recycling the bottoms as the aforesaid higher boiling material to said contacting step.

3,197,942
METHOD FOR REMOVAL OF HYDROGEN HALIDE FROM A PROCESS STREAM

Robert W. Haisty, Richardson, Tex., and John W. Ross, Cumberland, R.I., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Continuation of application Ser. No. 831,966, Aug. 6, 1959. This application Apr. 7, 1964, Ser. No. 359,545
9 Claims. (Cl. 55—71)

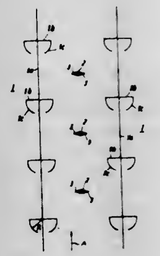


1. A method of efficiently removing hydrogen halide from a process stream consisting essentially of hydrogen halide and a substantially unadsorbable carrier gas, which comprises the steps of modifying a synthetic zeolite selected from the group consisting of Type 4A and Type 5A Molecular Sieves by ion exchange using calcium ions, and thereafter passing the process stream through the modified sieve at a temperature from about 30° C. to about 350° C.

3,197,943
PRECIPITATING ELECTRODES FOR ELECTRIC FILTERS

Dietrich Ertl, Konigstein, Taunus, and Walter Steuernagel, Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Filed Mar. 20, 1961, Ser. No. 96,905
Claims priority, application Germany, Apr. 20, 1960, M 45,048
2 Claims. (Cl. 55—154)



1. In an electrical precipitator having a horizontal gas flow therethrough:

(a) a plurality of spaced apart parallel rows of vertically extending uniform precipitating electrodes;

(b) each row of electrodes including a plurality of separate strip elements, each element having,

(1) a flat planar body portion parallel to the direction of gas flow, said body portion having a vertically extending upstream edge and a vertically extending downstream edge,

(2) a flange connected to and coextensive with each said edge with the flanges on opposite side edges extending in opposite directions from said body portion, each flange being about one half the width of the body portion and each of said flanges having an inner half portion extending outwardly from the body portion at a right angle thereto and an outer half portion extending in a curve directed toward and terminating short of the plane of the body portion and opposite to the direction of gas flow, whereby each flange forms with the body portion a dust collecting pocket open in the direction of gas flows;

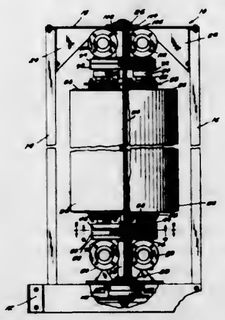
(c) all of the body portions of the elements in a single row lying in the same plane with the inner half portions of the flanges of adjacent elements in the same and adjacent rows lying in the same plane;

(d) the spacing between the rows of electrodes being to the width of the body portion of an element in the ratio of 4:3.

3,197,944
ROTARY ADSORBER HAVING INTERMITTENT MOVEMENT

Herbert W. Westeren, Barrington, and Carl G. Paulson, Providence, R.I., assignors to C. I. Hayes, Inc., Cranston, R.I., a corporation of Rhode Island

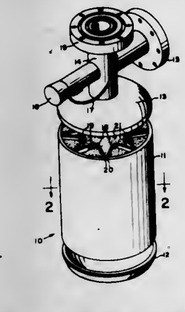
Filed Aug. 7, 1961, Ser. No. 129,705
1 Claim. (Cl. 55—162)



In adsorption apparatus for the production of nitrogen, a frame, a shaft mounted for rotation on said frame, a rotary manifold that includes at least three separate but similarly constructed adsorption chambers vertically mounted in said frame in adjacent relation and operatively connected to said shaft for rotation therewith about the axis thereof, each of said adsorption chambers having an adsorbent material contained therein, said rotary manifold further including sealing assemblies located above and below each of said chambers and fixed thereto, additional piping located above and below said chambers and fixed in said frame, said additional piping cooperating with said chambers and the sealing assemblies fixed thereto to define an operating station, a heating station and a cooling station, means for directing a combustible gas into the chamber located at said operating station for the separation of nitrogen from said gas, means for heating the interior of the chamber located at the heating station for regenerating the adsorption material contained therein, means for cooling the interior of the adsorption chamber located at the cooling station for completing the regeneration cycle thereof, means for rotating said shaft to produce a corresponding rotation of said chambers for moving said chambers to said stations in successive order, means for interrupting the rotation of said shaft at selected intervals for locating said

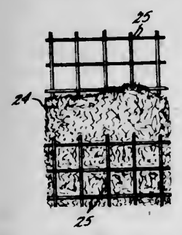
chambers at said stations for predetermined periods of time, said rotating means including an actuating device and an arresting device, and means for actuating said arresting device simultaneously with the operation of said actuating device for limiting the rotary movement of said shaft so that each of said chambers is advanced to the next station and retained thereat for the predetermined period of time.

3,197,945
SORPTION PUMP APPARATUS
Renn Zaphiropoulos, Los Altos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 27, 1961, Ser. No. 91,837
2 Claims. (Cl. 55—269)



1. A vacuum sorption pump apparatus comprising: a hollow pump casing made of heat conductive, impervious material and having a cylindrical side wall and top and bottom walls, said casing adapted to be refrigerated by a liquid coolant, said top wall having a gas inlet aperture, said casing being vacuum tight except for said gas inlet aperture; a plurality of elongated, heat conductive U-shaped fin members disposed in a radial array lengthwise within said casing, said fin members having valley and ridge portions, said ridge portions being permanently secured to said side wall in good thermal relationship, said fin members dividing said container into a plurality of gas sorbent material receiving compartments disposed on both sides of said fin members; and, gas sorbent material disposed within and substantially filling each of said compartments and contacting said fin members and casing.

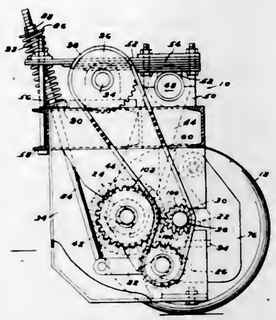
3,197,946
COALESCER FOR A MOISTURE SEPARATOR
Herbert E. Taylor, Longmeadow, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Nov. 25, 1960, Ser. No. 71,605
9 Claims. (Cl. 55—527)



1. A coalescer having a high permeable material formed from an array of long staple tetrafluoroethylene fibers horizontally arranged in sheet form, said fibers being substantially equal to 4 microns in diameter, and the density of said material being equal to .0045 pound per cubic inch.

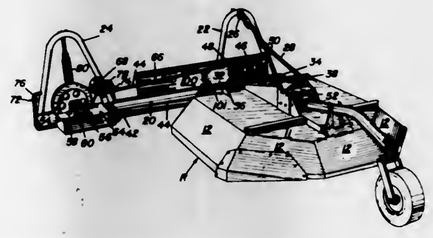
8. In combination, in an air and liquid separator, a duct, a water separator having an outer casing including an inlet opening receiving one end of said duct for receiving a moisture laden airstream, a coalescer having a hollow cylindrically shaped member located within the casing and disposed in the path of the airstream, said hollow cylindrical member having one end cut along a bias relative to the longitudinal axis thereof, said end defining an elongated planar surface, a sheet of porous material overlying said planar surface, said material formed by a matted array of tetrafluoroethylene fibers, a collector formed from an open wire mesh mounted in and arranged across the casing and located in juxtaposed relation to the coalescer, a conduit in said casing connected to said hollow cylindrical member, bypass valve means mounted on one end of said conduit, and openings in said hollow member interconnecting said duct and said bypass valve means for bypassing said porous material.

3,197,947
CROP CONDITIONER
Arthur Raymond Cunningham, Chicago, Ill.; Thomas Wayne Cunningham and The First National Bank of Leesburg, executors of said Arthur R. Cunningham, deceased
Filed Mar. 13, 1961, Ser. No. 95,303
9 Claims. (Cl. 56—1)



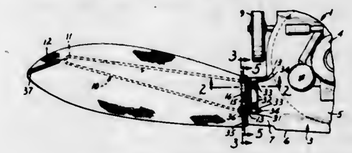
1. Crop treating apparatus comprising a supporting frame adapted for advance over a field on which previously harvested plant toppings form a layer supported on their own stubble, rolls carried by said frame on substantially parallel axes and each having circumferentially spaced flutes extending generally lengthwise thereof, the flutes of said rolls interdigitating with one another and defining a bite at one side of the point of flute interdigitation to receive toppings, power means for rotating said rolls in directions such that the interdigitating flutes move into said bits, yieldable means supporting corresponding ends of said rolls for rotation on portions of said frame which are relatively movable transversely of said roll axes to permit said corresponding roll ends to move away from each other far enough to withdraw the portions of the flutes at said corresponding roll ends from interdigitating relationship with each other and thereby facilitate the passage of large bunches of toppings between the said portions of said flutes, and means supporting the opposite ends of said rolls for rotation on relatively immovable portions of said frame to thereby preserve the established flute interdigitation at said opposite roll ends irrespective of the relative positions of said corresponding roll ends, said power means being directly connected to each of said rolls at said opposite ends thereof.

3,197,948
HITCH STRUCTURE FOR MOUNTING A ROTARY MOWER LATERALLY OFFSET TO ONE SIDE OF A TRACTOR
Tiras J. Danford, Rocky Mount, N.C., assignor to Harrington Manufacturing Company, Inc., Lewiston, N.C., a company of North Carolina
Filed Apr. 19, 1962, Ser. No. 188,670
9 Claims. (Cl. 56—25.4)



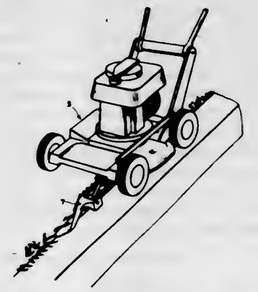
1. A cutting implement comprising in combination:
(a) a tractor,
(b) a rotary cutter,
(c) a tractor-cutter interconnecting means which operatively interconnects said tractor and rotary cutter,
(d) said tractor-cutter interconnecting means comprising:
(1) an elongated torsion member having an inboard end and an outboard end and being normally disposed approximately parallel to the ground, but capable of being inclined with respect to the ground,
(2) said inboard end being designed to be located directly behind the tractor,
(3) said outboard end being designed to be located in an offset position to the side and rear of the tractor,
(4) the inboard end of said torsion member having mounted thereon a mast-type hitch structure including an upstanding member extending vertically above said torsion member,
(5) said upstanding member being provided with a plurality of attachment means which are adapted to be operatively connected to the tractor so that the entire tractor-cutter attachment means can be raised and lowered with respect to the ground,
(6) the outboard end of said elongated torsion member being provided with a mast-type hitch structure including an upstanding member extending vertically above said torsion member, and with securing means for attachment to the rotary cutter in trailing relationship to the direction of travel,
(7) the inboard end of said elongated torsion member additionally having mounted thereon a first pulley which is adapted to be driven by a power take-off means on said tractor,
(8) a second pulley being disposed adjacent the outboard end of said elongated torsion member at a spaced distance from said first pulley,
(9) at least one endless belt operatively interconnecting said first and second pulleys,
(10) said second pulley also being operatively connected to the drive shaft of the rotary cutter.
(e) the elongated torsion member of said tractor-cutter interconnecting means being disposed in advance of said rotary cutter so as to function as a strong rigid bumper for initially contacting and bending over brush and foliage in the path of the rotary cutter, thus facilitating effective operation of the rotary cutter.

3,197,949
ADJUSTABLE GRASS CATCHING ATTACHMENT FOR ROTARY MOWERS
Norman A. Waag, Minneapolis, Minn., assignor to J. Gordon Campbell, Incorporated, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 16, 1963, Ser. No. 309,053
4 Claims. (Cl. 56—202)



1. A grass catching attachment for lawn mower housings of the type having a lateral discharge opening, said attachment comprising:
(a) an elongated supporting member having a bag-supporting outer end portion and an inner end portion adapted for securement to the top wall of the mower housing in closely spaced relation to said discharge opening,
(b) a generally rectangular frame rigidly secured to said supporting member and depending therefrom in outwardly spaced relation to the inner end portion of said supporting member, said frame comprising:
(1) a plurality of L-shaped frame sections which are slidably interconnected and extensible and retractable with respect to one another for increasing or decreasing the size of said rectangular frame in correspondence with various sizes of mower discharge openings, and
(2) means for releasably securing said frame sections to one another, and
(c) a clamping device for detachably securing the inner end portion of the supporting member to the top wall of the mower housing with said frame abutting and generally encompassing the discharge opening of said mower housing.

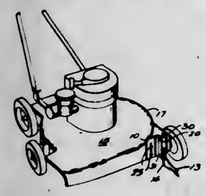
3,197,950
GRASS MOWER ATTACHMENT FOR EDGE-TRIMMING
Owen Samuel Griffith, 19 Norfolk St., Killara, New South Wales, Australia
Filed Sept. 25, 1963, Ser. No. 311,478
4 Claims. (Cl. 56—255)



1. A mower attachment comprising a pick-up member adapted to rest on the ground and to be moved along the ground during mowing operations, said pick-up member having a configuration which raises grass to be cut to a substantially upright position as said pick-up member is advanced along the ground, a backing-plate fixed to and extending rearwardly from said pick-up member and dur-

ing use of the attachment being situated in a substantially vertical plane for receiving the substantially upright grass from the pick-up member and maintaining the grass in a substantially upright position, said backing-plate having a rear end portion adapted to be situated, during use of the attachment, in the immediate vicinity of rotary cutting elements of the mower so that the substantially upright grass will be presented by said backing-plate to said cutting elements of the mower to be cut thereby, a bracket adapted to be attached to the housing of a mower at a front portion of the housing, and connecting means extending between and operatively connecting said pick-up member to said bracket for transmitting movement of said bracket with the mower housing to said pick-up member so as to displace the latter along the ground, said connecting means at the same time freeing said pick-up member for free movement relative to said bracket according to the configuration of the surface along which the pick-up member moves so that the pick-up member is free to adapt itself to the surface on which it rests while remaining connected to said bracket for movement with the latter, said backing-plate being formed with a notch for receiving a front peripheral portion of the housing of the mower, said rear portion of said backing-plate extending rearwardly of said notch and forming the only part of the attachment which is situated within the mower housing.

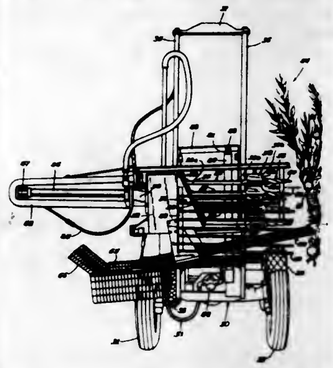
3,197,951
GRASS-ERECTING ATTACHMENT FOR A LAWN MOWER
Erwin W. Zick, Beaver Dam, Wis.
(918 E. Frances St., Appleton, Wis.)
Filed June 1, 1964, Ser. No. 371,249
4 Claims. (Cl. 56—255)



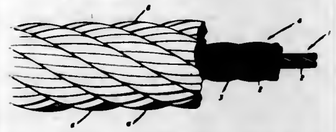
1. An attachment for a lawn mower comprising a twisted blade having a substantially flat vertical portion, a laterally and forwardly inclined portion, and a generally horizontal tip, a mounting bracket, guide means adapted to hold said blade in vertically reciprocable relation to said bracket, and a pivotal connection between said guide means and said mounting bracket, said pivotal connection being adapted to permit said blade to swing in an arc between a lower operative position and an upper inoperative position, said mounting bracket including a vertical flange and a mounting plate normal to said flange, said guide means comprising a tube, said blade having a shaft vertically reciprocable in said tube, said tube being provided with a vertical slot and said shaft being provided with a stop pin extending into said slot, and a spring within said tube and bearing on said shaft adapted to urge said shaft downwardly in said tube.

3,197,952
FRUIT HARVESTER
Fred D. Lasswell, Jr., 329 Bayshore Blvd., Tampa, Fla.
Original application June 15, 1960, Ser. No. 36,448, now Patent No. 3,129,551, dated Apr. 21, 1964. Divided and this application Sept. 18, 1963, Ser. No. 309,722
2 Claims. (Cl. 56—328)

1. A fruit tree harvester comprising a mobile supporting structure, a fruit picker support mounted on said mobile supporting structure, means vertically moving said fruit picking support, a panel mounted on said fruit picker support and arranged and constructed for horizontal movement thereon, said panel having tree penetrating rotating spindles thereon whereby the fruit tree harvester may have the tree penetrating rotating spindles maneuvered to any portion of the tree to be harvested.



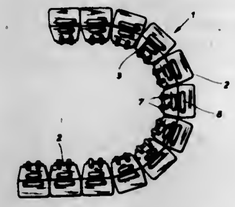
3,197,953
POLYPROPYLENE ROPE
Henry D. Dawbarn and Joseph W. Arnett, Waynesboro, Va., assignors to W. R. Grace & Co., a corporation of Connecticut
Filed June 3, 1963, Ser. No. 284,912
8 Claims. (Cl. 57—147)



1. A polypropylene rope stabilized against unwinding, untwisting and fraying when cut by heating the said rope to a temperature of from about 135° F. to about 300° F. but below the softening point of the said polypropylene and stretching from about 5 to about 50 percent while in the heated state; said rope containing: (A) a twisted central heart strand and (B), around the heart strand, at least one wrap having at least 3 strands in side by side relationship with the direction of any adjacent wraps being opposite to each other end with the twist in the strands of any wrap being opposite in direction to that of the wrap itself which contains the strands; each of said strands having a twist of from about 2 to about 30 turns/ft., a total denier from about 3,000 to about 250,000 and containing a plurality of continuous oriented polypropylene filaments having an individual denier of from about 3 to about 1,000.

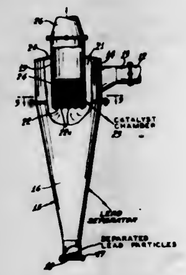
3,197,954
LINK CHAIN FOR GUIDING ELECTRIC CABLES AND THE LIKE
Herbert Merker, Siegen, Westphalia, and Kurt Loos, Dreis-Tiefenbach, Germany, assignors to Kabelschlepp G.m.b.H., Siegen, Westphalia, Germany
Filed Feb. 5, 1962, Ser. No. 171,013
Claims priority, application Germany, Feb. 8, 1961, K 42,845
3 Claims. (Cl. 59—78.1)

1. A link chain for guiding flexible elements such as electric cables, conduits and the like from a stationary connection to a movable consumer, which comprises: a plurality of chain links, each chain link having a lower member of U-shaped cross section with laterally spaced outwardly resilient legs and also having a substantially planar lid member extending between the ends of said legs and closing the open side of the respective chain link, latch means on the ends of the legs and on the side edges of said lid member in interfitting engagement interconnecting the lid member with the legs whereby the lid member is retained in engagement with said legs while simultaneously pulling said legs toward each other, said latch means being releasable upon movement of said legs toward each other to permit removal of said lid member from the chain link, elongated flexible means extending along the link chain and supportingly engaging said legs of each said chain link in a region thereof located



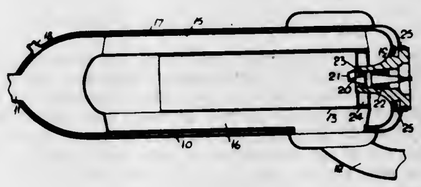
about midway between the said lid member and the closed side of the said lower member, the said legs of adjacent chain links abutting between said flexible means and said lid member while being inclined away from each other between said flexible means and the closed side of said lower member when the chain is straight whereby said link chain is self supporting against bending in one direction but is bendable a predetermined amount in the opposite direction, each link being adapted to receive a bundle of flexible elements such as cables or the like between the legs of the links when said lid member is removed from said lower member, said legs being adapted to grippingly engage said bundle of elements when said legs are pulled toward each other by said lid member.

3,197,955
PURIFICATION OF INTERNAL COMBUSTION ENGINE EXHAUST GAS
Johann G. E. Cohn and Anna P. Hanel, West Orange, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
Filed Nov. 1, 1962, Ser. No. 234,725
5 Claims. (Cl. 60—30)



1. In combination with an internal combustion engine operable on leaded fuel,
(a) an exhaust gas conduit for conducting engine exhaust gas containing particulate lead from the internal combustion engine to an inlet means of a cyclone separator hereafter specified;
(b) the cyclone separator, said separator including the exhaust gas inlet means for introducing exhaust gas tangentially into the separator in an upper portion thereof, and gas discharge conduit means for removal of exhaust gas of reduced particulate lead content from said separator, said discharge conduit means intersecting an upper end wall of the separator and extending axially linearly downwardly therewithin an appreciable distance to terminate in a gas discharge outlet therein at a level of the separator below that of the gas inlet means;
(c) solid particulate lead collector means communicating with a lower end portion of the cyclone separator for receiving by gravitational flow the solid lead particles separated from the exhaust gas in the separator;
(d) a gas-pervious mass of an oxidation catalyst susceptible to premature deactivation by particulate lead disposed within a lower end portion of the exhaust gas discharge conduit extending within and surrounded by said separator;
(e) means for retaining the catalyst gas-pervious mass within said gas discharge conduit end portion while permitting free flow of the gas of reduced lead content thereinto; and
(f) means for removing the collected solid particles from the collector means.

3,197,956
INTERNAL COMBUSTION ENGINE EXHAUST AFTERBURNER
John Stanley Clarke, Edgbaston, Birmingham, and John Peter Soltau, Dorridge, Solihull, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England
Filed June 6, 1963, Ser. No. 285,944
2 Claims. (Cl. 60—30)

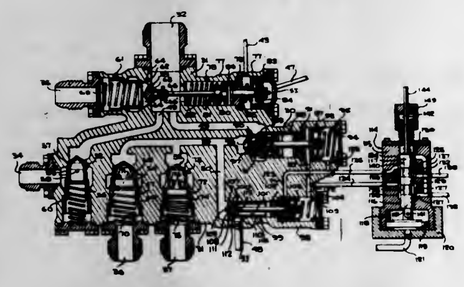


1. Combustion apparatus for treating exhaust gases comprising a casing having an upstream end, an exhaust gas inlet connected to said casing to introduce exhaust gases into said upstream end in a direction generally parallel to the length of said casing, an elongated combustion chamber closed at its end adjacent said exhaust gas inlet positioned generally axially of said casing, ignition means mounted in said casing coaxially of said combustion chamber at the downstream end of said casing remote from said exhaust gas inlet, means between said combustion chamber and said casing supporting said combustion chamber and providing alternate two sets of passages extending parallel to the axis of said casing, one set of passages conducting exhaust gases from said exhaust gas inlet to the end of said casing remote from said exhaust gas inlet and adjacent said ignition means, the other set of passages conducting gases from adjacent the closed end of said combustion chamber in a downstream direction, an outlet at the downstream end of said second set of passages, and a plurality of air supply passage means to supply air to said combustion chamber, said air supply passage means entering said casing adjacent said ignition means arranged to direct air toward said combustion chamber.

3,197,957
PROPELLANT COMPOSITION AND METHOD
Barnet R. Adelman, Los Angeles, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 8, 1958, Ser. No. 766,642
10 Claims. (Cl. 60—35.4)

6. A method of propelling a rocket, which method comprises passing to a rocket reaction chamber a liquid rocket propellant composition consisting essentially of ammonium ozonate and a liquid fuel selected from the group consisting of kerosene, ammonia, hydrazine and unsymmetrical dimethyl hydrazine, the ammonium ozonate constituting at least about 70% by weight of the composition, and igniting said rocket propellant in said chamber.

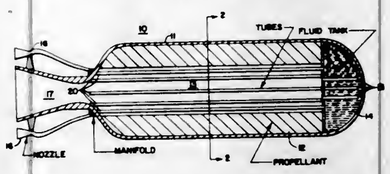
3,197,958
FUEL SELECTOR AND FLOW DIVIDER VALVE AND CONTROL MEANS FOR JET ENGINES
Robert H. Davies, Aurora, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 11, 1961, Ser. No. 144,330
17 Claims. (Cl. 60—35.6)



1. In a fuel system for supplying fuel to a jet engine afterburner manifold of the type divided into sections including at least one sector and one uniform, a first fuel supply means of the variable pressure type connected to the manifold for supplying fuel to the manifold during the operation of the afterburner, a second fuel supply means of a generally constant high pressure connected to the manifold uniform for filling the manifold uniform with fuel prior to the supplying of fuel to the manifold uniform from the first fuel supply means, and pressure responsive control means including a first valve means for controlling fluid flow from said first fuel supply means to said manifold uniform, and a second valve means for controlling fluid flow from said second fuel supply means to said manifold uniform, signal pressure means, said signal pressure means controlling said first and second valve means to open said second valve means and hold said first valve means closed, and said signal pressure means being selectively operable to hold said second valve means closed and simultaneously allow said first valve means to open.

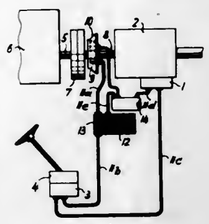
11. In a fuel system for supplying fuel to a jet engine afterburner manifold of the type divided into sections including at least one sector and one uniform, a first fuel supply means connected to the manifold for supplying fuel to the manifold during the operation of the afterburner, a second fuel supply means connected to the manifold uniforms for filling the manifold uniform with fuel prior to the supplying of fuel to the manifold uniform from the first fuel supply means, and control means connected to the second fuel supply means and to the manifold uniform for controlling the flow of fuel into the manifold uniform from the second fuel supply means in accordance with the condition of fuel fill in the manifold uniform, the second fuel supply including a squirt valve operable through a cycle in its delivery of fuel to the manifold uniform, and the control means including piston operated valve means and actuating pressure sources controlled thereby and effective to time the fuel delivery cycle of the squirt valve to prevent delivery when the manifold uniform is full and cause delivery only over a period necessary to bring the manifold uniform to a full condition, the piston of said piston operated valve means being operable in one direction by manifold uniform pressure and in an opposite direction by tail pipe pressure.

3,197,959
CONTROL APPARATUS
Walter F. Keller, Los Angeles, Calif., assignor to Honeywell Inc., a corporation of Delaware
Filed Aug. 22, 1960, Ser. No. 51,160
5 Claims. (Cl. 60—35.54)



1. In a reaction propelled missile of the type having a guidance system and pay load, said missile comprising an external cylindrical casing having therein a solid fuel propellant, a combustion chamber generating gases from the propellant and thereby supplying energy to a main reaction nozzle, a liquid storage chamber, for a non-combustible liquid, adjustable auxiliary nozzle means for providing a steering thrust lateral to the longitudinal axis of said casing; pressure transmitting conduits extending from said combustion chamber to said liquid storage chamber to apply pressure thereto; and further conduits extending from said liquid storage chamber through a portion of said combustion chamber, for vaporization of said non-combustible liquid by heat in the combustion chamber by the passage of heat through the walls of the conduit, to said auxiliary nozzle means whereby a jet of vapor may be emitted or exhausted therefrom.

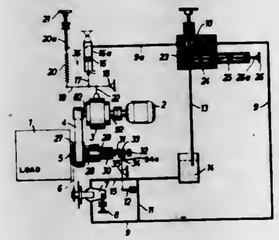
3,197,960
HYDRAULIC SYSTEM FOR POWER STEERING AND GEAR SHIFTING OF MOTOR VEHICLES
Hans-Joachim M. Förster, Stuttgart-Riedenberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 28, 1962, Ser. No. 248,153
Claims priority, application Germany, Jan. 3, 1962, D 37,835
6 Claims. (Cl. 60—52)



1. A hydraulic system for a motor vehicle having an engine, change-speed gear means, shifting means for said change-speed gear means, and power steering means, said motor vehicle being provided with means for controlling

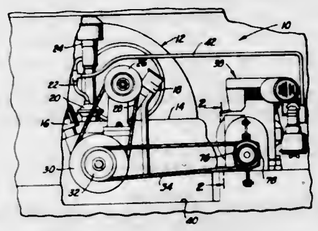
the travel of the vehicle including throttle control means for said power steering means and further throttle control means for operating said shifting means for said change-speed gear means, said system comprising fluid circuit means including a high-pressure pump and a fluid reservoir, said high pressure pump having a capacity less than the combined peak load requirements for operating said shifting means and for operating said power steering means, but greater than each of said peak load requirements taken singly, said first-named throttle control means and said further throttle control means being connected in series with said high-pressure pump, said further throttle control means being disposed downstream from said first-named throttle control means in said fluid circuit means, and means for limiting the delivery output of said high-pressure pump including by-pass means disposed in said fluid circuit means upstream from said first-named throttle control means between said first-named throttle control means and said high-pressure pump.

3,197,961
PUMP CONTROLLED DRIVE SYSTEM
August Wilhelm Quick, Aachen, and Hans Lindemann, Bielefeld, Germany, assignors to Th. Calow & Co., Bielefeld, Germany
Original application Mar. 7, 1957, Ser. No. 644,516, now Patent No. 3,009,323, dated Nov. 21, 1961. Divided and this application Nov. 1, 1961, Ser. No. 149,373
Claims priority, application Germany, Mar. 28, 1956, C 12,802; Dec. 7, 1956, C 14,090; Feb. 4, 1957, C 14,342
12 Claims. (Cl. 60—53)



1. A drive system comprising, in combination, drive means including rotary output means, and adjusting means for adjusting the output torque of said output means; a shaft driven by said output means and adapted to drive a machine subjected to a variable load; a pump driven from said shaft; conduit means connected to said pump so that a liquid is circulated therethrough; a pressure responsive control element connected to said adjusting means and communicating with said conduit means so that said adjusting means and thereby said output means are adjusted in accordance with the pressure in said conduit means produced by said pump; and control means in said conduit means for reducing or increasing the pressure in said conduit means beyond the pressure reduction or pressure increase produced by said pump pumping at a speed depending on speed variations of said shaft whereby the pressure acting on said pressure responsive control element is more rapidly increased, or decreased, respectively, than the pressure produced in said conduit means by said pump due to speed variations of said shaft; and a control device driven by said shaft independently of said pump and responsive to an angular deviation of said shaft from its angular position at a normal desired speed, said control device being operatively connected to said control means for actuating the same to further increase or decrease, respectively, the pressure in said conduit means when the speed of said shaft is higher or lower than the normal desired speed so that the output torque is rapidly increased, or decreased, by said adjusting means when the speed of said shaft varies due to load variations, whereby the output speed of said output means is maintained substantially constant.

3,197,962
AUXILIARY VEHICLE POWER SUPPLY
Omar W. Suttles, 11887 Douglas, Yucaipa, Calif.
Filed Jan. 10, 1963, Ser. No. 250,694
3 Claims. (Cl. 60—97)



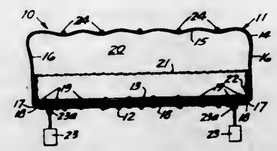
1. A motor vehicle power supply system which comprises:

a principal engine from which ordinary driving power for a vehicle is derived, said principal engine having a principal output shaft connected for driving the vehicle, said principal engine having an auxiliary output shaft separate from its principal output shaft externally of said principal engine and connected to said principal output shaft within said principal engine;

an auxiliary engine associated with said principal engine, means to couple said auxiliary engine to said auxiliary output shaft of said principal engine so that said auxiliary engine can transmit power into said auxiliary output shaft of said principal engine to augument the vehicle driving power of said principal output of said principal engine; and

means connected to said means to couple arranged to be controlled by the operator of the vehicle for actuating said auxiliary engine so that said auxiliary engine transmits power to said auxiliary output of said principal engine.

3,197,963
WAVE ATTENUATOR
Harald D. Frederiksen, Sacramento, Calif., assignor to The Regents of The University of Minnesota, Minneapolis, Minn., a corporation of Minnesota
Filed July 19, 1960, Ser. No. 43,919
12 Claims. (Cl. 61—5)



1. A wave arrestor for use in a body of water comprising an elongate and closed hollow body to be oriented in a horizontal position and having an interior chamber with opposite ends in fluid communicating relation with each other; said hollow body having a rigid bottom and having a flexible membrane defining the top and side walls of said chamber at the opposite ends of said chamber to permit simultaneous expansion and collapsing of the chamber at the opposite ends thereof, a quantity of

gaseous fluid in said chamber and maintaining the chamber in partially expanded condition at the submerged location to permit differential expansion and collapsing of the opposite ends of said chamber, said rigid bottom including substantially rigid fluid-carrying conduit means extending longitudinally of the body the full length thereof, said conduit means being spaced beneath said membrane top wall and being perforated at a multiplicity of positions along the length thereof for receiving and discharging fluid and thereby preventing the membrane walls from seating against the bottom and thereby restricting longitudinal flow of fluid in the chamber and between the ends thereof, restraining means surrounding the upper portion of the chamber to limit expansion, bottom anchoring means for holding said body in a submerged location and in a horizontal position and extending in the direction of wave travel, whereby the height of traveling waves is attenuated as the waves travel over the wave arrestor.

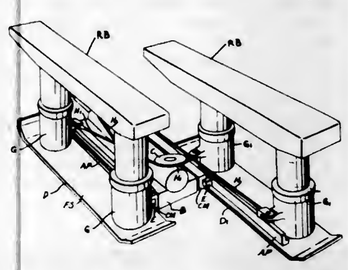
3,197,964
METHOD FOR MAKING A REINFORCED CONCRETE STRUCTURE
Hans Beat Fehlmann, Klausstrasse 43, Zurich 34, Switzerland, and Max R. Schaub, Bern, Switzerland; said Schaub assignor to said Fehlmann
Filed Dec. 21, 1960, Ser. No. 77,405
Claims priority, application Switzerland, Dec. 24, 1959, 82,295
4 Claims. (Cl. 61—35)



1. A method for making a reinforced concrete structure of column-shaped parts engaging each other across substantially vertical joints, forming a longitudinally extending trench-like excavation, inserting at least two first reinforcing means in said excavation at a distance from each other, inserting at least two sheathing means in said excavation, each of said sheathing means to extend approximately coaxially with one of said first reinforcing means and to define a column-shaped space, each of said sheathing means having a longitudinal extension smaller than that of the respective first reinforcing means, having each of said first reinforcing means extend longitudinally at both ends beyond the respective sheathing means, filling each of said sheathing means with concrete for forming at least two spaced column-shaped concrete parts, inserting second reinforcing means into the space in said excavation between said column-shaped concrete parts in an overlapping relationship with said first reinforcing means, and filling said space between said concrete parts with concrete to form a further concrete part.

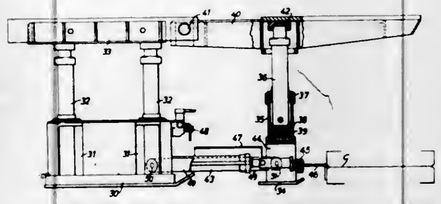
3,197,965
SELF-ADVANCING MINE ROOF SUPPORTS
Roger Dennant Lee and Robert Edwin Harold, Great Sankey, Warrington, England, assignors to Electro-Hydraulics Limited, Warrington, England, a corporation of the United Kingdom
Filed Jan. 10, 1961, Ser. No. 81,835
11 Claims. (Cl. 61—45)

1. A mine roof support for use in a mine having an anchorage therein, said support comprising two alternately advanceable frames, each said frame including a floor skid, a roof bar, and means for causing movement of said floor skid and said roof bar towards and away from one another so as respectively to release and to secure said frames from or in an operative position between the floor and roof of the mine in which operative position said frame is held stationary by engagement of its floor skid and roof bar respectively with the floor and roof of the mine; a double acting hydraulic ram having a cylinder element and a piston rod element; means mounting said frames to slide relatively to one another in spaced parallel relationship toward and from said anchorage and connecting said frames to one of said elements for movements relative thereto; means for operatively connecting the other of said elements to said anchorage; and motion



transmitting and amplifying means positioned between said frames and being connected to said one of said elements and to both of said frames and being operable, when one of said frames is held stationary in its operative position, the other of said frames is in released position and said one of said elements is operated relatively to said other of said elements for moving said other of said frames an amount greater than the operating movement of said one of said elements.

3,197,966
ROOF SUPPORTING MEANS FOR MINES
Leslie John Arnott, Chasetown, near Walsall, England, assignor to Gullick Limited, Wigan, England, a British company
Filed Feb. 14, 1961, Ser. No. 89,159
Claims priority, application Great Britain, Feb. 18, 1960, 5,708/60
4 Claims. (Cl. 61—45)

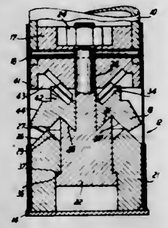


1. A self-advancing mine roof support comprising a pair of roof support units each having a base and disposed one behind the other for location adjacent a conveyor, a fluid pressure advancing ram operatively connected to the base of one of said units and adapted to be connected to said conveyor to independently advance the conveyor and the units as a pair, and rigid link means of constant length hingedly connecting the base of the rear unit to the base of the forward unit so as to permit step-like elevation of one base with respect to the other and to transmit a forward thrust exercised by said advancing ram from said one base to which it is connected to the other base to advance both units together.

ERRATUM

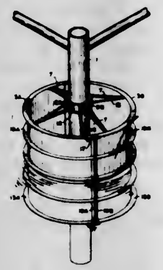
For Class 61—49 see:
Patent No. 3,198,614

3,197,967
PILE DRIVING APPARATUS
Joseph W. Corfield, Long Beach, Calif., assignor of one-half to Guy F. Atkinson Company, South San Francisco, Calif., a corporation of Nevada
Filed Aug. 27, 1962, Ser. No. 219,690
5 Claims. (Cl. 61—53.68)



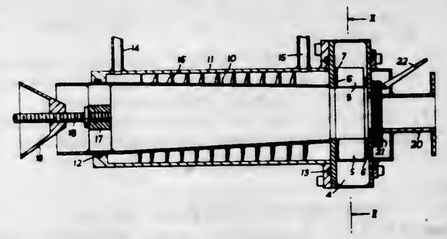
1. In apparatus for driving a pile shell into a ground formation, wherein the shell is tubular and has a driving tip at its lower end, a driving unit adapted to be positioned within the shell at its lower end and adapted to receive driving impacts, said unit including a plurality of segmental and radially movable driving dogs disposed about the unit, said dogs having downwardly facing driving faces, and means for radially expanding and retracting the driving dogs, the dogs when expanded serving to swage the shell outwardly to form a driving shoulder engaging said faces to transmit downward driving impacts from the unit to the shell, said driving faces being disposed at an acute angle to a plane normal to the vertical axis of the unit.

3,197,968
MARINE STRUCTURE REPAIR CAISSON
Leo J. Castellanos, Annapolis, Md., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Feb. 16, 1962, Ser. No. 173,699
5 Claims. (Cl. 61—63)



1. Apparatus for repairing the support members of marine structures, comprising:
matching, semicylindrical outer wall members;
latching means for holding together said wall members to form a cylindrical seal;
a downwardly coning, split floor member having matching sections attached to said wall members, and having an opening therein for accommodating a marine structure support member;
a compressible gasket between said wall members and the sections of said floor member at their line of juncture and extending to said opening;
an annular split gasket housing affixed at the lower end thereof to said floor member around said opening, extending into the space defined by said floor member and wall members, and having a plurality of longitudinal slots extending from the upper end thereof along a portion of the length thereof;
an annular compressible resilient gasket within said gasket housing to conform to the marine structure support member, said resilient gasket defining a passageway coaxial with said floor opening and having a diameter smaller than the opening in said floor; and
an annular gasket housing compressing means extensible around said gasket housing for exerting compressional force on said gasket housing and annular gasket.

3,197,969
HEATING AND COOLING OF AIR FOR VENTILATING, WARMING AND REFRIGERATING PURPOSES
Charles Edward Over, Betchworth, England, assignor to Kinematics Limited, London, England, a British company
Filed Feb. 24, 1964, Ser. No. 346,722
13 Claims. (Cl. 62—5)

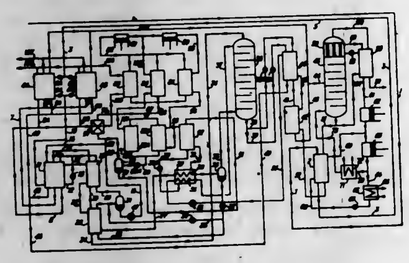


1. Air-heating and cooling apparatus, comprising:
a volute chamber
having an inlet which opens tangentially into a circumferential region thereof,
a warm air outlet in one end wall thereof and
a cold air outlet in its other end wall of substantially smaller flow area than the warm air outlet,
both of said outlets being in communication with a central region of said volute chamber;
means for supplying compressed air to the circumferential region of the volute chamber through the inlet thereof; and
a ring of guide vanes arranged within the volute chamber in an annular zone between the circumferential and central regions thereof,
the individual guide vanes of said guide vane ring being inclined so as to reflect air from the circumferential region into the central zone.

3,197,970
METHOD FOR THE PURIFICATION OF HYDROGEN
Warren Leonard Nelson, Montreal, Quebec, and Claude Salama, Mount Royal, Quebec, Canada, assignors to L'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude
Filed Apr. 16, 1963, Ser. No. 273,444
Claims priority, application France, Apr. 19, 1962, 895,069, Patent 1,329,645
3 Claims. (Cl. 62—17)

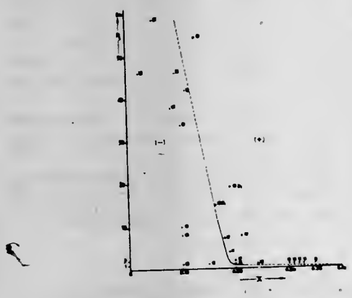
1. A method for the elimination of normally gaseous impurities from impure hydrogen, comprising:
(a) washing impure hydrogen in a wash zone at a low temperature with a liquid hydrocarbon less volatile than methane, thereby to produce relatively pure hydrogen and impurity-laden liquid hydrocarbon at a first pressure,

(b) rectifying said impurity-laden liquid hydrocarbon in a rectifying zone at a second pressure lower than said first pressure, thereby producing impurity-rich vapors and regenerated liquid hydrocarbon,
(c) expanding a portion of regenerated liquid hydrocarbon to a third pressure lower than said second pressure,



(d) subcooling a further portion of regenerated liquid hydrocarbon by heat exchange with said expanded liquid hydrocarbon thereby vaporizing expanded liquid hydrocarbon,
(e) compressing said vaporized expanded hydrocarbon to said second pressure and introducing it into a lower portion of said rectifying zone, and
(f) introducing said subcooled regenerated liquid hydrocarbon into said wash zone as wash liquid.

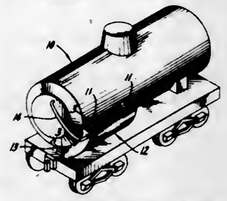
3,197,971
PROCESS FOR STORING OZONE
Francis Mahieux, Gennevilliers, France, assignor to L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude
Filed Sept. 25, 1963, Ser. No. 311,352
Claims priority, application France, Oct. 10, 1960, 840,697, Patent 1,246,273
1 Claim. (Cl. 62—48)



A process for storing ozone under safe conditions at ambient temperature, by separating ozone from an ozone-containing gas mixture by dissolving it in a liquid halogenated fluorine-containing methane at a temperature so low that the partial pressure of ozone is below its explosion limit, introducing at about said low temperature the ozone solution into a pressure-resistant vessel, closing said vessel and allowing the temperature of the solution to rise to ambient temperature, wherein there is dissolved in the liquid halogenated fluorine-containing methane such an amount of ozone that the ozone content of the gas phase after warming up to ambient temperature, expressed as a molar fraction, versus the total pressure inside the storage vessel, expressed in bars, is lower than about the limit corresponding to the following table:

Ozone content:	Total pressure
0.10	62
0.12	53
0.14	35
0.15	24
0.16	16
0.17	10
0.18	4.5
0.19	1.5
0.20	1.0
0.25	0.75
0.30	0.50

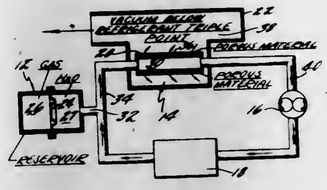
3,197,972
LIQUIFIED GAS TRANSFERRING SYSTEM
Robert Q. King, Escondido, Calif., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Nov. 27, 1961, Ser. No. 155,061
3 Claims. (Cl. 62—55)



1. In combination, a container for storing a liquified gas and a system for pumping said liquified gas from said container with energy derived solely from the natural environment of the system, said container comprising a horizontally disposed, generally cylindrical tank, said pumping system comprising fluid conduit means with heat transfer characteristics having inlet means at one end and outlet means at the opposite end, means for introducing liquified gas from said container into said inlet means of said conduit means for travel therethrough, a housing defining an elongated air passage enclosing said conduit means along its length and being open to the atmosphere at an inlet end and an outlet end, said housing being contoured to fit snugly against the side of said tank with said outlet end of said passage disposed adjacent the bottom of the tank and said inlet end disposed upwardly along the side of the tank, said air passage having a relatively small cross-sectional area, the length and cross-sectional dimensions of said passage being so related that the introduction of said liquified gas into said conduit means from said inlet means induces substantial convectional flow of atmospheric air through said passage from said inlet end to said outlet end, sufficient atmospheric air being induced to flow through said passage in heat transfer contact with said conduit means so that sufficient liquified gas is vaporized in said conduit means to produce gas under substantial pressure, said outlet means of said conduit means being connected to said container whereby gas under pressure is introduced to said container to force liquified gas out of said container.

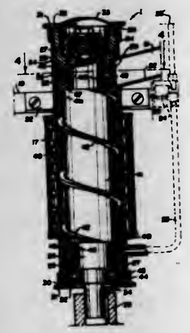
3,197,973
REFRIGERATION SYSTEM WITH SUBLIMATOR
George C. Rannenberg, East Granby, and Rafael R. Bawabe, Manchester, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 14, 1964, Ser. No. 403,825
6 Claims. (Cl. 62—268)

1. In combination, a refrigeration system including a sublimator having a porous plate having a surface subjected to refrigerant and an opposing surface subjected to a pressure below the triple point of the refrigerant, said porous plate having a pore size whose magnitude is relatively impervious to the flow of liquid under normal operating pressures but allows the refrigerant to migrate by capillary action to the outer surface so as to freeze



upon contact with said pressure below the triple point thereof, passage means interconnecting the sublimator and the environment intended to be cooled for defining a closed-loop circuit and pump means in said passage means for forcing refrigerant through said sublimator and said environment intended to be cooled.

3,197,974
AUGER TYPE ICE CHIP MAKING MACHINE
Dave C. Smith, Denver, Lyle L. Smith, Littleton, and Joe E. Wadsack, Denver, Colo., assignors to Ice-O-Matic, Inc., Denver, Colo., a corporation of Colorado
Filed June 24, 1963, Ser. No. 289,810
6 Claims. (Cl. 62—320)



1. In an ice chip producing machine of the type which comprises:
(a) an end-closed cylindrical shell arranged in a substantially upright manner with the lower portion thereof constituting a freezing section and the upper portion thereof constituting a chip-producing section,
(b) a freezing means embracing the freezing section of the shell,
(c) a water supply means adapted to maintain water within the shell at a level near the top of the freezing section,
(d) a rotatable shaft means axially centered in the shell and thereby forming an annular chamber between the shaft means and the shell wall,
(e) a spiral wiping blade on the shaft means at the freezing section and at the lower portion of the chip-producing section, with rotation of the shaft and spiralled blade thereon being adapted to scrape off ice flakes formed on the wall of the shell at the freezing section and to lift accumulated ice flakes as a cylindrical mass of slush ice upwardly and into the upper portion of the chip-producing section and to rotate this mass as it is being lifted; and,
(f) a side outlet at the upper portion of the chip-producing section;

The improvement which consists of:
(a) an annular ceiling at the top of the chip-producing section adapted to suppress upward movement of said cylindrical mass of slush ice, but to permit said mass to continue to rotate with the rotation of the said blade and to become thereby compressed and solidified by upward thrust action of the spiralled blade; and,
(b) an obstruction on the wall of the cylindrical shell protruding part way across the chip-producing section thereof radially offset with respect to said side outlet, but below the ceiling and above said spiral, which partially blocks the passageway of the shell wall and thereby permits the soft slush ice cylinder to flow therepast as it rotates with rotation of the blade but stops said rotative movement of the ice mass as it commences to solidify and becomes partially hardened, whereby to permit continued rotation of the blade to break down the cylinder of the partially hardened ice and eject it from the side outlet.

3,197,975
REFRIGERATION SYSTEM AND HEAT EXCHANGERS
Cecil Boling, Litchfield, Conn., assignor to Dunham-Bush, Inc., West Hartford, Conn., a corporation of Connecticut
Continuation of abandoned application Ser. No. 7,223, Feb. 8, 1960. This application Aug. 24, 1962, Ser. No. 221,398
1 Claim. (Cl. 62—498)



A refrigeration system including two heat interchange units respectively forming a condenser and an evaporator connected in a refrigerant circuit and means for withdrawing refrigerant vapor from the evaporator at a low pressure and temperature and delivering refrigeration vapor to the condenser at a high pressure and temperature, one of said heat interchange units comprising a plurality of substantially horizontal tube assemblies each being formed by a pair of concentrically positioned tubes defining a substantially annular chamber therebetween which is substantially horizontal and is connected at its opposite ends in the refrigerant circuit for the flow of refrigerant therethrough, and an internal metallic fin assembly within said chamber comprising a strip of corrugated sheet metal extending spirally within said annular chamber with each of the corrugations being substantially straight and non-distortable and extending longitudinally of said chamber and bridging the space between said tubes thereby to divide said annular chamber into a plurality of substantially parallel longitudinal passageways each extending between the side edges of said strip of corrugated sheet metal, the adjacent turns of the spirally formed strip of corrugated sheet metal being spaced from each other to provide a spiral passageway between the side edges of the adjacent turns thereby to reduce the effective length of each

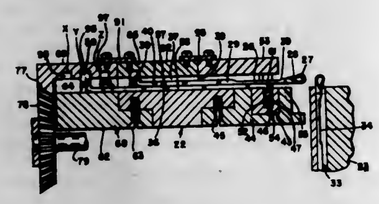
of said longitudinal passageways to that of a single corrugation of the strip and to permit arcuate fluid flow of the refrigerant between the serially-related longitudinal passageways along said annular chamber, and the distance between said tubes being such that the inner and outer peripheries of said fin assembly have radial compression forces exerted upon them whereby the corrugations are placed under radial compression and are subjected to sufficient force to insure a good heat transfer relationship between each of said tubes and said internal fin assembly.

3,197,976

NEEDLE RACKING APPARATUS

John C. Rice, 74 Mayflower Drive, Manchester, N.H.

Filed Jan. 17, 1964, Ser. No. 339,844
6 Claims. (Cl. 66—26)



5. Individual needle racking mechanism for use on the dial needles of circular knitting machines said mechanism comprising:

a plurality of identical, individual, inner, needle-deflector means spaced around the inner face of the dial of said machine, each said means including a yoked follower embracing the shank of one of said dial needles and mounted to slide freely in said dial in a horizontal plane in a path obliqued to the radial path of said needle;

and racking means including a plurality of elongated members slidable radially in said dial, each said member having a butt at the outer end thereof and having its inner end pivotally connected to the centre of one of said yoked followers;

whereby each inner end of each conventional dial needle of said machine may be deflected, or shifted, laterally in either direction by radial inward or outward movement of the butt of the elongated member associated with said dial needle.

3,197,977

YARN CLAMPING AND SEVERING MECHANISM FOR MULTI-FEED CIRCULAR KNITTING MACHINES

Vernon T. Stack, Winston-Salem, N.C., assignor, by mesne assignments, to The Gordon Company, Winston-Salem, N.C., a partnership

Filed Feb. 5, 1960, Ser. No. 7,035
1 Claim. (Cl. 66—140)

In a circular knitting machine having a plurality of independent needles arranged in a circle, a transfer dial cap disposed within the needle circle and at least two yarn feeding stations, yarn trimming means comprising:

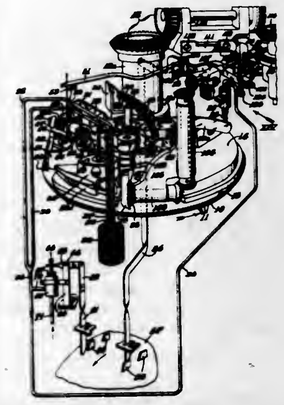
(a) a retractable yarn severing element mounted on the dial cap proximate the needle circle,

(b) means for moving said retractable severing element into yarn shearing relation with a cooperating yarn severing element.

(c) a fixed yarn severing element mounted on the dial cap proximate the needle circle and angularly spaced from said retractable yarn severing element,

(d) a rotatable horizontal axis, toothed wheel disposed in yarn shearing relation with the fixed yarn severing element,

(e) said wheel being positioned on the dial cap to intercept in its toothed periphery, during a yarn



change, the trailing portion of a newly inserted yarn and also a withdrawn yarn,

(f) means for periodically rotating the wheel to deliver the intercepted yarns to the fixed severing element and

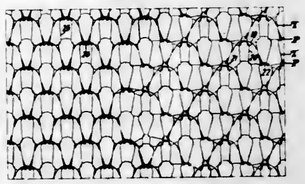
(g) control means for periodically and simultaneously moving the retractable yarn element and rotating the rotatable toothed wheel to sever yarn.

3,197,978

RUN-RESISTANT HOSIERY AND METHOD OF MAKING THE SAME

William E. Sheeler, Sinking Spring, Pa., assignor to Berkshire International Corporation, Wyomissing, Pa., a corporation of Pennsylvania

Filed July 9, 1962, Ser. No. 208,312
4 Claims. (Cl. 66—169)



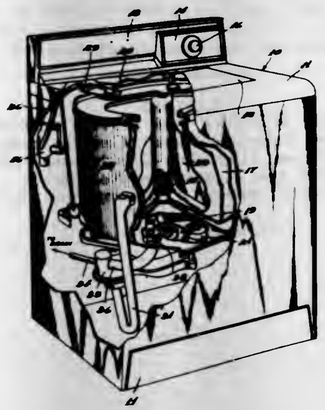
1. A run-resistant stocking fabric comprising circularly knit instep and sole portions and a reciprocatorily knit heel pocket, said heel pocket being of plain knit construction, said instep portion being formed of knitted loops of yarn with every third loop in alternate courses comprising a held loop, said sole portion being formed of knitted loops of yarn with every other loop in alternate courses comprising a held loop, and both said portions having the loops of intermediate courses in the wales of the held loops tucked with said held loops, and having the loops between said held loops of said alternate courses constituting relatively tightly drawn loops.

3,197,979

AUTOMATIC LAUNDRY APPARATUS HAVING SUPER WASH MEANS

Guy Dean Phillips and James A. Tichenor, St. Joseph, Mich., assignors to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware

Filed Aug. 8, 1963, Ser. No. 300,880
3 Claims. (Cl. 68—12)





1. Apparatus for automatically laundering a batch of materials through a programmed sequence comprising,

a liquid-receiving container having agitating and centrifuging means disposed on a vertical axis for containing washing and rinsing liquid and materials to be laundered,

a presettable sequential controller,

wash liquid injecting means regulated by said controller for charging said container with liquid to a first normal level,

detergent adding means regulated by said controller for adding a sufficient quantity of detergent to the normal level of washing liquid to produce a first wash solution of high detergent concentration equal to 0.40 to 0.50 percent detergent by weight,

agitating means regulated by said controller to agitate the materials in said first wash solution,

said controller having means stopping the machine and effecting a pause while dirt settles out in said first wash solution, and

drain means,

said controller having means actuating said drain means for draining a quantity of said first washing solution from the bottom of said container to remove the settled out dirt particles,

said controller having means for actuating said wash liquid injecting means to add fresh washing liquid to said container for restoring it to said initial liquid quantity to thereby produce a second wash solution having a detergent concentration equal to 0.20 to 0.25 percent detergent by weight,

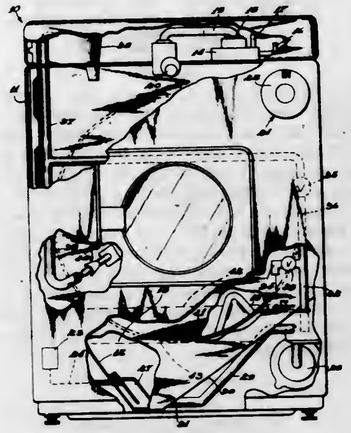
said controller having means to complete a normal programmed sequence in a laundering cycle.

3,197,980

AUTOMATIC LAUNDRY APPARATUS HAVING A SUPER WASH CYCLE

Walter L. Marple, St. Joseph, Mich., assignor to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware

Filed Sept. 6, 1963, Ser. No. 307,251
5 Claims. (Cl. 68—12)



1. Apparatus for automatically laundering a batch of materials through a programmed sequence including finite washing and rinsing periods comprising:

means forming a confined treatment zone,

means including liquid level control means for charging said treatment zone with a normal quantity of liquid in which to launder a batch of materials,

agitating control means for agitating the materials and the liquid in the zone,

motor-operated drain control means for removing liquid from said zone,

detergent control means for adding detergent to the treatment zone,

and a presettable sequential controller having means regulating said liquid level control means to charge said treatment zone with water to a normal level,

to actuate said agitator control means for a discrete period to wet the materials and loosen surface soil thereon,

to actuate said drain control means to remove a quantity of the liquid confined in the zone,

to actuate said detergent control means to add a supply of detergent to the reduced quantity of liquid in the zone to form a first relatively high concentrated detergent laundary solution equal to 0.40 to 0.50 percent of detergent by weight,

to actuate said agitator control means to agitate the materials in said first concentrated laundry solution for a discrete period,

to actuate said liquid level control means to add fresh liquid to said first concentrated laundry solution to establish a second laundry solution of a normally recommended detergent concentration equal to 0.20 to 0.25 percent of detergent by weight,

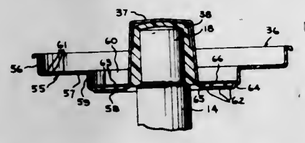
and to thereafter operate said apparatus to complete a normal laundry sequence,

thereby minimizing redeposition of soil particles on the materials.

3,197,981
FILTER PAN PARTICULARLY SUITED FOR USE IN CLOTHES WASHERS AND THE LIKE

Everett D. Morey and John Bochan, Louisville, Ky., assignors to General Electric Company, a corporation of New York

Filed Aug. 28, 1963, Ser. No. 305,121
8 Claims. (Cl. 68—18)

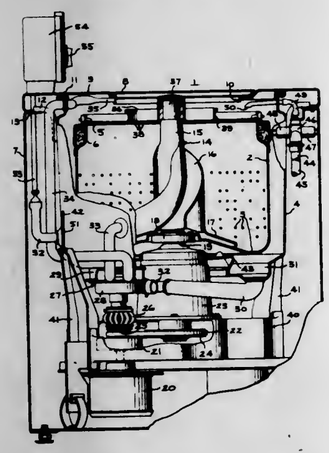


1. A filter pan adapted to filter lint and fine particulate matter out of a stream of liquid delivered into said pan from above, said pan being formed with a bottom wall and an imperforate peripheral upwardly extending side wall, said bottom wall having an annular portion thereof formed with a substantial number of openings extending therethrough to filter lint from said stream, said bottom wall having a second portion thereof formed with a substantial number of openings therethrough and formed to receive and retain a sheet of filter material in a surface which is discontinuous relative to said first mentioned portion whereby each of said portions provides a path for part of the liquid.

3,197,982
WASHING MACHINE

Joseph C. Worst, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Mar. 16, 1964, Ser. No. 352,093
4 Claims. (Cl. 68—23)

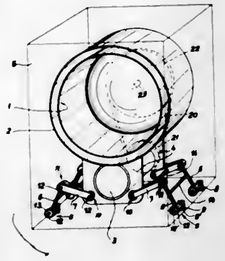


1. A clothes washing machine comprising:
(a) a basket for receiving clothes and a substantial quantity of liquid;
(b) an imperforate tub positioned about said basket so as to receive the liquid therefrom;
(c) a drain pump communicating with the bottom of said tub;
(d) transmission means for rotating said basket at centrifuging speed so as to discharge liquid into said tub;
(e) a drive motor having an output member connected in direct driving relation to said pump;
(f) a connecting member rotatably mounted on said output member and frictionally driven thereby;
(g) and centrifugally responsive means on said connecting member effective to couple said output member to said transmission means at a predetermined speed of rotation of said connecting member;
(h) said connecting member having a frictional relationship to said output member such that said predetermined speed of rotation is attained after a period of time sufficient for said pump to remove the major portion of the liquid initially in said tub.

3,197,983
RESILIENT SUPPORT FOR ROTOR ASSEMBLY

Erwin Ilmer, Hohr-Grenzhausen, Germany, assignor to Clemens August Voigt, Hohr-Grenzhausen, Germany

Filed Aug. 22, 1962, Ser. No. 218,740
Claims priority, application Germany, Aug. 23, 1961, V 21,213/61
6 Claims. (Cl. 68—24)



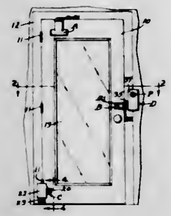
1. A rotor assembly comprising
(a) first stationary support means for directly supporting the rotor of said rotor assembly,
(b) second stationary support means, and
(c) resilient suspension means interposed between said first and second support means, and being constituted by two groups of rigid members and joints, each of said groups including
(1) two elongated rigid members, each having a first and second end portion,
(2) a central joint pivotally connecting the first end portions of said rigid members, said rigid members extending substantially sideways away from said central joint in an angular position with respect to each other,
(3) two terminal joints pivotally connecting the second end portions of said rigid members to said first and second support means, said terminal joints thus being disposed in a substantially lateral relationship, with said central joint being a distance away from a substantially laterally extending line connecting said terminal joints, said group further including
(4) yieldably resilient means incorporated in at least a portion of said central and terminal joints, said central and terminal joints serving to prevent transmission of vibrations of said rotor.

3,197,984
CLOSURE CONTROL

Marvin C. Cohen, 3026 W. Queen Lane, Philadelphia, Pa.

Filed Dec. 26, 1961, Ser. No. 162,039
1 Claim. (Cl. 70—271)

Closure control apparatus, as for an unattended public laundry, comprising in combination with a closure and its frame, a closure closing device, a lock between the closure and its frame including a lock proper having a latch bolt comprising one locking element and a movable strike keeper comprising the other locking element, said strike keeper being movable from a retracted position where it is clear of said latch bolt to a position where it will cooperate with the latch bolt to lock the closure, a first controlled power means adapted to be energized for moving said keeper in one direction and a spring urging it constantly in the other direction, a closure hold-open device, a second controlled power means adapted to be energized for moving said hold-open device in one

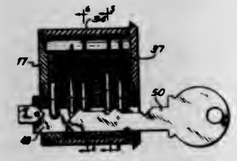


direction and a spring urging it constantly in the other direction, and a power control means for conjointly energizing both of said controlled power means, said first power means when energized moving said keeper to retracted inactive position and said second power means where energized moving said hold-open device to retracted position to release the closure for closing and locking, said power control means including a subservient control means controlled by said keeper for causing said second power means to be energized to retract said hold-open device when the keeper is projected in to locking position and for de-energizing said second power means to cause said hold-open device to be projected when said keeper is retracted into non-locking position.

3,197,985
COMBINATION FOR LOCKS WITH MOVABLE TOGGLE HOLDER AND SAFETY DOME

Othón Orozco Cosío, 604 Calzada de Guadalupe, Mexico City, Mexico

Filed May 4, 1962, Ser. No. 193,076
5 Claims. (Cl. 70—419)

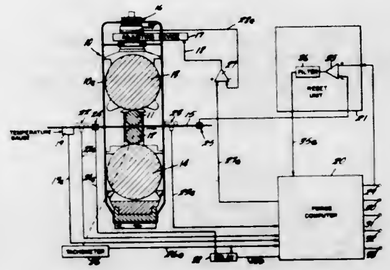


1. A safety mechanism for a cylinder lock which comprises, in combination, a housing, a cylinder having a plurality of bores, a corresponding plurality of tumblers movably housed in said bores, a movable driver support surrounding said cylinder and provided also with a corresponding plurality of bores similarly positioned as said bores in the cylinder, a plurality of drivers movably housed in the bores of said support, both said cylinder and driver support being housed within said housing, the bores of said driver support being open at the top for allowing projection of said drivers by movement of said tumblers into the bores of the driver support, said housing being formed with a pair of stops to permit limited rotation of said driver support and including a central dome portion permitting the drivers to be lifted when the driver support and said cylinder are in a locked position, and a pair of portions connecting said dome with said stops and which prevent said drivers from being lifted when the driver support is turned to bear against one of said stops, and releasable locking means other than said drivers and tumblers for maintaining the bores of the cylinder in register with the bores of the driver support.

3,197,986
CONTROL SYSTEM FOR ROLLING MILLS

Robert P. Freedman, Waterford, Peter J. Barnikel, Quaker Hill, and James H. Torrance, Uncasville, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 7, 1961, Ser. No. 150,738
17 Claims. (Cl. 72—9)



1. Control apparatus for a rolling mill wherein a piece of material is passed between a pair of working rolls supported in a frame to reduce its thickness to a desired value comprising fluid-actuated rapid response adjusting means interposed between the frame and one of the working rolls to vary the separation of the rolls in response to a control signal, and means operatively positioned in advance of the pair of working rolls for determining the force necessary to accomplish a desired reduction in the thickness of the piece and transmitting to the adjusting means a control signal to actuate the adjusting means to produce the necessary force at the time the piece passes between the working rolls.

3,197,987
RIVET TOOL

Alan Martin, 21 Grant Circle, Sharon, Mass.

Filed Jan. 11, 1963, Ser. No. 250,935
9 Claims. (Cl. 72—114)



1. A rivet nut tool comprising,
a case,
a shaft assembly extending axially through the case,

a threaded collar secured to the case and registering with a threaded section on the shaft assembly causing the shaft assembly to move axially in the case in response to rotation thereof,

an anvil carried on one end of the case and having an opening therein coaxial with the case and the shaft assembly, said shaft assembly extending through the opening and being threaded in a direction opposite to the threads on the section registering with the collar,

a friction clutch disposed between and connecting the two threaded sections of the shaft assembly enabling the shaft assembly end extending through the anvil to move rotationally relative to the remaining portion of the shaft assembly,

a power source connected through a second clutch to the opposite end of the shaft assembly enabling the power source to operate without turning the shaft assembly when the load on the assembly exceeds a predetermined value,

and means for switching the direction of rotation of the power source.

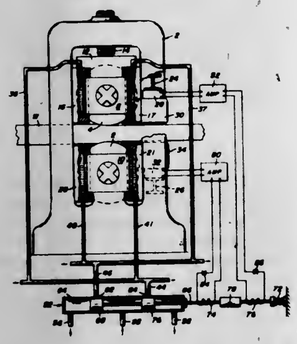
3,197,988

APPARATUS FOR HOT ROLLING

William L. Roberts, Murrysville, Pa., assignor to United States Steel Corporation, a corporation of New Jersey

Filed Feb. 18, 1963, Ser. No. 259,249

6 Claims. (Cl. 72—12)



1. Apparatus for hot rolling a workpiece which comprises upper and lower rolls between which the workpiece passes and is reduced, means for moving the top roll horizontally toward and away from the exit side of the rolls, means for moving the bottom roll horizontally toward and away from the exit side of the rolls, and means responsive to the workpiece leaving the rolls for actuating said roll moving means when the workpiece leaving the rolls curves away from the horizontal.

3,197,989

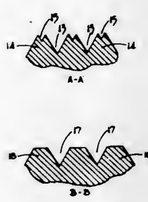
DIES FOR ROTARY THREAD ROLL DIE MACHINES FOR PRODUCING SCREWS

Frederick William Cooper, Birmingham, England, assignor to GKN Screws and Fasteners Limited, Birmingham, England, a British company

Filed Jan. 16, 1963, Ser. No. 251,830

4 Claims. (Cl. 72—104)

1. Means for rolling a thread upon a spaced thread type screw in which adjacent convolutions of the thread rib are spaced apart by a flat bottomed groove as herein defined, said means comprising; a pair of co-operating die-rolls each having a thread form comprising grooves, separated by ribs, extending round its periphery at an angle to the axis of the roll corresponding to the helix angle of the thread of the screw, one of said die rolls having a thread form wherein each groove has a cross-section corresponding to the desired cross-section of the thread rib on the screw, and each rib has a cross-section substantially of the form to produce the flat bottomed



groove on the screw, but each such rib having its crest interrupted by at least one further groove which extends longitudinally of the rib throughout its length and is of shallow depth as compared with the depth of each groove for producing the thread rib on the screw.

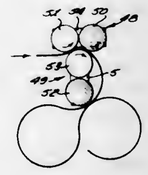
3,197,990

METAL FORMING DEVICE

Thomas A. Stubblefield, Vista, Calif., assignor of one-third to James F. Brooks, Garden Grove, Calif., and one-third to John H. Hancock, La Habra, Calif.

Filed Dec. 12, 1962, Ser. No. 244,167

11 Claims. (Cl. 72—131)



1. A forming device comprising

a first pair of rollers,

a second pair of rollers,

means rotatably mounting said first pair of rollers about an axis parallel to the axes of said rollers and bisecting an imaginary line interconnecting the axes of said rollers,

means rotatably mounting said second pair of rollers about an axis parallel to the axes of said second pair of rollers and bisecting an imaginary line interconnecting said axes of said second pair of rollers,

means for simultaneously rotating said pairs of rollers about said axes of rotation for defining different passageways between adjacent rollers of said pairs,

and means for forcing a workpiece through said passageways.

3,197,991

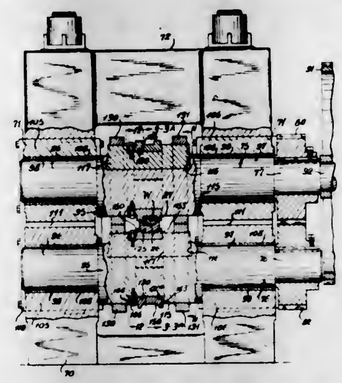
APPARATUS AND METHOD FOR TAPERING BARS

George L. Radamaker, Detroit, Mich., assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Filed July 30, 1962, Ser. No. 213,247

8 Claims. (Cl. 72—198)

1. An apparatus for shaping an article comprising an article carrier having a die surface for receiving the article thereon and corresponding to a desired contour for one surface of said article, a pair of roll shafts each having a circular cross section and a circumferentially extending roll receiving groove therein, first and second pressure rolls supported by said roll shafts respectively in said grooves and extending circumferentially of said roll shafts, each of said rolls including plural arcuate roll segments, and means for securing said roll segments forming said



first and second rolls in position in said roll receiving grooves, said first roll having portions for drivingly engaging said carrier and said second roll having portions for drivingly engaging a surface of said article opposite said one surface, said driving engagements causing said carrier and article to be advanced between said rolls whereby said one surface of said article is shaped to the contour of said die surface.

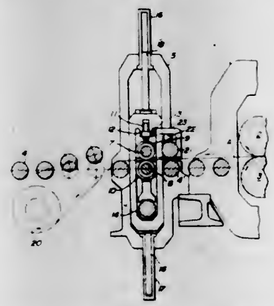
3,197,992

SLITTING APPARATUS FOR HOOP MILLS

Tetsuji Taniguchi, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed June 11, 1963, Ser. No. 287,090

2 Claims. (Cl. 72—203)



1. In a hoop mill, a slitting apparatus comprising a shear, an inside frame carrying said shear and a roller as one of the table rollers of the hoop mill, drive means for vertically moving said inside frame, and an outside frame carrying said drive means and arranged along the rolling line of the mill for guiding the vertical movement of said inside frame, said inside frame having two positions including one position where said roller is held at the level of the rolling line to allow the material rolled to be carried over said roller and the other position where said shear is held at the level of the rolling to work on the material rolled.

3,197,993

ROLLING MILL

Ewald Hein, Kreuztal, and Friedrich W. Busch, Duesseldorf, Germany, assignors to Siemag Siegener Maschinenbau G.m.b.H., Dahlbruch, Westphalia, Germany, a corporation of Germany

Filed Feb. 25, 1963, Ser. No. 260,714

Claims priority, application Germany, Feb. 24, 1962, S 78,198

4 Claims. (Cl. 72—230)

3. A continuous rolling mill, comprising

(a) a set of roughing stands having rolls whose axes are parallel,

(b) a set of intermediate stands having rolls whose axes are parallel to each other and extend at right angles to the axes of the rolls in the other set,

(c) a set of finishing stands having rolls whose axes are parallel to each other and to the axes of the rolls in the set of roughing stands, the stands of the intermediate set being arranged in two parallel spaced rows,

(d) looping tables arranged on either side of the two rows,

(e) a repeater located on the discharge side of the final stand of the intermediate set and movable along a path parallel to the two rows, the looping tables which are located on the same side of the rows being movable transversely of the rows out of the path of the said repeater.

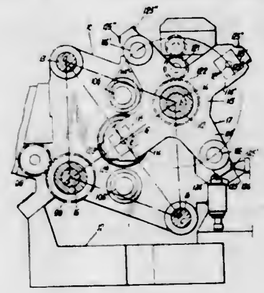
3,197,994

FOUR-COLUMN PRESS

Herbert John Samuel, Northbourne, Dorset, and Salli Alfred Rosenthal, Poole, Dorset, England, assignors to The Loewy Engineering Company Limited, Bournemouth, England, a corporation of Great Britain

Filed June 21, 1962, Ser. No. 230,775

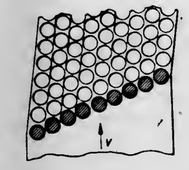
8 Claims. (Cl. 72—263)



1. A press comprising a main frame consisting of two pressure platens and four horizontal tension columns on which the two platens are mounted in parallel spaced relation to each other, each of said columns extending from one platen to the other and each column being secured to both platens, the columns being arranged so that, in transverse section, the axes of the columns define the corners of a parallelogram having diagonals of unequal length, main hydraulic reciprocating means and a ram driven thereby, said reciprocating means being mounted on one of said platens so that the said ram is movable towards the other of the said platens upon operation of the reciprocating means, the axis of the ram being aligned with the point of intersection of the said

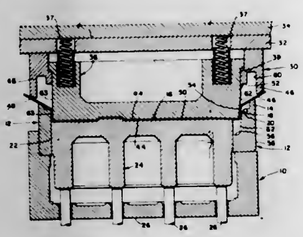
diagonals and constituting the working axis of the press, and the columns being arranged so that each column is spaced from the horizontal plane through the working axis of the press.

3,197,995
PROCESS OF WORKING STRIP
Hans Osterrath, Sassmannshausen, Westphalia, Germany
Filed Sept. 23, 1960, Ser. No. 58,078
4 Claims. (Cl. 72—347)



1. A method for deep drawing cups from a noninterrupted, solid strip of material in a network of equilateral triangles, comprising stepwise feeding said strip to a plurality of drawing dies the main axes of which are arranged in parallel relationship to each other and in one straight row, said row extending transversely over the entire width of said strip as covered by said network, said row including an angle of about 60° with the direction in which said strip is fed, applying simultaneously said drawing dies arranged in one straight row to said strip intermediate said feeding steps and deep drawing said cups by said dies directly from said uninterrupted, solid strip.

3,197,996
REDRAWING DIES FOR DEEP DRAWING TO VARYING DEPTHS
John H. Zeder, Jr., Southampton, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 7, 1962, Ser. No. 243,066
6 Claims. (Cl. 72—354)



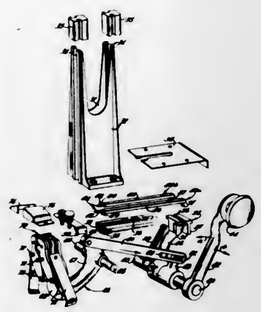
1. In a die system for deep drawing and flanging a preformed metal sheet having a shallow draw portion and outward extending flange portions comprising in combination, a stationary lower female perimeter die, vertical blank holding dies affixed on said lower female perimeter die, a floating lower die slidably mounted for vertical movement within said lower female perimeter die, an upper die plate, an upper male drawing die supported by said die plate and adapted to yieldingly engage said floating lower die to entrap said shallow draw portions of said preformed sheet, an upper male perimeter die around said male die, vertical blank holding dies affixed on said upper male perimeter die cooperating with said vertical blank holding dies affixed on said lower female perimeter die operable to engage in vertical alignment therebetween said flange portions of said preformed metal sheet for yieldingly holding said flange portions when said upper male drawing die deep draws said flange portions into the lower female die, and flange extensions on said perimeter dies intermediate said vertical blank holding dies and said upper male drawing die for forming an offset flange in the outward extending flange portion subsequent to said deep drawing of said flange portion as said metal sheet is held by said upper male die and said lower floating die.

3,197,997
SUTURE NEEDLE
Leonard D. Kurtz, 9220 222nd St., Queens Village, Woodmere, N.Y.
Filed Nov. 17, 1960, Ser. No. 69,856
3 Claims. (Cl. 72—377)



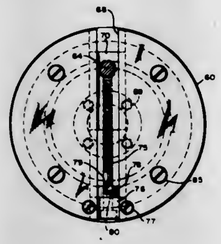
1. A method for increasing the resistance to bending of a surgical needle in the area of the needle gripped by a needle holder comprising the steps of compressing the needle to form flattened areas for gripping by clamping needle holders and compressing the needle in a plane at 90° to the needle holder gripping areas to increase the thickness of the needle between the two flattened needle holder gripping areas.

3,197,998
FLOWER STEMMING MACHINE
Nunzio Giovannlello, Ridgewood, N.Y., assignor to B & K Tool, Die & Stamping Co., Inc., Woodhaven, N.Y.
Filed Sept. 27, 1962, Ser. No. 226,551
10 Claims. (Cl. 72—385)



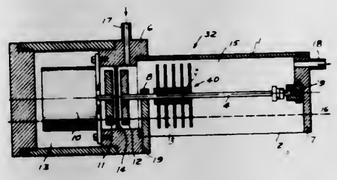
1. In a flower stemming machine of the type described, having a pushed rod sliding in a ways and means for supporting a stack of thin, sheet metal nested picks above said ways the improvement comprising spring means disposed in between the push rod and the ways for urging said push rod upwardly in a horizontal plane parallel to the horizontal plane of the ways so as to cause engagement between the lowest of the nested picks and the push rod.

3,197,999
CAN BODY MAKING MACHINE
Ed Laxo, Hayward, Calif.; Thelma E. Laxo, executrix of said Ed Laxo, deceased, assignor to Thelma E. Laxo
Filed June 22, 1960, Ser. No. 37,954
7 Claims. (Cl. 72—401)



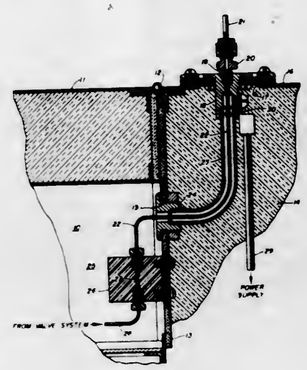
1. A mechanism of the character described comprising a frame, a shaft rotatable in said frame, a crank disc, means for connecting a rod eccentrically to said disc to cause reciprocation of said rod as the disc rotates, means for adjusting the radial position of said rod connecting means on said disc, and means for clamping said disc to said shaft comprising a separate clamping member and means for clamping said clamping member to said disc and to said shaft, said means for clamping being capable of loosening to permit rotation of said disc relatively to said shaft for timing adjustment and being capable of tightening after timing adjustment to clamp the disc to the shaft in adjusted position.

3,198,000
DEVICE FOR SUPERVISING THE CONTENT OF GAS IN LIQUID
Horst Schlageter, Morsch-Karlsruhe, Germany, assignor to Chlorator G.m.b.H., Groetzingen, Karlsruhe, Germany, a German company
Filed Nov. 13, 1962, Ser. No. 236,927
Claims priority, application Germany, Mar. 23, 1962, C 26,563
10 Claims. (Cl. 73—19)



1. A device for supervising and measuring a gas content in a liquid, in which device a flow of an auxiliary exchange gas is brought into contact with the liquid and the concentration of the gas to be supervised and measured is subsequently determined in said flow of the auxiliary gas by gas analysis, said device comprising gas-analyzing means, and gas exchange means, said exchange means including a closed gas exchange chamber having a bottom opening for partly filling said chamber with the liquid the gas content of which is to be supervised and measured by partly submerging the chamber below the level of said liquid, a rotatable probe mounted in the chamber and partly dipping into the liquid therein when the chamber is partly submerged to form a film of liquid on probe portions above the liquid level, a drive means for rotating said probe, a gas inlet conduit means communicating with the space in said chamber above the liquid level therein when the chamber is partly submerged for directing a flow of auxiliary gas into said space, whereby said auxiliary gas absorbs gas contained in said film of liquid, and a gas outlet conduit means connecting said space with said gas-analyzing means.

3,198,001
CONNECTION BETWEEN CHROMATOGRAPHIC COLUMN AND VALVE SYSTEM
Charles R. Ferrin, Tulsa, Okla., assignor to Instruments, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Mar. 27, 1963, Ser. No. 268,389
2 Claims. (Cl. 73—23.1)



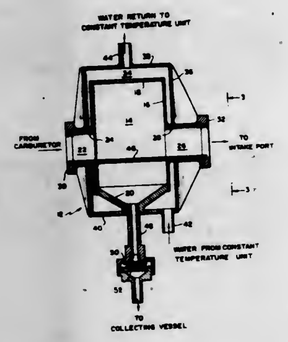
2. A connection system between the inlet valve system and column of a gas chromatograph, including,
an oven having a controlled internal temperature,
a thermal insulation body adjacent the oven,
a metallic union mounted on the thermal insulation body and having an access opening therethrough from external the insulation body to internal the insulation body,
a chromatograph column of selected size mounted on the external end of the access opening of the union,
a conduit mounted on the internal end of the union and extending through the insulation body and into communication with the adjacent oven,
a fluid connection between the valve system and conduit which also electrically insulates between the valve system and conduit,
and an electrical power lead extended through the body of insulation to connect with the column to resistance-heat the column.

3,198,002
LABORATORY METHOD OF AND APPARATUS FOR DETERMINING LOW SPEED ROAD OCTANE NUMBERS OF FUELS
Cosmo J. Di Perna, Haddonfield, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Apr. 19, 1962, Ser. No. 189,669
9 Claims. (Cl. 73—35)

1. In a method of operating a laboratory type engine to determine the octane rating of a combustible mixture under test that is applied to the engine, the steps of:
(a) condensing from 10% to 35% of the combustible

mixture before it is applied to the engine, thereby to produce a condensate,

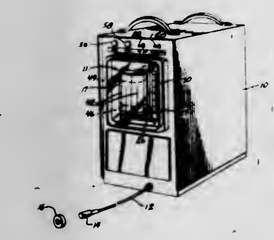
(b) adding a portion of the condensate to the part of



the combustible mixture not condensed to produce a modified mixture, and

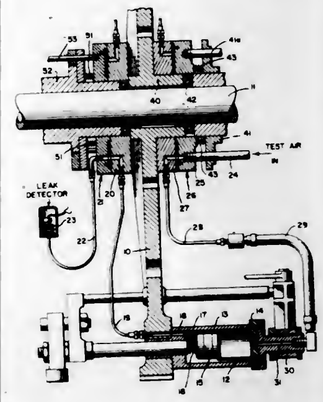
(c) applying the modified mixture to the engine to power the engine.

3,198,003
GAGING APPARATUS
Arthur W. Wiseman, Xenia, Ohio, assignor to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware
Filed May 9, 1960, Ser. No. 27,657
2 Claims. (Cl. 73—37.9)



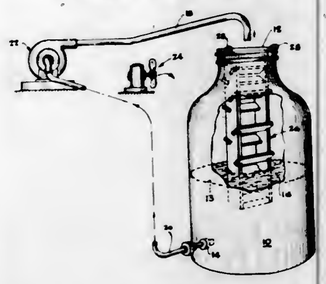
1. A gaging apparatus for recording measured product characteristics on a record chart, comprising, recording means including a chart drive for advancing a record chart in a first direction, marking means for recording indicia on said chart displaced transverse said first direction in accordance with the magnitude of the gaged characteristic, a pneumatic gaging circuit for connection at one end to a source of air under pressure and at the other end to a gage head controlling flow in accordance with the gaged characteristic, said circuit providing pressure changes within a gaging range in response to the magnitude of the gaged characteristic, first pressure responsive means connected for response to said pressure changes for displacing said marking means in accordance therewith, second pressure responsive means connected to said gaging circuit for response to pressure changes outside said gaging range operatively connected for controlling said chart drive to automatically advance said chart between recording displacements of said marking means while maintaining the chart stationary during recording, and timing means controlling each chart advance to provide a predetermined repeated spacing between the record indicia.

3,198,004
CAN TESTING VALVE
Victor I. Roberts and Maynard H. Riddell, Randolph, N.Y., assignors to The Borden Company, a corporation of New Jersey
Filed Oct. 12, 1962, Ser. No. 230,293
6 Claims. (Cl. 73—45.1)



1. A device for detecting can leakage comprising a conveyor for moving cans from a source to a destination, means including a first valve to establish a pressure difference across the wall of each successive can on said conveyor, means including a second valve responsive to a reduction in the pressure difference established across said can wall to prevent the leaking can from reaching said destination, said valves each including a moving part and a stationary part having abutting faces with ports which selectively register as the relative movement occurs, means to resiliently bias said faces together, at least one of said faces being metal and the other of a plastic material having anti-sticking properties and resistance to cold flows.

3,198,005
MULTI-PANEL SLIME ACCUMULATOR
Leonard L. Wolfson, Park Forest, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 8, 1962, Ser. No. 164,669
7 Claims. (Cl. 73—53)



1. A multi-panel slime accumulator testing apparatus comprising

(A) a reservoir having,

(a) an inlet for receiving industrial process waters and,

(b) an outlet for discharging said waters;

(B) a multi-panel holder adapted to fit within said reservoir, said multi-panel holder having,

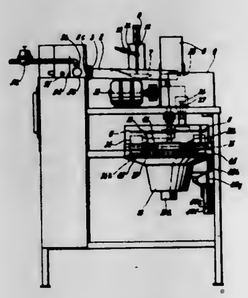
(a) a frame having parallel spaced-apart vertical sides,

(b) a plurality of alternately opposed diagonally downwardly disposed pairs of slots extending at least half-way through the width of the sides of the frame so as to support test panels in cascade flow relationship with respect to each other;

(c) easily removable test panels adapted to accumulate slime and to fit within said slots;

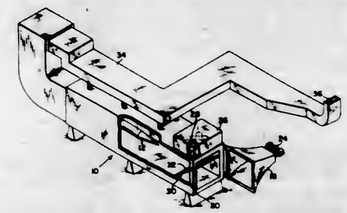
(C) support means for suspending the frame in the reservoir; said multi-panel slime accumulator being adapted for study of slime-forming tendencies of said industrial process liquids and for small scale screening and evaluation of slime control chemical treatments.

3,198,006
RECORDING OF FREENESS OF PAPER MAKING STOCK
David Joseph Williams, East Ivanhoe, Victoria, Australia, assignor to Australian Paper Manufacturers Limited, Matraville, New South Wales, Commonwealth of Australia
Filed Aug. 2, 1962, Ser. No. 214,420
Claims priority, application Australia, Feb. 21, 1958, 35,503/58
5 Claims. (Cl. 73—63)



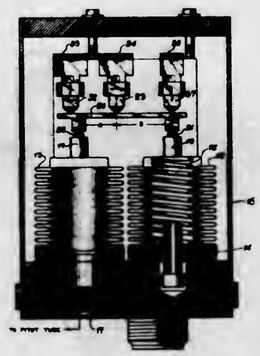
1. Apparatus for continuously recording the freeness of paper making stock comprising a delivery channel for receiving paper making stock diluted with water, sensing means operatively connected to a differential transformer-type measuring means disposed in said delivery channel for sensing variations in the consistency of said paper making stock, a freeness testing assembly disposed adjacent said delivery channel including at least one vessel member of constant volume operatively connected to a rotating means to rotate said vessel member in a circular path, said vessel member receiving during a portion of said circular path a sample of substantially constant volume of said paper making stock, said vessel member draining during another portion of said circular path the water from said sample of paper making stock, tank means for receiving the drained water, float means operatively connected to a further differential transformer-type measuring means disposed in said tank means for measuring the volume of the drained water, temperature measuring means disposed in said tank means to measure the temperature of the drained water, means connecting said differential means for sensing variations in the consistency of said paper making stock and said temperature measuring means to said further differential means to apply corrections to the measurements of the volume of the drained water to obtain freeness of said paper making stock, and means for recording the freeness of said paper making stock.

3,198,007
ACOUSTIC TESTING CHAMBER
Jerry B. Overton, 1720 Rialto, Oxnard, Calif.
Filed May 23, 1961, Ser. No. 112,127
11 Claims. (Cl. 73—69)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A chamber for the testing of a device under conditions which are controllable to simulate the acoustic environment in which such device is designed to function, said chamber including a region wherein the device to be tested is positioned, a first source of acoustic energy located within said chamber having a generally predetermined frequency range, a second source of acoustic energy also located within said chamber and having a generally predetermined frequency range different from that of said first source, said first source being positioned to direct energy emanating therefrom to the vicinity of said test device along an essentially linear path, said second source being positioned to direct energy emanating therefrom to the vicinity of said test device along a path the initial portion of which is angularly related to the path of the energy emanating from said first source, and means for diverting a portion of the energy emanating from said second source after it has traversed the initial portion of its path so that the remaining portion of such path lying between said diverting means and said test device substantially coincides with the linear path followed by the energy output of said first source.

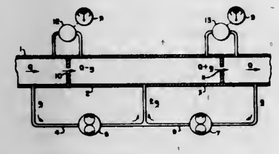
3,198,008
MACH NUMBER INDICATOR
Joseph R. Sclafani, Old Greenwich, Conn., assignor to Aerotec Industries, Inc., Greenwich, Conn., a corporation of Connecticut
Filed June 11, 1962, Ser. No. 201,525
10 Claims. (Cl. 73—182)



1. Apparatus for indicating a Mach number limit which comprises an evacuated bellows subject to the atmosphere, having one end fixed and the other end movable and biased outwardly toward the movable end, a pressure bellows exposed to the atmosphere and having a

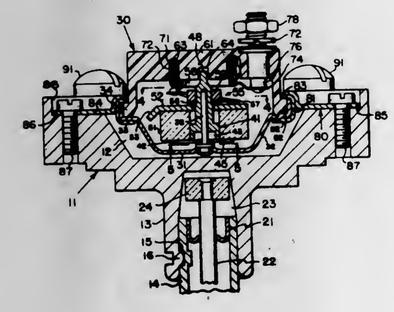
fixed end and a movable end, said pressure bellows having means to receive total static and ram pressure of a moving object to move the movable end of said bellows against static pressure outwardly from the fixed end, said evacuated bellows and said pressure bellows being in side-by-side position and expansible in the same direction, a floating lever linking the movable ends of said bellows, and an adjustably positionable contact means positioned between the points of linkage to said lever to be actuated by said lever.

3,198,009
MASS FLOWMETER
Bernard Fishman, New York, and Frederick Ryder, Lynbrook, N.Y., assignors, by mesne assignments, to Flotron Inc., a corporation of New Jersey
Original application July 22, 1958, Ser. No. 750,220, now Patent No. 3,015,233, dated Jan. 2, 1962. Divided and this application Dec. 26, 1962, Ser. No. 246,913
5 Claims. (Cl. 73—211)



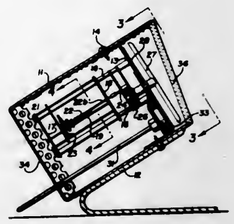
1. A mass flowmeter adapted to measure the mass flow rate of liquid passing therethrough comprising a conduit, means defining two orifices having like cross-sections smaller than the cross-section of said conduit spaced along the path of flow within the conduit and coaxial therewith, a means for measuring the differential in pressure head across each of said orifices and means connected to said conduit for pumping a portion of the conduit flow around each orifice.

3,198,010
LIQUID LEVEL GAUGE
William D. Huston, Rochester, N.Y., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 19, 1962, Ser. No. 174,053
8 Claims. (Cl. 73—313)



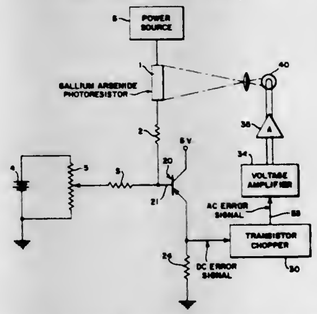
1. A gauge comprising
(a) a housing having a transparent wall at one end thereof,
(b) a stationary pivot pin extending into said housing from the opposite end thereof,
(c) a dial in said housing facing said transparent wall and having graduations disposed coaxially about said pin,
(d) a first annular magnet mounted on said pin for rotation coaxially thereabout,
(e) a pointer mounted for rotation with said magnet and overlying the graduations on said dial to be readable thereagainst through said transparent wall,
(f) an arcuate resistor fixed in said housing coaxially of said pin,
(g) means to connect said resistor in circuit with an electrically operated indicator located remote from said housing,
(h) said means including an electrical contact element mounted in said housing to rotate with said magnet and having a contact point which rides along said resistor coaxially of said pin upon rotation of said magnet, said contact point being radially spaced inwardly from the outer peripheral surface of said first magnet, and
(i) a second magnet mounted at the exterior of said housing to rotate coaxially of said pin in response to a change in a condition existing at the exterior of said housing and being operative through magnetic coupling to impart its rotation to said first magnet,
(j) said means further including a leaf spring secured at one end to said first magnet for rotation therewith,
(k) said spring adjacent the opposite end thereof extending tangentially across said pin, and having sliding, tangential, point contact with the peripheral surface of said pivot pin upon rotation of said first magnet.

3,198,011
MOISTURE SENSING DEVICE
Ralph L. Fenner, 45 Harrison Ave., Sausalito, Calif.
Filed June 1, 1960, Ser. No. 33,319
6 Claims. (Cl. 73—337.5)



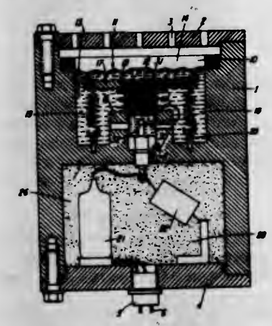
1. In a moisture measuring device, a housing, a gear train mounted in said housing, an indicator connected to the gear train and adapted to be driven by the gear train, the gear train including a rotatable shaft for driving the same, a moisture sensitive element consisting of the tail-like appendage of the seed of the genus Erodium, said moisture sensitive element being characterized in that as it winds and unwinds, it expands and contracts longitudinally, said housing having openings therein to permit air to circulate over the moisture sensitive element, means for securing one end of the element to the rotatable shaft, an arm, means for connecting the other end of the moisture sensitive element to the arm, means mounted within the housing for pivotally mounting the other end of the arm to prevent rotation of said other end of said moisture sensitive element and to permit movement of said other end of the moisture sensitive element in a direction longitudinally of the moisture sensitive element and to thereby maintain said moisture sensitive element free of forces tending to stress said element longitudinally.

3,198,012
GALLIUM ARSENIDE DEVICES
Gary R. Argue and Robert W. Haisty, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application Mar. 29, 1961, Ser. No. 99,259. Divided and this application Sept. 18, 1963, Ser. No. 314,831
2 Claims. (Cl. 73—362)



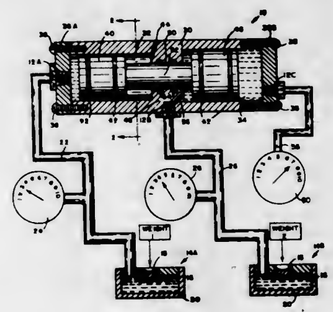
1. A method of sensing thermal changes of an environment comprising the steps of subjecting a gallium arsenide element having an energy level of about half the forbidden band gap width to an environment undergoing thermal changes, and detecting resistivity changes of said gallium arsenide element effected by said thermal changes.

3,198,013
PRESSURE GAGE
Ladislas Erdely, Paris, France, assignor to Pechiney, Paris, France
Filed Oct. 5, 1961, Ser. No. 143,193
3 Claims. (Cl. 73—398)



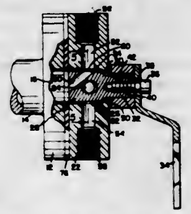
1. A pressure gauge which is highly sensitive to fluid pressure changes comprising a rigid housing, a rigid separating wall dividing the housing into a first compartment and a second compartment, a flexible diaphragm dividing the first compartment into a sealed inner chamber and an outer chamber which is exposed to the fluid in which changes in pressure are to be measured, flat isotropic, piezoelectric crystals stacked in the sealed chamber, means connecting the crystals one to the other in parallel, a gas-free inert liquid filling the sealed chamber and surrounding the stacked piezoelectric crystals to engage the stacked crystals substantially throughout their outer surfaces, said second compartment comprising a sealed compartment, means within the second compartment for amplifying the voltages generated in said crystals by reason of variations in pressure of the fluid and including an electrometer tube and a condenser, electrical connectors joining the crystals with the condenser and the electrometer tube in parallel and a connector in the electrometer for power input and read-out of the device.

3,198,014
PRESSURE INTEGRATOR
Stuart E. Corry, 4605 S. Evanston, Tulsa, Okla.
Filed Dec. 26, 1962, Ser. No. 247,013
3 Claims. (Cl. 73—419)



1. An integrating device for totaling the fluid pressure of two hydraulic systems, comprising:
a first cylinder having a first piston therein, said first cylinder having fluid communication with the first of said hydraulic systems whereby said first piston is disposed to move with a force proportional to the pressure of said first hydraulic system;
a second cylinder having a second piston therein, said second piston having fluid communication with the second of said hydraulic systems whereby said second piston is disposed to move with a force proportional to the pressure of said second hydraulic system, said second cylinder having a push rod opening therein;
a push rod sealably slidably positioned in said push rod opening in said second cylinder, said push rod having severable contact at one end thereof with said first piston, said push rod affixed at the other end thereof to said second piston whereby the force of movement of said first piston is exerted on said second piston, the internal cross-sectional area of said second cylinder being equal to the internal cross-sectional area of said first cylinder plus the cross-sectional area of said rod; and
means of detecting the force of movement of said second piston.

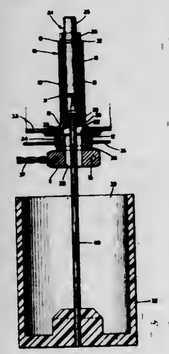
3,198,015
VALVE GAUGE MOUNTING
Russell G. Smith, Cincinnati, Ohio, assignor to Continental Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 23, 1962, Ser. No. 218,940
9 Claims. (Cl. 73—420)



5. A valve unit for application to a flange of a pipe communicating with a container of pressurized fluid, said valve unit comprising a plate of substantial thickness

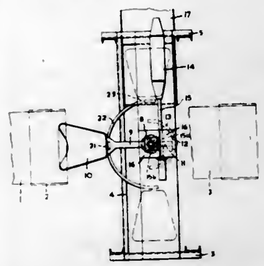
having an encircling peripheral surface and having flat outer and inner faces, means defining a plug bore in the plate extending transversely therethrough and opening through said outer and inner faces, a rotary plug mounted in said plug bore and having a reduced outer end stem portion projecting beyond said outer face of the plate, said plug having a main bore formed therein oblique to the longitudinal axis of the plug and having an inner ear opening through the inner end of the plug and having an outer end opening through the side of the plug, a second bore in the plug extending transversely of said axis and opening through opposite sides of the plug, a pair of oppositely extending bores in the plate having opposite outer ends opening through said peripheral surface of the plate and having inner ends opening into said plug bore, the ends of said second bore and said outer end of the main bore lying in a common plane with said inner ends of said pair of bores, one of said pair of bores forming a vent, means for coupling an instrument such as a gauge to the outer end of the other one of the pair of bores, a handle attached to said plug stem for turning the plug, and means for securing said plate to a pipe flange with said inner face of the plate opposing the face of the flange and with the plug bore aligned with the pipe.

3,198,016
HAND-HELD DRAIN VALVE OPERATING RECEPTACLE
Royal H. Poorman, 909 12th St. NW., Canton, Ohio
Continuation of application Ser. No. 823,964, June 30, 1959. This application Mar. 8, 1962, Ser. No. 180,921
1 Claim. (Cl. 73—421)



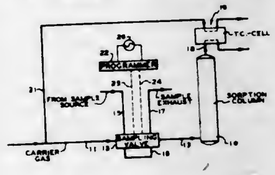
A hand-held drain valve operating receptacle for actuating a drain valve of an aircraft fuel tank to directly receive and visually inspect a sample of fuel from said tank, the drain valve being of the type having a body fastened extending upwardly into the lower portion of an aircraft fuel tank, which body has recessed selectively releasable drain means formed communicating between the interior of the fuel tank and opening downwardly through the fuel tank, and which drain means normally is resiliently urged to closed position closing said communication and is selectively releasable opening said communication through engagement by a pin-like release member engageable with said drain means and urged upwardly from closely below the fuel tank; the operating receptacle comprising an upwardly opening clear plastic cup-shaped member having a tubular upstanding upwardly opening continuous side wall and a closed bottom wall connected to said side wall, a rigid pin-like release member mounted rigidly embedded substantially centrally in the cup-shaped member bottom wall and extending upwardly within and spaced inwardly from upper extremities of the cup-shaped member side wall and terminating spaced above said side wall upper extremities, and the receptacle being constructed of a size for being hand held; whereby, the receptacle may be hand held and adapted to be placed beneath a valve drain means with the rigid release member upwardly engaged with and releasing a drain means, to receive a fuel sample downwardly around said release member into the receptacle within the upwardly opening receptacle side wall, and said fuel sample visually inspected for water and other impurities by viewing through the clear plastic forming said receptacle side wall.

3,198,017
MEANS FOR SAMPLING BULK MATERIALS
Wilfred Taylor, Newcastle-upon-Tyne, and James Farrell, Sunderland, England, assignors to The Birmingham Small Arms Company Limited, Birmingham, England, a British company
Filed July 31, 1962, Ser. No. 213,779
9 Claims. (Cl. 73—421)



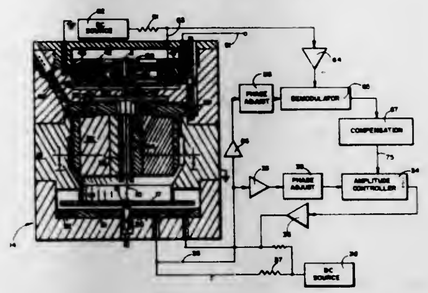
9. Apparatus for taking samples from the entire cross-section of a vertically falling stream of bulk material comprising an upwardly open container mounted for rotation about a vertical axis closely adjacent said stream, said container being substantia ly wedge shaped with its smaller end located nearer said axis so as to take substantially the same amount of material from each zone of said stream radially of said axis, and means automatically effective after the container has passed at least once entirely across said stream for dumping the contents of said container into a receptacle or the like.

3,198,018
ELECTRICALLY ACTUATED SAMPLING VALVE
Arthur B. Broerman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 28, 1961, Ser. No. 162,844
4 Claims. (Cl. 73—422)



1. A double-acting solenoid-actuated control mechanism comprising, in combination: a casing having a chamber therein and first and second passages extending from said chamber to a region exterior of said casing; first and second control rods slidably disposed in said first and second passages, respectively, said first rod being shorter than said second rod; first spring means secured within said chamber and operatively attached to each of said rods so as to bias said rods inwardly of said casing; a washer disposed within said chamber to contact the inner end of said first rod, said washer being traversed by a third passage to permit said second rod to slidably pass therethrough; a floating stator positioned within said chamber; second spring means positioned within said chamber so as to bias said stator toward the inner end of said second rod; an armature positioned adjacent said stator, said armature engaging said washer so that the force exerted by said first spring means through said first rod and said washer biases said armature away from said stator to form an air gap therebetween; a solenoid positioned within said chamber so that when said solenoid is energized said armature is moved relative to said stator to close said air gap, whereby said first rod is moved in a direction outwardly of said casing and said second rod is moved in a direction inwardly of said casing.

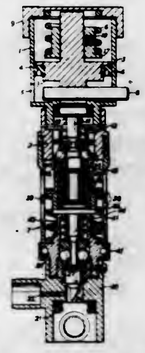
3,198,019
STABLE REFERENCE APPARATUS
William D. Mullins, Jr., Downey, and William H. Quick, La Mirada, Calif., assignors to North American Aviation, Inc.
Filed Mar. 17, 1961, Ser. No. 96,611
16 Claims. (Cl. 73—505)



2. A stable reference apparatus comprising: a support, a vibratile string having enlarged integral end portions, means for securing said end portions to said support to provide a substantially fixed string tension, said string being subject to modulation of said tension when vibrating, and means for servoing said tension modulation toward zero.

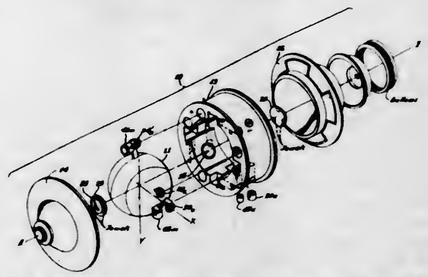
3,198,020
INFLATION APPARATUS
Brian Richard Arnold Reffell, Southall, Middlesex, and Laurence Arthur Clay-Smith, Northolt, Middlesex, England, assignors to The Walter Kidde Company Limited, Northolt, Middlesex, England, a British company
Filed May 23, 1963, Ser. No. 282,718
Claims priority, application Great Britain, May 25, 1962, 20,154/62
3 Claims. (Cl. 74—2)

1. An inflation device for the release of gas from a storage tank comprising in combination a body having a water entry aperture therein and being formed with internal apertures, a spring-loaded gas-storage opening plunger slidably mounted in said body and normally in a cocked position, radially movable locking members in apertures in said plunger, normally held in a radially outwardly projecting position to engage an abutment in the body, a release spindle extending between said locking members to hold the same in such position, spring means biasing said release spindle in a locking member-releasing direction, a fixed abutment, a water-soluble plug bearing against said abutment and obstructing the movement of said release spindle, shroud means normally in a position surrounding said water soluble plug to protect said plug from water entering through said water entry aperture, spring means biasing said shroud means away from such position, locking members holding said shroud means in such position and radially projecting from said internal apertures, a shroud means lock release spindle slidable in said body, said last mentioned spindle having an enlarged end to hold said locking members in such radially projecting position and a portion of reduced diameter, spring means pressing said shroud means release spindle against a fixed abutment to hold said enlarged end in register with said locking members associated therewith, a spring-loaded plunger for moving said shroud



means lock release spindle against the pressure of said spring means associated therewith to bring the portion of reduced diameter of said last mentioned spindle into register with said shroud means lock members, a withdrawable safety member for normally holding said spring-load plunger in a cocked position, and an enclosed cylinder having a wall, said plunger moving in sealed relation with the wall of said enclosed cylinder, aperture means being provided in said cylinder to admit water to one face of said plunger to prevent motion of said plunger under the influence of its spring when said device is submerged in water to more than a predetermined depth.

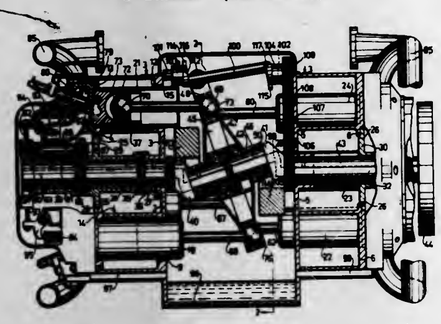
3,198,021
PRECISION GYROSCOPE
Joseph Arthur Cencel, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed June 7, 1961, Ser. No. 115,379
12 Claims. (Cl. 74—5)



1. In a precision gyro, the combination comprising: a housing member; a substantially spherical rotor-and-motor assembly positioned within said housing member, said assembly having as spin axis; a flotation liquid filling said housing member and surrounding said rotor-and-motor assembly, the mass of the liquid displaced by said rotor-and-motor assembly being approximately equal to the mass of said assembly; electrostatic means for elec-

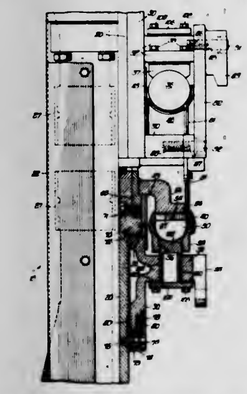
trostatically positioning said assembly in said housing; and torquer means selectively operable to apply force couples to said rotor-and-motor assembly for precessing said rotor-and-motor assembly.

3,198,022
WOBBLE PLATE ANCHOR CONTROL MECHANISM
Bror Algot de Waern, Spannvagen 8, Bromma, Sweden
Filed June 18, 1962, Ser. No. 203,220
Claims priority, application Sweden, Jan. 23, 1962, 747/62
8 Claims. (Cl. 74—60)



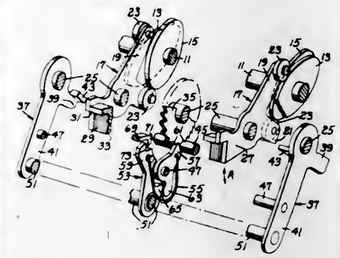
1. A wobble body mechanism for converting reciprocal piston movement to a rotary movement or vice versa, comprising a wobble body rotatably mounted on a main crank pin formed on a rotary main shaft and inclined thereto, a plurality of pistons, and connecting rods interconnecting the pistons with the wobble body, characterized in that the wobble body is slidably anchored to an auxiliary crank pin formed on a rotary auxiliary shaft and inclined thereto, said auxiliary shaft being parallel to the main shaft and means being provided to rotate said auxiliary shaft at a speed substantially the same as that of the main shaft.

3,198,023
CARRIAGE ROTATING MECHANISM FOR LIFT TRUCKS AND THE LIKE
William A. Norlander, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Feb. 5, 1962, Ser. No. 170,879
5 Claims. (Cl. 74—91)



1. In a carriage rotating mechanism, in combination, a fixed base having a cylinder support plate affixed thereto, a cylinder rigidly mounted to said support plate, said cylinder having a boss extending radially from one side thereof toward said support plate and having an opening in its opposite side extending along a portion of its length, said boss having a first radial bore communicating with the interior of said cylinder and in substantial alignment with said opening, and said support plate having a second radial bore in alignment with said first bore, a piston disposed within said cylinder for reciprocation therein, said piston having a gear rack formed in one side facing said opening, a rotatable carriage having secured thereto a pinion which projects through said opening and meshes with said gear rack to be driven thereby upon actuation of said piston, a bearing member housed substantially within said first bore, and means housed substantially within said second bore and anchored relative to said support plate for maintaining said bearing in contact with said piston approximately opposite the line of gear engagement with said pinion.

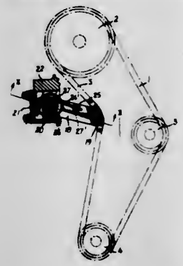
3,198,024
MECHANICAL MOVEMENT
Richard D. Hanson, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 12, 1963, Ser. No. 294,625
12 Claims. (Cl. 74—125)



1. A rapid, intermittent stepping movement comprising:
a stepping shaft,
a unidirectional ratchet wheel secured to said stepping shaft,
a pair of spaced apart cam followers oscillatable about said stepping shaft, each of said cam followers having a bifurcated end and a driving end,
a crossmember secured to said driving ends and having a first and a second impelling portion,
a continuous, unidirectional rotary input means having two similar pairs of spaced apart parallel cams thereon, one pair associated with each of said cam followers,
said cams of each of said pairs being angularly displaced with respect to each other and impingeable upon a different one of said bifurcations thereby providing a continuous, driven oscillation of said cam followers by said input means,
a pair of bell cranks translatable about said stepping shaft, each associated with an individual one of said cam followers, the first arm of each of said bell cranks being proximate one of said bifurcations and the second arm being driven in a first direction by said first impelling portion,
a lug on each of said first arms impingeable by its associated bifurcation during one portion of an oscillation to translate said bell cranks in a second direction,
a ratchet pawl biased into the teeth of said ratchet wheel and having a camming surface thereon,
an interposer biased in one direction into the path of said first impelling portion of said crossmember and cammable in the other direction by said camming surface of said ratchet pawl,

said interposer and said ratchet pawl being pivotally mounted on said second arms of said bell cranks and translatable therewith, and
an intermittently actuable, electromechanical detent for restraining said interposer and lying in the path of said second impelling portion of said crossmember,
whereby translation of said bell cranks in said first direction by said first impelling portion of said crossmember steps said ratchet wheel through said ratchet pawl, and translation of said bell cranks in said second direction causes said ratchet pawl to pivot upon a tooth of said ratchet wheel and thereby cam said interposer against said bias out of the path of said first impelling portion and into the control of said detent.

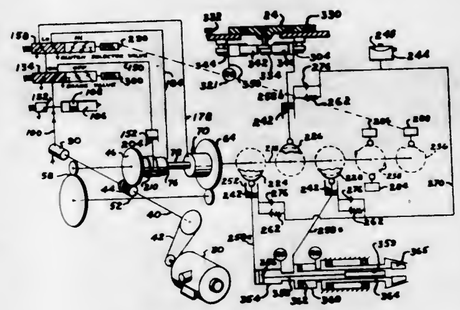
3,198,025
AUTOMATIC CHAIN TENSIONING DEVICES
Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed May 21, 1963, Ser. No. 281,900
Claims priority, application France, Nov. 18, 1959, 810,510, Patent 1,249,477
3 Claims. (Cl. 74—242.11)



1. In combination, sprocket wheels of an internal combustion engine including a camshaft sprocket wheel, a timing chain rotatably carried by said wheels and driving said camshaft sprocket wheel, a cylinder block, a pivot pin extending parallel to the camshaft sprocket wheel axis and disposed on a strap member detachably connected to said cylinder block, an elongated support member having one end pivotally connected to said pivot pin, a pressure member on the other end of said support member, said timing chain having a slack portion, said pressure member being disposed to contact and engage said slack portion of said chain, tensioning means mounted on said strap member and acting on said pressure member to maintain it in contact with the chain as it moves thereby, said pivot pin, said support member and said tensioning means being mounted with said strap member in a lateral recess of said cylinder block, the pivot pin axis being located on said cylinder block with respect to said sprocket wheels and to the pressure member so a rectilinear portion of said slack portion remains in constant inclination with respect to said cylinder block and to said sprocket wheels, and said recess being of a sufficient dimension to permit removal of the chain tensioning means from the outside of said cylinder block through said recess.

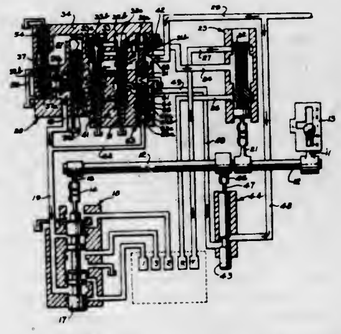
3,198,026
MECHANICO-HYDRAULIC POWER AND CONTROL UNIT
Earl A. Thompson, 1300 Hilton Road, Ferndale, Mich.
Original application Jan. 8, 1958, Ser. No. 707,802, now Patent No. 3,071,929, dated Jan. 8, 1963. Divided and this application Mar. 12, 1962, Ser. No. 179,178
9 Claims. (Cl. 74—337.5)

1. A self-controlling multi-speed motion programming device comprising an input shaft, a first power train driven by the input shaft and including reduction gearing and a clutch, a second power train also driven by the input shaft and including a second clutch, an output member adapted to be driven by either power train selectively and including a driven shaft, a casing including



bearing means for the shafts and power trains, cam means driven by the output shaft, and means operated by the cam means for selectively disengaging one clutch and engaging the other with each revolution of the output shaft.

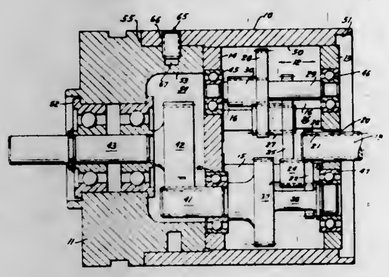
3,198,027
HYDRAULIC TRANSMISSION CONTROL
Charles A. Ramsel and Gerald D. Rohweder, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Nov. 6, 1961, Ser. No. 150,241
4 Claims. (Cl. 74—364)



1. In a transmission hydraulic control system including modulated fluid under pressure delivered to a speed clutch system the combination comprising a valve housing, a valve spool slidably residing in said housing and forming an orifice therewith, the fluid under pressure communicating with one side of said orifice, a directional clutch system communicating with the other side of said orifice, movement of said spool relative to said housing varying the area of said orifice, a piston adjacent one end of said spool and slidably maintained in a piston chamber in said housing, said spool having a central bore in its other end, said bore communicating with the side of said orifice which communicates with said directional clutch system whereby fluid entering said bore induces movement of said spool relative to said housing, a valve spring opposing the motion induced by fluid in said bore, a poppet valve communicating with said piston chamber, said modulated fluid communicating with said poppet

valve whereby fluid enters said piston chamber and induces movement of said valve spool in opposition to the movement induced by the pressure in said bore, movement by pressure in said bore operative to reduce the area of said orifice while movement in opposition thereto is operative to increase the area of said orifice.

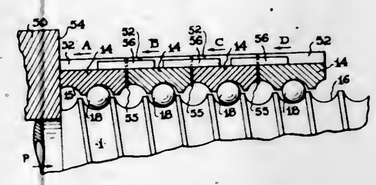
3,198,028
GEAR HEAD ASSEMBLY
Frederick L. Dahl, Ringoes, N.J., and James H. Hoke, Bedminster, and Stanley Cohen, Elkins Park, Pa., assignors to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed Nov. 16, 1961, Ser. No. 152,781
4 Claims. (Cl. 74—469)



1. A gear head assembly comprising a cylindrical housing; a gear cage in a first cylindrical formation of said housing and a head member supported in a second cylindrical formation of said housing, the longitudinal axes of said housing and gear cage coinciding; said gear cage having a pair of parallel plates integrally connected to a plurality of spacer members extending between the plates; openings in said plates, bearings in said openings; each of said openings in one plate being aligned with an opening in the opposite plate; a plurality of gear carrying shafts between said plates; said shafts each being rotatably supported in opposite aligned openings and an additional opening in one of the plates to receive a driving member, one of said shafts extending beyond the opposite plate to provide an output drive gear; an additional rotatable shaft carried by the head member; a gear on the portion of said shaft extending toward said cage; said output drive gear meshing with said gear on the shaft carried by said head member; the said last mentioned shaft extending beyond said head member to provide an output drive; said second cylindrical formation being slightly eccentric with respect to the longitudinal axis of the housing, whereby said shaft carried by the head and its gear are eccentrically positionable with respect to said longitudinal axis of the housing and the cage; adjustable connecting means for permitting a continuous rotatable adjustment between said housing member and said cage within a predetermined angular limit to adjust for backlash between said output drive gear and the gear carried by the shaft in said head member; and means for locking the cage and head to secure said adjustment.

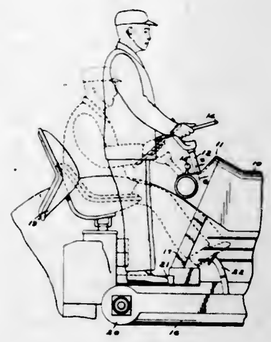
3,198,029
PRELOADED BALL BEARING SCREW AND NUT MECHANISM
Harry Orner, 2479 Glen Canyon Road, Altadena, Calif.
Original applications July 30, 1953, Ser. No. 371,253, and Apr. 2, 1959, Ser. No. 803,804. Divided and this application Feb. 24, 1961, Ser. No. 91,545
5 Claims. (Cl. 74—459)

1. A ball bearing nut and screw mechanism comprising a screw having a helical ball seating groove extending therealong, a plurality of similar nut rings encircling said screw and having inwardly opening helical grooves substantially identical to said screw groove, each nut ring having a single full convolution load groove opening at its ends into ball return passage means formed in the body of the nut ring, said nut rings each being held assembled to said screw by independent closed circuits of recirculating balls, each of said circuits having a figure eight configuration, recess means extending crosswise of



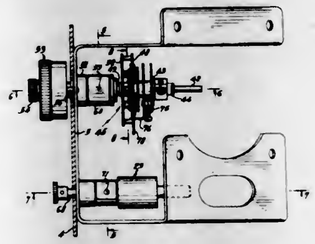
said rings and positioned to be in aligned registry with one another as said rings are held rotated against a fixed abutment adjacent said screw by a force sufficient to load the balls in contact with the screw by predetermined load values, and rigid close fitting key means extending through said aligned recesses to lock said nut rings precisely in the defined positions thereof to the end that an externally applied load will be distributed to all balls seated in said load convolutions.

3,198,030
ADJUSTABLE STEERING COLUMN
Raymond J. Miller, Detroit, and W. Robert Smith, Birmingham, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 20, 1961, Ser. No. 125,536
3 Claims. (Cl. 74—493)



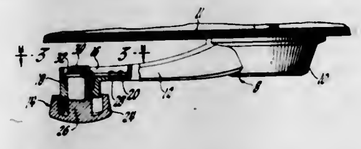
1. In a tractor, an upwardly, rearwardly inclined steering shaft, a steering wheel on the upper end of the shaft, bearing means rotatably receiving the steering shaft, means for providing a transverse, horizontal pivot axis about which the bearing means and steering shaft are adapted to be swung through an arc extending in a vertical plane perpendicular to the pivot axis of the bearing means, a spring biasing the bearing means in a direction generally axially of the upper portion of the steering shaft, a fixed member extending along an arc about the axis of the bearing means as a center and having portions interfitting with portions of the bearing means to lock said bearing means against swinging movement, the bearing means being displaceable by axial movement of the steering wheel and upper portion of the steering shaft to release the interfitting portions of the bearing means and member, the steering shaft being swingable about the axis of the bearing means to a second position.

3,198,031
AUTOPILOT CONTROL
Walter M. Templin, Wayne, and James E. Gasbo, Glenolden, Pa., assignors to Tactair, Inc., Bridgeport, Pa., a corporation of Delaware
Filed July 27, 1962, Ser. No. 212,979
5 Claims. (Cl. 74—504)



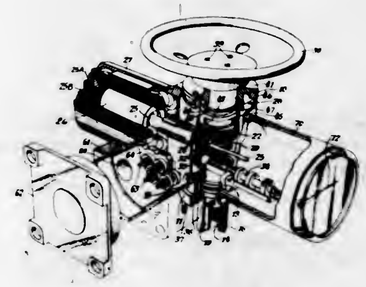
1. A control unit for aircraft stabilization systems having a movable input member for controlling the aircraft including a rotary motion transmission device having an output shaft coupled to said movable member, a first axially movable and rotatable input shaft coupled to said output shaft in a relatively low input-to-output speed relationship, and a second rotatable input shaft including step-down motion transmission means coupled to said output shaft to afford relatively high input-to-output speed relationship, a first control knob on said first input shaft, means to hold said knob in a centered position against rotation when it is moved in one direction axially with said first shaft and to allow limited rotation when said knob is moved in the other direction axially of said shaft, and a second control knob on said second input shaft.

3,198,032
HANDLE
Walter Pollak, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 20, 1962, Ser. No. 211,180
3 Claims. (Cl. 74—545)



1. A handle comprising: a crank member, a knob member projecting from an end portion of said crank member in slidable telescopic relation therewith, a resilient deformable support member having said knob member secured thereto, and frangible means releasably securing said support member to said crank member, said securing means being frangible to release said support member from said crank member upon the application of a predetermined force to said knob member and permit said knob member to telescope toward said crank member, a force less than said predetermined force on said knob member causing said support member to resiliently deform and telescope said knob member toward said crank member.

3,198,033
VALVE ACTUATORS
Jeremy Joseph Fry, Bath, Somerset, England, assignor to Rotork Engineering Company Limited, Bath, England
Filed Feb. 26, 1962, Ser. No. 175,769
Claims priority, application Great Britain, Feb. 28, 1961, 7,344/61
11 Claims. (Cl. 74—625)

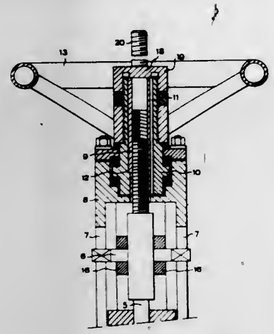


1. A valve actuator comprising an output shaft for actuating a valve in operable engagement therewith, driving means disposed on said output shaft, power operating means including an electric motor provided with a driving shaft having a worm mounted thereon, a worm wheel axially movable on said output shaft for normally engaging said driving means and coupling said motor therewith, said worm drivingly engaging said worm wheel, manual valve operating means movable to engage said driving means and to disengage said power operating means therefrom, and retaining means to hold said manual valve operating means in engagement with said driving means, said retaining means releasing said manual valve operating means from engagement with said driving means upon operation of said power operating means so that said power operating means engages said driving means.

3,198,034
VALVE ACTUATOR
Jacobus C. M. de Witte, Beek, and Andreas J. H. Goedhart, Sittard, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
Filed May 7, 1962, Ser. No. 193,362
Claims priority, application Netherlands, Nov. 17, 1961, 271,522
8 Claims. (Cl. 74—625)

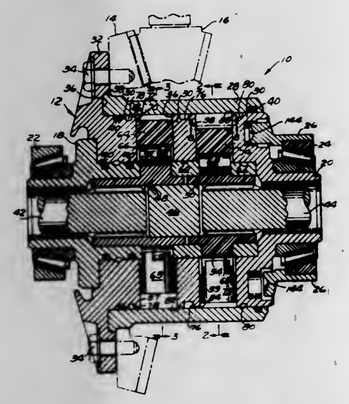
1. A valve actuator adapted for both manual and power operation including a casing, an operating rod mounted for axial movement in said casing, means restraining said rod from rotation with respect to said casing, a power operating device mounted laterally of said rod, means connecting said power operating device to said rod whereby the device may displace the rod in axial direction, a valve member connected to one end of said rod, a primary sleeve threadably engaged to the other end of said rod, an outer sleeve enclosing said primary sleeve and axially movable with respect thereto, means restraining said sleeves from rotation with respect to each other, means limiting the axial movement of said primary

sleeve with respect to said outer sleeve in direction toward said valve member, means rotatably mounting said outer sleeve in said casing, manual operating means associated



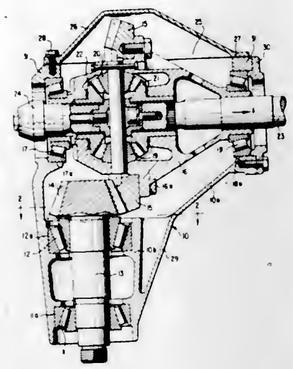
with said outer sleeve, and locking means for preventing relative axial movement between said sleeves during manual operation of the valve.

3,198,035
DIFFERENTIAL TRANSMISSION
Otto Mueller, 13 Byfield Lane, Dearborn, Mich.
Filed Aug. 16, 1963, Ser. No. 302,545
13 Claims. (Cl. 74—650)



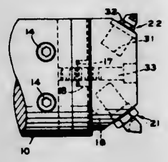
1. A transmission comprising a rotatable casing for transmitting an input torque, a pair of coaxially aligned rotatable elements mounted in said casing and adapted to be connected respectively to a pair of shafts, each of said elements having a plurality of circumferentially arranged and radially outwardly directed rise and fall cam surfaces, said casing having means defining in axially spaced relation two groups of circumferentially aligned and radially inwardly directed pressure chambers, one of said groups facing the cam surfaces of one of said elements and the other of said groups facing the cam surfaces of the other of said elements, the pressure chambers of said two groups each being in two sets, restrictive passage means associated with each group providing fluid communication in each group between the two sets of pressure chambers thereof, pistons in said two groups of pressure chambers operatively engaging the cam surfaces that are faced by their respective groups of pressure chambers for reciprocation in response to rotation of their associated elements relative to said casing, said two groups of pressure chambers and their associated cam surfaces being arranged so that when relative rotation occurs between said casing and either of said elements the pistons associated with the cam surfaces of such element reciprocate to transfer the fluid in the associated group of pressure chambers back and forth between its two sets via the associated passage means.

3,198,036
AXLE GEAR CONSTRUCTION
Alf John Müller, Stuttgart-Bad Cannstatt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Jan. 14, 1963, Ser. No. 251,264
Claims priority, application Germany, Jan. 19, 1962, D 37,955
14 Claims. (Cl. 74—710)



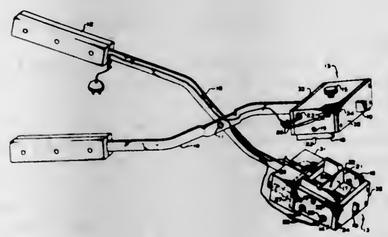
1. An axle gear for motor vehicles comprising:
an axle gear housing
a differential including housing-like differential body means, a spur bevel gear operatively connected with said differential body means, and a plurality of gear wheels,
axle shaft means operatively connected with some of said gear wheels,
said housing-like differential body means surrounding at the two ends thereof said axle shaft means and serving for the bearing support of said axle shaft means and of said gear wheels,
said axle gear housing being an integral structure and substantially enclosing on all sides and surrounding said differential including said housing-like differential body means, said spur bevel gear, and said plurality of gear wheels,
said axle gear housing being further provided with bearing aperture means for the bearings of two ends of said differential body means,
bearing means for said bearing aperture means,
means for removably retaining one of the bearing means for the ends of said differential body means in the respective bearing aperture means,
said axle gear housing being additionally provided with a lateral aperture disposed substantially transversely to the axis of said axle shaft means and within a plane located outside the bearing aperture means for the assembly and disassembly of said differential body means inclusive said spur bevel gear wheel,
said lateral aperture being of such size that said differential body means together with said spur bevel gear and with at least one of said axle shaft means supported therein may be removed in the inclined position thereof through said lateral aperture out of the axle gear housing upon removal of said removably retained bearing means.

3,198,037
TURRET NOSE BORING BAR
William Yogus, Birmingham, Mich., assignor to The Valeron Corporation, Detroit, Mich., a corporation of Michigan
Filed May 7, 1964, Ser. No. 365,611
9 Claims. (Cl. 77—58)



1. An adjustable turret nose boring bar assembly comprising, a boring bar body, a transversely adjustable slide mounted at the end of said body, a rotatably adjustable turret nose pivotally mounted on said slide, and a plurality of cutter elements alternately positionable through rotation of said turret nose to roughing and finishing cut positions.

3,198,038
INSULATION REMOVING TOOL AND METHOD
Max C. Fleming, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 24, 1961, Ser. No. 105,050
6 Claims. (Cl. 81—9.5)



1. A thermoplastic insulation removing tool comprising: a pair of pivotally connected handle members; an insulated handle provided on one end of each said handle members; a jaw member slidably and adjustably mounted on each of said handle members, said jaw members being adapted to be opened and closed with respect to each other by means of said handle members; each of said jaw members comprising a body provided with a transverse opening therethrough adapted to receive one of said handle members; a recess formed in the inner face of each of said jaw members; an integrally formed die insert, said die insert comprising a tapered longitudinal blade member provided with a flat narrow land at its insulation contacting edge and a pair of transverse blade members arranged perpendicular to the ends of said longitudinal blade member, a semi-circular tapered portion having a flat narrow land at its insulation contacting edge at the mid-point of each transverse blade member being coincident at said edge with said contacting edge of said longitudinal blade member; a pair of longitudinal openings provided in the body of each said jaw member adjacent its outer face; an electrical heater element disposed in each of said longitudinal openings; lead wires for supplying electric current to each of said heaters; and a heat responsive switch mounted on and adjoining the body of one of said jaw members and connected into one of said lead wires to each of said heaters for controlling said heaters.

3,198,039
TOOL FOR SEALING AN APERTURE IN A WALL
Edwin A. Price, 1660 Trenton St., Denver, Colo.
Filed Dec. 21, 1961, Ser. No. 161,063
8 Claims. (Cl. 81—15.6)

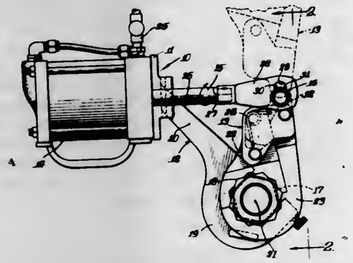


1. In a tool for sealing an aperture in a wall, an elongated shank terminating in a point at one end and having manipulating means mounted on the other end, a slot formed completely through the shank extending from adjacent said pointed end to a rear wall intermediate the ends of the shank and arranged to hold a predetermined amount of sealant, there being grooves extended from the slot to about the tip of the point and arranged to guide sealant from each slot over the tip of the point end of the shank for joining therebeyond, a movable key in the slot arranged to slide in said slot, said key having extending portions beyond said shank for contacting the wall at the aperture and be retained thereby on a withdrawal of the shank from such an aperture so as to force sealant therefrom, said movable key arrange for free sliding movement in the slot but having means to prevent lateral displacement from the slot.

3,198,040
WRENCH
George E. Franck, Morton Grove, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois
Filed Jan. 14, 1963, Ser. No. 251,175
6 Claims. (Cl. 81—55)

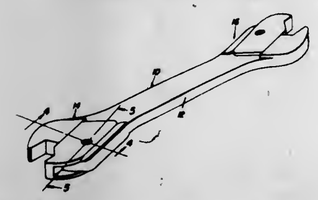
4. Apparatus for making-up a coupling having coaxial body and nut members, comprising: a support; a first jaw member fixedly secured to said support for fixedly holding one of the coupling members; a force member; means carried by said support for forcibly moving said force member parallel to a single line; a second jaw member for engaging the other of said coupling members; and means connecting said second jaw member

to said force member for swinging movement of the said second jaw member about the axis of the coupling members as a result of the movement of said force member, said connecting means including means on said force



member defining a slot extending perpendicular to said line and a shoulder means connected to said second jaw and slidable in said slot thereby permitting force transfer between said force member and said second jaw member substantially only parallel to said line.

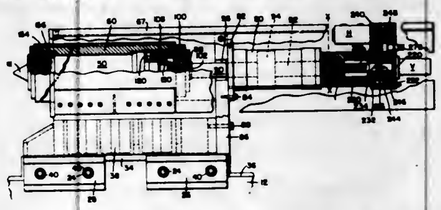
3,198,041
OPEN END WRENCH WITH SLIDABLE JAW INSERT
Wilbur A. Davis, R.F.D. 1, Mahomet, Ill.
Filed Apr. 25, 1963, Ser. No. 275,698
6 Claims. (Cl. 81—129)



1. An open end wrench for gripping hexagonal nuts and bolt heads, etc., said wrench comprising a stationary jaw, a slidable jaw mounted for sliding movement relative to said stationary jaw, the free ends of said stationary and slidable jaws including opposing generally parallel first gripping surfaces inclined in the same direction at an acute angle relative to the line of movement of said slidable jaw, said first gripping surfaces being substantially planar, slidable jaw being also provided with a second gripping surface on its inner end inclined in the opposite direction relative to the line of movement of said slidable jaw and substantially 120 degrees relative to the first gripping surface of said slidable jaw, the inclination of said second gripping surface relative to said line being in the order of two to three times as great as the inclination of said first gripping surfaces relative to said line.

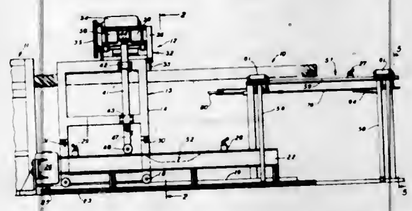
3,198,042
ROLL LATHE TAILSTOCK
Jack N. Blass, 4886 Oaklawn Drive, Cincinnati, Ohio
Filed Jan. 31, 1962, Ser. No. 170,846
20 Claims. (Cl. 82—31)

5. A tail stock for a heavy duty roll lathe, including a frame, a quill mounted in the frame for longitudinal sliding movement, means restraining the quill against rotation, a live tail center spindle rotatably supported by the quill, a reciprocating hydraulic motor including a piston and cylinder carried by the frame, means coupling the piston to the quill for effecting power positioning of the quill relative to the frame, and an auxiliary mechanical control for the position of the piston and quill relative to the frame including a lead screw coupled to the piston for bodily movement therewith and relative thereto, abutment means for limiting the joint bodily movement of the



piston and screw in either of two opposite axial directions, and driving means for effecting rotation of the screw in opposite directions to increase or decrease the effective overall length of the combined coupled quill, piston and screw to effect positioning of the quill.

3,198,043
PIPE CUTTING AND HANDLING APPARATUS
Paul K. Davis, Alameda, Calif., assignor to Pacific Roller Die Co., Inc., Hayward, Calif., a corporation of California
Filed Jan. 3, 1963, Ser. No. 249,196
12 Claims. (Cl. 82—53.1)

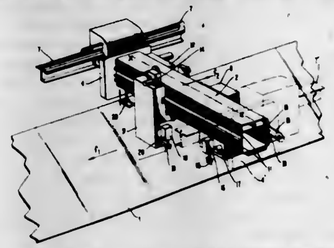


1. Cutting apparatus for use in connection with an elongated sheet metal pipe moving at a predetermined rate in one direction along a path of travel extending longitudinally of said pipe, comprising:
(a) a carriage supported for movement parallel to said path;
(b) driving means connected to said carriage for so moving the same at said predetermined rate in said one direction;
(c) cutting means carried by said carriage and supported for transverse movement into and out of cutting relation to said pipe in said path; and
(d) means responsive to said movement of said carriage past a first point for so moving said cutting means into said cutting relation for cutting said pipe and past a second point spaced from said first point a fixed distance in said one direction for so moving said cutting means out of said cutting relation.

3,198,044
GLASS CUTTING APPARATUS
Bernard Clin, Seine, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed May 31, 1962, Ser. No. 198,950
Claims priority, application France, June 7, 1961, 864,141
15 Claims. (Cl. 83—10)

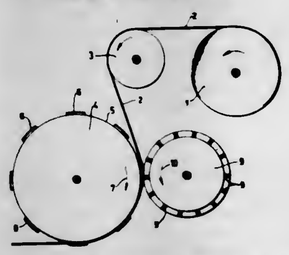
1. Apparatus for cutting an elongated sheet of glass moving in the direction of its length, comprising a transverse bridge disposed on one side of the sheet of glass

and selectively movable parallel to the sheet in the same direction as and opposite to the direction of travel of the glass, means mounting a first, transverse cutting, glass cutting tool on the bridge for selective travel in opposite directions along the bridge to cut the glass along lines transversely of the sheet of glass, means mounting



a second, longitudinally cutting, glass cutting tool on the bridge for adjustment longitudinally of the bridge, and means selectively to present the second tool to the glass and to retract the tool therefrom so that the second tool forms a longitudinal cut in the glass when presented to the glass and the bridge is moved longitudinally with respect to the glass.

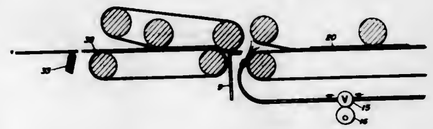
3,198,045
METHOD OF PERFORATING WEBS CONTAINING RESIN
Gustav Sigvald Hellberg, Johanneshov, Stockholm, Sweden, assignor to Aktiebolaget Produktions-Service, Stockholm-Vallingby, Sweden
Filed Aug. 30, 1960, Ser. No. 52,935
Claims priority, application Sweden, Aug. 31, 1959, 8,046/59
3 Claims. (Cl. 83—13)



1. A method of perforating paper and the like of a sheet-like form, the steps of which include feeding the paper onto a rotatable patrix and into contact with relief-like stud portions on said patrix having a shape corresponding to the shape of the perforations, rotating a tool against the paper in contact with the studs of the rotatable patrix to work the paper against the studs to produce said perforations, and producing a resinous coating upon the peripheral surfaces of the studs and tool to provide a working surface for the studs and tool to accomplish the perforating operation.

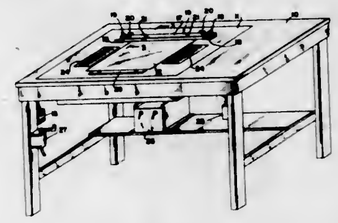
3,198,046
METHOD AND APPARATUS FOR HANDLING SHEETS CUT FROM A WEB
George B. De Angelo, Lee, Mass., assignor to The Clark-Aiken Company, Lee, Mass., a corporation of Massachusetts
Filed Feb. 20, 1963, Ser. No. 259,867
6 Claims. (Cl. 83—24)

1. A process for assembling sheets comprising passing a web through cutting means to obtain a plurality of sheets, separating said sheets by conveying them away from said cutting means at a higher rate of speed than that of said web and assembling said sheets in underlapping relationship by passing the separated sheets across a gap and over a bar positioned within the gap to a conveyor, arresting the forward movement of one



of said sheets and deflecting only the trailing edge of said sheet by a blast of air while urging the forward edge of the next succeeding sheet across the gap and over the bar so that the forward edges of succeeding sheets are fed under said trailing edge to form an assembly of spaced sheets in underlapped echelon on said conveyor.

3,198,047
APPARATUS AND METHOD FOR POSITIONING A SHEET OR FILM AND IMPOSING REGISTERING MEANS THEREIN
William Munz, Berkeley Heights, N.J., assignor to Publication Corporation, New York, N.Y., a corporation of New York
Filed Aug. 20, 1962, Ser. No. 217,902
12 Claims. (Cl. 83—33)

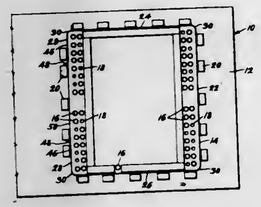


1. A method of registering and punching a pre-punched photographic film comprising the steps of registering the photographic film on a surface relative to a master layout and a punching means mounted in fixed position relative to said surface, positioning at least two film-positioning elements, each carrying upstanding registering means engageable with the initial punch holes in the film, relative to said surface with said means carried thereby in engagement with different punch holes in the film, magnetically clamping said film-positioning elements in their adjusted positions and actuating the punching means to produce additional punch holes in the film.

3,198,048
METHOD OF FORMING CODED CARDS FOR DATA-PROCESSING MACHINES
Logan J. Finlayson, Denver, and Emmet H. Cagley, Adams County, Colo., assignors to W. H. Kistler Stationery Company, Denver, Colo., a corporation of Colorado
Filed Feb. 19, 1962, Ser. No. 173,891
5 Claims. (Cl. 83—36)

1. The method of forming a duplicate pair of substantially rectangular cards from a single generally rectangular sheet of card stock which comprises the steps in sequence of, first die-cutting not more than one-half of the sheet to sever three of the four edges of a single card therefrom while leaving said card connected to said sheet

along an intermediate portion of the fourth edge located adjacent the transverse centerline of the sheet, said connecting portion forming a tab interrupting the fourth edge between its ends and extending along said transverse centerline of the sheet, second die-cutting the other half



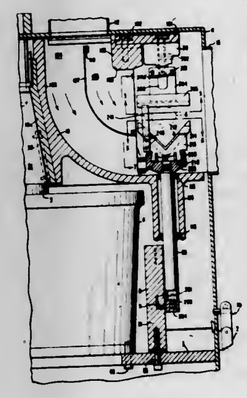
of the sheet to sever three of the four edges of a second card therefrom while leaving said second card connected to the first by means of said common tab-forming portion, and, third, separating the two cards by cutting along the interconnecting tab so as to leave the partially-formed fourth edges of both cards intact.

3,198,049

CUTTER MEANS FOR CLAMPING AND CUTTING FILAMENT

Pern Joseph Chassy, Camden, S.C., Archie Hahn, Jr., Wilmington, Del., Richard Richman Shimp, Camden, S.C., and Charles Carrick Webb, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Feb. 28, 1963, Ser. No. 261,805
5 Claims. (Cl. 83—98)



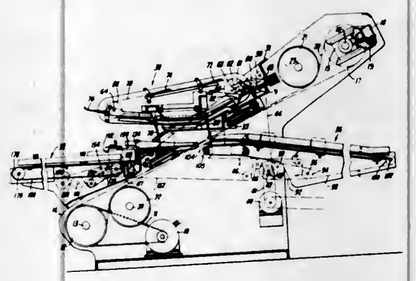
1. An improved high production rate staple cutter apparatus for cutting a dry tow of continuous filaments into dry staple fibers, said apparatus comprising in combination; a supporting frame structure, a plurality of movable units rotatably mounted in said frame structure for clamping and cutting a tow, each of said units comprising a set of cutter elements in alignment and in opposed relationship with one another, one of said cutter elements in each of said units being mounted for relative movement along a given direction axial to the general direction of rotation of said units, between an inoperative first position in which said cutter elements are spaced apart, an operative second position in which said cutter elements are in operative tow clamping engagement, and an operative third position in which said cutter elements are in tow cutting engagement, a drive means cooperating with said frame structure and said units to move said units along a given path of rotary motion through the three positions of said one cutter element in each of said units, a guide means mounted on said frame structure for receiving and guiding a tow into operative engagement with said units at said first position, an actuating means comprising a cam member for each of said cutter elements movable through said three positions and mounted in said frame structure to slowly and evenly actuate said axially movable cutter elements through their three positions to progressively clamp and then cut the tow concurrently at a plurality of spaced positions along the tow as the units rotate, and a dry fluid flow means mounted on the frame structure and cooperating with said units near said cutting position for collecting and conveying cut staple fibers away from the cutting position.

3,198,050

SYNCHRONIZER TO INTRODUCE ARTICLES IN PROPER PHASE

Benedict R. Benith, Westbury, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Oct. 1, 1962, Ser. No. 227,158
4 Claims. (Cl. 83—201.12)



1. In a bread slicing machine, a plurality of slicing saw bands, a first continuously operated transfer having a first individual conveying element for engaging and conveying an item toward and partially through said saw bands, a second continuously operated transfer, in tandem with said first transfer, said second transfer having a second individual element for engaging and conveying said item without interrupting the remainder of the distance through said saw bands, a receiving station in said machine for receiving said items at random, an elevator at said station for presenting said item to said first element so that said first element propels said item off said elevator toward said saw bands, means for actuating said elevator, said first element and said second element in synchronism.

3,198,051

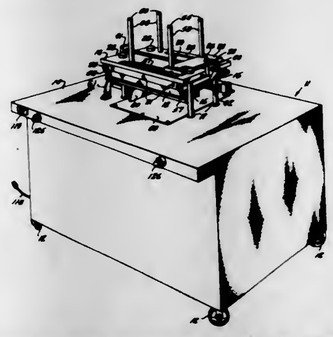
ADJUSTABLE THREE-KNIFE PAPER CUTTER AND TRIMMER

Meyer H. Ablon, Dallas, Tex., assignor of fifty percent to Roy E. Stein, Dallas, Tex.

Filed Aug. 28, 1961, Ser. No. 134,307
1 Claim. (Cl. 83—446)

In a paper cutting and trimming machine having a base, a work surface on said base, and a cutting and trimming head assembly on said base and adapted to operate vertically against said work surface, the said head assembly comprising, in combination, a carrier plate

spaced above said work surface having a pair of stationary cutting knives rigidly attached thereto and arranged in contiguous right-angular association, a third knife adjustably supported on said plate opposite and parallel to one of said stationary knives and at right-angles and adjacent to the other of said knives, means carried by said plate for adjusting said third knife to different spacings



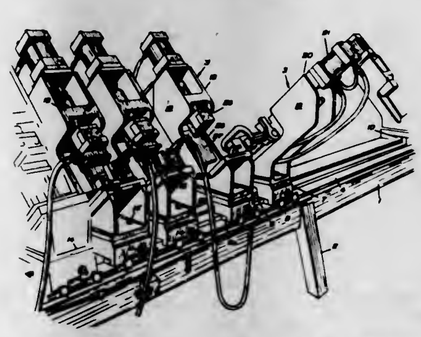
from and parallel to its said opposing knife, an adjustable stock guide opposing one of said stationary knives and operative at right-angles to said adjustable knife, and a yieldable stock guide adjacent to said stationary knife opposing said adjustable knife, paper clamping elements cooperatively arranged adjacent to said adjustable knife and its opposing parallel knife, and means for operating said head assembly.

3,198,052

APPARATUS FOR MACHINING ELONGATED SECTIONS OF MATERIAL

Sven Eric Persson, Stow, Ohio
(Eriksiastvigen 23, Malmo 20, Sweden)

Filed Mar. 14, 1963, Ser. No. 265,175
2 Claims. (Cl. 83—516)



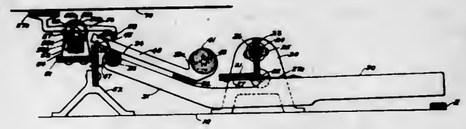
1. Apparatus for machining workpieces, comprising a bed, a plurality of work holder means having base portions supported on the bed, the base portions of said plural work holder means having a common midplane, the work holder means extending upwardly and outwardly from said midplane at an angle of about 45°, means releasably securing said base portions selectively in either of a pair of positions 180° apart, said positions having a plane of symmetry relative to each other that coincides with said midplane, tool carrier means carried by each work holder means, and means for reciprocably moving said tool carrier means along a line disposed at an angle of about 45° to said plane of symmetry.

3,198,053

PIANO ACTION

Wilfrid H. Bendall, P.O. Box 126, Stonington, Conn.

Filed July 12, 1963, Ser. No. 294,720
11 Claims. (Cl. 84—243)



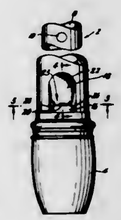
1. A piano action comprising bracket means supporting an angularly adjustable rail, a fixed rail, and a pivoted rail, said adjustable rail having a playing key in spring-loaded pivotal retention thereon, said fixed rail having a hammer in spring-loaded pivotal retention thereon and said pivoted rail having damper means in spring-loaded pivotal retention thereon, said key being in actuating contact with said hammer and said hammer being in actuating contact with said damper means.

3,198,054

MUSICAL INSTRUMENT OF THE WIND TYPE

Paul Ehrlich, 924 West End Ave., New York, N.Y.

Filed June 11, 1964, Ser. No. 374,373
5 Claims. (Cl. 84—380)



1. A musical instrument comprising a body and a mouthpiece, said mouthpiece and body having communicating air passages therethrough, and a partition in said body having an edge facing said mouthpiece and intercepting said body air passage, said partition extending to and its upper surface freely slantingly communicating between said body air passage and the outside of said body, thereby to define a windway, said partition edge comprising a surface which at the lateral ends thereof has a dimension in a direction substantially perpendicular to the axis of said body air passage which is appreciably greater than the corresponding dimension of said surface at points between the lateral ends thereof.

3,198,055

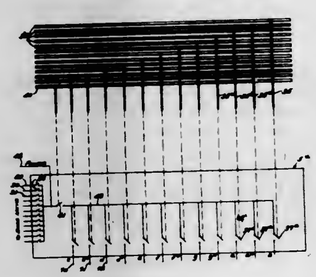
PIANO HAVING CHORD PLAYING MEANS

Lee L. Von Gunten, Tonawanda, N.Y., assignor to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware

Original application Feb. 24, 1959, Ser. No. 794,982, now Patent No. 3,149,528, dated Sept. 22, 1964. Divided and this application Feb. 28, 1962, Ser. No. 176,240
3 Claims. (Cl. 84—443)

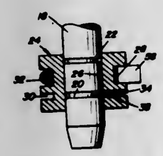
1. In a piano, the combination comprising a plurality of individual note playing means for at least one octave, a plurality of electrically energizable means individually operatively associated with said note playing means with each of said electrically energizable means when energized

being arranged to actuate the one of said note playing means with which it is associated, a source of electrical energy, a common power supply switch operatively connected to said plurality of electrically energizable means, and circuit means for said electrically energizable means to connect said source of electrical energy thereto through said power supply switch, said circuit means including mecahnical means comprising a plurality of pivotally positioned first bars operatively individually and selectively associated with said electrically energizable means,



said mechanical means also comprising a second pivotally positioned bar operatively associated with said common power supply switch, said second bar being arranged to close said switch after certain of said electrically energizable means for those of said individual note-playing means as are required for a selected chord have been prepared by operation of said first bars thereby to energize said certain of said electrically energizable means at one instant and to obtain simultaneous playing of the notes of said chord.

3,198,056
HITCH PIN SAFETY LOCK
Clarence E. Gowan, 527 Railroad St., Lovington, Ill.
Filed Sept. 12, 1963, Ser. No. 308,485
4 Claims. (Cl. 85—8.8)



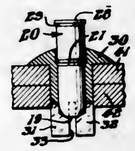
1. In combination with a shank adapted to detachably couple parts, a safety lock for preventing accidental withdrawal of the shank comprising, a collar member slidably receiving said shank therethrough, said collar member having a pair of axially spaced grooves therein, a slot formed in one of said grooves for alignment with an annular groove formed in the shank, an arcuate lever element, means disposed within one said groove and pivotally mounting the lever element for extension through the slot where intersecting said one groove, said level element being provided with an offset portion projecting from the collar member and overlying the other groove therein, and spring means seated in said other groove and having opposite ends interconnected between the offset portion of the lever element and the pivotal mounting means for biasing the lever element into the annular groove of the shank to lock the collar member thereto.

3,198,057
CORRUGATED FASTENER STICK
Roland J. Moore, Richmond Hill, N.Y., assignor of one-half to Leonard H. King, Valley Stream, N.Y.
Filed Dec. 12, 1961, Ser. No. 158,723
5 Claims. (Cl. 85—17)



1. A corrugated fastener stick in the form of a continuous elongated member folded upon itself to provide a plurality of elongated elements having corrugations extending completely across their smaller dimension, said elements including top and bottom end surfaces and having opposed side edges, any two adjacent elements being integrally joined by relatively narrow U-shaped tab portions at one side edge and being free from connection at the other side edge, and tab portions being readily severable by an axial force applied to the top end surface of one of said adjacent elements, each of said elements having a series of relatively sharp penetrating points along the bottom end surface thereof, said member including frangible retaining means secured to the integrally joined side edges thereof, whereby said member is prevented from expanding.

3,198,058
BLIND RIVET
John K. Barry, Springfield, Pa., assignor to South Chester Corporation, Lester, Pa., a corporation of Delaware
Filed Mar. 20, 1963, Ser. No. 266,732
1 Claim. (Cl. 85—84)



In combination: a rivet having a head and an elongated shank having a bore of substantially constant diameter extending from the head into the shank, said bore terminating in an inwardly-extending shoulder facing said head, said shank therebeyond being adapted to be expanded radially; an expander pin for insertion in the bore of said rivet, said pin having a length substantially longer than said rivet bore and a basic diameter corresponding to the diameter of said bore, said pin having a wedge head at one end and a circumferential wedge rib protruding beyond the basic pin diameter at a point above the other or nose end of said pin a distance less than the length of said bore, said wedge rib having a ramp surface which inclines outwardly from the basic surface of the pin in the direction of the head at an angle of between 15° and 20°, said wedge head having a conical surface portion and a cylindrical surface portion thereabove, said conical surface portion extending outwardly from the basic diameter of said pin to the diameter of said cylindrical surface portion, said wedge head being adapted to mate within the rivet bore under a press fit, thereby to seal the hole in the rivet, the largest diametral dimension of said wedge rib being smaller than the diametral dimension of the cylindrical surface of the head, said rib and said wedge head being the only portions of said pin having a diameter larger than the basic diameter of said pin, said pin also having an annular recess immediately in back of said rib, said recess having its bottom spaced radially inwardly of the basic pin diameter, the rivet and expander pin having such relationship that when said pin is inserted into predrive position in the bore of said rivet, said rib enters said bore to dilate the same before the nose end of said pin engages the internal shoulder to expand the rivet, said pin having such greater length than said rivet bore that said head remains outside said bore until after said pin has been driven in beyond the end of said bore to expand fully said rivet, said rivet being made of metal having sufficient elastic properties to return the dilated bore at least partially toward its original diameter in the region between said rib and the head end of the rivet bore.

3,198,059
FIBER ENERGY CONDUCTING DEVICE HAVING A HEAT SHRUNKEN TUBULAR FITTING
Roland A. Phaneuf, Sturbridge, and Wilfred P. Bazinet, Jr., Webster, Mass., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Feb. 8, 1960, Ser. No. 7,436
2 Claims. (Cl. 88—1)



1. A fiber energy conducting device of the character described comprising a multiplicity of long and thin normally flexible energy-conducting fibers arranged in side-by-side bundled relationship with corresponding one ends thereof cooperatively defining an end face of said device, a relatively long and resilient tubular sheath surrounding the major portion of the length of said bundle of fibers and extending therealong from a point back away from said end face, a relatively short continuous tubular fitting of initially dilated but heat shrunken plastic material contracted into immediately surrounding relation with at least a substantial portion of the length of said bundle of fibers between said end face and sheath and extending into overlapping relationship with an adjacent section of the length of said sheath, said tubular fitting being in compressively gripping relation with underlying lengths of said fibers and sheath and functioning to continuously apply a substantially uniformly distributed radially directed compressing force along such lengths of the fibers sufficient to prevent longitudinal slippage of one fiber relative to another and relative to said sheath while permitting free flexing of said sheath and fibers throughout sections thereof unsuppported by said fitting.

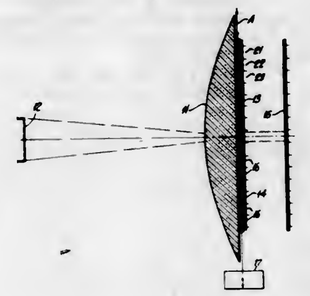
3,198,060
DISPLAY DEVICE FOR SPACED APART PARTIAL IMAGES
Manfred von Ardenne, Dresden-Weisser Hirsch, Germany, assignor to VEB Transformatoren- und Röntgenwerk, Dresden, Overbeckstrasse, Germany
Filed Mar. 2, 1962, Ser. No. 177,064
1 Claim. (Cl. 88—1)

A device for displaying stored images consisting of a plurality of relatively narrow, spaced-apart partial images, said device comprising, in combination:

(a) a collector lens;

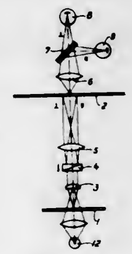
(b) a linearly extended light source disposed in the focal plane of said collector lens;

(c) a diaphragm having a plurality of equi-spaced parallel slots corresponding in number and spacing to the number and spacing of said partial images, extending parallel to said partial images and perpendicular to the extension of said light source, said diaphragms lying adjacent the stored image to be displayed, on the side of the collector lens facing away from said light source, said diaphragm being substantially adjacent said collector lens; and



(d) translucent screen means between the diaphragm and an observer, so positioned that the partial images appear as strip-shaped representations on said translucent screen means, with the longer sides of said strip-shaped representations lying substantially adjacent one another on said screen means, said strip-shaped representations constituting reproductions of said partial images which are expanded in the direction parallel to the extension of said light source.

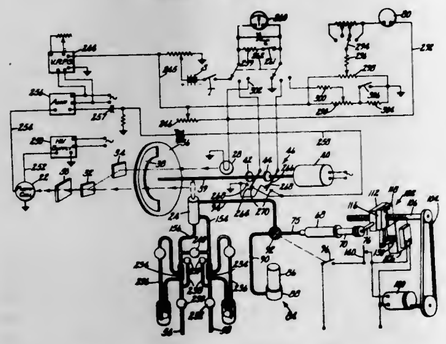
3,198,061
OPTICAL SYSTEM FOR ANALYZING MOVEMENT OF A MOVABLE GRATING
Fromund Hock, Wetzlar (Lahn), Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar (Lahn), Germany
Filed Apr. 6, 1960, Ser. No. 20,423
Claims priority, application Germany, Apr. 9, 1959, L 32,928
12 Claims. (Cl. 88—14)



1. In an optical analyzing system, the combination comprising: a movable optical grating; a light source for illuminating said grating from one side thereof; a single stationary optical grating at the other side of said movable grating; stationary optical means including ray divider means for forming two characteristically distinguishable images of a single point of said movable grating onto said single stationary grating, said two images being laterally displaced with respect to the optical center axis of said optical means in the direction of image movement as occurring upon movement of said grating, which direction coincides with the direction of extension of said stationary grating; two light receiver means; and optical

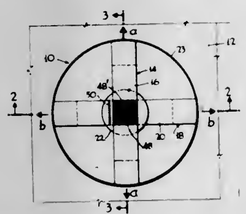
analyzing means for individually observing said characteristically distinguishable, laterally displaced images on said single stationary grating and correspondingly and respectively energizing said two receiver means with the light energy from said two images.

3,198,062
FLAME PHOTOMETERS
Emory Leon Chaffee, Belmont, Mass., assignor to Frederick G. Keyes Incorporated, Cambridge, Mass., a corporation of Massachusetts
Filed May 12, 1960, Ser. No. 28,733
5 Claims. (Cl. 88—14)



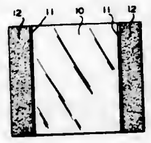
2. In apparatus for flame photometry, in combination, a burner for providing a flame and having inlet means for feeding liquid to the burner for dispersion in the flame, a source for supplying pure solvent at a controlled rate, a feeder operable to supply sample solution at a controlled rate, and connecting means between the source, the feeder and the burner including a valve operable to admit liquid from either the source or the feeder to the inlet means.

3,198,063
DIRECT READING UNIAXIAL PHOTOELASTIC TRANSDUCER
Salomon Redner, Norristown, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 1, 1961, Ser. No. 86,405
8 Claims. (Cl. 88—14)



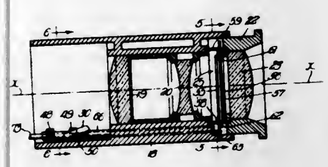
1. A photoelastic stress transducer for given workpieces comprising two photoelastic extensometers each including a forced-birefringent material indicator, means mutually perpendicularly orienting said extensometers with one said indicator overlaying the other said indicator, a birefringence inverter, means interposing said inverter between said indicators, the ratio of the strain sensitivities of said extensometers being equal substantially to Poisson's ratio for the given workpieces when said extensometers are attached at their ends to a surface of said workpieces.

3,198,064
BLOOD SAMPLE HOLDER
William C. Moore, Skaneateles, N.Y., assignor to Welch Allyn, Inc., Skaneateles Falls, N.Y., a corporation of New York
Filed June 29, 1961, Ser. No. 132,252
3 Claims. (Cl. 88—14)



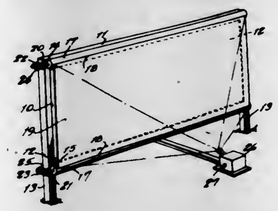
1. A disposable blood sample holder for use in a hemoglobinometer or the like, comprising: a pair of sheets of rigid transparent material having borders of substantially the same configuration, spacing means between said sheets located between the centers of said sheets and said borders on at least two diametrically opposite sides of said sheets, and material having good bonding characteristics with the material of the sheets sandwiched between said pair of sheets at said opposite sides between said spacing means and said borders, said spacing means being round in cross section and of uniform diameter, said bonding material securing said sheets together at said opposite sides in intimate contact with said spacing means, and a substantial portion of said sheets between said opposite sides being spaced apart the thickness of said spacer members.

3,198,065
LIGHT REGULATING MEANS FOR PROJECTORS
Henry A. Bohm, 981 Elm Ridge Drive, Glencoe, Ill.
Filed Nov. 21, 1960, Ser. No. 70,587
3 Claims. (Cl. 88—24)



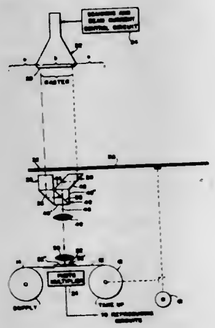
1. In a projector for projecting transparencies on a screen wherein the projector includes a light source, a lens system, and transparency support means, control means for increasing and decreasing the projecting power of the projector when transparencies of greater and less density than a normal reference transparency density are being projected, said control means comprising, an iris diaphragm mounted in front of said support so that the latter is disposed between the light source and the iris diaphragm, said iris diaphragm being adapted to vary the cross-sectional area of the light beam transmitted by the projector to a screen thereby controlling the projecting power of the projector, a photo-electric cell mounted between said support means and said iris diaphragm for sensing variations in the density of different transparencies being projected, and electrically operated power means operably connected to said photo-electric cell and said iris diaphragm for automatically controlling the projecting power of the projector in response to variations in density sensed by the photo-electric cell.

3,198,066
OUTDOOR ADVERTISING DEVICE INCLUDING PROJECTION MEANS
Clarence L. McGhee, 4420 Kushla, Dallas, Tex.
Filed Mar. 1, 1962, Ser. No. 176,701
1 Claim. (Cl. 88—24)



In an advertising billboard adapted for both permanent and light projected indicia, the said billboard having a frame having top, bottom and end members, a roller pivotally supported at each end along each of said top and bottom members, an electric motor mounted on the said frame for driving each of said rollers, and intermittently rotating the same a predetermined number of revolutions, a flexible screen of indeterminate length reeled on said rollers and capable of having a portion thereof exposed in a vertical plane between said rollers at predetermined intervals, certain of said exposed portions bearing advertising indicia imprinted thereon, and other of said exposed portions being blank, a projector associated with said billboard and adapted to project an image on said blank portions when exposed by the rotation of said rollers, timing means for actuating each of said motors for predetermined intervals, and light actuated means for energizing said projector.

3,198,067
OPTICAL RECORDING-REPRODUCING SCANNING SYSTEM
Dennis Gabor, London, England, assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Apr. 12, 1962, Ser. No. 187,025
7 Claims. (Cl. 88—24)



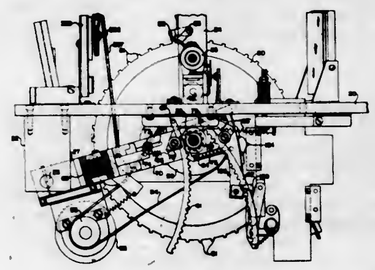
1. In recording-reproducing apparatus in which a moving record medium is scanned in a scanning area, means for alternately scanning the record medium in at least two different portions of the scanning area, comprising

(a) flying-spot tube means for generating successive scanning lines forming successive scanning patterns,

(b) image-forming means having first and second light-flux-entrance means mounted for admitting light flux from said scanning patterns and forming first and second images on said medium at first and second portions respectively of said scanning area without unfocusing any portion of either of said first and second images, and

(c) moving shutter means having a portion moving substantially in a plane perpendicular to the direction of film motion for alternately unblanking said first and second light-flux-entrance means.

3,198,068
MICRO IMAGE STORAGE AND RETRIEVAL UNIT
William R. Horst, Spring Valley, and Stanley F. Coil, Washington Courthouse, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Feb. 8, 1963, Ser. No. 257,165
15 Claims. (Cl. 88—24)



1. A micro-image storage and retrieval unit comprising a circular record medium having a recording surface area characterized by the ability to receive and retain a plurality of images in such a form that the retained images may be retrieved therefrom by projection techniques wherein the images are retained in a plurality of concentric recording tracks, each having the same number of images, extending circumferentially around said recording surface area with the corresponding images of each track being located within the same sector of the recording surface, an optical system, means for locating said record medium in the light path of said optical system, means for rotating said record medium whereby any sector thereof may be brought into register with said optical system, means for displacing said record medium substantially radially whereby any recording track thereof may be brought into register with said optical system, electrical circuit means for selecting the said sector and track to be brought into register with said optical system, sector indexing means responsive to said electrical circuit means for bringing a selected sector of said record medium into register with said optical system and stopping the rotational movement of said record medium, and track indexing means responsive to said electrical circuit means for bringing a selected recording track of said record medium into register with said optical system.

3,198,069
MOTOR OPERATED COPYBOARD
Leonard S. Florsheim, Jr., Glencoe, and Walter Waniolista, Westchester, Ill., assignors to Robertson Photo-Mechanix, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 1, 1963, Ser. No. 262,026
12 Claims. (Cl. 88—24)

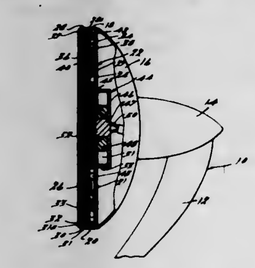
12. A copyboard having a base section and a cover section hinged to said base section for selective opening and closing movement, means releasably holding said cover section in a closed position, support means for said

base section supporting said base section for pivotal movement into a vertical copy position and into horizontal copy loading and unloading positions, and power means for moving said copyboard into vertical and horizontal positions and indexing said copyboard in these positions comprising an oscillatably driven driving member having



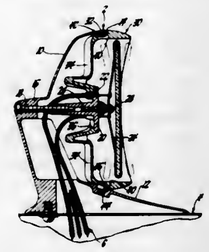
a driver member thereon, a driven member having operative connection with said copyboard and slidably engaged by said driver member and oscillatably driven thereby and having oppositely facing stop faces thereon limiting movement of said driven member as the copyboard is positioned into its vertical and horizontal positions and stopping the copyboard in these positions.

3,198,070
REAR VIEW MIRROR CONTAINING A FLUID LIGHT CONTROLLING MEDIUM
George E. Platzer, Jr., and Leonard P. Gau, Birmingham, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Dec. 1, 1961, Ser. No. 156,404
28 Claims. (Cl. 88—77)



11. A mirror structure comprising an enclosure, a transparent first plate forming a window for said enclosure, said plate having a light reflecting frontal face of relatively low light reflectivity and having a rearward face within said enclosure, said enclosure defining a closed fluid chamber for receiving an optically dense light attenuating fluid, a second plate within said enclosure having a light reflecting face of relatively high light reflectivity confronting said rearward face of said first plate, said plates being movable toward and away from each other and said second plate being arranged and constructed to permit this plate to substantially freely orient itself relative to said first plate to establish a condition of substantial parallelism between the confronting faces of said plates when said plates are moved into substantial abutment with each other, and shifting means operable to position said plates in a first position of substantial abutment in which the confronting faces of said plates are in substantial parallelism and less than about 0.010 inch apart whereby said light reflecting face of said second plate provides light reflectivity of the greatest intensity and in a second position in which the confronting faces of said plates are free of any requirement of parallelism and said plates are separated an amount more than 0.010 inch and sufficient to have said fluid provide a masking layer between said plates substantially extinguishing light reflections by said light reflecting face of said second plate whereby said light reflecting face of said first plate provides light reflectivity of the greatest intensity and whereby a combination of light reflections from said second plate acting with light reflections from said first plate to produce multiple images is avoided.

3,198,071
REAR-VIEW MIRROR HOUSING HAVING AN ADJUSTABLE SHIELD
Ira E. Gosling, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,578
4 Claims. (Cl. 88—98)

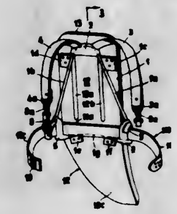


1. A mirror housing for a rear view mirror mountable on either side of a vehicle, comprising a bracket member having a mounting portion and an open end terminating with an edge lying in a vertical plane, a shield member having an inner mounting surface engaging said edge, a mirror support encompassed by said shield member, said shield member having an outer edge lying in a plane inclined to said vertical plane so as to present a large exposed surface and a small exposed surface respectively located at diametrically opposed points of the shield member, cooperating means formed on said bracket member and said shield member to permit the small exposed surface to be adjustably located on opposite sides of a vertical center line passing through the mirror support by rotating the shield member about an axis substantially normal to said vertical plane, said cooperating means comprising a stub formed on one of said members and a pair of openings provided in the other of said members.

3,198,072
PORTABLE MISSILE CARRIER AND LAUNCHER
Robert Bengelmann, Ottobrunn, near Munich, Germany, assignor to Bolkow-Entwicklungen Kommanditgesellschaft, Ottobrunn, near Munich, Germany
Filed Nov. 3, 1961, Ser. No. 150,061
Claims priority, application Germany, Sept. 24, 1959, B 54,908
17 Claims. (Cl. 89—1.7)

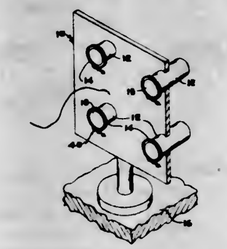
1. A missile carrier and launching device comprising a rigid endless frame member including a horizontal leg portion adapted to lie substantially horizontally across the back of the missile man at a location adjacent his waist, strap means connected to said frame member, said strap means including shoulder encircling strap portions and

a belt portion for encircling the waist of the missile man, a protective plate secured to said straps and including a lower portion extending in a curved direction outwardly from said frame member for deflecting gases from the missile and adapted to overlie the back of the missile



man, a launching platform and carrier secured to said frame, said launching platform and carrier constituting a missile holder and including a pin-receiving socket for a pin borne by the missile, and means locking said pin in said socket.

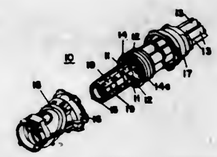
3,198,073
RUPTURABLE HEAT SHIELD
Wilbur Van Tine, North Plainfield, and Bernard L. Kotyuk, Manville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 87,804, Feb. 8, 1961. This application Nov. 6, 1963, Ser. No. 321,765
5 Claims. (Cl. 89—1.7)



3. A rupturable heat shield capable of withstanding temperatures in the order of 2000° F., and adapted to be positioned over a flange portion of a missile launching tube, comprising: a woven asbestos body portion reinforced with metallic thread and impregnated with a chloroprene base material but retaining the flexible propensity of a cloth; a contoured rim integrally molded with and circumposing said body portion, said rim having a portion corresponding to the configuration of and adapted to intermesh with at least a portion of the flange portion; and an appendage joined to said rim portion and forming a sheath for receiving a draw string.

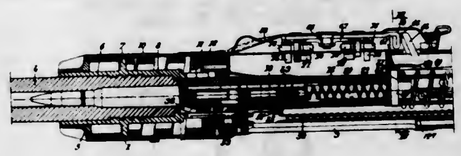
3,198,074
PIEZOELECTRIC-POWERED GUN FIRING MECHANISM
William E. Perkins, Runnemede, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 30, 1964, Ser. No. 364,046
6 Claims. (Cl. 89—12)
(Granted under Title 35, U.S. Code (1952), sec. 266)

5. In a rapid-fire gun to the Gatling type having a plurality of gun barrels in parallel relation and mounted to revolve successively into a firing position in circular formation about a common axis parallel to said barrels, the combination of a housing for the rear ends of said barrels, said housing having a guide groove therein, a movable operating bolt for each barrel, each bolt having an operating bolt shaft movable in and guided by said groove and being locked in the firing position of each barrel, a piezoelectric crystal element carried by each



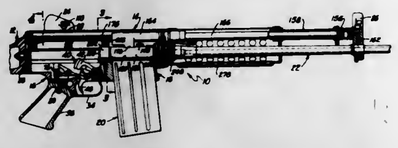
bolt, an electric firing pin in each bolt connected to the crystal element therein for receiving a firing voltage from said element, and means connected with the bolt shaft in each bolt for applying a voltage-generating pressure to the crystal element therein in response to movement to the firing position of the bolt and barrel associated therewith.

3,198,075
AUTOMATIC FIREARM WITH A RECOILING BARREL
Bernard Maillard, Geneva, Switzerland, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland, a society of Switzerland
Filed May 28, 1962, Ser. No. 198,195
Claims priority, application Luxembourg, June 2, 1961, 40,215; June 21, 1961, 40,296
6 Claims. (Cl. 89—33)



1. An automatic firearm which comprises, in combination, a cylindrical fixed casing, of circular cross-section, a barrel operatively connected with said casing coaxially therewith, a breech case slidably mounted in said casing for reciprocating longitudinal translatory movement with respect thereto, said casing being provided in its upper part with an opening for introduction of cartridges, a cartridge feed mechanism carried by said casing above said opening, said casing being provided in its lower part with a passage for ejection of empty cartridge cases, longitudinal slideways carried by said casing on the inside thereof, a breechblock body adapted to cooperate with said breech case and slidably guided in said slideways for reciprocating longitudinal movement in said casing, a return spring in said casing interposed between said breechblock body and the rear end of said casing, said breechblock body and said slideways being shaped and dimensioned to leave two elongated free spaces between said breechblock body and said casing, the first of said spaces being on one side of said breechblock body and the second one on the other side of said breechblock body, a device operatively connected with said breechblock body and with said cartridge feed mechanism for operating said mechanism in response to the displacements of said breechblock body in said casing, said device being housed in the first of said spaces, and a device operatively connected with said breechblock body to bring it into position for cocking the firearm, said last mentioned device being housed in the second of said spaces.

3,198,076
CONVERTIBLE GUN
Eugene M. Stoner, Newport Beach, Calif., assignor of one-half to Rhoda Jeanne Stoner, Malibu, Calif.
Filed Mar. 22, 1963, Ser. No. 267,183
15 Claims. (Cl. 89—128)



1. In a convertible gun, the combination of: a receiver; a bolt carrier in said receiver; a reversible mount secured to said bolt carrier; reversible guide and drive means secured to said mount; a belt feed mechanism demountably secured to said receiver for engagement by said reversible guide and drive means; a firing pin in said bolt carrier; and detent means on said bolt carrier for holding said firing pin against movement with respect to said bolt carrier when said reversible guide and drive means is engaged with said belt feed mechanism, said firing pin being operatively connected to said mount to engage said detent means with said firing pin and prevent relative movement between said bolt carrier and said firing pin.

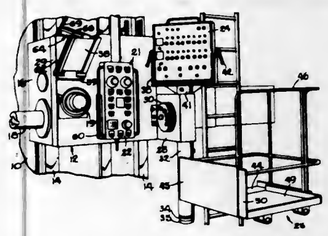
3,198,077
ACTION FOR AUTOMATIC FIREARMS AND MACHINE GUNS
Ross A. Close, 3831 Glenbrook Road, Fairfax County, Va.
Filed Mar. 23, 1964, Ser. No. 353,783
1 Claim. (Cl. 89—174)



A firearm comprising in combination a frame having a longitudinally movable cylindrical receiver mounted thereon, a barrel mounted in the cylindrical receiver, a cylindrical sleeve bolt having a cam slot and a cylindrical breech block both mounted within the cylindrical receiver and longitudinally movable coaxia ly along the axis of the bore of the barrel, the sleeve bolt being threadedly connected to the receiver, an interrupted screw thread locking the sleeve bolt to the breech block, a locking bolt connecting the frame, the receiver, the sleeve bolt, and the breech block, said locking bolt passing through the cam slot in the sleeve bolt for rotating the sleeve bolt and thus releasing the breech block.

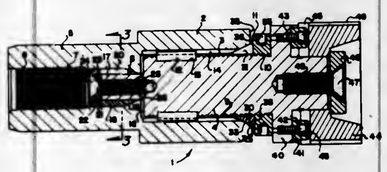
3,198,078
MACHINE TOOL CONTROL CENTER
Garner H. Schuerger and William D. Zettler, both of Fond du Lac, Wis., assignors to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed Aug. 16, 1961, Ser. No. 131,881
12 Claims. (Cl. 90—11)

1. In a machine tool including a vertical column supporting a spindle carrying headstock having controls thereon, the combination comprising an operator platform, a bracket rigidly fixed on the headstock and extending outwardly therefrom, and means mounting said platform on said bracket for swinging movement with respect thereto



so that said platform can be swung from a position adjacent the headstock and the controls thereon to a position spaced therefrom whereby complete access can be had to the headstock.

3,198,079
AXIALLY ADJUSTABLE TOOL HOLDER
Franklyn E. Winnen, Cleveland, Ohio, assignor to Erickson Tool Company, Solon, Ohio, a corporation of Ohio
Filed Jan. 22, 1964, Ser. No. 339,385
10 Claims. (Cl. 90—11)

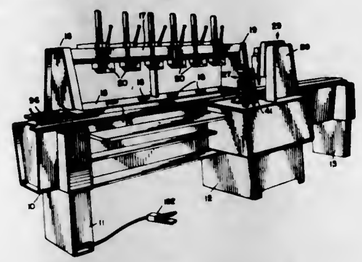


1. An axially adjustable tool holder comprising a tubular housing, a body member in said housing extending axially therebeyond, means operative to prevent relative rotational movement between said housing and body member, a dial member in threaded engagement with said body member beyond said housing for axial movement therealong, a split tapered wedge ring disposed on said body member between said housing and said dial member, and means for drawing said body member axially into said housing to compress said split wedge ring into tight engagement with said body member and said housing and dial member.

3,198,080
TANDEM HEAD PROFILER
Ray E. Colonius, Palatine, and Charles R. Onsrud, Chicago, Ill., assignors to Onsrud Machine Works, Inc., Niles, Ill., a corporation of Illinois
Filed Nov. 15, 1963, Ser. No. 323,933
11 Claims. (Cl. 90—13.5)

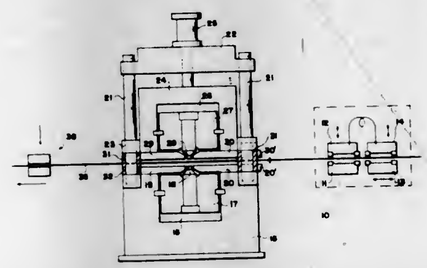
1. A profiling machine comprising,
(a) a work table mounted for horizontal reciprocation past a stationary cutter unit located at one side of said work table and adapted to carry a profile pattern and a workpiece to be countour shaped by said cutter unit,
(b) said cutter unit comprising first and second cutter carriages each mounted for independent horizontal reciprocation toward and away from said work table,
(c) reversible means for each of said carriages operable to urge the carriages resiliently toward the work

table during its travel in one direction and to retract said carriages from the work table during its travel in the opposite direction,
(d) a vertical axis motor driven spindle on each of said carriages and a cutter on each of said spindles,
(e) a pattern follower on each of said carriages coaxial with the respective spindle,
(f) means for adjusting the height of each said followers relative to the respective carriage and said work table and independently of the respective cutter,



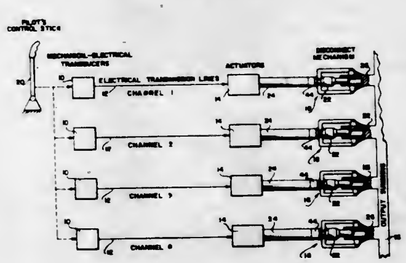
(g) means for driving said table through a forward work stroke past said cutter unit and automatically returning the table to its starting position, and
(h) a pattern on said work table engageable edgewise by said followers for positioning said cutters individually relative to the profile of said pattern when the respective carriages are urged toward the work table by said reversible means.

3,198,081
APPARATUS FOR TRIMMING FLASH FROM STRIP
Melvin M. Seeloff and Joseph H. Cooper, Warren, Ohio, assignors to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Filed Mar. 19, 1963, Ser. No. 266,271
4 Claims. (Cl. 90—24)



1. Apparatus for finishing metal strip having a butt-welded transverse joint therein and wherein flash and excess upset metal protrudes outwardly of the surfaces of the strip comprising a base and longitudinally spaced strip clamp platens on said base, a vertically moving housing and means carried by said base to guide the vertical movement of said housing, said housing mounting a pair of longitudinally spaced strip clamp platens overlying said first mentioned platens, separate tool slides mounted in said base and housing for sliding movement transversely of strip held by said platen and carrying cutting tools for machining the weld joint positioned between the clamps formed by said platens, means at one longitudinal end of said apparatus to draw strip through said apparatus whereby said weld joint is moved into alignment with said cutting tools, and the edges of said platens which are at the other longitudinal end of said apparatus being formed with shear knives whereby said protruded flash and excess weld metal is partially removed as said strip is drawn through said apparatus.

3,198,082
ELECTRICAL PRIMARY FLIGHT CONTROL SYSTEM UTILIZING REDUNDANT CHANNELS
Wolfram Eduard K. Kerris, North Hollywood, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Nov. 9, 1962, Ser. No. 236,514
7 Claims. (Cl. 91—1)

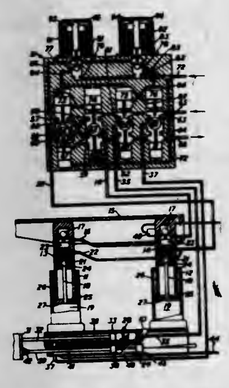


1. An electrical primary flight control system comprising: at least three parallel power transmitting channels; an actuator in each of said channels; a device for summing the actuator outputs of said channels; and a disconnect mechanism for disconnecting a malfunctioning channel from said summing device, said disconnect mechanism including: a spindle connected to the actuator output rod and having an annular groove with beveled sides; a shank attached to the summing device and adapted to receive the spindle; opposing roller means carried by said shank and being adapted to engage said groove during normal operation of the channel and to be disengaged from said groove in the event of a channel malfunction; and a spring biased knee joint connecting said roller means for keeping the roller means disengaged after a malfunction of the channel has occurred.

3,198,083
CONTROL SYSTEM FOR MINE ROOF SUPPORTS
Peter Farr, Cheltenham, and Peter H. Martyn, The Mythe, Tewkesbury, England, assignors to Dowty Mining Equipment Limited, Ashchurch, County of Gloucester, England, a British company
Filed May 13, 1963, Ser. No. 279,714
5 Claims. (Cl. 91—1)

2. In a mine roof support unit having hydraulic propping and shifting devices, a control system comprising: valve means interposed between a hydraulic power source and the propping and shifting devices, said valve means including two electromagnetically actuated two-position valves together providing a maximum of four operative combinations of valve positions, in each of which operative combinations said valve means is arranged to effect one of a corresponding number of different combined operations of the propping devices and shifting devices; first and second solenoids coupled with said valves and adapted for both to be deenergized, one or the other energized singly, or both energized, to provide the said

different operative combinations of valve positions; a control circuit including two conductors across which said solenoids are connected, current rectifying means associated with said solenoids to cause energization of one or other of said solenoids for opposite directions of current flow respectively through the two conductors, an alternating current source, switch means arranged to connect the alternating current source across said two conductors, and additional rectifying means associated with said switch means whereby said switch means is operable to isolate said alternating current source from said two conductors, or to direct electric current through the two conductors in one direction, another direction, or in both directions.



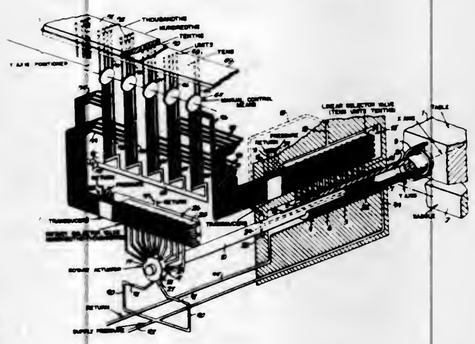
3. A control system according to claim 2 having in combination therewith an additional circuit comprising two additional conductors connected to an alternating current source, two signalling devices responsive to different conditions of the mine roof support, said signalling devices being interposed in said additional circuit, two indicating devices also interposed in said additional circuit, and rectifying means arranged to direct electric current from the source through one or the other of the signalling devices and one or the other of the indicating devices respectively in accordance with the direction of current flow in the two conductors.

3,198,084
POSITIONER

Robert Z. Hague, Oradell, Howard H. Laucks, Oakland, and Conrad C. Treff, New Milford, N.J., assignors to Moog Servocontrols, Inc., East Aurora, N.Y., a corporation of New York

Filed Jan. 7, 1963, Ser. No. 249,842
14 Claims. (Cl. 91—37)

14. In positioning apparatus, the combination comprising means providing transducer chambers, means providing tape reader chambers, and manual control means for controlling the pressure of fluid in said chambers and including a plurality of mounting members severally having laterally extending support arms, a plurality of dial members severally juxtaposed to said mounting members, a plurality of mode members severally juxtaposed to said dial members, said mode and dial members being pivotal relative to said mounting members about a common first axis, the periphery of each of said dial members having circumferentially spaced nodes providing recesses therebetween and having a radially inwardly extending notch at the base of each such recess, a pivot bar carried by said support arms parallel to said first axis, a plurality of detent arms pivotally mounted at one of their ends on said pivot bar and having their opposite ends severally engaging the peripheries of said dial members, a pair of end plates fast to said pivot bar at opposite ends thereof, an anchor bar extending between said end plates, a plurality of springs severally associated with said detent arms with one end secured to said anchor bar and the other end secured to the corresponding one of said detent arms and urging said detent arms toward said dial members, each of said mode members having a portion extending laterally outwardly beyond the periphery of the corresponding one of said dial members and having a slot extending generally radially outwardly from said corresponding one of said dial members, said slot including an arcuate inner portion concentric to the axis of said pivot bar, a shift bar extending generally parallel to said pivot bar through said slots and between said end plates, said shift bar when in said arcuate slot portions being capable of entering said notches to lock said dial members but when at the outer ends of said arcuate slot portions permitting said dial members to be set while holding said mode members in said manual control position and when



moved to the outer portion of said slots beyond said arcuate portions thereof shifting said mode members to said tape control position, an actuator bar extending between said end plates, said end plates, anchor, shift and actuator bars being pivotal as a rigid assembly about the axis of said pivot bar, a control panel having openings therein, said manual control means being mounted as a unit on one side of said panel, portions of said dial members projecting through said openings, manually operable means on said panel for effecting pivotal movement of said assembly thereby to select the mode of operation and including a pivoted arm the end of which engages said actuator bar, a first pressurized fluid enabling switch rendered operative when said assembly is in a position in which said shift bar is in said notches so that said dial members are locked against movement, and a second pressurized fluid enabling switch rendered operative when said assembly is in a position placing said mode members in said tape control position.

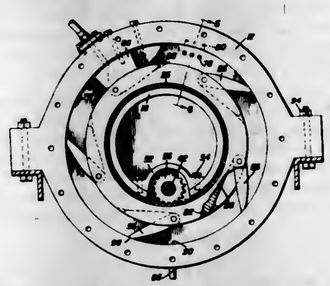
3,198,085
LIQUID POWER BOOSTER

Frank Grell, Sr., Fort Dodge, Iowa, assignor of forty-nine percent to Eugene O. Cornell, Fort Dodge, Iowa

Filed June 14, 1962, Ser. No. 202,604
4 Claims. (Cl. 91—142)

1. A rotary fluid motor comprising a casing having a peripheral wall having a substantially cylindrical inner surface and an integral end wall extending radially inwardly at one axial end of said casing, an annular rotor disposed in said casing in spaced concentric relation to the inner wall, a cover plate for the other axial end of said casing, said inner surface, rotor surface, end wall and cover plate providing a closed annular space, said

cover plate and said end wall each having a continuous annular recess therein, the axial ends of said rotor extending into said recesses, said recesses forming a bearing for both inner and outer radial surfaces of said axial ends of the rotor, an abutment attached to the casing and sealingly engaging the radial outer peripheral surface of the rotor thereby providing a partition in the annular space, fluid pressure inlet means on one side of the abut-

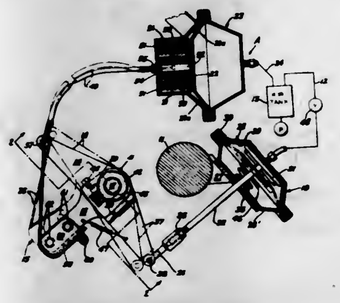


ment communicating with said annular space, fluid outlet means on the other side of the abutment communicating with said annular space, and a plurality of pivotal vanes mounted on the rotor having the free end thereof in sealing engagement with the inner surface of the casing thereby providing a plurality of compartments for receiving fluid pressure and converting such fluid pressure into rotational movement.

3,198,086
EMERGENCY AIR BRAKE ACTUATING MECHANISM FOR TRUCK TRAILERS

Edgar A. Rager and Willie T. Davis, San Jose, and Franklin F. Day, Saratoga, Calif.; said Rager and said Davis, assignors, by direct and mesne assignments, to Neway Equipment Company, Muskegon, Mich., a corporation of Michigan

Filed Sept. 4, 1962, Ser. No. 221,077
3 Claims. (Cl. 91—170)



1. Mechanical actuating means for emergency operation of a truck trailer type air brake system comprising

a lever journaled on a brake actuating shaft of such system and adjacent a brake arm of such system secured to such shaft,

a portion of the lever formed and positioned to operatively engage and move such brake arm toward brake setting position upon journal movement of the lever in one direction, and to swing free of operative engagement with such brake arm upon journal movement of the lever in the opposite direction,

means operatively connecting a free end of the lever to a primary air pot of such system for journal movement of the lever and its brake arm engaging portion in said one direction to brake setting position within normal limits upon actuation of such primary air pot,

an emergency air pot communicating with a compressed air supply of such system to be pressurized and held in actuated position when such system is pressurized to brake operating condition,

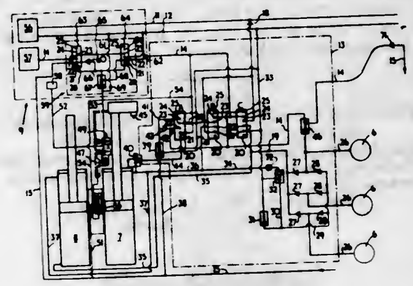
biasing means opposing air actuation of the emergency air pot, said biasing means being powerful enough for emergency actuation of such brake system, and less powerful than the emergency air pot when the latter is pressurized by compressed air from such system at brake operating pressure, and

tension transmitting means operatively interconnecting the biasing means with such brake arm, said tension transmitting means being slackened by actuation of the emergency air pot by pressurization thereof at brake operating pressure, and being tensioned by the biasing means upon loss of pressurization by the emergency air pot to move such brake arm away from operative engagement with the lever portion to emergency brake setting position beyond its said normal limits of operation.

3,198,087
ROOF SUPPORT ASSEMBLIES

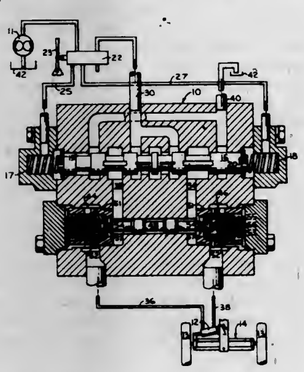
Michael Charles Potts, Mill Close, and Douglas Herbert Hewlett Bolton, Winchcombe, near Cheltenham, England, assignors to Dowty Mining Equipment Limited, Ashchurch, near Tewkesbury, England, a British company

Filed Aug. 26, 1963, Ser. No. 304,505
Claims priority, application Great Britain, Sept. 3, 1962, 33,755/62
8 Claims. (Cl. 91—189)



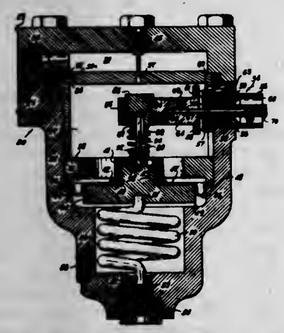
1. A roof support assembly for use in mines, including a series of roof supports advanceable in a predetermined sequence, means operatively connected to each roof support to advance the same, control means operable to send a signal to the first roof support in the sequence to initiate the advance of said first roof support, a signaling means operatively associated with each roof support, and operable upon completion of the advance of its roof support to send a signal to the next roof support in the sequence and so to initiate advance of said next roof support, said control means including a signal source and a cut-off device operable to isolate the signal source from said first roof support, locking means for locking the cut-off device in the isolating position independently of a future loss of a signal from the signal source, and release means operable to release said locking means.

3,198,088
FLUID MOTOR CONTROL SYSTEM
Howard L. Johnson and John A. Junck, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Aug. 13, 1963, Ser. No. 301,847
6 Claims. (Cl. 91—420)



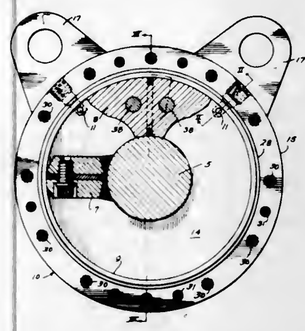
1. A control system for a double acting hydraulic jack comprising a valve for directing fluid under pressure to either end of the jack and venting the opposite end, a pair of aligned and opposed check valves normally closed to prevent flow from both ends of the jacks, a normally spring closed pressure breaker valve smaller than and disposed in each check valve, a spring for each check valve and a separate spring for each pressure breaker valve independent of the check valve spring, a cylinder containing a piston movable in opposite directions to engage and open one or the other of said pressure breaker valves, and means to communicate pressure directed to either end of the jack to one end of said piston to cause it to open the pressure breaker valve associated with the opposite end of the jack, the cross sectional area of said piston being greater than the pressure breaker valves and less than the check valves.

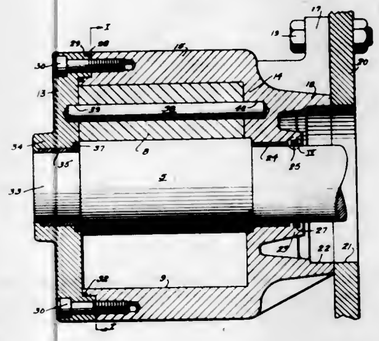
3,198,089
PRESSURE SENSITIVE DEVICE WITH SEALED MOTION TRANSMITTING LEVER
John B. McGay, Tulsa, Okla., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 29, 1961, Ser. No. 143,019
43 Claims. (Cl. 92—94)



1. In a pressure measuring device: a casing; a flexible diaphragm disposed in said casing and forming with said casing separate chambers on opposite sides of said diaphragm; said diaphragm having an annular generally U-section formed inwardly of the periphery thereof opening into the one of said chambers normally containing fluid under higher pressure than the other chamber; a diaphragm thrust member secured to said diaphragm inwardly of said annular U-section freely floating within said casing for movement with the diaphragm in response to pressure differentials between the chambers at opposite sides thereof; resilient means effectively opposing movement of said diaphragm from zero position; means in the wall of said casing providing a circumferential knife edge forming an aperture through said wall; a lever member projecting through said aperture with a close free fit; pivot means fixed to said lever member on one side of said wall; pivot retaining means cooperating between said wall and said pivot means to maintain said lever member in position; seal means providing a pressure seal between said lever member and said wall; and means within said casing coupling said lever member and said diaphragm thrust member for conjoint movement.

3,198,090
ROTARY HYDRAULIC ACTUATOR COMPRISING A ONE-PIECE UNITARY BODY AND MOUNTING END PORTION
Alfred G. French, Williamsville, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Oct. 22, 1962, Ser. No. 231,986
4 Claims. (Cl. 92—121)





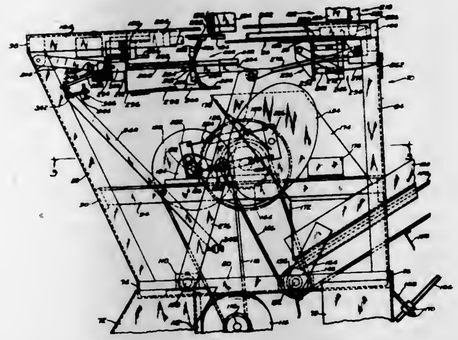
1. In a rotary hydraulic actuator including a wing shaft and a housing having means therein for hydraulically actuating the wing shaft oscillatably, said housing comprising:

a generally cup-shaped one-piece unitary body and mounting end portion defining a working chamber with an open end opposite said end portion,

a closure cap secured over the open end of the body, said end portion having a unitary base for engagement with a supporting structure of equipment with which the actuator is associated,

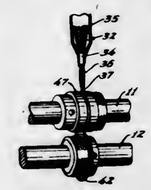
said base having a central axially opening recess affording clearance about a projecting end portion of the wing shaft and adapted to register with a clearance opening in said supporting structure.

3,198,091
SET UP MACHINE FOR EGG CARTONS
Richard J. Fahey, Glenview, Ill., assignor to Michigan Carton Company, Battle Creek, Mich., a corporation of Michigan
Filed May 28, 1962, Ser. No. 198,144
25 Claims. (Cl. 93—37)



9. An apparatus for setting-up a collapsed paperboard carton blank into an erected cellular carton, said blank being of the type characterized by a connected series of panel members adapted to be erected into side wall forming members and a bottom wall forming member of an erected carton and including cross partition forming members foldable out of the plane of a top wall forming member into interlocking engagement with said bottom wall forming member; said apparatus comprising a supporting frame including a set-up zone, a first set-up head, means mounting said first set-up head for movement on said supporting frame between a retracted position and said set-up zone, a tucking blade fixedly mounted on said supporting frame, a second set-up head, means mounting said second set-up head for movement on said supporting frame relative to said tucking blade between said set-up zone and a position retracted therefrom, drive means operatively connected to said first set-up head to move the latter along said supporting frame, means for feeding a carton blank into said set-up zone whereby said carton blank is confined between said first and second set-up heads in said set-up zone to move said side wall forming members away from each other to expand said carton blank with said top and bottom wall forming members connected between said side wall forming members opposite to each other and in respective engagement with said first and second set-up heads, means for folding said cross partition forming member inwardly of said expanded carton blank in said set-up zone, and abutment means interconnecting said set-up heads for movement of said second set-up head toward its retracted position upon further movement of said first set-up head whereby said tucking blade engages said bottom wall forming member and moves the latter toward and into a final set-up position interlocking with said cross partition forming members.

3,198,092
SCORE MOISTENING DEVICE
Hugo F. Koran, 301 Dionne Ave., St. Paul, Minn.
Filed Apr. 1, 1963, Ser. No. 269,350
3 Claims. (Cl. 93—58)



1. A score moistening apparatus for use in combination with a sheet folding apparatus, the apparatus, a frame, a pair of parallel shafts supported by the frame, means for conveying sheet between said shafts, and score rollers on said shafts engageable with the sheets to score the same, the moistening apparatus including:

(a) a hollow handle,

(b) a brush projecting from an end of said hollow handle and capable of being mounted by liquid within said handle,

(c) means adapted for connection with said frame to support said bristles in contact with the surface of one of said scoring rollers, and

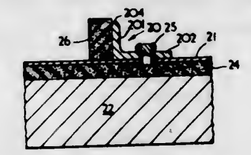
(d) means connected to said brush handle to supply liquid thereto,

(e) said brush including a series of bristles,

(f) means encircling the bristles intermediate the ends thereof and including spaces between the bristles through which water may flow, and

(g) means detachably securing said encircling means to an end of said handle.

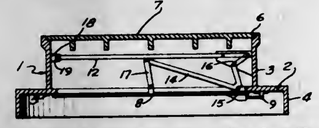
3,198,093
APPARATUS FOR CREASING AND/OR CUTTING CARDBOARD AND ANALOGOUS FLEXIBLE SHEET MATERIAL
Kenneth Kirby, Keith Roland Tallett Kirby, and Colin Walter Kirby, all of Walsall, Stafford, England, assignors to Kirby's (Engineers) Limited, Walsall, Stafford County, England, a corporation of Great Britain and Northern Ireland
Filed Jan. 22, 1964, Ser. No. 339,549
Claims priority, application Great Britain, Jan. 28, 1963, 3,387/63; May 11, 1963, 18,746/63
5 Claims. (Cl. 93—58.2)



1. Rotary apparatus for creasing and/or cutting cardboard and analogous flexible sheet material incorporating a solid rotatable forme-carrying roller, an impression roller, gearing interconnecting the forme-carrying roller and the impression roller whereby the said rollers may be driven positively simultaneously, a backing of relatively thin flexible sheet material bent to an arcuate shape for fitment concentrically on the said forme-carrying roller, lengths of rule arranged to lie on the backing along the desired lines of creasing and/or severance, through-fastening means which pass through the backing for securing the lengths of rule to the backing and which protrude on the underside of the backing, means for conforming and securing the backing to the forme-carrying roller and a mat

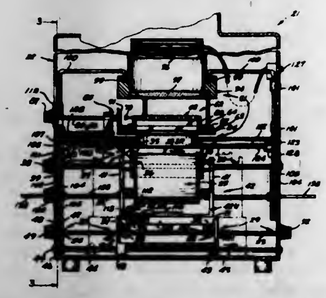
of resilient material for interposition between the backing and the forme-carrying roller to cushion the backing and the rule thereon with respect to the forme-carrying roller and to enclose the aforesaid protuberances of the through-fastening means whereby the said mat not only cushions the lengths of rule from the shocks occasioned by creasing or cutting but also prevents additional shocks due to metal to metal contact of the said protuberances and the periphery of the forme-carrying roller, said mat also compensating for the lack of rigidity of the forme by reason of the forme being made of flexible relatively thin sheet metal.

3,198,094
SAFETY MANHOLE FRAME AND COVER
Paul A. Dunkerley, Arlington, Mass.
Filed Aug. 20, 1963, Ser. No. 303,453
3 Claims. (Cl. 94—34)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A manhole frame and cover for installation in a well of a pressure drainage system comprising:
(a) a manhole frame having an upwardly facing seat for an outer manhole cover and a downwardly facing seat for an inner manhole cover;
(b) an inner manhole cover hingedly attached to said manhole frame and movable between a closed position adjacent said downwardly facing seat and an open position depending into the well;
(c) operating means connected to said inner manhole cover adapted to selectively open and close said inner cover, said operating means including an operating lever connected to said manhole frame below said upward facing seat and above said downward facing seat, said lever projecting above said manhole frame when said inner cover is open and lying within said manhole frame when said inner cover is closed; and
(d) an outer manhole cover receivable on the upwardly facing seat of said manhole frame when said operating lever lies within said manhole frame.

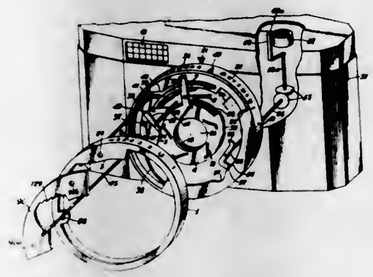
3,198,095
PHOTO-COMPOSING APPARATUS
George F. Cavanaugh, 1224 S. Westmoreland, Los Angeles, Calif.
Filed Jan. 18, 1963, Ser. No. 252,453
9 Claims. (Cl. 95—4.5)



1. Photo-composing apparatus for photographically exposing a photosensitive film panel with a plurality of lines of type face images, a line at a time in sequence, with each line of exposed images on the film panel corresponding to a correlated hand-set line of image-producing matrices, for photographically producing an exposed photographic film panel for use in making a printing plate, comprising: multiple matrix composing stick holder means having apertured receiving recess means controllably removably and interchangeably replaceably provided with and receiving and mounting, in laterally adjacent relationship, a plurality of image-producing matrices, each having distinctive light-modifying means simulating in shape and configuration a type face corresponding to any of a plurality of alpha-numeric symbols which is to be projected onto said photosensitive film panel, the light-modifying means of each matrix having different light-transmission characteristics from adjacent portions of said matrix whereby to provide, in response to the transmission of light through said light-modifying means, a selective differential exposure of a corresponding image location on said film panel which is to be subsequently employed for making a printing plate having a corresponding portion provided with a corresponding alpha-numeric symbol; optical projection means positioned for controllably operable optical image producing and projecting relationship with respect to said composing stick holder means and said plurality of image-producing matrices controllably removably and interchangeably replaceably received and mounted in laterally adjacent relationship by said apertured receiving recess means thereof, and positioned in conventional projection relationship with respect to a corresponding line exposure portion of said film panel, whereby optically to produce images corresponding to desired alpha-numeric symbols and to project same, in sharply defined laterally adjacent relationship, a line at a time, on corresponding ones of said line exposure portions of said film panel, said optical projection means being provided with controllably adjustable means for varying the image sizes of images produced and projected onto said film panel at said line exposure region with respect to the actual size of the corresponding light-modifying means carried by the corresponding one of said plurality of said image-producing matrices; compensation means for compensating for controllable adjustment of said optical projection means to vary the image sizes of images produced and projected onto said film panel and operable to maintain a consistent predetermined left margin of said projected images on said film panel; and controllably operable rotary position adjustment means for adjusting the relative position of said composing stick holder means and said plurality of image-producing matrices received and mounted thereby with respect to said film panel for varying the angle of each line of images projected onto said film panel relative to a true perpendicularly transverse direction on said film panel, said multiple matrix composing stick holder means being provided along one edge thereof with controllably removable and repositionable multiple scale means and means for mounting same in any of a plurality of different positions in a manner such as to display only a corresponding different one of said multiple scale means, each marked off in different units of printer's measurement.

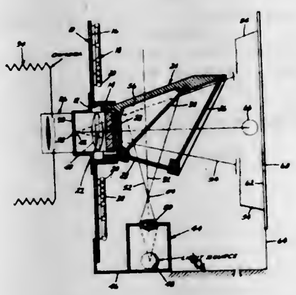
3,198,096
PHOTOGRAPHIC CAMERAS
Heinz Köppen, Stuttgart, Germany, assignor to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany
Filed Nov. 6, 1961, Ser. No. 150,354
Claims priority, application Germany, Nov. 11, 1960, Z 8,356
22 Claims. (Cl. 95—10)

19. A photographic camera, particularly a single lens mirror reflex camera designed for selectively making flash bulb exposures, automatic daylight exposures and manually set daylight exposures, said camera comprising in combination:
(a) a photographic objective provided with
(b) an adjustable diaphragm,
(c) a diaphragm preselecting means,
(d) a manual diaphragm adjusting means,
(e) a distance adjusting means,
(f) an automatic exposure device,
(g) a flash bulb guide number adjusting means operable in dependence of said distance adjusting means,



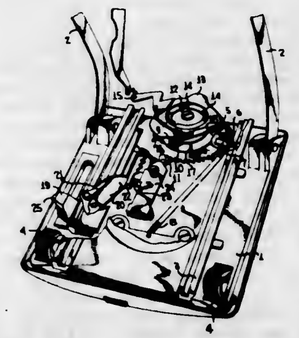
(h) means for limiting the range of said distance adjusting means in dependence of the adjusted guide number,
(i) an automatic diaphragm adjusting means operated in dependence of said guide number adjusting means for adjusting said diaphragm to a size corresponding to the adjusted guide number and adjusted distance, and
(j) means operated by said guide number adjusting means when the latter is moved outside the range indicating flash bulb exposures for disconnecting said means for limiting the range of said distance adjusting means and for selectively rendering operative said automatic exposure device and said manual diaphragm adjusting means.

3,198,097
ILLUMINATING APPARATUS
Sheldon H. Hine, 2538 John St., Fort Wayne, Ind.
Filed Dec. 20, 1962, Ser. No. 246,123
7 Claims. (Cl. 95—11)



1. Illuminating apparatus comprising a support having a central lens-receiving opening therein, a plurality of annular coplanar light sources concentrically encircling said opening and carried by said support, said annular sources being spaced apart progressively greater distances radially outwardly from said opening; an hermetically sealed housing having spaced-apart oppositely disposed front and rear transparent windows, said housing being carried by said support with said rear window being in optical alignment with said opening, said housing having a size which radially lies within the innermost of said annular sources, said housing having a third window in a side which is transverse to said front and rear windows, a beam splitter fixedly mounted in said housing at an angle of 45° to a first straight optical axis which passes through said opening and said front and rear windows, said beam splitter also being disposed at an angle of 45° to a second straight optical axis which passes through said third window, said first and second optical axes intersecting at right angles and said beam splitter coinciding with this intersection; a camera provided with a lens system having an optical center, said lens system being disposed in registry with said lens-receiving opening; a source of light which emits a divergent beam of light along said second axis through said third window and onto said beam splitter, said divergent source being operatively mounted on said support, said beam splitter reflecting said divergent beam along a second divergent path which passes through said front window, the backward projection of said second divergent path passing through said beam splitter and converging at a point which coincides with the viewing center of said lens system, said second path having a straight axis which coincides with said first axis, the plane of said coplanar light sources being at right angles to said first axis; a screen of retro-reflective material having an extended area surface transverse to said first axis, said screen being disposed to be intersected by said second divergent path, and means for holding said screen in position with respect to said support whereby incident light rays which define said divergent path are reflected from said screen rearwardly and converge onto said viewing center.

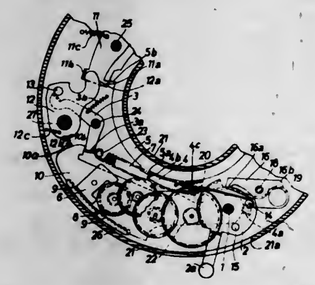
3,198,098
CAMERA RANGE-FINDER ADJUSTMENT SYSTEM
Nikolaus Karpf, 45 Rupert-Mayer Strasse, Munich 25, Germany
Filed July 23, 1962, Ser. No. 211,775
Claims priority, application Austria, July 22, 1961, A 5,653/61
11 Claims. (Cl. 95—44)



1. A photographic camera comprising a housing, a drop bed, a hinge connecting said drop bed to said housing, a lens carrier adapted to receive any one of a plurality of lenses each of predetermined different focal length, a track located on said drop bed, said carrier being supported on said track, means for displacing said track and said carrier along said drop bed to assume various

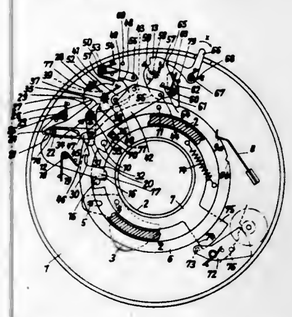
positions of focus, a movable rangefinder actuating member mounted on said housing, a first rotary cam disc provided with separate cam surfaces extending over different angular ranges of the cam disc, each of said surfaces being shaped in accordance with a respective lens of predetermined focal length, a second rotary disc mounted on the drop bed for rotation about the same axis as the said first rotary cam disc, means for rotating said second rotary disc in dependence on the displacement of said track, a cam follower member engaging a selected cam surface and acting to adjust the movable rangefinder-actuating member and thus the rangefinder in accordance with the position of the said track on the said drop bed, and means for securing said first and said second rotary discs together for conjoint rotation, said means including a locking member, a resilient member connecting said locking member to said second rotary disc, means on said first rotary cam disc for cooperation with said locking member, and means to release said locking member to permit relative rotation of said discs.

3,198,099
AUTOMATIC CAMERA WITH SELF-TIMER
Manfred Mueller, Donaueschingen, and Willi Schulz, Schwenningen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Sept. 17, 1962, Ser. No. 224,050
Claims priority, application Germany, Sept. 16, 1961, A 17,226
6 Claims. (Cl. 95—53.3)



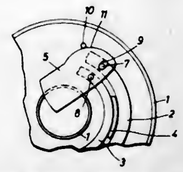
1. In a camera having a between-the-lens shutter and an automatic structure for automatically setting the camera according to the lighting conditions, in combination, a shutter housing; a self-timer unit pivotally carried by said housing in the interior thereof and adapted to be cocked by the operator whenever it is desired to use the self-timer unit, said unit including a plate formed along one edge with a row of notches; a pin located in said housing; means forming part of said automatic structure and moving said pin during automatic setting of the camera to a position determined by the automatic setting of the camera; spring means operatively connected to said unit for urging the latter, when cocked, to turn from a given rest position to a position where said pin is received in one of said notches, said spring means forming also a drive spring for said self-timer unit; manually operable means connected to said housing for initiating operations which result in tripping of the camera shutter and making of an exposure; and release means actuated by said manually operable means and operatively connected to said unit for releasing the latter to be moved by said spring means from said rest position to said position where said pin is received in one of said notches when said manually operable means is manipulated to make an exposure, whereby the automatic setting of the camera will be maintained during running down of said self-timer unit by cooperation of said unit with said pin.

3,198,100
BETWEEN-THE-LENS SHUTTER FOR SINGLE-LENS REFLEX CAMERAS
Gerd Kiper, Unterhaching near Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed Oct. 11, 1961, Ser. No. 144,436
Claims priority, application Germany, Oct. 29, 1960, A 35,910
11 Claims. (Cl. 95—63)



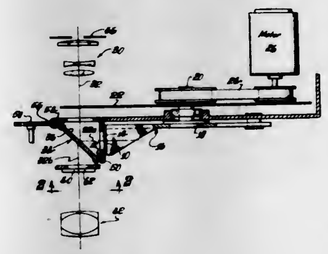
1. In a between-the-lens shutter for single-lens reflex cameras, in combination, support means forming part of an objective of the camera; a pair of rotary shutter rings carried by said support means for rotary movement about the optical axis of said objective, one of said rings being a shutter-opening ring which opens the shutter when said shutter-opening ring turns in a predetermined direction about the optical axis relative to the other of said rings, and said other ring being a shutter-closing ring which closes the shutter when said shutter-closing ring turns in said predetermined direction relative to said shutter-opening ring; spring means cooperating with said shutter-closing ring for urging the latter to turn in said predetermined direction when said spring means is tensioned; and shutter-cocking means cooperating with said shutter-closing ring for turning the latter in opposition to said spring means in a direction opposite to said predetermined direction to a position opening the shutter while said shutter-opening ring remains in the position it takes when the shutter has run down and is closed, so that when the shutter is cocked by said shutter-cocking means the shutter will be fully open so that the subject may be viewed through the shutter preparatory to making an exposure.

3,198,101
COMBINED SHUTTER AND DIAPHRAGM ASSEMBLY
Manfred Mueller, Donaueschingen, and Willi Schulz, Schwenningen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed Aug. 24, 1962, Ser. No. 219,217
Claims priority, application Germany, Aug. 30, 1961, A 17,152
6 Claims. (Cl. 95—63)



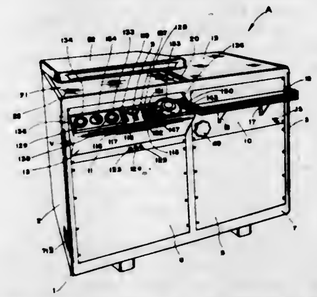
1. In a camera shutter assembly where the shutter blades also act as a diaphragm, in combination, a shutter-driving ring and an aperture-selecting ring, said rings being coaxial and having their center in the optical axis and said shutter-driving ring being turnable back and forth through the same angle to open and close the shutter irrespective of the selected aperture while said aperture-selecting ring is turnable with respect to said shutter-driving ring before actuation of the shutter to provide a selected aperture; a plurality of shutter blades and means connecting each blade to said rings, said latter means providing a pivotal connection of each blade to one ring and a pin-and-slot connection of each blade to the other ring; and a stop-pin located in the path of movement of at least one blade and engaging the latter when said one blade provides the aperture selected by said aperture-selecting ring and is located in the position it takes just at the instant when it changes direction and turns back to the position where the shutter is closed, whereby the engagement between said blade and said stop-pin reduces the shock and vibrations which might otherwise be present in said blade.

3,198,102
PHOTOGRAPHIC CAMERA WITH AN ADJUSTABLE SEMI-REFLECTOR FOR PHOTOGRAPHIC FILM EXPOSURE
George A. Mitchell, 687 Prospect Crescent, Pasadena, Calif.
Filed Mar. 23, 1962, Ser. No. 181,882
2 Claims. (Cl. 95—64)



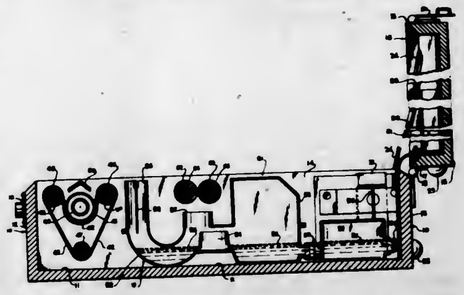
1. In a photographic camera, the combination consisting essentially of
a photographic objective passing an image forming beam along an axis,
a semi-reflector and semi-transmission element adjustably movable in a plane intersecting that axis behind the objective at an angle non-normal to that axis,
said reflector and transmission element having a multiplicity of areas movable by adjustment of said element into position intersecting the image forming beam,
said multiplicity of areas having respectively different reflective and transmissive ratios to reflect and transmit selected multiple different portions of the image forming beam along axes at an angle to each other,
an actinic surface positioned to receive the image beam on one of said relatively angular axes,
and an image viewing element positioned to receive the image beam on the other of said relatively angular axes, all whereby the total intensity of the image beam going to the actinic surface may be multitudinously variable to accommodate that intensity to the requirements of the actinic surface without varying the total intensity of the image forming beam passed by the objective,
and whereby the image viewing element receives substantially all of the light from the objective beam not going to the actinic element.

3,198,103
PHOTOGRAPHIC PRINTERS
John R. Malloy, Delaware County, and Theodore Hommel, Chester County, Pa., assignors to United States Banknote Corporation, a corporation of Virginia
Continuation of abandoned application Ser. No. 751,292, July 28, 1958. This application Dec. 14, 1960, Ser. No. 76,087
7 Claims. (Cl. 95—76)



1. A photographic printer comprising a housing provided with a vacuum frame, a cold-grid light source shiftably mounted in said housing for optional disposition in a first position under said vacuum frame and in a second position off-set from said frame, a point light source mounted in said housing, a reflector mounted in said housing and interposed between the point light source and vacuum frame for reflecting light from said point light source to said vacuum frame when said cold-grid light source is in said second position, filter means operatively mounted in said housing for optional disposition in front of said point light source so that the light therefrom will pass through said filter means before transmission to said vacuum frame, a light integrator for metering the light from said cold-grid light source and point light source in relation to time, said light integrator including means to detect and measure light from said point light source after said light has been acted upon by said filters, and selector switch means for optionally interconnecting either light source with the integrator for automatically shutting off the light source so connected after a predetermined quantity of light has been emitted therefrom.

3,198,104
PORTABLE PHOTOCOPYING APPARATUS
Harry Koretz, Sherman Oaks, Calif., assignor to Anken Chemical & Film Corporation, Newton, N.J.
Filed Aug. 14, 1962, Ser. No. 216,869
10 Claims. (Cl. 95—77.5)

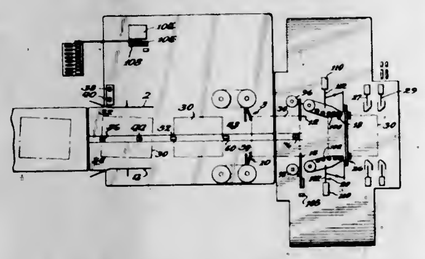


1. A portable photocopying apparatus comprising a carrying case having a main frame in the shape of an open-topped box with a flat bottom and walls perpendic-

ular thereto including a front and a rear wall, and a top for the main frame, the main frame of the box also being the main frame of the apparatus; means positioned near said front wall for photographically exposing a sensitized sheet; means positioned near said rear wall for storing processing solution, a tray for holding processing solution when the apparatus is positioned with the bottom of the main frame downward for the immersion in the solution of the exposed sheet and a transfer sheet, said tray being positioned intermediate said photographic means and said storing means; means for pressing the two sheets together after immersion to effect diffusion to the transfer sheet; means for the gravity flow of processing solution from the storing means to the tray when the apparatus is positioned with the bottom of the main frame downward and from the tray to the storing means when the apparatus is rotated ninety degrees in a particular direction; means for sealing stored processing solution from the atmosphere; and said front wall being externally provided with a handle for carrying the apparatus, whereby, when the apparatus is suspended by the handle, the rear wall is the lowest part of the apparatus.

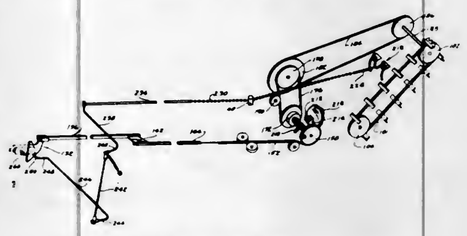
8. In a portable diffusion transfer process copying apparatus comprising a carrying case which is part thereof, a container for diffusion transfer processing solution, one part of the container being a processing tray and an adjacent part of the container being a reservoir, at least one passage communicating between the two parts of the container to permit rapid flow of said processing solution therebetween, the relative positions of the two parts of the container being such that processing solution therein occupies both parts when the case is oriented in a particular manner and flows into the reservoir part when the case is oriented in another particular manner, a storage pouch for processing solution being provided in communication with said reservoir part of the container by means of a flexible tube, the relative positions of said reservoir and said storage pouch being such that processing solution flows from the storage pouch to the reservoir when the case is oriented in the first mentioned manner and from the reservoir to the storage pouch when the case is oriented in the second mentioned manner, and means including a valve operable from the outside of the carrying case for choking the tube and operable from the inside of the carrying case for unchoking the tube.

3,198,105
METHOD FOR ALIGNING AND TYING STACKED BUNDLES
Norman J. Smith, Benton Harbor, Mich., assignor to Signode Corporation, a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 322,736
10 Claims. (Cl. 100—3)



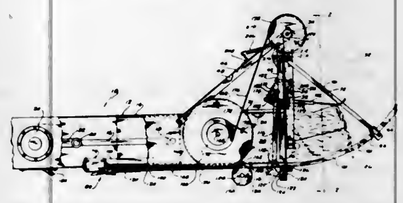
1. The method of aligning a stack of uniform items including the steps of placing the stack on a moving conveyor, moving the stack between side aligning means, oscillating the side aligning means relative to the sides of the stack to align the sides, moving the stack into position between end aligning means and aligning the ends of the stack, compressing the stack to remove the air from between adjacent items in the stack, moving the stack into position to be tied into a bundle, and wrapping a ligature around the stack to tie the items together.

3,198,106
AGRICULTURAL IMPLEMENT
Robert B. Skromme, Elmhurst, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Sept. 18, 1963, Ser. No. 309,671
18 Claims. (Cl. 100—188)



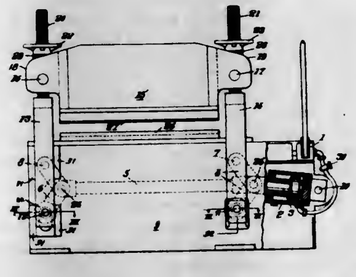
1. In a baler, means including an
endless conveyor positioned for throwing bales formed by the baler in a desired path, and means connected with said endless conveyor and constituted to start said conveyor
only at such times as a bale is ready to be thrown, and stop said conveyor after such bale has been thrown.

3,198,107
POWER TRANSMISSION
Demeter Gawreluk, Davenport, Iowa, assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Sept. 20, 1963, Ser. No. 310,342
3 Claims. (Cl. 100—188)



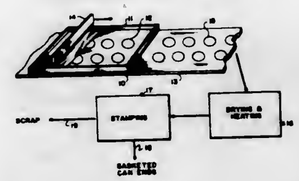
2. In a bale thrower adapted to receive a bale as it emerges from a baler of the type having a reciprocating plunger slidably mounted in a longitudinal baling chamber, and to project the bale in a desired free path, the combination of a
first latch element carried by the plunger for longitudinal reciprocating movement therewith in a path substantially parallel to the longitudinal axis of said baling chamber,
guide means supported in fixed relation to said baler adjacent to the path of said first latch element, a
longitudinally slidable member guided by said guide means for reciprocation in a path adjacent to that of said first latch element, a
second latch element mounted on said longitudinally slidable member, a
bale propelling element, said longitudinally slidable member being connected with said second latch element and with said bale propelling element arranged to impart bale propelling motion to said bale propelling element by reason of movement of said second latch element when connected to said first latch element,
means positioned to guide a bale emerging from the baling chamber into position to be acted upon by said bale propelling element,
means activated by the emergence of a bale, connected to said second latch element and positioned to shift said second latch element into the path of said first latch element to become engaged therewith, and
means on said baler in the path of said second latch element and positioned to disengage said second latch element from said first latch element at a predetermined desired point in the reciprocation of said plunger.

3,198,108
HYDRAULIC PRESSES
Fritz Ingold, Littau-Lucerne, Switzerland, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland, a Swiss society
Continuation of application Ser. No. 42,866, July 14, 1960. This application Apr. 23, 1963, Ser. No. 277,410
Claims priority, application Switzerland, July 18, 1959, 75,956
3 Claims. (Cl. 100—257)



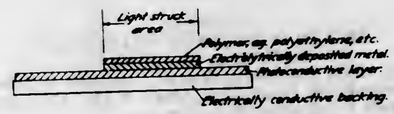
1. A press of the type described which comprises in combination, a fixed frame, two forked members each having a bifurcated section straddling said frame with elements of said section disposed adjacent to vertical sides of said frame, said members being movable vertically with respect to said frame, means guiding one of said members for vertical movement only with respect to said frame, two pairs of toggle links, each of said pairs comprising two links and a horizontal pivot for connecting them together, one of said pairs having its upper link pivoted to said frame about a horizontal axis and its lower link pivoted to one of said members, the other of said pairs having its upper link pivoted to said frame about an axis parallel to said horizontal axis and its lower link pivoted to the other of said members so that the links of one pair are parallel to the corresponding links of the other pair, respectively, said members being located at a distance from each other in a direction perpendicular to said axes and said toggle links being located in substantially the same vertical plane, a connecting rod extending between said pivots, a plate having its ends operatively connected with said members so as to be movable vertically with respect to said frame by simultaneous displacements of said members, a hydraulic ram including a piston and cylinder movable with respect to each other, said piston being operatively connected to one of the pivots in a substantially horizontal direction by which said pairs of toggle links are expanded to move said plate toward said frame, and means for independently adjusting in the vertical direction the connection between each end of said plate and the corresponding member for varying the inclination of said plate.

3,198,109
PRINTING OF CONTAINER CLOSURE GASKETS
James L. Dwyer, Concord, Richard J. Haberlin, Weston, and George A. Lothrop, Concord, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed May 2, 1961, Ser. No. 107,198
8 Claims. (Cl. 101—129)



4. A method of forming a can end gasket on metal sheet comprising placing the obverse face of a form-stable printing plate in contact with the top surface of a metal sheet to receive said gasket, said plate having a can end gasket design therein consisting of a multiplicity of independent small holes, defined by a continuous surrounding latticework, placing a fluid gasket-forming composition on the reverse side of said perforated plate, forcing said composition through said holes and into contact with said surface, separating said plate from said sheet and leaving a predetermined amount of compound on said surface, and converting the compound so transferred to a form-stable shape, said sheet having a thickness in the range of 0.100 to 0.500 millimeter, and said design having in the of 250 to 2500 perforations per square centimeter wherein the perforations occupy 40 to 75% of the total area encompassed by the design.

3,198,110
LITHOGRAPHIC PRINTING PLATE WITH POLYMER COATED METAL IMAGE
Byron W. Neher, Hudson, Wis., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original application June 15, 1959, Ser. No. 820,254, now Patent No. 3,127,331, dated Mar. 31, 1964. Divided and this application Apr. 19, 1963, Ser. No. 279,349
2 Claims. (Cl. 101—149.2)

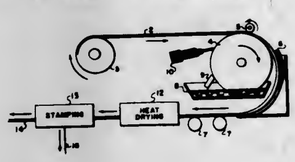


1. A novel lithographic sheet which comprises an electrically conductive backing, a photoconductive layer bonded to one contiguous electrically conductive surface thereof, a free metal image on selected surface portions of said photoconductive layer, and a polymer coating on the surface of and coextensive with said free metal image, the polymer of said polymer layer being capable of forming a latex in which the polymer particles bear a negative charge and being selected to provide a polymer coating having different wetting characteristics with respect to lithographic ink and fountain solution than the other portions of the sheet surface.

3,198,111
ENGRAVED ROLL APPLICATION OF SEALING COMPOUNDS

Donald T. Ellis, Wellesley Hills, Richard J. Haberlin, Weston, and Robert E. Fogg, Lynn, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Apr. 10, 1961, Ser. No. 102,021
6 Claims. (Cl. 101—170)



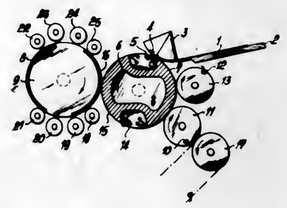
1. A method of printing a repeating pattern of a liquid polymeric composition on a form stable sheet comprising
(1) passing said sheet under an impression roll and uniformly and evenly placing a surface thereof in contact with a portion of a rotatable cylindrical printing surface having an intaglio design of the desired configuration,
(a) said intaglio design comprising a multiplicity of minute independent cavities ranging from 18 to 75 per square centimeter,
(1) said cavities having a depth of at least 0.120 millimeter and
(2) an enclosed surface area to volume ratio in the range of 5:1 to 500:1 centimeters^{-1},
(a) said enclosed surface composing 40 to 80% of the surface area encompassed by said design,
(2) filling said cavities with a liquid gasket-forming polymeric composition
(a) having a PIRV slope in the range of 0.70 to 1.05,
(b) a viscoelastic flow value greater than 12 millimeters,
(c) a solids content greater than 40 weight percent and
(d) is capable of wetting the surface of said sheet,
(3) removing excess composition from the background of said design, and then
(4) transferring a portion of the composition in said cavities to the surface of said sheet,
all while rotating said printing surface to produce a repeating pattern of said design.

3,198,112
MULTICOLOR SHEET FED ROTARY PRINTING MACHINE

Franz Moos, Heidelberg, Germany, assignor to Schnellpressenfabrik Frankenthal Albert & Cie. Aktiengesellschaft, Frankenthal, Pfalz, Germany

Filed Sept. 13, 1963, Ser. No. 308,793
Claims priority, application Germany, Sept. 15, 1962, Sch 32,038
4 Claims. (Cl. 101—174)

1. A rotary printing machine for the multi-colored relief or other printing of sheets comprising in combination:
(1) a rotary compression cylinder having a first and a second printing segment each being fitted with its own sheet gripping and tensioning means,
(2) a rotary form cylinder cooperating with said impression cylinder and having a first and a second form segment,
(3) feeding means to position a sheet to be printed upon the first printing segment of said impression cylinder,
(4) transfer means fitted with gripping means and operably engaging said impression cylinder, to remove a sheet from said first printing segment and to transfer it to the second printing segment of said impression cylinder, and
(5) delivery means fitted with sheet gripping means and cooperating with said impression cylinder, to permanently withdraw said sheet from said impression cylinder,
(6) said feeding means, said form cylinder, said delivery means and said transfer means being arranged

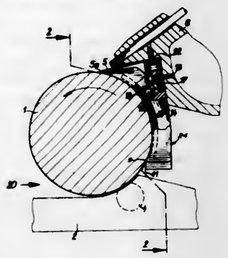


in the order named and in the direction of rotation of and around the periphery of said impression cylinder and arranged relatively to each other to cooperatively effect, during two consecutive rotations of said cylinders, the operations of feeding and printing of a sheet by said first form segment, transferring the printed sheet from the first to the second printing segment of said impression cylinder, printing the transferred sheet by the second form segment of said form cylinder, and finally withdrawing the sheet by said delivery means.

3,198,113
INK DIVIDER FOR MULTICOLOR INK ROLLERS

Werner Feller, Allmendingen, near Thun, Switzerland, assignor to Maschinenfabrik Winkler, Fallert & Co. AG., Bern, Switzerland

Filed Nov. 1, 1963, Ser. No. 320,728
Claims priority, application Sweden, Nov. 13, 1962, 12,164/62
6 Claims. (Cl. 101—208)

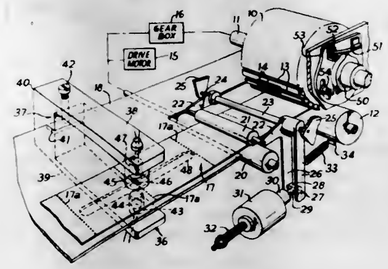


1. A device for preventing the comingling of two colors on a color roller below a color knife and above a reservoir having separate color compartments in a printing machine, comprising a compartment wedge formed by two substantially parallel plates having curved outer edges which are adapted to bear against a color roller, said plates having lower ends adapted to extend downwardly toward a reservoir adjacent the juncture of two of the separate color compartments and being shaped to intersect adjacent their lower ends and diverging outwardly from the intersection to the lower ends for the purpose of deflecting the color from the separate sides of said wedge member outwardly and in opposite directions toward the respective color compartments of a reservoir.

3,198,114
ROTARY WEB PRINTING MACHINE WITH PHOTO-ELECTRIC CONTROLLED FEEDING MEANS

Frank Jones, Gomersal, near Leeds, and Richard H. Jones, Leeds, England, assignors to Tickopres Limited, London, England, a British company

Filed May 27, 1963, Ser. No. 283,411
Claims priority, application Great Britain, May 31, 1962, 21,071/62
17 Claims. (Cl. 101—228)



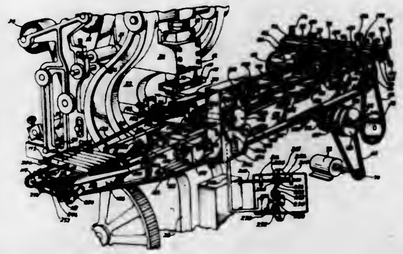
1. A ticket or like printing machine for effecting a printing impression on each of a series of discrete printing areas of a strip-form element which is provided with a series of spaced markings thereon, each marking defining a different successive one of said printing areas, which machine comprises a rotatable drum carrying a projecting printing image extending over a part only of the circumference of said drum, a counterpressure member co-operating with said rotatable drum to form a printing zone to impress said printing image in said strip-form element, intermittently operable strip feeding means for moving said strip-form element forwardly through said printing zone and control means for controlling the operation of said strip feeding means to start and stop the strip feeding movement imparted thereby, said control means including photo-electric means for sensing one of said markings in said strip-form element to provide an output control signal, electrically operated means coupled to said strip-feeding means and supplied with said control signal to cause cessation of feeding movement of said strip-form element by said strip feeding means at a position where the next discrete printing area is in correct positional relationship to the printing image in said drum, said control means further including contact means coupled to and operated by the rotation of said drum and also connected to said electrically operated means to cause re-commencement of strip feeding movement by said strip feeding means at least by the time when the leading edge of said printing image arrives at said printing zone.

3,198,115
AUTOMATIC FEEDER FOR PRESSES

Albert J. Harvey, Detroit, Mich., assignor to Engraved Stationery Manufacturers Research Institute, Inc., Washington, D.C., a corporation of Delaware

Filed May 14, 1962, Ser. No. 194,530
8 Claims. (Cl. 101—316)

4. An apparatus for sequentially feeding work-pieces to a printing press, which press has a pair of normally separated printing elements providing a printing area between them, one of said elements being cyclically movable to and from said area to produce an impression upon a work-piece disposed thereat: said feeding apparatus comprising conveyor means disposable in co-operative relation to said printing area and adapted to serially receive the work-piece; driving mechanism for said conveyer means adapted to impart continuous forward motion thereto whereby the work-pieces may be sequentially transported across the printing area; means engageable by the conveyer as each work-piece reaches a co-operative position relative to said area whereby to effect a temporary interruption of the conveyor movement so that the pieces may

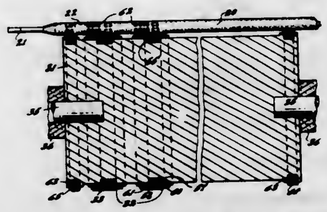


be stationary at the time of their engagement by the movable printing element; means readily precisely adjustable during continued functioning of the apparatus to accurately vary the position of said movement-interrupting means and thus alter the point at which such interrupting means is engaged by the conveyer, whereby to exactly control the location on the work-pieces of the impressions produced thereon by said printing element; and means operable by the press to render said movement-interrupting means ineffective at the conclusion of the printing operation, whereby movement of the conveyor may be resumed.

3,198,116
ELASTOMER DIE SWELLABLE INTO ENGAGEMENT WITH A CYLINDER BY SOLVENT CONTAINED IN THE INK

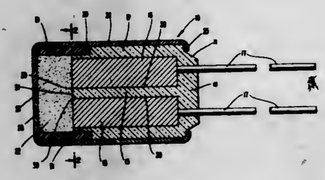
John Mikurak, Darby, Pa., assignor to Arcos Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Nov. 2, 1962, Ser. No. 235,008
6 Claims. (Cl. 101—377)



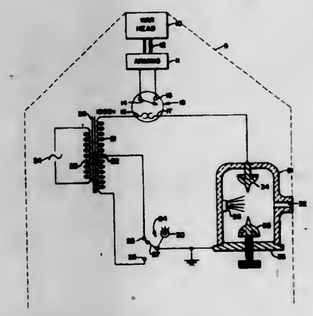
1. In marking equipment, a marking drum having an annular groove which is free from undercut, an elastomer printing die extending around the circumference of the drum fitting into and occupying the groove and having printing characters on the outside, said elastomer being swelled upon contact with a solvent and shrinking upon being removed from contact with said solvent, a body of ink including a swelling solvent for said elastomer die, and means for transferring the ink including the solvent to the die, whereby the die is held in the groove due to the swelling caused by said solvent.

3,198,117
ELECTRICALLY TRIGGERED SQUIB WITH SEMICONDUCTIVE DISSIPATER FOR STRAY CURRENTS
Rolland M. Purdy, Bainbridge, and Carl R. Joslyn, Sidney, N.Y., assignors to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed Oct. 2, 1961, Ser. No. 142,262
17 Claims. (Cl. 102—28)



8. A squib comprising a body of semi-conductive material and a pair of elongated metallic electrodes embedded in said body with parallel flat confronting side surfaces and having adjacent ends thereof exposed flush with an end surface of the body, said parallel side surfaces being spaced apart in spark gap relation and in intimate contact with the material of the body therebetween whereby to form a shunted surface gap between the exposed adjacent ends of the electrodes across said end surface of the body.

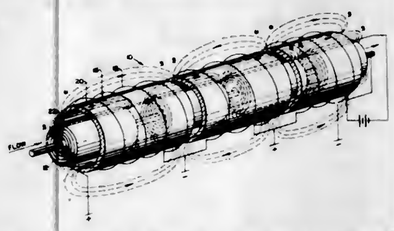
3,198,118
ARMING CIRCUIT WITH PRESSURE RESPONSIVE DISCHARGE SWITCH
Jerome L. Lorenz, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 6, 1960, Ser. No. 74,169
2 Claims. (Cl. 102—70.2)



1. In combination: a ballistic missile including a warhead; and an arming circuit connected to said warhead including an avalanche discharge arming switch.

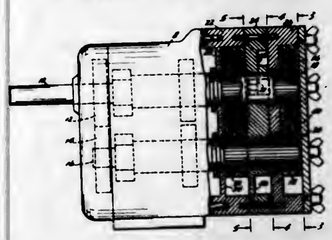
3,198,119
ELECTRO-MAGNETIC PUMP
George N. J. Mead, 5 Robin Lane, Exeter, N.H.
Filed Sept. 4, 1963, Ser. No. 306,519
10 Claims. (Cl. 103—1)

1. A device for pumping an electrically conductive fluid medium, comprising a conduit for said medium, magnetic means fixed to said conduit for producing a first magnetic field lengthwise thereof, a first electrode adjacent the inner surface of said conduit, a second electrode spaced from said first electrode and within said conduit, an electrically insulating wall extending in a spiral path from said first electrode to said second electrode and defining an axial passage for the flow of said medium, and means for applying a D.C. current to said electrodes whereby said current will flow through said



medium in a spiral path between said electrodes defining a fluid electro-magnet to produce a second magnetic field extending lengthwise of said first magnetic field for interaction with said first field, the interaction of said fields being operative to pump said medium in an axial direction.

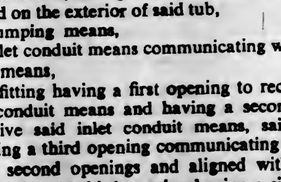
3,198,120
MULTIPLE POSITIVE DISPLACEMENT PUMP
Clarence W. Little, Jr., Wauwatosa, Wis., assignor to Waukesha Foundry Company, Waukesha, Wis., a corporation of Wisconsin
Filed Oct. 29, 1962, Ser. No. 233,659
13 Claims. (Cl. 103—5)



1. A multiple positive displacement pump comprising primary and secondary pump casing sections and an intermediate transfer section, each of the pump casing sections having a transverse wall and pumping recesses, a plurality of shafts extending through the several sections and the recesses aforesaid, material pumping means comprising complementary positive displacement pump rotors on the shafts in the respective recesses, and means for detachably connecting the several sections, the primary pump casing section having an inlet and the secondary pump casing section having an outlet, said transfer section and said transverse wall of one of said pump casing sections having complementary means providing a passageway for delivery of material pumped from the primary pump casing section to the secondary pump casing section and said complementary means having surfaces completely exposed for cleaning upon the separation of said sections.

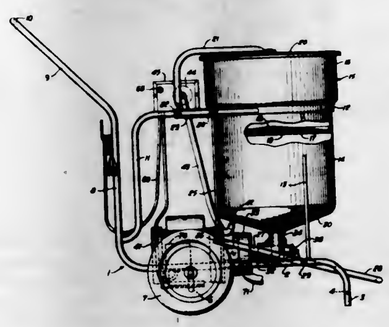
3,198,121
TANKLESS WATER PRESSURE SYSTEM
Robert F. Schaub, La Grange, Ill., assignor to Syncrodo, Inc., a corporation of Illinois
Filed Sept. 26, 1962, Ser. No. 227,115
2 Claims. (Cl. 103—11)

1. A tankless water pressure system comprising a plurality of pumps of different sizes connected in parallel between a source of water and a water line conduit, control means in said water line conduit and being responsive to the flow of water therein, said control means being adapted to cause only a smaller of said pumps to continuously operate below a predetermined flow rate in said water line conduit and also being adapted to operate a larger of said pumps when the flow in said water line conduit is above said predetermined rate, a restricted bypass around said smaller pump for allowing the circulation of



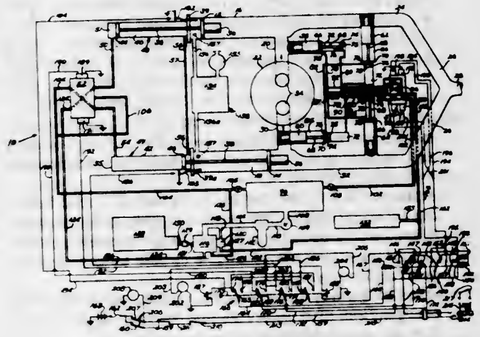
water through said pump when the flow rate in said water line conduit is at zero or substantially zero, a normally closed waste valve connected to said bypass, and a temperature responsive means for opening said waste valve for discharging water from said bypass when the temperature of the circulating water therein exceeds a predetermined set value.

3,198,122
PORTABLE PUMPING STATION
Donald E. Lippke and Clifford J. Kinsey, Delavan, Wis., assignors, by mesne assignments, to Sta-Rite Products, Inc., Delavan, Wis., a corporation of Wisconsin
Filed Dec. 4, 1961, Ser. No. 156,833
4 Claims. (Cl. 103—25)



1. A portable pumping station for a milking system, comprising
(a) a tub to contain the milk,
(b) outlet conduit means connected to the bottom portion of the tub for conducting milk from the tub,
(c) flexible presure conduit means having a first end communicating with the lower portion of the tub and having an opposite end located at a higher level than the first end, said pressure conduit means being located on the exterior of said tub,
(d) pumping means,
(e) inlet conduit means communicating with the pumping means,
(f) a fitting having a first opening to receive said outlet conduit means and having a second opening to receive said inlet conduit means, said fitting also having a third opening communicating with said first and second openings and aligned with said second opening, said third opening having a size to properly receive said pressure conduit means whereby during the cleaning operation said opposite end of said pressure conduit means is inserted within said third opening, and
(g) pressure responsive means operably connected to said pumping means and responsive to the pressure within said pressure conduit means for starting said pumping means when the milk level rises to a predetermined level in said tub.

3,198,123
PUMP AND VALVE ASSEMBLY
Orville L. Wilkinson, Northridge, and George H. Cooke, Granada Hills, Calif., assignors, by mesne assignments, to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Original application July 16, 1963, Ser. No. 295,334. Divided and this application Nov. 18, 1964, Ser. No. 412,042
5 Claims. (Cl. 103—49)



1. A pump for pumping aggregate-containing concrete comprising:
a first delivery piston reciprocally mounted in a first cylinder, said first delivery piston having an upstream face and a downstream face;
a second delivery piston reciprocally mounted in a second cylinder, said second delivery piston having an upstream face and a downstream face;
a concrete-supply hopper in fluid communication with each of said cylinders;
a first concrete-delivery line having an upstream end in fluid communication with said first cylinder and a downstream end;
a second concrete-delivery line having an upstream end in fluid communication with said second cylinder and a downstream end;
a common concrete-delivery manifold in fluid communication with said downstream ends of said first and second delivery lines;
a first valve controlling flow of materials from said hopper to said first cylinder;
a second valve controlling flow of material from said hopper to said second cylinder;
a third valve controlling flow of material through said first delivery line;
a fourth valve controlling flow of material through said second delivery line;
a valve-actuating piston connected to each of said valves for controlling the operation thereof, each of said valve-actuating pistons having an upstream face and a downstream face;
a first transfer valve means for selectively placing said upstream faces of said valve-actuating pistons in fluid communication with a source of hydraulic fluid under pressure and with a reservoir, and for placing said downstream faces of said valve-actuating pistons in fluid communication with said source of hydraulic fluid under pressure and with said reservoir;

a first hydraulic line placing the downstream faces of said second and third valves in fluid communication with said transfer valve;

a second hydraulic line placing the downstream faces of said first and fourth valves in hydraulic communication with said transfer valve;

a third hydraulic line placing the upstream faces of said first and fourth valves in fluid communication with said transfer valve;

a fourth hydraulic line placing the upstream faces of said second and third valves in fluid communication with said transfer valve;

a first solenoid connected to said transfer valve, actuation of said first solenoid placing said first and third hydraulic lines in communication with said reservoir;

a second solenoid connected to said transfer valve, actuation of said second solenoid placing said first and third hydraulic lines in fluid communication with said source of hydraulic fluid under pressure;

a third solenoid connected to said transfer valve, actuation of said third solenoid placing said second and fourth hydraulic lines in fluid communication with said source of hydraulic fluid under pressure;

a fourth solenoid connected to said transfer valve, actuation of said fourth solenoid placing said second and fourth hydraulic lines in fluid communication with said reservoir;

a latching relay connected to said solenoids, said latching relay having a first position completing an electrical circuit to said first and third solenoids and a second position completing a circuit to said second and fourth solenoids;

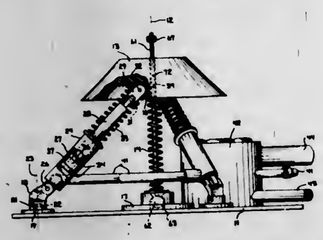
said latching relay being moved to said first position by energization of a first coil and to said second position by energization of a second coil;

a first limit switch connecting said first coil to said first cylinder for actuating by said first delivery piston to energize said first coil;

a second limit switch connecting said second coil to said second cylinder for actuation by said second delivery piston to actuate said second coil; and

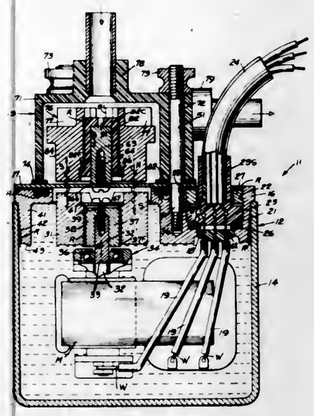
means for reciprocating said delivery pistons in opposition to each other.

3,198,124
INERTIA MACHINE
Cecil L. Moore, St. Louis, Mo., assignor, by mesne assignments, to E & R Laboratory Service Corporation, St. Louis, Mo., a corporation of Missouri
Original application Apr. 26, 1961, Ser. No. 105,712. Divided and this application Dec. 5, 1963, Ser. No. 334,073
7 Claims. (Cl. 103—71)



1. An inertia machine mounted to a movable base for performing useful work in response to motions of the base to which it is mounted and comprising: an inertial mass; resilient means coupled to the base and supporting said inertial mass and normally positioning said mass at a certain point with respect to said base, the resilient means providing freedom of movement of said mass and said mass being movable rectilinearly and curvilinearly in every direction from said point; means coupled between said mass and said base and having a chamber therein of variable capacity whereby motions of the base change the positional relationship between the base and said inertial mass to cause variations in capacity of the chamber; a fluid in said chamber; and valve means coupled to said chambered means whereby said machine is adapted to pump said fluid, said chambered means being responsive to movements of said mass in every direction from said point to pump said fluid upon each movement of said mass from said point.

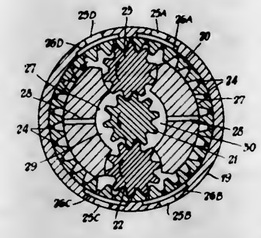
3,198,125
CENTRIFUGAL PUMPS
Joseph J. Yuza, 3816 W. 64th St., Chicago, Ill., and Rudolph A. Yuza, 1910 Buckingham, Westchester, Ill.
Filed July 14, 1960, Ser. No. 42,784
8 Claims. (Cl. 103—87)



1. A centrifugal pump comprising: a base assembly which includes a hermetically sealed housing substantially completely filled with oil, a motor mounted within the housing and immersed within the oil, and first magnetic means connected for rotation by the motor and disposed within the housing; and a pump head assembly removably mounted on the base assembly, said pump head assembly including an outer casing, an impeller mounted for rotation within the casing, inlet and outlet conduit means for conducting fluid to and from said impeller, and second magnetic means associated with the impeller and magnetically coupled with the first magnetic means for rotating the impeller therewith, at least one of said magnetic means consisting essentially of an annular member of permanent magnet material having axially projecting pole pieces magnetized in an axial direction at a plurality of spaced points about the periphery thereof.

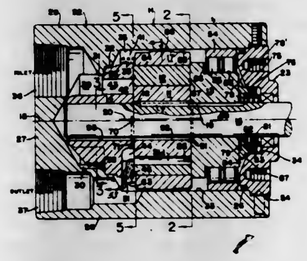
3,198,126
HYDRAULIC MOTOR AND PUMP COMBINATIONS
Geza Stephen Minich, Cranley Gardens Hotel, 8 Cranley Gardens, London SW. 7, England
Filed Sept. 16, 1963, Ser. No. 309,226
Claims priority, application Republic of South Africa, Sept. 19, 1962, 1,116/62
3 Claims. (Cl. 103—118)

1. A hydraulic motor and pump combination comprising a stationary casing, a high pressure fluid inlet to the casing, a low pressure fluid outlet to the casing, a high pressure fluid inlet to the casing, a high pressure fluid outlet to the casing, and rotatable means comprising an internal gear, a central gear mounted concentrically with said internal gear and at least one pair of gears each meshing with said central gear and said internal gear for forming seals between the low pressure fluid inlet and outlet and between the high pressure fluid inlet and outlet and for



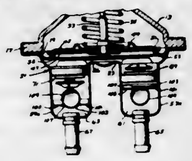
conveying fluid from said high pressure fluid inlet to said low pressure fluid outlet and for conveying fluid from said low pressure fluid inlet to said high pressure fluid outlet, parts of said rotatable means projecting from the remainder of said means and presenting surfaces upon which high pressure fluid entering at said high pressure fluid inlets acts and tends to turn said rotatable means.

3,198,127
HYDRAULIC PUMP OR MOTOR
Robert W. Brundage, 2809 Wakonda Drive, Belnor, St. Louis, Mo.
Original application May 19, 1959, Ser. No. 814,320, now Patent No. 3,034,448, dated May 15, 1962. Divided and this application Feb. 26, 1962, Ser. No. 175,481
9 Claims. (Cl. 103—126)



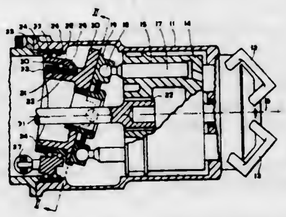
1. In a hydraulic pump comprised of a housing having an inwardly facing surface defining a pumping cavity; an externally toothed and an internally toothed gear member rotatable about spaced axes and defining a plurality of progressively increasing and decreasing volume pumping chambers, said gears each having an axially facing surface, a bearing member/rotatably supporting said internally toothed gear and having an axially facing sealing surface, a sealing member having an opposite axially facing sealing surface engaging the gear sealing surfaces, the improvement which comprises said sealing member sealing surface extending radially beyond the periphery of said internally toothed gear member, said bearing member being axially movable in said housing and means biasing said bearing member sealing surface against said sealing member sealing surface.

3,198,128
MECHANICAL PUMP
Russell F. Smith, Ferguson, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Original application July 5, 1961, Ser. No. 122,025, now Patent No. 3,150,601, dated Sept. 23, 1964. Divided and this application Jan. 26, 1962, Ser. No. 169,012
6 Claims. (Cl. 103—150)



1. A diaphragm pump, particularly for pumping a volatile liquid such as automotive fuel, comprising a pump head, a sheet metal pump body secured to said pump head, a diaphragm having its margin clamped between the pump body and the pump head, said pump body having an end wall and an annular peripheral wall defining with the diaphragm a pumping chamber, said body further having a pair of side-by-side cup-shaped projections extending from its end wall and opening into the pumping chamber, an intake check valve in one of the cup-shaped projections and a discharge check valve in the other of said cup-shaped projections for controlling the flow of fuel into and out of the pumping chamber, a discharge outlet communicating with said other cup-shaped projection downstream of the discharge check valve, a discharge cavity formed in the other projection between the discharge outlet and the check valve, and means in the discharge cavity downstream of the discharge check valve for dampening pulsations in pressure of the fuel delivered by the pump to the discharge outlet, said means comprising a generally transverse partition across the discharge cavity and having a generally central opening therethrough, a resilient generally ball-shaped member removably seated over the opening thereby tending to equalize the pressure of the fuel being delivered by the diaphragm pump, and at least one additional opening in said transverse partition to permit the flow of fuel through the discharge cavity when the ball-shaped member is seated over said first mentioned opening.

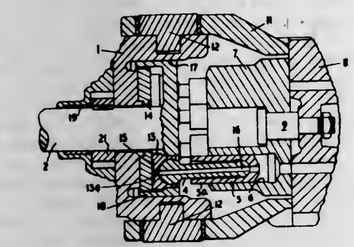
3,198,129
FLUID-PRESSURE MACHINES
Alan Cameron-Johnson, Cheltenham, England, assignor to Dowty Rotol Limited, Cheltenham, England, a British company
Filed Sept. 25, 1962, Ser. No. 226,104
Claims priority, application Great Britain, Sept. 29, 1961, 35,286/61
1 Claim. (Cl. 103—162)



A variable capacity fluid-pressure machine comprising a casing and a barrel rotatable therein about a fixed axis, and formed with a plurality of circumferentially spaced, axially directed cylinders, a piston reciprocable in each cylinder, a swash plate whereon the projecting end of

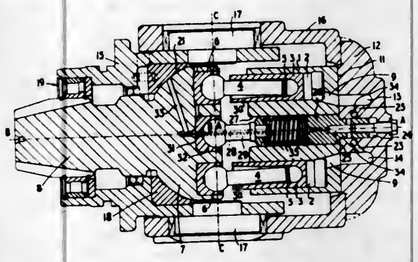
each piston bears, a first wedge-shaped member forming one part of a double-wedge assembly, and mounted in said casing for angular adjustment about such fixed axis, a second wedge-shaped member forming the other part of the double-wedge assembly, and including said swash plate, said second wedge-shaped member being supported from the casing for tilting movement about a tilting axis disposed substantially transversely of the machine and intersecting the fixed axis, but constrained against rotation, and the two wedge-shaped members being interconnected for their relative angular movement about an axis which intersects the fixed axis at the intersection of the latter and the tilting axis, and means to adjust said first wedge-shaped member about the fixed axis, whereby the resultant tilting of the second wedge-shaped member will effect adjustment of the angle of the swash plate about the tilting axis, and consequently of the stroke of the pistons within their cylinders.

3,198,130
HYDRAULIC APPARATUS
Oswald Thoma, Charlton Kings, Cheltenham, England, assignor to Dowty Hydraulic Units Limited, Ashchurch, England, a British company, and Unipat A.G., Glarus, Switzerland, a company of Switzerland
Filed Jan. 31, 1963, Ser. No. 255,253
Claims priority, application Great Britain, Apr. 6, 1962, 13,365/62
1 Claim. (Cl. 103—162)



A hydraulic pump or motor including
(a) a rotatably mounted drive shaft
(b) a drive member fast on the drive shaft
(c) a radial thrust bearing surrounding and acting on the drive member
(d) a cylinder block mounted for rotation with said drive member about an axis that during operation intersects and is inclined relative to the rotational axis of the drive shaft and drive member
(e) said cylinder block having a series of sylinders directed generally parallel to the rotational axis of the cylinder block
(f) a series of connecting rod, slipper and piston assemblies interconnecting the cylinder block and the drive member
(g) the pistons being reciprocably mounted one in each cylinder of the cylinder block
(h) the drive member having a series of holes extending parallel to its rotative axis within the corresponding one of which holes the respective slippers are unrestrained against reciprocation in a direction parallel to the rotative axis of the drive member
(i) the connecting rod of each assembly being pivotally connected to the corresponding slipper and piston
(j) a track member separate from but adjacent the drive member having a surface against which the slippers bear in the axial direction and by reciprocation in their holes can bear evenly on the track member despite bending or inaccuracy in the drive member
(k) means including liquid inlet and outlet ports for delivering a liquid to and discharging it from the cylinders during rotation of the cylinder block
(l) a plane that includes the centers of the pivotal connection between the connecting rods and the slippers intersecting the surface of the radial thrust bearing for the drive member such that the greater part of the said surface lies on the side of the said plane remote from the cylinder block
(m) and a radial thrust pilot bearing surrounding and acting on the drive shaft at a position axially spaced from the drive member.

3,198,131
HYDROSTATIC BEARING FOR THE DRIVE FLANGE OF A HYDRAULIC PUMP OR MOTOR
Oswald Thoma, Charlton Kings, England, assignor to Dowty Hydraulic Units Limited, Ashchurch, England, a British company, and Unipat A.G., Glarus, Switzerland, a Swiss company
Filed Feb. 5, 1963, Ser. No. 256,391
Claims priority, application Great Britain, Apr. 6, 1962, 13,367/62
8 Claims. (Cl. 103—162)

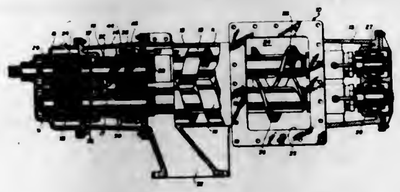


1. A hydraulic pump or motor including a rotatably mounted cylinder block having a series of cylinders extending substantially parallel to the rotational axis of the cylinder block, a series of pistons each reciprocably mounted in a different one of the series of cylinders in the cylinder block, a drive flange mounted for rotation with the cylinder block about an axis inclined to the rotational axis of the cylinder block, a series of connecting rods each connected to a different one of a series of pistons and to the drive flange, liquid inlet means and liquid outlet means associated with the cylinder block, at the block's end distant from the drive flange, a bearing member in which the drive flange is rotatably mounted, the drive flange and the bearing member co-operating to define chambers, and conduit means passing from the liquid inlet and outlet means through the central region of the cylinder block and the drive flange, and arranged to supply liquid under pressure from the cylinders to the chambers, the liquid under pressure providing a thrust which balances at least some of the thrust exerted on the drive flange by the connecting rods during operation of the pump or motor.

3,198,132
PUMP
Albert A. Zalis, Warren, Mass., assignor to Warren Pumps, Incorporated, Warren, Mass., a corporation of Massachusetts
Filed Jan. 17, 1964, Ser. No. 338,512
10 Claims. (Cl. 103—204)

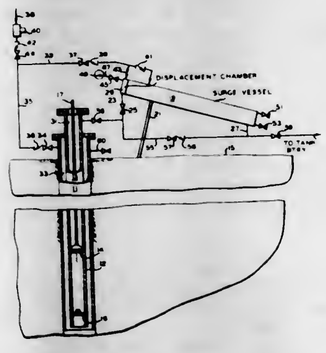
1. A pump, comprising
(a) a housing having an internal chamber and a bore extending from the chamber to the exterior of the housing,
(b) a shaft residing in the bore and having pumping elements which reside in the chamber,

(c) a bushing residing in the bore and extending between the bore and the shaft, the bushing having a cooling passage therethrough terminating at one end in a flushing groove which lies against the surface of the shaft, and
(d) means supplying a cooling and flushing fluid to the other end of the passage, the bushing being



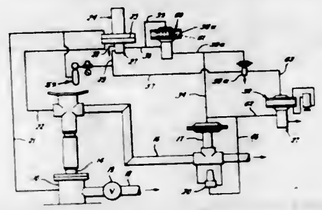
generally in the form of a tube having concentric cylindrical inner and outer surfaces, a fluid-receiving groove being formed on the outer surface adjacent one end thereof, the flushing groove being formed on the inner surface adjacent the other end, and the cooling passage extending axially through the bushing from the fluid-receiving groove to the flushing groove.

3,198,133
PROCESS AND APPARATUS FOR REDUCING SURGE IN LEAD LINES
Ralph W. Elliott, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 8, 1963, Ser. No. 293,520
16 Claims. (Cl. 103—223)



1. Apparatus for absorbing pressure surges in a lead line transporting liquid from a well comprising in combination, adjacent the well head:
(1) a well conduit having a downhole single action reciprocating pump on the lower end thereof, said pump having an intake on its lower end for formation liquid;
(2) a lead line for liquid connected with the upper end of said well conduit having a check valve therein adjacent said well conduit;
(3) a surge vessel connected by conduit with said lead line upstream of the delivery end thereof and downstream of said check valve having an inlet for gas therein;
(4) a gas displacement chamber communicating with said inlet and with the upper end of said well conduit;
(5) means for preventing back flow of fluid from said surge vessel thru said displacement chamber; and
(6) a gas supply line connected with said displacement chamber having a check valve therein to prevent back flow from said chamber.

3,198,134
PUMPING SYSTEM FOR GAS WELLS
James M. South, Longview, Tex., assignor to U.S. Industries, Inc., a corporation of Delaware
Filed Dec. 19, 1961, Ser. No. 160,476
2 Claims. (Cl. 103—231)



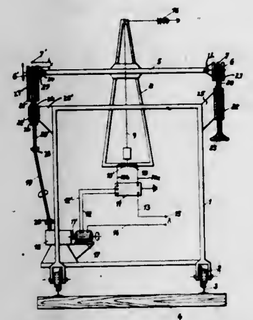
1. A gas lift system for moving liquid from a well producing both gas and liquid comprising a gas production line connected with an annulus of a well; an adjustable valve in the gas production line; production tubing for liquid extending down into operative contact with liquid in the well; a liquid withdrawal line connected to the production tubing; means for bleeding gas at a selected substantially constant rate from an upper part of the production tubing; a fluid actuated motor valve disposed to control flow through the liquid withdrawal line; a second fluid actuated motor valve; piping arranged to supply actuating fluid to both motor valves; a controller, including a spring loaded diaphragm responsive to differential in pressure between gas in an upper part of the production tubing and gas in an annulus of the well and a valve closure member operated by movement of the last mentioned diaphragm controlling flow of actuated fluid through the controller and said piping to both said motor valves; a fluid actuated timer connected to vent actuating fluid from both said motor valves at expiration of a selected time interval after application of actuating pressure; and a by-pass line from said source of actuating fluid to said fluid actuator timer, said second motor valve being disposed to control flow through said by-pass line.

3,198,135
MOVABLE APPARATUS USEFUL IN TRACK GRADING
Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna I, Austria
Filed Mar. 12, 1962, Ser. No. 180,065
Claims priority, application Austria, Mar. 15, 1961, A 2,179/61
5 Claims. (Cl. 104—7)

1. An apparatus movable on two track rails and useful in track grading operations wherein the rails are leveled in relation to two reference lines defining vertical planes with respective ones of said rails, comprising
(a) means arranged for engagement with, and movable on, said track rails;
(b) a frame mounted on said movable means;
(c) a first means arranged for contacting engagement with one of said reference lines;
(d) means for vertically adjustably mounting said first means on said frame;
(e) a second means arranged for contacting engagement with the other one of said reference lines;
(f) additional means for vertically adjustably mounting said second means on said frame;

(g) mechanical drive means for vertically adjusting said additional means;

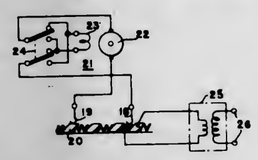
(h) a means mounted on said frame for indicating the vertical position of said reference lines relative to each



other thereby establishing the horizontal inclination of the plane extending through said reference lines;

(i) control means operating in response to said relative vertical position indicating means of the reference lines and actuating said mechanical drive means.

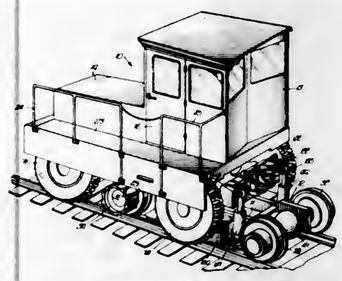
3,198,136
ELECTRIC SINGLE-TRACK VEHICULAR TOY
Alexander Girz, Nurnberg, Germany, assignor to Schreyer & Co., Nurnberg, Germany, a German corporation
Filed Dec. 6, 1960, Ser. No. 74,203
6 Claims. (Cl. 104—148)



1. In a vehicular toy having a single track line bendable into various desired shapes and having a driven vehicle with rear wheels and a swivelled leading track-follower wheel ridable on the track line for steering the vehicle, the improvement comprising a track-line member having two coaxial mutually insulated conductor means for connection to a current source, said conductor means forming longitudinally alternate and uniformly spaced contact surfaces respectively, said vehicle having a propulsion motor of polarity-independent running direction and having two mutually insulated contact means connected with said motor and engageable with respective contact surfaces of said two conductor means for energizing said motor, said track-line member having a flexible core and having two helical conductor tapes wound upon said core so as to form said respective uniformly spaced contact surfaces, said tapes being electrically insulated from each other.

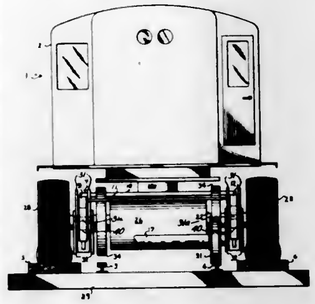
3,198,137
TRACTION VEHICLE
Eugene B. White, Jr., Park Forest, Ill., assignor to Whiting Corporation, a corporation of Illinois
Filed Feb. 7, 1963, Ser. No. 256,973
25 Claims. (Cl. 105—26)

1. In a rail traction vehicle of the type having a frame, an engine and a transmission carried by the frame, the improvement which comprises: a vehicle coupler carried by the frame for movement in a generally vertical direction and for shifting movement laterally of the vehicle as the latter traverses a curve with a railway car coupled thereto, said vehicle coupler including a generally horizontal pad for engagement with a lower surface of a railway car coupler, means for lifting the vehicle coupler and thereby transferring a portion of the weight of the railway car to said vehicle coupler, first and second rail wheel axles on the frame spaced horizontally forwardly and rear-



wardly, respectively, of the point of load application between said vehicle coupler and the frame, said second axle being rigidly mounted to said frame and spaced nearer said point of load application than said first axle, said first axle being resiliently mounted to said frame, and driving means for driving both of said rail wheel axles, said means including a non-slip differential on said second rail wheel axle thereby to minimize loss of traction upon slipping of one rail wheel.

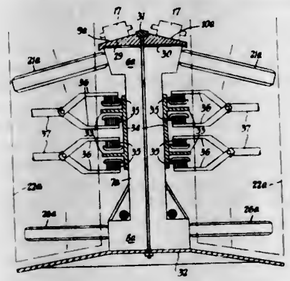
3,198,138
MOTORIZED RAILROAD TRUCK
Conway H. Melcher, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed May 27, 1963, Ser. No. 283,211
3 Claims. (Cl. 105—49)



1. In a rail-type vehicle, a truck assembly comprising: first and second pairs of axles, one axle of said first pair being located at each end of said truck assembly with said second pair of axles positioned therebetween so that an axle of said second pair is inboard of and adjacent to an axle of said first pair; rail guide wheels mounted on said first pair of axles adapted to guide said truck assembly along a railway; means for power driving said second pair of axles; road wheels mounted on said second pair of axles adapted to drive said truck assembly from a roadway adjacent said railway; an equalizer member extending longitudinally of said truck assembly; a load lever pivotally connected at a point intermediate the ends thereof to each end of said equalizer, each of said load levers being positioned between the adjacent axles of said first and second

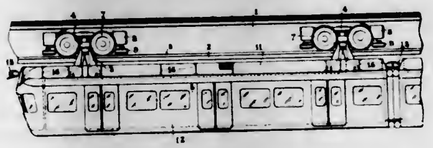
pairs and having their ends supported thereon; and a frame resiliently supported on said equalizer member, said equalizer member and the pivotally connected load levers at the ends thereof being operative to distribute the load on said truck assembly in a preselected proportion between said first and second pairs of axles and maintaining such distribution independent of relative variations in height between the railway and roadway surfaces.

3,198,139
MONORAIL SYSTEMS
John William Dark, 41 Criffel Ave., London SW. 2, England
Filed Aug. 19, 1963, Ser. No. 302,813
Claims priority, application Great Britain, Sept. 14, 1962, 35,067/62; Oct. 1, 1962, 37,197/62
6 Claims. (Cl. 105—145)



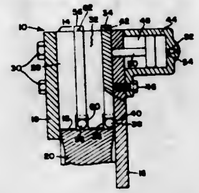
1. A monocar system comprising a monocar, a track beam having a top surface and opposed side walls, said monocar being freely supported for movement along said track beam, and having a plurality of pairs of freely rotatable supporting rollers bearing upon the two running surfaces; and means for producing reaction forces between the side walls of the beam and cooperating means carried by the monocar to propel the monocar along the beam; said propelling means comprising electro-induction elements carried by the monocar reacting with electro-induction reaction elements on the side walls of the beam; said reaction elements carried by the beam comprising strips of conductive material extending along each side of the beam, and the elements carried by the monocar comprising field coils supported in close proximity to said strips.

3,198,140
VEHICLE BODY STRUCTURE FOR OVERHEAD RAILWAYS WITH SUSPENDED VEHICLES
Lucien Chadenson, Paris, France, assignor to Safege-Transport, Paris, France
Filed May 3, 1963, Ser. No. 277,890
Claims priority, application France, Feb. 15, 1963, 924,969, Patent 1,356,455
4 Claims. (Cl. 105—150)



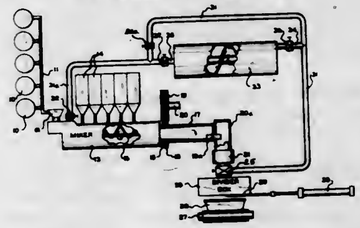
1. A body structure of vehicle for elevated railway system utilizing vehicles suspended from two bogie trucks, said body structure consisting of two elements constructed separately, the first element being a block-beam constituting the stress-resisting element of the structure and comprising two longitudinal parallel members disposed at the level of the roof of the vehicle body and carrying the pendular suspension members extending vertically over them and adapted to connect said body structure to the two bogie trucks of the vehicle, and, at its two longitudinal ends, the buffer and coupling means of the vehicle, the other element of the body structure consisting of the body proper suspended from said block-beam and secured to it containing the equipments necessary for the passenger traffic.

3,198,141
WAFERING MACHINE CONVERTIBLE DIE STRUCTURE
Harold M. Knoth, Davenport, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,650
10 Claims. (Cl. 107—14)



10. Die structure for a wafering machine, comprising: an annulus including inner and outer peripheries and having a pair of coaxially spaced apart ring-like side elements and a plurality of uniformly circumferentially spaced apart generally radial spacers affording a like plurality of generally radial die cells having radially opposite inner and outer ends opening respectively at said inner and outer peripheries of the annulus and each spacer likewise having radially opposite inner and outer ends respectively at said inner and outer peripheries, means at one periphery of the annulus including a plurality of notches respectively at the ends of the cells at said periphery; a plurality of individual plate-like members equal in number to the cells, one member being disposed in each cell and extending radially from one end toward the other end thereof, each member being dimensioned for radial withdrawal from its cell at the end of said cell at said same periphery, said members respectively having end portions adjacent to said notches, respectively, and each member having at said end portion a mounting part removably received in an associated notch.

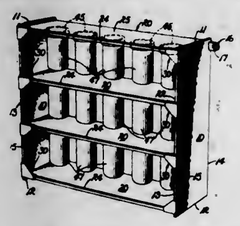
3,198,142
METHOD AND MEANS FOR PREPARING DOUGH
Herbert G. Lothes, Atlanta, Ga., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Apr. 27, 1961, Ser. No. 106,063
10 Claims. (Cl. 107—30)



10. Apparatus for making dough, including: means for mixing dough ingredients and developing the mixture into an expanded dough mass having gas cells with an en-

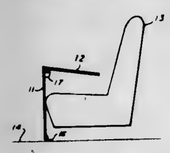
trapped gas content; said means including a revolving vessel having an interior wall for supporting thereon a dough mass; and means for revolving said vessel at a speed sufficient to engage the dough mass with the interior wall surface of the vessel and subject it to centrifugal forces of such magnitude as to drive some of the entrapped gas into solution in the dough.

3,198,143
DISPLAY AND SUPPORT RACK FOR RE-USABLE CONTAINERS
Clyde E. Biglieri, 2250 Tybo Ave., Reno, Nev.
Filed Feb. 10, 1964, Ser. No. 343,703
8 Claims. (Cl. 108—28)



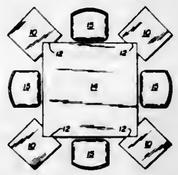
1. A display and support rack for a plurality of re-usable containers which are provided with respective removable covers of a predetermined vertical height, the rack comprising a pair of transversely spaced, approximately vertically oriented frame members; a plurality of elongated shelves extended between and secured to said frame members in superposed, vertically spaced, substantially parallel relationship and affording respective downwardly presented surfaces extended between opposite ends of said shelves; and a plurality of individual container support means integral with the shelves and extended from said downwardly presented surfaces at predetermined intervals of transverse spacing between said frame members to accommodate said containers and affording respective downwardly opening sockets of a depth less than said predetermined height and of a transverse dimension to accommodate said covers to support the same in depending relationship with a portion of the covers extended outwardly from the support means.

3,198,144
COLLAPSIBLE TABLE
Joseph M. Cullinan, 1212 Tower Drive, Vista, Calif.
Filed Nov. 14, 1962, Ser. No. 237,569
1 Claim. (Cl. 108—48)



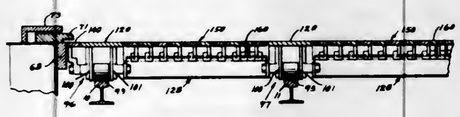
A collapsible table for cooperation with a seat in an automobile comprising a pedestal member and a desk member, mounting means for pivotally mounting said pedestal member, coupling means for rotatably coupling said desk member to said pedestal member, said coupling means including first and second brackets mounted on said pedestal member and said desk member, respectively, said brackets cooperating to form a self-locking coupling at one rotation extreme and a removal coupling at a predetermined arc of rotation from said arc rotation extreme.

3,198,145
AUXILIARY TABLE
Horace G. Duncan, 3000 S. Vine St., Denver, Colo.
Filed Apr. 10, 1963, Ser. No. 272,034
2 Claims. (Cl. 108—59)



1. A self-supporting auxiliary table for square card tables comprising a generally square planar member of a size substantially smaller than the table with which it is associated, a triangular cutout portion arranged centerwise in one side of said planer member and arranged to mate in a non-attached abutment with a minor portion of one corner of a card table extending diagonally outwardly from the corner, the area of said triangular cutout being substantially less than the area of the planar member so as to abut against a minor portion of the card table sides leaving a major portion of each side of the card table clear for the use of the occupants, foldable leg members secured to said planar member and arranged to support said planar member horizontally and at substantially the same height as the adjoining card table, a planar filler arranged to fill the space of said cutout and form a square auxiliary table, and means hingedly connecting said filler with said auxiliary table.

3,198,146
TRAVELLING GRATES FOR INCINERATORS
Frank S. Simpson, Alton, Ill., assignor to Illinois Stoker Company, Alton, Ill., a corporation of Delaware
Continuation of abandoned application Ser. No. 144,482, Oct. 11, 1961. This application Sept. 12, 1963, Ser. No. 308,929
7 Claims. (Cl. 110—40)



1. In a travelling grate for an incinerator or the like having (a) a supporting framework including a pair of spaced side frames held spaced by rows of cross braces, (b) a plurality of spaced rails extending in the direction of said side frames and supported therebetween by said cross members, (c) a plurality of pairs of sprockets, the pairs being aligned respectively with said rails, and (d) a plurality of endless chains each traversing a different pair of sprockets and supporting between them the several components of the grate, the improvement which comprises,

(1) said endless chains comprising articulated links of integral box-like structure, each including

(i) a cover part having a longitudinal dimension parallel with said rails and a lateral dimension parallel with said cross members,

(ii) a pair of longitudinally extending drive bars depending from said cover part in laterally spaced relation to each other and each drive bar having means at each longitudinal extremity thereof for articulating it with a longitudinally adjacent drive bar,

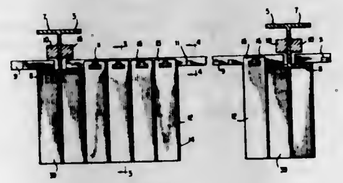
(2) a grate bar connected between laterally aligned links of different endless chains,

(3) means for connecting said grate bars to said links with the uppermost surface of the grate bars below the level of the cover part of said links,

(4) grate keys mounted on said uppermost surface of said grate bar and together forming a surface in substantial continuity with the cover part of said links, said grate bars and said grate keys being interlocked by a raceway which admits of movement of the keys relative to the bars in the direction lengthwise of the bars but prevents relative movement between a key and its associated bar in other directions, and

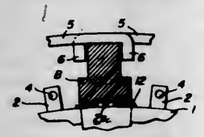
(5) a locking key for preventing the escape of said grate keys from said raceway.

3,198,147
FURNACE ROOF CONSTRUCTION
Andrew Anthony Usmiani, Hollywood, Fla., and Samuel I. Wallace, Steubenville, Ohio, assignors to National Steel Corporation, a corporation of Delaware
Filed June 21, 1962, Ser. No. 204,192
12 Claims. (Cl. 110—99)



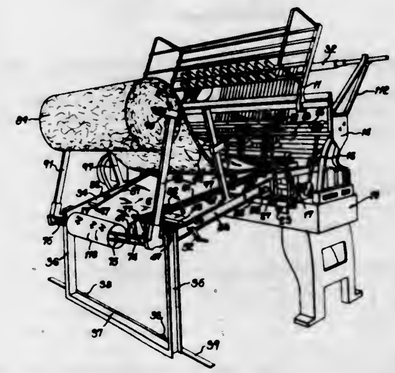
1. Furnace roof construction comprising roof-supporting structure and a furnace roof comprised of a multiplicity of contiguous metal-sheathed refractory bricks, means interconnecting the metal sheathing of not more than half the bricks with the roof-supporting structure to suspend not more than half the bricks by their metal sheathing from the roof-supporting structure, and means supporting at least half the bricks on the metal sheathing of an immediately adjacent brick, the bricks that support other bricks being characterized in that those portions of the metal sheathing by which the supporting bricks are themselves supported are connected in unitary assembly by portions of the metal sheathing with those portions of the metal sheathing which support the supported bricks, so that the weight of the bricks which are supported by the supporting bricks is carried by the metal sheathing rather than by the refractory material of the bricks.

3,198,148
METALLURGICAL FURNACE ROOF
Thomas A. Hall, Canfield, Ohio, assignor to The Youngstown Sheet and Tube Company, Youngstown, Ohio, a corporation of Ohio
Filed Oct. 22, 1963, Ser. No. 317,901
2 Claims. (Cl. 110—99)



2. In a basic refractory furnace roof comprising a plurality of independently supported metal encased basic refractory bricks and spaced hold-down beams extending longitudinally of the roof, a plurality of rods interposed between said beams and the cold ends of the respectively subjacent bricks, and tabs projecting from said bricks and overlying said rods for supporting said subjacent bricks therefrom, the ends of said rods extending outwardly beyond the edges of said bricks and into engagement with independently supported bricks aligned therewith to support said rods from said independently supported bricks.

3,198,149
MACHINE FOR MAKING STRETCHABLE QUILTED FABRIC
Kurt Schlegel, Old Westbury, N.Y.
(% Edgewater Machine Co. Inc., College Point, N.Y.)
Filed Apr. 1, 1964, Ser. No. 356,612
16 Claims. (Cl. 112—118)

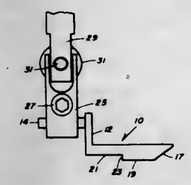


1. A quilting machine having apparatus for assembling and supplying elements to said quilting machine which comprises a pair of front sprocket wheels axially spaced and rotatable in vertical planes, a pair of guide sprocket wheels axially spaced more widely than said front sprocket wheels and rearwardly of said front sprocket wheels and rotatable in vertical planes, a pair of endless chains extending in divergent upper reaches one each from one of said front sprocket wheels to one of said guide sprocket wheels, a series of pins mounted on each of said chains inboard of said chains and pointing upwardly in said upper reaches, means immediately in front of said front sprocket wheels to mount a roll of stretchable foundation sheet to engage its side edge margins with successive pins on said chains as said chains travel in their upper reaches from said front sprocket wheels to said guide sprocket wheels thereby stretching said stretchable foundation sheet transversely to its direction of travel, means above the upper reach of the chains passing from said front sprocket wheels to said guide sprocket wheels to support a roll of facing sheet to supply said facing sheet in unstretched condition to the upper surface of said foundation sheet and means to move said chains in their upper reaches beyond said guide sprockets to the quilting machine.

3,198,150
SHIRRING FOOT
Angelo Micale, 995 Nassau St., North Brunswick, N.J.
Filed Oct. 29, 1963, Ser. No. 319,807
1 Claim. (Cl. 112—134)

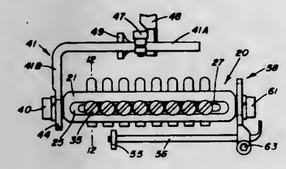
A shirring foot, the bottom surface of which has a front upturned portion, an intermediate portion to contact the feeder of a sewing machine, a rear portion at a higher level than the intermediate portion, the foot having depthwise, a hole or needletrack within the limits of the foot,

which needletrack is elongate in the front-rear direction, the foot comprising at its rear end a rearwardly extending cylindrical shank for accurate, angular selective at-



tachment to a foot bar in a front-rear direction and also for angular adjustment so that said intermediate portion of the foot may be flat on a machine feeder.

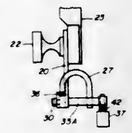
3,198,151
ADJUSTABLE FINGER ATTACHMENT FOR SEWING MACHINES
Angelo Micale, 995 Nassau St., North Brunswick, N.J.
Filed Oct. 29, 1963, Ser. No. 319,805
2 Claims. (Cl. 112—152)



1. A sewing machine attachment comprising an elongated frame, said frame including spaced upper and lower parts, the upper part having an elongated vertical slot therethrough and lengthwise thereof, a plurality of parallel guide fingers disposed in the space between the upper and lower parts of the frame and slidable lengthwise of the frame and disposed transverse thereto, screws passing through said vertical slot in the upper part of the frame, each screw threadably engaging one of said guide fingers and adapted to hold it in a predetermined position, a bar, a clamp for adjustably securing the bar lengthwise thereof to allow movement of the frame to the right and left, one end of said frame being swivelly connected to said bar to allow tilting movement of the frame, said bar being formed to allow the frame to be connected thereto at different points so that the frame may be moved forward and backward in a direction transverse to its length, a single means for securing the bar to the frame both in a selected tilted position and in a selected forward-backward position, a connector formed in part as a clamp in which the goods guide is selectively clamped, said connector swivelly secured to an end of the frame and formed for forward and backward movement relative to the frame, and a single means for fastening the connector to the frame in a desired forward-backward position and also in a desired swivelled position.

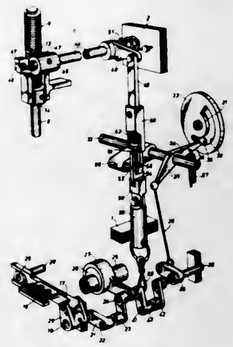
3,198,152
FINGER GUARD AND GOODS GUIDE FOR SEWING MACHINES
Angelo Micale, 995 Nassau St., North Brunswick, N.J.
Filed Oct. 29, 1963, Ser. No. 319,804
1 Claim. (Cl. 112—153)

An attachment for a sewing machine, comprising a supporting connector adapted to be adjustably secured to a sewing machine said connector being a rigid L-shaped member having one end thereof adapted to be connected to the sewing machine for angular and up and down movement with respect thereto, an upright finger guard of inverted U-shape extending beyond the right side of the connector and having one leg secured to the other end of the connector, a goods guide comprising a horizontally disposed shank passing transversely and slidably through the



supporting connector and extending to the right of the connector, the body of the guide adjustably depending from the shank and adapted to touch the sewing machine table, the body of the guide being a cylindrical roller vertically positioned endwise, the guide comprising a spring under compression to press downwardly on the roller.

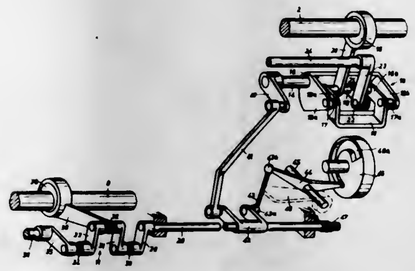
3,198,153
STITCH CONTROL FOR PLURAL-FEED SEWING MACHINES
Karl Weber, Kaiserslautern, Pfalz, Germany, assignor to G. M. Pfaff A.G., Kaiserslautern, Pfalz, Germany
Filed July 31, 1963, Ser. No. 299,002
Claims priority, application Germany, Aug. 1, 1962, P 29,938
10 Claims. (Cl. 112—209)



1. The combination with a sewing machine of the type comprising stitch-forming means, a work presser foot, a feed dog, a pair of work-engaging upper and lower feed rollers, means to operate said dog and at least one of said rollers in synchronism with said stitch-forming means, to intermittently advance a workpiece being operated on in cooperation with said presser foot and the remaining one of said rollers, respectively; of stitch controlling means comprising a rotary control member having a pair of adjoining cam surfaces for forward and reverse stitching, respectively, cam follower means and adjusting means therefor to operate the same into engagement with either of said surfaces, to change from forward to reverse stitching, and vice versa, resilient means to normally urge said follower means into engagement with the surface for forward stitching, feed stroke control means for said dog, means operably connecting said control means with said adjusting means, to vary the feed stroke of said dog in respect to zero feed by rotation of said member, said cam surfaces having a configuration to maintain the same feed stroke by said follower means engaging either surface in any adjusting position of said member, spring-loaded operating means to

temporarily withdraw one of said rollers from work-engaging position, and lost-motion connecting means between said operating means and said adjusting means, whereby to first withdraw said last-mentioned roller and to subsequently change from forward to reverse stitching upon and during actuation of said operating means.

3,198,154
STITCH CONTROL MECHANISM FOR SEWING MACHINES WITH COMBINED LOWER AND UPPER FEED
Rudolf Reeber, Neukefer Loh uber Munich, Germany, assignor to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany, a corporation of Germany
Filed July 17, 1963, Ser. No. 295,758
Claims priority, application Germany, July 18, 1962, P 29,852
9 Claims. (Cl. 112—210)



1. In a sewing machine of the type having a base plate, a housing including an upright and an overhanging arm extending therefrom in a direction parallel to said plate and terminating in a sewing head, a reciprocatory needle mounted within said head, to produce stitches in a workpiece fed along said plate, a needle drive shaft within said arm operably connected to said needle, to reciprocate said needle in the vertical direction, and a loop taker drive shaft in driving connection with said first drive shaft and mounted below said plate; work feeding means comprising in combination:

(1) a first rockshaft mounted within said arm and operably connected with said needle, to oscillate the same in the work feeding direction, to provide first work feeding means of said machine,

(2) a work feeding dog,

(3) a second rockshaft mounted below said plate and operably connected to said dog, to provide second work feeding means of said machine, and

(4) drive and unitary stitch control means to operate said first and second rockshaft and to adjust the feed advance strokes of both said work feeding means, comprising:

(a) first motion-transmitting mechanism operably connecting said needle drive shaft with said first rockshaft, to convert rotary motion of the needle drive shaft into oscillating motion of said first rockshaft,

(b) second motion-transmitting mechanism operably connecting said loop taker drive shaft with said second rockshaft, to convert rotary motion of said loop taker shaft into oscillating motion of said second rockshaft,

(c) a first rotary control shaft of said first mechanism operative to control the feed stroke of said needle in accordance with the angular adjusting position of said first control shaft,

(d) a second rotary control shaft of said second mechanism operative to control the feed stroke of said dog in accordance with the angular adjusting position of said second control shaft, and

(e) uni-control means to adjust both said control shafts, to simultaneously vary the feed strokes of said needle and feed dog in synchronism.

3,198,155
METHOD OF INTERCONNECTING TWO SHEETS OF DEFORMABLE MATERIAL
Ermal C. Fraze, 355 W. Stroop Road, Dayton, Ohio
Filed Mar. 2, 1964, Ser. No. 348,712
15 Claims. (Cl. 113—121)



1. A method of interconnecting two sheets of deformable material, including the steps of:

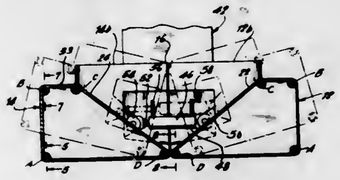
forming two hollow rivets with transverse end walls in the two sheets respectively with one hollow rivet dimensioned to telescope into the other;

telescoping the two hollow rivets together with the two transverse end walls of the rivets close together;

telescoping a first die member into the telescoped hollow rivets to contact the inner of the two transverse end walls; and

without subjecting the tubular walls of the telescoped hollow rivets to axial compression, placing a second die member against the outer transverse end wall to cooperate with the first die member to squeeze the two transverse end walls simultaneously across their thickness to reduce the wall thicknesses and extrude the metal of the two transverse end walls radially to expand the two hollow rivets radially adjacent the two transverse end walls thereby to positively mechanically interlock the two hollow rivets.

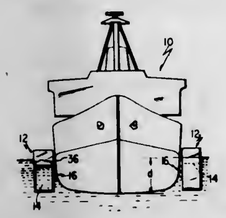
3,198,156
BARGE CONSTRUCTION
Alfred Kunz, Munich, Germany, assignor to Firma Deggendorfer Werft und Eisenbau, Ges. m.b.H., Deggendorf (Danube), Germany
Filed Oct. 16, 1963, Ser. No. 316,615
Claims priority, application Germany, Oct. 27, 1962, D 40,154
2 Claims. (Cl. 114—29)



1. A barge comprising first and second floating body elements, said floating body elements including separate stern, bow and central portions, coupling means holding said stern, bow and central portions together, means pivotally connecting said first and second floating body elements together adjacent their upper interior corners and permitting their lower interior corners to abut, and means for moving said first and second floating body elements outwardly to pivot said floating body elements about said pivot means for opening said barge, propulsion means mounted on said first and second floating body ele-

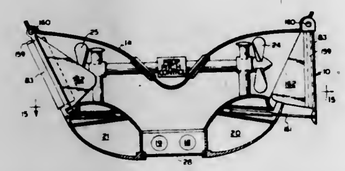
ments, and means mounting said propulsion means on said floating body elements permitting said elements to be pivoted outwardly while holding said propulsion means in a substantially upright position.

3,198,157
DRAFT REDUCING DEVICE FOR VESSELS
Amilcas Ion Livas, 50 Broadway, New York, N.Y.
Filed Oct. 31, 1963, Ser. No. 320,405
4 Claims. (Cl. 114—123)



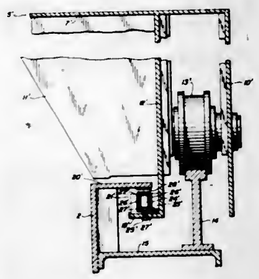
1. An apparatus for reducing the draft of a ship comprising a pair of normally remote hollow buoyant bodies having a predetermined quantity of water ballast therein, which are adapted to be moved into position alongside a ship, one adjacent each side thereof; a first pair of elongated brackets one of which is secured in fixed horizontal position to one side of each of said buoyant bodies and extends outwardly therefrom toward said ship when said bodies are disposed alongside said ship; a second pair of elongated similar brackets one of which is adapted to be secured in horizontally disposed outwardly extending position on each side of said ship in position for the under surface thereof to be engaged by the upper surface of the said one of said first brackets secured to the side of the adjacent buoyant body whereby the weight of said ship is partially supported by said hollow buoyant bodies when the draft of said buoyant bodies is decreased by removing ballast therefrom.

3,198,158
SHIP MANEUVERING SYSTEM AND CONTROL
Duncan Kenneth Winter, 4614 Maple Ave., Bethesda, Md.
Filed Apr. 8, 1964, Ser. No. 358,235
16 Claims. (Cl. 114—151)



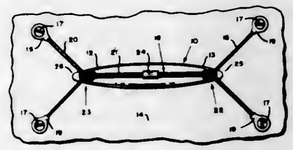
1. A maneuvering device for ships, barges, or the like comprising an athwartships passage near one end of the ship, a valved bottom opening in said ship connected to said athwartship passage, a louvered opening at each end of said passage, two adjustable, reversible-pitch propellers, one mounted at each end of said passage adjacent said louvered openings, a single means to simultaneously adjust the pitch of said propellers and switch means whereby the adjustment of the pitch of one of said propellers can be changed from adjustment in the same direction as the other propeller to adjustment in the opposite direction to the other propeller.

3,198,159
HATCH COVER WITH INFLATABLE GASKET
Alois F. Cherney, Towson, and Herman A. Rohrs, Baltimore, Md., assignors, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware
Filed Mar. 6, 1964, Ser. No. 349,909
9 Claims. (Cl. 114—202)



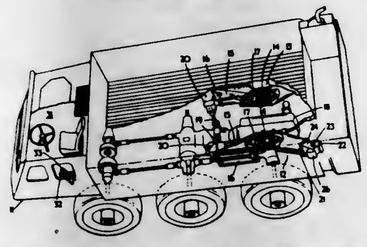
1. Closure means for a hatch opening extending through a deck, comprising:
(a) a vertical coaming extending along the perimeter of the hatch opening above the deck,
(b) a first horizontal flange secured to said coaming above the deck and extending away from the hatch opening,
(c) a hatch cover adapted to be placed over the hatch opening to close the same or selectively to be removed from the hatch opening to open the same,
(d) a second horizontal flange on said hatch cover extending inwardly thereof beyond the outer edge of said first horizontal flange and adapted to underlie the first flange in vertically spaced relation when said hatch cover is placed over the hatch opening,
(e) gasket means interposed between said first and second flanges.

3,198,160
CLEAT GUARD
Warren D. Anderson, 421 Ocean Drive W., Stamford, Conn.
Filed Jan. 23, 1964, Ser. No. 339,768
11 Claims. (Cl. 114—218)



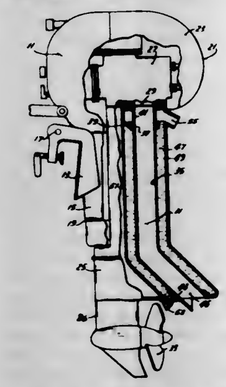
1. In combination, a support; a cleat, having aligned arms, mounted on said support; and an elastic barrier member attached to said support at points spaced from the ends of the arms of said cleat and adapted to pass over and engage the ends of said arms to prevent the arms of said cleat from snagging lines sliding along said support.

3,198,161
BOATS, AMPHIBIOUS VEHICLES AND OTHER WATERBORNE VESSELS
Thomas D. H. Andrews, Cheltenham, and Allen C. Walker, Longridge, near Stroud, England, assignors to Dowty Technical Developments Limited, Andoversford, Gloucester County, England, a British company
Filed May 7, 1963, Ser. No. 278,532
Claims priority, application Great Britain, May 9, 1962, 17,772/62; June 2, 1962, 21,351
6 Claims. (Cl. 115—14)



1. A vessel having at least one hydraulic jet reaction propulsion apparatus mounted on each side of the vessel, each apparatus including a discharge orifice to direct a jet rearwardly of the vessel for forward propulsion, and means for drawing in water and ejecting it through said orifice, a pivotally mounted deflecting means operatively associated with each discharge orifice, means to shift each deflecting means about its pivot axis between a nondeflecting position and a position in which rearward flow is obturated, and instead is deflected forwardly of the vessel, control means individual to each deflecting means to shift the same by any amount from nondeflecting position, independently of the opposite deflecting means, for steering, each deflecting means being of generally cylindrical shape about its pivot axis as a center, but each terminating in a flat exit lip which in the nondeflecting position is disposed angularly relative to the rearward direction of the issuing jet, whereby water reaction from the issuing jet tends to retain the deflecting means in its nondeflecting position.

3,198,162
ENGINE
Robert T. Larsen, Menomonee Falls, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 329,036
42 Claims. (Cl. 115—17)



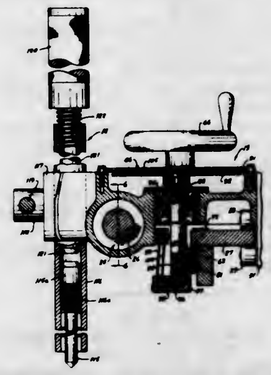
1. In a marine propulsion device, an engine having an exhaust gas discharge port, and a lower unit including exhaust gas passage means communicating with said exhaust gas discharge port of said engine, said gas passage means including an exhaust gas tube, and resilient means interposed between said tube and said exhaust gas discharge port, whereby said gas tube is free of rigid connection with said engine.

3,198,163
INDICATOR DEVICE
Robert J. Williams, Birmingham, Mich., assignor to Cadillac Products, Inc., Warren, Mich., a corporation of Michigan
Filed Feb. 13, 1963, Ser. No. 258,265
11 Claims. (Cl. 116—114)



1. An enclosure for humidity sensitive articles, comprising: a container adapted to receive the article to be enclosed; a film of thermoplastic material laminated to a portion of the inside surface of said container; means defining an aperture in said portion of said container; a substantially transparent window having a film of thermoplastic material on both surfaces thereof overlying said aperture and fused about its periphery to the surrounding inside surface of said container; and a porous thermoplastic backing member overlying said aperture and said window, said backing member being fused about a portion only of its periphery to the periphery of said window whereby a pocket is defined between said backing member and said window, a portion of the periphery of said window projecting from beneath the portion of the periphery of the backing member which is not fused thereto so that said container, window and backing member may be fused together in a single operation, said pocket being adapted to receive humidity indicating material so that the latter is visible from outside said container through said window.

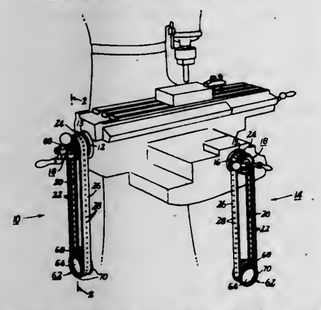
3,198,164
LAYOUT MACHINE
Ernest W. Nyberg, Chicago, and Arthur W. Virta, Mount Prospect, Ill., assignors to Ancraft Products Co., Chicago, Ill., a corporation of Illinois
Original application Jan. 2, 1959, Ser. No. 784,612, now Patent No. 3,116,556, dated Jan. 7, 1964. Divided and this application Feb. 25, 1963, Ser. No. 267,374
1 Claim. (Cl. 116—115)



In a layout machine having relatively movable members, a position indicating dial assembly comprising, in combination, a frame defining a cylindrical chamber, a circular dial journaled in said chamber, means coupling

said dial to said members to rotate the dial relative to said frame upon said relative movement said dial having outer and inner peripheral bands of indicia, said outer band of indicia dividing said circular dial into decimal parts of the dial circumference, said inner band of indicia dividing said circular dial into fractional parts of the dial circumference, a glass cover rotatably mounted in said frame over said dial, said cover having a radially extending reference mark, and means for clamping said cover in place so as to fix said reference mark with respect to said dial.

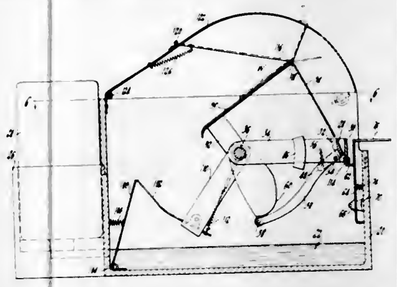
3,198,165
ANGULAR POSITION INDICATOR FOR ROTATABLE ELEMENT
George Hamlin Leonard, Darien, Conn., assignor to Hamlin Leonard Associates, Inc., Stamford, Conn.
Filed July 9, 1962, Ser. No. 208,287
18 Claims. (Cl. 116—115.5)



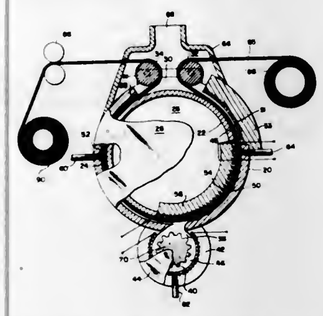
1. A work table position indicator for a machine tool comprising, in combination,
(A) a shaft whose rotation determines the position of a work table
(B) an indexing hub mounted for rotation with said shaft and having
(1) measuring indicia marked on its periphery and
(2) regularly spaced teeth protruding from its periphery which are incrementally related to said indicia
(C) a first endless belt
(1) aligned to be moved with said hub, and
(2) having regularly spaced holes therein
(a) the distances between said holes and said teeth being equal and representing predetermined measuremental increments of table movement,
(b) the spaces between said holes being consecutively numbered,
(D) and a second endless belt
(1) shorter than said first endless belt by an integral number of said distances,
(2) having holes therein regularly spaced apart the same distance as said spaced teeth
(3) aligned to be moved with said hub adjacent said first endless belt
(4) and having major scale indications marked thereon,
whereby information concerning the amount of movement of said table may be read from said belt.

3,198,166
MACHINE FOR DIPPING AND WIPING BOX TOE STIFFENERS
Lewis D. Bartley, 7 Spofford St., Newburyport, Mass.
Filed Jan. 9, 1963, Ser. No. 250,280
7 Claims. (Cl. 118—11)

1. Apparatus for conditioning pieces of sheet material, comprising a receptacle for a pool of liquid, a horizontal shaft in said receptacle rotatable above said pool, a frame swingable by said shaft in a circular orbit about the axis thereof, said frame including two laterally elongated jaws parallel to the axis of said shaft, spring means tending to close said jaws, a fixed cam mounted in said receptable, means including a cam follower engaging said cam for holding said jaws open when said frame is in a normal position of rest, said cam being shaped to permit said spring means to close said jaws immediately after a revolution of said frame starts from said position of rest and to keep the jaws closed until the frame has nearly completed its revolution, means for rotating said shaft, a stop member mounted on said receptacle normally in the path of said jaws and engaged by said jaws when in their normal position of rest, and a trigger member operable to move said stop member out of the path of said jaws whereby to release said jaws for a revolution.

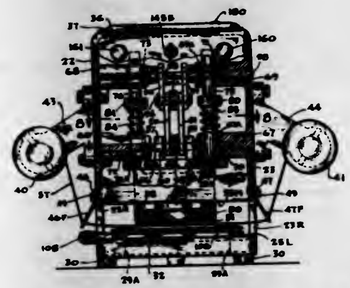


3,198,167
VAPOR DEPOSITION DEVICE
Robert Bakish, Brighton, Donald B. Irish, Newtonville, and Iwan Marinow, Allston, Mass., assignors to The Alloyd Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Mar. 10, 1961, Ser. No. 94,790
3 Claims. (Cl. 118—48)



1. An apparatus for depositing metal on an elongated sheet material, said apparatus comprising a housing including an inner cylindrical drum and an outer cylindrical casing, the inner surface of said casing and the outer surface of said drum being spaced apart a distance within the range from 1/32 to 1/4 inch and defining an annular passage, said casing having an opening at a first position of said passage for permitting said elongated sheet material to enter said passage at a first extremity thereof and to leave said passage at a second extremity thereof, said first extremity and said second extremity being adjacent to each other, said casing having an opening at a second position of said passage, a first auxiliary casing communicating with said opening at said second position, a rotatable cage within said first auxiliary casing, a conduit for introducing an auxiliary gas into said first auxiliary casing for flowing said auxiliary gas through said cage and acquiring a heat decomposable metal bearing vapor from granular material in said cage, a second auxiliary casing communicating with said opening at said first position for exhausting said passage, first heating means for heating the inner surface of said casing at said first extremity of said passage, second means for heating the outer surface of said drum at said first position, and conduits for introducing auxiliary gas through said casing between said entrance and said first position and between said exit and said second position, said annular passage in profile extending throughout almost the whole extent of a closed curve.

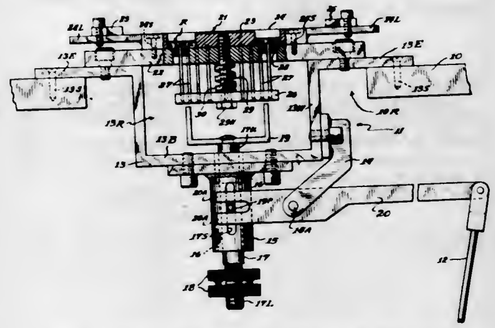
3,198,168
MACHINES FOR PROCESSING PRINTING PLATES AND THE LIKE
William F. Grupe, River Edge, N.J., assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Apr. 5, 1961, Ser. No. 100,873
12 Claims. (Cl. 118—202)



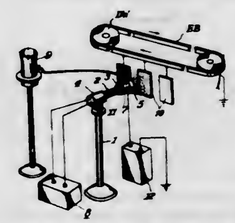
1. In a machine of the class described wherein an embossed printing plate or like article of predetermined color is to have a selected portion thereof provided with facing material of contrasting color transferred by heat thereto, a platen in the machine guided for reciprocal movement between a retracted and an actuated position and having electrical heating means associated therewith, means for reciprocating the platen including electromagnetic means and an associated core connected to the platen, guide means for locating a strip, coated on one side with heat off-settable facing material, within the path of movement of the platen to be engaged on the opposite side by the platen in its actuated position, a support for such an article and arranged in the machine for manual movement between a loading position whereat the article to be faced is to be mounted therein and a facing position whereat the article so mounted is disposed with said portion thereof in a plane coincident with the facing material on the strip in the actuated position of the platen, and means for establishing an energizing circuit for the electromagnetic means and including a normally open switch that is closed only when said support has been located accurately in facing position.

3,198,169
DOTTING DEVICE
Rufus F. Pike, Highland Park, Ill., and William W. Thompson, Peterborough, Ontario, Canada, assignors to Luminous Processes, Inc., a corporation of New York
Filed Aug. 27, 1962, Ser. No. 219,444
1 Claim. (Cl. 118—263)

A dotter comprising support structure providing an open central region, said support structure having a vertical sleeve underlying said open central region, a ram reciprocable in said sleeve, a dotting assembly removably associated with said structure and comprising plate structure removably secure in bridging relation to said support structure to span said region, said plate structure providing a ring-shaped reservoir for luminous liquid at a location overlying said region, said plate having a number of bushings of lubric plastic material in horizontally spaced array defining bottom wall portions of said reservoir and underlying luminous liquid disposed therein, a dotter head carrying a corresponding number of vertically oriented dotter pins projecting in liquid sealing slideable relation through the bushings, a guide post depending from said plate to extend vertically through said region and having an abutment underlying said reservoir and spaced beneath said plate, said dotter head being mounted in vertically slidable relation upon said post, yieldable means reacting between said head and said plate to bias said head downwardly against said abutment and define a lower position in which said pins have their upper ends disposed in liquid in said reservoir, and a vertically movable striker underlying said head and arranged structurally independently of said dotting assembly to enable removal and replacement of said assembly, said strike being mounted on said ram to move therewith and engage and lift said head to move said pins above said reservoir and dot paint upon a clock face positioned on said plate.



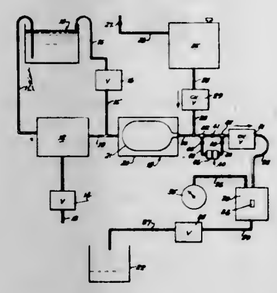
3,198,170
ULTRASONIC-WAVE PAINTING MACHINE
Toshio Onishi, Yamato-machi, Kitaadachi-gun, Saitama-ken, Japan, assignor to Kabushiki Kaisha Kopara, Tokyo-to, Japan, a joint-stock company of Japan
Filed Mar. 6, 1962, Ser. No. 177,820
Claims priority, application Japan, Mar. 11, 1961, 36/8,083; Apr. 27, 1961, 36/14,980; July 8, 1961, 36/24,590; Sept. 22, 1961, 36/34,290
1 Claim. (Cl. 118—627)



An ultrasonic-wave spray painting apparatus comprising in combination an ultrasonic-wave generator, an interrupting device for periodically interrupting the output of said generator, a sweeping dvice for continuously varying the oscillation frequency of said generator with a

relatively small reduction in output, a transducer connected to the output of said generator, a horn-shaped coupling element fixed at one end to said transducer, a thin metal acoustic matching element fixed to the opposite end of said coupling element, a paint projecting plate fixed on one side surface to said matching element, means providing a continuous flow of paint in film form over the surface of said plate opposite said matching element and a high voltage direct current power source connected to said plate for providing an auxiliary electrostatic field between said plate and an article to be painted, whereby upon operation of said generator to energize said transducer said plate will vibrate at a varying frequency corresponding to the output frequency of said generator to project paint from said plate in the form of a spray to an article to be painted.

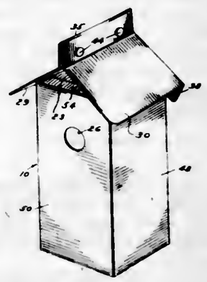
3,198,171
ARTIFICIAL HABITAT AND METHOD FOR THE GROWTH AND STUDY OF DEEP SEA MARINE ORGANISMS
James A. Westphal, Altadena, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 30, 1964, Ser. No. 379,415
8 Claims. (Cl. 119—1)



1. Apparatus for the control of environmental conditions necessary to the growth study and observation of deep sea marine organisms comprising, in combination:
- a fresh water system means for developing the high pressures needed to simulate the normal pressures under which such marine organisms exist;
- a growing vessel for containing living specimens of said marine organisms;
- a highly pressurized sea water system including means for furnishing pressurized salt water to said growing vessel; and
- means to transfer said high pressures developed in said fresh water system to said sea water system without contamination of said sea water.

3,198,172
BIRDHOUSE ASSEMBLY KIT AND BIRDHOUSE CONSTRUCTED THEREFROM
William B. Crane, Jr., New York, N.Y., assignor to Ex-Cell-O Corporation, Detroit, Mich.
Filed Feb. 17, 1964, Ser. No. 345,375
11 Claims. (Cl. 119—23)

1. A birdhouse assembly comprising
(a) an opened and reclosed paperboard milk container of the type having a pair of inclined top panels and a pair of ridge-forming panels extending upward from the top panels, and
(b) a top structure forming a combined roof and mounting bracket secured to the top of said container,
(c) said top structure comprising a section of sheet-like material folded in the center to provide a pair of opposed, facing socket-forming panels for the reception of the ridge-forming panels of said container and folded along the lower edges of said socket-forming panels to provide downwardly and outwardly extending roof-forming panels,



(d) said roof-forming panels projecting beyond the front and side edges of the container,
(e) said socket-forming panels being operative to maintain the ridge-forming panels of the container in a reclosed condition.

3,198,173
COILED RAWHIDE ANIMAL TOY
Stanton E. Fisher, % Sidney B. Ring, Petrolite Corp., 369 Marshall Ave., St. Louis 19, Mo.
Filed Feb. 20, 1964, Ser. No. 346,144
4 Claims. (Cl. 119—29)



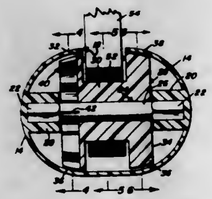
1. An exercising and plaything device for animals comprising a strip of rawhide wound and rolled into an elongated, corkscrew shaped, loosely coiled configuration.

3,198,174
LIVESTOCK FEEDING APPARATUS
Merwin W. Gilmore, Jerald W. Bishop, and Robert B. McVay, Clay Center, Kans., assignors to Gilmore-Tatge Manufacturing Co., Inc., Clay Center, Kans., a corporation of Kansas
Filed Oct. 12, 1962, Ser. No. 230,111
1 Claim. (Cl. 119—61)



A livestock feeding apparatus comprising:
(a) a series of independent frames each consisting of:
(1) a vertical post and
(2) a cradle member affixed to said post and extending horizontally therefrom, said post extending upwardly from said cradle member,
(b) means for affixing said frames independently relative to the ground whereby said posts are disposed in a line and said cradle members extend transversely in the same direction from said line,
(c) a trough extending parallel to said line of posts and supported in said cradle members, and
(d) a horizontally extending flexible barrier attached to the upwardly extended portions of said posts above said trough, said barrier being sufficiently elevated to give animals access to said trough by extending their heads and necks therebeneath, said barrier including cables that are adjustably anchored with the ground whereby the apparatus is maintained in a stationary position.

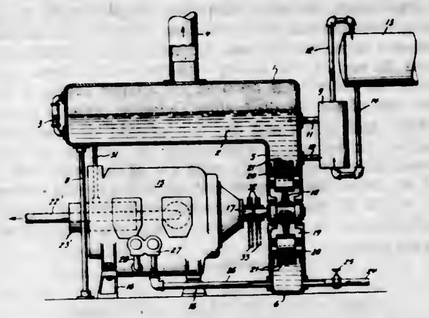
3,198,175
DOG LEASH
John H. Dean, 116 Conrad Drive, Rochester 16, N.Y.
Filed Mar. 13, 1964, Ser. No. 351,656
2 Claims. (Cl. 119—109)



1. A dog leash comprising a hollow elongated ovate sheet material shell provided with axially aligned concavo-convex end portions joined by an intervening generally cylindrical body portion, said shell being of a length, size and weight that it can be conveniently and comfortably held in the hand of the user when being used, said body portion having a leash-accommodating slot, a shaft located in the hollow portion of said shell with its respective end portions fixed in place and connected with axial portions of the concavo-convex end portions, said shaft being provided intermediate its ends with a journal and said journal registering with and bridging said slot, a reel confined in the hollow portion of said shell and having a hub portion freely turnable on said journal and provided at its respective ends with heads, one of said heads having a coil spring incorporated therein, said coil spring having one end attached to said one head and the other end fixedly attached to said shaft, an elongated tape constituting the aforementioned leash and having an inner end attached to and wound on said hub between said heads and an outer end portion slidingly operable in and through said slot, said outer end being provided with a link and a complemental snap fastener, said snap fastener being swivelly joined to said link, the portions of said body portion encircling and proximal to the respective heads being yieldingly resilient and manually squeezed by the fingers of the hand of the user and compressed into gripping engagement with the respective heads in a manner to provide the desired at will brake action.

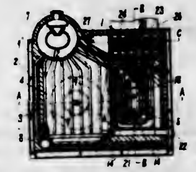
3,198,176
THERMAL-MOLECULAR HEATING SYSTEM
Robert Helmer, 27 Baker Hill Road, Great Neck, N.Y.
Filed Jan. 30, 1961, Ser. No. 85,801
8 Claims. (Cl. 122—26)

1. A heating system comprising an internal combustion engine, a boiler for water to be heated, a hysteresis coupling in said boiler having a rotor and a hysteresis ring, means connecting said engine to said rotor, means for fixing said ring inside of said boiler and holding said



ring stationary and for immersing said ring in said water, and means for sealing said rotor off from said water.

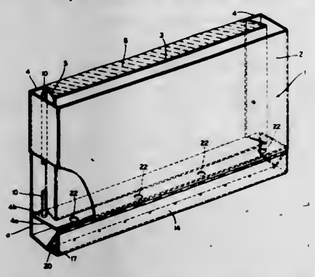
3,198,177
WATER TUBE BOILER
Yuko Fujii, Ichikawashi, Japan, assignor to Maruzen Iron Works, Limited, Tokyo, Japan, a limited-liability company of Japan
Filed July 22, 1963, Ser. No. 296,837
2 Claims. (Cl. 122—236)



1. A water tube boiler construction, comprising a substantially right rectangular prismatic housing, a vertical partition within and extending along the length of said housing and dividing the housing into a combustion chamber and a convection chamber, a burner directed into one end of said combustion chamber substantially axially of the longitudinal dimension of the chamber, a steam drum along the top of said combustion chamber and extending slightly into said combustion chamber and extending slightly out of the top surface of said housing, said combustion chamber having a fireproof lining, a water drum in said lining and extending along the bottom of said combustion chamber, boiler tubes extending from said water drum to said steam drum through said combustion chamber, further boiler tubes extending from said steam drum to said water drum through the lining in the side of said combustion chamber, a plurality of coiled tubes in said convection chamber, each tube having a plurality of substantially rectangular coils which lie in substantially vertical planes in the convection chamber, the one ends of said coiled tubes being connected to one end of said steam drum and circulating pump means to which the other ends of said coiled tubes are connected, said circulating pump means being connected to the other end of said steam drum, a substantially horizontal partition extending along the length of said housing and covering the top of said convection chamber, means forming an opening between said vertical partition and said housing at the end remote from said burner for admitting combustion gases into said convection chamber, a plurality of transverse horizontally spaced baffles in said convection chamber, alternate baffles extending upwardly from the bottom of the convection chamber and the remainder

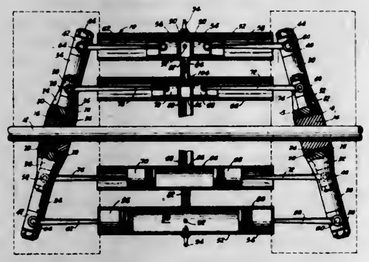
extending downwardly from the horizontal partition, said horizontal partition defining an air preheating chamber between itself and the top wall of the casing, a plurality of combustion gas pipes extending longitudinally of the casing through said air preheating chamber and having their one ends opening into said convection chamber adjacent the end of said casing with the burner therein and having the other ends opening out of the casing at the other end of the air preheating chamber, passage means between said casing and one end of said air preheating chamber for admitting combustion air into the air preheating chamber, a duct opening out of the other end of said air preheating chamber and extending to said burner, and baffles in said air preheating chamber for causing combustion air to travel a zigzag path across said combustion gas pipes.

3,198,178
OPEN HEARTH FURNACE DOOR
June H. Reighart, 1991 Lee Road, Cleveland 18, Ohio
Filed July 17, 1962, Ser. No. 210,349
16 Claims. (Cl. 122—498)



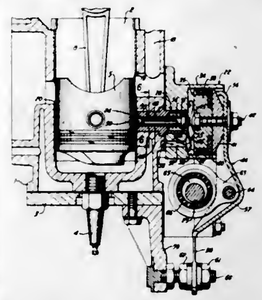
1. A water-cooled open hearth furnace door comprising a hollow metal shell forming a water jacket space over the outer side of the door, a closure plate connected to the exterior of the lower outer edge portion of said shell and forming therewith a compartment on the exterior of said shell, and refractory material filling said compartment and providing protection for said lower outer edge portion of said shell against the splashing of hot metal.

3,198,179
MULTIPLE PISTON INTERNAL COMBUSTION ENGINE WITH PUMP COMPRESSION
Herman Y. Stephens, 1510 N. Lewis Place, Tulsa, Okla.
Filed Feb. 28, 1962, Ser. No. 176,351
1 Claim. (Cl. 123—51)



An internal combustion engine comprising
a plurality of spaced power cylinders,
an intake cylinder in association with each power cylinder and having less capacity than the said power cylinder,
opposed piston means slidably disposed in each power cylinder,
opposed piston means provided in each intake cylinder and having a shorter stroke than the first mentioned piston means,
outer hub means connected with all of the said piston means and movable thereby,
inner hub means concentric with the outer hub means and rotatable with respect thereto,
shaft means rigidly secured to the inner hub means,
and said inner hub means angularly disposed with respect to the shaft means whereby the inner hub transmits rotation to the shaft upon movement of the outer hub means.

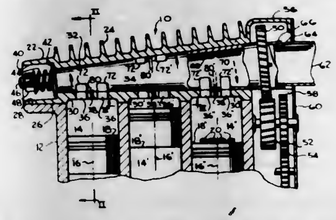
3,198,180
FUEL SUPPLY SYSTEM FOR INTERNAL-COMBUSTION ENGINES
Edgar Rose, Oshkosh, Wis., assignor to Kiekhaefer Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 9, 1961, Ser. No. 143,685
9 Claims. (Cl. 123—59)



4. In a fuel supply system for an internal-combustion engine having a cylinder block including a plurality of cylinders slidably supporting pistons and having a crankshaft connected to said pistons and supported in a crankcase constituting an extension of the cylinder block, each of said cylinders having an enriched air-fuel port and a separate air port, means to introduce air into the cylinder through said separate air port, a main valve mounted within the air-fuel port and having means continuously urging the valve to close the air-fuel port, a precompression chamber coaxially arranged adjacent the back side of the valve with the air-fuel port terminating therein and having an inlet opening in the base, means to supply an enriched air-fuel mixture into the precompression chamber through the inlet opening, a valve mounted to open and close the last-named opening, a piston slidably mounted in the chamber to actuate said valve and compress the air-fuel mixture in the chamber, an actuator connected to the piston and engaging the main valve to open the air-fuel port, an arm movably mounted and secured at one end to the precompression piston, a cam rotated in synchronism with the crankshaft and coupled to move the arm, and means to drive said cam to sequentially precompress said air-fuel mixture and open the main valve to introduce the air-fuel mixture into the cylinder.

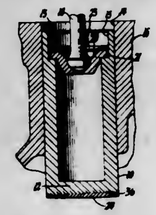
3,198,181
INTERNAL COMBUSTION ENGINE
Maynard W. Dolphin, 844 Hackett St., Beloit, Wis.
Continuation of application Ser. No. 324,785, Nov. 19, 1963. This application Dec. 10, 1964, Ser. No. 419,278
10 Claims. (Cl. 123—59)

1. An internal combustion engine having one or more cylinders and pistons reciprocable along axes of said cylinders comprising
a cylinder head
an interior wall defining a bore
gate means in said head opening into each cylinder from said bore
nozzle means separate and apart in the head from said gate means
gas passage means opening into said bore from an exterior surface of said cylinder head
a rotatable tubular valve member fitted into said bore open at one end to admit fresh air axially thereinto



timing means driving said valve member in timed relation with said pistons
port means of predetermined partial peripheral extent open radially through the wall of said valve member
means defining canal closed to communication with the interior of said valve member
periodic opening of flow communication from said gas passage to said nozzle means.

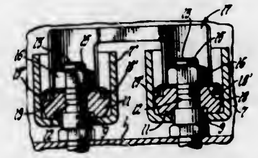
3,198,182
VALVE LIFTER
George H. Robinson, Rochester, and Edward R. Mantel, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 17, 1962, Ser. No. 217,700
5 Claims. (Cl. 123—90)



4. A valve lifter comprising an integrally formed ferrous metal tubular body closed at one end thereof to form a base and having a peripheral ridge projecting from said base forming a recess and a wear-resistant ferrous alloy coating on said base within said recess comprising by weight 1.5% to 3.0% carbon, at least 2% molybdenum and at least 2% tungsten, the sum of the molybdenum and tungsten being not greater than 10%, silicon 0.5% to 3.0% and the balance substantially iron, the ferrous metal base underlying said coating having a carburized layer forming a hard support for said coating.

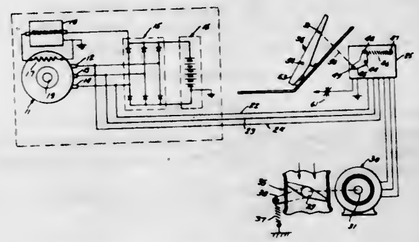
3,198,183
STUD TYPE ROCKER ARM MOUNTING
Frank W. Ball, Lansing, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 21, 1964, Ser. No. 346,439
3 Claims. (Cl. 123—90)

1. In combination, a pair of valve rockers in spaced side-by-side relation, each having a part-cylindrical journaling surface intermediate its ends, each said surface having an aperture extending through the rocker, a pair of bearings for said rockers, each said bearing having a part-cylindrical surface conforming to and engaging said journaling surface of its associated rocker, each said bearing having an opening extending therethrough opposite said aperture of its associate rocker, a support disposed oppositely of the rockers from said bearings, a pair of



members secured to said support and extending respectively through said apertures and openings, each said member having means extending laterally thereof and overlying the bearing of its associated rocker, and a retainer having portions in interengaging relation with each of said bearings and secured thereto by said means.

3,198,184
AUTOMATIC SPEED CONTROL DEVICE
Donald I. Bohn, 377 Country Club Road, Asheville, N.C.
Filed Jan. 12, 1961, Ser. No. 82,337
11 Claims. (Cl. 123—98)

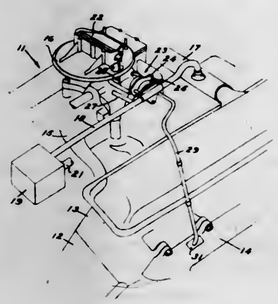


11. In combination an automatic control arrangement and an engine, said arrangement comprising, a first means driven by the engine, a second means for controlling fuel flow to the engine, said second means including an element biased toward a first position, a third means energized by said first means and operatively connected to said element for movement thereof away from said first position toward a second position, said second means permitting a greater fuel flow to the engine when said element is in said second position than in said first position; said first means comprising an alternator and a device for maintaining alternator output voltage magnitude reasonably uniform as the output voltage frequency varies over a wide range; said third means including a mechanically variable impedance element; a fourth means for selectively varying said impedance element to obtain a desired engine speed setting; said third means comprising a portion whose impedance is a function of frequency; said third means also comprising rectifier means fed by said portion and a D.C. torque motor fed by said rectifier means; said torque motor operatively connected to operate said element toward said second position.

3,198,185
AUTOMATIC CHOKE
George Nastas, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 14, 1963, Ser. No. 265,123
9 Claims. (Cl. 123—119)

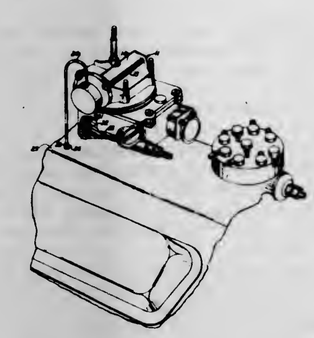
1. An automatic choke mechanism for the charge forming device of a liquid cooled internal combustion engine comprising a choke valve supported in an induction pas-

sage of the charge forming device, a housing affixed to the charge forming device, a thermally responsive element supported in said housing, actuating means operatively connecting said thermally responsive element to said choke valve for moving said choke valve between an



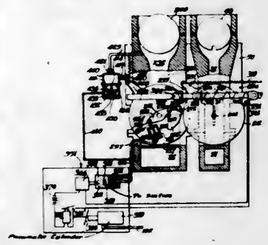
opened and a closed position in response to temperature changes, a flexible tube adapted to carry liquid heated in the cooling system of the engine, and means affixing a sufficient length of said tube against said housing to promote a heat exchanging relationship between the coolant in said tube and said thermally responsive element.

3,198,186
AUTOMATIC CHOKE
Joachim Skudelny, Cologne, Germany, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 12, 1963, Ser. No. 272,657
4 Claims. (Cl. 123—119)



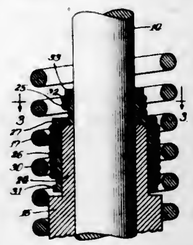
1. An automatic choke for the induction system of an internal combustion engine comprising a choke valve rotatable in an induction passage of the induction system, a Bourdon tube, means connecting the closed end of said Bourdon tube to said choke valve for moving said choke valve between a closed and an open position in response to pressure changes, a conduit closing the other end of said Bourdon tube and extending to a portion of the engine heated by its operation, and a fluid confined in said conduit and said Bourdon tube, said fluid being thermally expansible to generate an actuating pressure upon said Bourdon tube in response to increases in temperature caused by the operation of the engine.

3,198,187
INDUCTION SYSTEMS
Earl Bartholomew, Birmingham, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Oct. 8, 1963, Ser. No. 314,814
17 Claims. (Cl. 123—127)



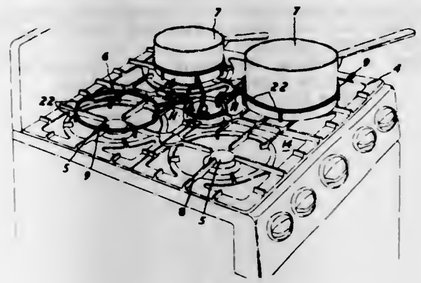
1. A gasoline engine having gasoline supply means for delivering gasoline to at least one cylinder, air supply means including a throttle control for delivering air along with the gasoline to provide an explosive mixture, both of said means being connected for limiting the reduction of air delivery when the throttle control is abruptly closed so that the relationship between the air delivery rate and the engine r.p.m. drop falls within the area ABCD of FIG. 3, both of said means being further connected to essentially shut off the delivery of gasoline as the throttle control is abruptly closed if at the time the engine is running at more than 1450 r.p.m., the gasoline supply means being also connected to supply to the engine about 0.15 milliliter of additional gasoline per hundred cubic inches of engine displacement when the shut-off is terminated and to supply the additional gasoline into a portion of the air supply means where the air velocity is relatively high at engine idle.

3,198,188
VALVE STEM SEAL
Robert W. Held, Jr., Richmond, Ind., assignor, by mesne assignments, to Perfect Circle Corporation, Hagerstown, Ind., a corporation of Indiana
Filed Mar. 29, 1961, Ser. No. 99,264
2 Claims. (Cl. 123—188)



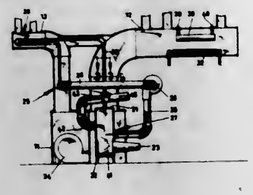
1. In combination with a valve stem guide for a reciprocating valve stem, said valve stem guide having a portion of reduced external diameter at its end, a seal comprising a pair of collars adapted respectively to hug said stem and to grip said reduced diameter portion, said collars being integrally and relatively rigidly connected to each other in end-to-end relation, the one of said collars which grips said reduced diameter portion being the sole means for holding the other of said collars against movement and a pair of contractile springs coiled about the respective collars to increase the hugging and gripping actions thereof, the maximum outside diameter of said seal being less than the diameter of said guide beyond said reduced portion.

3,198,189
SAFETY DEVICE FOR COOKER HOBS
Arthur Frederick Oatley, Wilton Lodge, Werga Road, Tettenhall, Wolverhampton, England
Filed Apr. 29, 1963, Ser. No. 276,307
8 Claims. (Cl. 126—24)



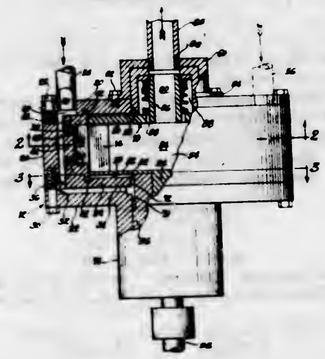
1. In a cooker having a hob including at least one pan heating means, a safety device to prevent the over-turning of a pan on the hob comprising a ring adapted closely to encircle the pan and provided with means for tightly holding the pan, a support rigid with the ring and an upwardly open socket rigid with the hob, the support being slidably engageable with and disengageable from the socket by respectively downward and upward movement of the support, the portions of the socket and the supports which are engageable being of comlementary non-circular cross-sectional configuration and equally spaced from the centers of the heating means and ring respectively and the support, by engagement with the socket, locating the ring centrally over the heating means and holding it firmly against lateral displacement.

3,198,190
REGENERATIVE AIR HEATING SYSTEM
Harold Gordon, 211 Maria St., Toronto, Ontario, Canada
Filed Sept. 6, 1963, Ser. No. 307,142
8 Claims. (Cl. 126—101)



1. A regenerative heating system for use with warm air heating systems of the fuel combustion type and comprising a combustion chamber, including a heat exchanger; a chimney pipe defining an exit from said heat exchanger, whereby spent products of combustion are vented to atmosphere; a hot air plenum and a cold air plenum, said hot air plenum including an extension about said heat exchanger, thereby to provide an air circulation system; a horizontal connecting plenum between said hot air plenum and said cold air plenum; a preheat pipe having a substantially flat, hollow configuration extending vertically upward from said heat exchanger into said hot air plenum extension and horizontally through said connecting plenum into said cold air plenum to define a circulation system for hot gases from said heat exchanger; and pipe means connecting the distal end of said preheat pipe to said combustion chamber, whereby said hot gases are re-combusted to reduce carbon monoxide therein.

3,198,191
HEAT GENERATOR
Stanley W. Wyszomirski, Chicago, Ill., assignor to Kinetic Heating Corporation, Chicago Heights, Ill., a corporation of Illinois
Filed Apr. 2, 1962, Ser. No. 184,480
8 Claims. (Cl. 126—247)



1. A hot liquid generator comprising a stationary housing having a cylindrical chamber therein, an inlet through the housing in communication with the chamber for the introduction of liquid into the chamber, an outlet coaxially of and in communication with the interior central portion of the chamber for the removal of the product of the liquid raised to elevated temperature within the housing, a plurality of pockets of curvilinear cross-section formed within the stationary wall about the periphery of the chamber and arranged to extend crosswise of the chamber in circumferentially spaced apart relation, a plurality of generally radially extending impeller vanes extending crosswise of the chamber in circumferentially spaced apart relation with the space between the impeller vanes being open for radially inward direct communication between the interior of the chamber and the plurality of pockets in the stationary wall, with the outer edges of the vanes in contiguous relation with said wall and with the inner edges of the vanes terminating short of the interior portion of the chamber, the interior portion of the chamber being free of obstruction, means for driving said vanes at high speed in a circular path about the chamber relative to the said wall whereby liquid in the chamber is thrust radially outwardly against the wall and into said pockets and inwardly into the interior portion of the chamber with a pulsating effect to create free vortices in the pockets and in the interior portion of the chamber with a forced vortex within the area between the vanes.

3,198,192
SLIPPER CAST
Helen T. O'Brien, 644 18th St., Manhattan Beach, Calif.
Filed Mar. 7, 1963, Ser. No. 263,543
7 Claims. (Cl. 128—83.5)

1. A foot cast comprising
a rigid sheet member,
a rigid receptacle connected to and extending upwardly of said sheet,
said rigid receptacle extending upwardly on either

side of said sheet and over the top of said sheet, said rigid receptacle having a forwardly inclined rear edge

and a rearwardly inclined front edge thereby defining a relatively narrow central portion over said sheet,

said central portion being inclined downwardly and forwardly,



a heel affixed to the bottom of said sheet intermediate the ends thereof,

and a flexible member connected to said sheet member and extending rearwardly of said rigid receptacle,

said flexible member defining a loop for engaging heel portions of a foot for retaining the foot in said rigid receptacle and on said sheet.

3,198,193
NASAL INHALER
Sam Schwartzman, Deforest Corners, Brewster, N.Y., and Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y.
Filed Oct. 12, 1962, Ser. No. 230,085
1 Claim. (Cl. 128—198)



A nasal inhaler comprising a housing having a bottom and peripheral side and end walls, a casing removably seated in said housing, said casing having side and end walls sitting on side bottom said end walls being provided with relatively small rectagular notches at their lowermost portions, said casing having a contoured concave top wall extending beyond said peripheral walls, said casing side walls having projections thereon for resiliently frictionally engaging said side walls of said housing, said end walls having ribs thereon resiliently frictionally engaging said end walls of said housing, said projection means and said ribs defining relatively small air spaces between said casing and said side and end walls of said housing, side air spaces connecting with said notches said concave top wall having a pair of spaced ogive-shaped projections extending therefrom, said concave top wall having a groove therein between said projections, said groove extending below the lowest part of said top wall, said projections having perforations therethrough, through which air containing medicament vapors can be drawn, a wadding of an absorbent material in said casing and extending into said projections and against said bottom, said side and end wall air spaces serving to permit entry of replenishing air through said notches and hence through said wadding, and a top on said casing, said top having a pair of tapered detents engageable in said perforations closing said perforations.

3,198,194
ADMIXING STORAGE CONTAINER WITH MEANS PREVENTING INADVERTENT REMOVAL OF CLOSURE MEANS
Edgar H. Wilburn, Rutherford, N.J., assignor to The Upjohn Company, Kalamazoo, Mich.
Filed May 13, 1963, Ser. No. 282,528
2 Claims. (Cl. 128—272)



1. In an admixing storage container having a substantially filled top liquid compartment, a bottom material compartment, a neck defining the upper end of said top compartment, a piston plug in said neck, said top and bottom compartments being segregated by a gate plug expellable by hydraulic pressure into said bottom compartment through forward movement of said piston plug in said neck, the improvement which comprises:

(a) Screw threads on the upper portion of said neck terminating intermediate its length;

(b) Means on said neck below said screw threads defining a downwardly facing first stop shoulder;

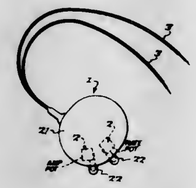
(c) A cap positioned on and telescopically movable over said neck, said cap having means for access to said piston plug by a hypodermic needle;

(d) Internal screw threads on said cap engagable with said screw threads on said neck;

(e) Means on said cap below said cap screw threads defining an upwardly facing second stop shoulder, whereby in the initial outward position of said cap, said first and second stop shoulders are aligned in opposed relation for substantial abutment to resist further removal of said cap, and whereby a forward thrust on said cap causes the internal threads of said cap to engage said threads on said neck to permit threaded advancement of said cap and said piston plug, thereby exerting pressure on liquid in said top compartment to cause expulsion of said gate plug into said bottom compartment to give admixture of the initially segregated ingredients.

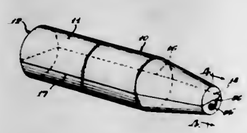
3,198,195
IMPLANTABLE CONTROLS FOR CARDIAC PACEMAKERS
William M. Chardack, 144 Ivyhurst Road, Buffalo, N.Y.
Filed Oct. 18, 1962, Ser. No. 231,349
5 Claims. (Cl. 128—419)

1. In combination with an implantable cardiac pacemaker compatible with the human body as an environment and having a housing and an electrode lead extending therefrom, percutaneously actuated controls implantable with said pacemaker beneath the skin of the human body for varying different output characteristics of said pacemaker comprising a first adjustable component in said housing operable to vary one output characteristic of said pacemaker, a second adjustable component in said housing operable to vary another output characteristic of said pacemaker, means for adjusting said first component including first means carried by said housing for receiving a skin puncturing instrument, means for adjusting said second component including second means



carried by said housing for receiving a skin puncturing instrument, said first and second means projecting from the main portion of said pacemaker housing in spaced relation to each other and to the juncture of said lead and said housing, and one of said first and second means being positioned closer to said juncture than the other thereof, whereby said first and second adjusting means can be located and identified by palpation, said projecting adjusting means being encased within a shield of material puncturable by a skin puncturing instrument and compatible with the human body as an environment.

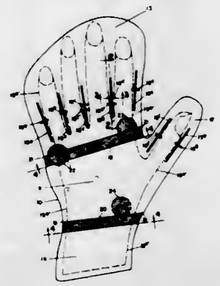
3,198,196
HAIR TREATING CONTAINER WITH A HAIR POSITIONING AND HOLDING PART
Robert L. Sawin, 242 W. 108th Place, Chicago 28, Ill.
Filed Oct. 15, 1962, Ser. No. 230,475
7 Claims. (Cl. 132—9)



1. A hair treating device comprising shell means having walls forming an enclosure when closed, means for opening and closing said shell means along a seam line, means for locking and sealing the shell means in closed position, a port in a wall of said shell means displaced from said seam line, and a channel in said wall of said shell means connecting said port at a first end of the channel with said seam line at a second end of the channel, said channel including a portion thereof offset from said port.

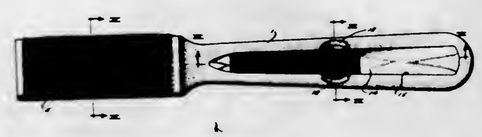
3,198,197
MANICURE NAIL PROTECTOR WITH DETACHABLE FINGER PARTITIONS
Hazel M. Van Halanger, 840 Argyle St., Chicago, Ill.
Filed July 9, 1962, Ser. No. 208,506
1 Claim. (Cl. 132—73)

A unit for attachment to a hand, comprising in combination, a sheet of board of contour and size to correspond to a human hand, and including a palm area, a finger area, and a thumb area; together with a series of five successively spaced apart partitions extending from the finger area normal to said area with four elongated spaces between said partitions, together with means to removably attach the partitions to said finger area with the directions of the partitions lengthwise of the finger area; wherein said removable partition attaching means comprises a slot in the finger area of the board corresponding to each partition and extending at an angle non-parallel to the direction of such partition when such partition extends in the direction of the spaces at the sides of such partition, and a lug on the central portion of the edge of each partition and of thickness to extend through the corresponding slot, such lug including a part which extends in direction substantially parallel to the partition and non-parallel to the slot when the partition extends in the direction of the spaces proximate to such partition; together with an elongated partition in connection with and normal to the board at each side of the thumb area, removable means to attach the partitions of the thumb area to the board with the directions of such partitions



corresponding to the direction of such thumb area; wherein said thumb area partition attaching means comprises a slot in the board at each side of the thumb area and extending at an angle non-parallel to the direction of the corresponding partition when such partition extends in the direction of the space between the thumb partitions, and a lug on the central portion of each such thumb area partition extended through the corresponding slot, which slot is non-parallel to the corresponding partition when such partition is in position at one side of and parallel to the thumb area; together with means to attach the board to a hand, wherein the last named attaching means comprises spaced areas of tacky material on the surface of the board only at each side of the board finger area, and at that side of the thumb area remote from the finger area and substantially at the board area lying between the palm area and the thumb area.

3,198,198
CORN AND CALLOUS FILE
Ernst Bittner, Frankfurt am Main, Germany, assignor to The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York
Filed Nov. 24, 1961, Ser. No. 154,774
3 Claims. (Cl. 132—76.4)



1. In a corn and callous file,

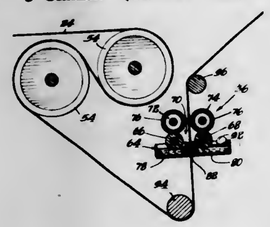
(a) a handle,

(b) a skeleton frame on said handle and having opposite edge notches,

(c) an apertured cutting member over one side of said frame defining therewith an interior hollow open at one end, and

(d) another similar cutting member of a degree of coarseness differing from the first said member over the other side of said frame defining therewith an identical interior hollow, both of said cutting members having edges thereof retainingly engaged in said notches and said members being curvate about equal radii outwardly convex whereby said file is symmetrical.

3,198,199
APPARATUS FOR DAMPENING A PRINTED WEB
Herman J. Schultz, 1240 W. Morse Ave., Chicago, Ill.
Filed Feb. 10, 1964, Ser. No. 343,616
3 Claims. (Cl. 134—122)



1. In apparatus for printing a continuous web, the combination comprising: roll means for directing a web in a vertical path of movement; a water reservoir including a pair of elongated trays spaced laterally on opposite sides of said path to accommodate said web therebetween and further including connection means coupling said trays beneath the water level thereof and adjacent corresponding ends thereof spaced from the edge of said web whereby to preserve a uniform water level in said trays; a pair of rotatable cylinders associated with said reservoir and arranged individually with said trays, each of said cylinders being disposed partially within the corresponding tray for receiving a film of water therefrom and partially extending from the corresponding tray for presenting the film of water at a dispensing region; a rotatable cylindrical member operatively associated with each of said cylinders, said member being aligned with its longitudinal axis parallel to the longitudinal axis of the corresponding cylinder, said member having a multiplicity of flexurally resilient bristles mounted thereon to extend substantially radially therefrom for disposition in engagement with the corresponding cylinder at said dispensing region; and drive means for said cylinders and for said members operative to rotate said members relative to said cylinders whereby to sweep said bristles through said film of water and out of engagement with said cylinders for spattering a stream of droplets evenly onto both sides of said web.

3,198,200
SPORTSMAN'S TENT
Bryan E. Sanders, 1143 S. Louisville, Tulsa, Okla.
Filed May 20, 1963, Ser. No. 281,674
1 Claim. (Cl. 135—1)

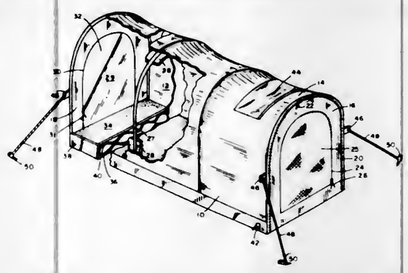
A portable sleeping tent comprising:

an elongated structure of flexible waterproof material having substantially straight sides, an integral continuous arcuate top, and substantially vertical end portions;

a zipper means attaching at least one of the end portions to the sides and top portions, the zipper means affording access into the structure;

a multiplicity of spaced apart structural members attached to the interior of the top and sides of the structure, each of the structural members formed of a substantially straight unitary metallic member arcuately flexed within its elastic limit, the flexed structural members serving to laterally support the sides and top of the structure;

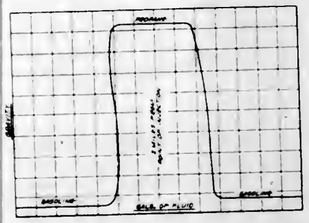
paralleled, spaced apart horizontally extending bottom



panels, the bottom panel forming the bottom of the structure and forming a mattress receiving pocket therebetween; and

an inflatable mattress in the pocket formed by the panels, the mattress when inflated affording longitudinal support to maintain the structural members in extended spaced relationship, wherein the structure is longitudinally compactably collapsible when the mattress is deflated and extended to full length when the air mattress is inflated.

3,198,201
METHOD FOR SIMULTANEOUSLY TRANSPORTING TWO IMMISCIBLE FLUIDS BY PIPELINE
Richard L. Every, Tibor O. Edmond, and Raymond D. Phillips, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed June 8, 1962, Ser. No. 201,045
8 Claims. (Cl. 137—1)

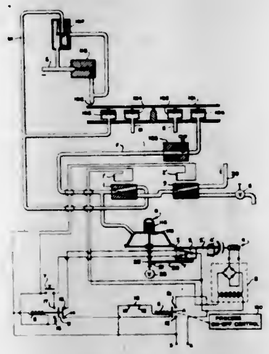


1. The method of transporting by pipeline two immiscible liquids which comprises interposing between said immiscible liquids a liquid which is miscible in each of said immiscible liquids and pumping said liquids through said pipeline under turbulent flow conditions.

3,198,202
PNEUMATIC CONTROL OF PHYSICAL QUANTITIES
Nico Jacobus August van den Hemel, Klaproosstraat 13a, Vlaardingen, Netherlands
Filed June 23, 1960, Ser. No. 38,183
Claims priority, application Great Britain, June 26, 1959, 22,106/59
10 Claims. (Cl. 137—85)

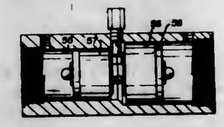
1. In a pneumatic controller for controlling a process variable having a control member for regulating the magnitude of the process variable and a control means for

starting and stopping the process, the combination comprising a memorising device for memorising the last setting of the control member whenever the process is interrupted,



and establishing means coupled to the control member and the control means for establishing the control member at the memorised setting before the process is continued.

3,198,203
SAFETY VALVE FOR HYDRAULIC BRAKING SYSTEM
Frank J. Margida, Cuyahoga Falls, Ohio, assignor to Saf-T-Brake Valve Co., Inc., Cuyahoga Falls, Ohio, a corporation of Ohio
Filed Dec. 26, 1962, Ser. No. 246,984
1 Claim. (Cl. 137—118)



A control valve for controlling hydraulic flow between the master cylinder and the front and rear brake lines of an automotive vehicle, comprising;

(A) a valve body having
  (1) a main axial passage therethrough defined by port openings provided adjacent the opposed axial ends thereof,
  (2) a second auxiliary passage
    (a) interconnecting said main passage adjacent the central portion thereof;

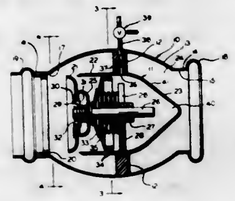
(B) a pair of concentric piston heads
  (1) receive in said main axial passage in axially shiftable relationship therewith;

(C) a pair of valve plugs
  (1) supported by said piston heads in radially and axially shiftable relationship therewith,
  (2) projecting axially from said heads toward said port openings,
  (3) and being shiftable into seating engagement with said port opening adjacent thereto upon movement of said piston head into adjacency with said port opening;

(D) at least one piston rod
  (1) interconnecting said piston heads and
  (2) permitting relative axial movement between said pistons while retaining the same in concentricity with each other;

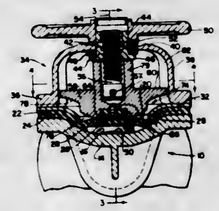
(E) and displacement control means
  (1) defined by said main axial passage and said piston heads and
  (2) independently displacing different volumes of braking fluid to said front and rear brake lines upon separation of said pistons in response to equal pressures introduced through said second auxiliary passage.

3,198,204
INLINE VALVE
William W. Parks, Glenview, Ill., assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed May 8, 1963, Ser. No. 278,844
10 Claims. (Cl. 137—219)



1. An inline fluid valve comprising, a tubular casing having an inlet and an outlet axially aligned therewith, a cylindrical shell suported within said casing and axially aligned with said inlet and outlet, the external diameter of said shell being no greater than that of the inlet, the end of said shell adjacent the inlet being closed and the end thereof adjacent the outlet being open, a piston received in said shell and having a piston rod axially and slidably suported therein, spring means normally biasing said piston toward said outlet, a seat at said outlet, first and second discs mounted on said rod and coacting with said seat to close said outlet, one of said discs being substantially equal in diameter to said piston and being adapted to engage said seat and being floatingly connected to said rod and having openings arranged about the rod, the other of said discs being fixed to said rod and adapted to close said openings of said other disc and seat against same, means for permitting fluid about said shell to bleed therein, and vent means for dumping the high pressure from said shell to control operation of said valve.

3,198,205
DIAPHRAGM VALVE
Henry W. Boteler, East Greenwich, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,912
23 Claims. (Cl. 137—270)

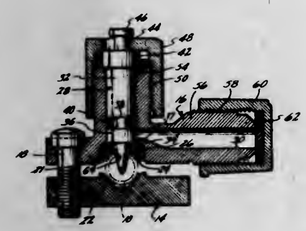


1. A diaphragm valve comprising:

(1) a body having:
  (A) a passage therethrough,
  (B) a diaphragm opening which:
    (1) is on one side of said passage,
    (2) has a rim therearound,

(C) a diaphragm seat which:
(1) is opposite said opening
(2) blends smoothly with said rim,
(II) a diaphragm having:
(A) a peripheral portion overlying said opening rim,
(B) a central portion covering said opening and said seat,
(III) a top works assembly having:
(A) a first portion which clamps said diaphragm peripheral portion to said body opening rim,
(B) a second portion which clamps a part of said diaphragm central portion to a corresponding part of said seat,
(C) a third portion which is movable:
(1) with respect to said first and second top works assembly portions,
(2) toward and away from the remainder of said seat.

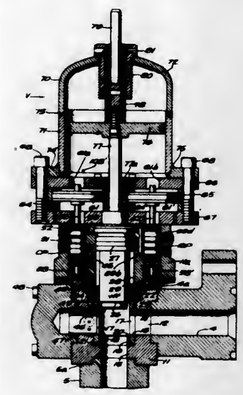
3,198,206
PIERCING VALVE
Thomas F. O'Brien, 14 Laurel St., Rockville, Conn.
Filed Aug. 1, 1961, Ser. No. 128,508
1 Claim. (Cl. 137—315)



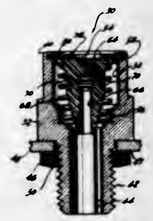
A piercing valve for recharging a hermetically sealed unit, said valve including body means attachable to a line of said unit, sealing means between said body and said line, a bore extending through said body, an external threaded area on said body coaxial with said bore, passage means in said body intersecting said bore, piercing means positionable in said bore and having sealing means thereon for controlling communication between said line and said passage means, a thrust cap threadedly connected to the threaded area of said body and having locking slot means thereon, said slot means having portions of different diameter, and means integral with said piercing means including a groove and head means of unequal diameter at opposite ends of said groove enabling assembly of said piercing means in said thrust cap locking slot means in one aligned position and precluding disassembly of said thrust cap and said piercing means in another aligned position in which other position said cap is laterally displaced with respect to the axis of said piercing means and said thrust cap may be threadedly mounted on said body.

3,198,207
FLUID PRESSURE CONTROLLED SHUT-OFF VALVE RESPONSIVE TO PREDETERMINED LINE PRESSURES
Robert S. Willis, Long Beach, and William J. Baker, Anaheim, Calif.; said Baker assignor to said Robert S. Willis; N. Elizabeth Willis, executrix of Robert S. Willis, deceased
Filed Nov. 14, 1961, Ser. No. 152,239
15 Claims. (Cl. 137—458)

1. A fluid pressure operated shut-off valve comprising: a valve housing having a flow passage therethrough; said housing also having a piston chamber; main valve means for controlling the flow of fluid through said passage including a differential end area piston having its larger end reciprocable in said chamber to move said main valve means between first and second positions for opening and closing said passage; said housing having a passageway leading from said passage to said chamber at one side of said larger end; normally open pilot valve means for closing said passageway; means for holding said pilot valve means closed including a cylinder; a pilot valve actuator piston in said cylinder and connected to said pilot valve means; and means responsive to predetermined changes in pressure in said flow passage for supplying control fluid under pressure to one side of said pilot valve actuator piston to hold said pilot valve means closed and for venting said cylinder.

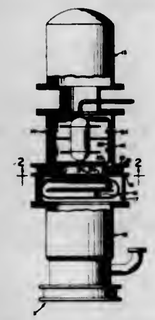


3,198,208
ANTI-FLUTTER METERING VALVE
Vernon N. Tramontini, Indianapolis, Ind., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Apr. 4, 1961, Ser. No. 100,608
4 Claims. (Cl. 137—480)



4. An anti-flutter metering valve, comprising a casing having a through passageway including spaced openings defining valve seats, a valve member movable axially in the casing, said valve member having one end seatable on one of said seats and having a generally flat other end seatable on the other of said seats, a spring between the casing and valve member to bias the flat end of the valve member against the casing over the other casing opening to close the metering valve, said valve member having flow calibrated passage means extending from an exterior surface thereof intermediate its ends to said one end, the differential pressure across the metering valve being operable to move the valve member against the bias of the spring axially within the casing for metering the flow through the valve, spaced annular abutment surfaces on the valve member extending transversely thereof, and a ring shaped dampening member supported solely by the valve member loosely coupled between the spaced annular abutment surfaces, the distance between the spaced annular abutment surfaces and the thickness of said ring shaped member being such that said ring shaped member is freely movable independently of the valve member between the spaced annular abutment surfaces a distance substantially less than the distance of valve member movement and is operable upon impact against the abutment surfaces to dampen flutter of the valve member when the latter is unseated from both casing openings.

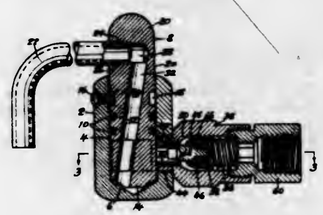
3,198,209
DIFFUSION VACUUM PUMP SYSTEM APPARATUS
Werner G. Bächler, Cologne, Germany, assignor to Leybold Holding A.G., Zug, Switzerland
Filed Nov. 29, 1962, Ser. No. 240,874
Claims priority, application Germany, Nov. 29, 1961, L 40,565
25 Claims. (Cl. 137—565)



1. A vacuum system apparatus comprising a diffusion vacuum pump adapted to utilize a pumping fluid, a sealed vacuum chamber adapted to be evacuated by said diffusion vacuum pump, a vacuum sealed tubulation connected between said diffusion vacuum pump and said sealed vacuum chamber so as to provide for gas communication therebetween, a creepage barrier located entirely within said vacuum sealed tubulation so as to be isolated from the atmosphere during periods in which said tubulation is maintained at reduced pressure, said creepage barrier positioned so as to interrupt all paths between said diffusion vacuum pump and said sealed vacuum chamber along the internal surface of said vacuum sealed tubulation and wherein said creepage barrier is composed of a solid material not wetted by the pumping fluid utilized in said diffusion pump thereby effectively preventing surface migration of the pumping fluid between said vacuum diffusion pump and said sealed vacuum chamber.

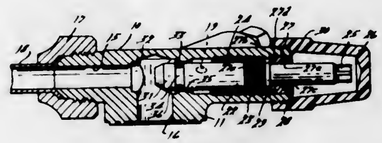
3,198,210
SWING-TYPE FAUCET
Martin J. Lewis, Yardley, Pa., assignor to Franklin Machine Products Co., Inc., West Trenton, N.J., a corporation of New York
Filed Mar. 14, 1963, Ser. No. 265,220
1 Claim. (Cl. 137—616.5)

A swing-type faucet or valve assembly comprising a body having a cavity therein, a spindle of generally cylindrical form located in said cavity and rotatable about the longitudinal axis of the spindle, said spindle having an end portion projecting beyond said body and provided with a radially directed opening on one side thereof, a liquid passage extending through said spindle and inclined with respect to the longitudinal axis of the spindle, one end of said passage communicating with said radially directed opening at a point located near the opposite side of said spindle so that the depth of said opening exceeds the radius of the spindle, said opening having threads extending substantially the full depth thereof, a spout having threads on the end thereof engaging a plurality of turns of the thread in said opening, said spout extending substantially radially from the projecting end portion of the spindle and operable to rotate the spindle about its longitudinal axis from one position to another, the portion of said spindle located within said cavity being



provided with a flattened port presenting a circumferentially inclined camming surface, a member secured to said body having a fluid opening communicating with the cavity in said body and formed with a valve seat surrounding said opening, a valve housed within said member, means including a spring for urging said valve toward said valve seat to close said fluid opening, a valve stem connected to said valve and projecting through said fluid opening into said cavity, said valve stem being engageable by the camming surface on the reduced portion of the spindle to move said valve away from said valve seat against the action of said spring when said spindle is rotated by movement of said spout about its longitudinal axis from one position to another.

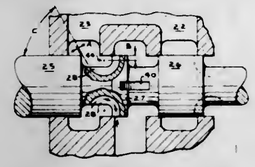
3,198,211
MULTI-WAY VALVE UNIT HAVING PARTICULAR O-RING VALVE AND SEAT STRUCTURE
Robert A. Gray, Jr., Port Huron, Mich., assignor to Mueller Brass Co., Port Huron, Mich., a corporation of Michigan
Filed Mar. 30, 1962, Ser. No. 183,851
4 Claims. (Cl. 137—625.4)



1. A compressor valve for a refrigeration system comprising, a valve body defining a valve chamber having at least one outlet port and at least one service port longitudinally spaced from said outlet port for attachment to service equipment, said valve body being formed in one piece and having an open end, an inwardly extending annular rib on the surface of said valve chamber disposed between said outlet and said service port and forming a valve surface, a valve stem provided with a threaded portion for engagement with a threaded portion in said valve chamber for longitudinal movement of the valve stem in said valve chamber, an annular groove on said valve stem adjacent the inner end thereof, and an O-ring sealing member mounted in said groove for engagement

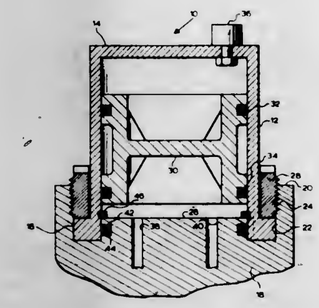
with said valve surface in one position of said valve stem to close communication between said service port and said outlet port, the side of said rib between said valve surface thereof and the juncture with the valve chamber wall being rounded to provide a smooth approach for the O-ring and resilient compression thereof from an expanded diameter in which at least a portion of its periphery projecting beyond said valve stem is engaged by at least a portion of the rounded said side of said rib to a compressed diameter as it is moved into engagement with said valve surface, the expanded diameter of the O-ring being less than the diameter of the valve stem threads to permit assembly of the parts by inserting the valve stem into the said open end of the valve body.

3,198,212
METERING SLOT CONFIGURATION FOR HYDRAULIC CONTROL VALVES
John A. Junck and James E. Scheidt, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed May 22, 1963, Ser. No. 282,418
5 Claims. (Cl. 137—625.37)



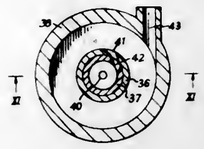
1. In a control valve having a ported bore and a spool with lands separated by grooves reciprocable in the bore for controlling fluid flow through the ports, metering slots bridging said lands and grooves and having a substantially semi-cylindrical configuration originating from a center disposed within a groove and spaced inwardly from the outer diameter of the lands.

3,198,213
UNIT AREA RATIO ACCUMULATOR WITH FAIL-SAFE MEANS
Arnold Schindel, Fair Lawn, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 21, 1962, Ser. No. 246,527
2 Claims. (Cl. 138—31)



1. In combination, a hydraulic unit having a cylindrical recess in one surface thereof with a cylindrical boss of reduced diameter projecting upwardly into said recess, an accumulator comprising a cylindrical housing having a closed end and an open end with an attachment flange about said open end, the outside diameter of said boss being substantially the same as the inside diameter of the housing, said open end of the housing being slidably positioned over said boss, a clamping ring fitted within said recess about said housing and abutting against said attachment flange, said clamping ring threadably engaging the wall of said recess to positively prevent the disengagement of the housing from the boss, a free-floating piston slidably sealed within said housing, said hydraulic unit having inlet and outlet passageways communicating with the end face of said boss to direct pressurized fluid into and out of a chamber on one side of the piston, said piston being maintained against the fluid by a pressurized gas in a chamber on the other side of the piston, and an O-ring seated in an annular groove in the cylindrical wall of said boss and slidably sealing against the inner cylindrical surface of said housing.

3,198,214
FLUID REGULATOR
Wilhelm T. Lorenz, Socking, Germany, assignor to R.I.V. Anstalt zur Verwaltung von Real- und Immaterialvermogen, Schaan, Liechtenstein
Filed Oct. 30, 1963, Ser. No. 320,613
Claims priority, application Germany, Oct. 30, 1962, R 33,786
5 Claims. (Cl. 138—37)



1. A through-flow regulator for fluids in which the through-flow quantity is dependent upon the speed of flow, comprising

(a) a hollow body defining a cylindrical chamber having end walls parallel to each other, one of said end walls closing entirely one end of the body,

(b) at least one inflow channel communicating with said chamber and provided in said body tangential to said chamber,

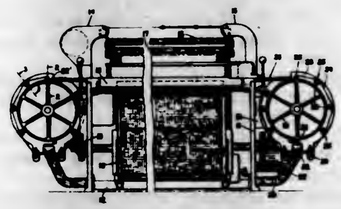
(c) an outflow channel communicating with said chamber and arranged on the longitudinal axis of said chamber in the other end wall,

(d) a first annular member concentric with said chamber and extending between the end walls thereof, said annular member having openings therein to permit through-flow of fluid, and

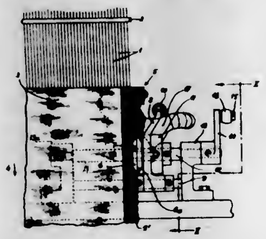
(e) a second annular member concentric with said chamber and closely fitting within said first annular member, said second annular member having openings therein which communicate with the openings in said first annular member, and said second annular member being rotatable within said first annular member whereby adjustment of the through-flow is achieved.

3,198,215
TAPE MOTION FOR SHUTTLELESS LOOMS
Wesley L. Tinkham, Upton, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed June 12, 1963, Ser. No. 287,351
3 Claims. (Cl. 139—122)

1. In a shuttleless loom of the type having means to insert filling from an outside source of supply which includes filling carriers attached to the free ends of flexible tapes, oscillating tape wheels to which said tapes are attached and upon which they are wrapped and from which they are extended into a warp shed by oscillation of said tape wheels, means for maintaining each of said tapes in contact with each of said tape wheels which includes endless belt members and a plurality of spaced rotatable pulley members radially disposed from the rims of said wheels and around the major portion of the circumference thereof, a portion of said endless belt members being adapted to bear against a considerable extent, at least of the circumferential extent of said wheels with the remaining portions thereof being guided by said pulley members, some, at least, of said pulley members being adjustable for varying the tension under which said belt members are caused to function.

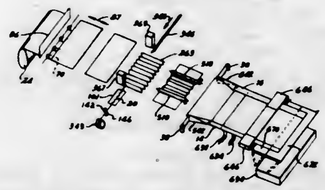


3,198,216
WEFT THREAD CUTTING DEVICE FOR SHUTTLELESS LOOMS
Victor Marie Joseph Ancet and Marius, known as Marcel, Fayolle, Lyon, France, assignors to Brelic International Inc., Panama City, Panama, a corporation of Panama
Filed July 19, 1963, Ser. No. 296,274
Claims priority, application France, July 25, 1962, 42,775, Patent 1,348,370
3 Claims. (Cl. 139—302)



1. In a loom for fabric having successive wefts in which some at least of the successive wefts have end portions which project laterally along one edge of the fabric which advances through the loom, a device for severing said portions of said wefts along said one edge, said device comprising a roller having a geometrical axis and a periphery formed as a hard substantially cylindrical surface, said roller being rotatably carried by said loom with its axis substantially perpendicular to the direction of advance of said fabric through the loom and being so disposed on said loom that the portions of said wefts to be severed pass substantially thereon during the advance of said fabric through the loom; a rotatably supported disc having a geometrical axis and a periphery in the form of an edge of small width, with the axis of said disc parallel to the axis of said roller, said disc being disposed close to said one edge of said fabric and at such a position on said loom that said portions of said wefts tend to pass between said edge of said disc and said roller during the advance of said fabric through the loom; means to resiliently press said edge of said disc against said roller, said disc and said roller thus forming a frictionally coupled unit; and means to oscillate said frictionally coupled unit to cause said portions of said wefts to be repeatedly caught and crushed between the hard surface of said roller and said edge of said disc until they are severed at a small distance from said one edge of said fabric.

3,198,217
METHOD AND APPARATUS FOR MANUFACTURING REINFORCED FABRIC PANELS
Richard P. Doerer, Ypsilanti, and Herman G. Guenther, Detroit, Mich., assignors to Van Dresser Specialty Corporation, Warren, Mich., a corporation of Michigan
Filed June 23, 1960, Ser. No. 38,402
17 Claims. (Cl. 140—3)

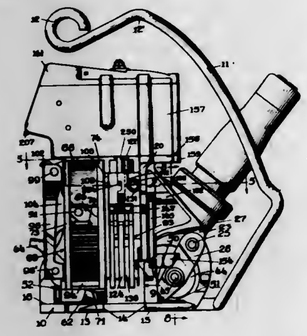


1. Apparatus for making reinforced webs comprising a pleater for shaping a web so that it has a multiplicity of closely spaced generally parallel pleats, a conveyor for intermittently passing webs into and out of said pleater in a direction parallel to said pleats, a plurality of generally parallel tubular needles each having an open outer end and extending transversely of said pleats, said needles being axially movable inwardly and outwardly respectively between a retracted position at one side of said pleater and said conveyor and an advanced position in which said needles each pierce all of said pleats, means for axially advancing said needles in an outward direction from retracted to advanced position causing said needles each to pierce all of said pleats, strand driving means at the opposite side of said pleater and said conveyor for inserting reinforcing strands axially into said respective needles in an inward direction through the open outer ends thereof while the latter are in their advanced positions so that when said needles are retracted said strands will remain in said web threaded through the pleats thereof, means for axially retracting said needles in an inward direction from advanced to retracted position, and means beyond said pleater along the path of said conveyor for ironing out the pleats in the strand reinforced webs delivered intermittently by said conveyor.

3,198,218
STRAPPING TOOL
Arvid I. Ericsson, Chicago, and Ilmar J. Vilcins, Oak Park, Ill., assignors to Signode Corporation, a corporation of Delaware
Filed Dec. 5, 1960, Ser. No. 73,885
37 Claims. (Cl. 140—93.4)

2. In a strapping tool, a shear unit having a vertical bore, a sealer unit having an upper end slidably mounted in said bore, a piston ram connected to said sealer unit for vertically reciprocating the same, said sealer unit having a notch, means mounted in said shear unit and engageable with said notch to prevent relative vertical movement between said sealer and shear units, a spring urging said means into engagement with said notch, and a lug engageable with said means to move it from said

notch against the action of said spring at a predetermined point in the vertical downward movement of said



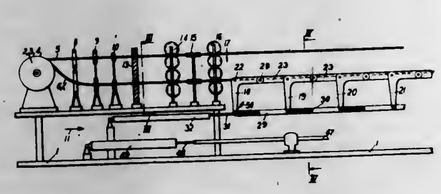
sealer unit to permit relative movement between said sealer and shear units.

3,198,219

APPARATUS FOR PRODUCING A GIRDER

Fritz Grebner, Mainz, Wilhelm Koelsch, Wiesbaden, and Willi Lauterbach, Hechtsheim, Germany, assignors to Rheinbau G.m.b.H., Wiesbaden, Germany, a German company

Filed Jan. 25, 1962, Ser. No. 169,187
Claims priority, application Germany, Jan. 27, 1961, R 29,552
5 Claims. (Cl. 140—112)



1. An apparatus for continuously producing a concrete reinforcing girder having a straight longitudinal boom and two undulating struts connected to the boom at an acute angle to each other, the boom and the struts consisting of elongated metal members, comprising

(a) a supply of three lengths of said elongated metal members,

(b) guide means directing the metal members from the supply to a bending station, the guide means being arranged to direct one of the metal members constituting the straight boom centrally between a pair of said metal members constituting the struts and in a plane spaced from the struts,

(c) means for feeding the metal members to, and through, the bending station,

(d) bending means at the bending station for bending the struts into undulating configuration, the bending means including

(1) a plurality of successive bell-crank levers associated with each of the struts, each of said bell-crank levers having two limbs,

(2) a pivot extending transversely of the direction of movement of said metal members mounting each of said bell-crank levers for pivoting and the limbs extending from the pivot at an angle to each other,

(3) means for displacing the pivots in said direction,

(4) rods linking an end one of the limbs of each bell-crank lever to the pivot of a successive one of said levers,

(5) a link interconnecting the ends of the other limbs of said bell-crank levers, said other limb ends being movable in successive slots in said link,

(6) means for pushing successive ones of said other limb ends in said successive slots in said direction, and

(7) means for holding intermediate portions of the struts at said pivots during pivoting of the bell crank levers,

(e) means for advancing the straight boom and the undulating struts to a welding zone, and

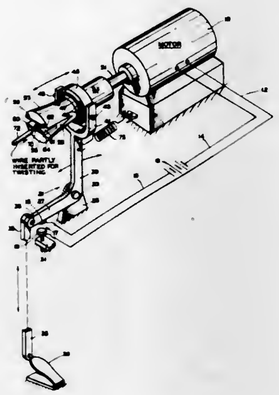
(f) welding means in said zone for welding successive apices of the undulating struts to the straight boom.

3,198,220

TWISTING MACHINE FOR STRANDED WIRE

Gennaro S. Scamberti, Newark, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Dec. 7, 1962, Ser. No. 242,963
4 Claims. (Cl. 140—119)



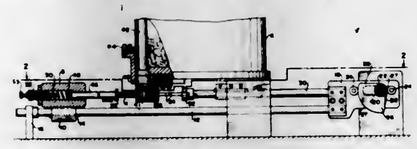
1. A twisting machine for imparting a rotary motion to wire end strands to provide a uniform twisted end portion thereof; said machine comprising a motor, a shaft to be rotated by the motor, said shaft including a pair of resilient jaws, means slidably mounted on the shaft for operatively closing the jaws, an arm to operatively position the jaw operating means, an operator-operative means for positioning the jaw operating means through said arm, control means operative by said arm simultaneously with the jaw operating means for rendering said motor effective to rotate the shaft, said shaft formed of a flexible plastic material having a cleft portion in the free end thereof so as to provide a pair of blade like jaw members, resilient cushioning pads affixed to inner surfaces of the blades, and a V-shaped wedge member positioned between the pads with each of its end portions contacting the inner surface of each jaw member for wedging within the V-shaped member an end portion of a stranded wire, the wire strands of which may be effectively twisted upon rotation of the shaft by the motor.

3,198,221

EXTRUSION APPARATUS

Matthew Orlando, Stamford, Conn., assignor to Matthew Orlando, Stamford, Conn., and Leonard Schub, Portchester, N.Y.

Filed Oct. 30, 1961, Ser. No. 149,154
4 Claims. (Cl. 141—263)



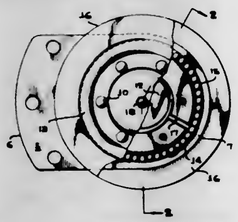
1. A machine for packing a dry cell envelope having a closed base and an open filling end with a charge of depolarizing mix comprising an extrusion nozzle of a size to be received within said open filling end of said envelope, a carrier mounted for reciprocating movement parallel to the axis of said nozzle and toward and away from said nozzle, an envelope back-up member mounted for movement on said carrier coaxially with said nozzle and sized to receive the closed base of the dry cell envelope, a spring operatively engaged between said carrier and said back-up member permitting relative movement therebetween and biasing said back-up member toward said nozzle, carrier actuating means operatively connected to said carrier for reciprocating said carrier through a forward stroke toward said nozzle into a filling position with said filling end of said envelope engaged over said nozzle and through a rearward stroke away from said nozzle into an envelope loading position, an extruder in communication with said nozzle arranged to introduce a charge of depolarizing mix during a filling interval through said nozzle and into said envelope, the pressure built up in said envelope upon the introduction of said depolarizing mix thereinto causing said envelope to back off from said nozzle and causing a corresponding movement of said back-up member relative to said carrier with said spring being elastically deformed, and a back-up member stop adjustably positioned in said carrier for defining maximum movement of said back-up member and an envelope positioned thereon away from said nozzle for holding said envelope stationary during the final portion of the filling interval for compacting said mix, said carrier actuating means moving said carrier through said rearward stroke after said filling interval to remove said envelope from said nozzle.

3,198,222

IDLER PULLEY AND END MOUNTING FOR A CHAIN SAW

Willard L. Bowen III, Harwinton, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine

Filed June 18, 1963, Ser. No. 288,744
3 Claims. (Cl. 143—32)



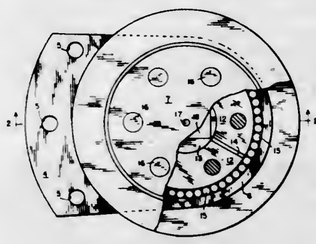
1. An idler pulley and end mounting for a chain saw comprising a flat sheet metal collar having a bore therethrough defined by a wall of said collar, said collar wall being in the form of an outer bearing race, two sheet metal disks of substantially uniform thickness arranged in back-to-back relation and being of a diameter greater than the diameter of said bore, each disk having an intermediate annular portion disposed within said bore in axially centered relation relative to said collar and said intermediate annular portions being secured together in face-to-face relation, said disks having opposed part-circular grooves disposed concentric with said collar wall and disposed immediately radially inwardly adjacent to said collar wall, said grooves having opposed surfaces defining a generally C-shaped inner race opening towards said outer race-forming collar wall, a plurality of bearing balls mounted within said inner race in direct riding engagement with said outer race, and said disks having outer flanges extending radially outwardly of said collar wall, said outer flanges being axially spaced and having said collar positioned therebetween in guided relation.

3,198,223

END GUIDE FOR CHAIN SAW

Willard L. Bowen III, Harwinton, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine

Continuation of application Ser. No. 162,414, Dec. 27, 1961. This application Nov. 12, 1963, Ser. No. 325,201
3 Claims. (Cl. 143—32)



1. An antifriction end guide for a chain saw comprising a thin mounting plate having an inner surface defining an outer bearing race surrounding a bore through said mounting plate, a bearing ring extending through said mounting plate bore, said bearing ring having an outer surface defining an inner bearing race opposing said outer bearing race, said inner bearing race being of a greater width than said outer bearing race and projecting to opposite sides thereof, a series of antifriction bearing rollers positioned between said bearing races and supporting said bearing ring, said bearing rollers being of a length in excess of the width of said outer bearing race, and a pair of side disks secured to faces of said bearing ring and projecting radially outwardly beyond said outer bearing race, said side disks having axially offset outer flanges disposed in closely adjacent relation to said mounting plate and said flanges having radially inwardly facing edge portions opposing said bearing rollers and combining with said outer race to confine said bearing rollers.

3,198,224

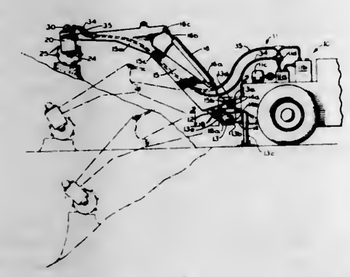
STUMP CUTTING APPARATUS

Alan R. Hiley, P.O. Box 477, Felton, Calif.

Filed Sept. 27, 1961, Ser. No. 141,944
8 Claims. (Cl. 144—2)

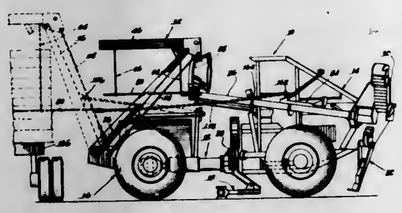
1. In stump cutting apparatus adapted to be attached to the free end of a pivoted and foldable boom which is attached to the rear of a tractor, the improvement comprising a rigid frame, a rotatable stump cutting element, a shaft for said cutting element, bearing means for said shaft attached to said frame for supporting

said cutting element so that it extends downward from said frame, a hydraulic motor attached to said frame, means for coupling said hydraulic motor to said cutting element for driving said cutting element, a source of fluid pressure positioned on said tractor, means including a fluid pressure line and a return fluid line supported on said boom for supplying fluid pressure from said source to said hydraulic motor for driving said motor, a di-



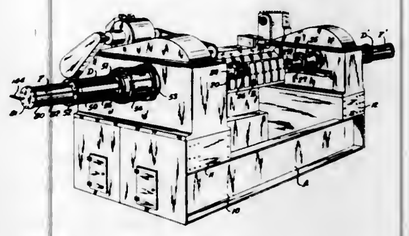
rectional valve connected to said motor for by-passing fluid pressure around said motor when said motor is coasting by virtue of the momentum of said cutting element, said directional valve being connected so that it is responsive to suction produced by said motor during said coasting, and means for attaching said frame to the free end of said boom so that said cutting element extends downward from said free end of said boom.

3,198,225
TREE HARVESTING APPARATUS
Thomas N. Busch, Daphne, Ala., assignor to Timberline Equipment Company, Bradley, Ill., a corporation of Illinois
Filed Nov. 29, 1962, Ser. No. 240,920
10 Claims. (Cl. 144—3)



1. A timber harvesting apparatus comprising a vehicle, means mounted on said vehicle for feeding successive sections of a felled tree to a predetermined raised position, means mounted on said vehicle for successively severing said sections from the remainder of the tree when said sections are in said position, vertically adjustable means mounted on said vehicle for catching said sections and supporting them above the ground as they are severed and dropped by gravity from said position, said vertically adjustable means including a plurality of flexible members spaced apart longitudinally of said position and traversing and having opposite end portions supported at opposite sides of said position, and means adjusting said vertically adjustable means for enabling a plurality of said sections to be received and stacked on said vertically adjustable means while minimizing the distance which each tree section falls.

3,198,226
HYDRAULIC VENEER LATHE
George Haumann, Portland, Oreg., assignor to The Coe Manufacturing Company, Painesville, Ohio, a corporation of Ohio
Filed June 5, 1961, Ser. No. 114,746
3 Claims. (Cl. 144—209)



1. In a veneer lathe, a frame, a pair of spaced axially aligned quills rotatably supported in said frame, means for rotating said quills, spindles slidably but non-rotatably supported in said quills and adapted to have chucks connected to their adjacent ends, a reciprocating type double acting fluid actuated motor means operatively connected to the end of one of said spindles which is non-adjacent to the other of said spindles, solenoid operated valve means for controlling the flow of pressure fluid to and from said fluid pressure actuated motor means, means for actuating said valve means to connect the outer ends of said motors means to a source of high pressure fluid to effect relative movement between said spindles in the direction to move them towards one another, and means for automatically connecting said fluid actuated motor means to a source of low pressure fluid when disconnected from said high pressure fluid source.

3,198,227
EXPANDABLE SAW BLADE
Emory D. Roberts, 19159 Calvert St., Reseda, Calif.
Filed Mar. 18, 1963, Ser. No. 265,682
2 Claims. (Cl. 144—239)



1. An expandable saw blade comprising a blade having a central spider and integral legs radiating from the spider and attached to respective segments of the blade, the respective segments of the blade being detached from each other and each segment having inwardly directed arms, front and rear blade plates, the rear plate terminating in an inwardly directed hub threaded along its outer surface and provided with an arbor receiving opening

through its inner surface, the inner open surface having annular bushing receiving recesses, the front blade plate having a central threaded opening and an actuating member provided with a handle part and a sleeve part, the sleeve part provided with threads along its inner and outer surfaces, the inner threads engaging the threads along the hub of the first plate, the outer threads being threaded oppositely to those of the hub portion and engaged with the threaded portion of the front plate, the inwardly directed pairs of arms of each of the segments attached alternately to the front and rear saw plates, whereby turning of the saw actuating member either expands or contracts the respective saw segments to vary the rabbet cut by the saw.

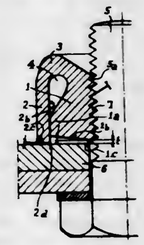
3,198,228
INTEGRAL RECLOSABLE BAG
Kakuji Naito, Kawasaki-shi, Kanagawa-ken, Japan, assignor to Kabushiki Kaisha Seisan Nihon Sha, Tokyo, Japan, a corporation of Japan
Filed Oct. 29, 1962, Ser. No. 233,959
Claims priority, application Japan, Nov. 27, 1961, 36/42,167
7 Claims. (Cl. 150—3)



1. A reclosable flexible container comprising,
a bag body having flexible walls formed of a plastic film having an opening therein,
releasably interlocking rib and groove elements integrally part of the walls on facing inner surfaces thereof formed of a resilient material and separable by drawing the elements apart and interlockable by pressing the elements together, external flanges on the upper exposed edges of said walls which may be gripped and drawn apart to separate said elements,
said rib element being arrowhead shaped with the rib and groove elements having interengaging upper surfaces extending toward the outside of the bag and interengaging lower surfaces extending toward the inside of the bag with the upper engaging surface of the rib element being shorter than the lower engaging surface of the rib element so that the bag opens relatively easily from the outside and resists opening from the inside,
said rib element surfaces being on the base of the arrowhead shaped rib element.

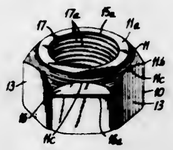
3,198,229
SELF-LOCKING NUT
Maurice Beltoise, Paris, France, assignor to Beltoise, Marguet & Co., Paris, France, a French society
Filed Jan. 2, 1964, Ser. No. 335,123
Claims priority, application France, Feb. 20, 1960, 819,109
3 Claims. (Cl. 151—21)

1. A deformable self-locking nut comprising an internally threaded inner nut portion, an outer skirt portion surrounding said inner nut portion and generally coaxial therewith, said portions having an end adapted to engage a bearing surface and an end remote from the first said end, and a generally radial web portion integral with and interconnecting said inner and outer portions at the end remote from the first said end, said outer skirt portion extending axially beyond the inner nut portion at the first said end, said inner portion including an enlargement adjacent the first said end in contacting relation with the outer skirt portion, said radial web portion providing sufficient flexibility between the nut portion and skirt portion to permit relative movement therebetween, the outer skirt portion having an end surface which is adapted to



engage said bearing surface, said end surface being tapered so that said end surface has an inner periphery which projects beyond the outer periphery of said end surface in the undeformed condition of the nut, the inner nut portion having an end surface which is adapted to engage said bearing surface, the latter said end surface being tapered so that said latter end surface has an inner periphery which projects beyond the outer periphery of said latter end surface in the undeformed condition of the nut.

3,198,230
LOCK NUT
Jordan H. Stover III, Bloomfield Hills, Mich., assignor to The Lamson and Sessions Company, Cleveland, Ohio, a corporation of Ohio
Filed June 26, 1964, Ser. No. 378,354
2 Claims. (Cl. 151—21)



1. A lock nut of the prevailing torque-type comprising a nut body of resilient material having a hexagonal shape to provide said body with six sides forming three pairs of opposed vertical flats, said nut body having a central vertical axis and including an integral upper portion forming an out-of-round truncated cone tapering continuously upwardly from said flats at an angle of approximately 45° relative to said axis, said body having a threaded central hole extending axially through the body from top to bottom and adapted to receive a mating bolt, said hole being circular at the bottom and partly defining at the reduced upper end of the cone an out-round annular surface in a plane normal to said axis, said annular surface forming the top of the nut body and being of substantially uniform dimension as measured between the inner and outer edges of the annular surface, said body having at the bottom an annular bearing face surrounding the hole in a plane normal to the nut axis, the height of the nut body as measured between the plane of said upper end of the the cone and said bearing face being at least about 0.90D minus 0.015 inch for nut sizes from ¼" through ⅝" diameter and at least 0.88D minus 0.020 inch for nut sizes from ¾" to 1½" diameter, where D

is the nominal diameter of said mating bolt in inches, the opposed vertical flats of one of said pairs each having an indentation extending continuously across the upper portion of the flat, the lowest extent of said indentation being spaced below the plane of said upper end of the cone a distance equal approximately to one-third of said height of the nut body, said cone and the threaded hole portion within the cone having in cross-section and at the top the shape of an ellipse with its major axis parallel to said indented flats and disposed in a vertical plane intersecting a pair of opposed vertical corners formed by the other flats, the minor axis of said ellipse being perpendicular to said major axis, said cone and the nut body between said indentations defining a threaded hole which is out-of-round by an amount sufficient to provide the nut with a friction locking torque of $115D^{2.4}$ to $280D^{2.5}$, on a mating screw within the dimensional tolerances of its class of fit, the conical surface of said cone extending from said reduced upper end to said vertical flats, the minimum height of the cone, as measured from the plane of its upper end to the highest points of the flats, being at least one-third of said spacing of said lowest extent of said indentation and a coating of extreme pressure lubricant on the threads of said hole and said bearing face.

3,198,231
HIGH STRENGTH THREADED INSERT
Robert H. Bisbing, Upper Darby, Pa., assignor to South Chester Corporation, Chester, Pa., a corporation of Delaware
Filed Jan. 9, 1962, Ser. No. 165,164
4 Claims. (Cl. 151—41.73)



1. A threaded insert adapted for anchorage in a body having a smooth-walled, approximately cylindrical bore extending inwardly from the surface thereof, said insert comprising:

a plug component having a bore with internal threads formed in the wall of said bore, the outside surface of the plug component comprising:

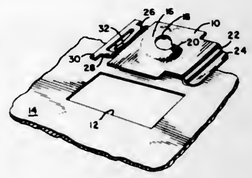
(a) at the first inserted end a first flange having a relatively smooth circumferential surface of such diameter as to just fit within the bore of the supporting body;

(b) a slightly larger diameter second flange adjacent the first flange having around its circumference a plurality of helical serrations oriented in a direction corresponding to the direction of the threads in said bore, the helix angle of the serrations in relation to the axis of the plug component being steeper than the helix angle of the internal threads of the plug component, the second flange being of such diameter that the walls of the bore in the supporting body are grooved in one direction;

(c) a round rearwardly tapering portion extending from the second flange to the end of the plug component; and

a ring having a tapering internal bore adapted to fit around the tapering portion of the plug component and having on the outside surface a plurality of helical serrations oriented in a direction substantially opposite to that of the aforementioned serrations, the helix angle of the serrations in relation to the axis of the plug component being steeper than the helix angle of the internal threads of the plug component, the outside diameter of the ring being the same size as that of the second flange of said plug so that the walls of the bore in the supporting body are grooved in a direction substantially opposite to that of the aforementioned grooves.

3,198,232
FRONT MOUNTING CLIP WITH SPRING ARM
Robert A. Munse, Perrysburg, Ohio, assignor, by mesne assignments, to The Bishop and Babcock Corporation, Toledo, Ohio, a corporation of Ohio
Filed Apr. 18, 1963, Ser. No. 273,986
3 Claims. (Cl. 151—41.75)

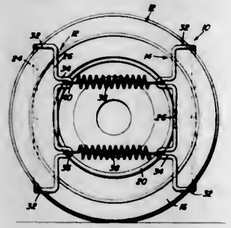


1. A front mounting clip comprising a sheet metal body, screw thread engaging means carried by said body, and means for attaching said body in a generally rectangular aperture of a supporting panel, said attaching means including a relatively long generally T-shaped neck portion offset from said body and in substantially parallel relation thereto and adapted to engage a surface of the supporting panel opposite to that engaged by said body, said neck portion being of approximately the width of the aperture of the supporting panel, an end wall interconnecting said neck portion with said body, an elongate upwardly inclined resilient tongue projecting above the plane of said neck portion and having one end integral with the fastener, the length of said elongate tongue being equal at least to three times the width thereof, the side edges of said tongue being substantially spaced from the adjacent portions of the body by providing a cut-out portion along each side of said tongue, at least a portion of one of the side edges of said tongue adapted to engage an end wall of the aperture of the supporting panel, the side edges of said tongue being substantially parallel to the end wall of the aperture and a relatively short tongue arm on the opposite side of said body offset therefrom to provide a shoulder to abut against the adjacent end wall of the panel aperture upon engagement of said arm with the opposite end wall of the aperture, whereby the resilient tongue automatically compensates for deformation or unevenness of the supporting panel as well as variations in the thickness thereof.

3,198,233
WHEEL TRACTION AID DEVICE
Richard P. Aler, Baltimore, Md., assignor to A.G.S. Development & Sales Corporation, Baltimore, Md., a corporation of Maryland
Filed Feb. 1, 1963, Ser. No. 255,544
2 Claims. (Cl. 152—218)

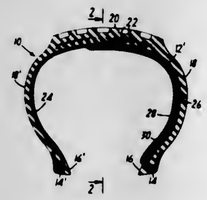
1. In a wheel traction aid device an open rectangular member adapted to be used with a similar opposed member and resiliently connected therewith, said open rectangular member including a straight rod-like inner side, a pair of end members of rod-like construction unitarily

formed with the inner side and extending perpendicular in relation thereto with the two end members being disposed in the same plane and free of obstructions, the outer end of each end member including an offset portion in perpendicular relation thereto with both offset portions lying in the same plane perpendicular to the plane of the end members, an outer side interconnecting the ends of the offset portions of the end members and being substantially parallel with the inner side but spaced laterally in relation thereto, said outer side having a pair of U-shaped crotch



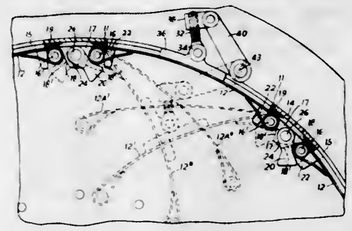
members formed therein with the U-shaped crotch members opening toward the plane of the end members, said crotch members being disposed in perpendicular relation to the outer side and disposed in the same plane as the outer side and in the same plane as the offset end portions, and a coil spring having hook ends, one hook end of the coil spring being disposed in and rigidly affixed to one of said U-shaped crotch members formed on the outer side and extending in perpendicular relation to the outer side and generally in alignment with the U-shaped crotch members.

3,198,234
METHOD OF REPAIRING PNEUMATIC TIRES AND PATCHES THEREFOR
Jean-Marie Massoubre, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin and Cie, Clermont-Ferrand, France
Filed Aug. 30, 1963, Ser. No. 305,746
10 Claims. (Cl. 152—367)



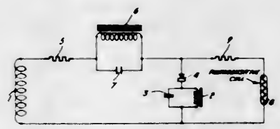
1. A patch for repairing an injury in a pneumatic tire comprising a trapezoidal-shaped sheet of elastomeric material having generally parallel first and second ends disposed at a distance apart so as to be located, respectively, in the region of the bead of the tire and of the equatorial plane of the tire and having opposite edges extending between the ends and diverging from the first end so as to lie in planes meeting at a common axis corresponding substantially to the tire axis, and a plurality of spaced-apart reinforcing cords in the elastomeric sheet diverging from the first end and extending in planes meeting generally at said common axis.

3,198,235
AIR REGISTER WITH MOVABLE VANES
John S. Maskell, London, England, assignor to Babcock & Wilcox Limited, London, England, a British company
Filed Feb. 11, 1963, Ser. No. 257,616
Claims priority, application Great Britain, Feb. 28, 1962, 7,814/62
10 Claims. (Cl. 158—1.5)



1. An air register of circular cross-section comprising a plurality of circumferentially arranged dampers, means for supporting each damper including a pair of pivotal supports affording different axes of rotation for said damper, a means for selectively securing one of said supports so that it rotates substantially only about its axis of rotation while permitting free movement of the other of said supports, and means for rotating said damper about the axis of rotation of the fixed support.

3,198,236
FLAME DETECTING DEVICES
Fernand Alfred Henri Pierre Puech, Amiens (Somme), France, assignor, by mesne assignments, to Honeywell Inc., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,649
Claims priority, application France, Apr. 18, 1963, 931,905
5 Claims. (Cl. 158—28)



1. Control apparatus comprising:

first relay means including actuating means constructed and arranged to be operatively energized only by D.C. voltage,

second relay means having actuating means,

a source of A.C. voltage,

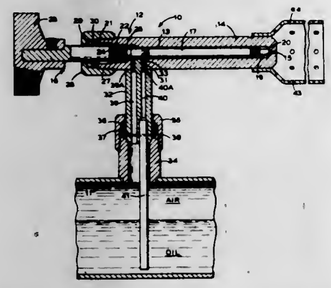
circuit means connecting the actuating means of said first and second relay means in series with said source of A.C. voltage, said circuit means being constructed and arranged to apply a voltage having a D.C. component to said first and second relay means to thereby operatively energize the actuating means of both of said relay means,

photoconductive means having a normally high resistance and a low resistance when subjected to light energy,

and circuit means connecting said photoconductive means in a parallel circuit to the actuating means of said second relay means and to said source of A.C. voltage whereby the presence of light energy is effective to apply a voltage to said first relay means

actuating means having an A.C. component to thereby operatively de-energize the actuating means of said first relay means, the actuating means of said second relay means being operatively de-energized only in the event that said photoconductive means experiences an abnormally low resistance.

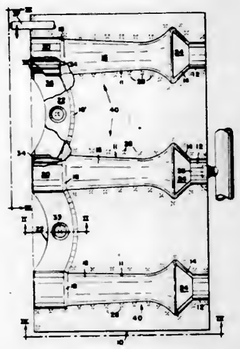
3,198,237
TORCH FOR LIQUID FUEL BURNERS
John H. Sadler, Manchester, Conn., assignor of one-half to William H. Byrne, New York, N.Y.
Filed Oct. 14, 1963, Ser. No. 315,882
4 Claims. (Cl. 158—76)



1. A starting torch comprising a tubular burner body having a longitudinally extending bore and a restricted orifice at one end thereof and communicating with said bore, an elongated rod disposed axially within said bore, cooperating means on opposed rear portions of said rod and bore for rotatably mounting said rod within said bore, said rod including a forwardly extending stem portion having a smooth exterior surface in opposed closely spaced relation to the surface of said bore to provide an annular space therebetween extending toward said orifice, said stem terminating at its forward end in a valve portion for adjustably controlling the effective size of said orifice as said rod is rotated relative to said tubular burner body, said stem including at the forward end thereof a roughened surface portion of limited longitudinal extent, said roughened surface portion comprising a plurality of closely spaced annular grooves, said roughened surface portion being in slightly spaced relation to the opposed surface of said bore and completely out of contact with the bore surface, inlet means on the rear portion of said tubular burner body including a pair of passages at one end thereof communicating with the annular space between said stem portion and the bore of said tubular member and being adapted to be connected respectively at the other ends thereof to a source of fuel and air under pressure, said roughened surface portion of the stem being effective to induce turbulence and admixture of fuel and air passing through said annular space toward said orifice.

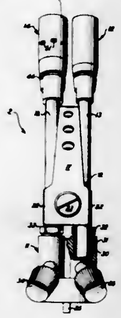
3,198,238
SHEET METAL GAS BURNER CONSTRUCTION
Robert L. Hughes, West Covina, Calif., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed June 30, 1961, Ser. No. 121,015
1 Claim. (Cl. 158—104)

A gas burner comprising a first plate member having spaced portions extending across the width thereof and deformed outwardly thereof, said first plate member having an additional portion deformed outwardly thereof, said additional portion communicating with the spaced portions extending across the width thereof, a second plate member deformed in the same manner as the first plate, said plate members being united with the planar areas of each in mutual engagement and the deformed portions confronting one another to form passageways extending the width of the members and connected by a cross passage of a configuration determined by the deformation,



flame retention members arranged in said passageways, and an insert positioned in said cross passage, portions of the plates defining the cross passage being depressed into tight intimate engagement with said insert to prevent relative movement between the plate and the insert.

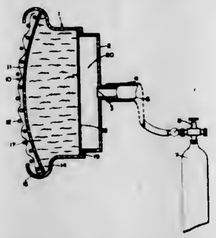
3,198,239
DUAL GAS BURNER HEAD ASSEMBLY
Milo E. Webster, Rochester, N.Y., assignor to Bernz-O-Matic Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 25, 1963, Ser. No. 253,880
7 Claims. (Cl. 158—106)



1. A burner head assembly for a gas supply cylinder comprising:
(a) a connector for mounting the head assembly on a gas supply source, the connector including a first conduit means for delivery of gas from the cylinder;
(b) two burners, one of which includes means for providing a pencil flame and the other of which includes means for providing a utility flame;
(c) second and third conduit means in parallel flow relationship interconnecting, respectively, the pencil burner and the utility burner with said first conduit means of the connector;
(d) valve means for each of the second conduit means and the third conduit means operatively mounted in its conduit means for control of gas flow to the pencil burner and the utility burner; and

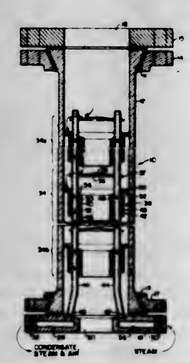
(e) the two burners being juxtaposed and including means to direct their flames in substantially parallel directions and arranged to permit lighting of either burner from the other.

3,198,240
CATALYTIC OXIDATION UNIT AND RADIANT GAS BURNER
Carl D. Keith, Summit, and George Soustruznik, Caldwell, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
Filed Sept. 4, 1962, Ser. No. 221,234
4 Claims. (Cl. 158—116)



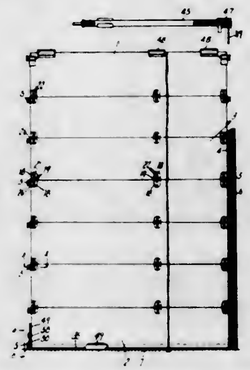
4. A catalytic heater comprising a housing open at the front and having an entry port through which fuel gas is introduced into the housing, and a catalyst unit across the front of said housing, said catalyst unit comprising a support structure of asbestos cloth, which is porous to permit passage of a fuel gas therethrough, and a catalytic material deposited on the cloth, said catalytic material comprising particles of active alumina less than 20 microns in size and a catalytically active metal from the group consisting of platinum, palladium and rhodium, said metal being precipitated on and fixed on the particles of alumina in a ratio of metal to alumina of 0.05–20% by weight, said catalytic material being deposited on said cloth in a concentration to provide from 0.05–2.0 grams of the catalytically active metal per square foot of cloth.

3,198,241
EVAPORATOR STRIPPER AND FRACTIONATOR
James L. Baird, Winchester, Mass., assignor to Artisan Industries Inc., Waltham, Mass., a corporation of Massachusetts
Filed Jan. 31, 1963, Ser. No. 255,393
8 Claims. (Cl. 159—13)



1. An evaporator for the separation of a relatively volatile material from a relatively non-volatile material which evaporator comprises in combination:
an elongated outer housing having at the one end an inlet opening to introduce fluid material to be evaporated and to remove volatile material, and at the other end a discharge opening to remove non-volatile material, the housing containing therein a plurality of alternating discs and tubular jackets axially disposed and spatially separated within the housing;
the discs positioned transverse to the flow of material through the housing and shaped to direct the flow of fluid material thereon toward the outer peripheral edge of each disc;
the tubular jackets characterized by an enclosed tubular cavity having a substantially vertically disposed circumferential inner wall surface of sufficient vertical length that a majority of the heat transfer to the mixture to be separated occurs on this surface and of less internal diameter than the disc directly below the tubular jacket, the jacket having an inwardly dished relatively short flange about its upper circumference, the outer peripheral lip of the flange extending beyond the peripheral edge of the disc directly above the flange, whereby fluid material from the upper disc is directed onto the flange and is rapidly formed into a thin downwardly moving film on the inner wall surface and then falls onto the lower disc; and
means to introduce into and means to withdraw from each tubular cavity a fluid heat exchange medium thereby permitting fluid material introduced into the evaporator to be separated into a relatively volatile and non-volatile material by continuously forming and reforming said non-volatile material on the relatively cool horizontal discs and directly heating the material only as a relatively thin downwardly moving film on the inner wall surface of the tubular jacket.

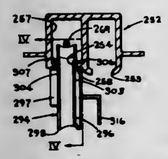
3,198,242
UPWARDLY ACTING DOOR AND SEAL MEANS THEREFOR
Flay Downs Crosswell, Hartford City, Ind., assignor to Overhead Door Corporation, Hartford City, Ind., a corporation of Indiana
Filed Sept. 5, 1961, Ser. No. 135,988
2 Claims. (Cl. 160—190)



1. An upwardly acting door assembly comprising side frame members, tracks including upright portions of facing channel cross section disposed at the inner sides of the door frame side members in facing relation to each other, a door comprising a plurality of pivotally connected sections, track engaging rollers disposed at the ends of said sections, counterbalance means including a cable, a combined spindle supporting bracket and cable anchoring member disposed on the end of the lower door section and comprising a plate-like body portion having

an inwardly projecting roller spindle bearing and an inwardly projecting cable coupling socket disposed above said spindle bearing, a track engaging roller having a spindle disposed in said spindle bearing, and a cable coupling member provided with a spindle engaged in said cable coupling socket and terminatnig at its outer end in a laterally projecting lug and having a keyhole slot therein extending into said lug, said cable having a terminal portion detachably engaged with said keyhole slot, said cable coupling member being swingable laterally relative to said lower door section and to said track.

3,198,243
STRUCTURAL DEVICE
James A. Ford, Sturgis, Mich., assignor to Kirsch Company, Sturgis, Mich., a corporation of Michigan
Original application Dec. 18, 1961, Ser. No. 159,851, now Patent No. 3,151,666, dated Oct. 6, 1964. Divided and this application July 15, 1964, Ser. No. 382,847
5 Claims. (Cl. 160—347)



1. In a traverse assembly for supporting substantially upright panels, said traverse assembly including an elongated flexible element connectible to said panels for effecting movement thereof, the combination comprising:

an elongated, rigid track structure having wall means forming a pair of elongated and parallel channels defining passageways disposed in side-by-side relation, one of said channels opening downwardly;

means on said one channel defining spaced rail means extending toward each other from the opposite edges of the open side of said one channel;

a narrow, elongated pulley casing having a pair of substantially parallel side walls;

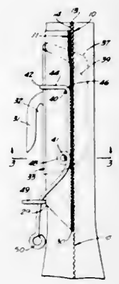
a pair of upwardly and sidewardly extending, support flanges rigidly and respectively secured to said side walls adjacent corresponding ends of each, said flanges each having a dimension substantially lengthwise of the casing less than the distance between said rail means so that said flanges are insertable into said one channel between said rail means when said casing extends transversely thereof, the distance between the opposite ends of the flanges transverse of the casing being materially greater than the distance between said rail means, whereby said flanges are supported upon said rail means when said casing is in a position substantially parallel with and below said one channel;

connecting means mounted upon said casing adjacent the other end thereof for clamping said casing against the rail means; and

a pulley rotatably supported upon and between said side walls, said pulley projecting between said rail means into said one channel for engagement with the elongated element.

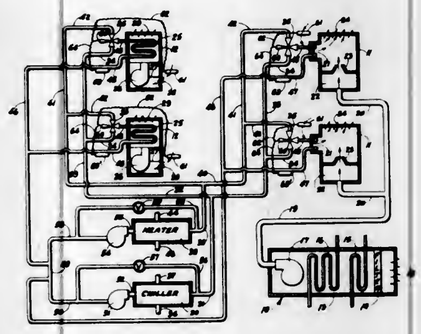
3,198,244
PLEATED DRAPERIES
Irving W. Mairson, 204 Tulane Place, Costa Mesa, Calif.
Filed Aug. 26, 1963, Ser. No. 304,309
2 Claims. (Cl. 160—348)

1. For use with pleats of pleated drapes, means providing two connected spaced side webs adapted to be positioned in the backs of two outermost pleats of a pleat group of a drape, means providing a downwardly open hook secured to said side webs and projecting rearwardly therefrom, each side web having upper and lower piercing points projecting laterally from the outer sides thereof adapted to be projected through the outer sides of said outermost pleats, and a clamping member having a central portion adapted to be positioned across the backs of



the side webs, said clamping member having arms extending forwardly and downwardly from the central portion engageable over the tops and forward sides of the upper piercing points and with the bottoms and forward sides of the lower piercing points, said arms having means for detachably connecting them to each other across the rear edges of the side webs.

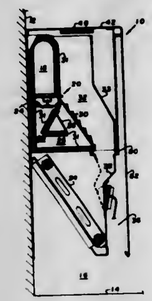
3,198,245
AIR CONDITIONING SYSTEMS
Sam P. Seling, Spring Garden Township, York County, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 5, 1960, Ser. No. 73,855
2 Claims. (Cl. 165—22)



1. An air conditioning system for multi-room buildings comprising a plurality of heat-exchange coils in air communication with respective rooms; means including a heater and a chiller for simultaneously supplying a heated and a chilled heat-exchange fluid to said coils for flow therethrough; means for flowing room air over said coils in heat-exchange relation therewith; valve means located at the inlet to each said coil; control means for positioning said valve means to flow either heated or chilled heat-exchange fluid through said coils, dependent on whether the room temperature is below or above a predetermined

temperature; and means for overriding said control means to maintain a predetermined maximum leaving temperature of said supplied heated fluid exiting a coil.

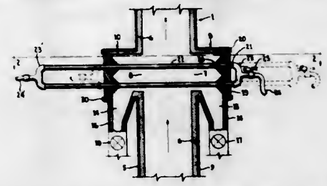
3,198,246
INDUCTION UNIT
Ronald W. Brown and Walter Earhart, La Crosse, Wis., assignors to The Trane Company, La Crosse, Wis.
Filed Mar. 26, 1962, Ser. No. 182,190
1 Claim. (Cl. 165—35)



An air conditioning unit adapted to be mounted against a wall, in a conditioned space a predetermined distance above the floor comprising: a substantially rectangular casing, a recirculated air opening in the bottom of said casing, a discharge opening in the top of said casing, said casing having a front panel, a heat exchanger mounted in the lower portion of said casing and inclined upwardly and rearwardly at an angle to said front panel, one corner of said heat exchanger being adjacent the rear of said casing, means forming a passage extending from below said heat exchanger between said front panel and said heat exchanger to bypass recirculated air, a primary air plenum chamber supported in the upper portion of said unit, means for supplying air under pressure to said primary air plenum chamber, regulating means dividing said primary air plenum chamber into a first chamber and a second chamber, said supply air being delivered to said first chamber, nozzle means connected to said second chamber, damper means pivotally supported between said bypass passage and said heat exchanger, and control means operably associated with said damper means to control the pivoting of said damper means in response to load conditions to regulate the proportions of recirculated air induced through the heat exchanger and the bypass passage by said nozzle means.

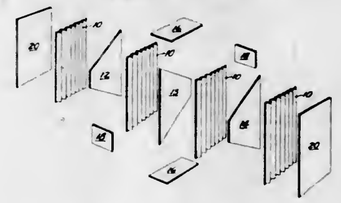
3,198,247
APPARATUS FOR THE PRODUCTION OF HYDRAULIC CEMENT
Richard G. Schlaach, Allentown, Pa., assignor to Fuller Company, Catasauqua, Pa., a corporation of Delaware
Original application Aug. 5, 1958, Ser. No. 753,227, now Patent No. 3,043,703, dated July 10, 1962. Divided and this application Oct. 19, 1961, Ser. No. 146,243
2 Claims. (Cl. 165—94)

1. Apparatus for removing matter from a gas stream comprising a conduit through which the gas stream is caused to flow, at least one condensing surface in said conduit in the path of a stream of gases passing therethrough, means for maintaining in the condensing surface a temperature below the solidification point of a vapor component of the gas stream, said conduit having lateral extensions extending therefrom through which said condensing surface extends, scrapers positioned within the lateral extensions adapted to engage the surface of the condensing surface, means for reciprocating said condensing surface relative to said scrapper for removing the solidified matter deposited on the condensing surface and discharge hoppers extending downwardly



from said extensions and directly below the scrapers, whereby material scraped from the condensing surface will fall into said discharge hoppers and be discharged from the conduit separately from the gases.

3,198,248
CORRUGATED HEAT TRANSFER EXCHANGERS
Thomas Noel Stack, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 10, 1963, Ser. No. 271,929
2 Claims. (Cl. 165—166)



1. A fluid handling apparatus having

(I) at least three regularly undulate, substantially identically rectangular, heat-exchanging panels, spaced apart with like portions thereof substantially equidistant at opposing points;

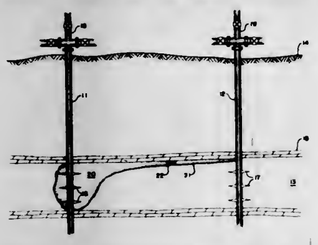
(II) at least two substantially identical, planar spacer members of trapezoidal shape, each member positioned between and spacing apart a pair of said undulate panels and joined thereto along all lines of contact; said spacer members being substantially coextensive over a portion of their width with said panels and substantially coterminous at acute-angled corners with corners of said panels; and consecutive spacer members being inversely positioned; and

(III) end plates on two side of the joined panels and members, said plates spanning the respective undulate ends of said panels and each of said plates being bonded to said ends and to only one acute-angled corner of each of said planar spacer members, and means directing the flow of fluid toward and from the edges of the joined panels and members not spanned by said plates.

3,198,249
METHOD FOR SEALING OFF POROUS SUBTERRANEAN FORMATIONS AND FOR IMPROVING CONFORMANCE OF IN-SITU COMBUSTION
Bertram T. Willman, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Sept. 1, 1961, Ser. No. 135,580
7 Claims. (Cl. 166—4)

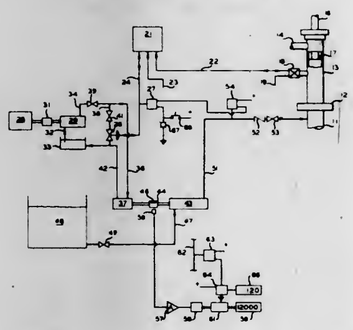
7. A method for sealing off at least a portion of a porous earth formation which comprises: heating said portion to a temperature substantially above the carbon-

ization temperature of sugar, and then contacting the heated portion with a solution of sugar in water, whereby



precipitation and carbonization of said sugar occurs with the consequent plugging of the pores of said formation.

3,198,250
WELL OPERATION
Robert S. Hoch and Ralph W. Elliott, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,388
9 Claims. (Cl. 166—4)

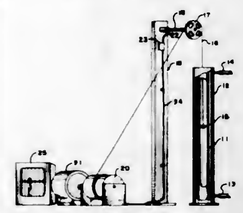


1. A method for preventing blowout of a drilling well while pulling pipe from the well bore, comprising the steps of:
continuously determining the amount of pipe removed from the well;
continuously monitoring the presence of drilling fluid at a predetermined level in the well;
pumping drilling fluid into the well as needed when said fluid is below said level, to return the height of drilling fluid up to said level;
measuring the drilling fluid added to the well;
recording the amount of pipe removed from the well;
recording the amount of drilling fluid added to the well; and
adjusting the quantity of mud in the hole so that the pressure of the mud will counteract the pressure in the borehole when less drilling fluid is recorded than the amount necessary to replace the volume of the amount of pipe removed.

3,198,251
DEODORANT PREPARATION
Joseph L. Shore, Philadelphia, Pa., assignor to Hart Laboratories, Inc., a corporation of Pennsylvania
No Drawing. Filed Aug. 26, 1960, Ser. No. 52,055
18 Claims. (Cl. 167—22)

1. A water-dispersible deodorant mixture containing a water-soluble benzethonium quaternary salt and a member of the class consisting of an alkali metal nitrite and ammonium nitrite, which mixture after dispersion in water, provides by inter-action between its said quaternary salt and nitrite an oily material over the surface of said dispersion of the mixture; and said aqueous dispersion as applied adequately over an area which thereunto manifested undesirable organic odor, serves to rid the area of such odor to an extent sufficient to last for days before a subsequent application of said dispersion may be needed.

3,198,252
PROCESS FOR OVERCOMING LOST CIRCULATION
Richard E. Walker, Tulsa, Okla., Wladimir Philippoff, Cranford, N.J., and Victor V. Horner, Tulsa, Okla., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Mar. 13, 1962, Ser. No. 179,386
8 Claims. (Cl. 166—32)

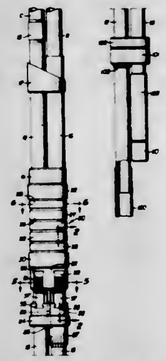


1. A process for overcoming lost circulation in a borehole penetrating subsurface strata which comprises dissolving a high molecular weight polymer in an organic solvent in a concentration sufficient to produce, at the temperature conditions prevailing within the lost circulation zone, a viscous liquid having a recoverable shear rate of at least two recoverable shear units, a mending time less than about 30 seconds, and a positive elastic drag coefficient in the apparatus of FIGURE 1 of the drawing of at least 1.2 dynes per centimeter per unit of shear over at least 7 shear units at a shear rate between about 0.5 and about 50 reciprocal seconds, entraining solid particles in said viscous liquid, and thereafter injecting said viscous liquid containing said solid particles into said borehole and the surrounding lost circulation zone at a pressure below the formation fracturing pressure.

3,198,253
HYDRAULIC FRACTURING
Don R. Holbert, Tulsa, Okla., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 8, 1960, Ser. No. 41,476
19 Claims. (Cl. 166—33)

1. In a method for increasing the permeability of an oil-bearing formation, the steps comprising placing a fracturing liquid in contact with the oil-bearing formation, exerting a pressure on the liquid to fracture hydraulically the oil-bearing formation, introducing into the fractured formation an aqueous plug-forming composition having a viscosity of about 1 to 15 centipoises and a specific gravity greater than the in-situ oil and in an amount of at least about 25% of the volume of the fracturing liquid, introducing a flushing liquid into the fractured formation prior to the plug-forming composition being transformed into the plugging state, said flushing liquid having a specific gravity less than formation brine and less than the plug-forming composition and constituting about 10 to 75% of the volume of the fracturing liquid and allowing the plug-forming composition to transform into an essentially solid, formation-plugging state.

3,198,254
METHOD AND APPARATUS FOR COMPLETING WELLS
Edward H. Wise, Lafayette, La., and Archer W. Kammerer, Jr., Fullerton, Calif., assignors to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed May 8, 1962, Ser. No. 193,136
19 Claims. (Cl. 166—48)



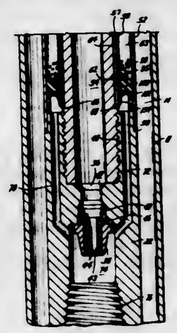
14. The method of installing a well packer in a well bore, comprising lowering the well packer in the well bore, the packer having a releasable lock preventing the well packer from being set, operatively connecting a tubular string therewith which extends from the packer to the top of the well bore, imparting energy to said tubular string by stressing it sufficiently to set said packer in the well bore, installing a well head assembly at the top of the well bore and connecting said assembly in final position to said tubular string to control fluid flow therethrough and to prevent movement of the upper portion of said tubular string; and releasing said lock to release the energy in said tubular string whereby said tubular string sets said packer without movement of the upper portion of said tubular string.

3,198,255
MAGNETIC SIGNALING WELL TUBING NIPPLE
Warren G. Ownby, Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas
Original application Apr. 19, 1961, Ser. No. 104,051. Divided and this application Feb. 17, 1964, Ser. No. 345,316
1 Claim. (Cl. 166—65)



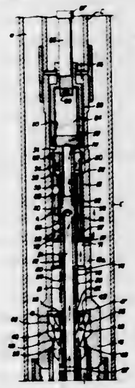
For providing a signal marker in a tubing, a tubing element of nonmagnetic material and a stack of rings fitted in interchangeable succession within the tubing element, certain of said rings being magnetized in the axial direction thereof and each of like polarity throughout its circular extent with opposite poles at opposite ends thereof and others of the rings being of nonmagnetic material and of lengths differing axially one from another, said others of the rings in interchangeable relation being interposed between the magnetized rings for locating the latter selectively in longitudinally spaced apart relationships.

3,198,256
JET JUNK BASKET
John H. Kirby II, Houston, Tex. assignor to Bowen Tools, Inc., Houston, Tex., a corporation
Filed Oct. 9, 1961, Ser. No. 143,875
5 Claims. (Cl. 166—99)



2. An upper mandrel adapted for use with a junk basket, said upper mandrel having a bore of substantially constant diameter throughout the axial length thereof with the outer periphery of said upper mandrel being greater in the upper portion than the lower portion, and a plurality of vanes coupled to said upper mandrel near the point of change in outer periphery, the reduced periphery section having a polygonal shaped cross-section to provide a plurality of chambers when a cylindrical, circular member is positioned around the reduced periphery section.

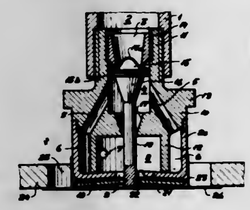
3,198,257
MULTIPLE ZONE SELECTIVE CROSS-OVER APPARATUS
William D. Myers, Houston, Tex., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 27, 1962, Ser. No. 247,579
19 Claims. (Cl. 166—136)



1. In apparatus to be disposed in a well bore having upper and lower producing zones and in which one zone is to be produced through a tubular string disposed in the

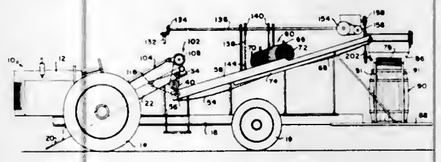
well bore and the other zone through a region externally of the tubular string: tubular body means adapted to form part of the tubular string; mandrel means secured within said body means against substantial longitudinal movement with respect thereto and providing therewith separate passages adapted to conduct fluids from the upper and lower zones to the interior of the tubular string above said body means and to the region externally of the tubular string; and valve means shiftably mounted in said tubular body means to control flow of fluids through said passages, said valve means being positionable in said body means in one location for conducting fluids separately from the lower zone to said interior of the tubular string and from the upper zone to said region and positionable in said body means in another location for conducting fluids separately from the lower zone to said region and from the upper zone to said interior of the tubular string.

3,198,258
SPRINKLER APPARATUS
Georg Christian Werner, 8 Hammerensgade, Copenhagen, Denmark
Filed Dec. 30, 1963, Ser. No. 334,510
Claims priority, application Denmark, Jan. 10, 1963, 104/63
3 Claims. (Cl. 169—37)



1. A sprinkler comprising a housing adapted to be mounted adjacent a ceiling structure, said housing having a water conduit therein at one end adapted for connection to a water supply, said housing having a cylindrical water chamber therein at an opposite end, cylindrical flange means within said water chamber for dividing said water chamber into an annular chamber and a concentrically disposed inner cylindrical chamber, said flange being provided with holes arranged tangentially relative to the inner cylindrical chamber and connecting the inner cylindrical chamber with the annular chamber, said housing being further provided with passages inclined relative to the axis of said housing and communicating between said water conduit and said annular chamber, said housing having a first aperture communicating between said water conduit and said inner cylindrical chamber, and said housing also having a central aperture communicating between said inner cylindrical chamber and the exterior of said housing, a stem extending through said first aperture and said central aperture and having a valve member located in said water conduit and having a plate exterior of said housing, said stem having one position wherein said valve member closes said water conduit and wherein said plate closes said central aperture, said stem having another position wherein said valve member permits communication between said water conduit and said passages but closes said first aperture and wherein said plate permits communication between said inner cylindrical chamber and the exterior of said housing, and a fusible member sandwiched between said plate and said housing and being adapted to hold said plate tightly thereagainst and to maintain said stem in said one position, said fusible member being adapted to melt at a predetermined temperature thereby simultaneously releasing said plate from said housing and permitting said stem to move to its other position whereby water is permitted to flow through said water conduit, through said passages, through said annular chamber, through said holes, through said inner cylindrical chamber and through said central aperture, the tangential arrangement of said holes providing a rotational movement to the water flowing into said inner cylindrical chamber and outwardly from said central aperture.

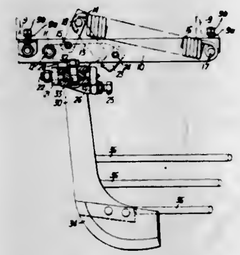
3,198,259
POTATO DIGGING AND SEPARATING APPARATUS
Glenn H. Manuel, R.F.D. 1, Monticello, Maine
Filed June 13, 1963, Ser. No. 287,574
17 Claims. (Cl. 171—28)



1. A self-propelled vehicle for harvesting potatoes and the like from the earth comprising a frame, front and rear wheels secured to said frame; motive means for propelling said vehicle; means for steering said vehicle including means for turning said rear wheels to provide a short turn radius for said vehicle, digger means carried by said frame for plowing into the earth to dig potatoes, first longitudinal conveyor means on said frame disposed behind said digger means for receiving potatoes, stones and other material thereon, vine stripping means disposed behind said first conveyor means for stripping vines therefrom, second longitudinal conveyor means on said frame disposed rearwardly of said vine-stripping means for receiving potatoes, stones and other material from said first conveyor means after they have passed said vine-stripping means, brush means associated with said second conveyor means for separating potatoes from said stones and other material, third longitudinal conveyor means on said frame disposed adjacent said second conveyor means for receiving potatoes thereon separated by said brush means said first, second, and third conveyor means being disposed in an in-line arrangement; and drive means for rotating said first, second, and third conveyor means, and said brush means, in the same direction and opposite the direction of travel of said vehicle, whereby said potatoes are dug, stripped from any vines and separated from any stones in a substantially straight in-line operation.

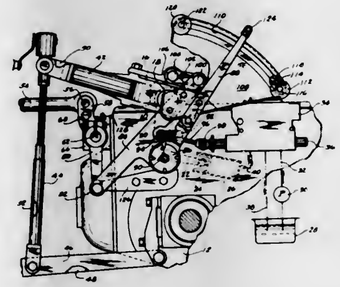
3,198,260
PIVOTED SHARE ROOT CROP HARVESTER
Georges F. Gay, Creteil, Seine et Oise, and Serge M. Sassier, Paris, Seine, France, assignors to Massey-Ferguson S.A., Paris, France, a corporation of France
Filed Mar. 4, 1963, Ser. No. 262,492
Claims priority, application Great Britain, Mar. 3, 1962, 8,304/62
6 Claims. (Cl. 171—106)

1. A share assembly for a root crop harvester comprising, in combination, a support member connectable to the frame of the harvester, a pair of spaced side-by-side shares mounted on rigidly interconnected share-supporting members depending from said support member and pivotal in a direction transverse to the direction of motion of the harvester, means for limiting pivotal movement of the share-supporting members, said means comprising a tapered screw having a threaded portion engaging with a corresponding threaded aperture in said share-supporting members adjacent their point of interconnection, said tapered screw engaging a recess in a part of said frame which is restrained against transverse pivotal movement, so that the transverse pivotal movement of said shares is



variable between a position of maximum movement when said screw is disengaged from said recess and a locked position when said screw is screwed fully home into said recess.

3,198,261
IMPLEMENT DRAFT AND POSITION CONTROL FOR TRACTORS
Evans Lipton Clarke, Sherrard, Ill., assignor to J. I. Case, Company, Racine, Wis., a corporation of Wisconsin
Filed Feb. 27, 1963, Ser. No. 261,391
4 Claims. (Cl. 172—9)



1. In a tractor of the type adapted to carry and propel an earth working implement and including a source of pressure fluid, a fluid motor and lift means connected to the implement and to the fluid motor adapted to raise and lower the implement in response to activation of the fluid motor, the combination of a

shiftable element,

sensing means connected to the implement, yieldable in response to variations in draft reactions from the implement,

initiating means connected to said shiftable element and to said sensing means for shifting said shiftable element in response to yielding of said sensing means,

follow-up means connected with said lift means and with said shiftable element at a point spaced from said initiating means,

a hand lever pivotally mounted on and supported from said shiftable element, and

detent means for retaining said hand lever in angular adjustment relative to said shiftable element,

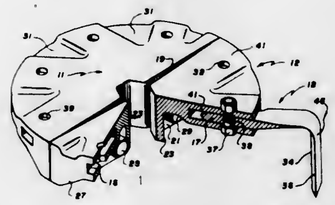
valve means on the tractor,

conduit means connecting said valve means with said source of pressure fluid and with said fluid motor, and

actuating means directly connected with said hand lever at a point

between said initiating means and said follow-up means, and said actuating means being also directly connected with said valve in actuating relation therewith.

3,198,262
CULTIVATOR TOOL HOLDER
Mayes R. Robinson, Gilroy, Calif.
(P.O. Box 45, San Martin, Calif.)
Original application Mar. 28, 1960, Ser. No. 18,077, now Patent No. 3,101,122, dated Aug. 20, 1963. Divided and this application Sept. 24, 1962, Ser. No. 225,726
6 Claims. (Cl. 172—556)

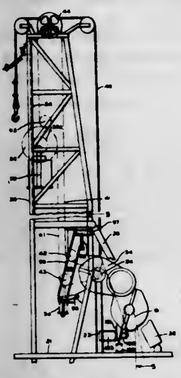


1. A ground cultivator tool holder disc having formed therein an even numbered plurality of rectangular tool sockets equally spaced peripherally thereof, each of said sockets having the side walls thereof opposed axially of said disc and of equal thickness, each of said sockets having its axis parallel to and offset from a radius of said disc in the intended direction of rotation of said disc, said disc being formed with a polygonal sided axial shaft opening, the number of sides of said shaft opening and the number of tool sockets, one with respect to the other, not being a whole number, and said disc being divided into two semicircular parts formed to have there between a lenticular opening extending diametrically of said disc and formed so that contact between said parts is limited to peripheral portions thereof; and means for securing together said semicircular parts; one side wall of each of said sockets being formed with a first hole to receive therein the shank of a tool holding bolt, and the other wall of each of said sockets being formed therethru with a second and larger hole than said first hole to receive therein and therethru the head of such bolt shank.

3,198,263
POWER MEANS FOR ROTARY DRILL APPARATUS
Karl E. Reischl, South Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,428
8 Claims. (Cl. 173—26)

8. In a rotary drilling apparatus having a main supporting frame and a drill mast pivotally supported by said frame, the combination comprising: means for tilting said mast about its pivot; a track extending longitudinally along said mast; drill string rotating means mounted on said mast having rotatable track engaging means movable longitudinally along said track to raise and lower said drill string rotating means for drilling operations; a driven shaft aligned with the pivot of said mast; driving means to drive said shaft; wheel means carried by said mast which are located both above and below said drill string rotating means; and flexible drive means including a closed loop extending from said drill string

rotating means upward to and around the wheel means above the drill string rotating means, then to and around said shaft, then to and around the wheel means below said



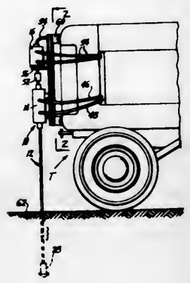
drill string rotating means, and then upward to said drill string rotating means, the length of path of said closed loop being the same irrespective of the angle of tilt of said drill mast.

3,198,264
DOUBLE HEAD PISTON DOWNHOLE DRILL
Erwin S. Oelke, Easton, Pa., Ewald H. Kurt, Phillipsburg, N.J., and Richard W. Beaumont, Claremont, N.H., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 17, 1962, Ser. No. 223,881
7 Claims. (Cl. 173—73)



1. A percussive drill apparatus comprising:
(a) a drill body including a pair of axially aligned cylinders and an interposed spacer ring between the adjacent ends of the cylinders;
(b) a piston having a pair of heads sliding in the respective cylinders and an intermediate shank sliding in said spacer ring;
(c) a bit having an anvil sliding in the outer end of one of said cylinders to close that cylinder and movable between a fully retracted position and a fully extended position in said drill body;
(d) a plug in the outer end of the other cylinder;
(e) said plug, spacer ring and bit anvil cooperating with said piston heads to form fluid pressure chambers at the opposite ends of said piston heads adapted to receive pressure fluid for reciprocating said piston and causing it to impact on said bit anvil;
(f) valve means for alternately admitting pressure fluid to the chambers at the opposite ends of each piston head;
(g) said piston and bit containing central passages serving as central exhaust passages for said fluid pressure chambers;
(h) said drill body containing a side passage located outside of said cylinders and serving as a side exhaust passage for said fluid pressure chambers; and
(i) means for closing said side exhaust passage when said bit is moved to its fully extended position so that all the exhaust air flows through the central exhaust passages.

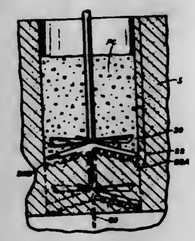
3,198,265
GAS LEAK DETECTION DEVICE
Frank J. Voelkerding, 118 Madison, Lake City, Iowa
Filed Dec. 26, 1962, Ser. No. 246,965
4 Claims. (Cl. 173—74)



1. A machine for detecting leaks of fluid in, and removing said fluid from, a definite area to be tested, in ground and building walls, comprising in combination:
(a) a mobile carrier;
(b) a rotatable drill assembly insertable into and removable from said area, comprising an elongated tubular member having an upper end and a lower end an a longitudinal bore, and of a drill bit threaded onto said lower end;
(c) driving and rotating means connected to the upper end portion of said drill assembly;
(d) a plurality of apertures located in the lower portion of said drill member, in the tubular member thereof, and communicating through the wall of said tubular member with said bore and with the exte rior of said tubular member;
(e) separate means adapted to impose in said bore a pressure and a vacuum, respectively;
(f) a mounting plate in front of said rigid support, and movable up and down relative to said support, on vertical slideways attached to the vertical sides of said support;
(g) supporting means projecting outwardly from said mounting plate and at right angle thereto, and supporting said driving and rotating means;
(h) driving and rotating means consisting of a vertical driving bevel gear rotatingly attached to said mounting plate and driven by the power take-off of said mobile carrier, and of a horizontal driven bevel gear meshing with said driven gear and supported by said supporting means;
(i) a keyed connection between said tubular member of said drill assembly and said horizontal bevel gear, said tubular member being slidable in said supporting means;
(j) a union affixed to the upper end of said tubular member and having an outer body and an inner rotating member;

(k) an internal bore from the top to the bottom of said outer body, through said rotating member, the bottom of said rotating member being keyed to said tubular member, said internal bore being in open communication with the inner bore of said tubular member;
(l) said internal rotating member and internal bore being coaxial with said tubular member;
(m) a leak-proof connection between the upper end of said internal bore and pressure exerting means;
(n) a lateral duct through the walls of said outer body and internal rotating member, and vacuum producing means connected to said duct in the wall of said outer body;
(o) said pressure exerting means and said vacuum producing means being operated from sources of pressure and vacuum in said mobile carrier.

3,198,266
ICE FISHING DRILL
Max L. Mishler, Mentor, Minn.
Filed July 2, 1963, Ser. No. 292,399
12 Claims. (Cl. 175—18)

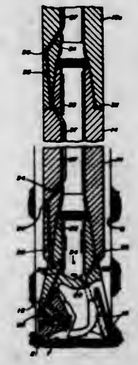


6. An ice drill comprising a drive shaft, rotary ice chipping means, ice transfer means, and power means, said ice chipping means comprising a plurality of radially extending bars attached to one end of said drive shaft, said power means disposed so as to rotate said drive shaft, and said ice transfer means comprising a plurality of fan blades extending radially from said drive shaft, and spaced a short distance from said ice chipping means, whereby said ice transfer means is operable to blow ice chips out of a hole.

3,198,267
METHOD AND APPARATUS FOR CONTROLLING DUST IN A ROTARY DRILLING OPERATION
Leo D. Madson, Hibbing, Minn., assignor to United States Steel Corporation, a corporation of New Jersey
Filed May 17, 1963, Ser. No. 281,195
10 Claims. (Cl. 175—69)

1. In a rock-drilling operation wherein a tubular drill string, which includes a bit of the type having cones and bearings rotatably mounting the cones, rotates within a drill hole while the cones engage a drilling face at the bottom of the hole and produce cuttings which include dust, a method of controlling the dust comprising injecting an air stream through the drill string, discharging a major portion of the air through the bit into the drill hole to blow cuttings from the drilling face and out the hole, discharging a minor portion of the air into the bearings to flush away foreign particles, conducting a water stream through the drill string, maintaining the water stream separate from the air stream from the upper end of the drill string to the bit, and discharging the water into the drill hole separately from the minor portion of the air where the water wets the cuttings without contacting the bearings.

6. In a rock drilling apparatus which includes a rotatable tubular drill string and a cutting bit attached to one end thereof, said cutting bit having cones and bearings rotatably mounting said cones and being adapted to engage a drilling face within a drill hole and produce cuttings which include dust, the combination therewith of an apparatus for controlling dust in the cuttings, said last-named apparatus comprising means for injecting an air stream through said drill string to said bit, said bit having



main air passages for discharging a major portion of the air into the drill hole to blow cuttings from the drilling face and out the hole and auxiliary air passages for discharging a minor portion of the air into the bearings to flush away foreign particles, and means for separately conducting a water stream through said drill string to said bit, said bit having passages for discharging the water into the drill hole separately from the minor portion of the air, whereby the water wets the cuttings without contacting the bearings.

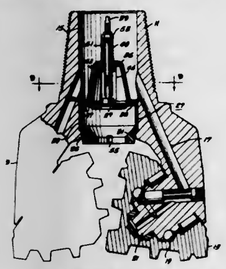
3,198,268
METHOD OF REDUCING FLUID LOSS IN WELL TREATMENT
Gordon P. Lindblom, Gerald D. Ortloff, and John T. Patton, Tulsa, Okla., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
No Drawing. Filed July 2, 1963, Ser. No. 292,480
14 Claims. (Cl. 175—72)

1. A method for reducing fluid losses to a porous subterranean formation surrounding a borehole in the earth which comprises incorporating a mixture of heteropolysaccharide and bacterial cells produced by the fermentation of an aqueous carbohydrate solution with bacteria of the genus Xanthomonas into an aqueous medium in a concentration between about 0.005 percent and about 3.0 percent by weight, injecting said medium into said borehole in contact with said porous formation, and thereafter withdrawing said medium from said borehole.

3,198,269
ROTARY DRILL BIT NONRETURN VALVE ASSEMBLY
Dan C. Nickles, Tucson, Ariz.; Freddie Lee Nickles, executrix of said Dan C. Nickles, deceased
Filed Mar. 21, 1963, Ser. No. 267,395
8 Claims. (Cl. 175—318)

1. In a rotary drill bit having a unitary body through which a longitudinal passage for drilling fluid extends, rotary cutters journalled on the lower end portion of the unitary body and extending inwardly into the lower portion of the passage so as to partially obstruct said passage, said unitary body having separate fluid courses extending

downwardly from the upper portion of said passage to the interiors of the rotary cutters for conducting drilling fluid thereto, support means extending transversely of said passage between said rotary cutters and the upper



ends of the fluid courses, and a nonreturn valve assembly mounted in said passage on the support means for permitting downward flow of fluid to the exteriors of said rotary cutters and preventing upward flow through said passage to said fluid courses.

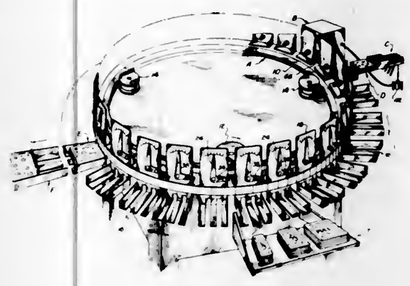
3,198,270
DRILL BIT WITH INSERT
Paul M. Horvath, Detroit, Mich., assignor to Horvath Tool and Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Mar. 26, 1963, Ser. No. 268,127
1 Claim. (Cl. 175—410)



In a drill bit of the class described, a shank portion substantially oblong in cross section providing opposed flat sides forming large capacity flutes to permit the escape of grit and dust from the hole during drilling, and a flat cutting blade secured in the end of said oblong shank portion by brazing, soldering, or the like, said blade extending angularly with respect to said flat sides between diametrically opposed corners of said oblong shank portion thereby providing an extended surface contact with said shank portion, said blade being located substantially entirely between the surfaces of said flat sides so as not to reduce the area of said flutes, said shank portion being cut away at the leading edge of the blade to provide an angular relief to facilitate sharpening of the blade.

3,198,271
TRAVELLING WEIGHT INDICATOR
Paul F. Good, Lutherville, Md., assignor to Speedco, Inc., Baltimore, Md., a corporation of Maryland
Filed Oct. 16, 1963, Ser. No. 316,573
6 Claims. (Cl. 177—45)

1. An apparatus for weighing and forwarding an article along with an indicator showing the weight of the article comprising a single weighing means for measuring the weight of the article, a conveyor adjacent said weighing means for receiving articles and having article advancing units, an indicator at each said advancing unit and movable in position therewith, and indicator setting means adjacent said conveyor and responsive to said weighing

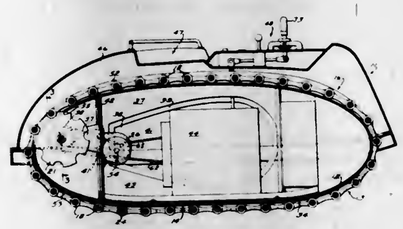


means for automatically setting said indicators to show the measured weight of said article for each article as the article advancing units and indicators pass by the weighing means and during its travel with said advancing unit along said conveyor.

3,198,272
PACKAGING MACHINE SCALES
Kenneth M. Allen and Chester H. Harper, Newberg, Oreg., assignors to Allen-Harper, Inc., Portland, Oreg., a corporation of Oregon
Filed Oct. 29, 1962, Ser. No. 233,731
9 Claims. (Cl. 177—60)

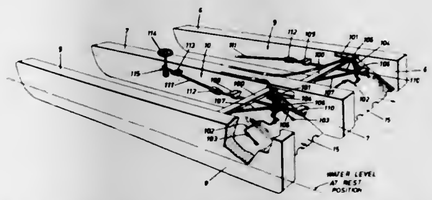
1. In a packaging machine scales,
platform means for receiving material to be weighed,
feed means for feeding material to the platform means,
yieldable means supporting the platform means,
a lever,
means mounting the lever pivotally,
means connecting the platform means to the lever means,
first magnetic means carried by the lever,
second magnetic means mounted in a fixed position such that when there is less than a predetermined weight on the platform means the first magnetic means is close to and is strongly attracted to the second magnetic means and operable as soon as said predetermined weight is on the platform means to permit the lever to be swung with a snap action to a position in which the first magnetic means is remote from the second magnetic means,
counterbalancing weighing means engaged by the lever after the lever is swung to said position in which the first magnetic means is remote from the second magnetic means,
and means operable by the lever when the lever is so swung for slowing the feed means.

3,198,273
TRACK LAYING VEHICLE
Oliver S. Turpen, Jr., Danville, Calif., assignor to Dynamech Corporation, Danville, Calif., a corporation of California
Filed Nov. 6, 1961, Ser. No. 150,373
10 Claims. (Cl. 180—6.7)



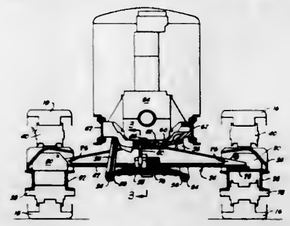
1. A self propelled vehicle comprising a body member having an exterior surface forming a generally continuous chain support, said body member having a substantially flat bottom surface adapted for disposition adjacent the ground, a pair of endless chains disposed around said support and adapted to move thereon, a plurality of rotatable ground engaging tread members carried by said chains forming a tread surface extending across the width of said body member, said rotatable tread members being positionable subjacent said bottom surface in engagement therewith and for engagement with the ground, said bottom surface having a length substantially twice as long as its width, said width of said bottom surface being substantially equal to the greatest width of said vehicle, and means for independently moving each of said chains and corresponding tread members around said track.

3,198,274
AIRCRAFT
George T. Cocksedge, R.R. 1, Niagara Falls, Ontario, Canada
Filed Mar. 19, 1963, Ser. No. 267,383
24 Claims. (Cl. 180—7)



1. A craft having a bow and stern and adapted to be propelled over surfaces at varying heights above said surfaces, said craft comprising at least three longitudinally extending spaced apart hulls, means connecting said hulls together, said hulls and said means connecting said hulls together defining at least two longitudinally extending, side-by-side channels, each of said channels having an open underside, propelling means for drawing air into said channels adjacent said bow of said craft and for propelling air through said channels towards said stern of said craft, a set of bow plate means positioned across said channels adjacent said bow of said craft, a set of stern plate means positioned across said channels adjacent said stern of said craft, said stern plate means being movable to open and close said channels adjacent said stern of said craft, means for individually moving said stern plate means to individually control the pressure in each of said channels, the displacement of said craft being such that at rest said craft floats in water with said hulls only party submerged and said channels only partly filled with water, air occupying the reminder of said channels from the bow to the stern thereof and means for longitudinally shifting at least one of said sets of plate means in said channels to alter the effective length of said channels and vary the position of the center of lift of said craft relative to the center of gravity of said craft.

3,198,275
EQUALIZER BAR FOR USE IN TRACKED VEHICLES
Clady J. Royer, 2645 NW. 26th St., Oklahoma City, Okla.
Filed May 13, 1964, Ser. No. 367,067
2 Claims. (Cl. 180—9.6)

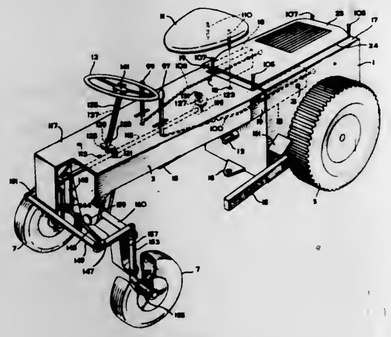


1. In a tracked vehicle of the type having a pair of horizontally spaced trucks carrying endless tracks, a main frame connected to said trucks adjacent the rear end of the said trucks, an engine carried on said main frame, a pair of spaced auxiliary springs connected to said main frame and disposed forwardly of the points of connection of said main frame to said trucks, a bracket spaced below said main frame and passing between and secured to said auxiliary springs, and at least two horizontally spaced U-bolts connected to said bracket for securing an equalizer bar thereto, the improvement which comprises:
a unitary elongated equalizer bar having its opposite ends supported freely by said trucks for sliding movement on said trucks in a transverse direction and passing beneath and supporting at its center said main frame and engine, said equalizer bar comprising:
a unitary elongated beam having a central web portion and a pair of flanges secured to the longitudinal edges of said web portion to form an I-shaped cross-section for said beam, said web portion being tapered and diminishing in width toward each of its ends and one of said flanges converging toward and intersecting the other of said flanges at each end of said beam, said beam passing through said U-bolts and over said bracket; and
a wear plate secured to the other of said flanges and extending the length of said beam to form a surface for contacting said trucks.

3,198,276
DRIVEN VEHICLE FOR OPERATING IMPLEMENTS
Donald J. Gordon, Rouge Park, Ontario, Canada, assignor, by mesne assignments, to Turnbull Elevator Limited, Toronto, Ontario, Canada, a corporation
Filed May 21, 1962, Ser. No. 196,344
8 Claims. (Cl. 180—11)

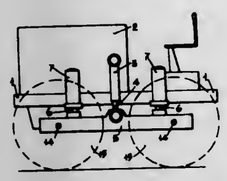
1. A driven vehicle for operating implements, comprising a power unit having reversible drive wheels for moving the power unit with respect to the earth and means for attaching implements to the power unit at one end of the power unit to move therewith, a wheel supported operator's carrier having a place for an operator to sit, and controls for the vehicle on said carrier and operable

from said place for the operator to sit, the power unit and the carrier having means, independent of the implement attaching means, for connecting the carrier to support the operator alternatively at said one end and at the op-



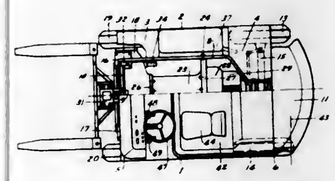
posite end of the power unit without interfering with the attachment of implements to the power unit and with the wheel of the power unit and carrier longitudinally spaced apart.

3,198,277
LEVELING CONTROL FOR VEHICLE SUSPENSION
Mario Trivero, Corso 100, Cannoni 1, Alessandria, Italy
Filed Dec. 10, 1962, Ser. No. 243,361
Claims priority, application Italy, Dec. 18, 1961, 23,029/61
5 Claims. (Cl. 180—41)



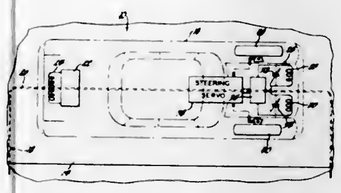
1. In a vehicle, having a frame, a pair of wheels on opposite sides of said frame, the improvement which comprises a vehicle suspension system comprising a bearing member on each side of the vehicle, means mounting said pair of wheels for vertical movement under control of a respective one of the bearing members, for each bearing member means comprising a cylinder comprising a fluid-actuated piston for varying the vertical height between the axis of rotation of the individual wheels and said frame, each piston having a downwardly extending connecting rod connecting each piston to a respective bearing member, fixed guide means on said frame for guiding the up and down movement of said bearing members, upright guide members received in said guide means on said frame for axial movement therein vertically for guiding the vertical travel of said bearing, members, sensing means for sensing of deviations of said frame from a horizontal position, and means comprising a single distributor valve actuated by said sensing means for distributing fluid under pressure to bottom of said cylinders individually and only alternatively in dependence upon which bearing member is to be lowered relative to said frame to maintain said frame horizontal.

3,198,278
FRAME FOR A FORK LIFTING VEHICLE
Otmar Kapp, Aschaffenburg, Germany, assignor to Gesellschaft für Linde's Eismaschinen Aktiengesellschaft, Hollriegelskreuth, Munich, Germany
Filed Sept. 6, 1962, Ser. No. 221,916
Claims priority, application Germany, Dec. 4, 1959, G 28,509
4 Claims. (Cl. 180—54)



1. A lift truck comprising a pair of box-shaped longitudinally extending carriers having high inner side walls, and intermediate casing having a flange on one end thereof with said flange being connected between and secured to said inner side walls, the rear ends of said inner walls being positioned toward each other, a counterweight mounted on the rear ends of said side walls, means for mounting and supporting an engine on said intermediate casing flange, and an axle housing connected to the other end of said intermediate casing and extending laterally under the front ends of said inner side walls with said front ends resting upon said housing so as to be supported thereby.

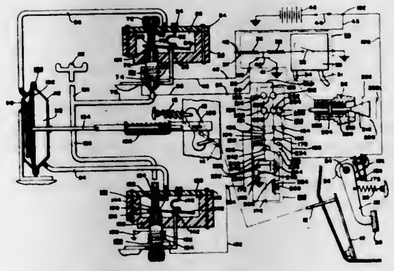
3,198,279
PASSIVE GUIDANCE SYSTEM
Clark E. Quinn, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 9, 1962, Ser. No. 208,368
10 Claims. (Cl. 180—79)



1. In a system for automatically guiding vehicles having steering means along a bidirectional roadway, the system comprising a closed loop of conductive material disposed in the roadway such that a first portion of the loop defines a desired path of vehicle travel in one direction along the roadway and a second portion of the loop defines a desired path of vehicle travel in the opposite direction along the roadway, a signal transmitter mounted on the rear of each vehicle, the transmitters mounted on the vehicles proceeding in one direction operating at a first predetermined frequency and the transmitters mounted on vehicles proceeding in the opposite direction operating at a second predetermined frequency, the transmitters being coupled to the loop to induce respective signals therein at the first and second predetermined frequencies, whereby the loop radiates an electromagnetic field above the roadway, the electromagnetic field having

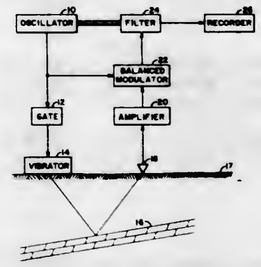
components at the first and second predetermined frequencies, a pickup mounted on the front of each vehicle and responsive to the electromagnetic field to produce a guidance signal indicative of the deviation of the vehicle from the desired path, frequency selective means connected to the pickup to pass only those signals substantially corresponding to the frequency of the transmitter mounted on that vehicle, servo means connected to the frequency selective means and to the vehicle steering means and responsive to the guidance signal to maintain the vehicle in the desired path.

3,198,280
VEHICLE SPEED CONTROLLING SYSTEM
David L. Van Ostrom, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 17, 1963, Ser. No. 273,667
9 Claims. (Cl. 180—82.1)



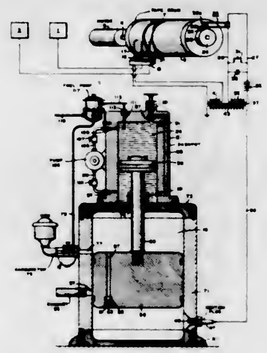
1. A control system for regulating the speed of a motor vehicle to maintain it substantially constant, said system comprising: fuel control means for the motor vehicle engine, mult-terminal electrically energizable and deenergizable first control means for controlling the operation of said fuel control means to operatively control the vehicle speed, vehicle speed responsive switching means operable between opened and closed position in accordance with actual vehicle speed error from a desired vehicle speed, a source of direct current, a normally closed manually operable first switch having one contact connected to one side of said source of direct current, a manually operable normally open second switch which is capable of being momentarily closed, second control means having first, second, third and fourth terminals, said second control means being so constructed and arranged that said first and fourth terminals are electrically connected when current is passing between said first and second terminals and between said first and fourth terminals, said second control means being operative to electrically connect said first and third terminals when current is passing only between said first and second terminals, means electrically connecting one terminal of said first control means and the first terminal of said second control means with one of the contacts of said second switch, means connecting the third terminal of said second control means with one of the contacts of said first switch, means connecting another terminal of said first control means and said fourth terminal of said second control means with one side of said speed responsive switching means, and means connecting the opposite side of said speed responsive switching means and said second terminal of said second control means with the other side of said source of direct current, said speed responsive switching means and said second control means thereby being operative to control the electrical energization and deenergization of said first control means.

3,198,281
SEISMIC METHOD OF PROSPECTING
Joseph F. Mifsud, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Aug. 8, 1960, Ser. No. 48,157
9 Claims. (Cl. 181—0.5)



6. A method of seismic prospecting comprising:
imparting into the earth a first continuous wave of finite duration whose frequency varies linerally;
generating a second continuous signal whose frequency varies the same as said first continuous wave;
continuing generating said second continuous wave at the same linear change of frequency beyond said finite duration;
detecting the reflected signal from said first wave at the surface of the earth; and
obtaining the difference in frequency between said detected reflection and said second waveform at the time said second reflection is detected.

3,198,282
INTERNAL COMBUSTION TYPE SEISMIC WAVE GENERATOR
James H. Dunaway, Bellaire, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Jan. 4, 1962, Ser. No. 164,250
7 Claims. (Cl. 181—.5)



6. Apparatus for generating a seismic impulse, comprising:
a housing member, including a base member for engaging the earth, defining a piston chamber;
a piston forming a reaction member, slidably mounted in said housing member for vertical movement in said piston chamber;

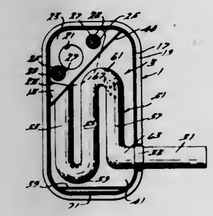
means for introducing a combustible fluid fuel into said piston chamber beneath said piston;
means in said piston chamber for igniting combustible fuel below said piston;
means for restricting the rate of downward movement of said piston; and
means for venting products of combustion from the portion of said piston chamber beneath said piston.

3,198,283
LOUD SPEAKER CONSTRUCTION
John W. Woods, Auburn, Calif., assignor to Sierra Spun Metals, Inc., Auburn, Calif., a corporation of California
Filed Nov. 9, 1962, Ser. No. 236,621
1 Claim. (Cl. 181—32)



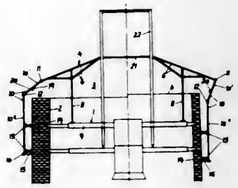
A loud speaker of the type having a frame and an energizing means mounted on said frame, the improvement comprising a cone formed of an integral metallic sheet, said cone having a hollow conical body and a radially extending rim, the rim of the cone securely fastened to the rim of said frame, and the apex of the conical body attached to said energizing means, the conical body of said cone being work hardened and formed with small closely spaced lands and grooves running in a helix as acquired by metal spinning, said rim being unworked and corrugated in coaxial corrugations as acquired by pressing, whereby the rim of the cone is substantially softer and thicker than the conical body to allow the rim of the cone to function readily as a flexible support for the conical body on the rim of the frame.

3,198,284
MUFFLER
Walter H. Powers, Racine, Wis., assignor to Walker Manufacturing Company, a corporation of Delaware
Filed Sept. 6, 1961, Ser. No. 136,360
3 Claims. (Cl. 181—54)



1. A lawn mower muffler comprising a relatively small box-like casing, means in said casing providing an inlet chamber, means in said casing providing a resonator chamber, means in said casing providing a spit chamber, and means in said casing providing a tri-flow passage separating the resonator chamber from the spit chamber and having communication with the spit chamber and opening into the inlet chamber.

3,198,285
WEATHER SHELTER FOR WORKING PLATFORM FOR THE ERECTION OF FACTORY CHIMNEYS
Wilhelm Nerlich, Duisburg-Meiderich, North Rhine-Westphalia, Germany, assignor to Deutsche Babcock und Wilcox Dampfkesselwerke AG., Oberhausen (Rhine), Germany
Filed Dec. 2, 1963, Ser. No. 327,352
Claims priority, application Germany, Dec. 1, 1962, D 40,415
6 Claims. (Cl. 182—128)



1. A tent-coverable vertically movable work platform for constructing chimneys that have a constantly decreasing diameter as they rise in height comprising a vertically positionable and climbing platform construction within and supported by the chimney being constructed; a fixed size tent supporting framework having a plurality of ends which lie in an outer diameter relative to the changing diameter of said chimney that is less than the outer base diameter of said chimney; support beams based on said platform construction and supporting said framework vertically thereabove at points on said framework that are within the small top inner diameter of said chimney to allow such framework to be raised with said climbing platform construction; and a plurality of side poles each one of which is pivotally attached to and dependent from a corresponding one of said ends, said poles having a length to extend as low as the work level of said platform construction.

3,198,286
FOLDING SAWHORSE
Homer M. Wilson, 414 W. 17th, Houston, Tex.
Filed Dec. 3, 1962, Ser. No. 241,661
6 Claims. (Cl. 182—155)

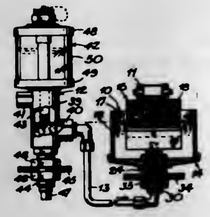


1. In a folding sawhorse, having a longitudinal plate and side members, legs pivotally mounted on said side members and movable into extended and retracted position, a center beam between side members and extending longitudinally of said plate, wings mounted on said center beam and extending over the margin of said side members, said wings having means for constantly urging same into locking position against said legs when said legs are in extended position and movable out of locking position to move said legs into retracted position.

3,198,287
UNDERSIDE LUBRICATING APPARATUS
Frank J. Lyden, 1115 N. 9th St., Manitowoc, Wis.
Filed Jan. 26, 1962, Ser. No. 169,038
7 Claims. (Cl. 184—16)

1. In an underside lubricator, an open-top container for holding a pool of oil therein, a capillary-feed oil-

applying brush disposed in said container and having its lower portion adapted to be submerged in the oil pool, said brush having bristles projecting upwardly from the container for yielding contact with the underside of a



moving member to be lubricated, a tubular conduit-forming supporting shank for said brush projecting downwardly therefrom for upflow admission of oil to said container, and means for rigidly securing said tubular shank to said container in vertically adjusted position.

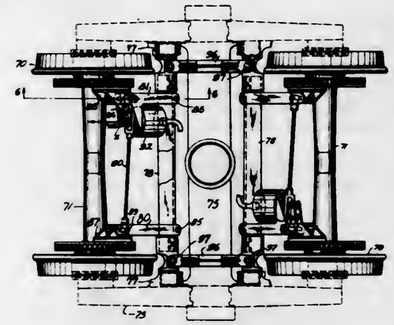
3,198,288
IMPACT ENERGY ABSORBER
Peter Presunka, Ottawa, Ontario, Canada, assignor to Mary Presunka, Fort William, Ontario, Canada
Filed Apr. 4, 1962, Ser. No. 185,161
3 Claims. (Cl. 188—1)



1. An impact energy absorber for use in coupling restraining means in a vehicle, said impact absorber comprising: a first member adapted to be secured to said vehicle; a second member adapted to be secured to said restraining means; means providing limited relative movement of one of said members with respect to the other; and a malleable element inserted into and supported along two sides and one end by one of said members and adapted to be deformed by the passing of the other of said members therethrough in response to a substantial tensile force impressed between said vehicle and said restraining means.

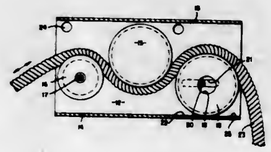
3,198,289
RAILWAY TRUCK BRAKE
Elias Orshansky, Jr., Los Angeles, Calif., assignor, by mesne assignments, to American Seal-Kap Corporation of Delaware, New York, N.Y., a corporation of Delaware
Filed Sept. 1, 1960, Ser. No. 53,427
3 Claims. (Cl. 188—59)

3. In a railway truck having an axle with wheels at the ends thereof and having truck side frames supported from the axle and having brackets extending generally lengthwise of the side frames, there being an individual brake disk adjacent each wheel and rotating therewith, a cross beam extending between said side frames with its ends slidable along said brackets lengthwise of the side frames, a pair of brake carrying bars each pivoted to said cross beam and extending from the cross beam alongside of a respective wheel and disk, a brake shoe mounted on the end of each of said bars opposite to the adjacent disk, a lever having a fulcrum support on a swinging portion of one of said bars and spaced from the brake shoe mounting end thereof, a link pivoted at one end to a swinging portion of said lever and at its other end to the other of said bars, and a fluid pressure cylinder secured to the bar mounting said lever and provided with a piston operatively



connected to another portion of said lever to thrust the brake shoes in opposite directions toward respective disks.

3,198,290
LINE SNUBBING DEVICE
Vincent Di Maio, 3546 Camille Drive, Toledo, Ohio
Filed Oct. 28, 1963, Ser. No. 319,299
7 Claims. (Cl. 188—65.1)

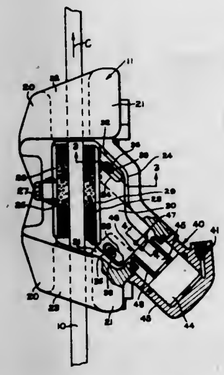


1. In a line snubbing device, an open ended housing, three sheaves arranged side by side within said housing, knurled surfaces on the peripheries of said sheaves respectively, a fixed pivot for at least one of the end sheaves, the intermediate sheave being a centerless floating sheave having a portion projecting between the end sheaves, means to limit the movement of said portion of the intermediate sheave from between the end sheaves, and a line threaded over the end sheaves and under the center sheave whereby where a load on the line adjacent the fixed sheave exceeds that of the line portion at the outer side of the other end sheave, the intermediate sheave shifts toward the fixed sheave for pinching the line against the fixed sheave.

3,198,291
SELF-ENERGIZING SPOT TYPE DISC BRAKES
Henry James Butler, Sutton Coldfield, England, assignor to Dunlop Rubber Company Limited, London County, England, a British company
Filed Apr. 4, 1963, Ser. No. 270,611
Claims priority, application Great Britain, Apr. 10, 1962 13,890/62
14 Claims. (Cl. 188—73)

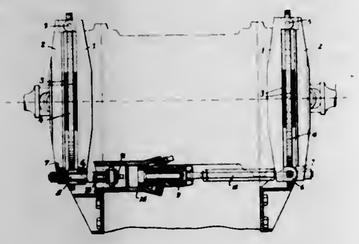
1. A disc brake which comprises a disc rotatable on a central axis, a housing having a pair of limbs spaced to define a channel for the braking surfaces of said disc, a pair of friction elements, one on each side of said disc, and supported by an adjacent limb, the limb and its associated friction element on at least one side of said disc having sidewise extensions in relative sliding association on a plane normal to a radius of said disc, one of said relatively slidable extensions having a pair of parallel cam slots oblique to the plane of said disc, and a pair of cam followers on the other extension one slidable in one of said cam slots and the other slidable in the other

of said cam slots to guide and support said friction element in movement oblique to the plane of said disc and



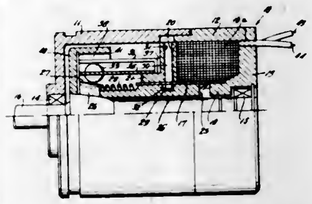
an actuating means acting between and in a direction parallel to said slots to move said friction element toward frictional contact with said disc.

3,198,292
DISC BRAKES WITH CONJUGATE JAWS
Antoine Brueder, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed May 21, 1963, Ser. No. 282,010
Claims priority, application France, May 28, 1962, 898,949, Patent 1,334,990
2 Claims. (Cl. 188—73)



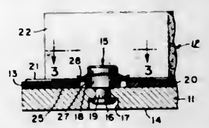
1. Twin disc brakes for vehicles, comprising two brake discs each rigid with a vehicle wheel, a pair of elongated jaws comprising an inner jaw and an outer jaw disposed on opposite sides of each disc and positioned in chordal relation to an outer peripheral portion of the respective disc, with opposite ends of the jaws extending beyond the periphery of the disc, a friction lining fixed on a central portion of each of said jaws in position to engage the respective disc, means pivotally connecting first ends of the two jaws of each pair directly to one another with a single pivotal axis, means pivotally connecting the second end of the inner jaw of each pair to a fixed portion of the vehicle, tension members pivotally connected respectively to the second ends of the outer jaws of said pairs, said tension members extending toward one another through openings in the second ends of the respective inner jaws, a floating cylinder connected to one of said tension members, a piston in said cylinder connected to the other of said tension members and means for supplying pressure fluid to said cylinder to draw said tension members and outer jaws toward one another and thereby apply said friction linings on said jaws to said discs, the reactive forces of said discs on said inner jaws being taken solely and directly by said pivotal connections of said second ends of said inner jaws to said fixed portions of the vehicle and the reaction forces of said discs on said outer jaws being taken solely and directly by the pivotal connections between the first ends of the jaws of each pair and thereby transmitted through said inner jaws to said fixed portions of the vehicle.

3,198,293
BRAKE MEANS
John J. Mathews, Levittown, Pa., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed Apr. 25, 1963, Ser. No. 275,730
6 Claims. (Cl. 188—163)



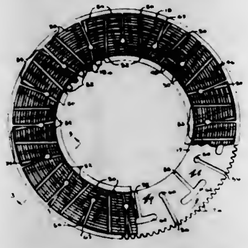
6. A device of the class described including a rotatable shaft, an armature mounted to said shaft and having a conical surface concentric with the longitudinal axis of said shaft, a spring biasing said armature to a first position, an electromagnet for moving said armature along said axis to a second position, a brake drum keyed to said shaft, a plurality of brake shoe carrying fingers arranged in a circular array about said axis as a center and extending generally parallel thereto, said fingers interposed between said conical surface and said brake drum, ball means interposed between and indirect contact with said fingers and said conical surface in direct contact with each, said armature upon movement to said second position having its said conical surface drive said balls against said fingers thereby transmitting force components which drive said brake shoes against said brake drum to halt rotation of said shaft.

3,198,294
BRAKE SHOE FASTENERS
Robert G. Stacy, Meadowbrook, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 26, 1963, Ser. No. 333,366
15 Claims. (Cl. 188—234)



1. For use in a brake shoe having a rigid backing plate, the combination comprising: a pad of rubberlike material adapted to be pressed against said plate; a brake lining adapted to press said pad against said plate; a plurality of projections adapted to extend between said plate and said brake lining; and a plurality of spring elements connected to said projections and adapted to bias said brake lining in opposition to said pad whereby said brake lining is movable from a balanced position both towards and away from said plate against the bias of said pad and said spring elements respectively.

3,198,295
FRICTION COUPLE COOLING DEVICE
Charles N. Fangman and Francis E. Kronenberg, Peoria, and Ivan R. Lamport, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Feb. 21, 1963, Ser. No. 260,178
2 Claims. (Cl. 188—264)

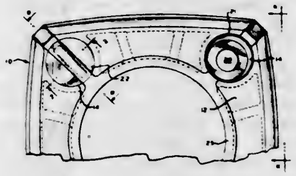


1. A rotary friction disc for a fluid cooled friction couple of the kind which cooling fluid is circulated through a stack of engaged, relatively rotatable friction discs to prevent overheating of the discs, said disc comprising an annular metal plate formed with splines about one periphery, a sintered metallic friction facing bonded to each face of the plate and extending across substantially the entire radial extent of the plate from the splines to the other periphery for minimizing differences in thermal expansion between the inner and outer portions of the plate, each of said facings having generally circumferential grooves formed therein across the entire radial extent of the facing, said circumferential grooves being multiple lead spiral grooves, each of said facings also having generally radially extending grooves formed therein at substantially equal intervals about the circumference of the facing with each radial groove in one facing disposed between two radial grooves in the other facing, the radial grooves being formed as a first and second set of parallel pairs, each pair in each set being disposed at 45° with respect to an adjacent pair in the set, and the two sets being circumferentially offset sufficient to position one groove of each pair in the second set substantially midway between a parallel pair of grooves in the first set, and radial slots extending inwardly from the outer periphery through both the facings and the metal plate and terminating in a slightly enlarged circular opening disposed in the inner annular portion of the friction disc to accommodate circumferential expansion of the outer peripheral portion of the friction disc.

3,198,296
BASE FOR POLES
Henry C. Pfaff, Jr., Summit, and Francis G. Schlosser, Carteret, N.J., assignors to Pfaff and Kendall, Newark, N.J., a corporation of New Jersey
Filed Dec. 20, 1961, Ser. No. 160,834
2 Claims. (Cl. 52—298)

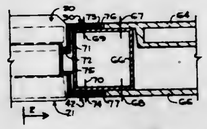
1. A base for securing a pole to a paved surface, comprising,

(a) a hollow upstanding unitary base which is supported on a substantially horizontal paved surface;
(b) said base having a substantially horizontal upper top plate section which has a centrally positioned circular opening therein having a depending annular flange to accommodate and support a pole vertically with respect to said paved surface;
(c) a plurality of inwardly recessed open top bolt and nut receptacles in said top plate section which are symmetrically disposed about said circular opening to accommodate vertically upstanding bolts which are fixedly mounted in the paved surface;
(d) said bolt and nut receptacles being disposed about said circular opening in encircling relation thereto to enable the base to be supported equally against all lateral forces exerted thereon;
(e) the bottom wall of said bolt and nut receptables being apertured so that the upper threaded section of said upstanding bolts can be passed therethrough;
(f) the depth of said bolt and nut receptacles being sufficient to permit accommodation of said upper threaded section with allowance for variance in height of the upstanding bolt;
(g) the width of said bolt and nut receptacles being sufficiently wide to accommodate a nut and to allow clearance for a wrench;



(h) the upper section of said bolt and nut receptacles having an annular shouldered portion adjacent the open top thereof;
(i) a closure plug which fits across and closes the top of each of said receptacles and has a periphery which tightly engages said annular shouldered portion, said plug having a top surface substantially flush with and having a configuration matching the adjacent top plate section to blend therewith when in place; and
(j) said closure plug having an outwardly bowed flexible center section so that the closure plug may be firmly secured in place by depressing said outwardly bowed section to thereby press the periphery thereof against the upper section of said receptacle.

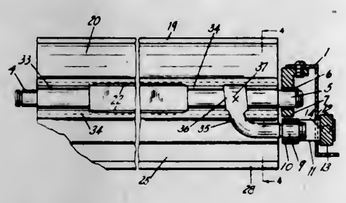
3,198,297
DOOR AND WINDOW STRUCTURES FOR BUILDINGS
Roger J. Halle, Pound Ridge, N.Y.
Original application June 22, 1953, Ser. No. 363,021. Divided and this application Nov. 21, 1963, Ser. No. 326,323
4 Claims. (Cl. 189—46)



1. In a building, in combination with a pair of spaced columns which are aligned in a wall assembly of the building and which have an identical square enveloping contour in cross-section, each column being disposed with opposite faces thereof at respectively opposite sides of the wall assembly, a door frame composed of two prefabricated, substantially congruent, unitary sub-frames applied to opposite sides of the aforesaid columns, said sub-frames each having vertical sides respectively along the columns and a portion at the top of the vertical sides extending between the columns, to define a door opening,

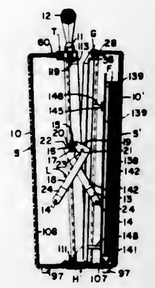
said sub-frames being mutually dimensioned and fitting together, inwardly of the opening, to form said door frame and to constitute it as a door-receiving form, each of said sub-frames having structure which faces the opening along both sides and the top, the opening-facing structure of one sub-frame including a portion which overlaps a portion of the opening-facing structure of the other sub-frame, said portions being shaped so that they may be brought into said overlapping relation upon insertion of said subframes between the columns from respectively opposite sides of the wall assembly, at least one of said sub-frames including structure extending inwardly of the opening to constitute a closure abutment for a door hung in the assembled door frame, each of said sub-frames having vertical flanges along both of its vertical sides disposed to be parallel with said wall assembly and arranged in flatwise overlapping abutment on the adjacent one of the aforesaid faces of the adjacent column, each of said flanges being dimensioned to overlap said adjacent column face by a distance equal to about one-half the width of said column face, said subframes being secured to the columns in assembled relation of the door frame, and at least one wall panel joined to one of the columns and having a flat portion overlapping one of the said faces of said last-mentioned column by about half the width thereof, said panel extending in the plane of the wall assembly adjacent said last-mentioned column face, in a direction away from the column on the other side thereof from the door frame, said overlapping panel portion and the adjoining vertical flange of one of the sub-frames being aranged so that neither overlaps the other and so that they together substantially cover said last-mentioned column face, and being shaped and dimensioned for each to cover only one-half of the width of the column face, in a manner characteristic of interchangeability of such panel and such door sub-frame in respect to the attachment of such panels and door frames to columns.

3,198,298
SHUTTER SLAT AND SLAT MOUNTING
David R. Ferris, Cadillac, Mich., assignor to Kysor Heater Co., Cadillac, Mich.
Filed Sept. 13, 1961, Ser. No. 137,917
2 Claims. (Cl. 189—62)



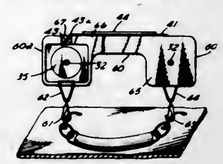
1. A radiator shutter comprising a plurality of slots pivotally mounted at their ends on opposite sides of a frame by pintles on the slats,
said pintles being like parts having inner portions of uniform non-circular cross section with outer ends of circular cross section projecting beyond the ends of the slats as pivots,
crank arms on one end of the slats projecting alongside of the pintles and engaged with an operating bar common to all the pintles and slats,
said crank arms being angled pieces having their inner ends secured by welding to the non-circular portions of one of said pintles,
said slats having spaced longitudinal stiffening ribs on their back side deformed into retaining engagement with the non-circular portions of said pintles.

3,198,299
LUGGAGE CASES
Willard G. Axtell, Englewood, Colo., Melvin H. Best, Pasadena, and Clair A. Samhammer, Altadena, Calif., assignors, by mesne assignments, to Samsonite Corporation, Denver, Colo., a corporation of Colorado
Filed Mar. 19, 1964, Ser. No. 364,873
Claims priority, application Great Britain, Oct. 4, 1963
20 Claims. (Cl. 190—41)



1. A luggage case comprising:
two opposed concave shells, each having a top wall, a bottom wall, end walls and a side wall;
a first frame having top, bottom and end channels extending around the peripheral edge of one shell and attached thereto, at least the major portion of the top channel being spaced outwardly from the end channels;
a second frame having top, bottom and end channels extending around the peripheral edge of the other shell and attached thereto, at least the major portion of the top channel being spaced outwardly from the end channels;
said first frame having a tongue extending from said top channel thereof to provide a recess along at least a major portion of the top of said luggage case;
said frames having interfitting means for engagement when said luggage case is closed; and
hinge means pivoting said frames together at the bottom of said case.

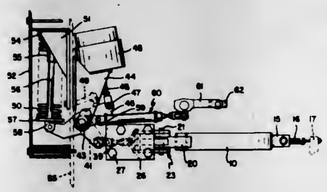
3,198,300
HANDLE HAVING A RETRACTABLE STRAP
George K. Tuttle, 5110 Hiawatha Ave., Minneapolis, Minn.
Filed May 31, 1963, Ser. No. 284,592
2 Claims. (Cl. 190—57)



1. Extendable support apparatus to be used with a piece of luggage comprising:
(a) a hollow housing constructed and arranged in the shape of a luggage handle, said housing including a pair of spaced sides;
(b) a pair of attaching members secured to said hollow housing at its end portions and being adaptable to releasably engage cooperating luggage ring members;
(c) a pair of shafts securely disposed transversely between said housing sides at its end portions, said shafts having bearing surfaces formed thereon intermediate therein;

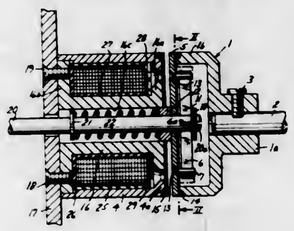
(d) a pair of hollow spools, each of which respectively has extending flange portions with bores formed through said spools for engaging said bearing surfaces of said shafts;
(e) a pair of springs, each of which is respectively wound around said shaft within said hollow center of said spool and has one end secured to its corresponding shaft and the other end secured to its corresponding spool, said springs constantly urging said spools to rotate in one direction;
(f) and a strap wound around said spools transversely between said flange portions, said strap being secured to said spools and extending through the upper side of said housing, said strap upon being extended rotating said spools and coiling said springs, and upon being retracted allowing said spools to rotate in said one direction within said housing.

3,198,301
CLUTCH AND BRAKE WITH RESILIENT OPERATOR
Kenneth W. Randall, Indianapolis, Ind., assignor to Insley Manufacturing Corporation, Indianapolis, Ind., a corporation of Indiana
Original application Sept. 13, 1961, Ser. No. 137,881. Divided and this application Apr. 4, 1963, Ser. No. 270,593
1 Claim. (Cl. 192—17)



A brake and clutch assembly for a heavy traveling machine, such as a crane, comprising a brake, a jaw clutch including an axially shiftable driven jaw member, common means for actuating said brake and driven jaw member in a predetermined manner, said common means including an oscillatable sleeve, separate means to rock said sleeve respectively in one direction or the other for selectively actuating said brake and driven jaw member, said common means including link and lever means operatively connected to said driven jaw member and brake respectively, said link and lever means extending to the driven jaw member comprising an actuating arm rigid with said sleeve and extending outwardly therefrom for oscillating movements therewith, an elongate tubular housing, a pivotal connection between one end of said housing and said rigid arm, a rod extending inside of said housing from the end opposite to that connected to said rigid arm, an operating member for said driven jaw member effective upon oscillation of said rigid arm in one direction to shift said jaw member into clutching engagement and in the opposite direction to shift said jaw member out of clutching engagement, a pivotal connection between the opposite end of said rod and said operating member, abutment means on the inner end portion of said rod which is disposed within said housing, a sleeve within said housing and in which said rod is slideable and against which one end of said abutment means bears when said rod is moved axially in a direction outwardly of said housing, a washer against which said sleeve is adapted to abut, stop means outside of said first sleeve and against which said washer is also adapted to bear, a helical coil spring about said rod and bearing at one end against the inner end of said washer, a shoulder on said rod disposed within said tubular housing and spaced axially from said washer, a second washer on said rod providing a seat for the opposite end of said coil spring and abutting against said shoulder, and an abutment for limiting the movement of said second washer in a direction away from said first washer, the spring arrangement being such that cushioning takes place in either direction of oscillation of said rigid actuating arm and the coil spring is compressed upon movement of the rod in either direction.

3,198,302
ELECTROMAGNETIC CLUTCH AND BRAKE WITH RESILIENT TRANSMITTING MEANS
Heinz-Dieter Janzen, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany
Filed Apr. 1, 1963, Ser. No. 269,360
Claims priority, application Germany, Apr. 4, 1962, O 8,668
10 Claims. (Cl. 192—18)



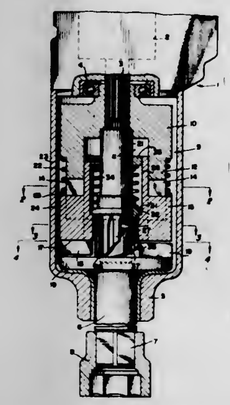
1. An axial clutch and brake comprising a rotary driving shaft including a rotor element; a rotary driven member coaxial with said driving shaft and having a portion adjacent to said rotor element; a fixed braking element adjacent to but spaced from said rotor element; a coupling disk member rotatably and axially movably surrounding said portion of the driven member intermediate said elements and normally engaging with friction one of said elements; resilient motion transmitting means connecting said disk member with said driven member so that the disk member is free to move axially of said driven member but rotates said driven member in response to rotational movement imparted to said disk by said rotor element when said disk member and said rotor element are in engagement, said motion transmitting means comprising a leaf spring mounted on one of said members and engaging the other of said members slidably in radial and axial directions; and electromagnetic shifting means coaxial with and surrounding said rotary driven member for moving said disk member into frictional engagement with the other of said elements so that the disk member drives said driven member while engaging said rotor element and that the driven shaft is held against rotation when the disk member engages said braking element.

3,198,303
ROTARY IMPACT TOOL
Christopher K. Brown, Camp Hill, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 6, 1964, Ser. No. 338,556
13 Claims. (Cl. 192—30.5)

1. A rotary impact tool comprising:
(a) a casing;
(b) a rotary motor in said casing;
(c) a motor and a rotor driven by said motor;
(d) an anvil member rotatably mounted on said casing adjacent said rotor and having a spindle adapted to apply a series of rotary impacts to a workpiece;
(e) an anvil tooth integrally fixed on said anvil member adapted to receive rotary impacts;

(f) a hammer member including an integral hammer tooth, means mounting said hammer tooth on said rotor in a manner causing the hammer member to rotate with the rotor and allowing the hammer member to move on said rotor toward and away from said anvil member between alternate positions, one position being an impact position wherein the hammer tooth is located to strike said anvil tooth as said rotor turns and the other position being a non-impact position wherein the hammer tooth clears said anvil tooth as the rotor turns;

(g) means biasing said hammer member toward its impact position;

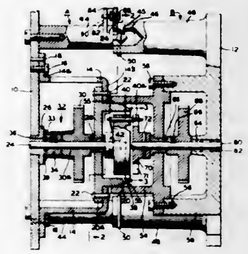


(h) a pair of cam elements cooperating to periodically bias said hammer member toward its non-impact position as said rotor turns relative to said anvil member, one of said cam elements being connected to said anvil member and the other cam element being connected to said hammer member, said cam elements being normally located relative to each other to cooperate and bias said hammer member toward said non-impact position as said hammer tooth approaches and passes said anvil tooth;

(i) and a resilient means interconnecting at least one of said cam elements to its interconnecting member so that that cam element can move relative to its interconnecting member when said hammer tooth approaches said anvil tooth at high speed whereby said hammer tooth is not moved out of said impact position soon enough to avoid striking said anvil tooth.

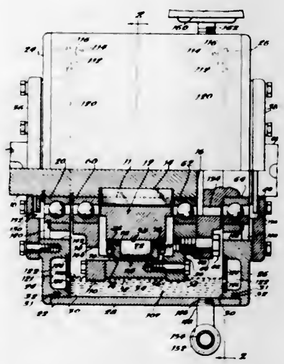
3,198,304
MECHANICAL COUPLING DEVICE HAVING ONE WAY CLUTCH AND SHAFT ALIGNING MEANS
Joseph L. Rosenblum, South Norwalk, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 13, 1962, Ser. No. 244,461
12 Claims. (Cl. 192—48)

2. A device for coupling a driving shaft of a first unit to a driven shaft of a second unit, said device comprising; a first shaft aligning member secured to said first unit; a second shaft aligning member secured to said second unit; said members being configurated and positioned for mating engagement one with the other to precisely align said shafts, one with the other, and prevent radial movement therebetween; means operative for automatically and releasably securing said aligned shafts to each other for bidirectional rotational movement in unison, said shaft securing means being actuated to securing condition upon initial bi-directional rotative movement of said shafts with respect to each other; a driving gear rotatively mounted onto said driving shaft, and an over-running clutch for



establishing driving engagement of said driving gear with said driving shaft only under conditions where said driving gear is driven in a certain direction.

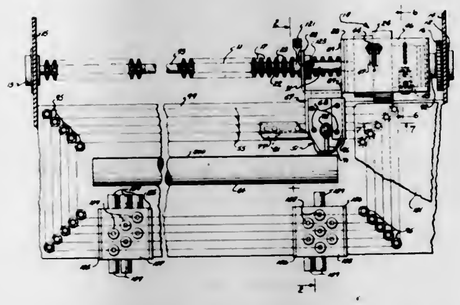
3,198,305
ONE-WAY CLUTCH WITH LUBRICANT CONTAINING HOUSING
Joseph A. Marland, Elm and Washington Aves., La Grange, Ill., and Charles W. Hill, La Grange, Ill., said Hill assignor to said Marland
Filed July 16, 1963, Ser. No. 295,448
10 Claims. (Cl. 192—113)



1. A one-way clutch mechanism for coupling an input shaft to an output shaft separately journaled on a supporting base for rotation about a common axis comprising an output clutch member drivingly connected to said output shaft, an input clutch member drivingly connected to said input shaft, and clutching means interposed between said clutch members for coupling together said clutch members on rotation of said input shaft in a first direction and for uncoupling said clutch members on rotation of said input shaft in the opposed direction, a housing enclosing said clutch mechanism having a first opening encompassing the first shaft and a second opening encompassing the second shaft, a first bearing means mounted on the housing in the first opening and on the first shaft and a second bearing means mounted on the housing in the second opening and on the second shaft, said housing being suspended from the support base and rotatably supported by said first and second shafts, a lubricating means

for the clutch members and clutching means disposed within the housing including a body of liquid lubricant disposed in the lowest portion of the housing and means for conveying portions of said body to the clutching means, a rigid arm mounted on the housing and extending in a direction having a component normal to the axis of both of said shafts, and a resilient snubbing member mounted on and extending from the arm and adapted to abut a stop on the supporting base to prevent the housing from rotating in the direction of rotation of the shafts.

3,198,306
WIRE MATRIX PRINTER
Robert A. Bachman, La Crescenta, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Mar. 28, 1962, Ser. No. 184,639
12 Claims. (Cl. 197—1)



1. A wire printing mechanism comprising means for supporting a record medium at a printing station, a guide plate adjacent said station, said guide plate having a pair of first and second guideways therein, said guideways extending in directions intersecting each other, said first guideway being at least substantially straight, a printing wire guided for endwise movement in said guideways, said wire being bent back upon itself to form a first section slideable in said first guideway and a second section slideable in said second guideway, said first section terminating in a print head, a spring element on said plate, the movable portion of said spring element being connected to said wire intermediate said first and second sections thereof, and said second wire section being effective when pulled through said second guideway to push said first wire section along said first guideway against the action of said spring element whereby to project said print head against said record medium at said printing station.

3,198,307
TYPEWRITER RIBBON SPOOL
John F. Kloski, West Hartford, Conn., assignor to Royal McBee Corporation, New York, N.Y., a corporation of New York
Filed Feb. 17, 1964, Ser. No. 345,417
4 Claims. (Cl. 197—175)

1. As an article of manufacture, a molded plastic ribbon spool comprising

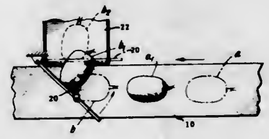
a substantially cylindrical hollow core and an integral coaxial circular flange, said flange having a pair of spaced pivot housings formed thereon at opposite ends respectively of a trip lever receiving slot formed in said flange,

and a ribbon reversing mechanism trip lever extending through said slot and having horizontal and vertical arms and also having a pair of pivots disposed respectively in said housings to pivotally mount said lever on said spool, said horizontal lever arm comprising a pair of spaced legs each joined at one end to one of said lever pivots and connected at their other ends to a base portion, said horizontal lever arm also comprising a narrow spring member secured at one end to said base portion and lying in the space between said pair of spaced legs, said spring member extending toward but with its free



end lying short of the root of said vertical arm, said vertical arm being adapted to be engaged by a ribbon wound on said spool to hold said trip lever in non-reversing position, said spring member flexibly engaging a portion of the bottom of said flange when said lever is in non-reversing position thereby to bias said lever toward reversing position; the spaces between said pair of spaced legs being provided to reduce the inertia of said horizontal arm.

3,198,308
CONVEYOR SNATCHER
Theodore W. Driesch and William H. Wood, Roanoke, Va., assignors to General Electric Company, a corporation of New York
Filed May 24, 1962, Ser. No. 197,406
7 Claims. (Cl. 198—24)

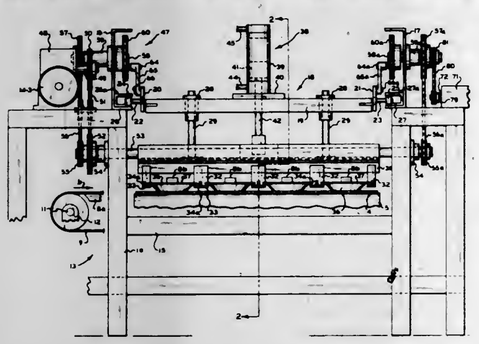


1. A mechanism for unloading a series of objects one at a time from a conveyor belt moving at a relatively high speed comprising: a movable diverter positioned along the path of movement of said belt, and means for moving said diverter repetitively into said path to first intercept each object and to momentarily arrest the continued movement of the object in said path, said means also withdrawing said diverter from said path to then remove each object so arrested from said belt independently of the other objects in the series of objects.

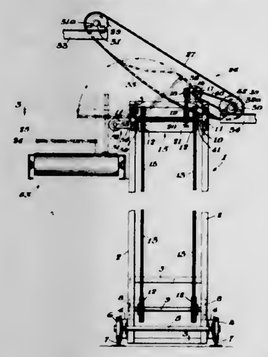
3,198,309
TRANSFER APPARATUS
Paul K. Ogawa, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Feb. 14, 1963, Ser. No. 258,518
8 Claims. (Cl. 198—24)

1. Apparatus for transferring an article from a first position to a second position, said apparatus comprising carriage means; at least one pair of substantially parallel supporting members free at corresponding ends carried by said carriage means and spaced apart from one another a distance to engage and support said article; means for lifting said carriage means at said first position to effect lifting of said article; means for transferring said carriage means in a direction from said first position toward said second position and beyond; means at said

second position located between said support members for engaging said article and removing the latter from said support members as said carriage means is transferred in said direction beyond said second position; and means for returning said carriage means to said first position.

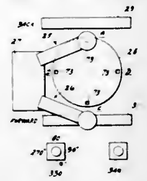


3,198,310
PAN UNSTACKING APPARATUS
Peter H. Valentyne, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Apr. 23, 1962, Ser. No. 189,507
4 Claims. (Cl. 198—33)



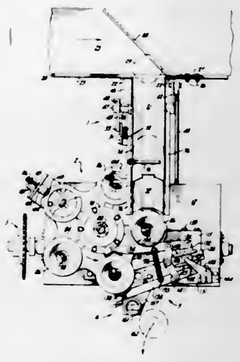
1. Apparatus for upsetting a pan or the like having a projection extending from at least one side thereof, said apparatus comprising means for supporting said pan with said projection at a predetermined level; barrier means on said supporting means engageable with the opposite side of said pan; a pair of turning members spaced apart from one another a distance to more than span said supporting means; means mounting said turning members at different levels above said supporting means and on opposite sides thereof, the lower one of said turning members being at the side of said supporting means corresponding to said one side of said pan; endless, flexible means trained around said turning members and forming upper and lower runs inclined upwardly and transversely of said supporting means, said lower run being unengaged between said turning members and the spacing between said turning members being less than the length of said lower run whereby the latter is slack; hook-shaped means carried by said endless means for movement therewith; and means for driving said endless means in such direction that said hook-shaped means traverses the lower run of said endless means in a direction from said one side of said supporting means toward the other, whereby said hook-shaped means may engage said projection from beneath the latter to lift said pan and rock the latter through an arc of more than 90° about said barrier means and upset said pan, whereupon said hook-shaped means releases said projection and gravity acts on said pan to continue rocking movement thereof, the slackness of said lower run of said endless means being at least as great as that required to permit such rocking of said pan.

3,198,311
APPARATUS FOR TRANSFERRING AND ORIENTING ARTICLES
Peter A. Lajole, Oley, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 24, 1962, Ser. No. 225,792
14 Claims. (Cl. 198—33)



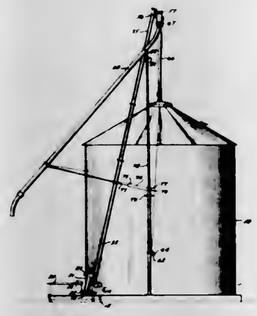
1. Apparatus for transferring and orienting articles which comprises:
- means for transporting articles between a first and a second station,
- a first pickup means operable at the first station for transferring unoriented articles from a supply of the same to the transporting means,
- a receptacle at the second station for receiving oriented articles,
- a second pickup means operable at the second station for transferring an article from the transporting means to the receptacle while simultaneously orienting the same, and
- means cooperatively associated with the second pickup means for transmitting orientation information thereto.

3,198,312
FRUIT ORIENTOR
Malcolm W. Loveland, Orinda, Calif., assignor to Atlas-Pacific Engineering Company, Emeryville, Calif., a corporation of California
Filed Nov. 5, 1962, Ser. No. 235,320
4 Claims. (Cl. 198—33)



1. A fruit orientor comprising: an endless conveyor provided with fruit-receiving cups spaced on a predetermined modulus and each provided on its bottom with a central hole; a fruit-tumbling wheel eccentrically mounted adjacent the bottom of each cup centrally thereof and for movement therewith and protruding into its associated hole; means for continuously rotating said wheels; and means for moving said endless conveyor in increments equal to said modulus and for causing said conveyor to dwell at the terminus of each increment of movement.

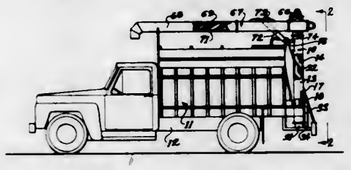
3,198,313
GRAIN BIN LOADER AND UNLOADER
William R. Long, Tarboro, N.C., assignor to Long Manufacturing Company, Tarboro, N.C.
Filed July 26, 1962, Ser. No. 212,667
4 Claims. (Cl. 198—64)



1. Grain bin loading and unloading mechanism comprising a loading hopper adapted to be embedded in the earth near the grain bins to be loaded and unloaded, said hopper having inclined wall structure defining a sump into which grain can flow by gravity, an auger-type conveyor in said hopper for elevating grain from said sump to the top of the hopper, a second auger-type conveyor overlapping and in communication with the first and having its upper end at an elevation above the grain bin, a motor located at the joint between the conveyors and having a motor shaft, means for driving said conveyors directly from opposite ends of said motor shaft, means whereby the drive may be imparted to the first conveyor ahead of the second, a movable control member actuatable by the movement of the grain controlling the operation of the motor and constructed to stop the motor when the flow of grain is exhausted, a valve housing connected to the second conveyor at its end remote from the first conveyor, said valve housing having a series of discharge openings, a series of pipes leading from said discharge openings including to a grain bin, and a selector valve in said valve housing for determining the path of flow of the grain.

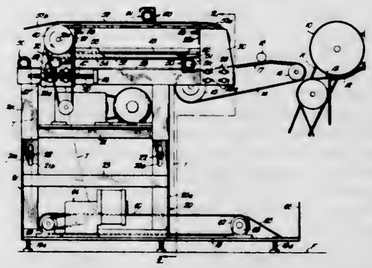
3,198,314
CONVEYOR FOR COMMINUTED MATERIALS
Wilbur R. Duram, Birmingham, Ala., assignor to Fontaine Truck Equipment Company, Incorporated, a corporation of Alabama
Filed Oct. 14, 1963, Ser. No. 315,935
1 Claim. (Cl. 198—88)

In apparatus for discharging comminuted material from a bin and the like,
- (a) a generally vertically arranged conveyor embodying an outer vertical tube mounted for rotation about its longitudinal axis and a vertical power driven auger therein for elevating material,
- (b) means to rotate said vertical tube to selected angular positions,
- (c) means to deliver material into the lower part of the vertical tube for upward movement by the vertical auger,
- (d) a laterally directed tube pivotally connected at one end to and communicating with the vertical tube adjacent the top thereof into which material is delivered by the vertical auger,
- (e) a material discharge tube connected rigidly at one end to and communicating with the other end of said laterally directed tube for receiving material delivered therefrom whereby said material discharge tube is adapted for movement with said laterally directed tube in a plane parallel to the longitudinal axis of said vertical tube,
- (f) a power unit interposed between said vertical tube and said material discharge tube to move said material discharge tube relative to said vertical tube,



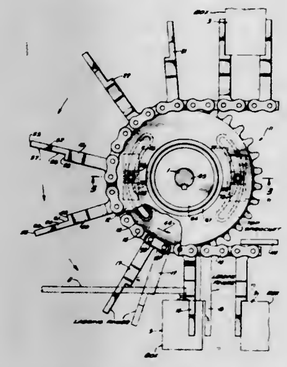
- (g) an auger mounted within the discharge tube to convey material therethrough,
- (h) a gear box having a power take-off sprocket adjacent the top of the vertical tube and driven by the vertical auger therein,
- (i) a gear box having a power input sprocket adjacent said one end of the discharge tube operatively connected to transmit power to and drive the auger therein,
- (j) a pair of idler power transmitting sprockets mounted for rotation between the vertical and discharge tubes and rotatable about said laterally directed tube,
- (k) means limiting axial movement of said power transmitting sprockets relative to said laterally directed tube, and
- (l) sprocket chains to transmit power from said power take-off means to said power input means through said idler power transmitting sprockets.

3,198,315
METHOD AND APPARATUS FOR FEEDING FLATWORK IRONERS
Arch O. Long, Sr., 1311 Tangier Way, Sarasota, Fla.
Filed Jan. 25, 1962, Ser. No. 168,674
14 Claims. (Cl. 198—102)



1. Apparatus for feeding flatwork to the conveying belt of an ironing machine comprising a rod member, and means for supporting and advancing said rod member from a point remote from said belt to engagement with the belt and thereafter roll it on the surface of the belt for a selected distance from the contact point.

3,198,316
SPROCKET DRIVE FOR CARTON CONVEYOR
Elbert L. Bivans, Glendale, Calif., assignor to Bivans Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 4, 1963, Ser. No. 262,654
9 Claims. (Cl. 198—179)



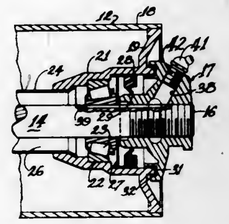
1. A sprocket device having a chain having link members having a hinge connection by means of pins carrying bushings spaced opposed sections of the chain, in combination with a finger bracket having a base having spaced bearing holes mounted on adjacent ones of said pins, means for retaining said base on said pins, and sprocket means having grooves of different radial distances from the center of said sprocket for tilting a finger on said bracket in a lagging direction.

3,198,317
CONVEYOR APPARATUS
Samuel Davis Robins, 114 Berkshire Place, Lawrence, N.Y.
Filed July 13, 1962, Ser. No. 209,648
8 Claims. (Cl. 198—192)



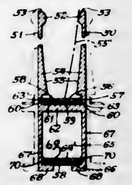
1. An apparatus for use in combination with a conveyor framework provided with transversely spaced frame elements, said apparatus comprising: a nonrotating, flexible catenary shaft of uniform diameter for suspension between said frame elements; and a belt supporting tubular roll of flexible one-piece construction having a uniform inside diameter closely and concentrically spaced about said shaft throughout substantially the entire length of both said roll and said shaft, said roll being adapted to assume a catenary shape for accommodating the curved section of a troughed conveyor belt, said roll containing throughout its length a flexible bushing for journal engagement with said nonrotating catenary shaft, and a plurality of enlarged diameter disc portions integrally formed on said roll, said discs being positioned in spaced relation along substantially the entire length of said roll and wherein said bearing surface of said roll is formed of a first helically wound metal band wound in a clockwise direction and a second helically wound metal band wound concentrically with said first band in a counterclockwise direction.

3,198,318
IDLER ROLL ASSEMBLY
Billy H. Brown, Winfield, Ala., assignor to Continental Conveyor & Equipment Company, a corporation of Alabama
Filed Apr. 20, 1964, Ser. No. 360,844
6 Claims. (Cl. 198—192)



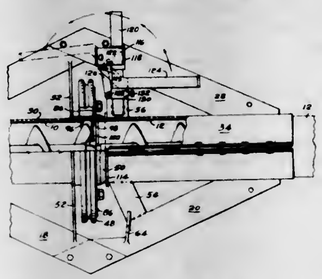
1. In an idler roll assembly for a belt conveyor in which the ends of the idler roll are supported by upstanding frame members:
(a) a shaft extending through said roll and having threaded end portions,
(b) a supporting nut threadedly engaging each of said threaded end portions,
(c) bearing units mounted between the roll and the shaft inwardly of the ends of each supporting nut for supporting the roll for rotation about said shaft,
(d) a washer surrounding and carried by said shaft between each nut and the bearing unit adjacent thereto,
(e) a resilient seal carried by said roll and having an annular lip in position to surround and slidably engage each nut outwardly of said washer to define with the adjacent portions of said nut and washer an inner labyrinth seal,
(f) an outer labyrinth seal between each nut and an adjacent portion of said roll,
(g) an outwardly projecting lug carried by each nut in position to extend alongside the upstanding frame member adjacent thereto, and
(h) a retaining element securing each lug to the frame member adjacent thereto to provide positive holding of the roll in said frame members.

3,198,319
CONVEYOR STRUCTURE
Frank J.-Blume, 2726 N. Ashland Ave., Chicago, Ill.
Filed Sept. 15, 1961, Ser. No. 140,645
4 Claims. (Cl. 198—204)



1. In a conveyor for feeding documents, an elongated channel formed of soft erodable metal such as aluminum and comprising a pair of laterally spaced side portions for engaging and supporting a document therebetween, said channel having an intermediate portion flanked by said side portions, said intermediate portion having a bottom and upright sides defining an upwardly open guideway, guide means on said side portions spaced above said bottom of the intermediate portion, a hard metal liner generally U-shaped in cross-section having a bottom section overlying the bottom of said intermediate portion and having upright side walls disposed between said sides of said intermediate portion, at least portions of said side walls being disposed in vertically overlapped relation and interlocked with the guide means against separation in at least one vertical direction, said guide means extending laterally with respect to said side walls, and a rubberized fabric belt supported on said liner, said belt and liner having vertical edges elongated lengthwise of the belt and engageable with each other for guiding the belt out of contact with the metal side portion of the channel to prevent production of soot particles through abrasion between the belt and the channel, said liner and channel being disposed in mutually supporting relation, said liner providing a relatively low coefficient of friction for the belt to accommodate sliding thereof thereupon whereby inhibiting the development of static electrical charges on the belt and attraction thereby of said soot particles.

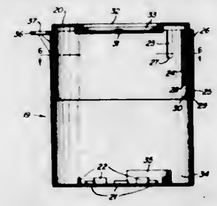
3,198,320
CENTER DRIVEN AUGER CONVEYOR
Martin Mayrath, Dallas, Tex., and Charlie E. Pike and John W. Kendall, Dodge City, Kans., assignors to Mayrath Machinery Co., Inc., a corporation of Kansas
Filed Oct. 5, 1962, Ser. No. 228,678
7 Claims. (Cl. 198—213)



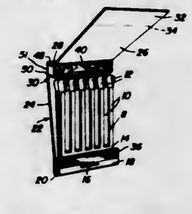
1. An auger conveyor comprising a pair of cylindrical auger tube sections, an outrigged framework connecting said sections with respective ends thereof in spaced, juxtaposed, confronting and axially aligned relationship, an auger drive pulley journalled about one of said ends and having a relatively thin web plate presenting a substantially clear central aperture of axial width conforming to the thickness of said web plate and conforming to the inside diameter of said sections, said web plate substantially filling the space between said sections; an auger flight passing through said tube sections and through said central aperture, and relatively narrow spoke means, constituted by an integral continuation of said web plate, connecting said web plate and said auger flight.

3,198,321
LANTERN CONTAINER
Frank D. Politano, Bountiful, Utah
(3443 Honeycutt Road, Salt Lake City, Utah)
Filed June 12, 1963, Ser. No. 287,368
5 Claims. (Cl. 206—1)

1. A container for camp lanterns having a circular base and a threaded top post comprising: a bucket; a plurality of grooves extending from the top rim of the bucket downwardly along the bucket wall to varying depths; a lid adapted to telescopingly seal said bucket; a tang on the telescoping surface of the lid, said tang being adapted to individually mate with each of the grooves thereby limiting telescoping movement between the bucket and lid; a circular groove formed on the inside bottom of the bucket and adapted to receive the base of a camp lantern; a hole through said lid adapted to receive the threaded top post of a camp lantern; and a circular recess formed in the top surface of said lid in surrounding relationship to said hole, said recess being just large enough to surround the base of a camp lantern and having sufficient depth that a nut screwed onto said top post and into engagement with the surface of said recess does not extend upwardly beyond the top surface of said lid.



3,198,322
MATCHBOOK AND GIVE-AWAY ARTICLE CONTAINER COMBINED
Robert L. Athnos, % Kroc Radio, 100 1st Ave. Bldg., Rochester, Minn.
Filed May 14, 1963, Ser. No. 280,223
3 Claims. (Cl. 206—29)

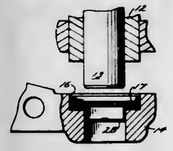


2. A throw-away matchbook comprising: a sheet cardboard folder embodying a back cover panel provided at a lower end with a return-bent book match anchoring flap, a book of matches having a lower end thereof interposed and fastened between said anchoring flap and the corresponding lower end of said back cover panel, said back cover panel being of a length greater than the length of said book of matches and the upper end portion extending beyond the heads of the matches and being joined by a first folding crease to a laterally directed front cover panel assembling and connecting web, a front cover panel opposed to said back cover panel and having an upper end joined to a cooperating edge of said web by a second folding crease, the lower end of said front cover panel being free and proximal to and being adapted to be tucked between said anchoring flap and book of matches, said web and coacting upper end portions of said cover panels providing a pocket above the heads of said matches, and a small article storing compartment wholly located in said pocket, said compartment comprising an elongated rectangular frame, one longitudinal frame member being superimposed upon and detachably joined to an interior surface of said web, the respective open sides of said frame being spanned and normally closed by the respective upper end portions of said back and front cover panels.

3,198,323
PACKAGE OF ANNULAR SEALS
Robert E. Alberti, York, and Augustus C. Martyn, Thomasville, Pa., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Feb. 9, 1962, Ser. No. 172,274
3 Claims. (Cl. 206—46)

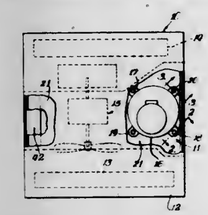
2. A package comprising two aligned annular seal elements and including means to hold said elements in an annular recess at one end of a bore, said means including

a cylindrical element of paper-like material extending away from the seals, the outer surface of said cylindrical element, along at least its major length, having a diameter less than the diameter of the central aperture in said seals,



said cylindrical member being of a size to provide an interference fit with the bore, and means integral with the cylindrical element to secure said cylindrical element to the seal elements in axial alignment with them and to hold the seal elements in axial alignment with each other.

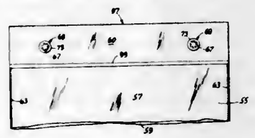
3,198,324
COMPRESSOR MOUNTING STRUCTURE FOR USE IN AIR CONDITIONER APPARATUS
Paul C. Kallenbach, Howard M. Oglesby, and Eugene F. Thomson, Evansville, Ind., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Aug. 15, 1962, Ser. No. 217,227
11 Claims. (Cl. 206—46)



1. In an air conditioner apparatus, an outer housing defining the normal enclosure of the apparatus when the apparatus is installed and requiring the installation of the housing alone as a first step in the installation of the apparatus, a chassis removably associated with the housing, and a compressor, structure for mounting the compressor on the chassis including means for resiliently mounting the compressor to the chassis in an operating arrangement of the apparatus, means for selectively overcoming the resilient mounting means and releasab y rigidly securing the compressor to the chassis in a shipping arrangement of the apparatus, and means precluding removal of the chassis from the housing to prevent disposing the apparatus in the operating arrangement until said rigid securing means is released.

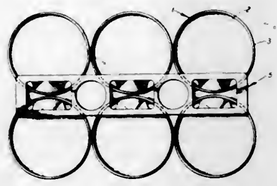
3,198,325
BAG PACKAGE
James White, Fremont, Calif., assignor to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri
Original application Aug. 12, 1960, Ser. No. 49,188. Divided and this application Apr. 24, 1963, Ser. No. 275,255
1 Claim. (Cl. 206—57)

A packet comprising a stack of open-mouth plastic bags, each bag having a front wall and a back wall, the back wall of each bag having an upper end portion extending beyond the front wall at the mouth of the bag, said upper end portion of the back wall having an upper edge extending straight across the bag and the front wall of each bag having an upper edge extending straight across the bag for the full width of the bag below and parallel to the upper edge of said upper end portion of the back wall, the upper edge of the front wall being wholly free of the back wall between the sides of the bag, each bag having a pair of openings in said upper end portion of its back wall adjacent the upper corners thereof and above the upper edge of the front wall, said bags being stacked with their edges substantially in register and with said openings substantially in register, a relatively rigid backing member backing the back wall of the last bag of the stack and having a width greater than the distance between said openings, a pair of fasteners ex-



tending from said backing member through said openings and having heads at their forward ends larger than said openings for holding the bags in packeted assembly on said fasteners and on the backing member, the front wall of each bag being free of the fasteners and each bag in the packet being free of the other bags in the packet apart from said fasteners, and each bag having a line of weakness in said back wall extending across the back wall adjacent the upper edge of the front wall and below said fasteners.

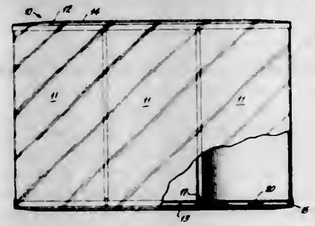
3,198,326
MULTI-CAN PACKAGE AND CONNECTOR FOR CANS
Rex L. Brunsing, San Francisco, Calif., assignor of three percent to Walter Kieckhefer and four percent to Gordon A. Coats and Patricia A. Coats
Filed Aug. 4, 1960, Ser. No. 47,433
4 Claims. (Cl. 206—65)



1. A connector for holding one of the corresponding ends of a pair of cylindrical cans together in a position in close side by side relation and which ends have heads closing said ends and annular chimes projecting radially and axially outwardly of said cans around said heads, said connector comprising: a member adapted to extend across the axially outwardly facing surfaces of the adjacent portions of said chimes that face away from said pair of cans axially thereof when said pair of cans are in said position, a rib integral with said member rigid relative thereto adapted to be positioned between and in engagement with the adjacent sides of said pair of cans and in engagement with the axially inwardly facing surfaces of said chimes that are on the sides of said chimes opposite to said outwardly facing surfaces, and spring means integral with said member adapted to be sprung past said axially outwardly facing surfaces of said chimes and toward said heads and into engagement with the radially inwardly facing surfaces of the chimes on such pair of cans and said head at different points around said chimes when said cans are in said position with said member extending across said portions and with said rib between said pair of cans in engagement with the adjacent sides thereof and with said axially inwardly facing surfaces of said chimes, said spring means being tongues connected with said member along straight lines of flexure

spaced from said rib at opposite sides thereof, each of said tongues being similarly inclined to one side of said member from said lines toward said rib, and the portion of each of said tongues adapted to engage said radially inwardly facing surfaces on said chimes and said tongue being relatively wide in a direction circumferentially of said chimes and said last mentioned portion being bowed generally in said direction with the concave side of said portion adapted to face said head to enable said last mentioned portion to simultaneously engage said chimes and said head on each can of said pair along their juncture at said different points.

3,198,327
MULTI-UNIT MERCHANDISING PACKAGE
Daniel E. Boehling and Thomas E. Kirby, Jr., Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed July 30, 1962, Ser. No. 213,436
3 Claims. (Cl. 206—65)



1. A multi-article merchandising package comprising, a plurality of closely grouped cylindrical containers each having radially projecting end chimes, an overwrap of transparent plastic film snugly surrounding and fully enclosing said grouped containers with said plastic film sealed upon itself to form a unit-handled container package, spacer means disposed between and in tangential contact with each adjacent pair of chimes to thereby space apart each pair of adjacent containers by the thickness of said spacer means to prevent chime-riding, a sheet-like insert disposed within said overwrap adjacent and parallel with the container ends for vertically spacing vertically adjacent chimes of separately packed containers when stacked to prevent chime abrasion of the overwrap therebetween, and means lightly urging said insert away from said containers to thereby maintain said overwrap in tautly embracing relationship about said containers and insert.

3,198,328
PACKAGE FOR FLUENT MATERIALS
Gary M. Donahue, Temperance, Mich., and Charles H. Stark, Waterville, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed Dec. 3, 1962, Ser. No. 241,788
7 Claims. (Cl. 206—65)

1. A package for packaging materials having cold flow properties comprising:

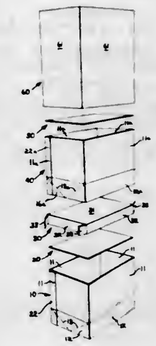
(a) a first paperboard container, said first container comprising a plurality of side wall panels foldably connected together to define a tubular configuration and closure means for closing the lower end of said tubular configuration;

(b) a first quantity of said material disposed within said first container, said first quantity of material having a settled height less than the height of said first container;

(c) a restraining member disposed atop said first container, said member comprising a central panel spanning the upper open end of said tubular configuration, said central panel being positioned above said first quantity of material defining a space therebetween, and a plurality of flaps foldably connected to said central panel and folded into contiguous relationship with the exterior surfaces of said side wall panels, said flaps being secured to the upper edges of said first container;

(d) a paperboard sleeve telescoped over said restraining member and first container, said sleeve arranged to firmly hold said flaps against said first container;

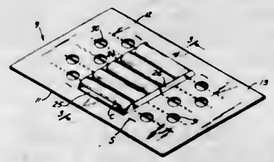
(e) a second paperboard container disposed atop said



retaining member and supported thereon, said second container comprising a plurality of side wall panels foldably connected together to define a tubular configuration and closure means for closing the lower end of said tubular configuration;

(f) a second quantity of said material disposed within said second container, the weight of said second quanity of material downwardly deforming said central panel into said space and into a concave formation, thereby drawing inwardly the upper edges of the side wall panels of said first container.

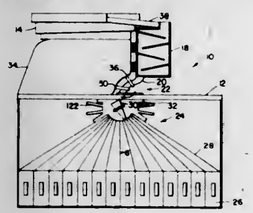
3,198,329
PACKAGING OF TUBULAR ARTICLES
Charles Golenpaul and Murray De La Fuente, New Bedford, Mass., assignors to Aerovox Corporation, New Bedford, Mass., a corporation of Massachusetts
Filed July 22, 1963, Ser. No. 296,666
1 Claim. (Cl. 206—65)



A capacitor package for a plurality of capacitors of the tubular type having terminal leads extending axially from each end, comprising a first plate having a central capacitor receiving aperture of length equal to the length of the capacitors packaged, and of width equal to the width of the plurality of capacitors when arranged in side by side relationship as measured diametrically thereacross, flaps extending into the aperture in said first plate from an edge thereof, a second plate arranged over said first plate, said second plate having an aperture dimensioned like the aperture in said first plate, and aligned therewith, flaps extending into the aperture in said second plate from an edge thereof, a plurality of capacitors positioned within said apertures with the flaps on said first plate lying

against portions of said capacitors protruding beyond the plane of said first plate and the flaps on said second plate lying against portions of said capacitors protruding beyond the plane of said second plate, whereby the flaps on said second plate cooperate with the flaps on said first plate to retain the capacitors in said article receiving apertures, means to retain said plates in juxtaposition and a plurality of spaced access apertures arranged in said first and second plates with said apertures aligned with the terminal leads extending from said capacitors.

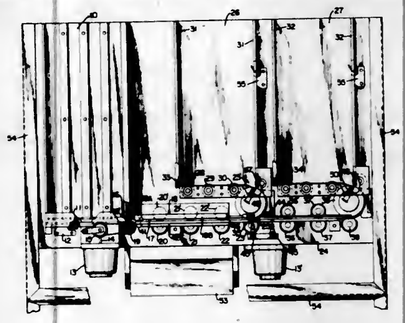
3,198,330
AUTOMATIC SORTING MACHINE
Mordechai Wiesler, Brookline, and Avigdor Goren, Cambridge, Mass., assignors to Transistor Automation Corp., Cambridge, Mass., a corporation of Massachusetts
Filed Dec. 5, 1962, Ser. No. 242,475
4 Claims. (Cl. 209—74)



4. An apparatus for physically sorting a quantity of electronic components having similar structural but different functional characteristics, comprising a testing station, means for feeding said components one by one into said dispensing station, said testing station being adapted to guage the functional characteristics of said components and to produce a signal corresponding to said characteristics, a plurality of receptacles associated with said apparatus for receiving said components, a plurality of chutes disposed radially with respect to said testing station and communicating with said receptacles, a delivery funnel pivotally mounted between said testing station and said chutes, spaced abutments fixed to and extending in parallel spaced relation to the axis of rotation of said funnel, a series of movable actuators spaced along said axis in opposing spaced relation to said abutments, each of said actuators being formed with a distinctive abutment-engaging profile corresponding to a particular angular position of said member and power means responsive to said signal for driving said actuators selectively into engagement with said abutments to thereby rotate said member into the angular position associated with the particular driven actuator and into alignment with a particular one of said chutes.

3,198,331
SERIAL CARD READER
Raymond B. Larsen and Clarence W. De Karske, Broomfield, Colo., Wallace B. Edwards, Jr., Minneapolis, Minn., Archie H. Higgins, Broomfield, and Robert W. Bonnema, Denver, Colo., assignors to Uptime Corporation, Golden, Colo., a corporation of Wyoming
Filed Mar. 29, 1963, Ser. No. 268,863
6 Claims. (Cl. 209—110)

1. A serial card reader comprising a card load means, card activating means for continuously picking a card from the card load means, card transport means for continuously feeding a picked card past a card reader means, said card transport means including a pair of rollers mounted, with respect to the direction of card travel, immediately ahead of the card reader means, one of said rollers having a substantially smaller diameter than the other roller and being mounted with a portion of the surface thereof to lie immediately adjacent to a plane in which is to be positioned one end of the cards which are to be disposed within said card load means, card reader means provided with a first set of sensory means for sensing the relative position of the transported card as it is moved continuously past the card reader means and a second set of sensory means for sensing coded information on the card in synchronism with the first set of sensory means, and switching means controlled



by the information sensed by the second set of sensory means for continuously directing the transported card to either a first card receiving means or to a second card receiving means, said first card receiving means being cooperatively associated with the switching means for receiving cards continuously directed thereto, and said second card receiving means being cooperatively associated with said switching means for receiving cards directed thereto.

3,198,332
HYDROXY - OXO - ALUMINUM POLYOL COMPOUNDS AND THE PREPARATION THEREOF
Brian K. Davison, Didsbury, Manchester, England, assignor, by mesne assignments, to Agrashell Inc., Los Angeles, Calif., a corporation of Delaware
Filed Apr. 6, 1962, Ser. No. 185,754
Claims priority, application Great Britain, Apr. 18, 1961, 13,974/61
10 Claims. (Cl. 260—209)

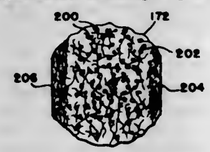
1. A process for preparing organic aluminum compounds of the formula

$$Al_3O_2(OH)_x(polyol)_y$$

where $x+y=5$, y is greater than zero, and x is no less than 4, which process comprises adding water and a polyol having at least 3 carbon atoms, having hydroxyl groups on adjacent carbon atoms, and consisting of carbon, hydrogen, and oxygen to a solution of an aluminum alcoholate of a lower aliphatic alcohol in an inert organic solvent, said addition taking place at the reflux temperature of the solution, and said aluminum alcoholate and water being reacted in a proportion of 3 molar parts to $2+x$ molar parts respectively.

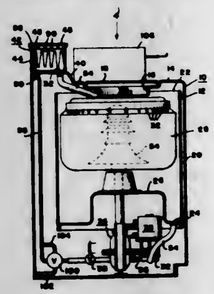
3,198,333
FILTER FOR DOMESTIC APPLIANCE
Byron L. Brucken and Victor A. Williamitis, both of Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,803
3 Claims. (Cl. 210—209)

1. A dry cleaning solvent filter for removing particulate matter and treating a liquid dry cleaning solvent and comprising a filter container having a container adapted to receive solvent returning from a dry cleaning apparatus and a container outlet adapted to supply said dry cleaning apparatus with filtered and treated solvent, said container having an opening and a cover for closing said opening, and a filter cartridge insertible through said opening, said cartridge including a bottom plate having a filter outlet port, a top plate effectively imperforate and in spaced parallel relationship to said bottom plate, a perforated cylinder perpendicular to said plates and extending therebetween with one end thereof in communication with said filter outlet port and a longitudinally extending accordion-pleated annulus of filter paper sheeting interposed in sandwiched relationship between said plates, said accordion-pleated annulus having a creased radially inner fold engaging said perforated cylinder and a creased radially outer fold extending substantially to the periphery of said plates, said folds forming a partition having an



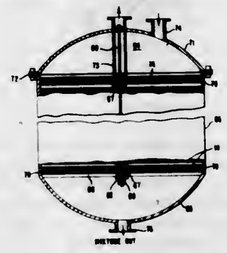
inside wall in communication with said filter outlet port through the perforations of said cylinder and an outside wall in communication with said container inlet, said filter paper sheeting comprising an integral filtering mat of interwoven paper fibers throughout for removing particulate matter from said solvent and a particulate surface active agent, the particles of which are variably dispersed throughout said mat from one outer surface thereof to the other outer surface thereof for treating said solvent, said paper fibers being more dense near each surface of said filter paper sheeting, and the particles of said surface active agent being more dense in the center of said filter paper sheeting remote from the surfaces to facilitate the retention of said particles in said filter paper sheeting when said sheeting is folded.

3,198,334
FILTER FOR A DRY CLEANING APPARATUS
Byron L. Brucken and Victor A. Williamitis, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,901
5 Claims. (Cl. 210—209)



1. A filter for removing particulate matter and treating a liquid solvent and comprising a filter container having a container inlet adapted to receive contaminated solvent and a container outlet adapted to supply filtered and treated solvent, said container having an opening and a cover for closing said opening, and a disposable filter member insertible and removable through said opening, said filter member including a support and a longitudinally extending accordion-pleated filter paper portion carried by said support, said filter paper portion forming a partition having one side in communication with said container outlet and another side in communication with said container inlet, said filter paper portion comprising a unitary filtering sheet of interwoven fibers for removing particulate matter from said solvent and solvent conditioning means including a surface active agent permanently held by said fibers for treating said solvent and a detergent completely soluble in said solvent and releasably held by said fibers for dispensing into said solvent for use solely outside said filter member, said interwoven fibers being cotton linters and said surface active agent being activated carbon combined in approximately equal parts by weight to form a filtering sheet weighing approximately 140 pounds per 3000 square feet.

3,198,335
PERMEATION APPARATUS
William Dein Lewis, Wilmington, Del., and Sherman A. Rogers, Landenberg, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 1, 1962, Ser. No. 213,917
15 Claims. (Cl. 210—321)

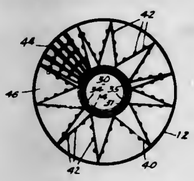


1. A permeation apparatus including a closed vessel; a plurality of aligned stacked detachable permeation cells of like construction, each of said cells comprising a fluid tight header means having an interior portion, open framework means connected to said header means defining an enclosed zone adjacent said header means, a plurality of flexible hollow, thin-walled filaments of a material suitable as a permeation barrier confined in said zone in a densely packed layer, said filaments in said layer being freely movable within the limits of said framework, each of said filaments having at least one open end portion with the open end portions of said hollow filaments being secured to said header means so that all open ends of each of said filaments are in free communication with the interior portion of said header means; means for securing said stack of said permeation cells to each other and in position in said vessel; inlet means for admitting a fluid mixture into said vessel; outlet means communicating with the interior portion of said header means of said permeation cells for removing fluids permeating through the walls of said hollow filaments from the interior of said hollow filaments and outlet means for removing the permeate depleted fluid mixture from the vessel.

3,198,336
PLEATED OIL FILTER
Harry E. Hyslop, 200 S. Michigan Ave., Chicago, Ill.
Filed Mar. 2, 1961, Ser. No. 92,917
3 Claims. (Cl. 210—457)

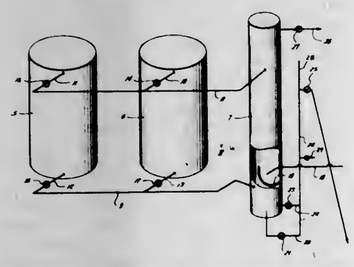
1. An oil filter for use in filtering the lubricating oil of engines, comprising: inner and outer concentric cylinders; said inner cylinder being made of cold rolled steel and having a plurality of circular apertures through which the oil to be filtered passes; said outer cylinder being made of rigid synthetic plastic and having a plurality of dot-dash apertures through which the filtered oil passes; first and second annular end caps respectively secured to

the ends of said cylinders and being made of tin plate so as to be impervious to the flow of oil; said end caps closing off the annular space between the ends of said cylinders so as to prevent the filtering oil from flowing through said space between the ends of said cylinders; said first end cap having a central depression which extends into and closes off one end of said inner cylinder so as to prevent said oil to be filtered from flowing through said one end of said inner cylinder; said second end cap having an upturned flange extending into the other end of said inner cylinder so as to form an aperture through which said oil to be filtered passes into said inner cylinder; an annular retainer shell being made of tin plate so as to be impervious to said oil to be filtered and having an inwardly turned flange secured to a portion of the outer surface of said second end cap; an annular retainer ring secured to the inner surface of said retainer shell and being separated from said inwardly turned flange by a gasket; a pressure plate tightly fitted



within said inner cylinder and engaging the inner surface of said central depression of said first end cap; a helical reinforcing spring positioned within and along the length of said inner cylinder and having one end engaging said pressure plate and the other end circumscribing said upturned flange and engaging the inner surface of second end cap; a fluid pervious paper filter element positioned within the annular space between said cylinders and said end caps; said filter element having a plurality of pleats extending parallel with the longitudinal axis of said cylinders; each of said pleats having at least three rows of at least three hemispherical dimples embossed on its radially outer surface; said dimples being positioned on their respective pleat so that when adjacent pleats radially move toward each other the dimples on one of said adjacent pleats engage a respective dimple on the other of said adjacent pleats so as to stabilize the pleats and prevent pleat crowding so that the oil being filtered can flow freely through said filter element.

3,198,337
APPARATUS FOR SEPARATING IMMISCIBLE FLUID PHASES
Alexander Peters, Jr., 204 E. Cherry, Robinson, Ill.
Filed June 22, 1961, Ser. No. 118,847
3 Claims. (Cl. 210—533)



3. Apparatus for separating immiscible fluids, said apparatus comprising, in combination;

a first vessel;

a second vessel positioned relative to said first vessel and having its bottom wall disposed, relative to the horizontal, lower than the bottom wall of said first vessel;

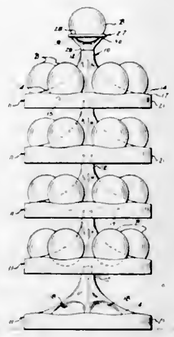
a first valved conduit means communicating said vessels for flow of fluid in both directions therein, said first conduit means leading out of said first vessel at a point adjacent its bottom and entering said second vessel at a point which, relative to the horizontal, is at least as low as its point of departure from said first vessel;

a second valved conduit means communicating said vessels, said second conduit means leading out of said second vessel at a point above said first conduit means and entering said first vessel at a point which, relative to the horizontal, is at least as high as its point of departure from said second vessel;

separate means for charging said second vessel with fluid, said charging means entering said second vessel at a point intermediate the entry thereinto of said first and second conduit means; and

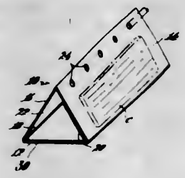
means for the regulated drainage of said second vessel from below the point at which said first conduit means enters into said second vessel.

3,198,338
BOWLING BALL DISPLAY RACK
Rayna H. McCormick, 125 S. Canton Road, Akron 12, Ohio
Filed Feb. 5, 1964, Ser. No. 342,708
7 Claims. (Cl. 211—14)



1. A display rack for bowling balls comprising a plurality of like turntables, each having a central, vertical hub portion and a horizontal web portion of substantially broad lateral area defined within a peripheral outer edge; each said hub portion including cylindrical male and female formations, said male formation of one of said turntables complementally rotationally engaging said female formation of another of said like turntables; whereby the like turntables are adapted to be interchangeably vertically stacked one upon the other for relative rotation with respect to each other; each said web portion having a plurality of peripherally spaced openings of smaller diameter than the bowling balls and defining peripheral seats adapted to receive bowling balls for support of the same with major portions of the balls freely exposed above the web; each said turntable having bracing means between the web portion and the hub portion supporting the web with respect to respective hub portion; and each said turntable having supporting portions projecting downwardly at least to a plane through the end of the hub whereby each turntable is interchangeably adapted to serve as a supporting base at the bottom of a plurality thereof connected in said vertically stacked relation.

3,198,339
DESK MOUNT
Edward M. Stolarz, New York, N.Y., assignor to Winthrop-Atkins Co., Inc., Middleboro, Mass., a corporation of Massachusetts
Filed Aug. 17, 1962, Ser. No. 217,701
6 Claims. (Cl. 211—49)



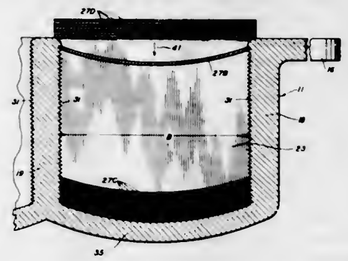
1. A desk mount comprising a hollow open-end body of stiff but resilient sheet material, having a plurality of flat side walls joined by dihedral angles, one of the side walls providing support for the mount in one position, in which at least one of the other side walls is inclined upwardly and rearwardly from said one side wall, a panel disposed beneath said one side wall in face-to-face contact therewith and hinged along its rear edge to said one side wall, said body being pivotal rearwardly about said hinge to dispose the body in a second position on another side wall, to expose the upper surface of the panel, and with said one side wall inclined upwardly and rearwardly from the panel, and stiffly resilient means interiorly of the body between which and one of the side walls an end or an implement of writing material may be thrust for support when the mount occupies said one position, the projecting portion of the implement or writing material affording means for tilting the body rearwardly to said second position to expose the panel and the one side.

3,198,340
EXTRUDED DISPLAY RACK RISER
Stephen G. Tokash, 8008 Linden St., Munster, Ind.
Filed July 24, 1963, Ser. No. 297,346
6 Claims. (Cl. 211—49)



1. The combination with a display rack having spaced front and rear legs, upwardly and rearwardly inclined side rails extending between said front and rear legs, and a front rail extending between and secured at its ends to said front legs, of a plurality of risers, each comprising a member having angularly disposed flanges, which form the bottom and rear wall of a display pocket, means on the rear face of said front rail to removably receive the forward edge of the bottom of the next adjacent riser, said means and said edge being shaped to provide an articulate joint, the rear face of each riser being likewise formed with a similar means to receive the forward edge of adjacent risers whereby said risers may be successively removably joined for producing a plurality of display pockets in said display rack.

3,198,341
DISPENSER TRAY
Isao Sasaki, Altadena, Calif., assignor to Jet Plastics, Los Angeles, Calif., a corporation of California
Filed Apr. 5, 1962, Ser. No. 185,434
2 Claims. (Cl. 211—50)



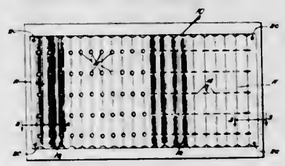
1. A dispenser tray for flat, stiff, sharp edged identical price cards, these being of such a material that the cards bow slightly under edgewise pressure without being marred and which return to flat when such edgewise pressure is released; said cards being approximately one inch square to serve as conventional price cards for shelf moldings of supermarkets;

said tray comprising a compartment having a back wall, two side walls, and a bottom wall, with neither a top wall nor a front wall, both top and front being open; the compartment having a plan area approximately that of the card;

the side walls each having a multiplicity of open front horizontal serrations in their inner facing surfaces for individually receiving edges of cards; the side walls being spaced slightly closer than the width of the cards when flat so that a card will bow downwardly when it is laid flat on the upper edges of the side walls and pushed horizontally downwardly into the compartment from above it;

the back and bottom walls rigidly connecting the side walls to stiffen them and prevent their relative movement.

3,198,342
CORRUGATED WALL BOARD
Thomas O. Murray, 1127 N. State St., Chicago 10, Ill.
Filed Oct. 28, 1963, Ser. No. 319,128
1 Claim. (Cl. 211—86)



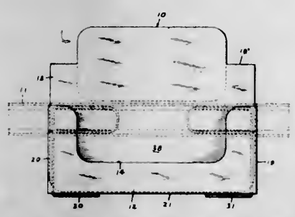
A thin aluminum wall board comprising a single corrugated sheet with a plurality of alternating outwardly extending rounded ridges and inwardly extending rounded hollows and adapted to be cut to any size and shape to be fitted to a desired object, said hollows having a plurality of longitudinally spaced openings therethrough to receive fastening means to attach the wall board direct to the desired object without the need of any intermediate attaching means, said ridges having a plurality of longitudinally spaced openings therethrough for the reception and holding of supporting hooks, said ridges providing greater space to the rear thereof for the accommodation of supporting hooks extending through the openings.

3,198,343
STORAGE RACK
Gordon J. Pollock, 6219 Nelwood Ave., Parma Heights, Ohio
Filed Apr. 10, 1963, Ser. No. 271,947
9 Claims. (Cl. 211—87)



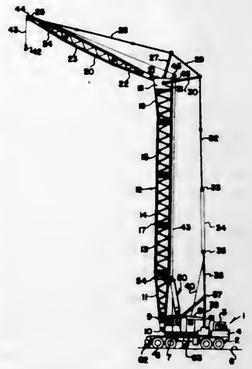
1. A rack support unit comprising a pair of rigid elongated rods adapted to be mounted in a vertically extended position spaced from a vertical wall, said rods having laterally offset adjacently disposed end portions terminating in extreme outer ends directed normally to said rods and said wall for spacing said rods from said wall, clamp means for clamping said adjacently disposed ends of said rods, said clamp means comprising a pair of mating sections having complemental curved longitudinal edges, the mating sections when assembled forming an elongated opening for receiving said adjacently disposed, laterally offset ends of said rods, means for securing said mating sections together, a rack-receiving member mounted on one of said rods, upper and lower mounting members adhesively bonded to said vertical wall, and means for rigidly mounting the opposite ends of said rod members to said mounting members whereby the rack support unit is firmly mounted on said vertical wall without marring the same.

3,198,344
SPACE SAVING DISPLAY CARTON
Carl Walter Lindgren, Murray Hill, N.J., assignor to Thomas J. Lipton, Inc., Hoboken, N.J., a corporation of Delaware
Filed Aug. 13, 1963, Ser. No. 301,800
4 Claims. (Cl. 211—88)



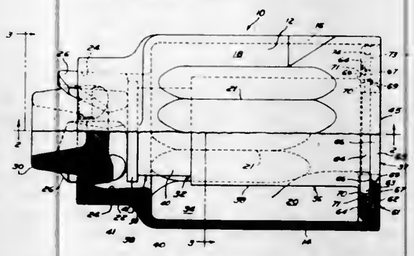
1. A display device for price channels, comprising a container for supporting articles therewithin having a vertical back having apertures adjacent to opposite vertical side edges of said back, a bottom extending forwardly from the back of said container, said bottom having apertures formed adjacent to its opposite horizontal side edges between the front and back edges of said bottom, at least two support members, an arm portion on each of said support members extending downwardly and forwardly through the apertures in said back and bottom and at least partially across and beneath said bottom toward the front edge thereof, and compressible clip means on each of said supporting members for engaging the price channels and supporting said container therefrom

3,198,345
CRANE
Erwin C. Brekelbaum, Elyria, Robert J. Bushong, Vermilion, and George C. Noll and George B. Klos, Elyria, Ohio, assignors, by mesne assignments, to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 22, 1962, Ser. No. 232,190
4 Claims. (Cl. 212—59)



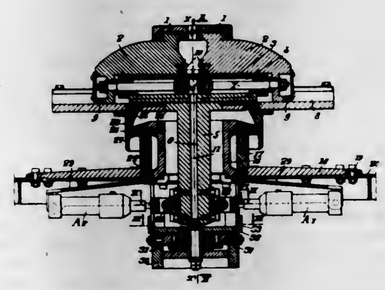
1. A crane comprising a rotatable superstructure, a boom pivotally connected to the superstructure, and a telescopic back stay connected to said boom and superstructure and operative to limit upward swinging movement of the boom relative to the superstructure, characterized by said telescopic back stay comprising at least one pair of telescoping tubular members, and pin means operative optionally either to limit relative telescopic movement between said members to prevent said boom from swinging beyond a desired elevation about its pivot connection to said superstructure or to lock said telescoping members together to hold the boom in a vertical position.

3,198,346
HYDRAULIC FRICTION DRAFT GEAR
Harry W. Mulcahy, Chicago Heights, and John T. Ellis, Jr., Skokie, Ill., assignors to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 9, 1963, Ser. No. 314,993
6 Claims. (Cl. 213—43)



1. A draft gear comprising, in combination, a draft gear casing open at both its front and rear ends and having a friction bore at its front end, a series of friction shoes disposed in said friction bore and having a wedge associated therewith for actuating same, a normally fully extended hydraulic shock absorbing unit disposed in said casing inwardly of said friction shoes and characterized by a pressure cylinder one end of which is closed by an end wall having a stepped configuration on its outer face, said cylinder having a movable ram projecting from the opposite end thereof, said hydraulic unit being disposed in said casing with said cylinder end wall disposed in said open rear end of said casing and with the end of said ram in engagement with the inner ends of said friction shoes, and a locking ring disposed in encircling relationship about said cylinder end wall and having an inner peripheral stepped configuration complementary to said stepped configuration of said cylinder end wall for receiving same therein and an outer peripheral configuration engageable with flange means provided on said open rear end of said casing, whereby said locking ring and said cylinder end wall of said hydraulic unit define a removable end wall for said casing.

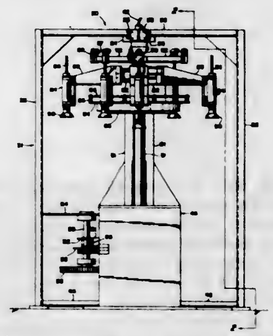
3,198,347
REMOTE CONTROL APPARATUS
Philippe Wallet, Vincennes, and Henri Taverne, Saclay, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Dec. 28, 1961, Ser. No. 162,812
Claims priority, application France, Jan. 12, 1961, 849,474
8 Claims. (Cl. 214—1)



1. Apparatus for remotely controlling manipulating devices to maneuver radioactive objects and the like within a sealed enclosure by means of controls outside said enclosure, said apparatus comprising a tubular member passing through a wall of said enclosure and rotatably mounted with respect to said wall for rotation about its own axis, a first sliding sealing means provided between said wall and said tubular member to effect a hermetic seal therebetween, a support disposed within said enclosure and pivotally mounted on said tubular member, gripping members carried by said support, a second sliding sealing means positioned between said support and said tubular member to effect a hermetic seal therebetween, a first motor means operatively connected with said support to control pivotal movement of said support with respect to said tubular member, a second motor means operatively connected with said tubular member to control rotation thereof, and controls operatively connected with said gripping means for actuating said gripping means.

3,198,348
WARE LOADER AND UNLOADER
Howard B. Cummings, New Castle, Pa., assignor, by mesne assignments, to Shenango Ceramics, Inc., a corporation of Delaware
Filed Apr. 10, 1962, Ser. No. 186,536
2 Claims. (Cl. 214—1)

2. Ware transport apparatus for conveying unglazed ceramic ware to the spindles of a glazing table, rotating at a constant angular velocity, from a stationary loading station comprising a stationary support bridge, a vertically depending shaft journalled for rotation in said support bridge, drive means for driving said shaft at a constant angular velocity, a plurality of radially extending arms supported by and freely rotatable about said shaft, a ware pick-up means affixed to the end of each of said arms, said ware pick-up means comprising a cylinder and an extensible pneumatically actuated hollow ram axially slidable in said cylinder and having a suction cup at its lower end, a circular disk fixedly secured to said main shaft, a cam plate fixedly secured to said support bridge below said circular disk, means defining a cam track on said cam place, cam linkage means for each of said arms pivotally connected to said disk and to said arms and having a cam follower engaging said cam track to cause said ware pick-up means to dwell at a ware pick-up station and to decelerate from an angular velocity equal to that of the main shaft to a linear velocity equal to that of a spindle on said glazing table, a compressed

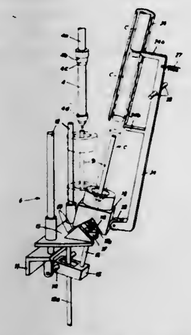


air source, a vacuum source, tube means pneumatically connecting each cylinder with said compressed air source to extend said ram, tube means pneumatically connecting each hollow ram with said vacuum source to create a vacuum in said hollow ram and thereby hold said ware against said suction cup, a cam actuated control valve unit for each of said ware pick-up means affixed to said main shaft pneumatically connected to each of said tube means, said control valve unit having a cam actuated vacuum control portion for controlling the vacuum in said hollow ram and for admitting compressed air to said hollow ram and having a cam actuated ram control portion for admitting compressed air to said cylinder, a cam plate fixedly secured to said support bridge above said ware pick-up station to actuate said ram control portion of said control valve unit, and a pair of cam plates fixedly secured to said support bridge above said spindles to actuate said ram control portion and said vacuum control portion of said control valve unit.

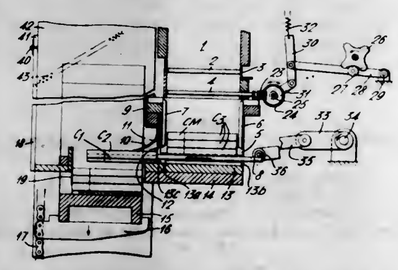
3,198,349
LOADING DEVICE FOR MACHINE WORKING ON TUBULAR WORKPIECES
Lazare Hauf, Chemin de Boisconnet 11, Lausanne, Vaud, Switzerland
Filed July 26, 1963, Ser. No. 297,761
Claims priority, application Switzerland, July 28, 1962, 9,078/62
3 Claims. (Cl. 214—1)

1. A loading device for use with a machine performing working operations on tubular workpieces and having a guiding member periodically moved into a loading station for receiving a new workpiece, in combination, a transporting member mounted for rocking motion about a fixed axis between a receiving position and a loading position in which it is aligned with the guiding member

standing at the loading station, said transporting member comprising a rod adapted for receiving the workpieces and a pusher being shiftably mounted on said rod for moving the workpiece carried thereby in an axial direction with respect thereto, distributing means adapted for delivering a workpiece to said transporting member when the same is in its receiving position, a control member mounted for shifting motion in a direction parallel to the guiding member standing at the loading station and adapted for causing the workpiece carried by said transporting member to be shifted axially from this transporting member onto the guiding member standing at the loading station when said transporting member is in its loading position, connecting means inserted between control member and said transporting member, said connecting means comprising cooperating camming means arranged in part on the control member and in part on said pusher, said connecting means causing said transporting member to be rocked from its receiving position into its loading position when said control member starts its loading stroke and to be rocked from its loading position into its receiving position when said control member ends its return stroke.

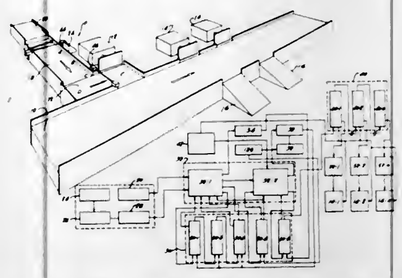


3,198,350
APPARATUS FOR TRANSFERRING ROD-LIKE ARTICLES
Desmond Walter Molins, and Horace Alexander Stone, London, England, assignors to Molins Machine Company Limited, London, England, a corporation of Great Britain
Filed Feb. 18, 1963, Ser. No. 259,277
Claims priority, application Great Britain, Feb. 20, 1962, 6572/62
5 Claims. (Cl. 214—6)



1. Apparatus for transferring the bottom row of a first stack of rodlike articles on to the topmost row of a second stack of rodlike articles, the said topmost row being at a lower level than the said bottom row, and spaced from it in the direction of the longitudinal axes of the articles, comprising support means on which said bottom row rests, said means terminating adjacent said topmost row and closer to the said topmost row than are the adjacent ends of the rod-like articles in said bottom row to provide an end marginal portion of the support means, pusher means to push said bottom row over the said end marginal portion in the direction of the longitudinal axes of the articles, for the said bottom row to fall on to the said topmost row, and resilient means over the said end marginal portion of the support means to apply to the trailing ends of the articles, while the trailing ends are still supported by the support means, a downward force to stop the leading ends of the articles tilting downwards into contact with the topmost row due to their own weight as the trailing ends of the articles approach the extremity of the said end marginal portion of the supporting means.

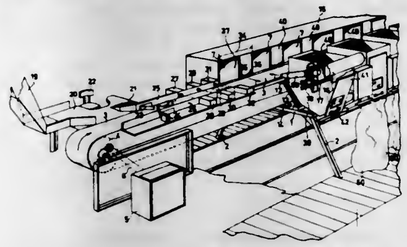
3,198,351
CONVEYOR SYSTEM
Edgar H. Paglee, Chicago, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Mar. 12, 1962, Ser. No. 178,964
7 Claims. (Cl. 214—11)



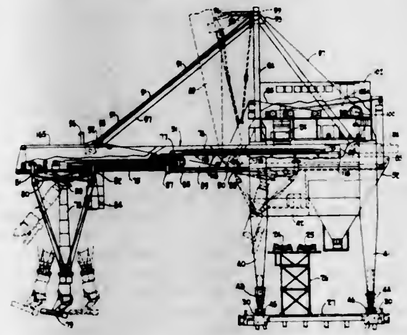
1. In a conveyor system of the type in which a main belt transports packages loaded thereon toward discharge stations along its path, in which transfer mechanisms are provided at the stations for removing packages from the main belt, and in which an electrical control system having a manually operated keyboard producing coded routing information for each package loaded on the belt is controlled by the information to selectively operate the transfer mechanisms for removing the packages at selected discharge stations, in combination therewith a package load mechanism adjacent the main belt path, a storage belt on which packages are loaded, a load belt, a buffer memory interposed between the keyboard and the control system receiving and storing routing information for each package incident to the operation of the keyboard, means for normally maintaining the load belt in operation, means operable responsive to the presence of a package on said moving load belt for stopping said load belt when said package is adjacent the load mechanism, means for moving the storage belt in steps to advance the packages to said load belt, means advancing the routing information in the buffer memory coincident with the movement of the packages on the storage and load belts, and circuit means initiating the operation of the load mechanism and transferring routing information of transfer packages from the buffer memory to the control system.

3,198,352
PARCEL SORTING MACHINE
Lucien P. Puechberty, Paris, France, assignor to Saunier-Duval, Paris, France, a company of France
Filed Aug. 24, 1964, Ser. No. 391,499
8 Claims. (Cl. 214—11)

1. A parcel sorting machine for selectively ejecting at a plurality of unloading positions parcels according to the addresses thereof comprising an endless conveyor having a straight pass and conveying parcels thereon, a memory device adapted to temporarily store the parcel addresses, a first and a second pluralities of parcel-receiving devices respectively disposed along both sides of said pass to receive parcels therefrom, a plurality of air-blast nozzles along both sides of said pass, at least one nozzle being positioned between a contiguous pair of parcel-receiving devices, said nozzles having substantially vertical mouths whose lower parts are flush with said conveyor and being disposed to direct air toward a respective parcel-receiving device at the other side of said pass, a pressure air line, means for selectively feeding said nozzles from said pressure air line, said feeding means being controlled by said memory device according to the addresses stored therein and means for varying the velocity of the air-blast across the mouths of the nozzles, whereby the velocity pattern of the air-blast issued from the nozzles can be brought to a maximum at substantially the level of the conveyor.

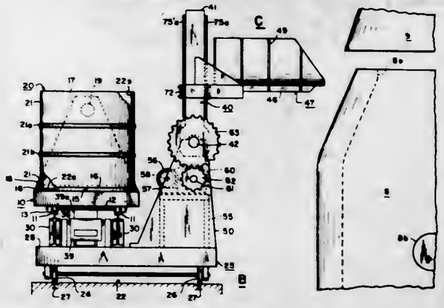


3,198,353
BULK MATERIAL LOADING SYSTEM
Robert C. McDowell, Cleveland, Ohio, assignor, by mesne assignments, to McDowell-Wellman Engineering Company
Filed Dec. 24, 1962, Ser. No. 246,694
11 Claims. (Cl. 214—14)



1. An apparatus for loading a vessel at a pier with bulk material comprising in combination:
(a) guide means disposed along the pier for parallel relation to a vessel docked thereat,
(b) a main frame movably supported on said guide means,
(c) a boom structure comprising a front boom portion and a rear boom portion and carried by said main frame and disposed transverse to said pier guide means, said front boom portion extending beyond said main frame and pivotally secured to said rear boom portion.
(d) pivot means coacting between said rear boom portion and the adjacent extremity of said front boom portion for rotatably securing said front boom portion thereto,
(e) a plurality of shuttles movably supported on said boom in surmounting parallel relation to each other, said shuttles being retractable from said front boom into said rear boom portion,
(f) means for retracting said shuttles into said boom portion,
(g) material conveying means carried by each of said shuttles,
(h) material distributing means coacting with one of said shuttles for delivering bulk material to said vessel, and
(i) means coacting with the frame, the shuttles and the distributing means to selectively manipulate said distributing means relative to the vessel.

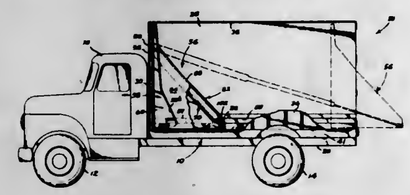
3,198,354
ROTARY SCRAP CHARGING
Levi S. Longenecker, 61 Mayfair Drive, Pittsburgh, Pa.
Filed Sept. 30, 1963, Ser. No. 312,617
16 Claims. (Cl. 214—18)



1. Apparatus for overhead charging solid material in the nature of scrap metal through an open mouth portion of a metal melting and refining furnace which comprises, a group of substantially cylindrical containers of sufficent capacity for fully charging the furnace with the solid material; each of said containers having a closed side wall, an open-mouth upper end and longitudinally spaced-apart flange rings about its side wall; a support buggy for said group of containers, said buggy having axial shafts carrying wheels thereon for moving said buggy, said buggy having a substantially planar platform and projecting flanges thereon in a longitudinally spaced-apart relation for encircling and retaining said containers in an upright position thereon in such a manner that said containers may be lifted on and off said platform, a pair of crane-hook-receiving post means projecting upwardly in a balanced relation from said platform between said projecting flanges whereby said buggy with filled containers thereon may be lifted from a lower plant level to an upper plant level and said buggy with empty containers thereon may be returned to the lower plant level, an upper platform extending longitudinally along the furnace at the upper plant level, a longitudinal trackway on said platform, a charging machine operatively mounted for movement on said trackway, said charging machine having a platform thereon and a longitudinal trackway along said platform for receiving the wheels of said buggy when said buggy is raised to the upper plant level with filled containers thereon, said last-mentioned trackway having stop means at its opposite sides for limiting maximum movement of said buggy on said charging machine, said charging machine having a motor-driven belt operatively positioned to extend longi-

tudinally-centrally thereof, pulley means for operatively positioning and adjusting the tension of said belt, dogs projecting outwardly from said belt in a spaced relation therealong for selective engagement wth one of the axial shafts of said buggy when said buggy is positioned on said last-mentioned trackway for moving said buggy longitudinally with respect to said charging machine to selectively align each of said containers, a container gripping frame swingably-mounted on said charging machine and having side arms extending transversely-backwardly of the furnace for positioning along opposite sides of one of said containers that is selectively aligned therewith, pairs of gripping fingers pivotally-carried by each of said side arms for engagement with said one container between its said flange rings, motor means for moving said gripping fingers into and out of gripping engagement with each container, and motor means for swinging said side arms and said one container being gripped by said pairs of gripping fingers between an upright position on said buggy and a forwardly-declining material-discharging cooperating position with the open mouth portion of the furnace.

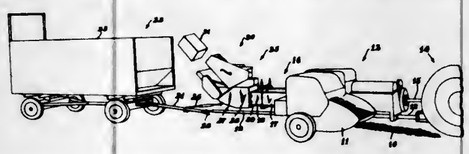
3,198,355
BODY FOR REFUSE-COLLECTION VEHICLE
Ernest F. Kamin, 1648 N. Ross Ave., Portland, Oreg.
Filed Apr. 2, 1962, Ser. No. 184,020
5 Claims. (Cl. 214—82)



1. In a vehicle comprising a wheel-supported vehicle frame and a body including a floor supported above and mounted on said frame, an elevated platform portion extending longitudinally along each side of said floor, said elevated platform portions terminating in longitudinally extending inner edges that are spaced apart from each in a zone intermediate the sides of said floor, an upright wall joining the inner edge of each of said platform portions and said floor, said upright walls and floor defining an elongated runway extending longitudinally of said body recessed from the level of said platform portions and having a top communicating with the inside of said body along the length of the body, and a power-actuated packer including a packer blade extending over said platform portions and transversely of said floor, said packer including a portion that projects down from the packer blade into said runway between said platform portions to adjacent said floor.

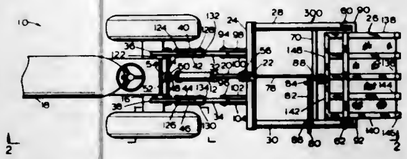
3,198,356
BALE GUIDING MEANS
Charles H. Muehlhausen, Shelbyville, Ill., assignor to Oliver Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 19, 1962, Ser. No. 180,732
1 Claim. (Cl. 214—83.3)

In apparatus for baling hay and the like comprising: baling means arranged and adapted to be transported in a forward direction, to compress hay into a bale, and to move the same rearwardly into a bale chamber having vertically extending side walls and a bottom wall; a bale thrower pivotally supported on said bale chamber rearwardly thereof to rotate about a vertical axis and having a chamber for receiving a bale from said bale chamber, said bale receiving chamber having vertically extending side walls the forward edges of which are spaced rearwardly and outwardly from the rear edges of said side walls of said bale chamber and a bottom wall substantially at the elevation of said bottom wall of said bale chamber, said bale thrower being adapted to convey a bale from said bale receiving chamber and throw it into a following wagon having an articulate connection to said baling means, and means for causing said bale thrower to pivot in accordance with the position of said wagon; the improvement in said apparatus which comprises means for guiding a bale from said bale chamber into said bale receiving chamber including a pair of guide plates



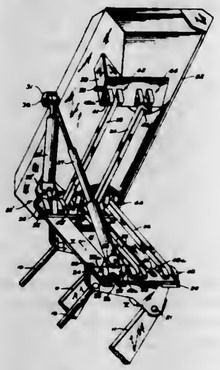
having forward ends mounted to the outside of respective side walls of said bale chamber adjacent said rear edges thereof by pivot means for swinging movement of each guide plate about a vertical axis, said guide plates extending freely rearwardly into said bale receiving chamber in overlying relation with the inside surfaces of respective side walls thereof and being of sufficient length to span the horizontal distance between said respective side walls in any position to which said bale thrower is rotatable with respect to said baling means to guide each bale from said bale chamber on said baling means into said bale receiving chamber on said bale throwing means, said pivot means constituting the sole means mounting said guide plates.

3,198,357
TRACTOR-MOUNTED IMPLEMENT CONTROL
Earl E. Shelby, Silver City, Iowa
Filed Sept. 5, 1961, Ser. No. 136,001
1 Claim. (Cl. 214—140)



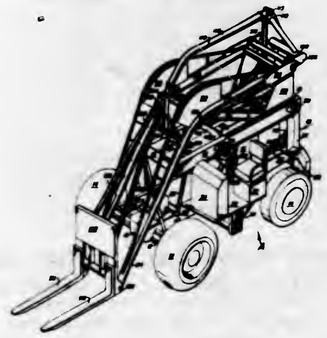
A device adapted to be mounted on a tractor of a kind having a pair of tractor-mounted controllable lifting levers extending rearwardly from the rearward end thereof, said lifting levers being swingable upwardly and downwardly at their rearward ends about a horizontal axis at their forward ends, said horizontal axis being disposed in fixed position with respect to said tractor whereby said horizontal axis does not move upwardly or downwardly with respect to said tractor, and power means attached to said tractor and controllable by the operator thereof for controlling upward and downward movements of the rearward ends of said lifting levers, said device comprising: a pair of rearwardly extending support arms disposable at the rearward end of a tractor, means for pivotally mounting the forward ends of said arms on the rear axle housing of said tractor, means for connecting said arms to said tractor-mounted controllable lifting levers in positions for the use of said levers to raise and lower said arms pivotally about their forward ends, an implement carrying frame means pivotally attached to the rearward ends of said arms whereby said frame means can define only pivotal means with respect to said arms and whereby said frame means is adapted to be swingably raised and lowered at its rearward end with respect to the rearward ends of said arms about a horizontal axis extending transversely of said arms and of said tractor, and a two-way hydraulic cylinder assembly extending rearwardly from said tractor, means for pivotally mounting the forward end of said hydraulic cylinder assembly on said tractor above said support arms for upward and downward movements of the rear end of said hydraulic cylinder assembly, upstanding support means attached to and extending upwardly from said implement frame, means for pivotally connecting the rearward end of said two-way cylinder to said upstanding support means at a position spaced a substantial distance upwardly from the pivotal connection between said arms and said frame, whereby vertical swinging movements of said rearward ends of said arms are controllable by the operator through said tractor-mounted levers and whereby vertical swinging movements of the rearward end of said implement frame about its pivotal connection to said arms can be controlled by the tractor operator by operation of said two-way hydraulic cylinder assembly, and whereby said cylinder assembly can be attached to a controllable power means mounted on the tractor and controllable by the operator from his driver's seat for supplying reversible hydraulic pressure to said hydraulic cylinder, and means on the rearward end of said implement-carrying frame for facilitating the connection of said frame to an implement, whereby the vertical positioning and the inclination with respect to the vertical of said implement by said cylinder can be substantially immediately controlled, said two-way hydraulic cylinder being independent and free of any cylinder-operating connection with said tractor-mounted controllable lifting levers and also of any means for control of the latter.

3,198,358
VEHICLE MOUNTED LOADER WITH A SIDE DUMP BUCKET TILTING ARRANGEMENT
Charles W. Gardner, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Aug. 1, 1962, Ser. No. 214,033
10 Claims. (Cl. 214—140)



1. A side dump bucket arrangement comprising a cradle, a bucket arranged to be supported on said cradle, at least one first link pivotally mounted on a first end portion of said cradle and further pivotally mounted on a second end portion of said bucket, at least one second link arranged in substantial parallel relationship with said first link and pivotally mounted on a second end portion of said cradle and further pivotally mounted at a first end portion of said bucket, actuating means operatively connected between said cradle and said bucket for selectively tilting said bucket on said first link about the first end of said cradle or on said second link about said second end of said cradle and locking means including a pivoted latch member operatively associated with each of the first and second end portions of said bucket and said actuating means for locking both end portions of said bucket to said cradle and responsive to actuation of said actuating means for releasing the first or second end portion of said bucket from the first or second end portion of said cradle, respectively.

3,198,359
REACHING TYPE LOADER
Le Grand H. Lull, 5501 Woodlawn Blvd., Minneapolis, Minn.
Filed Jan. 29, 1963, Ser. No. 254,675
3 Claims. (Cl. 214—140)

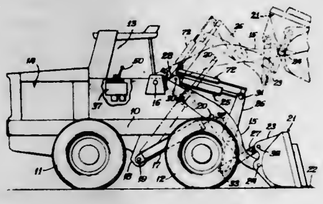


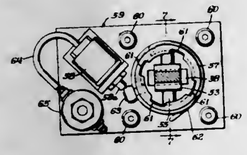
1. A reaching type loader including a mobile body having a pair of laterally spaced longitudinal side members forming inwardly facing way means, the said side members being connected at their rear end by a lateral member, a carriage, said carriage including a transverse support member, roller means supporting said carriage in said way means for reciprocating movement longitudinally of said mobile body, load handling boom structure mounted on said carriage, and power means operable to extend and retract said carriage and said boom structure with respect to said mobile body, said power means including a single hydraulic jack connected at one end thereof to said transverse support of said carriage and at the other end thereof to the said lateral member connecting the rear end of the said side members of said mobile body, said hydraulic jack being disposed vertically within the plane of and between the said side members of said mobile body.

3,198,360
BUCKET POSITION CONTROL MECHANISM
Don S. Strader, Mount Prospect, Ill., and Marcus W. Hagen, Kenosha, Wis., assignors to The Frank G. Hough Co., a corporation of Illinois
Filed Apr. 30, 1963, Ser. No. 276,883
5 Claims. (Cl. 214—140)

2. In a tractor loader having a pivotally carried bucket, linkage means including a hydraulic cylinder connected to said bucket so that said bucket is pivoted in either of two directions responsive to operations of said hydraulic cylinder, a hydraulic valve, hydraulic circuit means connecting said hydraulic valve to said hydraulic cylinder for operation of said hydraulic cylinder responsive to operations of said hydraulic valve to selectively pivot said bucket a selected amount in either of said two directions, and indexing means including a slotted detent sleeve operable to hold said hydraulic valve operated when said hy-

draulic valve is operated to pivot said bucket in a certain one of said two directions and another means operating





responsive to a particular operation of said hydraulic cylinder for restoring said slotted detent sleeve.

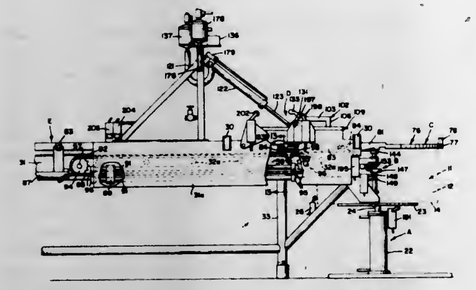
3,198,361

MACHINE FOR UNLOADING RETORT CRATES

Robert F. Krupp, Oakland, Calif., assignor to Gerber Products Company, Fremont, Mich.

Filed Dec. 26, 1961, Ser. No. 162,003

9 Claims. (Cl. 214—310)



1. A retort crate unloading machine for unloading a retort crate having a vertically slidable bottom and wherein containers are stacked in layers on said bottom, comprising: elevating means for raising said bottom in increments substantially equal to the height of one layer of containers, a longitudinally extending table adjacent said elevating means for deposit of containers from said crate, a sweep yoke mounted on said table, yoke moving means for reciprocating said yoke longitudinally of said table from a first position forwardly beyond a first end of said table and on the side opposite said table of a crate to a second position rearward of said first end, a gathering arm mounted above said table, and arm moving means for moving said gathering arm longitudinally of said table and also vertically in timed sequence to movement of said yoke from a first position adjacent said first end of said table to a second position above said table a distance less than the height of a container and longitudinally removed from said first position to a third position elevated above said table a distance substantially greater than the height of a container.

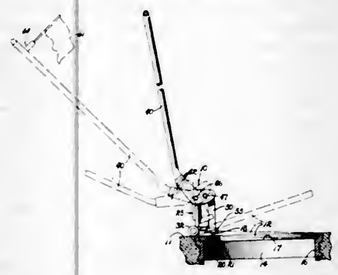
3,198,362

LIFTING TOOL

Harold L. Berg, 121 McKinley Ave., Fresno, Calif.

Filed Oct. 12, 1962, Ser. No. 230,071

7 Claims. (Cl. 214—370)



1. A lifting tool for manhole covers including an anchorage comprising a frame having support surface engaging means mounted thereon and cover stop means outwardly extended from the frame adjacent to said surface engaging means, a control handle having a lower bell crank end pivotally mounted on the frame, and an arm pivotally mounted on said bell crank end of the control handle eccentrically of the pivotal connection of the bell crank with the frame having a lower end engageable with said anchorage of the cover, said pivotal connection between the bell crank end of the handle and the frame providing a first fulcrum about which the control handle is motivated to lift the cover substantially vertically a predetermined distance against said stop means, and said surface engaging means providing a second fulcrum for the lifting tool about which the frame, arm and cover are rocked as a unit incident to engagement of the cover with the stop to render the first fulcrum inoperative.

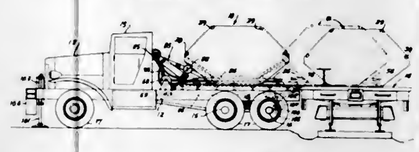
3,198,363

SKIP HAULER FOR TRUCK AND RAILWAY TRANSPORTATION

Edwin B. Snead, 5105 Ridge Oak Drive, Austin, Tex.

Filed July 24, 1963, Ser. No. 297,361

4 Claims. (Cl. 214—502)



1. In a carrier for transporting heavy cargo and transferring said cargo in a unit to another carrier, in combination with a truck having a frame and a subframe, and an elevatable carriage on said subframe, a skip normally supported on said subframe capable of removal therefrom, hydraulic means on said carriage for raising said elevatable carriage and said skip whereby the skip is supported wholly by said carriage, means operable by the motor of said truck for moving said carriage with said skip rearwardly beyond the rear end of said truck frame whereby to deposit said skip on an adjoining supporting surface and return said carriage to its inoperative position on said subframe, and a hydraulic ram mounted on said carriage independently of said skip and said hydraulic means for raising said carriage, the said hydraulic ram having means for interlocking engagement with said skip whereby to raise said skip to tilted position to dump its contents and retract it to normal hauling position on said carriage.

3,198,364

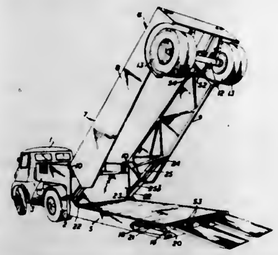
ROAD VEHICLES

Geoffrey B. Anderson, Andover, England, assignor to Charles Pitt (Barton Stacey) Limited

Filed Feb. 6, 1963, Ser. No. 256,570

Claims priority, application Great Britain, Feb. 6, 1962, 4,525/62

11 Claims. (Cl. 214—505)



1. A road vehicle including a load carrying floor pivotally mounted for movement between a position in which its rearward end is adjacent the ground and a raised operating psition in which the floor is clear of the ground; a vehicle body having an extension extending rearwardly beyond the floor; rear road wheels; suspension means comprising an axle mounted upon said body extension and carrying said rear road wheels; a hinge at the forward end of said body; and means for pivoting said vehicle body about said hinge upwardly in relation to said load carrying floor to a raised position in which said rear road wheels are located above said floor.

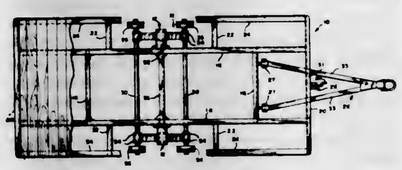
3,198,365

PIVOTABLE PLATFORM TRAILER

Jack Ervin Moll, New Berlin, Wis., assignor to Miller Tilt-Top Trailer, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Feb. 14, 1964, Ser. No. 345,037

5 Claims. (Cl. 214—505)



5. A trailer comprising the combination of

a platform having hitch assembly means pivotally connected to the platform at a point spaced from one end of the platform and a pair of mounting brackets located on the sides of said platform substantially at its midpoint, and

an undercarriage having a pair of parallel axles and a wheel mounted on the ends of each of said axles, spring means interconnecting said axles and a tubular member mounted on each of said spring means, said mounting brackets having parallel side walls and a downwardly sloping top wall supporting a pair of parallel pivot plates within the confines of said side walls which are spaced to abut the ends of said tubular member and pin means for pivotally mounting said plates on said tubular member, whereby said platform can be tilted with respect to said undercarriage.

3,198,366

BILLET HANDLING APPARATUS

James K. Figenshau, Big Lake, and William H. Hainer, St. Paul, Minn., assignors to General Mills, Inc., a corporation of Delaware

Filed Mar. 20, 1961, Ser. No. 96,826

2 Claims. (Cl. 214—652)

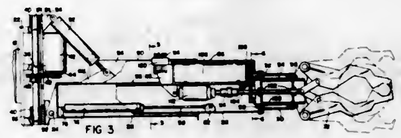


FIG 3

1. A billet handling apparatus for use during forging operations comprising in combination a movable lift truck having a vertically movable load support frame thereon, a swing shaft fixedly mounted with respect to said support frame so that its longitudinal axis is in a substantially vertical direction, a tilt frame swingably connected to said swing shaft, actuator means mounted on said tilt frame for swinging said tilt frame about the swing shaft, an elongated boom support pivotally connected to the tilt frame, said boom support being pivotal about a pivot axis which is substantially normal to the axis of the swing shaft, actuator means connected to the tilt frame for pivoting said boom support about the pivot axis, a boom member having a projecting end mounted within the boom support for reciprocal movement along the longitudinal axis of said support, actuator means mounted within the boom support for imparting reciprocal movement to said boom, a wrist member carried by the projecting end of the boom for rotation about the longitudinal axis of said boom, actuator means mounted on the boom member for effecting rotation of said wrist member, a grip mechanism mounted on the wrist member so as to be disengageable therefrom, actuator means mounted within the boom member for effecting gripping movement of the grip mechanism coupling means for detachably connecting the grip mechanism to the actuator means, and a pressure relief system operatively connected to the handling apparatus for minimizing the effect of shocks on said handling apparatus caused by external forces in excess of predetermined magnitudes.

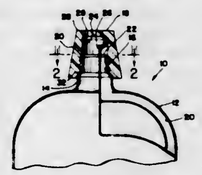
3,198,367

BOTTLE

Donald E. Stickney, 5151 Curtis Road, Plymouth, Mich.

Filed Jan. 30, 1963, Ser. No. 254,975

12 Claims. (Cl. 215—1)



1. In combination, a bottle having an externally threaded neck portion for discharging the contents of the bottle with the opening of the neck portion having a small cross-sectional area relative to the cross-sectional area of the remainder of the bottle, a handle, and a vent passageway extending through said handle and said neck portion with one end of the passageway open to the interior of the bottle at one side thereof and in venting communication with lower regions of the bottle and the other end of the passageway open to the atmosphere above the threaded neck portion, said passageway having an integral extension at said other end defining a partition extending

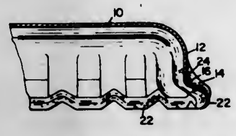
above and between the opening to the atmosphere and said opening for discharging the contents of the bottle, and a closure cap having internal threads for screwing the cap on and off said threaded neck portion, said cap having an annular portion sealingly engageable with the bottle at one end of the threaded neck portion.

3,198,368
CONTAINER CLOSURE
Walter Dean Kirkland, Libertyville, and Jim T. Oda, Mundelein, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
Filed July 24, 1963, Ser. No. 298,524
1 Claim. (Cl. 215—37)



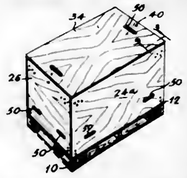
A container for parenteral solutions comprising a storage vessel with a defined access opening and a closure means, said closure means comprising a lining capable of sealably closing said opening of said container and a resealable backing of natural rubber which is easily pierceable by a hypodermic needle, sealing means sealingly securing said closure means to said storage vessel and defining an access opening overlying said resealable backing, said lining being made from material selected from the group consisting of chlorobutyl rubber and a polymer of tetrafluoroethylene, said lining and backing having a combined thickness between 60 and 100 mils.

3,198,369
BOTTLE CAP
Francis J. St. Jacques, Oakham Road, North Brookfield, Mass.
Filed Aug. 2, 1963, Ser. No. 299,651
1 Claim. (Cl. 215—39)



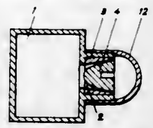
A crown cap for application to a bottle having a pouring lip and comprising a generally plane top portion and a depending flange at the periphery thereof, said flange being substantially continuous about the top portion and including a generally cylindrical portion, a plurality of spaced indentations in a part of the flange forming an indented peripheral crimped area in the flange, the portion of the cap including the indentations extending generally outwardly and downwardly away from the generally cylindrical portion of the flange, a generally inwardly directed terminal protective lip portion for the flange extending inwardly at an angle from the crimped area of the indented portion, and means at the interior of the generally cylindrical portion and the indented portion of the cap forming shoulder means for gripping the pouring lip of a bottle to which the cap is secured, the protective lip portion being below the shoulder means, and being so shaped that when the cap is on the bottle the lip portion projects downwardly and inwardly toward the center of the bottle and terminates at its lowest edge in close proximity to the surface of the bottle.

3,198,370
COLLAPSIBLE CARGO CONTAINER
Alphonse Briand, Chambly, Quebec, Canada, assignor, by mesne assignments, to Gulf Ports Steamship Co. Ltd., Montreal, Quebec, Canada
Filed July 16, 1962, Ser. No. 210,617
1 Claim. (Cl. 217—12)



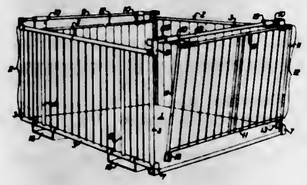
A collapsible cargo container comprising an open-sided pallet, a rectangular base panel secured on said pallet and having right angularly related slots at the corners thereof, side panels having first detachable connections with each other and each having a further detachable connection on said base panel, characterized in that said detachable connection between said side panels and said base panel consists of four attachment plates mounted on the upper surface of said base panel one adjacent each corner, each of said attachment plates being provided with a pair of slots disposed at right angles to each other and respectively parallel to an adjacent margin of said base panel, each of said side panels including a lower edge engaging the upper surface of said base plate with the outer surface of said side panels substantially flush with the peripheral edge of said base plate, each of said side panels being provided with a pair of spaced apart attachment straps one adjacent each lower corner with each of said attachment straps being curved arcuately outwards from the inner face toward the outer face of the respective side panel and having dimentions adapting it to slidably fit within said base attachment plate for permitting assembly of each of said sides from the exterior of said base leaving said base clear and unobstructed, said side panel straps and base panel plates being located within the interior of said container leaving the exterior surfaces clear of projecting elements, said first detachable connection comprising further holding devices provided in each of said side panels adjacent each upper corner, said holding devices being in matched pairs with a portion of each pair mounted on each adjacent side panel whereby when said side panels are mounted on said base by the engagement of said attachment straps in said base plate slots, the said holding device portions on each adjacent side panel are engaged one with the other and are adapted to be retained in said engaged position by the insertion of a retaining pin therebetween, said holding devices being located wholly within the interior of said container.

3,198,371
SEALING ARRANGEMENT FOR ELECTRON DISCHARGE DEVICES
André Velte and Didier Grauleau, Paris, France, assignors to CSF-Compagnie Generale de Telegraphie sans Fil, Paris, France
Filed Dec. 15, 1961, Ser. No. 159,637
Claims priority, application France, Dec. 30, 1960, 848,430
5 Claims. (Cl. 220—2.2)



1. A metallic vacuum-tight envelope provided with a metallic recess having a flared exhaust passage of substantially circular cross section that increases from the inside toward the outside of the envelope, and a metallic closure plug forced into said passage to establish therein a vacuum-tight seal, the metals of said recess and plug having substantially the same coefficient of expansion, at least one of said metals being a soft metal coated with a thin layer of another metal, and the shape of said plug being such that a tight contact is established between said recess and plug over only a relatively narrow annular strip.

3,198,372
METAL PACKING CASE FOR TRANSPORT OF FRUIT
Roger Ludovic Witrant, 4 Ave. de l'Opera, Paris, France
Filed Nov. 9, 1961, Ser. No. 151,252
Claims priority, application France, Nov. 15, 1960, 843,987, Patent 1,273,689
14 Claims. (Cl. 220—6)



1. A collapsible container adapted for storing material comprising a bottom, a pair of opposite side panels having upper and lower edges, means pivotally supporting the side panels at the lower edges thereof to the bottom, an upper frame, means pivotally supporting the side panels at the upper edges thereof to the upper frame and permitting collapsing of the side panels by concurrent pivotal movement of each of the side panels at their respective edges, a further pair of opposite side panels for said container, means supporting the further side panels from the upper frame for free pivotal movement about axes extending perpendicular to the first said axes, and means for detachably securing said further side panels at the lower edges thereof to said bottom and thereby provide stability for said container, the latter means being released with said further side panels pivotally moved a limited amount with respect to said upper frame whereby said further side panels may be further pivoted in either direction and the first said side panels may be collapsed, the container further comprising a lid pivotally connected to one of the first said side panels for closing the container, and means associated with said further side panels for contacting said lid with the latter closing the container to prevent pivotal movement of said further side panels whereby said lid must be first raised before said further side panels can be pivotally moved.

3,198,373
ELECTRICAL DEVICE COVER PLATE SEAL
Robert E. V. Ramsing, Whittier, Calif., assignor to Sierra Electric Corporation, Gardena, Calif., a corporation of California
Filed June 8, 1964, Ser. No. 373,403
6 Claims. (Cl. 220—24.3)

1. The combination comprising an apertured plate mountable to a surface about an electrical device and having a peripheral flange deflected from the plane of the plate to extend toward said surface, and a yieldable gasket having at its inside a groove receiving the edge of said flange and formed between an inner peripheral lip of the gasket overlapping the outer surface of the plate and a spaced parallel gasket rib engaged against the inside of the plate, the outer face of the gasket being formed to present a first peripheral sealing ridge projection of said lip and a second spaced parallel sealing ridge in pressure receiving relation with said plate-engaging rib inwardly of the flange edge so that plate pressure



against the gasket applied to said surface resiliently engages said first ridge against the surface and compresses said second ridge against the surface by force transmission from the plate through said rib.

3,198,374
LEAKPROOF BOTTLED LIQUID MAILABLE CONTAINER
Harold Lindner and Alfred Lindner, both of 58 Warren St., New York, N.Y.
Filed Aug. 31, 1962, Ser. No. 220,811
6 Claims. (Cl. 220—39)



1. In combination, a mailable leakproof container having a cylindrical wall and a bottom wall formed without joining seams and provided with a coupling thread on the upper end portion of the body wall, the upper end edge of the body wall being curled inwardly into pressure contact with the body wall to provide a true circular inwardly rolled edge disposed in a true right angle relation to the major axis of the container, and a closure cap having a skirt formed with a mating coupling thread threaded thereby on the container, the closure cap having an end wall integral with the skirt thereof and said end wall having a circular groove near its outer edge portions and a sealing gasket engaged with the inner surface of said wall and said groove and said rolled edge being forced against said sealing gasket into said groove when the closure cap is threaded on said container, whereby a leakless sealing engagement is established between said closure cap and said container, the cylindrical wall having internal beads spaced longitudinally thereon and having approximately the same internal diameter as the internal diameter of the curled edge of the body to provide a bore diameter of approximately uniform diameter from end to end through which a bottle may freely slide into and out of the container wall.

3,198,375
BLOW MOLDED CONTAINER
Paul H. Hunter, Highland Park, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed May 1, 1962, Ser. No. 191,560
8 Claims. (Cl. 220—60)

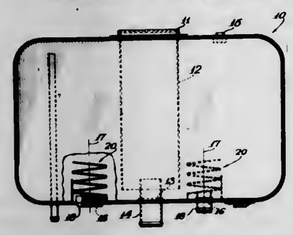
1. A blow molded plastic container comprising an open bottom container body having a beaded neck portion defining the open bottom thereof, said neck portion having

a minimum diameter as large as the inner diameter of said container body said container body adapted to be inverted for filling, and non-removable beaded bottom closure means adapted to be snapped into the beaded neck portion of said container body in air-tight, permanent, interlock-



ing frictional assembly therewith; said closure means being formed integral with said container body in the blow molding operation and adapted to be severed therefrom and snapped into the beaded neck portion of said container body.

3,198,376
HYDRAULIC RESERVOIR DIFFUSER
Walter M. Ashley, Jr., Glen Ellyn, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Feb. 19, 1963, Ser. No. 259,504
5 Claims. (Cl. 220—86)



1. A liquid reservoir including a tank, an inlet opening formed in said tank, and a diffuser mounted within said tank over said opening comprising: a first plate spaced above said inlet opening and lying in a plane transverse to the longitudinal axis of said inlet opening, an aperture formed in said first plate centered about the longitudinal axis of said inlet opening and corresponding in size to said inlet opening, a last solid plate spaced above said first plate and lying in a plane transverse to the longitudinal axis of said inlet opening, intermediate plates spaced between said first and last plates lying in planes transverse to the longitudinal axis of said inlet opening, apertures formed in said intermediate plates centered about the longitudinal axis of said inlet opening, the area of the apertures formed in said intermediate plates decreasing progressively in the direction from the first to the last plate, and means supporting said plates in their respective positions.

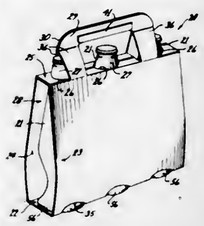
3,198,377
MIXING BOWL WITH HANDLE
Larry J. Buckley, 15587 Deering, Livonia, Mich.
Filed Apr. 30, 1962, Ser. No. 190,904
3 Claims. (Cl. 220—94)

1. A cooking utensil for facilitating the mixing and blending of cooking ingredients which comprises a relatively wide bowl having a bottom wall and a side wall extending upwardly from said bottom wall to receive and retain cooking ingredients, said bottom wall having a substantially flat supporting surface, said bottom wall being of substantial thickness greater than the thickness of an adult hand, and of substantial width sufficient to receive the four fingers of an adult hand, and means forming a cavity originating at said side wall of the



bowl in a direction generally toward the axis of the bowl, said cavity having sufficient width, height and length to receive the four fingers of an adult hand in an extended position to facilitate the use and handling of the utensil with one hand inserted in said cavity.

3,198,378
BOTTLE CARRIER AND BLANK THEREFOR OR THE LIKE
Melville T. Farquhar, Bon Air, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 228,877
2 Claims. (Cl. 220—108)

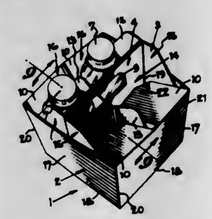


1. A container blank having a bottom wall means, a pair of opposed side wall means respectively hingedly secured to said bottom wall means, a pair of handle means integrally secured to said side wall means, and top wall means hingedly secured to one of said side wall means to be disposed between said handle means, said top wall means being adapted to cooperate with said other wall means to define a bottle-receiving compartment, said top wall means including a plurality of flap means defining openings therebetween to receive neck portions of bottles or the like disposed in said compartment whereby said handle means will extend over said bottles, each said handle means including a U-shaped handle having the legs thereof integrally secured to said one side wall means and having at least one of said flap means carved from said handle.

3,198,379
CONVERTIBLE ARTICLE CARRIER AND STORAGE UNIT
Edmund W. Creelman, Cincinnati, Ohio, assignor to C. W. Zumbiel Company, Cincinnati, Ohio, a corporation of Ohio
Filed June 25, 1963, Ser. No. 290,896
3 Claims. (Cl. 220—113)

1. A convertible article carrier and storage unit formed of paperboard material comprising;
an external carton having a bottom, generally vertical side walls, and an open upper end;
a plurality of turn-down flaps joined to the upper edges of the side walls of the external carton;
an article holder slidably interfitting the external carton;

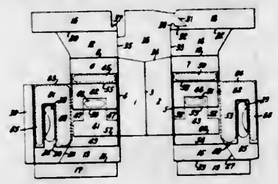
said article holder being formed from a single sheet of paperboard material having a main wall panel and a plurality of side wall panels;
said sheet being wrapped upon itself to form an open ended wrap-around tube having a rectangular cross section, the side wall panels of the sheet forming the side walls, and the main wall panel forming the main wall of the holder;
the side wall panels having a tear line and said main wall panel having a score line located mid-way along the length thereof;
whereby the side wall panels are separated along said tear line and the main wall panel is folded along said score line and doubled upon itself to form a two-ply main wall;
said holder thereby having generally vertical side walls and open upper and lower ends, the side walls of the article holder being substantially less in height than the side walls of the external carton;
the turn-down flaps of the external carton being doubled over and bent downwardly over the upper edge portion of the walls of the article holder;
said main wall extending across the midportion of the article holder;



said main wall including a handle portion projecting above the open upper end of the article holder;
said article holder adapted to confine a group of articles within the side walls thereof, with the lower ends of the articles resting upon the bottom of the external carton, said articles engaging and holding the turn-down flaps in locking position with respect to the walls of the article holder;
the distance from the lower open end of the article holder and the upper edge of the handle portion of the holder being equal to or less than the length of the articles, whereby the article holder is adapted to be shifted downwardly relative to the articles to a position wherein the upper edge of said handle portion is flush with or below the upper ends of the articles resting upon the bottom of the external carton, adapting a plurality of article carriers to be stacked one upon another in the form of storage units with the weight load thereof supported by the articles;
said article holder adapted to be shifted upwardly into engagement with the said turn-down flaps with the handle portion of said main wall projecting above the upper ends of the articles therein to convert the storage unit into an article carrier.

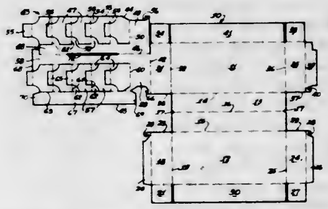
3,198,380
CARRIER CARTON
Lyman C. Gish, Rittman, Ohio, and William H. Finckel, Jr., Washington, D.C., assignors to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed Oct. 4, 1962, Ser. No. 228,377
4 Claims. (Cl. 220—115)

1. A carrier carton, comprising main blank means, and supplemental blank means of patch form initially separate from said main blank means; said main blank means including as relatively foldable integral elements a bottom, side and end walls, and a handle member which is provided with a finger hole and is disposed in spaced relation to said side wall: and said supplemental blank means comprising a handle reinforcing element of less area than the handle member and having parts secured to the handle member both longitudinally and vertically thereof in areas adjacent to the perimeter of said finger



hole, transverse partition means integral with said reinforcing element and hingedly connected therewith and disposed to span the space between said handle member and side wall, and securing means comprising glue flaps integral with and hingedly carried by said transverse partition means at their ends remote from said handle member and individually secured to said side wall and serving to foldably join the ends of said partition means to said side wall.

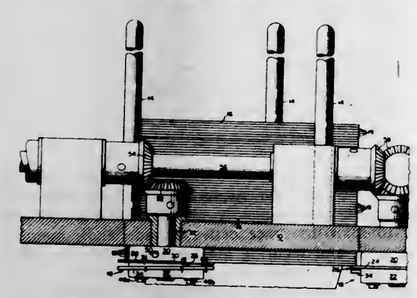
3,198,381
CELLULAR CARTON
Nicola J. Gioia, Vancouver, British Columbia, Canada, assignor to Morris Belkin, Vancouver, British Columbia, Canada
Filed Nov. 19, 1962, Ser. No. 239,399
1 Claim. (Cl. 220—115)



A carton comprising a one-piece blank having laterally opposed side wall panels, a bottom wall panel joining said side wall panels, an end wall panel portion extending from each end of each said side wall panel, each pair of said end wall panel portions being secured together to form an end wall, a partition-forming panel extending integrally from one of said end wall panel portions, said partition-forming panel having two panel sections foldably connected along a longitudinally extending fold line and doubled upon each other along said fold line for forming a folded top edge for the partition of the carton, a plurality of transverse partition members partially severed from each said panel section, each said partition member having a foldable connection with one of said panel sections, each said panel section having a top strip portion extending from end to end thereof, and a partition strip foldably connected to one of said panel sections along a longitudinally extending fold line parallel to said first fold line and disposed between said panel sections thereby forming a folded bottom edge for the partition, said partition strip extending from end to end of said carton, said partition strip fold line being engageable with said bottom wall panel, each said partition member having a tab secured to one of said side walls and a tab secured to said partition strip adjacent the bottom wall panel, said

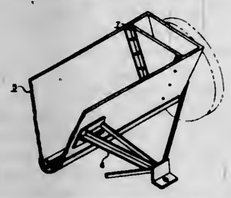
partition strip having end sections each adhesively secured between said end wall panel portions of a pair thereof.

3,198,382
APPARATUS FOR DISPENSING NESTED CONTAINERS
William O. Cleary, 1230 Kenton Road, Deerfield, Ill.
Filed Oct. 14, 1963, Ser. No. 315,851
4 Claims. (Cl. 221—222)



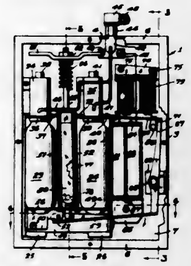
1. In a dispensing apparatus for a stack of nested containers provided with rims the combination of a base element containing an opening of a size to allow passage of the containers therethrough and a plurality of synchronically driven container separating and dispensing mechanisms for supporting the stack of containers and for separating the lowermost container from the stack of containers, said mechanisms being disposed along the circumference of the opening in angularly spaced relation to each other, each mechanism comprising a shaft rotatably mounted in said base element, an upper shank member and a lower shank member mounted on said shaft, releasable securing means for adjustably mounting one of said shank members in any one of a given number of fixed positions on said shaft relative to the other of said shank members, an annular flange segment mounted on said upper shank and a helical rib segment mounted on said lower shank, a given portion of said flange segment always being disposed in a spaced and inclined plane relative to a given portion of said rib segment, whereby the vertical distance between the leading edge of the flange segment and the portion of the upper surface of the rib segment located directly below said leading edge can be varied upon the release of said one shank member securing means and a preselected rotational movement of said one of the shank members with respect to the other shank member so that the mechanisms can accommodate container rims of different thicknesses.

3,198,383
MARKING SPREADER
Laurence R. Brown, 8103 Bardu Court, Springfield, Va.
Filed July 15, 1963, Ser. No. 294,840
3 Claims. (Cl. 222—1)



1. In a spreader for dispensing materials such as fertilizer comprising, a movable dispensing spreader having a storage bin mounted over the shaft between a pair of wheels and extending substantially therebetween dispensing means including agitating means disposed along the length of said shaft for engaging materials in said bin and dispensing them evenly over a row width disposed between said wheels as the spreader is moved, the improvement providing means for marking the limit of the row width to dispense materials evenly over a surface in contiguous rows comprising a panel inserted in said bin at one end thereof to form a small compartment at the end of said storage bin which communicates with said agitating means at the end of said shaft to dispense only at the edge of said row width any marking materials placed in said small compartment alongside the material placed in said storage bin.

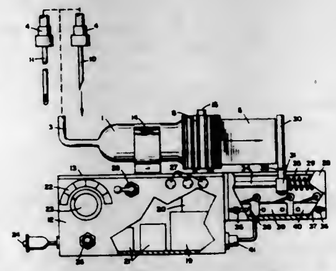
3,198,384
INFLATING MEANS FOR LIFE SAVING DEVICES
George Willard Anderson, 445 NW. 127th St., Miami, Fla.
Filed Sept. 18, 1962, Ser. No. 224,475
11 Claims. (Cl. 222—5)



1. An inflating mechanism for a life preserver, comprising, a pressure-tight casing having a pressure-deflectable diaphragm forming one wall thereof, means in said casing constructed and arranged to fix a puncturable, pressurized gas container therein, a firing pin mounted in said casing and movable from a first position free of a container fixed as aforesaid, to a second position puncturing the same, a hammer movable to strike said firing pin and drive the same to its said second position, means urging said hammer into movement striking said firing pin, latch means engageable with said hammer to releasably hold the same free of said firing pin, electromagnetic means in said casing energizable to move an element of said latch means to release said hammer to movement by said urging means, contact means in said casing closed by and in response to pressure acting externally on said diaphragm, and a circuit including said contact means and electromagnetic means.

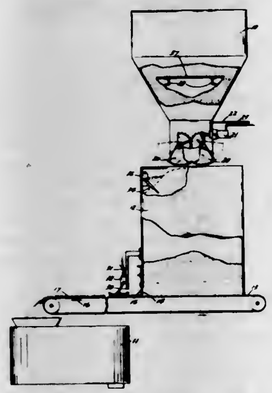
3,198,385
HIGH PRESSURE MEDICAL INJECTION DIRECT FROM A FLUID CONTAINING AMPULE
Palmer M. Maxwell, 5 Wymberly Point Drive, Savannah, Ga.
Filed Sept. 6, 1962, Ser. No. 221,775
4 Claims. (Cl. 222—41)

1. Apparatus for the controlled ejection of fluid comprising, in combination, an ampule having two ends and a hollow interior filled with said fluid, a solid rectangular leader attached to and extending from one end of the ampule, a hollow tube extending from the end of the ampule other than that to which the solid leader is attached and having its hollow interior filled with said fluid and joined to the hollow interior of the ampule, means for closing that end of the hollow tube remote from the ampule, two cylindrical rollers engaging opposite sides of the solid leader and having their centers of rotation parallel to each other in the same plane, means for rotating one cylindrical roller in a clockwise direction while rotating the other cylindrical roller in a counter-clockwise direction so as to impart motion to the



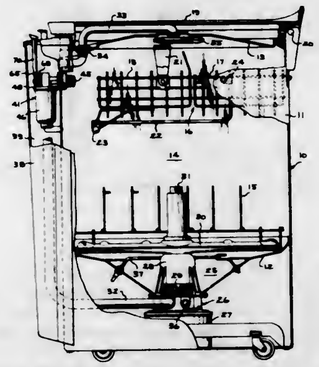
ampule between said rollers, and means responsive to the said motion of the ampule for selectively limiting the extent of said motion.

3,198,386
CONSTANT VOLUME FEEDER FOR FLOWABLE GRANULAR MATERIAL
Nelson Hartley, Baltimore, Md., assignor to Hartley Controls Corporation, Neenah, Wis., a corporation of Wisconsin
Filed Feb. 8, 1963, Ser. No. 257,237
2 Claims. (Cl. 222—55)



1. Apparatus for treating foundry sand and like flowable granular material, said apparatus including a bulk bin having side walls which tend to become incrusted by the granular material and from which the granular material is periodically dumped in batches to rush out of said bin, a continuous mixer having a substantially continuous constant volume demand for granular material and feeding mechanism adapted to receive the granular material from the bulk bin in batches and to furnish said material to said apparatus at a constant volume level, said feeding mechanism comprising:
(a) hopper into which said bin discharges,
(b) conveyor beneath said hopper for carrying material away from said hopper at a constant volume level,
(c) first sensing means to detect when the hopper is empty,
(d) second sensing means to detect when the hopper is full,
(e) gate means on the bin,
(f) means for widely opening said gate means to dump a batch of material from the bin into the hopper in response to said first sensing means and to close said gate means in response to said second sensing means,
(g) said gate means comprising means for opening the bin wide enough to cause the flowable granular material therein to be abruptly discharged and scour the side walls of the bin and prevent incrustation thereof.

3,198,387
TREATING AGENT DISPENSING MEANS
Norman L. Kendt and John A. Dicken, Jr., Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed Feb. 17, 1964, Ser. No. 345,432
3 Claims. (Cl. 222—70)

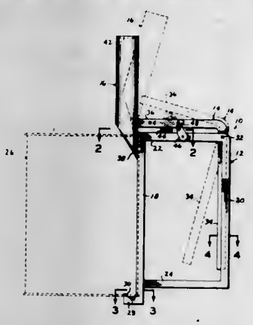


1. For use in an automatic washing machine having a wash chamber adapted to contain articles to be washed therein, wash means to effect a washing action upon the articles, and sequence control means to conduct the machine through a sequence of operations comprising a wash cycle, a treating agent dispensing means comprising:
(a) a housing forming a reservoir adapted to contain several times the quantity of agent dispensed with each operation of the dispensing means,
(b) a depressed sump in the bottom of said reservoir forming a cylinder,
(c) a piston disposed within said reservoir and adapted to cooperate with said cylinder,
(d) a first passageway formed in said housing and communicating with said cylinder,
(e) a second passageway formed in said housing and communicating with the wash chamber,
(f) a tube at one end connected to said first passageway at a point internally of said housing and at the other end connected to said second passageway at a point internally of said housing,
(g) energy storing means associated with said piston whereby release of the energy stored by said storing means causes movment of said piston,
(h) manually-operable means to energize said energy storing means,
(i) said energy storing means being adapted to be released by the sequence control means to thereby cause dispensing of agent into the wash chamber.

3,198,388
CAN OPENER AND POURING SPOUT
Bill L. Campbell, Star Rte., Canton, Okla.
Filed Jan. 2, 1964, Ser. No. 335,120
2 Claims. (Cl. 222—83.5)

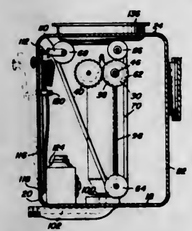
1. A can opener and pouring spout, comprising: a rectangular channel iron frame lying in a common plane and having one longitudinal side adapted to longitudinally engage a side of a can to be opened, the other longi-

tudinal side of said frame forming a hand grip; a lateral extension on one end of the cam engaging side of said frame forming a foot; upstanding lugs formed on said foot for engaging and supporting one end of a can to be opened; a bell crank pivotally connected to the hand grip side of said frame, said bell crank having a first leg disposed within the confines of said frame forming a handle, said bell crank having a second leg movable toward and away from the end of said frame opposite said foot; a pouring spout secured intermediate its ends to said



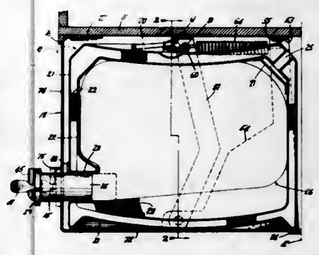
second leg of said bell crank, said spout having a sharpened can puncturing end projecting toward said foot, said spout being adjacent and parallel to the can engaging side of said frame when in can puncturing position; a stop formed on said frame opposite said foot for engaging a side surface of said pouring spout and limiting the can puncturing action of the latter; spring means normally urging said second leg of said bell crank away from the adjacent end of said frame; and locking means holding said bell crank in can opening position.

3,198,389
TOOTH PASTE DISPENSING CABINET
Thomas B. Dunning, 139 Reservoir Ave., Central City, Ky.
Filed Dec. 18, 1963, Ser. No. 331,498
8 Claims. (Cl. 222—93)



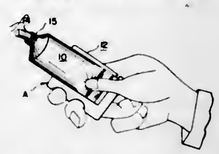
5. A tooth paste dispensing cabinet defining a support structure including a pair of interconnected opposite side walls, a pair of rollers, means journaling said rollers from said structure with said rollers paralleling each other and disposed in a plane extending between said side walls, said means also mounting said rollers for simultaneous guided movement along a path disposed generally normal to said plane independently of rotation of said rollers relative to said side walls, said rollers being spaced apart and adapted to rollingly compress a collapsible tube of tooth paste disposed therebetween, coacting means carried by said rollers and drivingly connecting one of said rollers to the other for equal and simultaneous rotation of said rollers, actuating means carried by said support structure and operatively drivingly connected to said one pair of rollers for effecting rotation of said rollers relative to said side walls and guided movement of said rollers along said path in response to said rotation when an elongated collapsible tube extending along said path is compressively engaged between said rollers, said actuating means comprising an endless flexible member entrained about aligned wheels journaled from said side walls and including one run paralleling said path of movement of said rollers, said one roller having a wheel mounted thereon drivingly engaged with said one run of said endless member.

3,198,390
INSULATED CONTAINER HAVING A DISPOSABLE BAG THEREIN ANCHORED TO ITS DISCHARGE TUBE
John H. Beckman, 5117 McCray, and Donald E. Bobo, 1604 N. Lynhurst, both of Indianapolis 24, Ind.
Filed Apr. 30, 1962, Ser. No. 191,214
9 Claims. (Cl. 222—105)



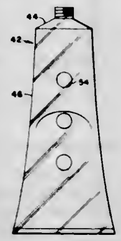
1. In combination with a liquid container having walls of low thermal conductivity and, in one of said walls near the bottom thereof, an opening providing communication between the interior and exterior of the container, a liquid containing bag of pliable material located within said container, said bag having a neck located in said opening and long enough to project therethrough, a sleeve in said opening and surrounding said neck, said sleeve having an outlet opening in its bottom wall and said neck having a discharge orifice located over said outlet opening, neck clamping valve means mounted within said sleeve, operable from exteriorly thereof, and adapted to clamp said neck at a point spaced inwardly from the outer end of said outlet opening, said sleeve being slidable in said first mentioned opening between an outer position in which said outlet opening is located exteriorly of said container and an inner position in which the neck-clamping portion of said valve means is spaced inwardly from the outer end of said first mentioned opening.

3,198,391
COLLAPSIBLE TUBE DISPENSER
Dwight M. Sencabaugh, 15319 Edgewater Drive, Lakewood 7, Ohio
Filed June 14, 1963, Ser. No. 287,818
3 Claims. (Cl. 222—105)



1. In a dispensing device for assisting in the manual removal of material in paste form from a disposable collapsible tube, e.g. tooth paste from a conventional collapsible tube, a plate-like base or body member against which a tube of material is adapted to be pressed by the person dispensing the material in the tube, said base or body member having one or more spaced narrow slots adjacent to one end thereof opening into one of its sides and adapted to receive a flattened portion of the tube, at least one side of said slot being of a length corresponding to the width of a tube insertable therein whereby material in the tube at one side of said slot or slots is prevented from flowing into the tube at the other side of said slot or slots.

3,198,392
TUBE COLLAPSING STRUCTURE
Woodrow S. Wilson, Pasadena, and Edward G. Akers, Downey, Calif., assignors to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts
Filed Nov. 5, 1963, Ser. No. 321,539
1 Claim. (Cl. 222—107)



An article of manufacture, said article of manufacture comprising:

a tube adapted to contain material, said tube having first and second walls, said tube being formed of a flexible, self-supporting, inert polymer composition material, said tube having a top and a body;

said top having an openable closure adapted to open to discharge material from within the interior of said tube body and adapted to be closed to maintain material within said tube body and protect material within said tube body;

said body having a top end and a bottom end;

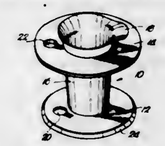
said top being secured to said top end of said body;

said bottom end of said body being closable along a generally straight line extending transversely of said tube;

means formed on the inside of at least said first side of said tube, said means comprising at least two cups formed integrally with said first tube wall and preventing an inwardly directed concave surface when in unstressed condition, said cups being adapted to engage with said second wall of said tube to hold first and second walls in proximity to each other after at least some of the material in said tube is discharged whereby the separation of said first and second walls due to the flexibility of said flexible, self-supporting, inert polymer composition material is prevented.

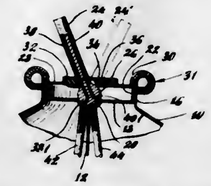
3,198,393
POURING SPOUT
Donald M. Kitterman, Kansas City, Mo., assignor to Pacific Industries, Inc., San Francisco, Calif., a corporation of California
Filed Feb. 28, 1963, Ser. No. 261,706
1 Claim. (Cl. 222—109)

A pouring spout for liquid containers having a neck, said spout comprising a pair of spaced apart discs, one of said discs having an edge in engagement with the inner face of the wall of the neck at the base of the neck whereby to retain said spout with respect to said neck, the other of said discs being adjacent the rim of the neck of the bottle, each of said discs having a hole therethrough, said holes being in vertical alignment; a tube interconnecting said discs and in communication with the interior of the container, said tube being coaxial with the neck of the container and cooperating with said discs and the inner face of the wall of the neck to define an air chamber which circumscribes said tube and is in communication with the atmosphere and the interior of said container through said hole, said tube normally extending above the



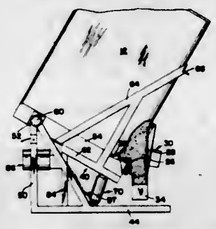
plane of said other disc, there being a pouring lip formed on the extending portion thereof, said pouring lip being in opposed relationship to said holes, said other disc being inclined from a point beneath said lip toward the hole formed therein whereby any excess liquid returns to the container.

3,198,394
PRESSURIZED DISPENSERS
Samuel Lefer, 112 Eastwood Road, Fairfield, Conn.
Filed Nov. 16, 1962, Ser. No. 238,085
9 Claims. (Cl. 222—135)



1. A pressurized dispenser which comprises: a container having a plurality of compartments therein; nozzle means defining a plurality of separate independent dispensing passages therethrough; manually selectively operated valve means intermediate said container and nozzle means and arranged to interconnect any one of said compartments in fluid flow relationship with a separate one of said dispensing passages and propellant means in each compartment for dispensing material therein out through said valve means and nozzle means on said each compartment being placed into fluid flow relationship.

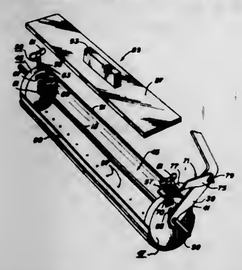
3,198,395
APPARATUS FOR DISCHARGING BULK MATERIAL FROM BINS
Ralph E. McKinney, Beatrice, Nebr., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Apr. 15, 1964, Ser. No. 360,010
4 Claims. (Cl. 222—166)



4. Apparatus for tipping to discharge the contents of a bin having legs, a stand having a base and a frame extending upwardly from said base, a bin supporting cradle having a pair of transversely spaced upwardly opening chan-

nel tracks having front and rear ends, said tracks being located at the lower end of the cradle and shaped to receive the bin legs, frame means on the cradle connecting said tracks, pivot members secured to said tracks adjacent the rear ends thereof and rotatably supported on the upper end of said frame so that said track members are movable up and down between a substantially horizontal position and a position inclined downwardly and forwardly from said pivot members, a framework on said cradle extending upwardly and having a portion thereof above and in substantially vertical alignment with the front ends of said tracks in the horizontal position thereof, and power operated extensible means connected to and extending between said stand and said cradle, said means being connected at one end thereof to said cradle adjacent the forward ends of said tracks in a supporting relation with said cradle for moving said cradle upwardly to said substantially horizontal position thereof.

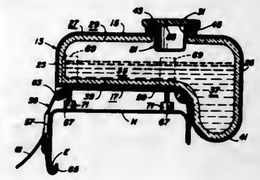
3,198,396
MEANS FOR KILLING NUT GRASS
Robert S. Bailey, 2039 Cowden, Memphis, Tenn.
Filed Apr. 9, 1963, Ser. No. 271,748
2 Claims. (Cl. 222—176)



1. A device for killing nut grass comprising an axle, wheels mounted on said axle for supporting said axle for movement over the ground, a handle including a bifurcated lower portion having apertures therethrough receiving said axle for pivotally mounting said handle relative to said axle, a trough for holding poison therein, said trough including a pair of spaced apart ends and a rounded bottom interconnecting said ends, each of said ends including a vertical slot through which said axle loosely extends; a pair of adjustment means respectively at said ends; each of said adjustment means including an adjustment screw, a nut fixedly attached to one of said ends, said screw being threadedly engaged in said nut with the end of said screw engaging said axle to pivotally support said trough therefrom with said bottom thereof being spaced above the ground at a height greater than the height of the desirable grass and lower than the nut grass; a pad attached to the lower side of said bottom and extending substantially along the length thereof, said bottom being provided with a plurality of holes therethrough whereby poison is adapted to drain from said trough through said holes and onto said pad where it is adapted to be transferred to the nut grass as the trough is moved over the ground.

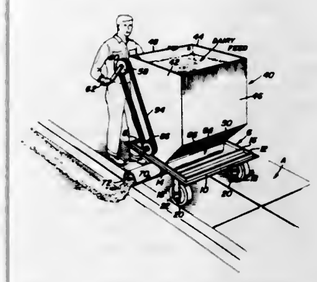
3,198,397
WATER CARRIER FOR FARM TRACTOR
Leon Lo Bello, 4479 E. Dearing Road, Memphis, Tenn.
Filed Oct. 1, 1963, Ser. No. 313,084
15 Claims. (Cl. 222—176)

1. In combination with a tractor having a hood covering the engine thereof, a water carrier comprising a container having insulated wall means defining a chamber for carrying water, means attached to said wall means and communicating with said chamber for dispensing the water therefrom, means removably securing said water container to said hood, means supporting said container in spaced relationship above said hood for permitting air to circulate between said container and said hood, and said means removably securing said water container to



said hood including flexible strap means attached to said container and hook-shaped end members attached to the ends of said strap means and removably hooked under and engaging the lower edge portions of the respective sides of the tractor hood.

3,198,398
MANUALLY MANEUVERABLE CATTLE FEEDING CART
Edward A. Schreiber, Jr., R.F.D. 1, Mosinee, Wis.
Filed May 12, 1964, Ser. No. 366,710
7 Claims. (Cl. 222—176)



1. A mobile manually maneuverable cart adapted to be pushed along a walkway while transporting and dispensing dairy feed to a cattle manger comprising: a wheel-supported hopper for the feed (in either ground or pellet form) said hopper having a wholly open top portion and being of a vertical height that the walking attendant can load the container portion at a convenient level and can walk behind the cart and push it along unhampered in whatever direction and manner desired, said hopper having sloping feed gravitating walls and a discharge slot at its bottom discharging into a trough underlying and aligned with said slot, said trough being closed at one end and open and provided at its other end with an aligned discharge spout, the latter projecting a limited distance beyond the vertical plane of the adjacent vertical hopper wall, said spout being rigid and positioned at the dispensing level desired, a screw conveyor confined and mounted for rotation in said trough and for augering and delivering the feed from the trough and emptying the same by way of said spout, and operating means for said conveyor supported on an exterior side wall of the hopper and having a handcrank located at a rearward upper corner portion of said hopper so that the attendant has control of the rate of delivery and amount of feed which is to be dispensed at a given time and place, whereby cattle can be selectively fed in keeping with the intentions of the attendant.

3,198,399
HAND-HELD AEROSOL DEVICE
Philip H. Sagaria, Bridgeport, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Connecticut
Filed Oct. 5, 1961, Ser. No. 143,165
9 Claims. (Cl. 222—182)



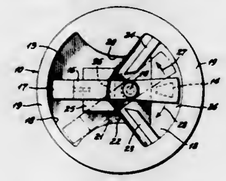
1. An aerosol-type dispensing device comprising, in combination:
(a) a tubular, thin-walled jacket,
(b) said jacket having an inwardly off-set annular mouth portion providing an inner annular shoulder surface on the inside of the jacket wall,
(c) a container in said jacket, having a top shoulder surface, and
(d) a spring detent clip having a center portion engaged with the top shoulder surface of the container and having end edges engaged with the inner annular shoulder surface of the jacket to retain the container therein,
(e) said detent clip having an aperture in its center portion, through which part of the container extends, and having U-shaped, flexible arms extending in part downward from the center portion, said arms being provided with the said end edges and each comprising two substantially upright portions joined together at their bottoms by a curved yoke portion.

3,198,400
DISPENSING CONTAINER ASSEMBLY
Paul E. Roehrich, Oceanside, N.Y., assignor to Richford Corporation, Oceanside, N.Y., a corporation of New York
Filed Feb. 19, 1963, Ser. No. 259,612
1 Claim. (Cl. 222—182)



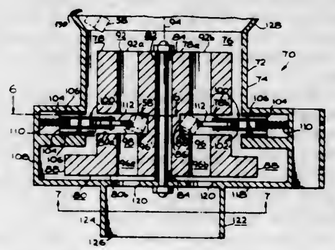
A leak proof dispensing spray container for liquids comprising, a container for liquids having an externally threaded neck portion with an opening extending therethrough; a spray pump assembly comprising a fitting mounted on said neck portion and closing said opening, a spray gun mounted on said fitting and extending through the opening in the neck portion with a spray head having a spray nozzle extending upwardly from said fitting and reciprocable between elevated and lowered positions to dispense a liquid from the container through the spray nozzle; said spray nozzle being flush with said spray head; a removable sheath tightly encasing the spray head and sealing the nozzle outlet against leakage and having a depending skirt having sealing engagement with the spray pump fitting when the spray head is in lowered position; and a closure cap for the container formed with an interior recess having internally threaded engagement with the threads on the neck portion; a sealing ring means for said cap which is applied to hold said spray head in lowered position in sealing engagement with the container with the closure cap and sheath being fully applied to the neck portion to seal said container from leakage, said internal recess being of a size to accommodate the spray head with the sheath applied thereto and being of a height to retain the spray head and sheath in lowered position when the cap is fully applied with the depending skirt in sealing engagement with the spray pump fitting.

3,198,401
DISPENSER CONTAINER
Taylor M. McDonald, Monticello, Fla., assignor of fifty percent to Irvin B. Wheeler, Cairo, Ga.
Filed Nov. 14, 1963, Ser. No. 323,675
4 Claims. (Cl. 222—196.4)



1. A dispenser for particulate material comprising a hollow container having a dispensing aperture through a wall thereof, a pendulum pivotally mounted on the outside of said wall on an axis spaced from and generally parallel to the axis of said aperture, for movement of one end of the pendulum back and forth across said aperture to alternately open and close said aperture and scatter material emitted therefrom, a pair of opposed inwardly facing shoulders located on the outside of said wall on opposite sides of said pendulum to limit the arc in which the pendulum swings, and resilient means cooperating with and normally holding said pendulum over said aperture.

3,198,402
DISPENSING ARRANGEMENT
Russell G. Hunt, 1308 Shelley St., Santa Ana, Calif., and Milton Fabre, 1352 Garlingford St., Costa Mesa, Calif.
Filed Mar. 9, 1964, Ser. No. 350,286
8 Claims. (Cl. 222—251)



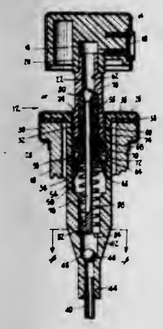
8. In combination:
a pair of spaced apart rotors adapted to rotate about a preselected axis and each of said rotors having a plurality of registrably aligned axially disposed apertures therethrough;
a plurality of separator means pivotally coupled to said pair of rotors and mounted therebetween, one of said

plurality of separator means adjacent each of said plurality of apertures in said pair of rotors;

means for sequentially urging each of said separator means to block each of said apertures during a first portion of each revolution of said pair of rotors; and

means for allowing each of said separator means to sequentially pivotally move away from said blocking relationship during a second portion of each revolution of said rotors.

3,198,403
ATOMIZER PUMP
William R. O'Donnell, Trumbull, and Wolf Steiman, Fairfield, Conn., assignors to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Oct. 22, 1963, Ser. No. 318,063
3 Claims. (Cl. 222—321)



1. An atomizer pump construction comprising, in combination:

(a) a pump cylinder adapted to be mounted on a container and having an inlet to enable it to receive liquid from the container,

(b) a piston device reciprocable in the cylinder between a first and a second position to effect a pumping action, said piston device including an actuator stem passing out of the cylinder, and including a single resilient hollow piston element of cylindrical configuration and having an axial length not in excess of its diameter,

(c) positive-acting, venting valve means including said piston element, enabling exterior air to pass through the cylinder for introduction into the container when the piston device is in its second position, said valve means being closed to prevent said passage of air when the piston device is in the first position,

(d) means providing a discharge passage from the cylinder,

(e) a valve controlling said discharge passage, said valve closing in response to the piston device moving toward the first position from the second and vice versa,

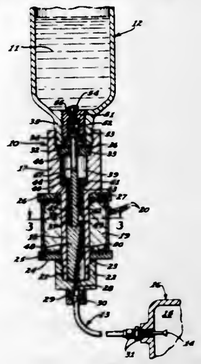
(f) said venting valve means comprising cooperable portions, of the cylinder wall and piston element,

(g) said cylinder having a valve opening in the said cooperable wall portion thereof,

(h) said piston element overlying and closing off the valve opening when the piston device is in its first position, and

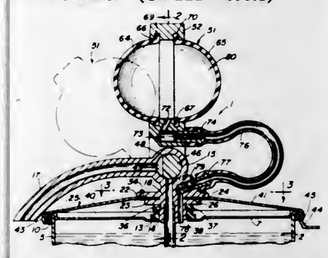
(i) rigid backing means on the piston device, engaged with peripheral portions of the piston element and engageable with the walls of the cylinder to prevent appreciable tilting of the piston device and deformation and inoperativeness of the latter when the piston device is being moved from the first to the second position to cause said pumping action.

3,198,404
PRESSURIZED DISPENSER HAVING AN ELECTRO-MAGNETIC VALVE
James H. Welches, 1021 N. 28th St., Phoenix, Ariz.
Filed Aug. 13, 1963, Ser. No. 301,787
6 Claims. (Cl. 222—394)



1. A dispenser having an electro-magnetic valve for discharging a measured amount of liquid fuel from a container comprising, a pressurized container having a neck portion, a measuring chamber adjacent to said neck portion, a fuel supply valve in said neck portion of said container, a solenoid having an armature, said armature having a fluid passage, said armature operating to open said fuel supply valve for the flow of fuel into said measuring chamber when said solenoid is energized, a seal member mounted on said armature to prevent the flow of fuel from said chamber when said fuel supply valve is open, said armature operating to close said fuel supply valve and actuate said seal member for the flow of fuel from said measuring chamber through said passage when said solenoid is deenergized.

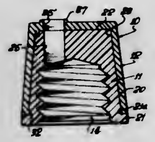
3,198,405
DISPENSER
William C. Pfeil, 1549 W. Fullerton, Chicago, Ill.
Filed Apr. 29, 1964, Ser. No. 363,519
9 Claims. (Cl. 222—400.8)



1. A dispenser comprising a housing, a spout leading from the housing and in communication with the interior thereof, a rotatable valve in the housing for opening and closing the spout, means by which the valve may be manipulated, said housing having flanges, and means for securing the housing to a container; said last means comprising a resilient bracket having a central opening through which the housing extends, said flanges being attached to the bracket at the walls thereof surrounding the central opening, said resilient bracket having legs that project away from said central opening, said legs terminating in flanges, one of the last mentioned flanges having a nib so that the last mentioned flanges and nib

cooperate for detachable snap engagement with the rim of a container.

3,198,406
DISPENSER CAP WITH DEFORMABLE CONE ASSEMBLY
Ahron W. Kopelman, 4813 August St., Los Angeles, Calif.
Filed July 16, 1964, Ser. No. 383,121
2 Claims. (Cl. 222—545)



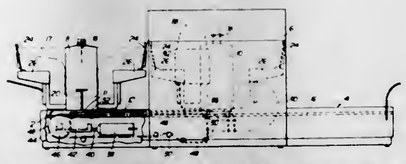
1. A dispenser cap which includes:

an inner cap having an internally threaded bore at its lower end for the reception of a threaded container outlet, and having an external conical wall surface diminishing in horizontal cross section to an upper end, and having the upper end of said conical surface provided with a circumferential step around at least part of its circumference;

an outer cap comprised of a top and a downwardly diverging conical sleeve depending from said top and mating with the upwardly converging conical wall surface of said inner cap, said outer cap having an internal annular shoulder adapted to mate with the external annular groove of said inner cap, and having an internal annular shoulder extending partially around the interior circumference of the upper interior of said outer cap to be slidably received in said upper exterior step of said inner cap, and permit partial relative rotation of said outer cap on said inner cap;

and walls defining mating passages in said inner and outer caps on one side of the axis of rotation of said outer cap, to provide selective opening and closure between said inner cap bore and the exterior of said outer cap.

3,198,407
SHIRT PRESSES
William Hughes, Birchington, England, assignor to Weston Laundry Machine Company Limited, Faversham, England
Filed July 23, 1963, Ser. No. 297,088
Claims priority, application Great Britain, July 25, 1962, 28,665/62
1 Claim. (Cl. 223—57)



A shirt pressing machine comprising two hollow bucks connected together, a pressing station having a pair of heated ironing plates movable to press the front and back of a shirt on one of said bucks when in position at the pressing station; two dressing stations one located at each side of and at an equal distance from the pressing station; aligned tracks for said bucks leading from each dressing station to the pressing station; the bucks being spaced apart a distance equal to the distance between the pressing station and a dressing station whereby the bucks may be alternately positioned at the pressing station; means for reciprocating the bucks between the position in which one of said bucks is at a dressing station and the other at the pressing station and the position in which said one buck is at the pressing station and the other buck is at its dressing station; means to supply heated air into the interior of a buck when at the pressing station; each buck including spaced front and rear plates and a top plate covering the upper ends of the front and rear plates, a U-shaped plate filling the space between the front and rear plates at the upper end of the buck and having the outer ends of its legs engaging the ends respectively of the top plate, the legs being disposed within the width of the buck and forming with the top plate a chamber at the upper end of the buck into which the heated air is initially introduced; and said legs of the plate being perforated to allow air to pass into the sleeves of a shirt on the buck, and other plates adjacent to and inset from the open sides of the buck extending from the base of the U-shaped plate and forming passages the upper ends of which communicate with the perforated legs to direct air from the chamber into both sides of the shirt below the sleeves.

3,198,408
SUPPORT FOR A MANIKIN FORM
Lloyd E. Benner, 125 Oak Grove, Minneapolis, Minn.
Filed June 19, 1964, Ser. No. 376,437
6 Claims. (Cl. 223—66)



1. In combination with a manikin form for use in supporting wigs, wearing apparel and the like,

a support comprising a base,

a ball and socket connection releasably and adjustably interconnecting the manikin form and said base, said connection comprising a ball member and a socket member adjustably receiving said ball member therein, one of said members being secured to said base whereby said members are pivotal relative to each other,

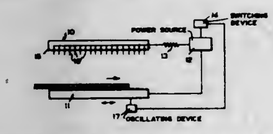
releasable locking means on one of said members for releasably locking said ball and socket members against movement with respect to each other,

and a pair of interengaging coupling elements on one of said members and on said manikin form, one of said coupling elements comprising an elongate pin and the other of said coupling elements comprising an elongate recess receiving said pin therein whereby said manikin form may be revolved relative to said one member.

3,198,409
METHOD FOR TRANSPORTING DIELECTRIC MATERIAL
Kelvin G. Anderson, Greer, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Filed Sept. 16, 1963, Ser. No. 309,082
7 Claims. (Cl. 226—1)

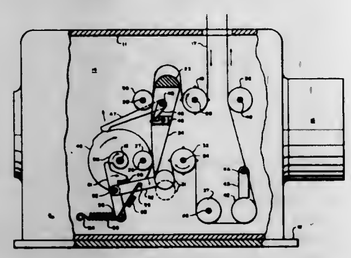
1. Method for electrostatically transporting an unrestrained sheet of dielectric film material comprising:

(a) placing said film between a pair of spaced apart parallel electrodes.
(b) electrostatically charging said film by establishing a high voltage potential between said electrodes thereby attracting said film to one of said electrodes,
(c) discontinuing said film attraction for said electrode by reversing the polarity of said electrodes thereby permitting the film to lift slightly from the attracting electrode toward the other electrode,



(d) oscillating the attracting electrode backward and forward in the desired line of travel,
(e) synchronizing said electrode oscillation with the reversal of polarity so that the attracting electrode is moved forward a small finite distance when said film is attracted thereto and backward when said film has lifted thereby producing a positive forward movement and
(f) repeating steps (b), (c) and (d).

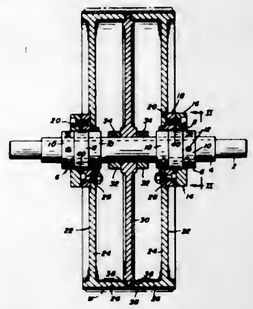
3,198,410
INTERMITTENT MOVEMENT FOR FILM TRANSPORT MECHANISM
Willy Borberg, Briarcliff Manor, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Apr. 3, 1963, Ser. No. 270,434
4 Claims. (Cl. 226—56)



1. A film beater intermittent comprising,
a roller for continuously engaging a film loop,
a periodic timing mechanism for controlling film movement,
first spring means under the control of said periodic timing mechanism for accelerating said roller once each said period and subjecting said film loop to a predetermined movement,
and second spring means for subjecting said roller to a second smaller force during the remainder of the period to maintain the film under proper tension during the film dwell time.

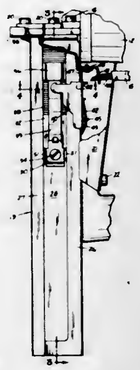
3,198,411
SELF-CENTERING ROLL
William E. Cope, Knox Township, Columbiana County, Ohio (Box 335, Salem, Ohio)
Filed Aug. 9, 1963, Ser. No. 300,993
12 Claims. (Cl. 226—194)

1. A self centering roll for conveying an object comprising a shaft, a pair of bushings secured to said shaft in spaced apart relationship and in axial alignment, each bushing having a convex spherical outer surface, a two part hub mounted on each bushing and having a concave spherical inner surface matching the spherical outer surface of the associated bushing, a pair of roll body members surrounding said shaft each having a rim and a radial



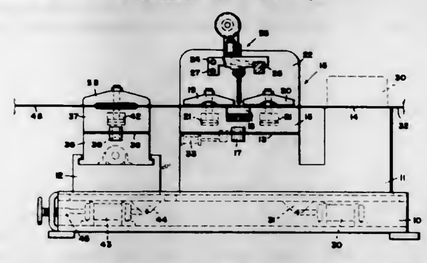
web, said rims forming an object supporting surface, means connecting each of said radial webs to one part of one of said hubs, and means for limiting radial inward movement of the adjacent ends of said rims.

3,198,412
MAGAZINE AND SAFETY TRIP FOR FASTENING DEVICE
Vernon D. Roosa, West Hartford, Conn., assignor, by mesne assignments, to Inventions Management Corporation, Raleigh, N.C., a corporation of North Carolina
Filed July 8, 1963, Ser. No. 293,928
10 Claims. (Cl. 227—8)



1. A magazine comprising a housing having a lateral overhanging portion thereupon, a rail centrally disposed within said housing adapted to support a plurality of U-shaped staple elements in laterally aligned relationship with one another, said rail provided with a longitudinal slot therewithin, a follower slidably movable along said rail and pivotally movable within said housing, said follower supported within said overhanging portion and having a prong normally disposed within said slot, a clock spring having one end connected to said housing and an opposite end connected to said follower, said follower being pivotally movable to overpass said plurality of staple elements upon loading of said magazine and thence abutting the rearmost staple element.

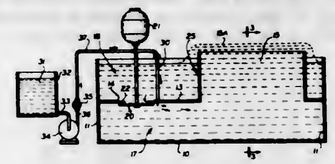
3,198,413
APPARATUS FOR JOINING METAL STRIP
Joseph H. Cooper, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Filed Feb. 12, 1962, Ser. No. 172,826
3 Claims. (Cl. 228—4)



1. Apparatus for joining metal strip in end-to-end relation comprising a normally fixed base positioned below and extending longitudinally of the path of travel of the strip through the apparatus,
a first sub-base slideably mounted for longitudinal movement on said fixed base and mounting a welding assembly operative to join striy lengths in end-to-end relation, means for moving said first sub-base longitudinally on said fixed base,
said assembly having entry and exit strip clamps as well as a welding head movable transversely therebetween said clamps, said assembly being pivotally mounted on said first sub-base for swinging movement about a vertical axis whereby said assembly may be accurately related longitudinally of and parallel with the trailing end of a stopped first strip length which may thereafter be secured by said exit clamp, means to move said welding head transversely between said clamps,
a second sub-base slideably mounted for longitudinal movement on said fixed base and mounting a manipulating strip clamp, means for moving said second sub-base longitudinally on said fixed base,
and said manipulating strip clamp being pivotally mounted on said second sub-base for swinging movement about a vertical axis and having means for effecting said swinging movement whereby the leading end of a succeeding strip length secured in said manipulating clamp may be accurately related longitudinally of and parallel or at an angle with said trailing end of said first strip length after which said succeeding strip length may be engaged by said entry clamp preparatory to welding said first and succeeding strip lengths together.

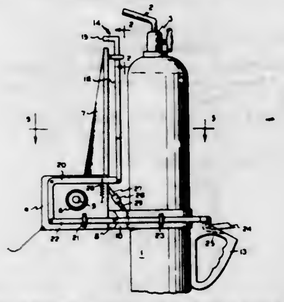
3,198,414
MOLTEN SOLDER BATH WITH UNIFORMLY DISPERSED ADDITIVE
Louis V. Tardoskegyi, Montreal, Quebec, Canada, assignor to Electrovert Manufacturing Co. Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed July 30, 1963, Ser. No. 298,757
6 Claims. (Cl. 228—37)

1. Wave soldering apparatus comprising, in combination, a tank containing molten solder; partition means dividing said tank into a solder supply section and a solder return section; a port in said partition means; pump means positioned to pump molten solder through said port from said return section to said supply section, said pump means including a rotor with a high velocity peripheral discharge; a solder discharge nozzle in solder receiving communication with said supply section and extending upwardly of said tank to provide a standing wave of solder overflowing to said return section; a reservoir containing an additive; and additive injecting means, in communication with said reservoir, and positioned to in-



ject said additive into the molten solder as the latter is peripherally discharged from said rotor.

3,198,415
SOLDER FEEDING DEVICE
Russell H. Taylor, McKeesport, Pa., assignor, by mesne assignments, to Rockdale Metal Products Corporation, Wellsburg, W. Va., a corporation of West Virginia
Filed Aug. 21, 1962, Ser. No. 218,405
4 Claims. (Cl. 228—57)



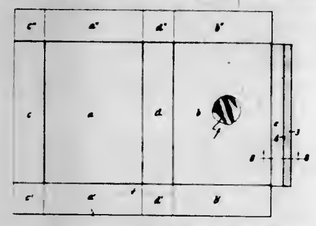
1. A solder feeding device for a gas torch utilizing a cylinder of compressed gas, comprising a container attachable to said cylinder, releasable fastening means for removably securing said container to said cylinder, said fastening means having a hand grip portion mounted thereon, a solder guide sleeve communicating with said container and extending in spaced relation along said cylinder towards said torch and having a free end spaced from said torch, a spindle mounted in said container for supporting a length of solder in a roll, solder advancing means aligned with said guide sleeve adjacent the free end thereof, said advancing means being mounted for slidable movement towards and away from said free end and being adapted to grip said solder when moved towards said torch and release said solder when moved toward said guide sleeve, a finger-engaging member on said hand portion and connected by linkage to said solder advancing means, whereby actuation of said member actuates said solder advancing means to move same towards said torch away from said guide sleeve, and resilient means acting on said advancing means to return same towards said guide upon release of said finger-engaging member.

3,198,416
METHOD OF PREVENTING WICKING AND MOISTURE AND VAPOR ABSORPTION AND PENETRATION IN PAPERBOARD CARTONS, AND CARTONS PRODUCED BY SUCH METHOD
Robert J. Hickin, Seville, Frank W. Hackman, Wooster, and Sylvester M. Heinz, Rittman, Ohio, assignors to Packaging Corporation of America, Dover, Del., a corporation of Delaware
Filed Sept. 18, 1962, Ser. No. 224,464
10 Claims. (Cl. 229—14)

1. The method of treating the bibulous fibres adjacent to a raw edge portion of an element of a carton blank

formed from sheet material such as paperboard, which comprises the steps of:

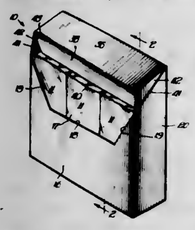
(a) removing from such edge-adjacent portion an increment of the thickness of such sheet material substantially in the plane of the element and less than its



full thickness to thereby expose in a thus-produced substantially planar interior surface of the blank the said bibulous fibres thereof, and

(b) applying to the thus exposed fibres a coating of a substance which will seal the fibres against imbibition.

3,198,417
DISPLAY CARTON
Morton Goldsholl, Chicago, Ill., assignor to Vienna Sausage Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 30, 1963, Ser. No. 320,178
2 Claims. (Cl. 229—38)



1. A carton formed of foldable paperboard or like material having an integral wall structure including:

(a) a front wall having an opening in the upper portion to display the contents of the carton,

(b) side, rear, top and bottom walls,

(c) tabs hinged to the upper ends of said side walls along lines extending downwardly from said rear wall and extending toward each other,

(d) said top wall being hinged to the upper end of said rear wall and extending downwardly therefrom in juxtaposed relation to and overlying said tabs,

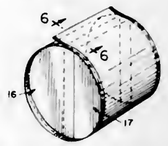
(e) a flap hinged to the distal edge of said top wall and extending downwardly and inwardly therefrom and closing off the upper portion of said opening in said front wall,

(f) the upper end of each side wall having a crease line extending downwardly from said rear wall below the hinge line of the respective tab, and

(g) that portion of each side wall between said crease line and said hinge line being in frictional engagement with the juxtaposed edge of the flap to hold it in place.

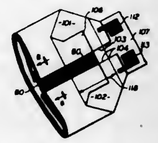
3,198,418
CONTAINER BAG FOR COILED STRIP MATERIAL
Richard O. Rupp, Oak Lawn, Ill., assignor to The Cromwell Paper Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 6, 1964, Ser. No. 349,964
1 Claim. (Cl. 229—40)

A hollow cylindrically-shaped container made of two semi-cylindrical sections comprising, a length of tough, flexible, sheet material and pairs of flat semi-circular end pieces bonded along their semi-circular perimeters by means of a reinforcing strip to the respectively opposite margins of the sheet material to constitute two hollow, upwardly-open, juxtaposed semi-cylindrical sections hinged together along the longitudinal axis between the contiguous ends of the diametric cords of the respective pairs of said semi-circular end pieces, one of said



semi-cylindrical sections having flaps extending upwardly from its unbonded perimeter and the other section having a flap extending longitudinally from said sheet material, the extending flaps when closed overlap portions of said other semi-cylindrical section of the container having pressure sensitive adhesive thereon to adhesively seal the container sections together to form a closed container.

3,198,419
VENTILATION BAG AND METHOD OF MAKING
Leonard E. Canno, 870 5th Ave., New York, N.Y.
Filed May 17, 1963, Ser. No. 281,263
7 Claims. (Cl. 229—53)



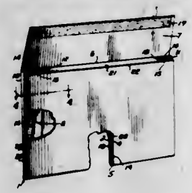
1. A ventilated bag including a tube of sheet material with opposite longitudinal edges of the sheet material secured to opposite edges of a ventilating strip throughout the entire length of the tube, the strip having openings therethrough and being substantially narrower than the bag and forming, with the connected portions of the sheet material, a front wall of the bag with a ventilating window through which air passes, one end of the tube having each of its sides folded inwardly for a distance substantially less than half the width of the tube when the tube is in a flat condition to overlap the lower end portions of front and back walls of the bag to form a flat bottom for the bag, whereby the overlap is substantially less than the distance between side edges of the folded tube so that a portion of the ventilating strip is left uncovered and the ventilating window extends across a part of the bottom of the bag.

3,198,420
EXPANDABLE CONTAINER
Walter L. Hiersteiner, Mission, Kans., assignor to Tension Envelope Corporation, Kansas City, Mo., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,183
4 Claims. (Cl. 229—68)

1. An expandable container having stages of expansion, said expandable container including

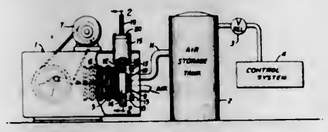
substantially rectangular overlying panels interconnected along bottom edges to provide a bottom and along at least one of the side edges of said panel, said side connection comprising

a side flap integral with a side edge of one panel by a fold and having a parallel median fold dividing said side flap into folding sections of substantially like size with the section that is integral with said one panel turned inwardly between said panels to provide an initial expansion on said first named fold and the other section of said side flap turned outwardly on said median fold and terminating with the outer edge substantially registering with the corresponding side edge of the other panel, said sections of the side flap lying flatly upon each other when the container is in flat condition, and



adhesive spaced outwardly from the median fold and connecting only the margin of the said outturned section with the margin of said other panel to provide a flexing portion in the said outturned section intermediate the median fold and the adhesive for cooperating with the first named fold of the side flap in expanding the container beyond the expansion afforded by said initial expansion.

3,198,421
CAPACITY CONTROLLED COMPRESSED FLUID SOURCE
Harold W. Alyea, Waukesha, and William P. Chapman and Edward D. Jurasinski, Milwaukee, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 30, 1963, Ser. No. 255,005
2 Claims. (Cl. 230—21)



1. A pressure control unit adapted to be connected to a compressor having a cylinder and a removable head, comprising

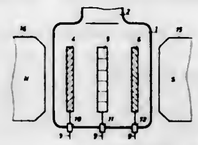
(a) a clearance ring having opposite end faces corresponding to the end faces of the head and the cylinder for clamping therebetween,

(b) a clearance control chamber secured to the clearance ring, said ring having a radial opening providing communication to the chamber and to the inside of the ring and thereby the cylinder, and

(c) presettable means to fixedly adjust the effective volume of the clearance control chamber to a constant clearance and thereby vary the volumetric efficiency of the compressor and the maximum out pressure.

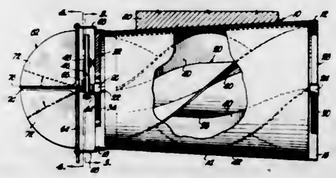
3,198,422
VACUUM SPUTTERING PUMP
Gerhard Kienel, Hanau (Main), Germany, assignor to W. C. Heraeus G.m.b.H., Hanau (Main), Germany, a corporation of Germany
Filed June 4, 1963, Ser. No. 285,354
Claims priority, application Germany, June 8, 1962, H 46,008
9 Claims. (Cl. 230—69)

1. A sputtering pump of the character described comprising a housing, an anode of cellular honeycomb structure mounted within said housing, a normal cathode means of getter material and an auxiliary cathode means of more easily sputtered getter material symmetrically disposed on opposite sides of said anode, a pair of pole pieces by which a magnetic field is produced, means by which a positive electric potential is supplied to said anode



and a negative electric potential is supplied to said normal and auxiliary cathodes, said normal cathode being supplied with a higher negative potential than said auxiliary cathode.

3,198,423
HELICOID FAN
Francis H. Clute, Rocky Ford, Colo.
Filed July 6, 1964, Ser. No. 384,569
10 Claims. (Cl. 230—121)



1. A helicoid fan comprising:

a mobile support;

a tubular housing rigidly secured to said support and having a pair of aligned openings at opposed ends thereof defining an inlet and an outlet therefor;

a first fan section within said housing and including a first frusto-conical tube having open ends and a number of first circumferentially-spaced, helically disposed blades within and secured at their outer peripheral edges to the inner surface of said first tube, one end of said first tube and the ends of said first blades proximal to said one end being disposed substantially at the inlet of said housing;

means mounting said first section to said housing for rotation about the longitudinal axis of said first tube, the outer surface of the latter being spaced inwardly from the inner surface of said housing;

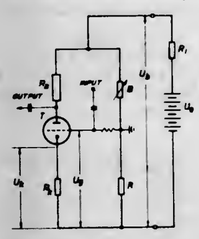
a second fan section secured to said first section for rotation therewith and disposed between said housing and said first tube, said second section including a second frusto-conical tube concentric to said first tube and having open ends, and a number of second, circumferentially spaced, helically disposed blades between said first and second tubes and secured at the inner and outer peripheral edges to the proximal surfaces of said first and second tubes respectively, one end of said second tube and the ends of said second blades proximal to said one end of the second tube being disposed substantially at the inlet of said housing, the diameters of said first and second tubes progressively decreasing as said outlet is approached;

means secured to said housing across said outlet for controlling the direction of movement of air passing out of the housing through said outlet to thereby permit control of the line of action of the thrust produced by the rearward acceleration of the air in response to the rotation of said first and second blades; and

means for rotating said first section, whereby said first and second blades accelerate the air entering said inlet rearwardly of said housing and induce respective circulatory flows of air toward said inlet from the

region forwardly thereof with said flows having envelopes coextensive with respective tubes to thereby effect a reduction in the air pressure in said region and the minimizing of decelerating effects on said housing and fan sections as the same move into the region.

3,198,424
CIRCUIT ARRANGEMENT FOR STABILIZING THE OPERATING POINT OF AN AMPLIFIER TUBE
Walter Otten, Hamburg, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 18, 1961, Ser. No. 159,945
Claims priority, application Germany, Jan. 12, 1961, P 26,368
4 Claims. (Cl. 330—129)



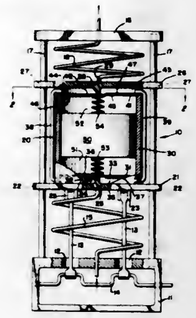
1. A circuit comprising an amplifier device of the type having first and second electrodes between which the main amplifier device current flows and a third electrode for controlling the flow of current between said first and second electrodes, a source of operating voltage having internal resistance, means connecting said source between said first and second electrodes, a variable load circuit connected to said source, and means for maintaining the current flow between said first and second electrodes substantially constant with variations of the voltage of said source due to variations in the current of said load circuit flowing through the internal resistance of said source, said means comprising a resistor connected in series between said source and said load circuit, and means connecting the junction of said resistor and load circuit to said third electrode, said resistor having a value R determined by the expression:

$$R=DR_1$$

where D is the inverse of the voltage amplification factor of said device, and R_1 is the internal resistance of said source.

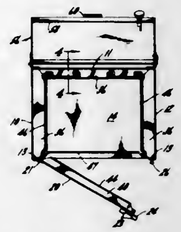
3,198,425
INERTIA TYPE PUMP OR COMPRESSOR
Anthony E. Robertson, Belle Mead, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 5, 1963, Ser. No. 328,390
12 Claims. (Cl. 230—174)

1. A compressor comprising:
(a) a cylinder adapted to be mounted for reciprocation;
(b) a piston slidably disposed in the cylinder dividing the area therein into two compression chambers;
(c) the piston and cylinder reciprocating axially relative to one another when the cylinder is reciprocated to alternately increase and decrease the volume of each compression chamber, the volume of one compression chamber simultaneously increasing as the volume of the other compression chamber is decreasing;
(d) the cylinder having an inlet chamber and an outlet chamber at each end adjacent each compression chamber;
(e) normally closed valve means disposed in the ends of the cylinder each passing compressed fluid from a compression chamber reducing in volume to the adjacent outlet chamber and passing fluid to be compressed from an inlet chamber to the adjacent compression chamber increasing in volume;
(f) manifold means in communication with the chamber at the ends of the cylinder providing a flow path between the inlet chambers and another flow path between the outlet chambers;



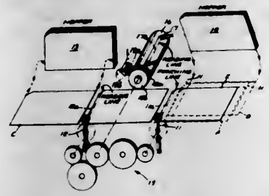
(g) a pair of conduit means each connected at one end to an end of the cylinder and held against movement at its other end;
(h) one of the conduit means being in communication with an inlet chamber and adapted to receive fluid to be compressed; and
(i) the other of the conduit means being in communication with an outlet chamber to provide a delivery connection for compressed fluid.

3,198,426
REFUSE CONTAINER
John C. Brighton, Columbus, Ind., assignor to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Oct. 7, 1963, Ser. No. 314,299
8 Claims. (Cl. 232—43.2)



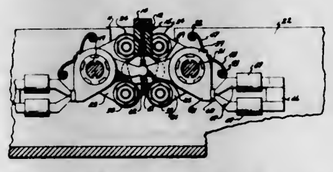
1. A refuse container, comprising
(a) a cabinet having a plurality of interconnected side walls,
(b) a door mounted on said cabinet for swinging movement about a vertical axis between open and closed positions,
(c) a throat forming member mounted on each of said side walls and said door and having a horizontal stretch and a vertical stretch, whereby upon said door being in closed position said vertical stretches form a generally rectangular throat over which the open end of a refuse bag may be folded, and
(d) a generally rectangular collar swingably connected to the horizontal stretch of one of said throat forming members for movement between a retracted position above said throat and an operative position immediately adjacent the outer faces of the vertical stretches of said throat forming members and within the vertical extent thereof for bindingly retaining the edges of said bag against said throat.

3,198,427
KEYBOARD CONTROLLED RECORDING MACHINE
Robert A. Locke, Easton, Conn., Gunnar Pohevitz, Brooklyn, and Joseph Kolar, Mount Vernon, N.Y., Paul H. Smith, Weston, Conn., and Kenneth R. Strandberg, Deer Park, N.Y., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 27, 1962, Ser. No. 190,529
44 Claims. (Cl. 234—18)



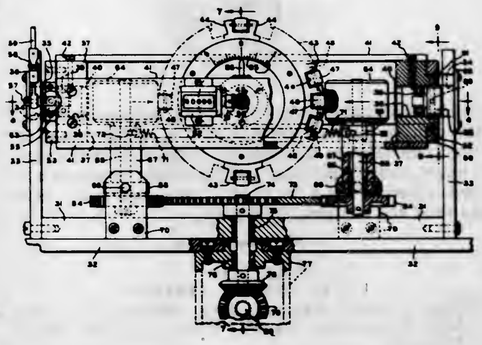
13. In a keyboard controlled machine for recording encoded data column for column on a record medium having columns and rows of index positions, each column being adapted to record one item of encoded data,
(a) a plurality of recording members including one for each index position of a record medium column,
(b) means controlled by said keyboard for selectively actuating said members to record one encoded representation of data in a column of said record medium,
(c) a plurality of counting means, each counting means associated with a respective one of said recording members for providing a parity count of the number of actuations of its associated recording member during the recording of a predetermined number of columns, in excess of one, of said record medium.

3,198,428
SELECTIVELY CONTROLLED OSCILLATING DEVICE
Richard E. Busch, La Puente, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed June 10, 1963, Ser. No. 286,612
19 Claims. (Cl. 234—119)



1. A selectively operable oscillating device comprising a driven element oscillatable from and to an initial position a drive element, a control element, said elements being arranged in side-by-side relation, means for continuously oscillating said drive element in opposite directions, said elements having inter-engaging surfaces on the adjacent sides thereof, each of said surfaces extending at an acute angle to one of said directions of movement of said drive element, said surfaces extending substantially parallel to each other, and means for selectively yieldably urging said control element in said one direction whereby to cam said drive element into driving engagement with said driven element or maintaining said control element in a position ineffective to cam said drive element into driving engagement with said driven element.

3,198,429
INTEGRATING MEANS
Harold L. Williams, Pearl River, N.Y., assignor to Merrick Scale Mfg. Company, Passaic, N.J., a corporation of New Jersey
Filed Aug. 19, 1963, Ser. No. 302,837
11 Claims. (Cl. 235—61)

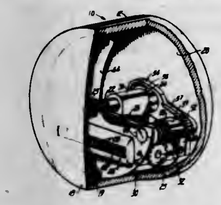


8. Means for integrating a variable load traveling at a variable speed, comprising a supporting structure including a horizontal base member and vertical members secured to the opposite ends of the base member and arranged with horizontally aligned bearings spaced from the base member, a frame including a pair of end members pivotally mounted on the bearings of the supporting structure and a pair of side members connected at the opposite ends to the end members and having aligned bearings midway of the end members, means connected to the frame to pivot the frame in relation to the variable load, a disk rotatably supported by the bearings in the side members of the frame, rollers rotatably mounted in the peripheral portion of the disk, a pair of rolls rotatably mounted in vertical alignment with the longitudinal center of the base member of the supporting structure and pivotally supported by said base member of the supporting structure to frictionally contact the rollers on diametrically opposite portions of the disk, and means connected to the rolls to rotate said rolls at a speed proportional to the variable speed, whereby the rotation of the rolls rotates the disk at a speed proportional to the product of the variable load and variable speed.

3,198,430
HUBODOMETER
Robert Hermann, Hartford, Conn., assignor to Veeder-Root Incorporated, Hartford, Conn., a corporation of Connecticut
Filed May 5, 1964, Ser. No. 364,985
3 Claims. (Cl. 235—95)

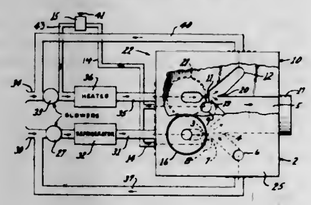
1. A hubodometer for use with a rotatable unit and comprising a casing, mounting means for mounting the casing upon the rotatable unit for rotation therewith, said casing having a wall at one end for engagement with the rotatable unit and having a window at its other end, an elongated shaft disposed coaxially with the axis of rotation of the casing and extending between said wall and window, a frame having a weighted base suspended from the shaft with its center of gravity below the shaft for rotation relative to the casing, a counter having a wheel supporting shaft mounted transversely on the frame adjacent

the window, and means for driving the counter in a forward direction during relative movement of the frame and casing in either direction comprising an eccentric cam mounted on the casing for rotation therewith, a follower mounted on the frame for pivotal movement about an axis parallel to but offset from the axis of rotation of the



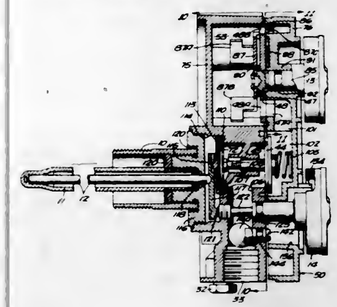
casing, said follower having a yoke portion embracing the cam, a pawl on the follower, a ratchet wheel rotatably mounted on the frame for engagement by the pawl, a worm coaxially mounted with the ratchet wheel and connected thereto, and a worm wheel connected to the counter shaft and engaging the worm.

3,198,431
FLUID MIXING SYSTEM
William F. Gesell, Fairborn, Ohio, assignor to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware
Filed Jan. 4, 1963, Ser. No. 249,519
10 Claims. (Cl. 236—13)



7. An air mixing system comprising,
a pressure source for supplying air under pressure,
a heater connected to said pressure source for increasing the temperature of the air as it flows through the heater,
first valve means having a supply passage connected to said heater for generating an air stream,
a main discharge passage and an auxiliary discharge passage in said valve means for receiving air from said supply passage,
said valve means providing an orifice arranged to flow air in a direction generally transverse to said stream to cause said stream to flow through said main discharge passage upon increased flow through said orifice,
a refrigerator connected to said pressure source for decreasing the temperature of the air as it flows through the refrigerator,
second valve means having a second supply passage connected to said refrigerator for generating a second air stream,
a second main discharge passage and a second auxiliary discharge passage in said second valve means for receiving air from said second supply passage,
said second valve means providing an orifice arranged to flow air in a direction generally transverse to said second stream to cause said second stream to flow in an increased proportion through said second main discharge passage upon decreased flow through said orifice in said second valve means,
means for combining the flow from said main discharge passages,
a common fluid duct connected to both of said orifices and to said pressure source for providing a flow of fluid through said orifices,
and means for controlling the amount of flow through said duct to increase the proportion of flow of fluid from either of said supply passages through a main discharge passage while decreasing the flow from the other supply passage through the other main discharge passage.

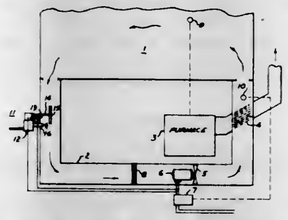
3,198,432
WATER HEATER CONTROL
Richard D. Grayson, Arcadia, Calif., assignor to International Telephone and Telegraph Corporation, Baltimore, Md., a corporation of Maryland
Filed Feb. 23, 1962, Ser. No. 175,144
9 Claims. (Cl. 236—21)



5. In a gas water heater control, a two-part casing, one of said two parts comprising a base member and the other of said two parts comprising a cover member removably mounted on said base member, said base member and cover member having cooperating cavity portions defined by cooperating aligned wall portions thereof to define an inlet chamber and a poppet valve chamber, said base member having an outlet connection, thermostatically operated valve means on said base member and incorporating valve means controlling the flow of gas from said poppet valve chamber to said outlet connection, one of said wall portions of said cover member being apertured for the flow of gas to said poppet valve chamber, said cover member having a flat valve seat thereupon, said flat valve seat having an apertured portion in communication with said apertured portion in said wall portion, an apertured flat plate mounted on said seat controlling the flow of gas from said inlet chamber through said apertured portion of said valve seat and through said apertured wall, said valve seat being flush with said wall portions of said cover member, and means on said cover member for moving said flat valve plate on said seat.

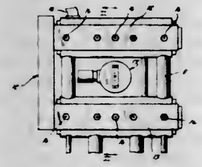
3,198,433
CONTROLLED HUMIDIFIER
William C. Crutcher, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 25, 1962, Ser. No. 212,405
9 Claims. (Cl. 236—44)

1. A controlled humidifier for use in a duct system having means recirculating a flow of air through a space to be humidified and including means for heating said air, said humidifier comprising:
valve means connected to a source of water under pressure,
an atomizing nozzle connected to said valve means and adapted to spray water therefrom into said duct system to thereby control the humidity in said space and in said duct system,
a moisture control member comprising a vertically movable absorbent body adapted to be disposed in said duct system in the path of the air flowing therethrough and arranged to receive a portion of the spray from said nozzle on one end thereof and being constructed so as to become gradually saturated by the water from said nozzle,



means controlled by the movement of said body and connected to open said valve means when the body is elevated and to close said valve means when the body is lowered,
means biasing said body to the elevated position when a portion of the saturating water has evaporated therefrom, and,
means adapted to disable the humidifier when the air heating means is inactive.

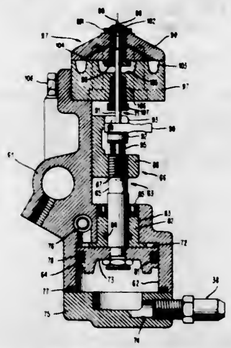
3,198,434
APPARATUS FOR APPLYING HEAT-REACTIVE COATINGS
Joseph G. Svrchek, Downers Grove, Ill., and Walter S. Rae, Houston, Tex., assignors to Dearborn Chemical Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 1, 1961, Ser. No. 86,455
2 Claims. (Cl. 239—79)



1. An apparatus for coating a surface comprising a hollow frame, means providing spaced orifices in said frame, means for feeding a combustible gas mixture to said orifices, a spray nozzle carried by said frame between said spaced orifices, said spray nozzle being spaced from said orifices by substantial free air space permitting substantially unimpeded air flow about said spray nozzle, said nozzle having additional air passages therein arranged to direct a curtain of air about the spray of resin issuing from said spray nozzle.

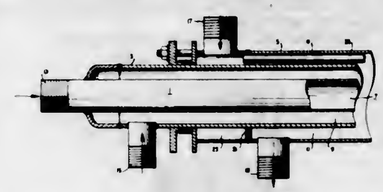
3,198,435
SPRAY GUN
John E. Ullman, Huntingdon Valley, Pa., assignor to Huntingdon Industries Incorporated, Bethayres, Pa., a corporation of Pennsylvania
Filed June 21, 1963, Ser. No. 289,704
6 Claims. (Cl. 239—117)

1. A spray gun for spraying adhesive on the flaps of a carton comprising a housing adapted to be mounted in close proximity to a flap of a carton and having a cylinder formed therein, a piston having a piston head positioned in said cylinder and a piston rod extending therefrom, a needle bar connected to said piston rod and reciprocable thereby, a spray head mounted on said housing and containing a plurality of adhesive spray orifices, a longitudinally movable needle extending from each of said orfices and including a shaft with a tip at one end and a head at the other, said head being spaced away from said needle bar in the direction away from said orifices a distance greater than the length of the operating stroke of the needle bar so that the movement of the needle bar is not



transmitted directly to the needle heads, and a removable selector tab positioned between the needle bar and one of the needle heads so that the movement of the needle bar is transmitted to the needle head to move the needle and its tip in and out of its adhesive spray orifice, whereby said spray gun is adapted to spray a pattern of a desired number of stripes of adhesive on the flaps of the carton by choosing the number of said tabs to be used.

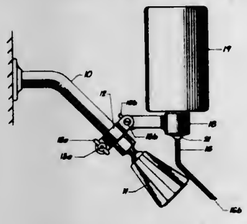
3,198,436
APPARATUS FOR SUPPLYING A PLURALITY OF FLUIDS TO A COMBUSTION ZONE
Edward F. Kurzinski, Allentown, Robert D. Jones, Coopersburg, Richard Reider, Bethlehem, and Jack R. Speary, Allentown, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware
Filed Feb. 15, 1962, Ser. No. 173,540
7 Claims. (Cl. 239—132)



1. Apparatus for supplying a plurality of fluids to a combustion zone, comprising: means defining inner and outer concentric fluid passageways for separately conveying streams of said fluids to said combustion zone; a plurality of laterally spaced nozzles at the downstream end of said fluid passageways, each nozzle having passageways individual to and in open communication with said concentric fluid passageways, the discharge ends of said nozzle passageways being so disposed that the separate fluid streams discharging therefrom meet and admix at the end of the nozzle; crossover means near the downstream end of said concentric inner and outer passageways for transposing their respective fluid streams; a check valve within the short inner passageway, immediately downstream of said crossover means, to prevent backflow of the one fluid stream; a second check valve within the longer inner passageway, immediately upstream of said crossover means, to prevent backflow of the other

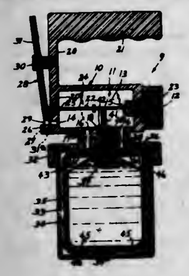
fluid stream; means defining lateral passageways for confined flow of cooling fluid between and around said nozzles; and means for supplying cooling fluid to said lateral passageways.

3,198,437
SHOWER BATH DISPENSER
Jack C. Faglie, San Antonio, Tex., assignor to The Dermaster Corporation, a corporation of Texas
Filed Oct. 19, 1962, Ser. No. 231,631
3 Claims. (Cl. 239—309)



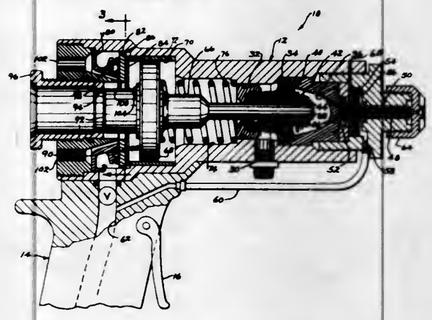
1. Apparatus to be used in a shower bath installation consisting of a water pipe and a shower head attached thereto whereby a liquid is metered into the water emitting from the shower head comprising a container for said liquid, means mounting said container on the water pipe in proximity to the shower head, said means including a connector, said container having a mating connector insertable into said connector, an elongated dispenser including a central longitudinal bore communicating with said container and terminating at one end in an aperture and at the other end in a ball member integral with said dispenser, a socket receiving said ball, said connector including a cutting element in one surface thereof, said container including a membrane over the opening of said container whereby said cutting element perforates the membrane when the mating connector of the container inserts into the connector.

3,198,438
SPRAYER CONSTRUCTION
Ralph J. Hultgren, 4724 Quail Ave. N., Minneapolis, Minn., and Julian Gutierrez, Edina, Minn.; said Gutierrez assignor to said Hultgren
Filed Mar. 12, 1964, Ser. No. 351,375
5 Claims. (Cl. 239—318)



3. Apparatus of the class described comprising:
(a) a mixing conduit having an inlet end adapted to be connected to a supply of liquid under presure, an intermediate portion having first and second adjacent apertures therethrough, and an outlet end;
(b) a pressure valve mounted in the inlet end of said mixing conduit to block the flow of liquid therethrough, said valve being held in a normally closed position by the inlet liquid pressure;
(c) a trigger mechanism connected to said pressure valve to operate said valve to an open position;
(d) a rigid container having a tubular extension at its front end, said extension opening into said container, said container further having an aperture through the front end thereof;
(e) a collapsible container mounted inside said rigid container and attached to encompass the opening of said extension; and
(f) a casing having one end thereof open and having said rigid container positioned therein, said casing engaging said mixing conduit to form a liquid-tight seal therebetween and to position the extension of said rigid container through one of the adjacent apertures of the intermediate portion of said mixing conduit.

3,198,439
AIRLESS SPRAY GUN WITH VARIABLE OUTPUT
Joseph H. McNinch, Jr., and Robert J. Della Flora, Toledo, Ohio, assignors to The De Vilbiss Company, Toledo, Ohio, a corporation of Ohio
Filed May 10, 1963, Ser. No. 279,481
13 Claims. (Cl. 239—332)

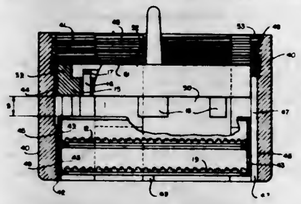


1. An airless spray gun comprising a spray gun body, means forming a power cylinder, a power piston located in said power cylinder, passage means in said spray gun body connected to a rear portion of said power cylinder, means for supplying power fluid to said passage means, fluid valve means to regulate flow of power fluid to said power cylinder, rear exhaust port means in said body communicating with the rear portion of said power cylinder, exhaust valve means for opening and closing said rear exhaust port means, and additional exhaust means for the rear portion of said power cylinder and opened when said power piston travels forwardly a predetermined distance in said power cylinder.

3,198,440
AERATOR STRUCTURE AND LEGGED DIAPHRAGM THEREFOR
Elie P. Aghnides, 46 W. 54th St., New York 19, N.Y.
Filed June 25, 1962, Ser. No. 204,803
7 Claims. (Cl. 239—430)

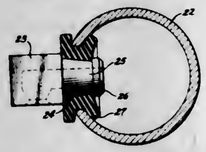
7. In combination a single piece casing for water aerators comprising a cylindrical body having threads adjacent the upstream end of said casing and an integral inturned segmented ledge at its downstream end, said casing having a plurality of longitudinal channels on the inner wall thereof and forming relatively wide areas of decreased thickness of the single piece casing, said channels providing both a substantial increase in available space for the admixture of air and water within said casing and a plurality of air passages from adjacent the outlet end of said casing to an area within said casing surrounding a mixing space, said channels having the segments of said ledge therebetween

whereby the supply of ambient air for admixture with water within said casing is increased to form a bubbly coherent stream, screen means resting on said ledge and covering the internal cross-section of said casing except



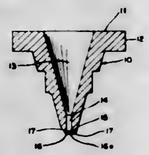
for said channels, said channels starting from the downstream end of the casing and extending straight to a level above the screen means, and jet forming means upstream the screen means.

3,198,441
NOZZLE BODY AND GROMMET ASSEMBLY
Thomas F. Facius, Baltimore, Md., assignor to Baltimore Aircoil Company, Inc., Baltimore, Md., a corporation of Maryland
Filed Mar. 11, 1964, Ser. No. 351,166
1 Claim. (Cl. 239—550)



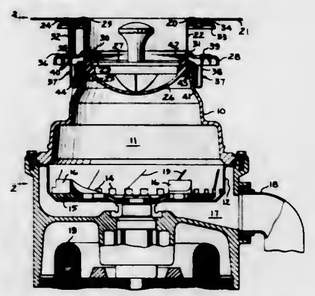
In an evaporative heat exchanger, a rigid pipe to supply cooling water to the region of heat exchange, said pipe having a plurality of holes therein, a nozzle body for each hole, each body including a portion external to the pipe, a bushing extending through a hole in said pipe and a flange at the end of the bushing which lies within the pipe and a flexible grommet engaging said bushing and the defining edges of a pipe hole as well as a portion of the inner and outer surface of the pipe adjacent to said hole, said body wholly defining a flow channel through said flange, bushing and external portion, said external portion and said flange both having a diameter greater than that of the bushing adjacent to the flange.

3,198,442
NOZZLES
Mannie Brenner, Cambridge, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed June 28, 1963, Ser. No. 291,315
5 Claims. (Cl. 239—601)



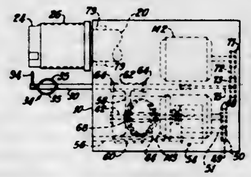
1. A nozzle tip for use in combination with a container closure lining machine nozzle adapted to place high viscosity lining compound high on the shoulder of container end closures, the said tip having a circular peripheral attachment flange, the remainder of said tip having a generally conic shape, a bore formed in the tip concentric with the vertical axis of the cone, one portion of said bore being formed at a taper of approximately 30° thereby to provide a seat for the valve needle of the lining machine nozzle, the said tapered portion terminating in a cylindrical bore having a diameter of 0.040 to 0.025 inch, the length of the said cylindrical bore being approximately twice its diameter, the said tip having upper and lower faces parallel to each other and normal to the vertical axis of the cone, no portion of the wall surrounding the orifice having a width greater than 1/64 of an inch.

3,198,443
SUPPORT SYSTEM FOR A FOOD WASTE DISPOSER
Lauren W. Guth, Louisville, and Harry W. Thurman, Fern Creek, Ky., assignors to General Electric Company, a corporation of New York
Filed June 17, 1963, Ser. No. 288,391
7 Claims. (Cl. 241—100.5)



1. A system to support a food waste disposer below a sink comprising:
(a) a housing forming a part of the food waste disposer,
(b) a plurality of resilient members suspended from the sink and adapted to support said housing,
(c) means extending from said housing having a surface which rests upon said resilient members to secure said housing in its normal supported position, and
(d) cam means on the outer surface of said housing inclined outwardly from the outer surface of said housing at least to a point in alignment with the outer extremity of said means extending from said housing,
(e) said cam means adapted to cooperate with said resilient members to bias said members out of supporting relationship with said means extending from said housing upon rotation of said housing.

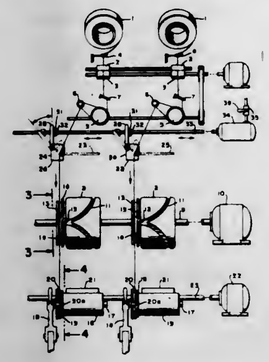
3,198,444
METHOD AND APPARATUS FOR PACKAGING FILAMENTARY MATERIALS
Ralph J. Moody, Anderson, and Sherman T. McLane, Williamston, S.C., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Apr. 11, 1962, Ser. No. 186,690
10 Claims. (Cl. 242—18)



4. A strand control and distributing device for strand winding and packaging apparatus comprising a rotatable

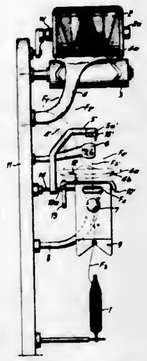
and reciprocable shaft, traverse means mounted on the shaft engageable with a strand for oscillating the strand to effect a crossing of individual convolutions of strand during winding of the same on a rotatable collector into a package, and a laterally extending abutment carried by the shaft and operable when said shaft is in a relatively stationary position to engage and hold the strand out of engagement with the oscillating means until the collector attains a predetermined speed.

3,198,445
YARN WINDING APPARATUS
William T. Hull, Jr., Rock Hill, S.C., and Eugene H. Parets, Decatur, Ala., assignors to Monsanto Company, a corporation of Delaware
Filed Oct. 25, 1963, Ser. No. 318,939
6 Claims. (Cl. 242—18)



1. Yarn winding apparatus for forming transfer tails on yarn packages comprising:
(a) a source of yarn supply,
(b) driven traverse means adapted to receive and displace yarn delivered thereto from said source of yarn supply in back and forth lateral displacement,
(c) threading means coaxially arranged and driven with said traverse means and providing with a threading rib for threading the yarn within said driven traverse means,
(d) drive means for driving said traverse means and said threading means,
(e) a driven yarn holder arranged near said traverse means for collecting the yarn forwarded therefrom,
(f) driven spool means coaxially arranged with said yarn holder for collecting initial lengths of yarn from said source of supply thereof,
(g) power means for operatively driving said yarn holder and said spool means,
(h) guide means near said traverse means for guiding the yarn from said source of supply to said traverse means,
(i) latch means in close relation to said guide means and operatively positionable to a locked position for guiding the yarn possing engagingly thereover from said guide means to said threading means and said yarn spool means and operatively positionable to a release position for disengaging the yarn therefrom,
(j) control means for actuating said latch means to said lock and said release positions.
(k) said guide means being oriented in relation to said latch means such that when the yarn is disengaging from said latch means the yarn assumes an angular course travelling to said spool means and said threading rib of said threading means making registry therewith and being operatively threaded into said traverse means while simultaneously being transferred from said spool means to said yarn holder for forming transfer tail wraps before being traversingly packaged thereon.

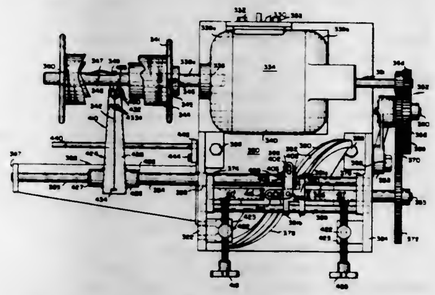
3,198,446
DEVICE FOR PREVENTING DOUBLE THREADS IN AUTOMATIC COIL WINDING MACHINES
Stefan First, Monchen-Gladbach, and Wilhelm Maassen, Monchen - Gladbach - Hardt, Germany, assignors to Walter Reiners, Monchen-Gladbach, Germany
Filed June 19, 1962, Ser. No. 203,540
Claims priority, application Germany, June 19, 1961, R 30,564
8 Claims. (Cl. 242—35.6)



1. In a yarn-coil winding machine having first means for accommodating a yarn supply, second means for holding a take-up spool to receive a yarn package being wound, a knotter located between and spaced from said first and second means, and a yarn-end seeker member for usually seizing a yarn end coming from one of said respective means and passing it along a specific path to said knotter, the combination of a device for preventing the knotting of double yarns in the event of loop formation at the yarn-end seizing location of said seeker member, said device comprising deflector structure protruding into the bight angle of the yarn-end loop between first and second portions of the loop, the first portion of the loop extending along said specific path to said knotter, said deflector structure being engageable with the second portion of the loop to divert the same from said specific path and hold it away from said knotter, whereby only the first portion of the loop is knotted.

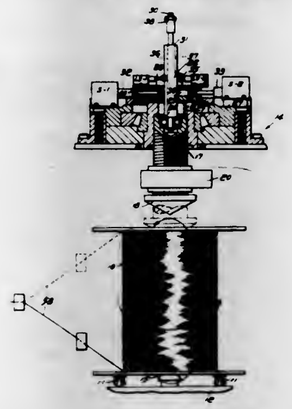
3,198,447
PRECISION WINDER
August J. Hambach, Richmond, Va., assignor, by mesne assignments, to Maremont Corporation, Chicago, Ill., a corporation of Illinois
Original application Sept. 14, 1961, Ser. No. 138,166. Divided and this application Oct. 26, 1962, Ser. No. 237,785
6 Claims. (Cl. 242—43)

1. In a thread winding machine:
(a) rotatable means for supporting a package adapted to have a thread wound thereon;
(b) means constraining said rotatable package supporting means against other than rotational movement;
(c) means reciprocable between first and second positions along an axis generally parallel to the axis of rotation of said package means for guiding a thread onto said package means; and
(d) means for expanding and contracting the traverse of the thread guiding means while maintaining one of said positions stationary and for shifting both of said positions without expanding or contracting the traverse of the thread guiding means, including:
(e) cam follower means mounted for reciprocable movement between fixed points;
(f) crank means pivotally mounted on said follower means for reciprocation therewith;
(g) means pivotally connecting a first arm of said crank means to said thread guiding means;
(h) a rotating cam directly drive-connected to said cam follower means;



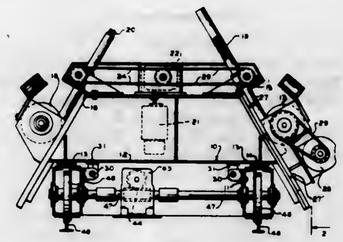
(i) crank arm guiding means;
(j) track follower means operatively connecting said crank arm guiding means and the second arm of said crank means, said guiding means being configured to constrain said follower means to movement along a rectilinear path as said crank means reciprocates with said follower means; and
(k) means for independently displacing the opposite ends of said crank arm guiding means toward and away from the path along which the cam follower means reciprocates in directions generally normal to said path.

3,198,448
LOCKING DEVICE FOR CORE TRUCK CLAMPING SCREWS
Helmut E. Durr, Summit, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 7, 1963, Ser. No. 257,019
7 Claims. (Cl. 242—54)



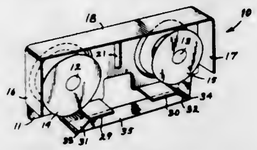
1. In a cable machine takeup unit including a core truck and driving means therefor, a clamping and locking device comprising:
a frame,
a clamping screw threadedly mounted in said frame,
means for moving the clamping screw into engagement with the core truck,
an elongated element having a locking portion thereon connected to said clamping screw,
locking means mounted in said frame and movable from a first position where it is out of engagement with said elongated element to a second position where it engages said locking portion of the elongated element to prevent axial movement thereof, and
means mounted on said frame operable to activate said locking means when the clamping screw engages the core truck.

3,198,449
INCLINE ROLL MOVEMENT MACHINE
Joseph William Scher, Short Hills, N.J., assignor to Weber & Scher Mfg. Co., Inc., a corporation of New Jersey
Filed Apr. 15, 1964, Ser. No. 359,862
9 Claims. (Cl. 242—54)



1. In an incline roll movement machine for turning a cable reel disposed on a given axis, a machine frame, a pair of support bearings disposed on said machine frame on each side of a center line thereof in spaced relation and each pair having axes angularly inclined toward each other, rollers on said bearings, one roller of each pair being movably positioned along the axis of the respective support bearing for movement relative to the reel axis, means for positioning the movable rollers according to the diameter of the reel to be circumferentially engaged and means for rotating one of said rollers to thus rotate the reel.

3,198,450
TAPE CARTRIDGE
Frederick C. Selden, Lynbrook, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Feb. 28, 1962, Ser. No. 176,325
7 Claims. (Cl. 242—55.13)



1. In an information processing system having a tape transport with means to mount two tape reels, a first set of fixed tension rollers, and a second set of tension rollers movable between a first position on one side of said first tension rollers and a second position on the other side of said first tension rollers, said tension rollers passing interstitially when said first set of tension rollers is moved between said first and second positions;
a tape cartridge for containing information-bearing tape separate from said tape transport, comprising

a base, including means to journal two tape reels rotatably in a predetermined spatial relationship to be mounted on said mounting means of said tape transport,

tape positioning means to direct tape along a predetermined path between the two reels and positioning said predetermined path to be between said first position of said second tension rollers and said first tension rollers when said cartridge is mounted on said tape transport, so that after said cartridge has been mounted on said tape transport said second set of tension rollers may be moved from said first position to said second position to properly tension the tape and move the tape out of engagement with said positioning means,

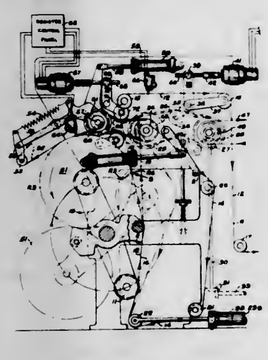
said tape positioning means extending beyond the bottom edge of said base to permit said tension rollers to be inserted adjacent to the tape and to permit said second set of tension rollers to be moved from said first position to said second position.

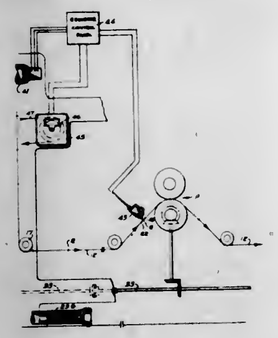
3,198,451

ROLLSTAND MECHANISM FOR CONTINUALLY DELIVERING PREPRINTED WEBS IN REGISTER

William F. Huck, 81 Greenway Terrace, Forest Hills, N.Y.

Filed Apr. 12, 1963, Ser. No. 272,664
24 Claims. (Cl. 242—58.3)





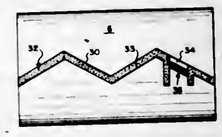
1. Mechanism for delivering a preprinted web in register to a rotary web processing unit from one web supply roll after another, comprising means driven in synchronism with the processing unit for feeding from an expiring roll a web carrying register elements, said web running from said roll to said processing unit, means driven in coupled relation with said web feeding means for driving a new roll of a like web at a peripheral speed equal to the speed of the running web, means for splicing the web of the new roll to the running web before the web supply of the expiring roll has expired, means operable to actuate said splicing means when the new roll is at such speed and a register element fixed relative to a pattern on the surface of the new roll is in at least approximate coincidence with a register element on the running web, web register control means including elements for comparing the position of register elements on the running web with the position of said processing unit, and precise web registering means responsive to impulses from said register control means, and including a variable speed drive driven in synchronism with said processing unit, for adjusting the position of the running web and simultaneously adjusting its speed relative to the speed of said processing unit to correct any detected lack of registration between the running web and the web processing unit.

3,198,452

WEB SPLICING TAB

Paul Matthue Buettel, Colonia, Rahway, N.J., assignor to Wood Newspaper Machinery Corporation, Plainfield, N.J., a corporation of Virginia

Filed Jan. 8, 1964, Ser. No. 336,440
3 Claims. (Cl. 242—58.5)



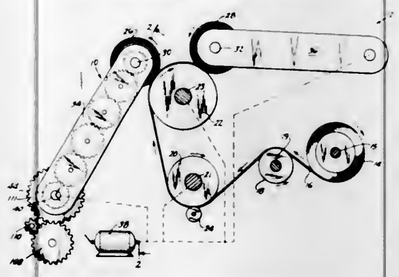
1. A splicing tape for splicing a new web roll to an expiring web, which splicing tape comprises a ribbon portion, a base adhesive on the bottom of said ribbon portion for securing said splicing tape to said new web roll, a splicing adhesive atop said ribbon portion for securing said new web roll to said expiring web, and raised non-adhesive strips atop said ribbon portion and relatively spaced from each other to prevent contact between a drive belt and said splicing adhesive.

3,198,453

AUTOMATIC VARIABLE SPEED REWIND DRIVE

Charles Aaron, West Caldwell, N.J., assignor to Cameron Machine Company, Dover, N.J., a corporation of New York

Filed May 15, 1963, Ser. No. 280,526
7 Claims. (Cl. 242—65)



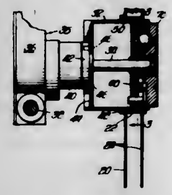
1. In a rewind machine a combination of a plurality of rewind arms pivotally supported at their inner ends and each pair being adapted to support a rewind shaft at their outer end on which shaft webs of sheet material are to be wound into rewind rolls, a contact drum in operational engagement with said rewind rolls, means for varying the angle of position of each of said pair of arms in accordance with the diameter of their respective rewind rolls, one of said arms of each pair carrying at its outer end means for driving engagement with said shaft, slip clutch means having the driven sides drivingly connected to said means for driving engagement, motive means having a plurality of power outputs drivingly connected to the driving side of said clutches respectively, control means for controlling the slip of each of said clutch means, each of said control means comprising a speed transmitter for sensing the speed of its respective motive means output and transmitting a corresponding signal, a second speed transmitter for sensing the speed of its respective rewind shaft and transmitting a corresponding signal, a constant signal transmitter, a selecting relay for receiving signals from said first speed transmitter and said constant signal transmitter and transmitting a corresponding signal, means for sensing the angle of position of said rewind arm and transmitting a corresponding signal, a ratio control station for receiving said selecting relay signal and the signal of said means for sensing the angle of position of the rewind arms and for transmitting a corresponding signal, and a controller which actuates its respective clutch means according to the signals received from said ratio control station and said second speed transmitter.

3,198,454

REEL MOUNTING

Edmund J. Gorsek, Jr., and Charles C. Patton, Springfield, Ill., assignors to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware

Filed July 17, 1963, Ser. No. 295,638
7 Claims. (Cl. 242—68.3)



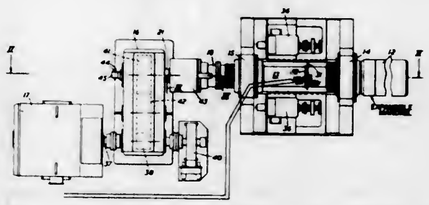
1. In reel mounting apparatus, the combination of a rotatable spindle, a rotatable mounting hub having a reel mounting seat thereon, a cam plate rotating with said mounting hub, a manually operable knob rotatably and shiftably mounted on said spindle, spring means normally tending to shift said knob inwardly along said spindle, gripping fingers carried by said knob, guide means operative to cause rectilinear radial projecting and retracting movements of said gripping fingers relatively to said knob, said guide means comprising cam slots in said cam plate, and cam follower pins carried by said knob and following said cam slots for causing said rectilinear radial projecting and retracting movements of said gripping fingers pursuant to rotational motion of said knob relatively to said cam plate, a first set of cam balls carried by said cam plate, and a second set of cam balls carried by said knob and operative to have rolling camming movement over said first set of balls for causing axial shifting movement of said knob and said fingers pursuant to further rotational motion of said knob relatively to said cam plate, said spring means coacting with said cam balls for establishing a yieldable detent action on the shifting movements of said knob.

3,198,455

COILER FOR COILING STRIP MATERIAL

Harry Laurence Fred Bond, Sheffield, Yorkshire, England, assignor to Davy and United Engineering Company Limited, Sheffield, Yorkshire, England, a company of Great Britain

Filed Jan. 26, 1962, Ser. No. 169,058
Claims priority, application Great Britain, Feb. 8, 1961, 4,672/61
6 Claims. (Cl. 242—72.1)



1. A coiler comprising an expansible mandrel having a mandrel drive shaft;

a gear box having input and output shafts;

a disengagable coupling connecting the mandrel drive shaft to the output shaft of the gear box;

hydraulically operated means carried by the mandrel shaft for rotation therewith for effecting expansion and collapse of the mandrel; and

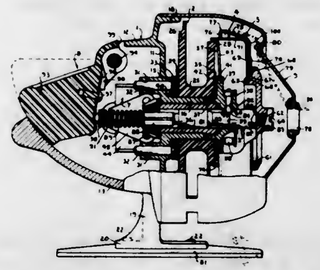
passages through the output shaft of the gear box for supplying fluid under pressure to the hydraulically operated means.

3,198,456

SPINNING REEL

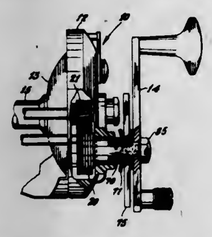
Morris E. Wood, Bronson, Mich., assignor, by mesne assignments, to Bronson Specialties, Inc., Bronson, Mich., a corporation of Michigan

Continuation of application Ser. No. 661,760, May 27, 1957. This application Oct. 31, 1961, Ser. No. 150,614
12 Claims. (Cl. 242—84.2)



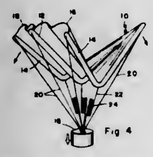
2. A spinning reel comprising a frame, a line support mounted at the front side of the frame, a rotary shaft extending through the frame and support, a cup-shaped element mounted on the shaft and provided with an annular wall, a line pickup mounted for movement with the shaft and disposed in and coaxial with said element with the wall of the latter overlying a portion of the pickup, driving means for rotating the pickup and element in one direction to cause the pickup to deliver line onto the support while said line rides on the element, and lever means for shifting the rotary shaft, pickup and element as a unit forwardly of the line support to place the pickup and element in a position whereby the line may move freely off the support while riding on the element.

3,198,457
DRAG FOR FISHING REELS
Joseph M. Holahan, Abington, Pa., assignor to True Temper Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 3, 1961, Ser. No. 129,053
4 Claims. (Cl. 242—84.45)



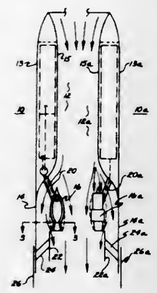
1. In a fishing reel having a spool rotatably mounted therein between a pair of spaced parallel end plates, a gear in driving engagement with said spool, a gear sleeve mounted on and extending outwardly from one of said end plates, said gear sleeve having a threaded end portion, a driving gear rotatably mounted on said sleeve, drag means slidably mounted on said gear sleeve and associated with said driving gear, said drag means consisting of a plurality of metallic drag washers, certain of said washers being rotatable with said gear sleeve and certain of said washers being rotatable with said driving gear, a star wheel threadedly mounted on said gear sleeve, spring means slidably mounted on said gear sleeve and positioned between said drag washers and said star wheel, said spring means having a concavo-convex configuration on each side thereof, whereby said star wheel is adapted to exert an axial force on said spring means and said drag washers whereby said gear sleeve is drivably connected to said driving gear.

3,198,458
METHOD OF PACKING AND DEPLOYING A FOLDABLE WING
James E. Fink, San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed May 6, 1963, Ser. No. 278,219
3 Claims. (Cl. 244—49)



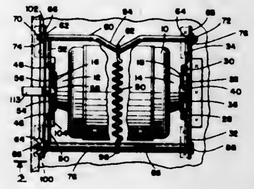
1. A method of packing and deploying a foldable wing having foldable longitudinal edge supporting members, with flexible lifting panels between the members and flexible suspension lines secured at spaced positions along the members, comprising:
- arranging the edge supporting members in adjacent, substantially parallel relation with the lifting panels folded therebetween;
- folding the wing with a substantially centrally folded portion and bringing the opposite ends of the edge supporting members together with the suspension lines on the outside of the folded assembly;
- securing the suspension lines collectively to a payload to be air dropped and stowing the wing in folded position on the payload;
- and, when the payload is dropped, releasing the folded wing into the air stream, whereby the air pressure opens the wing with the opposite ends thereof opening outwardly and downwardly in the general direction of travel, the suspension lines being separated outwardly without entanglement.

3,198,459
IMPOSION THRUST ENGINE AND VEHICLE
Milford Geary, R.R. 1, Polo, Ill.
Filed June 30, 1961, Ser. No. 121,205
4 Claims. (Cl. 244—73)



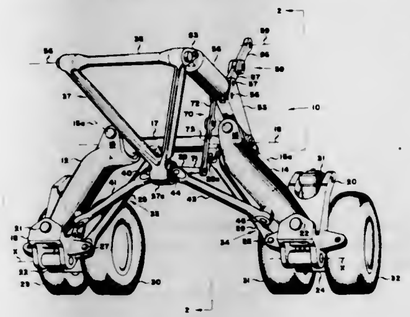
1. A vehicle adapted for travel in the earth's atmosphere and outer space comprising: a flow tube adapted to contain a substantially unimpeded relative flow therethrough of the earth's atmosphere and outer space, said flow tube having an inner wall and a spaced apart outer wall; a plurality of heated jet reaction thrust engines secured relative to said flow tube and positioned to discharge their heated jets within said flow tube contiguous to said flow therethrough, said engines being positioned axially parallel to one another and to said flow tube; said outer wall extending aftward of said plurality of said engines; a jet containment member secured relative to said flow tube and positioned aft and radially outward from said plurality of said engines within said outer wall; and an outer shell telescopically mounted adjacent the aft end of said outer wall and movable longitudinally relative thereto.

3,198,460
MOTOR MOUNT
Adam D. Goettl, 4960 Palomino Drive, Phoenix, Ariz.
Filed Feb. 12, 1963, Ser. No. 258,071
14 Claims. (Cl. 248—16)



10. In an adjustable motor mount the combination of: an electric motor having resilient bushings on opposite ends thereof concentric with its axis; clamp means secured around said resilient bushings; mount bracket means disposed to be secured onto a stationary object; said clamp means, at each opposite end of said motor, individually pivotally connected to said mount bracket; link means pivotally connected to each of said clamp means at opposite ends of said motor; said mount bracket means having slotted portions therein; and a single bolt extending through said slotted portions and said link means at opposite ends of said motor; and means for tightening and fixing said link means in various adjusted positions longitudinally of said slotted portions.

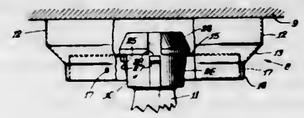
3,198,461
RETRACTABLE LANDING GEAR
James B. Beach, Van Nuys, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif., a corporation of California
Filed June 20, 1963, Ser. No. 289,362
8 Claims. (Cl. 244—102)



1. A retractable landing gear for an airborne vehicle comprising:
- (a) a first fulcrum fitting mounted upon the vehicle for rotation about a first fixed axis transverse to and fixed with respect to the longitudinal center line of the vehicle;
- (b) a pair of leg members having first ends attached to said first fulcrum fitting to rotate therewith about said first fixed axis and to swivel with respect thereto about axes normal to said first fixed axis;
- (c) a second fulcrum fitting mounted upon the vehicle for rotation about a second fixed axis parallel to said first fixed axis;
- (d) linkage means connecting said second fulcrum fitting to said leg members opposite said leg attachments to said first fulcrum fitting for controlling the transverse orientation of said legs responsive to rotation of said second fulcrum fitting;
- (e) actuating means connected to said first and said second fulcrum fittings for rotating the same, whereby said leg members are movable inward and upward by a single said actuator; and
- (f) a plurality of wheels perpendicularly mounted about a common axis upon the leg members adjacent linkage connections so as to remain at all times substantially perpendicular to the axes.

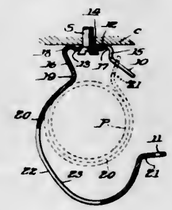
3,198,462
ELECTRIC LIGHT FIXTURE
Russell R. Schultz, Fort Atkinson, Wis., assignor to Thomas Industries Inc., Louisville, Ky., a corporation of Delaware
Filed May 28, 1962, Ser. No. 198,085
7 Claims. (Cl. 248—27)

1. In an electrical fixture, the combination of a transverse panel having an opening formed therein with alternate land portions and notches arranged about the circumference thereof, a pair of tabs formed in each of said land portions with circumferentially spaced apart facing ends, a socket having a base portion presenting an annular radial shoulder and an annular body portion projecting axially therefrom, said body portion having circumferentially spaced radial ribs, said body portion and associated radial ribs being insertable through said opening and notches in said panel so as to dispose said socket base



shoulder in abutment with said land portions, and said socket being rotatable relative to said panel so as to move said radial ribs over the adjacent land portions into a position intermediate the facing ends of said tabs whereby the latter serve to prevent rotative displacement of said socket relative to said panel.

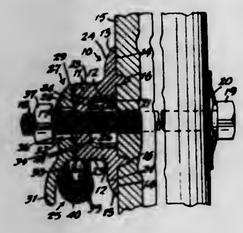
3,198,463
PIPE HANGER
James Loudon, Arlington Heights, Ill., assignor to Minerallac Electric Company, Chicago, Ill., a corporation of Illinois
Original application Aug. 16, 1960, Ser. No. 49,888, now Patent No. 3,121,549, dated Feb. 18, 1964. Divided and this application July 30, 1963, Ser. No. 298,777
3 Claims. (Cl. 248—62)



1. A pipe hanger comprising a relatively stiff flexible strap of set-retaining material bent to define a support portion including a flat central part with a securing means aperture and also including two side parts of unequal length bent from opposite ends of the central part in generally the same direction, a pipe-encircling portion of the strap joined to and curving away from the longer of said side parts and the support portion and curving partially back toward the support portion and the shorter side part, said encircling portion including a first curved part joined at one end to said longer part, an intermediate flattened part extending from the other end of the first curved part, and a second curved part connected at one end to the intermediate part and substantially conforming to the surface curvature of the pipe to be supported, one end portion of the strap extending generally radially outwardly of the second curved part at the other end thereof, a transverse slot in said one end portion, and a weakening slot extending longitudinally of the strap in said intermediate flattened part and having an end in tool-aligning relation to said securing means aperture, said shorter side part being bent on a smaller radius than the longer part and defining the other end portion of the strap, a locking tongue extending at an angle from the end of the shorter part, said one end portion and tongue being spaced apart by a distance not greatly less than the diameter of the pipe and arranged for projection of the tongue through the transverse slot upon bending of the encircling portion into embracing relation about the pipe, the tongue being deformable in pro-

jected position to lock the strap end portions against separation and hold the encircling portion under slight tension, said longer part having a length approximately equal to the length of the shorter part plus the distance between the transverse slot and the second curved part, and said encircling portion having a length less than the circumference of the pipe by approximately the distance between the longer part and the one end portion in said embracing relation, the stiffness of said strap being sufficient to allow the encircling portion to sustain the weight of at least the adjacent portion of a pipe received in the hanger before said securement of the opposite end portion by the tongue.

3,198,464
AERIAL CABLE SUSPENSION CLAMP
Owen R. Huggins, New Canaan, Conn., assignor to Malleable Iron Fittings Company, Branford, Conn., a corporation of Connecticut
Filed Sept. 5, 1962, Ser. No. 221,481
5 Claims. (Cl. 248—67.5)



1. In a cable suspension clamp for mounting on a vertical pole, a horizontal through bolt for engaging diametrically through said pole with a threaded end projecting at one side, a clamp body having a hole through which said through bolt is received, a clamping plate having a hole through which said through bolt is received, and a nut screwed upon said bolt having clamping engagement with said clamping plate, said clamp body having a fulcrum groove at one side of said hole and a messenger wire receiving groove at the other side of said hole, said messenger wire receiving groove of said clamp body having a substantially straight horizontal upper side and a convexly arched lower side whereby a messenger wire is engageable therewith in a substantially straight horizontal position and may thereupon assume a convexly curved position in engagement with the lower convexly arched side of said groove and said clamping plate having fulcrum means for cooperation with said fulcrum groove of said clamp body and a messenger wire receiving groove having arched parallel upper and lower sides to conform to and clampingly engage said arched messenger wire along upper and lower sides thereof when said messenger wire is engaged with the lower arched side of said messenger wire receiving groove of said clamp body.

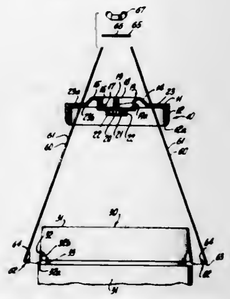
3,198,465
HOSE NOZZLE SUPPORT
Charles Zook Sutton, 2832 Divisadero St., San Francisco, Calif.
Filed July 10, 1963, Ser. No. 294,204
3 Claims. (Cl. 248—87)

1. A hose nozzle support comprising an upright rod having a curved portion at its upper end to serve as a handle, means on said rod adjacent its lower end forming a step for use in forcing said lower end of said rod into the ground, a frame in the form of a channel having a web and a pair of flanges, said flanges having apertures therein to receive both the upright and curved portions of said rod, means in said web for receiving a thumb screw engageable with said rod, means formed in said web and defining a cut out portion therethrough for engagement with a hose nozzle, and means including



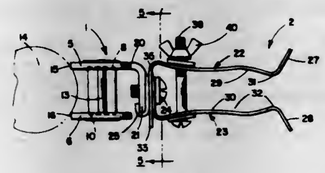
aligned holes in said flanges for receiving the spike of a spiked hose nozzle supported on said channel above said cut out portion.

3,198,466
ACCESSORY HOLDER FOR VEHICLE
Norman S. Gardner, Westchester County, and Gene Raul, Bronx, N.Y., assignors to Raul International Corporation, New York, N.Y., a corporation of New York
Filed July 17, 1964, Ser. No. 383,322
5 Claims. (Cl. 248—205)



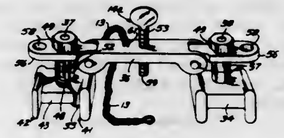
1. Holder for mounting an accessory device over the horn button of a vehicle, said horn button having the described combination and arrangement of a top and a skirt depending from said top and accessible at its bottom edge and inner face to hooks, said holder comprising a body adapted to have the accessory device mounted thereon and sized and adapted to be seated upon the horn button top, a boss on the top of said body having an upwardly inwardly inclined peripheral side surface, said boss having a central depression with a bottom and a peripheral wall, a stud in said depression upstanding from its bottom and spaced from its peripheral wall, said body having a plurality of through generally vertical openings outside said boss, a plurality of elongated flexible, non-extensible straps having hooks on their lower ends engageable over the bottom edge and inner face of said skirt, said straps adapted to be extended through said openings and respectively having a plurality of holes therein in lengthwise spacing, and a fastener adapted to be secured on said stud, said adapter adapted to be assembled to said horn button with said body seated on said horn button top and said hooks engaged over the bottom edges and inner face of said skirt and said straps extended through said apertures and against the side surface of said boss with said stud through holes in said straps, said fastener adapted to be mounted on said stud over and against said straps and moved down on said stud to draw said straps over said boss to said depression bottom whereby to tension said straps and fix said body against said horn button.

3,198,467
MAGNETICALLY SUPPORTED BRACKET
Robert H. Elfsten, Los Angeles, Calif., assignor to Bestools, Inc., Lynwood, Calif., a corporation of California
Filed Dec. 3, 1962, Ser. No. 241,805
3 Claims. (Cl. 248—206)



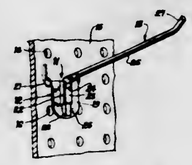
1. A supporting device comprising
a base, said base including
a duality of spaced members of magnetic material, said members having longitudinal edges adapted to engage an object to which said base is to be secured,
permanent magnet means interposed between said members with a pole of said magnet engaging each of said members,
whereby said members act as pole pieces for said permanent magnet means,
one of said members having a projecting portion extending from the opposite longitudinal edge thereof toward the other of said members,
a duality of gripping members,
said gripping members including opposed sheet metal elements adapted to receive an object to be supported therebetween,
said gripping members having support portions at one side thereof extending toward each other in an overlapping relationship,
each of said support portions including an aperture therethrough,
at least one of said apertures being an elongated transversely extending slot,
a fastener extending through said apertures securing said support portions to said projecting portion of said base,
whereby said support portions are adjustable laterally to vary the spacing between said gripping members
and adjustable angularly to adjust the angle between said gripping members,
and means for controlling the gripping force exerted by said gripping members,
said force controlling means including a duality of spaced individually adjustable members extending through said gripping members adjacent the opposite ends thereof
for limiting the outward travel of said gripping members at said ends and thereby adjusting the gripping effect of said gripping members.

3,198,468
MAGNETIC CLAMPING APPARATUS FOR SECURING STRIP HEATERS AND THE LIKE TO CURVED SURFACES
Earl F. Vye, 437 El Cajon Drive, San Jose 12, Calif.
Original application Nov. 29, 1962, Ser. No. 241,086, now Patent No. 3,169,184, dated Feb. 9, 1965. Divided and this application Dec. 14, 1964, Ser. No. 418,359
3 Claims. (Cl. 248—206)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Clamping apparatus for securely holding strip heaters in fixed positions on a ferrous metal plate comprising:
an elongate base having a central transverse opening, and
a magnetic assembly pivotably mounted on a horizontal axis at each end of said base,
each of said assemblies including:
a non-ferrous U-shaped casing having a hollow web portion and downwardly-extending hollow open-bottomed legs,
a section of hard magnetic material filling said hollow web portion,
sections of soft magnetic material filling said hollow legs with magnetic face portions projecting into said open bottoms and with upper portions disposed flushly against the outer ends of said hard magnetic section, said assemblies extending downwardly of the base and being spaced one from another a sufficient distance for straddling said strip heater, and
a load bar adjustably mounted in said base opening and extending downwardly of said base toward said straddled heater,
said load bar having its lower end portion formed for insertibly engaging said straddled heater and clamping the heater against said ferrous metal plates.

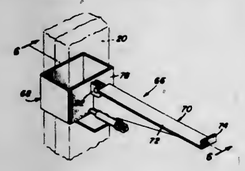
3,198,469
HOOK MOUNTABLE IN AN APERTURED PANEL
Robert A. E. Callanan, 1654 Lincoln St. NW., Marne, Mich.
Filed Mar. 2, 1964, Ser. No. 348,560
3 Claims. (Cl. 248—223)



1. A hook assembly for use on any standard apertured panel with one-eight or one-quarter inch holes on laterally spaced one inch center lines, comprising a bracket having a body portion with a main planar part, a pair of rearwardly and upwardly extending ears formed integrally with said body portion and spaced for insertion through laterally adjacent holes in a panel and each ear having a thickness less than half the diameter of said holes, a hook receiving portion formed integrally with and struck forwardly from said body portion and including a substan-

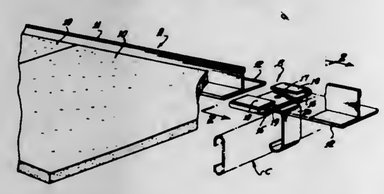
tially vertical wall spaced forwardly of the planar part of said body portion with a slot in the upper marginal edge thereof, the width of said bracket as defined by said ears adapted to be less than the lateral distance between the center lines of adjacent ones of holes in a panel; and a hook having a substantially vertical rear portion inserted into said receiving portion to frictionally engage the lower end thereof against said planar body portion, and a substantially horizontal forwardly extending portion engaged in said slot, said substantially vertical portion of said hook having a lower end angularly disposed relative to the upper part thereof in a plane including the axis of said substantially horizontal portion to facilitate its insertion between said vertical wall and the planar part of said body portion and to assure a wedging engagement of said hook in said bracket.

3,198,470
SCAFFOLD
James L. Owens, 418 Ingalton Ave., West Chicago, Ill.
Filed Feb. 18, 1963, Ser. No. 259,152
4 Claims. (Cl. 248—245)



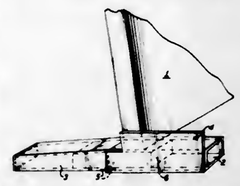
3. A scaffold bracket comprising a collar for engagement about a scaffold upright, a platform support arm pivotally fixed to and projecting outwardly from one side of the collar, piercing teeth fixed to said platform arm and projecting generally parallel thereto below said one side of the collar, said teeth extending inwardly of said one side, and adjustable means fixed to said collar and engaged with the platform support arm for pivoting said support arm downwardly and locking the teeth into engagement with the upright.

3,198,471
SUSPENDED-CEILING HANGER FOR DRAPERY TRAVERSE RODS
Frank L. Meyer, 10603 Stanwin Ave., Mission Hills, Calif.
Filed June 21, 1963, Ser. No. 289,499
3 Claims. (Cl. 248—265)



1. A drapery traverse rod suspension bracket for mounting on a suspended-ceiling panel support beam of inverted T-section including horizontal bottom flanges, said bracket comprising, in combination: a sectional mounting yoke including a pair of arms having, at their remote ends, jaws of hook form adapted to receive the marginal portions of the respective flanges, said arms being arranged in overlapping, longitudinally aligned association, one of said arms having a lonigtudinal slot therein and the other of said arms having a threaded aperture registering with said slot; a hanger element comprising an ear abutting the underside of said arm having the slot, a finger joined integrally to one end of said ear by a right-dihedral angular bend and projecting downwardly therefrom, and an integral stirrup on the lower end of said finger, spaced below said ear in vertically opposed relation thereto, said ear and stirrup cooperatively defining a claw having proportions such as to snugly receive a drapery traverse rod of C-section with the back side of the rod engaged against said finger; and a clamp screw extending through said slot, threaded through said aperture and adapted to be tightened against the underside of said support beam, said screw having a head adapted, when the screw is thus tightened against the beam, to engage the underface of said ear and to clamp said arms against said ear and against one another so as to secure said sectional yoke to said support beam and said hanger element to said yoke.

3,198,472
HORSE FOR TRANSPORT OF MATERIALS IN SHEET FORM
Jean Albert Marchand, Charleroi, Belgium, assignor to Glaverbel, Brussels, Belgium, a Belgian company
Filed Dec. 7, 1962, Ser. No. 242,977
Claims priority, application Belgium, Dec. 19, 1961, 487,794, Patent 611,740
7 Claims. (Cl. 248—346)

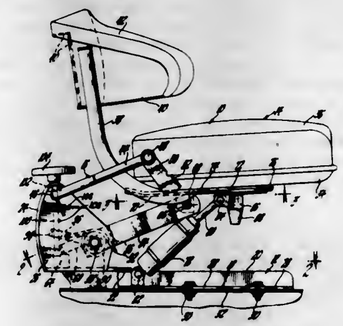


1. A unitary, self-standing horse for the transport and storage of sheet materials comprising a base, and upright sheet supporting means mounted on said base, said base being composed of a plurality of spaced frame supporting feet adapted to rest horizontally on the ground and extending normally of said sheet supporting means to enable the horse to stand upright by itself, each of said feet including a first horizontal part on which said sheet supporting means is mounted and adapted to rest horizontally on the ground in one of the supporting positions of said horse, and a second horizontal part movable relative to said first part and adapted to form a rearward extension of said first part in said one supporting position of the horse and to form a supporting base for said first part and said sheet supporting means in another of the supporting positions of said horse, said second part being adapted to rest horizontally on the ground in both of said supporting positions of the horse, and means movably connecting said second part to said first part, said second part having a rearwardly and downwardly inclined upper surface in extended position to shift said sheet supporting means from the position in which it is supported in said one supporting position of the horse, when said second part forms a supporting base for said first part and said sheet supporting means.

3,198,473
MULTIPLE POSITION SEAT
Harold O. Holz, Linden, Mich., assignor to Massey-Ferguson, Inc., Detroit, Mich., a corporation of Maryland
Filed June 18, 1962, Ser. No. 203,090
17 Claims. (Cl. 248—399)

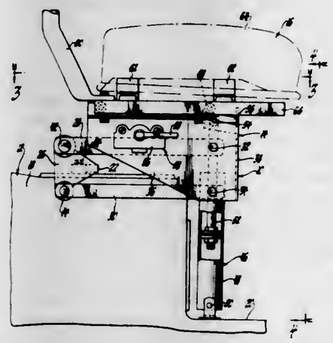
1. A vehicle seat structure comprising support means adapted to be secured to a vehicle, seat means, and yieldable suspension means including suspension linkage means

pivotally connected to said support means and seat means to yieldably suspend the latter in a first seating position



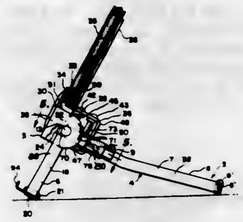
thereof, said suspension linkage means being pivotal to move said seat means to a second seating position above and to one side of said first seating position thereof.

3,198,474
ADJUSTABLE SEAT
Robert M. Doll, Inkster, Mich., assignor to Massey-Ferguson Incorporated, Detroit, Mich., a corporation of Maryland
Filed Aug. 1, 1963, Ser. No. 299,243
10 Claims. (Cl. 248—399)



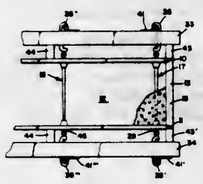
1. A seat assembly comprising a base member mounted in a fixed position relative to a seat support means, seat support means, fluid pressure operated motor means operatively connected between said base member and said seat support means, a source of substantially incompressible fluid under pressure, circuit means communicating said source to said motor means and including selector valve means selectively controlling the supply and exhaust of fluid to and from said motor means to selectively adjust the position of said seat support means relative to said base member, yieldable means responsive to variations in the pressure of the fluid in said motor means in response to variations in the load imposed on said seat support means to cushion movement of the latter relative to said base member, and means for varying the static pressure exerted by said yieldable means without affecting the static unload height of said seat support means.

3,198,475
BOOK HOLDER
Thomas J. Flahive, Chicago, Ill., assignor of one-half to Louis A. Derwin, Downers Grove, Ill.
Filed Feb. 27, 1964, Ser. No. 347,730
6 Claims. (Cl. 248—445)



1. In a bookholder and the like, a pair of leg structures pivotally interconnected at one of their ends for swinging movement about a substantially horizontal axis, book holding means having a body portion pivoted to said leg structures on said axis, said body portion having a part extending alongside one leg structure and presenting a series of notches, a latch having a body mounted on said one leg structure, said body having limited lateral movement and movable toward and away with respect to said part and having a bolt selectively positionable in any of said notches, and means yieldably biasing said latch body laterally and in a direction toward said part, the other of said leg structures swingable past said latch body and releasably engageable thereby.

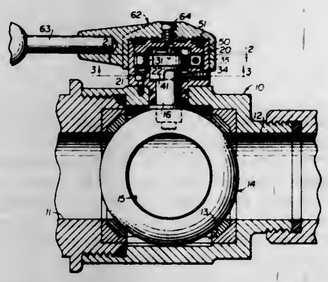
3,198,476
TAPERED TIE BOLT
Wilfred A. Smith, La Honda, Calif. (1102 Vera Ave., Redwood City, Calif.)
Filed Apr. 25, 1962, Ser. No. 190,021
4 Claims. (Cl. 249—42)



1. A reusable assembly for assistance in maintaining concrete form boards in preselected spaced positions comprising: a shaft having a cross section which gradually diminishes from a wider end to a narrower end thereof; a first frusto-conical shoulder member, of rigid material and substantially shorter length than said shaft, integrally joined to the wider end of said shaft and whose taper is greater but in the same direction as the taper of said shaft, a cylindrical portion extending longitudinally outwardly therefrom, said first shoulder member for engaging and preventing movement of a first form board in at least one direction; a second frusto-conical shoulder member, of rigid material and substantially shorter length than said shaft, threadably engageable with the narrower end of said shaft and whose taper is greater and in the opposite direction as the taper of said shaft, a cylindrical portion extending longitudinally outwardly therefrom, said second shoulder member for engaging a second form board aligned with said first form board and for maintaining the second form board at a preselected relative

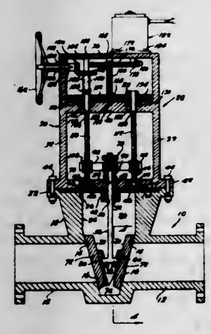
distance from said first form board; said assembly being entirely withdrawable from said first and second form boards and from concrete which may be formed therebetween when said second means is removed from said shaft.

3,198,477
SELF-LOCKING VALVE
George G. Allenbaugh, Jr., Rittman, Ohio, assignor, by mesne assignments, to Akron Brass Company, Wooster, Ohio, a corporation of Ohio
Filed Dec. 27, 1961, Ser. No. 162,361
20 Claims. (Cl. 251—77)



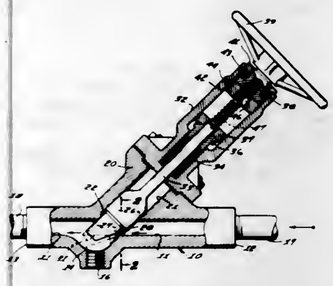
1. In a valve construction including a valve body, a plug rotatable in the valve body for establishing fluid flow in a first position and blocking fluid flow in a second position, and a shaft for rotating the plug, the improvement comprising locking means connected to said shaft for normally preventing rotation thereof, said locking means including wedging means operative in opposite directions of rotation of said shaft, drive means operatively connected to said locking means, said drive means including means for sequentially disengaging said wedging means and then rotating said shaft, and handle means rotatably connected to said valve body for operating said drive means.

3,198,478
GATE VALVE OPERATING MECHANISM
Donald N. Johnston, 29 Rose Ave., Cottage Hills, Ill.
Filed May 11, 1962, Ser. No. 193,915
3 Claims. (Cl. 251—85)



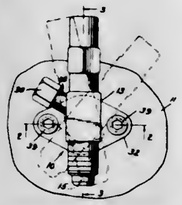
1. Valve operating mechanism comprising a support, a pair of laterally spaced feed screws journaled on the support, a cross member extending between the feed screws, and a valve operating shaft having valve means on one end thereof, and a spring-cushioned connector operatively connecting the other end of the operating shaft to the cross member at a point between the feed screws, said connector comprising a sleeve threaded on the operating shaft and connected to said cross member, a ring sliding on the sleeve and connected to the cross member, and a coil spring circumposed on on the sleeve and compressed between the ring and a part of the sleeve, said valve means comprising a pair of laterally spaced valve discs disposed in convergent relationship, and wedge means fixed on said one end of the shaft disposed between and supportably and operatively engaged with the valve discs.

3,198,479
METERING AND SHUT-OFF VALVE HAVING STRAIGHT-THROUGH FLOW CHARACTERISTICS
Eugene C. Greenwood, 413 Poinsettia, Corona del Mar, Calif.
Filed June 4, 1962, Ser. No. 203,680
7 Claims. (Cl. 251—121)



1. A valve, which comprises a valve body having a flow passage therethrough, said flow passage having a cylindrical wall of predetermined diameter, said valve body also having a cylindrical bore formed therein and intersecting said flow passage at an acute angle, said valve body being formed with a chamber communicating with said flow passage and disposed opposite said bore, the axis of said bore and the axis of said flow passage lying in substantially the same plane, said bore having a diameter substantially greater than that of said flow passage, all central and peripheral portions of said bore communicating freely with said flow passage, a substantially frustoconical valve seat formed integrally in said valve body coaxially of said bore in a plane perpendicular to the axis of said bore and generally tangential to said passage at the extreme inner end of said bore, said seat being spaced outwardly from said passage at all points excepting the point of tangency between said seat and said passage, the angle of said frustoconical seat being such that the surface of said seat is substantially coincident with the wall of said flow passage at said point of tangency, movable means mounted in said bore for seating on said valve seat to block flow of fluid through said passage, said movable means being movable from a position seated on said seat and blocking flow of fluid through said passage to a position completely retracted away from said passage whereby a straight-through unobstructed flow path is provided through said passage, and a tip element provided on said movable means for insertion into said chamber when said movable means is in seated position on said valve seat, said valve body being formed with wall means adapted to cooperate with said tip element to stabilize said movable means.

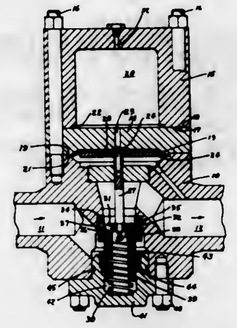
3,198,480
VALVE AND SWIVEL COUPLING FOR REFRIGERATION SYSTEMS
Stanley H. Morse, Adrian, Mich., assignor to Primore Sales, Inc., Adrian, Mich., a corporation of Michigan
Original application Aug. 5, 1959, Ser. No. 832,883. Divided and this application May 31, 1962, Ser. No. 199,189
3 Claims. (Cl. 251—148)



1. For use on a refrigeration unit having an opening extending laterally thereof and an annular substantially flat sealing surface lying in a plane generally perpendicular to the axis of the opening, a valve comprising a valve body having a length several times its width, a chamber in said body, a first passageway extending axially of said body from said chamber to the exterior, a projection extending transversely of said body, a second passageway extending through said projection and providing communication between said chamber and the exterior of said body, said projection having a first annular sealing surface generally perpendicular to the axis of the second passageway which extends through said projection, an annular rib on said projection, having a second annular sealing surface spaced radially outwardly and axially outward y from said first annular sealing surface, a pad member rotatably mounted on said projection and movable axially thereon, means for limiting the outward movement of said pad member on said projection, said pad member having a flat sealing surface surrounding said projection and lying in a plane perpendicular to the axis of the passageway through said projection, said flat surface of said pad member being spaced from the second annular sealing surface on said projection axially inwardly toward said body when said pad member is in its axially outermost position relative to the body, said pad member having opposed bolt openings therein adapted to receive bolts for drawing and holding said valve against said refrigeration unit.

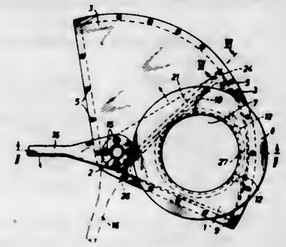
3,198,481
RECIPROCATING VALVE HAVING A THROTTLING ARRANGEMENT AND PARTICULAR HEAD AND SEAT COOPERATION
Austin U. Bryant, Walnut Creek, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed July 31, 1961, Ser. No. 128,102
6 Claims. (Cl. 251—210)

1. A fluid flow control device comprising:
a valve body having inlet and outlet flow passages,
a stationary valve member intermediate said passages forming a cylindrical opening therebetween,
a movable valve member on the upstream side of said stationary valve member and movable along the axis thereof,
a reduced diameter, coaxial cylindrical extension on the downstream side of said movable valve member, said cylindrical extension being of a diameter to engage closely within said cylindrical opening to form a flow constricting throat permitting leakage thereby, said cylindrical extension being engaged in said cylindrical opening during just a portion of the movement of said movable valve member adjacent to said stationary valve member,
One of said valve members having an annular working surface extending radially beyond the diameter of said cylindrical opening,



the other of said valve members having an annular recess opposite said annular working surface, and
a resilient seal ring disposed in said recess,
the inner diameters of said working surface and said seal ring being substantially equal,
the outer diameter of said seal ring being greater than the outer diameter of said working surface.

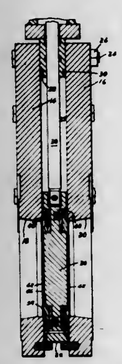
3,198,482
SLIDING GATE VALVE SECTOR-TYPE STORAGE TANK CLOSURE
Josef Bertels, Sternenstrasse 17, Berzdorf, near Bruhl, Germany
Filed Jan. 29, 1962, Ser. No. 169,559
Claims priority, application Germany, Feb. 1, 1961, B 61,090
6 Claims. (Cl. 251—302)



1. A sector-type storage-tank closure comprising a casing having an upper, an intermediate and a lower portion, said intermediate portion being at least partly wider than the other portions, a sector-shaped solid slide plate swingable between said upper and said intermediate portions and having an open and a closed position, seat means slidably contacted by said plate and engaging said plate when the latter is in its closed position, pivot means for laterally shifting said plate, an inlet opening in said upper portion and a discharge opening in said lower portion substantially aligned with said inlet opening, said intermediate portion sloping inwardly from the edges of said plate toward said discharge opening in said closed plate position, and said intermediate portion defining, where it slopes inwardly, at least part of the flow path through the closure, at least one projection on said intermediate

portion substantially perpendicular with respect to the plane of said plate and providing therefor a sliding support, and elongated sealing members respectively engaging opposed faces of said plate and situated in a central region of said casing substantially midway between said open and said closed plate positions.

3,198,483
RESILIENT SEAL MEMBERS OF ELONGATED CROSS SECTION FOR FLUID-FLOW CONTROL VALVES
John A. Anderson, Oakland, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed Jan. 26, 1962, Ser. No. 168,910
2 Claims. (Cl. 251—327)



1. In a valve construction comprising a valve body having a pair of flow passages for connection with associated piping, a valve member movable in said valve body transversely across said flow passages between open and closed positions and a pair of annular working surfaces, one on said valve body embracing one of said flow passages and the other on said valve member, said working surfaces being mated and opposed when said valve member is in its closed position;

the combination with said valve construction of a seal assembly comprising:

means forming an annular recess in one of said working surfaces,

said recess being in the form of a channel of substantially rectangular cross-section of a given width with generally parallel side walls, and

a resilient seal ring of the O-ring type loosely carried in said recess,

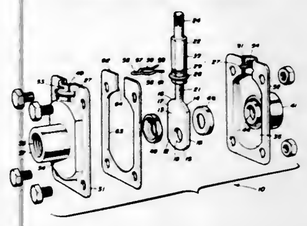
said seal ring being of generally oval cross-section with side surfaces defining a seal ring width along a minor axis, and curved ends defining a seal ring thickness along a major axis,

said given width of the recess being wider than said seal ring width to enable limited transverse movement and to accommodate distortion thereof under fluid and mechanical pressure,

said seal ring thickness being greater than the depth of its accommodating recess so to be compressed by engagement with the opposed working surface when said valve member is in its closed position,

said given width of the recess being narrower than said seal ring thickness to prevent rolling and twisting of said seal ring under frictional engagement with said opposed working surface as said working surfaces are moved transversely relative to each other during opening and closing of said valve.

3,198,484
SHEET METAL VALVE CONSTRUCTION
William H. Martindale, Northboro, Mass., assignor to Standard Fittings Company, Framingham, Mass., a corporation of Massachusetts
Filed Dec. 20, 1962, Ser. No. 246,165
1 Claim. (Cl. 251—329)



A valve, comprising

(a) a first body member formed as a sheet metal stamping,

(b) a second body member formed as a sheet metal stamping,

(c) an inlet port member secured to the first body member,

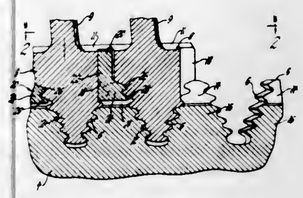
(d) the outlet port member secured to the second body member,

(e) a gate member having spaced parallel surfaces and an aperture therethrough,

(f) an actuating member of cylindrical form connected by threaded means to the gate member for bringing about sliding movement of the gate member between the first and second body members, each body member having a stamped semi-cylindrical neck portion which embraces the actuating member, and

(g) locking means permitting rotative but prohibiting axial movement of the actuating member in the neck portions, an aperture extending through each body member in the neck portion and the actuating member being provided with an annular groove adjacent these apertures, the said locking means consisting of a clip which extends inwardly through one of the apertures, lies in the groove of the actuating member, and extends outwardly through the other aperture.

3,198,485
TURBINE BLADE LOCK
Samuel Melenchuk, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 26, 1963, Ser. No. 311,865
1 Claim. (Cl. 253—77)



A bladed rotor wheel assembly for a turbine or the like comprising, in combination,

a wheel having a rim with blade slots extending transversely of the rim, the rim portion bounding the slots having multiple serrations,

blades having roots with multiple serrations slidably insertable into the slots and having the blade root serrations interlock with the serrations on the wheel rim,

each blade having a portion radially outwardly of the rim overlying the blade root,

a kerf in said portion and in the radially outer portion of one lateral face of the blade root extending radially and circumferentially of the wheel,

a notch in the wheel extending circumferentially and intersecting two serrations of the rim portion bounding the blade slots,

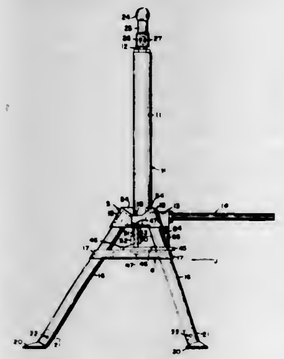
the said kerfs being aligned with the notch when the blades are installed, and

a blade retaining key having a stem adapted to lie in the said kerf and a lug extending from the stem into the said notch,

the lug having two projections conforming to and extending under two of the serrations of the root of the adjacent blade,

so that the adjacent blade root holds the key in place radially of the wheel and the key holds the first-mentioned blade in place axially of the wheel.

3,198,486
CAMPER JACK
Orris J. Allen, Lakewood, Colo., assignor, by mesne assignments, to Sulton Products, Inc., a corporation of Colorado
Filed Sept. 26, 1963, Ser. No. 311,703
10 Claims. (Cl. 254—45)



1. A camper jack comprising:

elevating means having a base plate and a member movable upwardly and downwardly;

a series of spaced supporting legs;

a support base having peripherally spaced sleeves having inclined outer walls and through which said legs freely extend, the base plate of said elevating means resting on said support base; and

a leg seat having an opening therethrough spaced above said support base and having sockets in alignment with said sleeves and into which the upper ends of said legs freely extend, said elevating means extending through said opening.

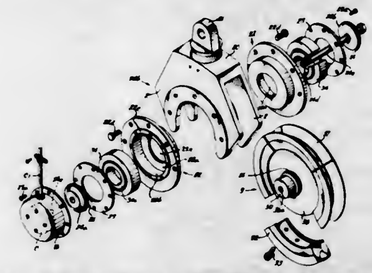
3,198,487
RAPID LOWERING WINCH-HOIST
De Witt C. Cox, Flourtown, Pa., assignor to The Lug-All Company, Haverford, Pa., a corporation of Pennsylvania
Filed Mar. 17, 1961, Ser. No. 96,486
5 Claims. (Cl. 254—167)

1. A rapid lowering winch adapted to move a load comprising a supporting frame, a cable drum, a ratchet wheel rotatable with said drum and having a plurality of ratchet teeth including first and second ratchet teeth, an operating lever associated with said drum, a lever pawl pivotally secured to said lever, a lever pawl spring for biasing said lever pawl in a chosen direction, a holding pawl pivotally secured to said frame, a holding pawl spring biasing said holding pawl into normal ratchet engaging position with said first ratchet tooth, said holding pawl spring, ratchet teeth and the free end of said lever pawl being arranged in alignment, said holding pawl spring being adapted to be acted upon by said lever pawl to bias said holding pawl away from its normal ratchet engaging position during lowering after said lever pawl has been moved into ratchet engaging position with said second ratchet tooth, said holding pawl being again normally biased by said holding pawl spring when said holding pawl spring is no longer acted upon by said lever



pawl, and restraining means for rapid lowering associated with said holding pawl, to prevent said holding pawl from being again normally biased by said holding pawl spring for a predetermined limited rotation under load of said ratchet wheel of at least two of said ratchet teeth thereby to restrain said holding pawl from its normal ratchet engaging position for said predetermined rotation of at least two of said ratchet teeth, and said restraining means including cam means secured to said drum, a shaft rotatively mounted on said frame, said holding pawl being fixedly secured to said shaft, said restraining means being associated with said shaft, said shaft including bearing means.

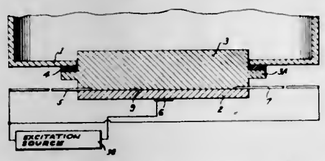
3,198,488
CABLE METER FOR TRAWLERS
Frank J. Luketa, 5567 Greenwood, Seattle, Wash.
Filed May 3, 1960, Ser. No. 26,554
7 Claims. (Cl. 254—192)



1. A block comprising a sheave the hub portion of which is formed with opposed trunnions, a pair of cheek plate members having opposed bores including axially extending walls and flared portions countersunk from the outside faces thereof, said sheave being positioned between the cheek plate members with its trunnions extending into the bores thereof, flange means detachably mounted on the ends of the trunnions so as to

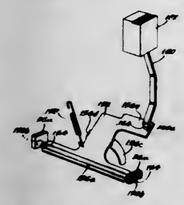
be rotatable therewith, and journal bearings engaged between the end portions of the trunnions and the axially extending walls of the flared portions of the bores in the cheek plate members, so as to locate the sheave in a radial sense with respect to the cheek plate members, said flange means having a radial extent exceeding that of the end portions of the trunnions, the inner races of the bearings being engaged between the flange means and the radially extending walls of said flared portions of the bores, so as to locate the sheave in an axial sense with respect to the cheek plate members.

3,198,489
COMPOUND ULTRASONIC TRANSDUCER AND MOUNTING MEANS THEREFOR
Horace T. Finch, Arcadia, Calif., assignor to The Birtcher Corporation, Los Angeles, Calif., a corporation of California
Filed Feb. 16, 1962, Ser. No. 173,640
15 Claims. (Cl. 259—1)



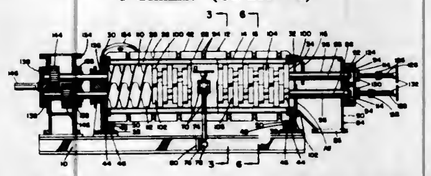
1. An ultrasonic cleaning apparatus including a transducer comprising:
- a relatively thin flat plate of polarizable ferroelectric ceramic material and
- a metal resonator having substantially identical and parallel major planar surfaces, the areas of which are coextensive with the areas of the planar surfaces of said plate, one of said planar surfaces of said plate being adhesively bonded to one of said planar surfaces of said resonator,
- a container having a receiving aperture for one end of said resonator, and
- means effecting a resilient sealed supporting connection between said resonator and the periphery of said aperture.

3,198,490
BEATER EJECTING MEANS FOR AN ELECTRIC FOOD MIXER
Ivar Jepson, Oak Park, and Worthy L. Chambers, Wilmette, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application Aug. 25, 1958, Ser. No. 756,853, now Patent No. 3,077,340, dated Feb. 12, 1963. Divided and this application Sept. 20, 1962, Ser. No. 224,947
5 Claims. (Cl. 259—1)



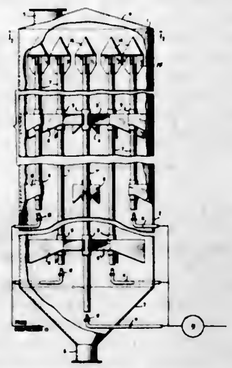
5. An ejector mechanism for ejecting a pair of beater elements from a food mixer comprising a substantially flat plate with means at one end thereof for pivotally mounting said plate, said plate including a pair of elongated spaced parallel arms depending downwardly from said plate toward shoulder means on said beater elements, the planes of said arms being generally perpendicular to the plane of said plate, one of said arms being longer than the other so that downward pivotal movement of said plate will cause one arm to engage its associated shoulder and release one of said beater elements prior to the release of said other element in response to continuous pivotal movement of said plate.

3,198,491
CONTINUOUS MIXER
Bernard A. Loomans, York, and Ambrose K. Brennan, Jr., Thomasville, Pa., assignors, by mesne assignments, to Baker Perkins Inc., New York, N.Y., a corporation of New York
Original application Mar. 21, 1962, Ser. No. 181,278. Divided and this application Dec. 23, 1963, Ser. No. 339,316
3 Claims. (Cl. 259—6)



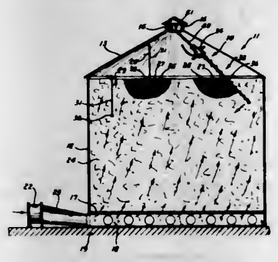
1. A continuous mixer comprising a casing in the form of parallel intersecting cylinders, a closure at one end of said casing, an opening in said casing adjacent said end closure for feeding material into said casing, the opposite end of said casing being open to provide a discharge opening, a discharge housing at the discharge end of said casing in communication with said discharge opening to receive material from said casing, a shaft extending axially through each of said cylinders and through said discharge housing, mixing elements in each of said cylinders mounted on said shafts for rotation therewith and arranged to advance material therethrough into said discharge housing, a weir plate in surrounding relation with respect to each of said shafts and arranged together to form a closure for said discharge opening, means for supporting said weir plates from said discharge housing for relative movement axially of said shafts, and means for independently moving said weir plates away from a position closing said discharge opening into said discharge housing to control said discharge opening.

3,198,492
BLENDING APPARATUS
George Schneider, Cleveland, Ohio, assignor to Fuller Company, a corporation of Delaware
Filed Sept. 17, 1962, Ser. No. 224,053
7 Claims. (Cl. 259—95)



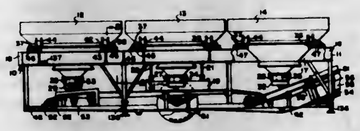
1. A blending apparatus for blending discrete particles of solid material comprising a bin adapted to contain the solid material and to provide a space between the surface of the material and the top of the bin, conveying tubes within said bid, said bin and tubes extending in a generally vertical direction and the lower ends of at least some of the tubes being positioned at different horizontal levels, a rigid expansion means for permitting longitudinal movement of each of said conveying tubes relative to the side wall of the bin, a nozzle for each conveying tube adjacent one end thereof and positioned to direct a fluid stream therethrough, and means for passing fluid under pressure through said nozzles.

3,198,493
PORTABLE GRAIN AERATION DEVICE
Eugene G. Sukup, Dougherty, Iowa
Filed June 12, 1963, Ser. No. 287,421
1 Claim. (Cl. 259—111)



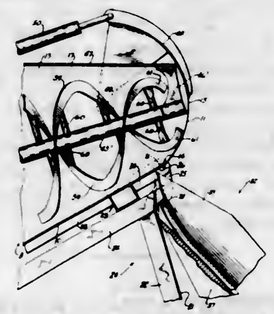
A device for stirring granular material, comprising in combination:
- a building for storing granular material, said building having a roof;
- an auger conveyor;
- power means attached to one end of said auger conveyor for rotating said auger conveyor about its longitudinal axis; and
- a chain one end of which is secured to said power means, and the other end of which is attached to said roof for swingably suspending said power means and said auger conveyor within said building such that the other end of said auger conveyor can extend into the granular material.

3,198,494
MOBILE BATCHING APPARATUS
Kenneth E. Curran, Littleton, N.H., Peter Ver Planck, La Jolla, Calif., and Jarl A. Carlson, Bedford, N.H.; said Carlson and Ver Planck assignors to said Curran
Filed Mar. 27, 1964, Ser. No. 355,289
8 Claims. (Cl. 259—154)



1. Mobile batching apparatus comprising a bed frame, a wheeled undercarriage and means detachbly to attach a truck-tractor unit for transporting said apparatus, the said bed frame having longitudinal side members located substantially along the lateral clearance lines of the vehicle, and transverse and intermediate members, strut support members having ground-engaging means for supporting the apparatus when in operating position, a fixed frame extension directed angularly upwards to a delivery point located in advance of said bed frame, conveyor means, a sub-frame beneath said bed frame supporting said conveyor means extending substantially from the rear of the apparatus to the said delivery point, power means to move the conveyor continuously, a plurality of rectangular aggregate bins, each of said bins having a short vertical upper wall portion and a lower portion having inwardly inclined walls, the said lower portion lying between the frame members and projecting downwardly to terminal bottom openings in each bin adjacent the conveyor, power-operated gate means to control said openings, a cement bin and means for its support above the bed frame, means controllably to permit the discharge of cement from said bin to said conveyor, transducer means adjacent each corner of each bin comprising an electrical load cell supported by said frame and positioned between the frame and support means on said bins whereby the weight of each bin is imposed on the group of four load cells, and means operatively associated with the load cells to cause the discharge of a predetermined weight of material from said aggregate bins and said cement bin on to said conveyor and thereafter cause the closing of the gates and the controllable discharge means when the said weight has been delivered, whereby measured amounts of the separate components of a concrete batch may be delivered to a concrete mixer.

3,198,495
TILTING DUMP TRUCK WITH RECEPTACLE DISCHARGING MEANS AND DIRECTIONAL CHUTE
Glenway Maxon, Jr., 1744 N. Farwell Ave., Milwaukee, Wis.
Filed Jan. 23, 1962, Ser. No. 168,109
5 Claims. (Cl. 259—171)



1. A truck body of the type which tilts about a fixed transverse axis adjacent to its rear to a discharge position with its forward end elevated so as to provide for discharge of its contents, through a rearwardly facing opening in its upper rear end, to the receiving pan of a distributing chute, said body being characterized by:
- (A) a rounded substantially conically surfaced bottom that slants convergently upwardly and rearwardly to said discharge opening and defines the lower edge thereof;
- (B) opposite side walls joined by said bottom wall and likewise converging rearwardly to said discharge opening to define the side edges thereof;
- (C) reinforcing keel structure fixed on the underside of the body and including
  - (1) a rigid yoke embracing the rounded bottom of the body and extending transversely thereacross at a location near to but a distance forwardly from the lower edge of the discharge opening so as to provide a space directly under the rear of the body and behind the yoke in which a portion of the receiving pan of a distributing chute can be received, said yoke having opposite ends which project laterally beyond the adjacent side portions of the body;

(D) outboard bearings fixed to the opposite ends of the yoke at its rear, so as to be located outwardly of the adjacent side portions of the body and of said pan receiving space, said bearings having pivot engaging means thereon which align on a common transverse axis passing through said space rearwardly of the yoke and directly adjacent to the bottom edge of the discharge opening, to provide for mounting the body for tilting discharge motion;

(E) and power driven means rotatably mounted in the rear end portion of the body and having discharge blade means at the rear extremity of the body to operate in said discharge opening.

3. A truck body for concrete and similar materials, and of the type which tilts about a transverse axis adjacent to its rear to a position at which its forward end is elevated to effect rear discharge of its contents, characterized by:

(A) a rounded substantially conically surfaced bottom wall that slants convergently upwardly and rearwardly;

(B) opposite side walls joined by said bottom wall and similarly converging rearwardly;

(C) a rearwardly facing discharge opening in the rear of the body having bottom and side edges defined by said designated walls of the body, the side edges extending upwardly from and rearwardly beyond the bottom edge of the opening;

(D) a deck on the body providing a top wall covering the rear portion of the body;

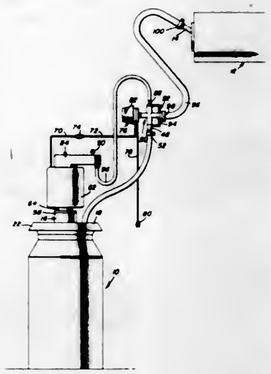
(E) a shaft in the body extending lengthwise thereof to its rear;

(F) means mounting the shaft for rotation about a fixed axis coincident with that of the conically surfaced bottom wall of the body, including a bearing carried by and depending from the underside of said deck and located a distance rearwardly of the lower edge of the discharge opening;

(G) and blading carried by the shaft to rotate therewith, said blading extending rearwardly beyond the lower edge of the discharge opening substantially to the rear extremity of the body and being operable to assure discharge of any body contents through said opening in consequence of rotation of the shaft in one direction.

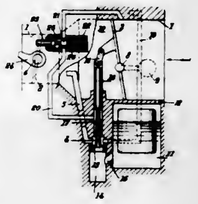
3,198,496
MIX PUMPING ATTACHMENT FOR FROZEN CONFECTION FREEZERS
Johnny R. Stapleton, 907 Ayers, Coffeyville, Kans.
Filed Oct. 8, 1962, Ser. No. 229,080
3 Claims. (Cl. 261—26)

1. A mix pumping attachment for frozen confection freezers including a mix inlet and in combination with a mix can for containing mix to be pumped into said inlet, said can including a large diameter generally cylindrical neck being open at its free end, said pumping attachment including a cover for said open end of said neck removably positioned thereover, a mix pump supported from said cover disposed adjacent the bottom of said can, and including an input shaft extending upwardly through said cover, motor means supported from the outer side of said cover and drivingly connected to said input shaft, said pump including an inlet and an outlet to which one end of an outlet conduit is communicated, said outlet conduit extending upwardly through said cover. an air pump including an inlet and outlet and supported from said cover and driven by said motor means, an outlet conduit having one end communicated with said air pump outlet, a mixing fitting assembly including a pair of inlets and an outlet, the outer ends of said outlet conduits being communicated with said pair of inlets, means adapted to communicate said mixing fitting assembly outlet with said mix inlet, said mixing fitting assembly including means for actuating the mix pump motor means in response to air pressure changes in said mixing fitting assembly said cover including means engageable with said neck to prevent shifting of said cover laterally of said neck the last



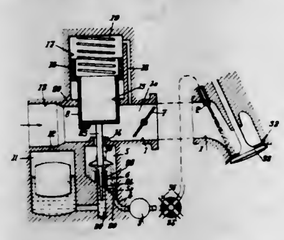
mentioned means comprising a downwardly and outwardly inclined circumferential depending flange carried by the outer marginal portions of said cover, said flange and cover being of one-piece construction.

3,198,497
CARBURETORS FOR INTERNAL COMBUSTION ENGINES
André Louis Mennesson, Neuilly-sur-Seine, France, assignor to Societe Industrielle de Brevets & d'Etudes S.I.B.E., Neuilly-sur-Seine (Seine), France
Filed Apr. 3, 1962, Ser. No. 184,788
Claims priority, application France, July 19, 1961, 868,389
2 Claims. (Cl. 261—46)



1. A carburetor for an internal combustion engine which comprises, in combination, an induction pipe having an air inlet, a throttle valve in said induction pipe, an automatic choke valve mounted in said induction pipe upstream of said throttle valve, said choke valve being mounted responsive to the thrust exerted thereon by the air stream flowing through said induction pipe so as to be urged toward opened position by said air stream, means for yieldingly urging said choke valve toward the closed position thereof, a fuel tank, a fuel feed conduit starting from said fuel tank and opening directly into the portion of said induction pipe located between said choke valve and said throttle valve, for conveying fuel from said fuel tank to said induction pipe, said fuel feed conduit including a throttled portion, a cylindrical passage in line with said throttled portion and opening into a part of said fuel feed conduit located downstream of said throttled portion thereof, an air bleed conduit opening into said cylindrical passage, a cylindrical rod fitting slidably in said cylindrical passage and operatively connected with said choke valve for opening or closing the communication between said air bleed conduit and said fuel feed conduit according to the position of said choke valve, said cylindrical rod being positioned relative to the opening of said air bleed conduit in such a manner as to close off said opening in response to the opening of said choke valve, a fuel metering member carried by said cylindrical rod and slidable in said throttled section for controlling the cross section therethrough, and valve means mounted on said air bleed conduit operatively connected with said throttle valve.

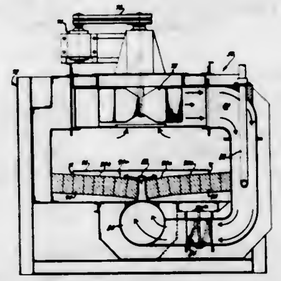
3,198,498
PRESSURE CARBURETORS
André Louis Mennesson, Neuilly-sur-Seine, France, assignor to Societe Industrielle de Brevets et d'Etudes S.I.B.E., Neuilly-sur-Seine, France, a society of France
Filed July 2, 1962, Ser. No. 206,581
Claims priority, application France, Oct. 9, 1961, 875,431; Jan. 16, 1962, 884,994; Mar. 9, 1962, 890,618
14 Claims. (Cl. 261—144)



1. An internal combustion engine carburetor which comprises, in combination, an air pipe leading to the engine to be fed by the carburetor, a throttle valve in said air pipe, throttling means movably mounted in said air pipe upstream of said throttle valve, so that an air pipe portion is limited between said throttling means and said throttle valve, means responsive to the air pressure difference between the upstream and downstream sides of said throttling means for automatically controlling said throttling means, means fixed with respect to said air pipe forming a fuel chamber, means including a part fixed with respect to said air pipe and a movable part operatively connected with said throttling means, forming a fuel passage opening into said chamber and of a variable cross section area proportional to that of the air passage controlled by said throttling means in said air pipe, means for feeding said fuel passage with fuel under a pressure equal to the air pressure in said air pipe upstream of said throttling means, means forming an injection orifice opening into said air pipe downstream of said throttle valve, a conduit leading from said chamber to said injection orifice, a pump mounted in said conduit to force fuel from said chamber to said injection orifice and means forming a venting passage between said chamber and said air pipe portion so that the pressure is the same in said chamber and in said pipe portion.

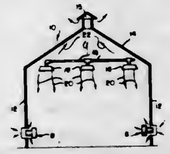
3,198,499
METHOD AND APPARATUS FOR SUPPORTING AND HEAT TREATING
Charles J. Stanley, Walnut Creek, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Aug. 11, 1961, Ser. No. 130,889
12 Claims. (Cl. 263—3)

5. An apparatus for heat treating metallic strip comprising an elongated horizontally disposed furnace enclosure in which a metallic strip is adaptable to be supported during traverse therein, means for ejecting gas outwardly in opposite directions toward lateral edges of the metallic strip from below, along and centrally of said strip and means adapted to cooperate with said strip to progressively confine in a decreasing cross-sectional area the flow of said ejected gas.



12. An apparatus for supporting a member such as a sheet, plate, strip or the like comprising an elongated centrally disposed plenum pressure chamber; divergent, V-shaped, gas flow confining surfaces extending laterally outwardly from said plenum pressure chamber, and means to eject gas from said plenum pressure chamber outwardly in opposite directions along the top side of the flow confining surfaces.

3,198,500
VENTILATING APPARATUS AND METHOD
Malcolm W. Patrick, Bedford, Ohio, assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed May 21, 1962, Ser. No. 196,313
14 Claims. (Cl. 263—19)



1. The method of heating and ventilating a building having vent openings in its upper reaches, comprising steps of:

(a) heating said building substantially solely with unvented gas-fired heaters;

(b) allowing unrestricted escape of the combustion products from said heaters;

(c) providing an outdoor air inlet opening remote from said heaters;

(d) drawing through said inlet opening outdoor air which is substantially free of said combustion products;

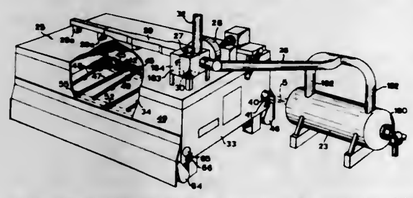
(e) distributing said outdoor air prior to mixing with said combustion products as a thin curtain extending from said inlet opening along interior wall surfaces of said building and moving past said heaters to mix with and dilute with said combustion products; and

(f) removing the admixed outdoor air and diluted combustion products from said building through said vent openings.

3,198,501
APPARATUS FOR HEATING TUBULAR METAL GOODS

Ronald K. Banister, Olaf J. Johanson, William E. Burley, and James J. Boyce, Edmonton, Alberta, Canada, assignors, by mesne assignments, to Banister Construction (1963) Ltd., Edmonton, Alberta, Canada, a company of Alberta, Canada

Filed Apr. 10, 1963, Ser. No. 271,915
3 Claims. (Cl. 263—36)

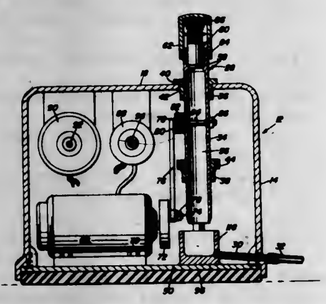


1. An apparatus for heating elongated articles which comprises, in combination, a preheating furnace; a holding oven; first conveyor means for moving said articles axially, one at a time, through said furnace for a rapid preheat into said oven; second conveyor and storage means for receiving said articles from said first conveyor means for moving said articles in parallel side-to-side relation across said oven, said second conveyor means comprising at least two elongated screws extending parallel to but spaced from each other partly across the oven and in the direction of movement of the articles across the oven, each of said screws being rotatable in a direction opposite to the other and having a thread pitch opposite to the other; means for transferring said articles from said first conveyor means to said second conveyor means actuable by switching means adapted to be engaged by incoming articles; switching means for regulating the travel of said second conveyor means adapted to be engaged by articles carried on said second conveyor means; third conveying means for moving said heated articles axially, one at a time, out of said oven; means for transferring said articles from said second conveyor and storage means to said third conveyor means actuable by switching means adapted to be engaged by outgoing articles; and means for automatically controlling the temperature of the oven such that said oven is maintained at a uniform desired temperature.

3,198,502
AMALGAM MIXER AND SEPARATOR

Donald Thompson, 655 North Ave., Missoula, Mont.

Filed Jan. 10, 1961, Ser. No. 81,725
8 Claims. (Cl. 266—1)

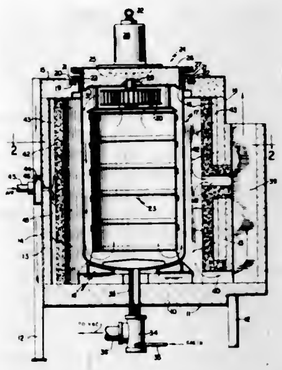


1. A machine for mixing and separating amalgam in one operation comprising a reciprocable tubular member having a passage, drive means operatively connected to said tubular member for imparting reciprocation thereto increasing in frequency to a preselected maximum, impact chamber means carried by said tubular member containing ingredients, restricted discharge means mounted in said impact chamber means for communication with said passage, means mounted in said discharge means for retaining said ingredients within said chamber means while being mixed by said reciprocation below a predetermined frequency, timing means operatively connected to said drive means for preselecting an operational period during which the reciprocation of the tubular member increases in frequency beyond said predetermined frequency to said preselected maximum frequency necessary to obtain removal of an excess of one of said mixture ingredients from the chamber means through the restricted discharge means, and collection means operatively mounted with respect to said passage means in the tubular member for conducting said excess of said one ingredient exteriorly of said machine, said tubular member including an upper portion containing said impact chamber means and a lower conduit portion through which the passage extends, inwardly projecting means maintaining the impact chamber means within the upper chamber portion and an impact element in the impact chamber means of such size as to prevent said one ingredient from freely flowing past the same into the restricted discharge means.

3,198,503
FURNACE

Henry L. Eichelberg, and Rita L. Thomson, Watertown, Wis., assignors to Basic Products Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Apr. 29, 1963, Ser. No. 276,644
7 Claims. (Cl. 266—5)



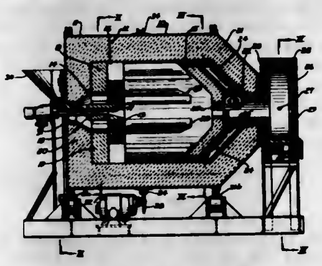
1. In a furnace having insulating refractory bottom, side and top walls, a retort within said furnace; another insulating refractory wall between said side wall and retort, and forming a plenum chamber between said side wall and other refractory wall; burner means extending through the side and other wall; a stack connected to the space between said other wall and retort; and means for supplying air under pressure to said plenum between said side wall and other wall, whereby said pressurized air diffuses through said other wall and passes out said stack thereby to cool said retort.

3,198,504
BARREL SALT BATH FURNACES

Borge Richard Ankersen, 32871 Chatham Lane, Birmingham, Mich.

Filed Sept. 14, 1961, Ser. No. 138,139
6 Claims. (Cl. 266—33)

1. A metal melting furnace for melting oxidizable metals and the like comprising a cylindrical housing forming a cylindrical body portion, divider means transversely separating said body portion into two generally cylindrical parts, port means communicating through said divider between the two parts, radial vanes on the periphery of each said parts extending lengthwise thereof, a frusto conical end portion on one of said cylindrical parts extending to an apex outside the cylindrical housing and having an opening at said apex, spaced enclosed diagonal

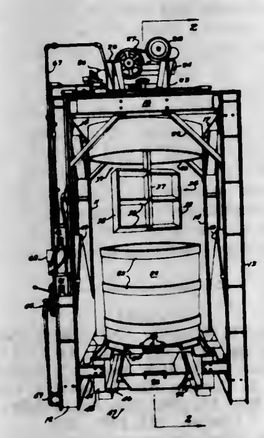


passages beginning and having a port adjacent each vane and extending to the apex of the frusto conical end and having a port at said apex, a trough extending into the apex to receive fluid from said passages, burner means directing a flame into said cylindrical portions, a fluid heat transfer medium in said cylindrical portions, feeder means delivering metal to be melted into the interior of the furnace and drive means rotating said cylindrical housing.

3,198,505
METAL RECOVERY APPARATUS

Milton G. Amdur, Clarence D. Nissley, J. C. Risner, and Joseph M. Sansone, Marietta, Pa., assignors to Metal Reclaiming Associates Inc., Marietta, Pa., a corporation of Pennsylvania

Filed Dec. 20, 1962, Ser. No. 246,038
5 Claims. (Cl. 266—37)

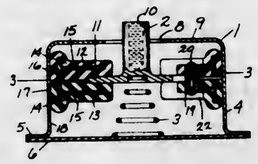


1. An apparatus for recovering molten metal from hot dross skimmings comprising:
(a) a vertically disposed support frame having a stationary platform mounted on the top thereof and including vertical guide means,
(b) a stirrer rotatably mounted on the stationary platform and depending downwardly therefrom,
(c) first motive power means mounted on the stationary platform and operatively coupled to the stirrer for rotatably driving same,
(d) a vertically movable platform mounted within the vertical guide means of the support frame and including first and second receiving means, the second receiving means being positioned immediately beneath the first receiving means,
(e) second motive power means mounted on the support frame and operatively coupled to the movable platform for raising and lowering same,
(f) an open-topped drum for containing hot dross skimmings having outlet tap means adjacent its bottom and adapted to be carried by the movable platform on the first receiving means,
(g) a recovery tray for receiving molten metal drained from the drum tap means and adapted to be carried by the movable platform on the second receiving means, and
(h) vented shield means mounted beneath the stationary platform surrounding the stirrer for enclosing the open top of the drum when the movable platform is in its raised position.

3,198,506
MOUNTING

Richard P. Thorn, Erie, Pa., assignor to Lord Manufacturing Company, Erie, Pa., a corporation of Pennsylvania

Filed Feb. 19, 1963, Ser. No. 259,679
4 Claims. (Cl. 267—1)

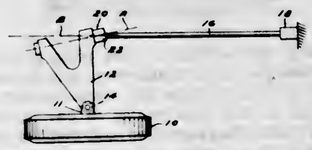


1. A resilient mounting having supporting and supported members with spring means therebetween for carrying the vertical load, one of the members having a vertical cylindrical surface, the other of the members having a flange presented edgewise toward said surface, said flange being of diameter smaller than the diameter of said surface, a member comprising portions of elastomer having a rim of unstressed diameter larger than the diameter of said surface, said rim frictionally engaging and squeezed inward by said surface and resisting movement in vertical directions, said elastomer portions having a central portion embracing and frictionally engaging opposite sides of said flange and resisting movement in lateral directions.

3,198,507
TORSION BAR CONNECTION

Henry J. Kozicki, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed June 30, 1961, Ser. No. 121,061
2 Claims. (Cl. 267—57)



1. A vehicle having sprung and unsprung components, a pivotally mounted suspension arm interconnecting said components, a torsion bar spring connected at one of its ends to said sprung components, a socket member secured to said arm and having a plurality of radially extending relieved portions, the other end of said torsion bar having

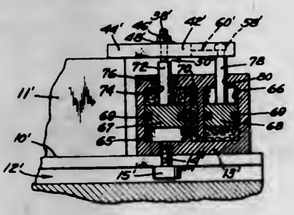
radially extending ear portions fitted into said relieved portions, spherical driving members interposed between said relieved portions and said ear portions, the connection of said arm with said sprung components having a pivot axis, said other end of said torsion bar having an axis of rotation, said axes being angularly offset with respect to each other.

3,198,508
SPACER FOR INSERTION BETWEEN ADJACENT CONVOLUTIONS OF A COIL SPRING
James O. Melton, Norman, and Thomas B. Wilkinson, Oklahoma City, Okla., assignors to Jamco, Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed Aug. 7, 1964, Ser. No. 388,040
6 Claims. (Cl. 267—61)



6. A spacer article useful for spacing adjacent convolutions of a coil spring, said spacer comprising an elongate resilient body having a convolution receiving socket in each end thereof, said sockets each being configured to surround a major portion of the received convolution, and said body further having a pair of open slots communicating with said sockets from at least one lateral side of said elongate body, said slots each providing a passage for admitting one of said convolutions to one of said sockets and having an opening of at most about 90° of the inner periphery of said socket, whereby the convolution to be passed through said slots must be forced through said openings into said sockets, thereby allowing said spacer to be readily retained upon a convolution.

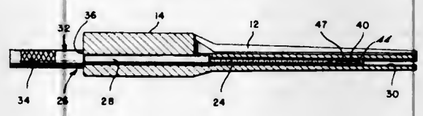
3,198,509
CLAMP FOR SECURING WORK PIECE TO MACHINE TOOL TABLE
David R. Sunderlage, 4139 Manchester Place, Riverside, Calif.
Filed Nov. 19, 1962, Ser. No. 238,566
8 Claims. (Cl. 269—20)



1. A clamp for securing a work piece to a machine tool table comprising, in combination, a body adapted to be secured on said machine tool table, a pair of posts disposed side by side and parallel to one another, said posts being slidably supported on said body, a horizontal bar carried at the top ends of said posts, one end of said bar projecting laterally to one side of said body and being adapted to overlie an edge of said work piece, means interconnecting said posts and allowing the same to move freely in the same direction but restraining said posts against movement in the opposite directions, the one of said posts adjacent said projecting end of said bar having a limited amount of longitudinal movement with respect to said bar, and means for drawing upwardly on said one post and reacting downwardly against said bar, said last-named means being operable to clamp said projecting end of said bar downwardly against said work piece to clamp the latter to said table, said means interconnecting said posts being operable to prevent the other of said posts from moving in opposition to said one post.

5. A device as set forth in claim 1, wherein each of said posts has a piston attached to the bottom end thereof, each of said pistons being slidable within a cylinder in said body, and said means interconnecting said posts consists of hydraulic fluid filling said cylinders on the top side of one piston and the bottom side of the other, and said body having a fluid passageway connecting said cylinders so that the fluid in one cylinder is in communication with the fluid in the other cylinder.

3,198,510
RING WELDING FIXTURE
Harry W. Williams, P.O. Box 718, Centralia, Wash.
Filed July 30, 1962, Ser. No. 213,441
3 Claims. (Cl. 269—52)

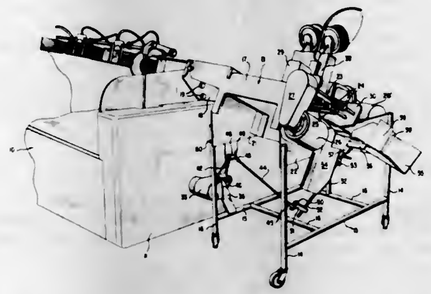


1. A ring welding fixture, comprising: (a) an elongated fixture body including a generally cylindrical hand grip means at the rear portion thereof and a longer mandrel portion extending from said hand grip and forming the remainder of said body, said mandrel portion tapering from said hand grip to the end thereof, (b) a first bore means extending longitudinally through said hand grip means and a second smaller diameter bore means extending longitudinally from said first bore means completely through said mandrel portion to define a passageway entirely through said body, (c) an elongated bifurcating cut extending from the outer end and along substantially the entire length of said mandrel portion, said cut joining with said second bore to separate said mandrel into upper and lower sections, (d) a handle element located coaxially with said bores at the hand grip end of said body and having an interiorly threaded member rotatably received in said first bore, and (e) an elongated threaded rod means threadably received in said member and extending into said mandrel portion through said second bore, said rod means having toggle pin means pivotally attached to the end of said rod extending transversely to said rod through and out of said cut.

3,198,511
COMBINED STITCHING AND CRISSCROSSER ATTACHMENT UNIT FOR COLLATORS
Christian J. Wirz, 5603 25th Ave. SE., Washington 21, D.C., and Roy E. Carlson, Rte. 4, Box 451, Vienna, Va.
Filed Apr. 19, 1963, Ser. No. 274,254
5 Claims. (Cl. 270—53)

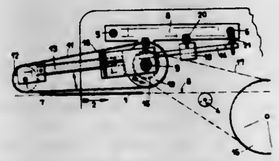
1. A collating apparatus comprising in combination a sheet gathering, feeding and grouping unit having a discharge end towards which successive groups of sheets are fed in an orderly manner, an independent supporting frame near and spaced from the discharge end of said unit, a conveyer and a stitching mechanism for said groups of sheets on the top of said supporting frame, said conveyer extending beyond the supporting frame and projecting toward said unit and including an end plate, said end plate adapted to be secured to said discharge end of said unit, whereby said conveyor may receive directly the groups of sheets as they are discharged in succession

from said unit, said supporting frame and conveyer and stitching mechanism having a discharge side remote from said unit, a receiving and stacking tray for the groups of sheets passing from said discharge side, said tray including angularly spaced stop plates, a generally vertical oscillatable rock shaft rigid with and carrying and depending from said tray, bearing means on said supporting frame receiving and supporting the rock shaft, a crank element on the rock shaft near the lower end thereof, a connecting rod having one end pivoted to the crank ele-



ment and extending generally transversely of the rock shaft and toward said unit, said unit having a constantly rotating drive shaft projecting therefrom adjacent the discharge end of the unit, gearing on said frame adapted to be connected with said drive shaft and driven thereby, oscillating lever means connected with and driven by said gearing and imparting reciprocatory movement to said connecting rod for in turn oscillating said crank and rock shaft, and means forming a quickly detachable connection between the adjacent end of said connecting rod and the oscillating lever means.

3,198,512
FOLDING MACHINES FOR PRE-PUNCHED CARDBOARD PIECES
Arthur Frei, St. Sulpice, Switzerland, assignor to J. Bobst and Son SA, Prilly, near Lausanne, Switzerland, a corporation of Switzerland
Filed Oct. 4, 1963, Ser. No. 313,873
Claims priority, application Switzerland, Oct. 16, 1962, 12,236
8 Claims. (Cl. 270—61)



1. Apparatus for folding into the plane of an advancing blank, a rearwardly extending flap which is foldably connected to the blank and initially extends slightly upwardly with respect thereto, said apparatus comprising means for supporting and advancing a blank thereon with the flap extending rearwardly and upwardly, means including a conveyed element advancing in the same direction as the blank at a faster speed thereof and having an elongated surface spaced from the blank less than the upward extension of the flap for engaging the flap to pivotally fold the same and means pivotally supporting the aforementioned means in an initial unbalanced position in which the conveyed element is tilted rearwardly down by a magnitude of unbalanced weight to contact the flap and pivot the same, said flap having sufficient stiffness related to the unbalanced weight of the conveyed element to cause the conveyed element itself to be pivotally moved upwardly by the flap itself as the latter is pivotally moved by the engagement of the flap with the conveyed element, whereafter as the flap is lowered into the plane of the blank, the conveyed element returns under its unbalanced weight towards its initial position to engage the opposite surface of the flap and complete the folding thereof into the plane of the blank.

3,198,513
STACKING DEVICES FOR SHEET ARTICLES
Claude Farez, Saint Maur, France, assignor to "Charvo," Grenoble (Isere), France, a French joint-stock company
Filed June 28, 1963, Ser. No. 291,333
7 Claims. (Cl. 271—1)

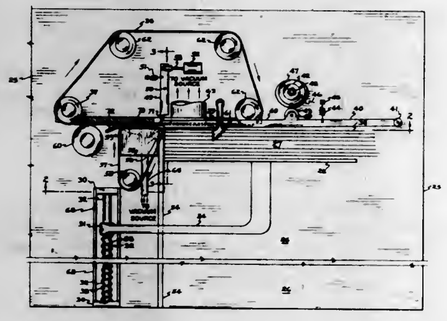


1. A machine for stacking opaque flexible sheet articles, such as hides and skins, comprising a main endless conveyor with a substantially flat article-carrying portion having a first side and a second side and an outlet end, and being at least in part transparent to light in the vicinity of said outlet end, said articles being disposed at random on one of said first and second sides of said article-carrying portion of said main conveyor to be carried thereby towards said outlet end at a given linear speed; two stationary main light-emitting surfaces disposed on the first side of said article-carrying portion of said main conveyor in the vicinity of the outlet end thereof and extending across the full width thereof substantially symmetrically with respect to a line transverse to said article-carrying portion of said main conveyor and close to said line so as to illuminate the articles carried by same, said surfaces having a substantially uniformly distributed luminosity and said surfaces each having a dimension longitudinally of said article-carrying portion of said main conveyor at least equal to half the maximum length of the articles to be stacked; two main photo-electric cells disposed on the second side of said article-carrying portion of said main conveyor, each to receive light substantially from one only of said main light-emitting surfaces; comparing means to compare the voltages emitted by said main photo-electric cells and to deduce from such comparison the passage across said transverse line of the approximate center of the surface of an article carried by said main article-carrying portion of said main conveyor between said main light-emitting surfaces and said cells; a stacking support disposed in the vicinity of the outlet end of said article-carrying portion of said main conveyor and on which the articles carried by said conveyor are to be stacked; depositing means to receive the articles from the outlet end of said article-carrying portion of said main conveyor and to deposit same on said support; driving means to drive said depositing means; and means to actuate said driving means a pre-determined time after said comparing means have detected passage of the approximate center of the surface of an article across said transverse line to substantially regularly stack same on said support.

3,198,514
DOCUMENT FEEDING SYSTEM

Frank B. Barbera and William A. Sugden, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York

Filed May 10, 1963, Ser. No. 279,414
3 Claims. (Cl. 271—12)

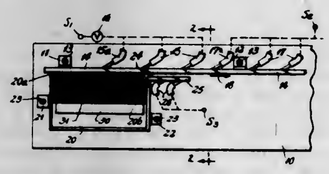


1. An apparatus for supplying the foremost document of a stack of documents to a transporting medium in response to a signal, said apparatus comprising: a continuously energizable document accelerating medium for accelerating said foremost document in a path of travel toward said transporting medium; means urging said stack of documents toward said accelerating medium; a gate means movable between a feeding position and a non-feeding position, wherein said foremost document is contactable with said accelerating medium when said gate means is in said feeding position and wherein said foremost document is non-contactable with said accelerating medium when said gate means is in said non-feeding position; gate operating means normally holding said gate means in said non-feeding position, said gate operating means responsive to said signal for moving said gate means to said feeding position and for subsequently returning said gate means to said non-feeding position; means for urging said foremost document into contact with said accelerating medium; document reverse driving means offset laterally from said path of travel; a means for separating from said end document in said path of travel a second document adhering to said foremost document and for urging said second document into contact with said reverse driving means; said reverse driving means driving said second document in contact therewith into said stack of documents.

3,198,515
AERODYNAMIC DOCUMENT HANDLING APPARATUS

Robert C. Pitney, Saw Mill Road, Stamford, Conn.

Filed Apr. 5, 1963, Ser. No. 270,830
3 Claims. (Cl. 271—26)

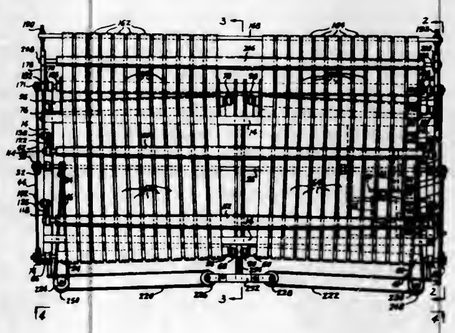


1. An aerodynamically operated document separating and feeding device: comprising
document retaining means for retaining a stack of documents;
a document guide track extending away from said retaining means and having a document guide surface formed thereon;
air jet means for aerodynamically feeding the leading document in said stack along said guide surface;
a second document guide track extending away from said document retaining means and having formed thereon a second document guide surface which faces a portion of the first mentioned guide surface; and
air jet means connected to said second document guide track and operatively arranged at an acute angle relative to said second guide surface to direct at least one jet of air along said second document guide surface in a direction opposite to the document feed direction whereby any additional document that is travelling with a lead document may be aerodynamically braked and reversely driven with respect to the associated lead document.

3,198,516
LAUNDRY FLATWORK FEEDER

Benjamin Withorn, 1200 N. Kenilworth St., Arlington, Va., and Aulick B. Cullins, Arlington, Va.; said Cullins assignor to said Withorn

Filed Feb. 12, 1962, Ser. No. 172,723
3 Claims. (Cl. 271—45)

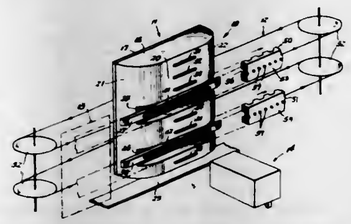


1. A laundry device for feeding fabrics to a flatwork ironer comprising a horizontally disposed surface formed of a plurality of divergent groups of endless belts for concurrently driving and guiding said fabrics, said divergent groups of endless belts extending from the front of said device and diverging outwardly from a position medial of said surface to a position outwardly of said medial position, a tapered roller means extending across said divergent belts, said tapered roller means tapering from a larger diameter at the medial position of said device to a smaller diameter at a position outwardly thereof for pressing said fabrics to said divergent position to effect a spreading action for the fabrics, two canted belts positioned forwardly of and below said groups of divergent belts frictionally engaging said fabrics during driving action to maintain it taut, means driving said canted belts away from each other and against the direction of said driving action, straight belt means moving in alignment with said driving direction positioned rearwardly of said groups of divergent belts engaging said fabric to increase the driving speed thereof, and second tapered roller means extending across said straight belt means pressing said fabric to said straight belt means.

3,198,517
DOCUMENT HANDLING MEANS

Samuel W. Martin, Westport, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware

Filed Nov. 14, 1962, Ser. No. 237,580
12 Claims. (Cl. 271—74)

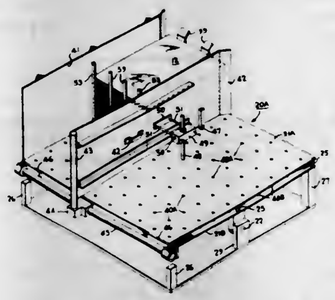


1. Document handling apparatus; comprising
a guide head provided with a smooth guide surface that is formed with at least one elongated belt receiving groove,
a longitudinal movable feed belt extending through said groove,
said belt having a plurality of longitudinally spaced apertures formed therein and having an outer surface which when moving through said groove is substantially coextensive with respect to the adjacent portions of said guide surface,
said guide head having a plurality of holes formed therein, one of said holes terminating in the bottom of said groove in registry with the longitudinal line of holes formed in said belt, and the other of said holes terminating in that portion of the guide surface that is adjacent to said belt groove,
and means for pneumatically coupling said holes to a sub-atmospheric pressure source.

3,198,518
SHEET MATERIAL HANDLING APPARATUS

John I. Carlson, Sr., New Britain, and Charles P. Page, West Hartford, Conn., assignors to General Electric Company, a corporation of New York

Filed Apr. 5, 1963, Ser. No. 270,971
3 Claims. (Cl. 271—86)

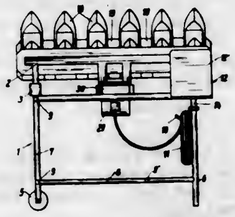


1. A stacking receptacle for sheet material comprising:
(a) a generally planar platform,
(b) a first generally planar side wall supported on said platform in substantially perpendicular relation thereto,
(c) a second generally planar side wall supported on said platform and extending substantially parallel to said first side wall,
(d) said platform having a large number of regularly and closely spaced holes therein,
(e) a plurality of posts each inserted in said holes in a line to form a bridging wall between said first and second wall, and
(f) a plurality of relatively short spacer posts inserted in said holes within the area defined by said side walls and said bridging wall to maintain said sheet material in spaced relation above said platform.

3,198,519
METHOD OF AND APPARATUS FOR STRAIGHTENING STACKS OF SHEET MATERIAL

Hans-Joachim Bartsch, Kaiser Wilhelm Allee 24, Wuppertal-Elberfeld, Germany

Filed Dec. 27, 1962, Ser. No. 247,738
3 Claims. (Cl. 271—89)



1. A jogging device for straightening stacks of generally rectangular sheets, comprising support means; a pair of knock-up plates mounted on said support means generally perpendicularly to one another and at an inclination to the horizontal to form an upwardly open longitudinally extending trough; a plurality of longitudinally spaced partitions extending perpendicularly to said plates and subdividing said trough longitudinally into a plurality of compartments, said partitions each being provided with a pair of spaced apart walls defining one side of a respective compartment, said walls converging toward one another at an upper edge of each partition in wedgelike configuration for directing respective stacks of said sheets away from the respective edge into respective compartments adjoining the latter, said partitions each having a lower portion along which the respective walls are generally parallel to one another and an arcuate upper portion terminating at the respective edge which is outwardly convex, one of said plates being provided with a longitudinally extending slot; and adjustable mounting means on each of said partitions engageable with said slot for adjustably securing it to said one of said plates and a selected longitudinal position therealong for regulating the size of said compartments.

3,198,520
GOLF CLUB INCLUDING GRIP LOCATING MEANS

George Stephen Ahnuty, 17 Thomas Leighton Blvd., Cumberland, R.I.

Filed Oct. 5, 1962, Ser. No. 228,530
4 Claims. (Cl. 273—81.4)



1. In a golf club having a shaft with a club head extending laterally from one end thereof, said head being connected at its heel to said shaft and having a ball striking face between its heel and a toe remote from said

shaft; a hand grip secured coaxially to the other end of said shaft having first, second and third relatively flat gripping surfaces extending longitudinally of the grip along a major portion thereof, said second and third relatively flat gripping surfaces being diametrically opposite and at right angles to said first relatively flat gripping surface, said first relative flat gripping surface lying in a plane parallel to said ball striking face, said second and third relatively flat gripping surface lying in a plane perpendicular to said ball striking face a generally round sectional contour uniting the ends of said second and third relatively flat gripping surfaces and located diametrically opposite said first relatively flat gripping surface, said first relatively flat gripping surface engaging the palm of one of the user's hands and the thumb of the other hand, said second relatively flat gripping surface engaging the thumb of said one hand, the third relatively flat surface and said generally round sectional contour being engaged by the index finger of said other hand, whereby said surfaces automatically orient the club properly in the hands of the user and ensure rigid gripping of the club.

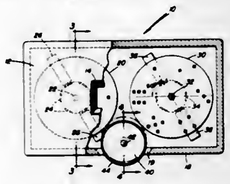
3,198,521
GAME SIMULATING STOCK MARKET PLAY
Eugene M. Kramer, 7 E. Lexington, Las Vegas, Nev., and John H. Kramer and Betty J. Kramer, both of 227 S. Texas, Henderson, Nev.
Filed Apr. 1, 1963, Ser. No. 269,563
4 Claims. (Cl. 273—134)



1. A game comprising a playing board having a playing surface with a playing path defined by successive discretely delineated areas, each being identified by legends thereon, including instructions relative to buying individual identified stocks; playing appurtenances, including a ticker tape wheel indicator for indicating current price quotations of individual stocks identified on the playing board surface, said indicator comprising a circular surface having a plurality of concentric circles and radial lines defining spaces between the circles and radial lines having numerical indications thereon indicating current price quotations of individual stocks, a rotatable disc disposed over said surface and having a sector shaped slot movable to expose a radially disposed group of figures identifying current stock price quotations of a plurality of stocks identified by legends on said disc between concentric circles adjacent to such slot, means comprising imitation money and miniature simulated stock certificates indicative of money and stocks held by individual players, and markers for individual players to indicate their positions on the playing path on the playing surface.

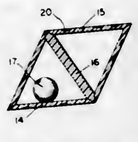
3,198,522
ROTATABLE CHANCE DEVICE
William E. Parks, Rte. 1, Box 240, Edgewood, Md.
Filed Mar. 18, 1963, Ser. No. 265,625
6 Claims. (Cl. 273—142)

5. A game device, comprising, structure defining a housing having a top and a bottom with at least one window provided in the top thereof, one side of said housing having a slot provided therein, means including a rotatably mounted thumbwheel cantably positioned in said housing and protruding from the interior thereof through said slot in said housing to the exterior thereof, at least one disc rotatably mounted in said housing with said thumbwheel and engageable thereby and spaced between said top and bottom of said housing, means for biasing said thumbwheel out of engagement with said disc, said disc



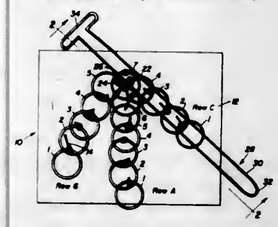
having a number of markings on the top thereof arranged to appear through its window in the top of said housing, said disc having a circular array of downwardly extending equally spaced fingers formed of ferrous metal equal in number to the markings on the top of the disc, and means including a pair of magnets positioned to attract diametrically spaced fingers for said disc for braking and stopping thereof.

3,198,523
WEIGHTED DICE
Jonathan C. Stimson, Arlington, Va. (1404 Lincoln St., Evanston, Ill.)
Filed Dec. 19, 1962, Ser. No. 245,920
3 Claims. (Cl. 273—146)



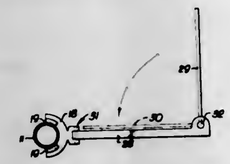
1. A set of dice comprising: a plurality of dice divided into playing dice and reserve dice; each of said dice being a polyhedron having two halves bounded by flat, similarly-shaped faces numbered so that one-half has numbers different from those numbers on the other half and each face on a half is numbered differently from the other faces on that half; and means weighting each die so that one half tends to come up more often than the other half and the faces of said one-half each have an equal chance of coming up.

3,198,524
RING PUZZLE
Ingval H. Ringstad, 410 W. 42nd St., Sioux Falls, S. Dak.
Filed Nov. 16, 1961, Ser. No. 152,855
3 Claims. (Cl. 273—158)



1. A puzzle comprising a base, a plurality of rows of rings, said rows being disposed with one end of each row adjacent the corresponding ends of the other rows, said rows diverging from each other, an elongated mounting member, said member having one end secured to the base, means pivotally locking the rings on the adjacent ends of said rows to the mounting member so as to provide a lower ring, an upper ring, and at least one intermediate ring, a mounting stem associated with each of the remaining rings, each stem having its associated ring pivoted to one end thereof, each stem projecting through the next ring inwardly toward the adjacent ends and into sliding engagement with the base member for movement of its associated ring toward and away from the base, and an elongated endless loop type slide engageable about the mounting member between the base and the lower end ring immediately thereabove, said slide being of a size receivable through the rings and capable of receiving the rings therethrough, said slide being manipulatable and selectively engageable and disengageable with the rings and stems in each row so as to effect a systematic movement of the slide upwardly along the mounting member until completely disengaged from the mounting member, the rings, and the stems.

3,198,525
GOLF PUTTER AND A FOLDABLE SIGHTING ELEMENT SECURED TO THE SHAFT THEREOF BY Y-SHAPED MAGNET MEANS
Harold W. Smith, 2449 Ridgeway Road, San Marino, Calif.
Filed July 23, 1962, Ser. No. 211,614
3 Claims. (Cl. 273—163)



3. In combination with a golf putter having an upright steel shank and a putting head at the lower terminal of the shank, a putting directional indicator unit having a rod-like line of sight element and means for removably attaching said unit to the putter so that said element establishes a line of sight axis at the upper side of the head and extending substantially normal to a plane defined by the front putting face of the head, said means including the Y-forked holder having upright magnet portions carried to have divergent faces exposed at the inside of the fork legs and sized for attaching magnetically to and about different diameter steel putter shanks received between the fork legs, an arm carried by and projecting away from the Y-forked holder to carry said element spaced from the shank, and a pivot connecting said arm to said holder and having a generally horizontal axis to allow up and down swinging of the arm and element relative to said holder.

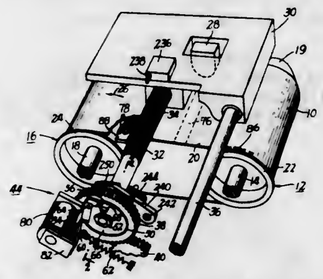
3,198,526
WEIGHTED PRACTICE GOLF BALL INCLUDING STABILIZER FINS
Harold W. Smith and Caroline H. Smith, both of 2449 Ridgeway Road, San Marino, Calif.
Filed Apr. 22, 1963, Ser. No. 274,482
4 Claims. (Cl. 273—199)

1. For use in a golf-type game, a lightweight hollow ball having a perforate shell structure adapted to be struck and thereby propelled by a golf-type club for short range air-flight, a weight carried by the ball for providing momentum tending to carry the ball forward, the shell structure acting with the air to create relatively high drag resistance to said flight, and fin structure carried to guide the ball during said flight, the weight and fin structure being at generally forward and rearward sides of the ball, the shell structure consisting of plastic material and the weight comprising a one-piece metallic body projecting through one perforation in said shell and having annular



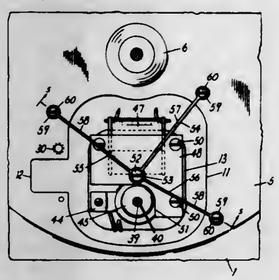
flanges respectively at the inner and outer sides of the lip of the shell surrounding said one perforation thereby to retain the weight in position on the shell, the inner flange being only slightly larger than said perforation so as to be capable of being snapped therethough.

3,198,527
METHOD FOR SYNCHRONIZING TRANSDUCER HEAD SCANNING MOTION IN SOUND RECORDING AND REPRODUCING MACHINES
George Taylor Stanton, Fairfield, Conn., assignor to Dictaphone Corporation, Bridgeport, Conn., a corporation of New York
Original application June 8, 1954, Ser. No. 437,762, now Patent No. 2,990,184, dated June 27, 1961. Divided and this application Sept. 30, 1960, Ser. No. 59,576
5 Claims. (Cl. 274—11)



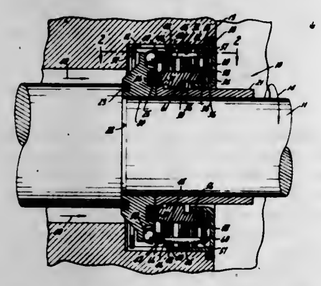
1. The method of tracking a record head across a magnetic record which is adapted to have deposited thereon a plurality of side by side signal tracks lying along the direction of motion of the record relative to the head comprising the steps of moving the record at substantially constant velocity in a first direction relative to said record head, moving said record head slowly relative to said record in a second direction approximately at right angles to said first direction to trace out a signal track which is inclined at a slight angle to said first direction, periodically at equal intervals measuring the amount of travel of said record head relative to said record in said second direction, and if the cumulative error in the amount of travel of said record head relative to said record along said second direction does not exceed a predetermined value, then continuing the motions of said record and head in both said directions for the next one of said equal intervals but if said error exceeds said predetermined value, stopping the motion of said head relative to said record along said second direction without changing the relative motion in said first direction and then after a given interval resuming the relative motion in said second direction.

3,198,528
VIBRATION DAMPENING MOTOR MOUNTING FOR PHONOGRAPHS
Robert L. Van Antwerp, Stevensville, Mich., assignor to Maestro Corporation, Stevensville, Mich.
Filed Feb. 11, 1963, Ser. No. 257,494
11 Claims. (Cl. 274—39)



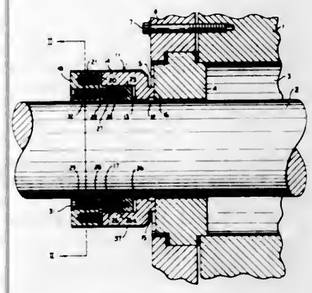
11. In a phonograph,
a base plate having a turntable with a downturned rim rotatably mounted thereon,
a motor having a shaft arranged parallel to the axis of said turntable,
a vertically rigid support connected to said base plate around said motor and connected to said motor at a single point adjacent a line through the null point of angular oscillation of said motor and parallel to the shaft of the motor,
said support being yieldable angularly about said single point,
and means supported on said base plate and frictionally drivingly engaged between said shaft and said rim.

3,198,529
ROTARY FACE SEAL
Robert M. Voitik, Evanston, Ill., assignor to Continental Illinois National Bank and Trust Company of Chicago
Filed Mar. 23, 1962, Ser. No. 181,954
14 Claims. (Cl. 277—3)



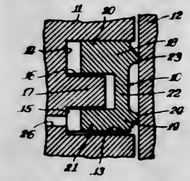
1. A rotary seal for restricting fluid linkage along a shaft passing through a relatively rotatable housing comprising, in combination, an annular rotor secured to said shaft and defining a sealing surface, an annular stator surrounding said shaft and having a sealing surface facing said rotor sealing surface, means for establishing a fluid seal between said stator and said housing, means for urging said surfaces into sealing engagement so that relative rotation between said rotor and said stator creates a torque tending to rotate the stator relative to said housing, said stator being mounted for limited rotational movement relative to said housing under the urging of said torque, and means including a pair of elements for converting relative rotation of said elements into relative axial movement of the elements, said means being interposed between said stator and said rotor with one of said elements being coupled for rotation with said stator and the other of said elements acting axially against said rotor.

3,198,530
OUTSIDE BALANCED MECHANICAL SEAL
Elmer W. Conklin, Pavilion Township, Kalamazoo County, Mich., assignor to Durametallic Corporation, Kalamazoo, Mich., a corporation of Michigan
Filed Feb. 12, 1962, Ser. No. 172,650
1 Claim. (Cl. 277—85)



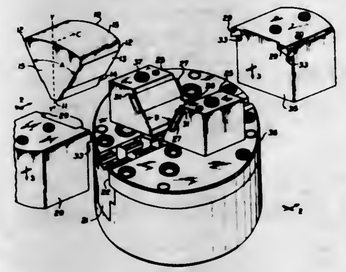
In a mechanical seal for sealing a rotating shaft with respect to a housing through which said shaft extends, wherein a first nonmetallic sealing member is affixed to said housing, a second nonmetallic sealing member encircles said shaft and is radially spaced therefrom, said second sealing member having a sealing surface engageable with a sealing surface on said first sealing member, said second sealing member having a sleeve extending away from said first sealing member and surrounding said shaft to define a pressure chamber between said sleeve and said shaft for reception of a balancing pressure fluid from within said housing, and driving means affixed to said shaft for effecting rotation of said second sealing member with said shaft, the improvement comprising:
means providing a wall extending from said sleeve into close proximity to said shaft;
substantially V-shaped shaft packing means within said pressure chamber spaced axially from said wall and adapted to engage sealingly said shaft and said sleeve, said shaft packing means being of such characteristics that an axial pressure thereon will cause same to spread radially inwardly and outwardly;
said driving means including a collar affixed to said shaft, said collar having elongated spring-receiving recesses in the end thereof remote from said chamber and passages of smaller cross-sectional size than said recesses and extending from said recesses to said chamber;
a nonmetallic compression ring bearing against the axial side of said shaft packing means nearest said wall, said compression ring having a tapered central portion entering between the legs of said packing means for urging said legs apart;
a plurality of circumferentially spaced rods anchored to said compression ring and extending axially through said shaft packing means and through said passages into said recesses, said rods having enlarged heads, a coil spring disposed within each of said recesses surrounding said rod therein and bearing at one end against said rod head and bearing at the other end against the bottom of said recess for urging said compression ring against said shaft packing means and thereby urging said shaft packing means against said sleeve and said shaft whereby to seal the end of said pressure chamber remote from said wall and thereby prevent escape of pressure fluid therefrom while preventing contact of said springs by said pressure fluid.

3,198,531
PISTON RING
Arthur M. Brenneke, Hagerstown, Ind., assignor, by mesne assignments, to Perfect Circle Corporation, Hagerstown, Ind., a corporation of Indiana
Filed Jan. 19, 1962, Ser. No. 167,283
2 Claims. (Cl. 277—178)



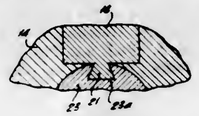
1. The combination of a piston having an annular piston ring groove, an inwardly extending annular upper channel formed in the bottom of said groove at the upper side thereof and providing an upwardly facing ledge, an inwardly extending annular lower channel formed in the bottom of said groove at the lower side thereof, and a combined compression and oil ring mounted in said groove and comprising a compression ring portion and an oil ring portion integral with each other, the compression ring portion including a projection which extends into said upper channel and said oil ring portion including a projection which extends into said lower channel, said portions respectively having cylinder engaging faces and said faces of said portions being axially spaced from each other, the axial thickness of said compression ring portion being greater than the axial width of said lower channel, whereby said ring is prevented from being inserted in said groove upside-down.

3,198,532
TWO-JAW WEDGE CHUCK
Walter F. Skillin, New Britain, Conn., assignor, by mesne assignments, to Cushman Industries, Incorporated, Hartford, Conn., a corporation of Connecticut
Filed June 20, 1962, Ser. No. 203,946
12 Claims. (Cl. 279—110)



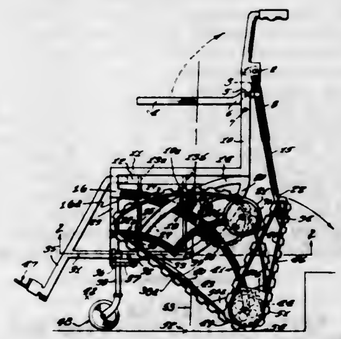
1. A chuck comprising
first and second top jaws movable in a keyway provided in a chuck body,
said top jaws having overhanging guide means,
locator blocks positioned on opposite transverse sides of the keyway adapted to receive a workpiece,
said locator blocks having recesses to accommodate resilient deformable inserts,
resilient deformable inserts positioned within said recesses,
said inserts having ends which extend beyond the locator body so that when the jaws compress against said ends, the inserts grow in a direction along the expanded surface.

3,198,533
LATHE CHUCK
Richard B. Goodrum, Kensington, Conn., assignor to Cushman Industries, Incorporated, Hartford, Conn., a corporation of Connecticut
Filed Oct. 4, 1963, Ser. No. 313,949
18 Claims. (Cl. 279—121)



2. A lathe chuck having a base and a work locating and clamping arrangement carried by the base and including clamping means operable to close on and clamp a work part, a work locator device actuated to move the work part relative to the clamping means into a required location within the clamping means to be clamped thereby, and means coupled to said clamping means and the locator device for concomitantly and synchronously actuating the clamping means to close on the work and the locator device to bring the work part to the required location prior to the clamping means closing on and clamping the work part at said location.

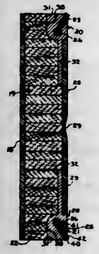
3,198,534
STAIR CLIMBING WHEEL CHAIR
Than Robinson Porter, 329 E. 13th St., Apt. A, New York, N.Y.
Filed Oct. 18, 1963, Ser. No. 326,313
18 Claims. (Cl. 280—5.22)



1. An improved type of stair climbing wheel chair comprising a pair of metal supported, closed curve tracks on each side of said chair, the tracks in each pair having a straight ground engaging section and each pair of tracks being adjustable vertically at three places to vary the angle between said straight sections, closed curve rims which are cross sectionally approximately semicircular and concave outward, one of said rims being positioned with its front end approximately at the front of the chair and its rear end at the rear of the chair, the other one of said rims having its front end slightly forward of the

rear of the chair, thus longitudinally lapping and being laterally spaced slightly from the first described rim, with the rear end of the second described rim projecting rearwardly from the back of the chair, said first described rim having an arcuate upper section, a longitudinally straight, ground engaging lower section, and substantially semicircular end sections, the second described rim having longitudinally straight upper and lower sections and substantially semicircular end sections, said front semicircular end section of the second described rim having the same center and radius as the rear semicircular end section of the first described rim.

3,198,535
SKI EDGE CONSTRUCTION
Culver S. Brown, Jr., 734 Melville Ave., Palo Alto, Calif.
Filed Aug. 5, 1963, Ser. No. 299,816
1 Claim. (Cl. 280—11.13)



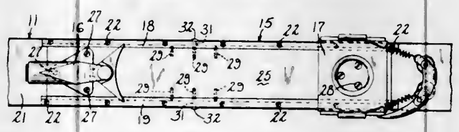
In a ski the combination of: a pair of recess areas formed along the lower corners of the ski and running substantially the entire length thereof, an elongate housing mounted within each of said recess areas having a side wall aligned with the outer side wall of said ski and a bottom wall aligned with the bottom of the ski, said housing formed with a flange running along the entire length of the housing and projecting inwardly into the body of said ski in an axis parallel with the bottom of the ski, means permanently fastening said flange to the body of the said housing, said housing formed to provide an interior channel projecting outward to the lower corner of the housing and extending the entire length of the housing, said channel having a cross-sectional shape which includes an enlarged portion, and a strip formed with a cross-sectional shape complementary to the cross-sectional shape of the channel and providing a fit snug enough to maintain stability against lateral movement within said channel and loose enough to allow the strip to be slidably inserted in and removed from the channel, and said strip being formed with an end portion dimensioned to project outwardly from the housing to form a control edge.

3,198,536
SAFETY ATTACHMENT FOR SKIS
René Rossellat, Tartegnin, Vaud, Switzerland, assignor to Gisele Rossellat-Ray, Tartegnin, Vaud, Switzerland
Filed Mar. 28, 1963, Ser. No. 268,639
4 Claims. (Cl. 280—11.35)



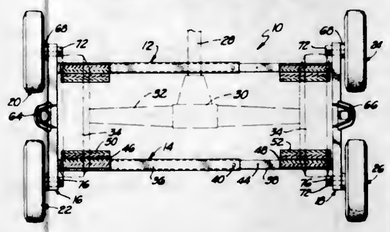
4. A safety attachment for skis, comprising a heel retaining member, means for securing said heel retaining member in a preselected longitudinal position on a ski, a slide secured to the ski forwardly of said heel retaining member, vertically disposed support means slidably mounted in said slide, a stop element pivotally mounted on said support means, means mounted on said stop element and being disposed in cooperating engagement with said support means for selectively maintaining said stop element in a predetermined angular position on said support means, spring means for releasably engaging said stop element with the toe portion of a ski boot and for simultaneously releasably engaging the heel portion of the ski boot with said heel retaining member, said stop element comprising a convexly arcuate tapering boot bearing surface and an outwardly extending convex lip disposed completely about said boot bearing surface in continuously overhanging relation thereto, whereby the tapering inclination of said boot bearing surface is directed towards said support means.

3,198,537
SKI BINDING PLATE
James K. Silberman, 195 Little Hill Drive, Stamford, Conn.
Filed Nov. 4, 1963, Ser. No. 320,998
5 Claims. (Cl. 280—11.35)



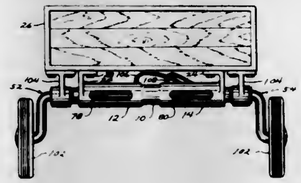
4. In combination, a ski having an upper surface and outer longitudinal edges, a pair of guides secured to the upper surface of said ski along the opposite edges thereof, a plate overlying the upper surface of said ski between said guides and having edge portions thereof mating with said guides for permitting relative movement between said plate and said guides only in a direction parallel to the longitudinal axis of said ski, ski boot toe and heel clamping means securely mounted on said plate, and means extending transversely of the longitudinal axis of said ski through at least one of said guides and into said plate for securing said plate relative to said guides at a selected one of at least two longitudinally adjusted positions of said plate relative to said ski, whereby the location of the ski boot along the longitudinal axis of the ski may be adjusted without altering the adjustment of the toe and heel clamping means.

3,198,538
DOLLY
Charles P. Nowell, 1675 Glen Ave., Apt. 1, Anaheim, Calif.
Filed Jan. 20, 1964, Ser. No. 338,642
6 Claims. (Cl. 280—35)



6. A dolly adapted for the support and conveyance of a disabled automotive vehicle, said dolly comprising a plurality of cross bars adapted to engage substantially beneath the automotive vehicle, said cross bars having ends, a locking shoe secured to each end of each of said cross bars, each of said locking shoes being of substantially rectangular configuration, first and second end frames, a recess formed in each of said end frames, said recess being of substantially rectangular configuration and having a locking lip therein, said locking shoe on one end of each of said cross bars engaging in said recess in said first end frame and said locking shoe on the other end of each of said cross bars engaging in said recess in said second end frame, said locking shoes being positioned within said recess behind said locking lip so that downward load on said cross bars causes locking of said locking shoes within said end frames, wheel assemblies demountably supporting said end frames and means on each of said end frames for raising said end frames.

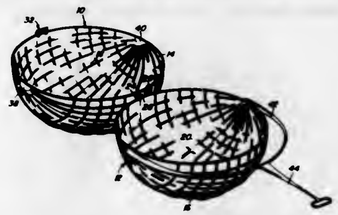
3,198,539
HYDRAULIC TORQUE CYLINDER
Wayne W. McMullen, 1002 67th St., and Leo S. Goulden, 1005 67th St., both of Des Moines, Iowa
Filed July 17, 1962, Ser. No. 210,376
9 Claims. (Cl. 280—43.17)



1. In a hydraulic torque cylinder,
an elongated cylinder,
an outer hollow casing secured to the end of said cylinder,
an inner hollow casing movably mounted for rotation about its own longitudinal axis within said outer casing,
a shaft means extending through said outer casing and being rigidly secured to said inner casing,
at least one straight slot in said outer casing,
an arcuate slot disposed on a spiral axis in said inner casing,
a piston slidably mounted in said cylinder,
a rod protruding from said piston into the interior of said inner and outer casings,
a pin extending transversely from said rod and extending into the slots in said inner and outer casings.
means for connecting said cylinder to a source of hydraulic power to reciprocate said piston and rod therein at times wherein the reciprocal movement of said rod and the pin secured thereto will impart relative rotational movement between said inner and outer casings,
and said arcuate slot is formed with an arcuate locking notch at its ends to retain at times the ends of the pin that extends transversely from said rod.

3,198,540
LEAF HOLDER AND TRANSPORTER
Frederick R. Averett, 719 Lee Ave., Rome, Ga.
Filed Feb. 19, 1963, Ser. No. 259,514
3 Claims. (Cl. 280—78)

1. A leaf holder and transporter in which raked leaves may be stored and conveyed to a disposal unit comprising a pair of frame means each of which includes a hemispherical shell having a foraminous network opening at one end to define a leaf-receiving mouth, mating hinge means on each of said shells at said one end for permitting relative pivotal displacement of each of said hemispherical shells about the axis of said hinge means to form a spherical enclosure and, alternatively, two leaf receivers, latch means for securing said hemispherical shells together when in closed relationship, and means for imparting and sustaining rotational and linear movement of said spherical enclosure, said network comprising a plurality of closely spaced members disposed as meridians and parallels on



said hemispherical shells, said hinge means embodying separable and connectible parts, said hinge means enabling nesting of said hemispherical shells for storing and shipping purposes, said means for imparting to and sustaining rotational and linear movement including an arcuate yoke having a centrally located elongated handle, the free ends of said yoke being pivotally attached to one of said hemispherical shells at diametrically opposite points adjacent said one end.

3,198,541
UNIVERSAL STEERING APPARATUS
John C. Christenson, Battle Creek, Mich., and Ronald A. Brudi, Longview, Wash., assignors to Clark Equipment Company, a corporation of Michigan
Filed June 18, 1962, Ser. No. 203,334
24 Claims. (Cl. 280—91)

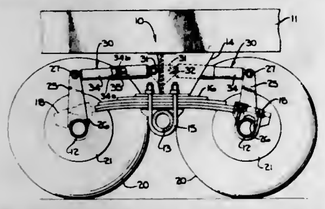


1. Universal steering apparatus for a vehicle having a plurality of pairs of steerable wheels, comprising a swivel shaft carrying each of the wheels for turning about a vertical axis, manually operable steering control means including a steering wheel, parallelogram linkage mounting said control means for movement longitudinally of the vehicle and including a control lever pivoted at one end to the control means and intermediate its ends to the vehicle, means for conjointly rotating the swivel shafts of each pair of wheels, and means operatively connecting said rotating means to the other end of said control lever and to said steering wheel for selective turning of the pairs of wheels to directional positions in response to selective independent and conjoint movement of the steering wheel and control lever.

3,198,542
SPRING SUSPENSION ASSEMBLY WITH BRAKE HOP CONTROL
Henry C. Harbers, Pasadena, Calif., assignor to Western Unit Corporation, City of Industry, Calif., a corporation of California
Filed June 28, 1963, Ser. No. 291,327
6 Claims. (Cl. 280—104.5)

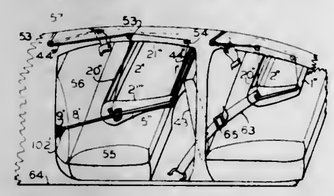
1. A vehicle spring suspension assembly having effective provision for counteracting tendency of the carriage wheels to hop while the brakes are applied, said assembly

comprising at least one wheeled carriage connected with a vehicle frame through spring means, said wheels having braking means therefor, and means for resisting tendency of said wheels to bounce toward and away from the roadway during application of said wheel braking means and comprising hydraulic shock absorber means of variable length supported lengthwise of the vehicle frame and having an orifice sized to pass hydraulic fluid at a rate varying with the pressure load thereon, said shock absorber means having one end rigidly connected to a sta-



tionary part of the vehicle and its opposite end connected with the carriage axle, said shock absorber means and said orifice being constructed and arranged so that said shock absorber means operates to change length in response to low frequency variable load impulses imposed thereon and characteristic of vehicle travel over bumps but is highly resistant to change in length when subjected to relatively high frequency variable load impulses characteristic of brake hopping conditions during application of the wheel brakes.

3,198,543
VEHICLE PASSENGER'S PROTECTION DEVICE
Peter Presunka, Ottawa, Ontario, Canada, assignor to Steve Presunka, Ottawa, Ontario, Canada
Filed Mar. 29, 1962, Ser. No. 183,663
20 Claims. (Cl. 280—150)



1. In a conveyance a directional impact energy absorbing device which includes

(a) a deformable structure which exhibits substantial rigidity to lateral forces which tend to deflect said structure out of a plane of predetermined yielding, and

(i) rigidifying means to maintain said structure within said plane of yielding, said means consisting of undulations in a sheet included in said structure, said undulations also defining axes of flexure, and

(ii) rigid guide means which constrain said axes to planes parallel to said plane of yielding, and

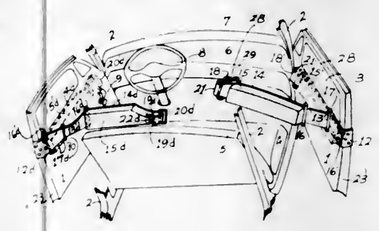
(b) rigid outer frame which constrains one edge of said deformable structure against movement in opposition to load applied to another edge which is substantially parallel and opposite to said one edge, and

(c) mounting and orienting means for maintaining said plane of yielding of said structure in alignment with said load, and

(d) links resisting load in tension and attaching said rigid outer frame to points in said conveyance located to rear of said structure, and

(e) resistance to collapsing means enabling said structure to undergo said predetermined yielding in said plane under said load and so absorb energy.

3,198,544
PROTECTION BARRIER FOR VEHICLE PASSENGERS
Peter Presunka, Ottawa, Ontario, Canada, assignor of fifteen percent each to Mary Presunka for Wesley Presunka, Fort William, Ontario, and Steve Presunka, Ottawa, Ontario, Canada
Filed June 4, 1962, Ser. No. 199,687
10 Claims. (Cl. 280—150)



1. In a vehicle having a seat structure for passengers and a substantially vertical side wall and a door extending along each end of said seat structure, a safety device for said passengers comprised of

(a) a horizontally extending barrier between said side walls generally in a lap region of said passengers, and

(b) a pair of attachment means attaching the outer ends of said barrier to said side walls, and

(c) a readily disconnectable connecting means connecting said barrier together substantially midway between said outer ends,

(d) said barrier consisting of a substantially flat, tensile strength member with its greatest cross-sectional dimension placed in a vertical plane, and

(e) a crushable padding structure secured to that flat side of said strength member which is nearest to said passengers, and

(f) each of said attachment means consisting of at least one vertically disposed metal connecting hinged pivot means, and

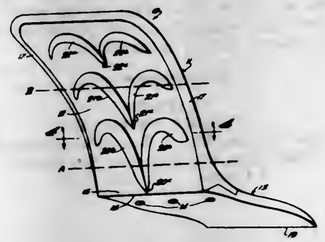
(g) a metal strap, one end of said strap being connected to said pivot means and an outer end of said strap being contoured and attached to said vehicle wall,

(h) said barrier, said hinged pivot means and said strap possessing sufficient vertical rigidity to constitute a self-supporting, freely pivoting and selectably positionable barrier in a substantially horizontal plane in any position between and including the position of use in the lap region of said passengers and its storage position along said side walls.

3,198,545
AUTOMOTIVE ROAD SPRAY SHIELD
Henry R. McDaniel, 3358 SW. 2nd St., Miami, Fla.
Filed May 6, 1963, Ser. No. 278,208
5 Claims. (Cl. 280—154.5)

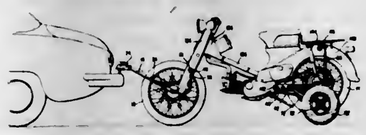
1. An automotive road spray shield comprising, in combination, a curved body member adapted to be placed in spaced relation behind a vehicle tire, and said body member having a concave inner surface and an inwardly-directed peripheral wall, said peripheral wall providing water flow channels for directing water downwardly by gravity flow from said inner surface, said inner surface having a pair of arcuate ridges extending upwardly from

the longitudinal center of said body member at the lower end thereof, thence outwardly to each side and thence downwardly, said pair of ridges being curved along their



height to provide flow channels for redirecting downwardly, water impinging in an upward direction upon said inner surface.

3,198,546
AUXILIARY WHEEL ATTACHMENT FOR CYCLES
William C. N. Hopkins, 881 Hawthorne Drive, Walnut Creek, Calif.
Filed Sept. 16, 1963, Ser. No. 309,054
13 Claims. (Cl. 280—303)



1. An attachment for a motorcycle having a main frame including a pair of trailing arms pivotally attached at their forward ends to said main frame and defining a rear fork, a driven wheel journaled between the free ends of said arms, and suspension means resiliently opposing pivotal movement of said trailing arms relative to said main frame, said attachment comprising

(a) a pair of brackets respectively attachable to the trailing arms of the motorcycle,

(b) an auxiliary arm pivotally attached at one end to each bracket for swinging between an upright storage position and an outwardly extending operative position,

(c) a stub axle carried by the free end of each said auxiliary arm,

(d) a wheel journaled on each of said stub axles for ground engagement when said auxiliary arms are in operative positions,

(e) a second pair of brackets attachable to the main frame of the motorcycle above the trailing arms thereof,

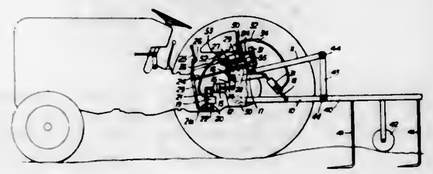
(f) a strut for each auxiliary arm and including an upper section pivotally connected to one of said second pair of brackets and a lower section pivotally connected to the free end of the associated auxiliary arm,

(g) means hingedly joining the adjacent ends of the two sections of each strut and enabling movement of said sections between folded and aligned positions,

(h) and means for locking the sections of each strut in aligned positions to retain said arms in operative positions,

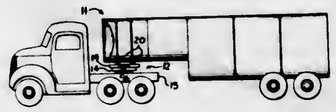
(i) the lengths of said struts and said auxiliary arms being such as to engage said auxiliary wheels with the ground surface to support said driven wheel elevated thereabove.

3,198,547
TRACTOR WEIGHT TRANSFER CONTROL
Robert B. Annat, Kenilworth, England, assignor to Massey-Ferguson (United Kingdom) Limited, London, England, a British company
Filed Apr. 8, 1963, Ser. No. 271,346
Claims priority, application Great Britain, Apr. 11, 1962, 13,955/62
2 Claims. (Cl. 280—405)



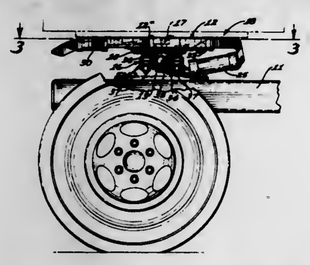
2. In a tractor having a pair of trailing draft links and a hydraulic system including a ram controlled by a spring positioned control rod, the improvement comprising, in combination, first and second hydraulic actuators respectively coupling said pair of draft links to said ram so that pressure in the ram lifts the links through the fluid in the actuators, a line hydraulically coupling said first and second actuators so that one draft link can raise and the other fall without varying the pressure in said line, a third hydraulic actuator anchored on said tractor, means mechanically coupling said third actuator to said control rod so that the spring forces on the rod react against the fluid in the third actuator, valves in said line for selectively blocking fluid flow between said first and second actuators so as to prevent relative vertical movement of the draft links, and means for hydraulically coupling said ram to said third actuator so that the lifting force in the ram is sensed by the control rod.

3,198,548
TRUCK TRACTOR-TRAILER COUPLING
Harold E. Lund, Oregon, Ill., assignor to E. D. Etnyre & Co., Oregon, Ill., a corporation of Illinois
Filed Dec. 5, 1962, Ser. No. 242,414
4 Claims. (Cl. 280—407)



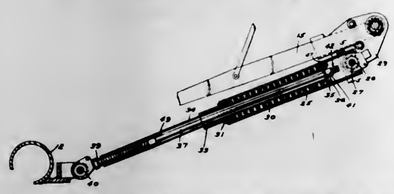
1. In a truck tractor-trailer coupling, the combination comprising, a lower fifth wheel mounted at the rear of the tractor, and an upper fifth wheel assembly mounted on the trailer, said assembly having a kingpin mounted in a kingpin carrier engageable with said lower fifth wheel to couple said tractor and trailer, said upper fifth wheel assembly including a stationary frame with said kingpin carrier mounted therein for sliding movement relative to said frame, said stationary frame and said kingpin carrier being locked together by a plurality of threaded pins having tapered ends, said pins being threadably engaged in a set of tapped openings in said stationary frame, each of said pin tapered ends registering with a selected one of a plurality of tapered openings in said kingpin carrier to lock in position the trailer relative to the tractor.

3,198,549
FIFTH WHEEL COUPLING DEVICE
Otto L. Martin, 6638 N. 19th Ave., Phoenix, Ariz.
Filed Feb. 2, 1962, Ser. No. 170,685
8 Claims. (Cl. 280—432)



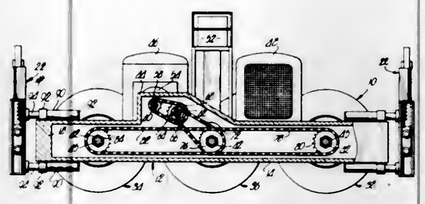
1. A fifth-wheel coupling device adapted to be mounted on a tractor and to receive the coupling pin member of a trailer comprising: a turntable having a guideway adapted to receive said coupling pin member; a latching assembly including one fixed latching member and one moveable latching member; means for maintaining said moveable latching member out of said guideway so that said coupling pin member may be brought into contact with said fixed latching member; means for bringing said moveable latching member into secure contact with said coupling pin member after said coupling pin member has been brought into contact with said fixed latching member; a first means for urging said moveable latching member against said coupling pin member, said means including a tapered surface contact; and a second means, including a pin member, for securing said moveable latching member in a locked position.

3,198,550
OVERLOAD RELEASE FOR MOWERS
Miles H. Tuft, Birmingham, and Charles J. Bays, Orchard Lake, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 22, 1962, Ser. No. 232,135
4 Claims. (Cl. 280—449)



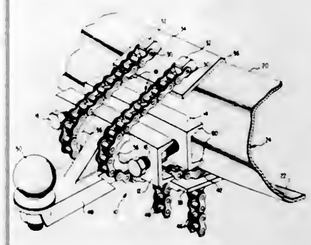
3. An overload releasable breakback link for a tractor-mounted mower, said link extending between the tractor and a portion of the mower adapted to swing rearwardly to prevent damage due to overload, the link comprising an elongated body having a first end attached to one of the units, a rod telescoped within the body and attached to the other unit, a tubular guide member mounted for telescopic movement within the body and having an enlarged end, a compression spring extending between the enlarged end of the guide member and the other end of the body and biasing the guide member towards said first end, the rod being telescopically received within the body and guide member and having an enlarged end extending through a central opening in the enlarged end of the guide member, the opening in the guide member being larger than said enlargement of the rod, and means on said body displacing the end of the rod laterally to engage the margin of the opening in the guide member, whereby tension on the link tends to displace the guide member in a direction to compress the spring, compression of the spring more than a predetermined amount withdrawing the rod from engagement with the rod-displacing means to permit the rod to move centrally of the spring, thereby releasing the inter-engaged portions of the rod and guide member to permit the link to extend.

3,198,551
PUSHER VEHICLE
Fay Troy Garner, Rte. 2, Box 136, Greeley, Colo.
Filed Mar. 27, 1961, Ser. No. 98,690
6 Claims. (Cl. 280—481)



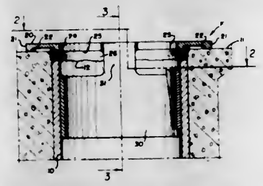
1. A pusher plate assembly adapted for attachment to a traction vehicle comprising a first plate normally disposed in a vertical position; a second plate spaced from said first plate and normally disposed in substantially parallel relationship thereto; means interconnecting said first and second plates whereby said second plate is vertically shiftable with respect to said first plate in a plane parallel to and spaced from said first plate, said interconnecting means comprising a vertically disposed piston and cylinder assembly carried by said first plate and a bracket interconnecting said piston with the second plate; and means disposed between said first and second plates to maintain the same in spaced relation and facilitate the movement of said second plate with respect to said first plate.

3,198,552
BUMPER HITCH FOR TOW ATTACHMENTS
William C. N. Hopkins, 1263 Rudgear Road, Walnut Creek, Calif.
Filed Sept. 6, 1963, Ser. No. 307,081
8 Claims. (Cl. 280—502)



1. A hitch assembly adapted to be removably attached to a vehicle bumper, comprising,
upper and lower hook members adapted to engage with and anchor to the upper and lower edges of an associated bumper,
a pair fo chains connecting said upper and lower hook members,
a hitch mounting bar having pair of toothed elements rigid therewith and disposed in spaced relation on said mounting bar with the spacing between toothed elements being such that said chains pass over and mesh with respective ones of said toothed elements at points on the chains between said hook members,
a pressure foot spaced inwardly of said mounting bar and adapted to bear against an associated bumper between the upper and lower edges thereof,
and means for positioning said mounting bar forcibly away from said pressure foot to tighten said chains and make said mounting bar rigid with the associated bumper and including mechanism interconnecting said pressure foot and said mounting bar for selectively increasing the spacing therebetween.

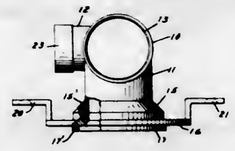
3,198,553
SELF-CONNECTING WATER CLOSET FLOOR FLANGE
Albert L. Fladung, Denver, Colo., assignor, by direct and mesne assignments, to Meyer J. Schaffner, Westminster, Colo.
Filed July 15, 1963, Ser. No. 295,009
5 Claims. (Cl. 285—56)



1. A water closet floor flange adapted to be set upon a floor and to connect with a sewer pipe extending upwardly from beneath the floor and terminating substantially at and slightly below the floor level and comprising:
(a) a flange ring adapted to be set upon the floor over the sewer pipe opening, having an external diameter sized to fit within the base of a water closet to be set thereover and an internal diameter substantially the same as the internal diameter of the sewer pipe and having means therein adapted to hold the water closet connecting bolts;
(b) a pair of diametrically opposed arms at the inner edge of the ring and depending therefrom to extend into a sewer pipe when the ring is set in position;
(c) a short tube depending from the arms and within the sewer pipe, having an external diameter slightly less than the internal diameter of the sewer pipe and having a tapered slot at one side thereof;
(d) a like-tapered wedge adapted to be fitted into the slot and to expand the ring by being driven into the slot, and;
(e) a packer ring at the underside of the flange ring adapted to set upon the top edge of the sewer pipe and the underside of the flange ring.

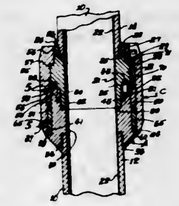
3,198,554
COMBINATION WASTE AND VENT FITTING FOR WALL HUNG WATER CLOSET
William I. Hartshorn, Jr., Los Angeles, Calif. (Rte. 4, Box 448, Grants Pass, Oreg.)
Filed June 26, 1961, Ser. No. 119,596
1 Claim. (Cl. 285—64)

A plumbing fitting for a wall hung water socket, comprising: a main tubular part arranged to be vertically positioned in use; an integrally formed tubular branch communicating with said main part between its ends through a sanitary sweep, and having an axis extending at right angles to the axis of said main part; an end flange at the outermost end of said branch connection presenting an annular seating face, said end flange having diametrically positioned radially extending mounting lugs on opposite sides, said lugs projecting beyond the flange periphery and respectively having outer end portions rearwardly offset with respect to said flange; and diametrically



positioned arcuate bolt receiving slots in said seating face concentric to the axis of said tubular branch, said slots permitting adjustable positioning of the bolts therein circumferentially of said axis.

3,198,555
PIPE COUPLING WITH LUG ENGAGING ROTATABLE COLLAR
Elmer Johnson, Long Beach, and James W. E. Hanes, Ventura, Calif., assignors to Johnson-Woodruff Company, Wilmington, Calif.
Filed Mar. 8, 1961, Ser. No. 94,360
4 Claims. (Cl. 285—91)

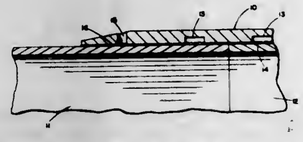


1. A drill string tool joint for use with drilling apparatus and for interconnecting in end to end relationship two adjacent lengths of drill pipe having exterior threads adjacent their ends comprising; a female section having internal threads at one end for connection to the end of a first drill pipe, a generally cylindrical exterior surface extending to the other end thereof, a plurality of spaced lugs extending outwardly from said exterior surface, a peripheral, transverse shoulder longitudinally below said lugs, and means for receiving a portion of a male section at the end opposite said threads; a male section having internal threads at one end for connection to the end of a second drill pipe, a portion seating in the receiving means of said female section, an upwardly facing exterior peripheral shoulder between an upper relatively small exterior diameter portion and a lower and adjacent relatively large exterior diameter portion; a coupling section having an upper portion having an internal diameter slightly greater than and of approximately the same longitudinal extent as said upper portion of said male section, an intermediate portion having an internal diameter slightly greater than said last-mentioned portion of said male section, a lower portion having an internal diameter slightly greater than the diameter defined by the external surfaces of said lugs of said female section, and spaced lugs for engagement with said lugs of said male section extending inwardly from said lower portion, the longitudinal distance between the upper edge of said intermediate portion and the lower edge of the lugs of said coupling section being substantially the same as the longitudinal distance between said shoulder of said female section and said shoulder of said male section; and means to seal said tool joint sections.

3,198,556
BRAZED JOINT AND METHOD OF MAKING THE SAME

James A. Kruse, Manhattan Beach, and Therian E. Austin, Long Beach, Calif., assignors to North American Aviation, Inc.

Filed May 1, 1961, Ser. No. 106,773
4 Claims. (Cl. 285—93)

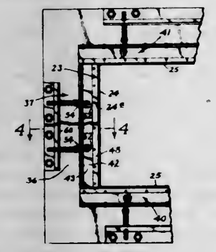


1. In a lightweight thin-wall, high-temperature, high-pressure brazed hydraulic system for aerospace vehicles, a brazing fitting comprising a thin-wall stainless steel first member having a bore therethrough; a thin wall tubular second member adapted to be received in the bore of said first member, said second member being of a stainless steel that is subject to annealing at the temperature required to melt and flow the brazing alloy with a consequent loss of strength thereof; said second member having an external diameter less than the diameter of said first member bore by a predeterminately slight amount for permitting wetting of the complementary surfaces of the fitting bore and the surface of said second member by liquid brazing alloy and inducing capillary flow of such liquid brazing alloy therebetween; a ring of brazing alloy positioned within said first member and spaced axially inwardly of the end of said first member prior to brazing; and means adjacent the end of said first member between said brazing alloy ring and the end of said first member for permitting visual inspection and control of the extent of the capillary flow of liquid brazing alloy outwardly toward the end of the first member during brazing whereby forming of a fillet of brazing alloy at the end of said first member and annealing of the unsupported portion of said second member adjacent the end of the first member is prevented.

3,198,557
FLEXIBLE JOINT

Robert C. Portouw, Portland, Oreg., assignor to Drew Engineering Company, Portland, Oreg., a corporation of Oregon

Filed Feb. 9, 1962, Ser. No. 172,325
2 Claims. (Cl. 285—224)

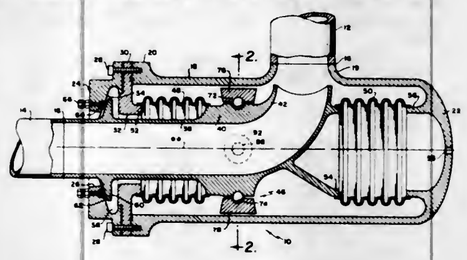


1. A joint connecting two conduits comprising a first conduit portion with four sides and of rectangular outline integral with one of said conduits, another conduit portion with four sides integral with the other of said conduits substantially concentrically positioned with respect to said first conduit portion, flange means extending about one of said conduit portions including for each side of the other conduit portion an adjacent elongated surface portion set at an angle with respect to the side but extending in a reach paralleling the side, a sealing element interposed between each side of said first conduit portion and its adjacent surface portion of said flange means having a first elongated sealing surface engaging the side of the first conduit portion and a second elongated sealing surface engaging the adjacent surface portion of said flange means, and means resiliently holding each of said sealing elements in place.

3,198,558
PRESSURE BALANCED PIVOTAL JOINT FOR PIPING SYSTEMS

John R. Braden, Anne Arundel County, Md.

Filed Apr. 29, 1963, Ser. No. 276,667
9 Claims. (Cl. 285—228)
(Granted under Title 35, U.S. Code (1952), sec. 266)

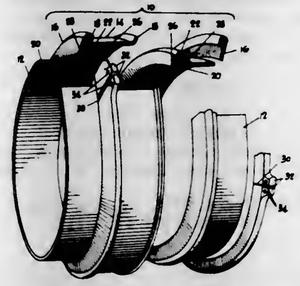


1. A pivotal joint for a piping system comprising:
a tubular casing having an opening for connection to a first pipe of the piping system;
said tubular casing having a first aperture;
a tubular member extending through said first aperture in spaced relation to the walls of the casing, whereby said member has at least limited lateral movement in the aperture;
said tubular member having inlet means exterior of said tubular casing for connection to a second pipe of said piping system and outlet means, said tubular member comprising an elbow portion open to the interior of said tubular casing;
gimbal means mounted on the interior wall of said tubular casing and on the tubular member for pivotally supporting said tubular member in spaced relation from the interior surface of said tubular casing, said gimbal means being positioned substantially at a midsection of said tubular casing;
a first bellows member mounted concentrically over said tubular member and disposed within said tubular casing, said first bellows member having a first end sealably secured to the external surface of said tubular member and a second end sealably secured to the wall of the tubular casing and circumscribing said first aperture whereby a seal is formed between the tubular member and the tubular casing enabling pivotal movement of said tubular member in said tubular casing, the interior of said first bellows being open to atmospheric pressure thru said first aperture;
a second bellows member of essentially equal diameter to said first bellows member and disposed interiorly of said tubular casing coaxially with said first bellows member, said second bellows member having a first end secured to the interior wall of said tubular casing opposite said first aperture and a second end secured to the exterior surface of said elbow portion whereby a chamber is defined by said second bellows, said interior wall of said tubular casing and said exterior surface of said elbow portion;
a second aperture in the wall of said tubular casing communicating with said chamber enabling a free flow of air between said chamber and the atmosphere whereby a force acting on said tubular member adjacent said first bellows and tending to displace said tubular member in one direction is counterbalanced by a second equal force acting on said elbow portion through said chamber in a direction essentially opposite from said first force.

3,198,559
FLEXIBLE COUPLING FOR RIGID MEMBERS

Raymond E. Snyder, Playa Del Rey, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.

Filed May 11, 1960, Ser. No. 28,436
2 Claims. (Cl. 285—233)



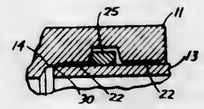
1. A coupling for flexibly connecting plain end ducts comprising cylindrical end members adapted for circumferential attachment over the ends of the ducts to be connected, said end members on each of said ducts having a channel at one end formed by outwardly directed inner and outer radial flanges, a large radius fillet formed at the junction between each of said inner flanges and a respective outer surface of each of said end members, a cylindrical sleeve having outwardly directed radial end flanges, said sleeve having an inside diameter greater than the outermost diameter of the inner flanges of the end members, annular sealing elements of a silicone polymer base, said elements having a rectangular lower portion seated in the channels of the end members and a bulbed upper portion in an interference fit with the interior surface of the sleeve and one piece resilient split snap rings having a straight first radial portion and a reversely bent peripheral portion terminating in an inwardly directed second radial portion of shorter length than said first radial portion, said two radial portions defining an inwardly opening channel,
said rings being snapped over and resiliently retained about the end flanges of said sleeve and retained about said flanges against axial displacement, the inner periphery of said first radial portion engaging said large fillet of said inner flange to thereby retain the ducts in fluid sealed connected relation and to permit limited axial misalignment thereof.

3,198,560
BRAZED TUBE COUPLING

Donald F. Collins, Bellevue, Wash., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 822,497, June 24, 1959. This application Mar. 6, 1963, Ser. No. 264,475
2 Claims. (Cl. 285—286)

1. A coupling for tubes comprising a body member having a cylindrical bore for receiving a tube, an annular recess in said bore spaced inwardly from the outer end thereof, a ring of fusible metal located within the recess, said ring having an inside diameter initially smaller than the diameter of a tube to be inserted therethrough, said recess having a flat bottom wall of uniform diameter and having straight side walls that taper away from each other whereby the recess is wider at its smaller diameter than at its bottom, said ring being axially split and having a flat cylindrical outer surface and straight end walls each terminating in a chamfer, said ring also having a cross

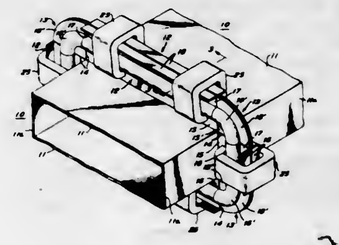


section of a thickness less than the depth of the recess and of a width less than the width of the recess whereby upon insertion of the tube through the ring the latter may expand readily within the recess without interference from the side or bottom walls thereof, said ring being responsive to heat for fusing to said tube and to said body member for forming a sealed joint therebetween.

3,198,561
HIGH PRESSURE DUCT CONNECTION

Albert L. Witt, Glenside, Pa., assignor to W. M. Anderson Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed May 13, 1963, Ser. No. 279,788
2 Claims. (Cl. 285—364)

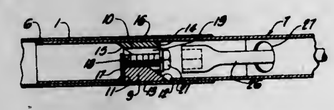


1. A duct joint for the connection of adjacent ends of duct sections comprising on each end of said duct sections, and as an extension of the walls of each duct section, an integral imperforate stiffening flange extending perpendicularly outwardly from the walls of the duct sections and having a stiffening groove thereon and on both faces of each of said flanges spaced outwardly from the duct section walls and inwardly of the outer margins of the flange, said flanges being disposed in meeting relation at the innermost portions thereof with the interiors of said grooves in facing relation, plastic packing material between said flanges and in the spaces in said grooves, spaced clamping members having elongated portions engaging said duct walls and opposite exterior portions of said flanges at locations contiguous to the meeting portions thereof and between said grooves and said duct walls retaining the duct sections in alignment and in sealed condition at said flanges, said duct sections having flat sides and corners at meeting locations of said sides and said flanges at the corners having inserts extending around the corners, means retaining said inserts against said flanges, said corner inserts having grooves connecting the grooves of said flanges, said plastic packing material substantially filling said grooves in said inserts, and said plastic packing material in all of said grooves cooperating to form a fluid tight seal completely around said joint.

3,198,562
INTERNALLY EXPANDING LOCKING DEVICE FOR TELESCOPED TUBES

Marlin M. Smith, Los Angeles, Calif., assignor to West Coast Industries, San Francisco, Calif., a corporation of California

Filed Feb. 20, 1963, Ser. No. 259,998
3 Claims. (Cl. 287—58)

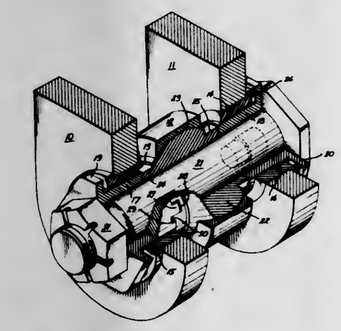


1. A seat assembly comprising a seat support tube having a side opening near one end, a stop plate near said end contiguous with said opening and extending into said tube, a base tube surrounding said end and said opening, a locking device comprising a first member extending through said opening and a second member positioned in the seat support tube, each of said members having a base, an inclined surface, and a locking surface, the base of the first member slidably engaging said stop plate, the base of the first member being remote from the base of the second member, the inclined surface of the first member slidably engaging the inclined surface of the second member, the locking surface of the first member engaging the base tube, the locking surface of the second member engaging the seat support tube opposite said opening, the first member having an internally threaded bore extending from its base to its inclined surface, the second member having an opening extending from its base to its inclined surface, the bore in the first member being in alignment with the opening in the second member, a bolt having a head, a body and a threaded end, the head abutting the base of the second member, the body extending through the opening in the second member, and the threaded end engaging the internally thread bore of the first member, the opening in said second member being so constructed and arranged as to permit movement of the locking surface of the second member away from the bolt as the bolt is screwed into the first member.

3,198,563
ADJUSTABLE HINGE

Robert H. Steidl, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Nov. 5, 1962, Ser. No. 235,496
11 Claims. (Cl. 287—96)

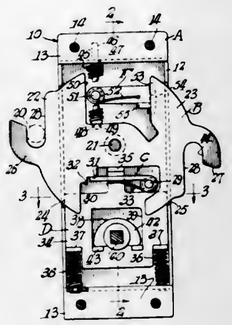


6. A hinge comprising the combination:
(a) a pair of spaced lugs, said lugs each having an aperture therethrough, said apertures being disposed in axial alignment,
(b) external bushing means positioned in said two axially aligned apertures, each of said external bushing means having an aperture, each of said bushing apertures having internal threads, said internal threads being opposite to each other,
(c) internal bushing means for engaging each of said threaded apertures, one of said internal bushing means having at least one tab,
(d) a cylindrical element having at least one notch on one end, said notch and said tab being interconnected,
(e) means for supporting said cylindrical element between said two internal bushing means, and
(f) said supporting means being cooperative with said opposite threads and said notch and tab to form means for preventing relative movement between said cylindrical element and said lugs.

3,198,564
SLIDING DOOR LOCK

William P. Welsh, Grand Rapids, Mich., assignor to Blumenthal Bros., Inc., Chicago, Ill., a corporation of Illinois

Filed Dec. 4, 1961, Ser. No. 156,674
4 Claims. (Cl. 292—117)



1. A lock for sliding doors comprising a casing adapted to be mounted upon one face of a sliding door, a substantially flat bolt extending along a vertical plane parallel with said door and rotatably mounted for movement in said plane and within said casing, said bolt being provided with opposite side portions projecting through said casing, said side portions providing oppositely-facing hooks adapted for latching engagement with suitable keeper pins at opposite sides of a door frame and being disengagable from said pins upon rotation of said bolt in one direction into an unlatching position, spring means provided within said casing for urging said bolt in said one direction into said unlatching position, a movable member mounted within said casing and engageable with said bolt to prevent said rotation in said one direction, said member being mounted for movement in substantially the same vertical plane as said bolt, and handle means operatively associated with said movable member for moving the same out of engagement with said bolt and thereby permitting rotation of said bolt in said one direction into said unlatching position, said side portions of said bolt being provided with cam surfaces engageable with said keeper pins for camming said bolt in an opposite direction of rotation into a latching position against the force of said spring means when said door is forced into its fully open and its fully closed positions.

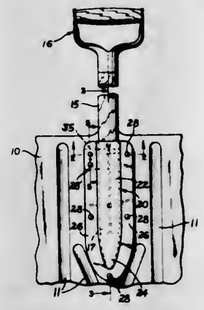
ERRATUM

For Class 294—50.5 see:
Patent No. 3,198,719

3,198,565
SHOVELS

Bill D. Ellis, Piqua, Ohio, assignor to The Wood Shovel and Tool Company, Piqua, Ohio, a corporation of Ohio

Filed Dec. 14, 1962, Ser. No. 244,825
3 Claims. (Cl. 294—54)



1. A shovel comprising a handle, a metal blade, an elongated retainer of generally channel-shaped section secured adjacent the back surface of the shovel blade with the open side thereof facing said blade defining a socket opening with said blade for receiving an end of said handle therein between said retainer and said blade, a separate spline member having a body portion secured directly to said shovel blade and terminating in an inwardly turned spline extending partially transversely into said socket opening, the axial length of said member at said spline forming a minor part of the total depth of said opening defined by said retainer and blade, means in said handle defining a kerf at one end thereof dividing said end into a pair of bifurcated portions positioned and proportioned to receive said spline therebetween upon the insertion thereof into said socket opening, the dimensions of said socket opening being slightly less than the outside dimensions of said bifurcated handle end to effect a squeezing together of said portions into gripping engagement with said spline when said handle end is inserted in said socket opening for eliminating play and distributing the load over a substantial portion of said handle end.

3,198,566
MATERIAL LIFTING DEVICE

James Floros, William F. Sosey, and Alfred T. Mitchell, Erie, Pa., assignors to Eriez Manufacturing Co., Erie, Pa., a corporation of Pennsylvania

Filed July 17, 1963, Ser. No. 295,751
6 Claims. (Cl. 294—65.5)



1. A material handling device comprising
a magnetic member having a plurality of spaced magnets with pole pieces attached thereto with one side thereof disposed in a plane,
a non-magnetic pusher plate attached to said device and adapted to engage work to be handled,
means to move said magnetic member into proximity to said pusher plate whereby magnetic fields from said magnets attract said work and hold it against said pusher plate,
means to move said magnetic member away from said pusher plate whereby said magnets are moved away from said work,
said means to move said pole pieces comprising a frame attached to said pusher plate,
spaced cam members on each side of said frame adjacent the outside edges thereof,
follower members on said magnetic member,
and means mounted on said frame and arranged to rotate said cam members whereby said magnetic member is moved by said cam members.

3,198,567
BREEZE GRAB

Gerrit Jongejan, Ijmuiden, Nico Plazier, Castricum, and Bernardus Wilhelmus Stokman, Heemskerk, Netherlands, assignors to Koninklijke Nederlandsche Hoogorens en Staalfabrieken N.V., Ijmuiden, Netherlands, a corporation of Dutch law

Filed May 3, 1963, Ser. No. 277,920
Claims priority, application Netherlands, May 3, 1962, 277,998
7 Claims. (Cl. 294—70)



1. A breeze grab, auxiliary tool to be operated by a pair of soaking pit charger crane tongs, the crane tongs via a crane column being adapted to open and close by a relative movement between the crane tongs and the crane column; the breeze grab having shells, each directly connected to a first cross-beam at one end and connected to a second cross-beam by means of at least one pivotally connected connecting rod at the other end, the cross-beams being relatively movable to and away from each other, the breeze grab having a head adapted to be engaged by crane tongs and said head being connected to a grab column having a transverse element secured thereto near its lower end, said grab column passing through at least said second cross-beam and extending toward said first cross-beam, means connected to the first cross-beam for engaging the transverse element when the latter is in a first angular position, and means associated with the second cross-beam for engaging the transverse element when the latter is in an angular position different from the first angular position, so that either one of the cross-beams may be lifted by the head.

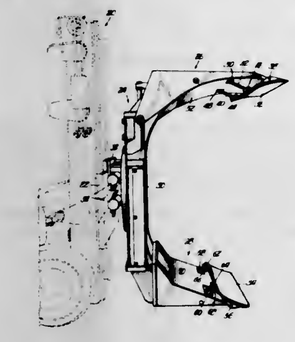
3,198,568
CLAMP PAD FOR ROLL CLAMPING MECHANISM

Kenneth H. Mindrum, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan

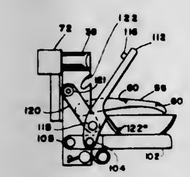
Filed Dec. 27, 1961, Ser. No. 162,339
5 Claims. (Cl. 294—88)

1. In a clamping mechanism of the type having a pair of opposed clamping arms adapted to reciprocate towards and away from one another for handling paper rolls and

the like, the improvement comprising, in combination, a clamping arm having first hinge means at the outer end thereof, a clamp pad having second complementary hinge means thereon in alignment with said first hinge means, a single member comprising a hinge rod and torsion spring arranged to project through said aligned first and second hinge means in operative engagement therewith to pivotally mount said pad on said clamping arm, first connecting means at a first position along the length of said member for securing said member to said first hinge means to prevent relative rotation therebetween, and second connecting means at a second position spaced along the length of said member from said first position for securing said member to said second hinge means to prevent relative rotation therebetween, whereby in addition to pivotally mounting said pad, said member will act as a torsion spring to yieldingly maintain said pad in a predetermined pivotal position relative to said clamping arm.

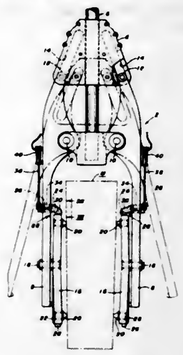


3,198,569
EGG HOLDING MECHANISM
Leonard Shelton, Omaha, Nebr., assignor to Continent Egg Corporation, Chicago, Ill., a corporation of Illinois
Original application Feb. 10, 1961, Ser. No. 88,395, now Patent No. 3,082,804, dated Mar. 26, 1963. Divided and this application Oct. 11, 1962, Ser. No. 230,317
4 Claims. (Cl. 294—104)



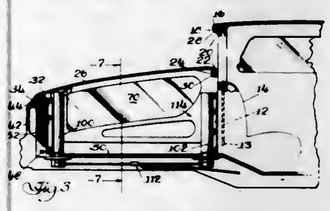
1. An egg holding and clamping assembly for positively holding an egg in position to be cut open including an egg cup comprising two laterally spaced cup halves, each cup having a concave side wall, a concave front wall, a concave bottom wall and a forwardly extending substantially flat rear wall, clamping means for clamping an egg in position in said cup including independently movable clamping fingers adapted to engage the upper surface of the egg in each cup half whereby an egg is clamped between a clamping finger and the bottom wall in a least one egg cup half.

3,198,570
INGOT FLIPPER TONGS
Francis J. Sines, Austintown Township, Mahoning County, Ohio, assignor to United States Steel Corporation, a corporation of New Jersey
Filed Apr. 16, 1963, Ser. No. 273,390
3 Claims. (Cl. 294—113)



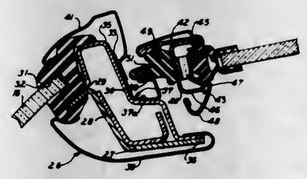
1. In an apparatus for flipping an elongated mass including opposed spaced pivoted legs the combination therewith of a flipper bar pivotally mounted intermediate its length on the inner side of each of said legs, a lug projecting axially from each end of each of said bars, a self-engaging latch projecting from the inner side of each of said legs for detachably engaging a lug of each of said bars to maintain the bars in position substantially parallel with said legs, each of said latches including a lever pivotally mounted intermediate its ends on the leg from which the latch projects, a catch pivotally mounted by one end on one end of each of said levers and projecting therefrom into the paths of movement of said lugs on said bars, each of said catches being adapted to be pivoted out of the way of said bars when struck by the lugs on the ends of the bars when the bars are swinging at relatively high momentum and to engage said lugs to halt movement of said bars when the latter are swinging at relatively low momentum, and remotely operable means connected with the end of each of said levers remote from the catch thereon for pivoting said levers to remove said catches from engagement with said lugs.

3,198,571
DUAL PURPOSE VEHICLE
Bruno F. Majeski, 4115 W. Arnold Place, Oak Lawn, Ill.
Filed May 14, 1963, Ser. No. 280,219
4 Claims. (Cl. 296—26)



1. A combination passenger and station wagon tonneau characterized by its ready convertibility to either type comprising essentially, a passenger compartment and a storage compartment having a floor, a wall means intermediate the said passenger compartment and said storage compartment movable to permit ready access therebetween, said storage compartment comprising a movable upper portion and a fixed lower portion, means to substantially vertically elevate the movable upper portion of said storage compartment in close juxtaposition with said passenger compartment, means to fixedly lock said movable upper portion of said storage compartment in its elevated position whereby a substantially enlarged capacity is created within said storage compartment to act as a station wagon compartment, means comprising a tailgate hingedly affixed along its lowermost edge to the edge of the floor of said storage compartment, and a tongue and groove means in complementary juxtaposition about the perimeter of the fixed lower portion of the said storage compartment, said tailgate, and the underside of said movable upper portion whereby when the upper portion is set down on the top side of said lower portion of the storage compartment and said tailgate the said tongue and groove means is interengaged to fixedly lock the said tailgate.

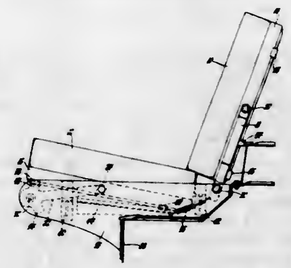
3,198,572
SEALING ARRANGEMENT FOR VEHICLE BODY CLOSURE STRUCTURES
Joseph M. Stolarczyk, Wyandotte, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,231
11 Claims. (Cl. 296—28)



1. In a vehicle body, a body wall having an exterior panel and an interior panel, an opening extending through said panels encompassed by structural members, a closure structure mounted on one of said structural members for swinging movement between closed and opened positions, continuous sealing means attached to the periphery of said closure structure, a stepped portion formed in the surfaces of said body structural members intermediate said exterior and interior panels, a continuous gutter encompassing said opening and secured to said stepped portion, said sealing means engaging said gutter in a closed position of said closure structure to seal said body opening, said gutter being adapted to intercept any water entering said body opening when said closure structure is in a closed position and to drain said intercepted water to the exterior of the vehicle body.

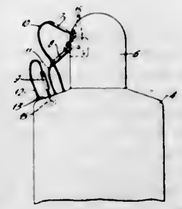
3,198,573
THREE-WAY SEAT ASSEMBLY
Kenneth R. Betts, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 8, 1962, Ser. No. 193,094
4 Claims. (Cl. 296—69)

1. A convertible seat comprising a support member, a seat unit, a seat back unit, said seat unit and seat back unit having a cushioned side and a floor-forming pan side, said units having a seat-forming position, a bed forming position and a floor-forming position and being selectively movable therebetween, linkage control means interconnecting said seat unit and said seat back unit with said support member for supporting said units thereupon, said linkage control means including a first control arm having a first pivotal connection at one end to said support means and a second pivotal connection at the other end to said seat unit intermediate the front and rear edges thereof, a second control arm having a third pivotal connection at one end to said support member and a fourth pivotal connection at the other end to said seat back unit intermediate the upper and lower edges thereof, said first and second control arms being movable about their said first and third pivotal connections, respectively, from a seat forming position corresponding to said units seat-forming positions to substantially horizontal positions corresponding to said units floor-forming and bed-forming positions, said first control arm pivotally supporting said seat unit for manually selectable pivotal movement about said second pivotal connection for selectively positioning said seat unit by rotating said unit to a cushion exposed position for said bed-forming and seat-forming positions



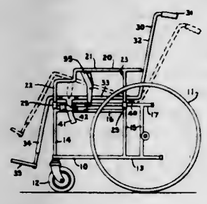
and to the floor pan exposed position for said floor-forming position, said second control arm pivotally supporting said seat back unit for manually selectable pivotal movement about said fourth pivotal connection for selectively positioning said seat back unit by rotating said unit to a cushion exposed position for said bed-forming and seat-forming positions and to a floor-pan exposed position for said floor-forming positions, bracket means secured on said units, support means attached to said support member for cooperating with said bracket means for supporting one of said units in each of said selected positions, respectively, and additional support means for positioning and supporting the other of said units in each of said selected positions.

3,198,574
DENTAL APPARATUS
Sadayasu Ota, Kiyoshi Okano, and Kazuo Hayashi, all of Kyoto, Japan, assignors to Kabushiki Kaisha Morita Seisakusho, Kyoto, Japan, a corporation of Japan
Filed Feb. 10, 1964, Ser. No. 343,664
Claims priority, application Japan, Feb. 19, 1963, 38/8,327



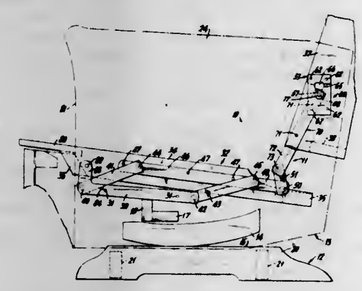
14. Dental apparatus comprising in combination: a chair having a seat, a back member movable to selected angles of inclination with respect to said seat, a headrest attached to the top of said back member, and a plurality of dental instruments each having operating means connected thereto, said headrest including dental instruments holding means for holding said instruments extending outwardly therefrom.

3,198,575
WHEEL CHAIR WITH POSTURE ADJUSTMENT
Harry O. Hawkins, 9239 N. Calhoun St., Portland, Oreg.
Filed Feb. 6, 1964, Ser. No. 343,077
3 Claims. (Cl. 297—328)



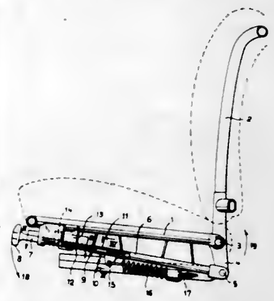
1. A wheel chair comprising a wheeled base frame, a seat, back and foot rest frame pivotally mounted for backward tilting on said base frame, a toothed latch bar on said pivoted frame, a latch dog on said base frame engageable with said latch bar, vertical sockets on said base frame, an arm rest detachably mounted in said sockets, a rigid hand grip on the under side of said arm rest providing a thrusting and pulling point for an occupant to tilt said pivoted frame, a squeeze-type release lever for said latch dog mounted in said hand grip, and a connection between said release lever and latch dog which is detachable when the arm rest is lifted out of said sockets.

3,198,576
RECLINING SEATING DEVICE
Ernest S. Rosmarin, Roslyn, N.Y., assignor, by mesne assignments, to Super Sagless Spring Corporation, Amsterdam, N.Y., a corporation of New York
Filed Sept. 21, 1962, Ser. No. 225,250
1 Claim. (Cl. 297—342)



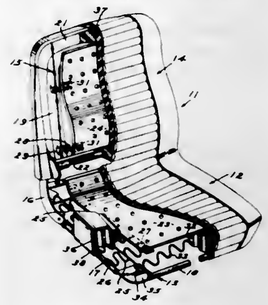
In combination, a chair support, a mounting member fixed to said support, front and rear carrier links pivoted at their lower ends to said fixed mounting member, a chair seat, a seat mounting link fixed to said chair seat, the upper ends of said carrier links being non-slidably pivoted to said seat mounting link, said mounting member, carrier links and seat mounting link substantially forming a parallelogram, said seat mounting member having a rear extension fixed with respect thereto and extending rearwardly of the pivotal connection of said rear carrier link to said seat mounting member, a back mounting member inclined downwardly and forwardly to a point above said rear extension, a chair back mounted on said back mounting member, means to releasably and pivotally mount said back mounting member on said support, a connecting link pivoted at its lower end to said rear extension, and being inclined forwardly and upwardly in all positions of adjustment of said chair seat and back and being pivoted at its upper end to the lower end of said back mounting member and means to stop rotation of said carrier links in opposite directions, in positions in which said carrier links are inclined upwardly and rearwardly.

3,198,577
ADJUSTABLE SEAT BACK FOR VEHICLE SEATS
Adolfo Messori, Turin, Italy, assignor to Fiat Società per Azioni, Turin, Italy
Filed July 2, 1963, Ser. No. 292,385
Claims priority, application Italy, July 24, 1962, 14,953/62
5 Claims. (Cl. 297—365)



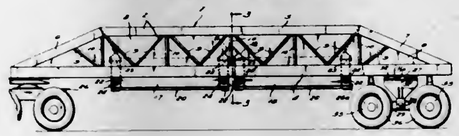
1. Device for adjusting the inclination of seat backs, particularly for motor vehicle seats, characterized by the fact that the device comprises a longitudinally extending rod articulated to the seat back, swingable into engagement with and disengagement with a member fast with the seat structure, said rod being urged by a spring tending to hold it in engagement with said member and to move the seat back forwardly, the rod being moreover provided with means for adjustment in length in order to effect fine displacements of the seat back.

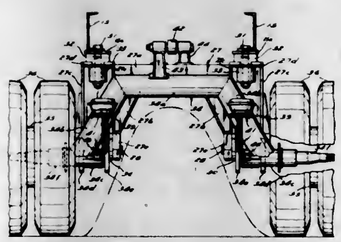
3,198,578
VEHICLE SEAT
Stephen P. Geoffrey and Lewis T. Hoppe, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,171
5 Claims. (Cl. 297—456)



1. In a vehicle seat,
a support section and a back rest section each having a frame formed of structural members defining horizontal and vertical support planes, respectively,
buttock and back panel sections contoured to conform to the human anatomy,
formed wire spring elements extending between the frame members and the mutually adjacent edge portions of said panel sections,
said formed wire spring elements resiliently supporting said panel sections on said frames in spaced substantially parallel relationship, respectively, to said support planes,
said panel sections under load being displaced toward the respective horizontal and vertical support planes,
the forward edge of said buttock panel being spaced from the mutually adjacent frame member of said support section,
and a zigzag spring element extending between the parallel members of said support and interposed between said forward edge of the buttock panel and the mutually adjacent frame member of said support section.

3,198,579
TRACTOR TRAILER DUMPING HOPPER VEHICLE
Jack Adams, Santa Fe, N. Mex.; Jeanine Adams Gruschus, executrix of said Jack Adams, deceased
Filed Apr. 17, 1961, Ser. No. 103,601
8 Claims. (Cl. 298—35)

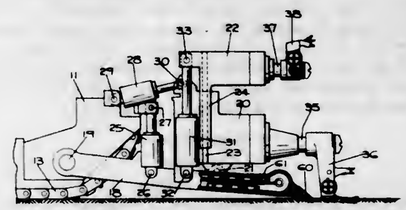




1. A dump truck comprising an elongated substantially rectangular frame structure; a hopper-shaped load compartment for bulk material supported on the frame intermediate the ends of the latter and having a door-controlled bottom discharge opening disposed approximately symmetrically in relation to a vertical plane through the longitudinal center line of the truck; and dual-axle running gear supporting the rear end of the truck frame, said running gear comprising a rigid high-arched saddle structure having a horizontal yoke and a pair of mutually-spaced dependent legs and being secured to the under side of the truck frame with its yoke disposed transversely of the frame, a pair of mutually parallel walking beams disposed longitudinally of the truck frame and having their respective midsections pivotally connected to the lower ends of the two saddle legs, a pair of rigid high-arched axle structures disposed parallel to the transverse saddle with one in front of and the other to the rear of the saddle and each having an upstanding arch comprising a yoke and two depending legs and also having two wheel bearing parts connected, respectively, to the lower ends of the leg parts of the arch, means pivotally connecting the lower leg parts of the front axle to the front ends of the walking beams and means similarly connecting the rear axle to the rear ends of the walking beams, means for normally holding the arched portion of each axle in an upright position with its yoke part approximately at the same height as the yoke of the saddle, and four ground-engaging wheel units mounted, respectively, on the four bearing parts of the two axles.

5. A dual-axle running gear for trucks of the type having an elongated frame structure and a hopper-shaped load compartment for bulk material supported on the frame intermediate the ends of the latter and having a door-controlled bottom discharge opening disposed approximately symmetrically in relation to a vertical plane through the longitudinal center-line of the truck, the said running gear comprising a high-arched saddle constructed to be secured to the under side of such a truck frame transversely thereof and having a horizontal yoke and a pair of mutually spaced dependent legs connected together to form a rigid unit; a pair of mutually parallel walking beams disposed at right angles to the yoke of the saddle and having their respective midsections pivotally connected to the lower ends of the two saddle legs; a pair of rigid high-arched axle structures disposed parallel to the yoke of the saddle with one in front of and the other to the rear of the saddle and each having an upstanding arch comprising a yoke and two depending legs and also having two wheel bearing parts connected, respectively, to the lower ends of the leg parts of the arch; means pivotally connecting the lower leg parts of the front axle structure to the front ends of the walking beams and means similarly connecting the rear axle structure to the rear ends of the walking beams; means for normally holding the arch portion of each axle in an upright position with its yoke part approximately at the same height as the yoke of the saddle; and four ground-engaging wheel units mounted, respectively, on the four bearing parts of the two axles.

3,198,580
MINING MACHINE AND CONTROL MEANS THEREFOR
William R. Eberle, Columbus, Ohio, assignor, by mesne assignments, to Jeffrey Galion Manufacturing Company, a corporation of Ohio
Filed July 19, 1960, Ser. No. 43,831
5 Claims. (Cl. 299—1)

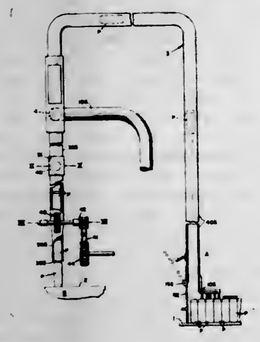


3. In a mining machine for removing selected material from a mine face, an adjustable mining head including a cutting and breaking element adapted to be advanced into the mine face for removing the selected material therefrom by a cutting and breaking action, means for adjusting said mining head, said cutting and breaking element including sensing means for sensing material of the mine face which is different from the selected material of the mine face, a control system operating said adjusting means for adjustment of said mining head, said sensing means including means responsive to the depth of penetration of the sensing means into said different material of the mine face, and said responsive means being connected to the control system to transmit a signal from the sensing means to the control system to stop operation thereof when the mining head is adjusted such that the cutting and breaking element is operated in said selected material and only skims said different material to maintain the mining head fixed in adjusted position.

3,198,581
METHOD AND APPARATUS FOR HANDLING ARTICLES

Goffredo Gamberini, Bologna, Italy, assignor to American Machine & Foundry Company, a corporation of New Jersey

Original application July 31, 1959, Ser. No. 830,924, now Patent No. 3,089,732, dated May 14, 1963. Divided and this application Feb. 28, 1962, Ser. No. 196,016
Claims priority, application Italy, Sept. 9, 1958, 13,473/58
7 Claims. (Cl. 302—2)

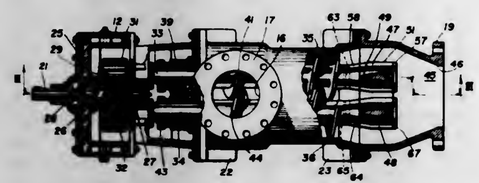


1. Installation for the pneumatic conveyance of cigarette packs or the like, in which the packs are sucked directly in a tubing of rectangular section, from a starting station to an arrival station, and in which the tubing presents in the arrival station a descending, vertical or inclined end section, which is connected at the top with an intake and is provided with a lower open outlet in which there is allowed to form a column of packs, characterized by the fact that the descending end section of the tubing in the arrival station presents below its connection with the intake at least one length of reduced cross-section, through which the packs pass with slight constriction, adhering on all four walls of the tubing, there being provided mechanical feed means, disposed upstream of the length of reduced cross-section, which push the packs forcibly through said length, preferably at a rate substantially equal to the rate of fall of the packs in the descending end section of the tubing.

3,198,582
SCREW PUMP

Albert A. Zalis, Warren, Mass., assignor to Warren Pumps, Inc., Warren, Mass., a corporation of Massachusetts

Filed Sept. 12, 1962, Ser. No. 223,106
5 Claims. (Cl. 302—14)

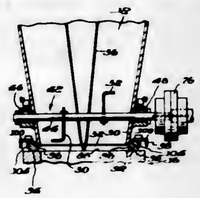


1. A screw pump for materials containing a high concentration of solid particles, comprising
(a) an elongated body,
(b) two shafts extending through the body,
(c) means connecting the shafts for rotation in the same direction,
(d) a pumping screw associated with each shaft,
(e) an inlet opening in the body adjacent the screws at one end of the body,
(f) an outlet passage in the body extending coaxially of the screws at the other end of the body,
(g) a pedestal for each shaft extending across the outlet passage, the pedestal being streamlined and without flat surfaces facing upstream in the direction of the axes of the shafts, and
(h) a bearing mounted in each pedestal and carrying one of the shafts.

3,198,583
SOLIDS FLOW SYSTEM

Loy A. Updegraff, Worthington, Ohio, assignor to Koppers Company, Inc., a corporation of Delaware

Filed Dec. 18, 1963, Ser. No. 331,591
4 Claims. (Cl. 302—17)



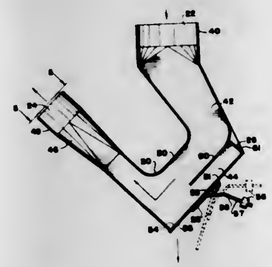
1. Apparatus for transporting particulate material as a fluidized mass through a conduit comprising
a bin for said particulate material,
a feeder device operable to periodically introduce selected quantities of said particulate material from said bin into an air stream,
a source of air under pressure,
conduit means to convey said air to said feeder device and to convey said particulate material and said air as a fluidized mass from said feeder device,
said feeder device having a solids inlet for said particulate material,
said bin positioned in overlying relation to said feeder device and having an outlet opening spaced from said feeder device solids inlet,
said bin outlet opening arranged to move vertically toward and away from said feeder device inlet opening,
and a flexible seal positioned between said bin outlet opening and said feeder device inlet opening,
said flexible seal constructed and arranged to permit air passing through said feeder device solids inlet into said bin outlet opening to pass around said seal so that said particulate material is free to flow by gravity from said bin outlet into said feeder device solids inlet opening.

3,198,584
BLENDER FITTING

Russell W. Kice and Jack W. Kice, both of 2040 S. Mead, Wichita, Kans.

Filed Oct. 31, 1962, Ser. No. 234,500
5 Claims. (Cl. 302—51)

1. A blender fitting for use in a pneumatic suction conveyor system for handling mill stock and the like material comprising, an upwardly facing annular inlet collar, a downwardly inclined hollow inlet leg portion of progressivey decreasing transverse cross sectional area integrally joined to said inlet collar, the longitudinal axis of said inlet leg portion intersecting the longitudinal axis of said inlet collar and forming an obtuse angle therewith, a downwardly inclined hollow chamber portion having a generally rectangular cross section integrally joined to said inlet leg portion, the longitudinal axis of said chamber portion intersecting the longitudinal axis of said inlet leg portion and forming an angle slightly greater than a right angle therewith, an upwardly inclined hollow outlet leg portion integrally joined to said chamber portion, the longitudinal axis of said outlet leg portion intersecting the longitudinal axis of said chamber portion and forming approximately a right angle therewith, an annular outlet collar integrally joined to said outlet leg portion, all of longitudinal axes of said inlet collar, inlet leg portion, chamber portion, outlet leg portion, said outlet collar being in the same plane, the outlet leg constructed to provide a progressively decreasing transverse cross sectional area with the cross sectional area being the least at the end adjacent the outlet collar, said chamber portion having relatively flat upper lower and opposed sides, an opening in said lower side positioned in the lower end thereof, a balanced automatic self-resetting overload release means on the lower side of said chamber portion, said overload release means comprising a flat panel covering said opening and extending at least one-half the length of said lower side, hinge means operatively attached on the uppermost end of said flat panel, a balance adjustment means for said overload release means, said balance adjustment means comprising a threaded rod affixed to said flat panel and

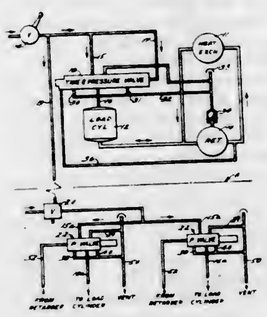


extending outwardly therefrom, and a weight means threadedly engaged on said rod, a baffle means within said chamber portion disposed parallel to and spaced from said upper and lower sides and extending at least one half the longitudinal length of said chamber portion, said baffle means joined to said opposed sides and said inlet leg portion and forming a smoothly rounded junction therewith, an adjustable air inlet means on said chamber portion comprising, a hinged rigid flap mounted on the uppermost end of said chamber portion between said baffle means and said lower side, a slotted locking plate mounted to rotate with said flap, and a thumb screw and bolt means rigidly mounted on said chamber portion positioned in said slot, said blender fitting constructed and adapted in use in a pneumatic section coveying system to add with said adjustable air inlet means a predetermined amount of air at a strategic point to thus increase the air stream velocity in the pneumatic conveyor system and propel the material on a rising or moving current of air and consequently increasing the efficiency of the conveying action, prevent clogging of the entire system by automatically allowing collected material to leave the system via an automatic self-resetting overload release means, and funneling the air and material being conveyed in said outlet leg portion to provide a choke proof action by increasing the velocity of said air and material as it proceeds along the outlet leg portion.

3,198,585
VEHICLE RETARDER SYSTEM

David E. Bullard, Washington, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Sept. 13, 1963, Ser. No. 308,763
5 Claims. (Cl. 303—7)

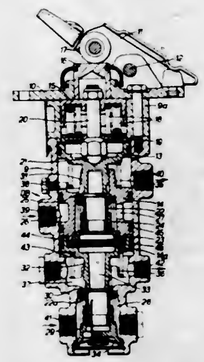


1. A retarder system including a retarder device adapted to contain fluid under pressure, a load cylinder in circuit with the retarder device, means to introduce fluid under pressure from a different circuit to the load cylinder to increase pressure in the retarder circuit, said last means including a valve, and means to communicate pressure from the retarder circuit to said valve to close the valve when pressure in the retarder circuit attains a predetermined value.

3,198,586
DUAL CONTROL VALVE FOR VEHICLE BRAKE SYSTEMS

George K. Farmery and Wilbur M. Page, Lincoln, England, assignors to Clayton Dewandre Company Limited, Lincoln, England, a British company

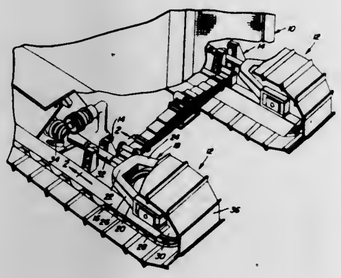
Filed June 19, 1962, Ser. No. 203,608
Claims priority, application Great Britain, June 26, 1961, 23,016/61
2 Claims. (Cl. 303—52)



1. A dual control valve for a vehicle braking system that comprises an actuator adapted to be selectively controlled by the operator and at least two independent sets of wheel brakes, comprising a housing having two separate inlets adapted to be connected to independent sources of fluid pressure, and two separate outlets adapted to be connected to the individual wheel brake sets, a primary

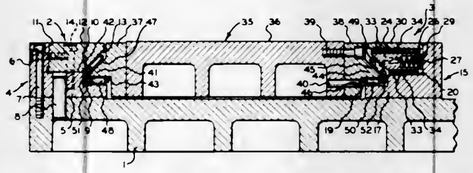
piston slidably mounted in said housing, a secondary piston assembly slidably mounted in said housing coaxially with the primary piston, means providing a first passage from one of said inlets through said secondary piston assembly to one of said outlets, a first tubular valve element slidably mounted on said secondary piston assembly and normally closing said first passage, means providing a second passage in said housing from the other of said inlets to the other of said outlets, a second tubular valve element slidably mounted in said housing and seated for normally closing said second passage, means providing an operative connection between said actuator and said primary piston whereby when the operator shifts said actuator the primary piston is displaced to engage and move said first valve element to open said first passage, means responsive to said displacement of the primary piston for displacing said secondary piston assembly to engage and move said second valve element to open said second passage, said secondary piston assembly comprising two axially separate structurally distinct components with said first passage being formed through that one of said components which carries said first valve element, and the other of said components being adapted to engage and move said second valve element, surface means in said housing, said secondary piston assembly and said first and second valve elements defining an exhaust passage extending through said secondary piston assembly and both of said tubular valve elements, means in said housing defining an exhaust port at one end of said exhaust passage for discharging fluid from said exhaust passage, said exhaust passage being normally in fluid communication with said outlets when said valve elements are in passage closed position, said primary piston cooperating with said first valve element to close communication between said first outlet and said exhaust passage when said first passage is opened to admit fluid pressure to said first outlet, and said secondary piston assembly cooperating with said second valve element to close communication between said second outlet and said exhaust passage when said second passage is opened to admit fluid pressure to said second outlet.

3,198,587
FRONT IDLER GUIDE FOR TRACTOR TREADS
Ervin R. Rish, 1815 8th St., Cayce, S.C.
Filed Dec. 31, 1963, Ser. No. 334,792
3 Claims. (Cl. 305—31)



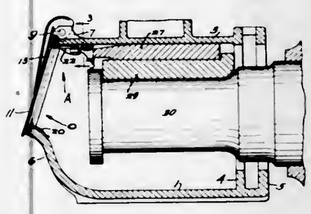
1. In combination with a tractor tread assembly of the type including an elongated track roller frame including transversely extending journal means on one end of said frame journaling an idler wheel and mounted on said frame for movement longitudinally thereof, elongated thrust bar means connected at one end to said journal means and at the other end to force means mounted on said frame and disposed between journal means and the other end of said frame applying a yieldable force on said bar means to urge the latter toward said one end of said roller frame, an idler guide comprising a pair of guide assemblies mounted on said roller frame on opposite sides of said bar means and including opposing bearing surfaces guidingly engaging said bar means from opposite sides thereof and resisting lateral deflection of said bar means, said guide assemblies each including a base portion stationarily mounted on said roller frame and a bearing member carrier slidably mounted on each base portion for movement transversely of said roller frame, said opposing bearing surfaces each being defined by a bearing member carried by the corresponding bearing member carrier, and means operatively connected between said base portions and said bearing member carriers independently yieldingly urging said carriers transversely of said roller frame relative to said base portions toward each other.

3,198,588
SLIDE ASSEMBLY
Robert W. Cashman and Anthony Wasco, Jr., Saginaw, Mich., assignors to Saginaw Machine and Tool Company, Saginaw, Mich., a corporation of Michigan
Filed Feb. 9, 1962, Ser. No. 172,266
12 Claims. (Cl. 308—6)



1. A slide assembly comprising a base member; a first guide member having a guide surface thereon; means fixedly mounting said first guide member on said base member; a second guide member having a guide surface thereon; means mounting said second guide member on said base member for movements toward and away from said first guide member; a slide member slideably interposed between said guide members and having guide surfaces thereon complemental to the guide surfaces on said guide members; yieldable means constantly acting on said second guide member and forcibly but yieldably urging the latter toward said first guide member so as slideably to clamp said slide member between said guide members; and means connected to said second guide member operable to move the latter away from said first guide member.

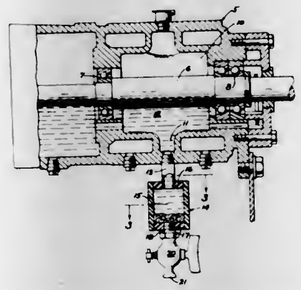
3,198,589
RAILWAY JOURNAL BOX LID SEAL
James J. Hennessy, Jr., Chambersburg, Pa., assignor to Hennessy Lubricator Company, Inc., Chambersburg, Pa., a corporation of Delaware
Filed July 18, 1962, Ser. No. 211,953
8 Claims. (Cl. 308—47)



3. In combination with a railway journal box having side, top and bottom walls, the forward edges of said walls lying in a common plane forming a rectangular

opening between them at the front of the box, the bottom wall being curved upwardly and outwardly adjacent to said opening and the top wall having bearing wedge-positioning lugs projecting downwardly adjacent the opening with opposing faces spaced apart horizontally inwardly of said opening, a lid hinge pin mounting lug projecting upwardly from the top wall, and a lid seal comprising a rectangular frame of distortable material overlying said forward edges and secured to the box solely by clips extending from said frame inwardly of the box and yieldingly engaging respectively the inner face of said upwardly and outwardly turned lower wall below the outer edge thereof and said opposing faces of the top wall lugs.

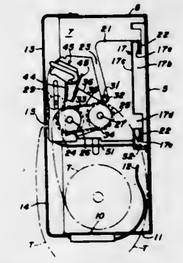
3,198,590
DETERMINATION OF THE STATE OF LUBRICATED BEARINGS FOR ROTATING SHAFTS
Harold B. De Benedetti, Concord, Calif., assignor to Tidewater Oil Company, Los Angeles, Calif., a corporation of Delaware
Filed July 24, 1963, Ser. No. 297,426
5 Claims. (Cl. 308—126)



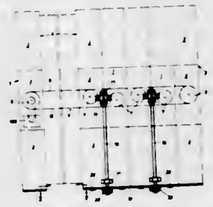
1. A bearing assembly comprising a shaft, bearings for said shaft, a bearing housing enclosing said shaft and bearings and providing a lubricant chamber having a sump, lubricating oil in said chamber, said bearings being during normal operation cooler than 500° F., and means for enabling visual observation to determine the state of the bearings and of its lubricant, said means comprising a transparent cylindrical reservoir positioned beneath said sump and a conduit connecting said reservoir to said sump and enabling circulation of said oil between said reservoir and said sump.

3,198,591
TOWEL DISPENSING CABINET AND CONTROL MECHANISM
Leon H. Kirkell, Blairsville, Pa., assignor to Blairsville Machine Products Company, Blairsville, Pa., a corporation of Pennsylvania
Filed Apr. 11, 1963, Ser. No. 272,434
7 Claims. (Cl. 312—38)

1. In a dispensing mechanism, in combination
a pair of rollers,
means for effecting simultaneous rotation of said rollers during each dispensing operation,
a lever pivoted at one end,
a pair of spaced stop surfaces on said lever remote from its pivot,
a camming member mounted on one of said rollers for concurrent rotation therewith,
spaced stop members on said camming member for selective engagement with said lever stop surfaces to selectively restrict rotation of said rollers in opposite directions,
springs means connected with said lever nomally positioning it relative to the camming member to permit only a dispensing movement of said rollers,
said camming member upon an initial rotation of its associated roller during a dispensing operation engaging and moving said lever into a position for a subsequent engagement of a camming member stop with a stop member surface of said lever for termination of simultaneous operation of said rollers.

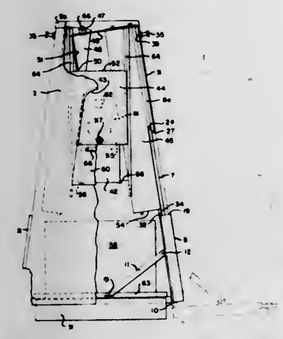


3,198,592
APPARATUS FOR EFFECTING THE SHIFTING OF SHELF OR CABINET UNITS FOR FILING SYSTEMS
Georg Alfred Zippel, Altdorf, near Nurnberg, Germany
Filed Dec. 19, 1963, Ser. No. 331,689
Claims priority, application Germany, Dec. 24, 1962, Z 9,830; June 27, 1963, Z 10,197; Oct. 31, 1963, Z 10,442
18 Claims. (Cl. 312—198)



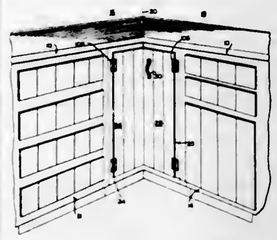
1. Filing apparatus comprising a plurality of filing units which are shiftable along tracks mounted on a floor so that a passageway can be formed between adjacent units;
an electrically driven drive device;
an endless flexible drive element arranged in the form of an elongated loop and connected to said drive device for being driven thereby, the two opposing longitudinally extending reaches of the loop being arranged in substantially the same plane, said drive element having regularly spaced drive members mounted thereon;
a pair of rotatable elements mounted on each filing unit for free rotation with respect thereto, the rotatable elements having radial projections in constant positive engagement with the drive members on the respective reaches of said drive element for being rotated thereby;
coupling means mounted on said filing units, said coupling means including displaceable means for engaging said rotatable elements and blocking rotation of each rotatable element with respect to the filing unit on which it is mounted; and
operator means for alternatively operating said coupling means for the respective rotatable elements on each filing unit so that the filing unit can be drivingly connected to one or the other of the reaches of said drive element.

3,198,593
DISPLAY RACK CLOSURE MEANS
Lawrence J. Dorie, Jeannette, Pa., assignor to Flannery and Associates, Inc., Springdale Township, Pa., a corporation of Pennsylvania
Filed Apr. 4, 1963, Ser. No. 270,596
7 Claims. (Cl. 312—222)



6. A receptacle comprising a body having a front opening and a side opening, a front closure slidably mounted in the body movable upwardly to close the front opening, a side closure slidably mounted in the body movable upwardly to open the side opening and a lever pivotally mounted inside the receptacle one end of which is disposed in the path of a portion of the front closure to be engaged by such portion of the front closure as the front closure upon upward movement approaches the position in which it closes the front opening, such engagement pivotally moving the lever to dispose the opposite end thereof in the path of upward movement of the side closure from the position in which it closes the side opening whereby to prevent opening of the side opening when the front opening is closed.

3,198,594
ROTARY STORAGE RACK
Hilton B. Murray, 66 N. Murray Place, York, Pa.
Filed July 3, 1963, Ser. No. 292,627
8 Claims. (Cl. 312—238)



1. In combination, a first and a second kitchen cabinet both resting on a common floor surface and having their tops lying in a common horizontal plane providing a counter surface, each of said cabinets having an end extending in a vertical plane at a right angle to the adjacent end of the other cabinet, said ends being respectively spaced substantially equal distances from a pair of vertical kitchen walls extending in planes perpendicular to each other at a corner of the kitchen, thereby providing a corner space bounded by said ends, by the projection of the planes of the front walls of said cabinets and by said pair of vertical kitchen walls, a rotary storage rack positioned in said corner space and mounted directly on said floor surface, said rack comprising a vertical frame having feet secured to said floor surface, a horizontal frame mounted on said vertical frame, a rotatable shelf of the lazy susan type, bearing means mounted on said horizontal frame, entirely below said shelf, supporting said shelf for rotation about a vertical axis, and door means connected to at least one of said kitchen cabinets and closing the front of said corner space, said door means including two door portions lying in planes at a right angle to each other and substantially in the same planes as the front walls of the respective first and second kitchen cabinets.

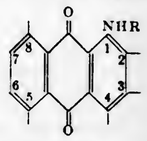
CHEMICAL

3,198,595
STEP-WISE PROCESS FOR COLORING AND FINISHING CELLULOSE MATERIALS WHEREIN A CATIONIC DYE-FIXING AGENT IS EMPLOYED WITH THE RESIN FINISHING AGENT
Jack Frankland Mawson, Ian Durham Rattee, and Irwin Seltzer, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed May 3, 1962, Ser. No. 192,063
Claims priority, application Great Britain, May 10, 1961, 17,000/61
9 Claims. (Cl. 8—18)

1. In the process of colouring cellulose materials comprising treatment with a reactive dye-stuff, thereafter applying a resin-finishing agent and thereafter baking the treated material to cure the resin, the improvement which consists in adding to the aqueous liquor containing the resin-finishing agent, an organic cationic dye-fixing agent free from anionic solubilizing groups and having at least one ammonium group.

3,198,596
PROCESS FOR DYEING POLYPROPYLENE FILAMENTS CONTAINING INORGANIC ALKALINE EARTH METAL COMPOUNDS WITH 1-AMINOANTHRAQUINONE DYES AND THE PRODUCT OBTAINED THEREBY
Duane Lionel Green, Long Branch, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 6, 1962, Ser. No. 235,843
4 Claims. (Cl. 8—39)

1. A dyed crystalline polypropylene filament consisting essentially of a dyeing adjuvant constituted by from about 0.5 to 20% by weight of a water-insoluble, inorganic alkaline earth metal compound and a disperse dye, said dye being a 1-aminoanthraquinone of the formula

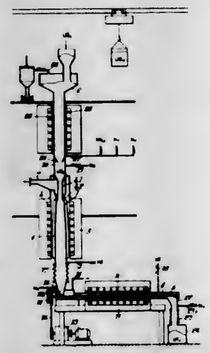


wherein R is selected from the group consisting of hydrogen, lower alkyl, hydroxy lower alkyl, phenyl and hydroxy phenyl, said anthraquinone having (1) on the 3-position a member of the group consisting of hydrogen, lower alkoxy, chlorine, and bromine; (2) on the 2-position a member of the group consisting of hydrogen, lower alkyl, lower alkoxy, chlorine, bromine, amino, carbamyl; (3) on the 4-position a member of the group consisting of hydrogen, chlorine, bromine, hydroxy, amino, lower alkyl amino, hydroxy lower alkyl amino, and phenyl amino; (4) on the 5-position a member of the group consisting of hydrogen, hydroxy, nitro, amino and lower alkyl amino, and (5) on the 8-position a member of the group consisting of hydrogen, amino and lower alkyl amino.

3,198,597
PROCESS FOR BLEACHING COTTON WITH AQUEOUS ALKALINE BLEACHING BATHS AND THE PRODUCTS OBTAINED THEREBY
Heinz Grunert, Dusseldorf-Wersten, Germany, assignor to Bohme Fettchemie G.m.b.H., Dusseldorf, Germany, a corporation of Germany
No Drawing. Filed June 25, 1962, Ser. No. 205,106
Claims priority, application Germany, July 21, 1961, B 63,363
12 Claims. (Cl. 8—111)

1. A process for the preparation of highly absorptive surgical cotton having a silk-like scroop which comprises treating the raw cotton material in a preliminary wetting step with an aqueous alkaline bath containing a non-ionic, polyoxyalkylene oxide condensation wetting agent at a temperature of 40 to 80° C., adding a bleaching agent and a scrooping agent to the said bath, heating the resulting bath and raw cotton stepwise up to about 120° C., cooling the bath to below 100° C., rinsing the cotton with first warm water and then cold water, and drying the cotton to obtain the said highly absorptive surgical cotton.

3,198,598
METHODS AND APPARATUS IN WHICH A MASS OF SOLID MATERIAL IS SUBJECTED TO TWO SUCCESSIVE TREATMENTS BY GASES
Maurice Delange, Ballancourt, Henri Huet, Saint-Vrain, and Paul Vertes, Mennecy, France, assignors to Commissariat à l'Energie Atomique, Paris, France, a French state administration
Filed Oct. 31, 1958, Ser. No. 771,029
Claims priority, application France, Nov. 5, 1957, 750,882
2 Claims. (Cl. 23—14.5)

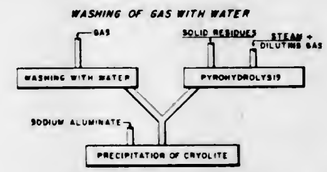


1. The method of preparing uranium fluoride from uranium oxides UO_3 and U_3O_8 which comprises, continuously feeding pellets of said uranium oxide into a vertical reaction zone having a base of reduced diameter, heating said zone at a temperature of about 600 to 700° C., passing a stream of reducing gas upwardly through said reduction zone in countercurrent to the downward movement of said pellets, providing a vertical fluorination zone below said reduction zone, continuously passing the uranium dioxide pellets obtained in said reduction zone through said fluorination zone, adjusting the temperature of said fluorination zone to about 400 to 500° C., passing hydrofluoric acid vapor upwardly through said fluorination zone in countercurrent to the movement of said pellets, recovering uranium fluoride pellets from the bottom of said fluorination zone, providing a blanket of nitrogen between said reduction zone and said fluorination zone, maintaining said blanket at a pressure higher than the pressure of the gases in said reduction zone and in said fluorination zone so as to prevent entry of the reduction gas into the fluorination zone and entry of the fluorination gases into the reduction zone, continuously supplying nitrogen under said higher pressure to said base of the reduction zone to maintain said blanket, withdrawing part of said nitrogen together with the upward flowing reduction gas, passing another part of said nitrogen downwardly, and withdrawing the same together with the gas leaving the fluorination zone, said reduction zone, nitrogen blanket and fluorination zone forming an uninterrupted coherent zone.

3,198,599
RECOVERY OF URANIUM AND/OR VANADIUM VALUES FROM ORES CONTAINING THE SAME
Clifford J. Lewis and William S. Dunn, Lakewood, Colo., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 15, 1961, Ser. No. 138,297
8 Claims. (Cl. 23—14.5)

1. A process for recovering uranium and vanadium values from an ore containing the same which comprises contacting the ore with a solubilizing and extracting solution comprising a nitrogen oxide selected from the group consisting of nitrogen dioxide and liquid nitrogen tetroxide, a water-insoluble organo-phosphate and a water-insoluble inert organic solvent, the amount of nitrogen oxide in the solution being at least stoichiometrically equivalent to the uranium and vanadium values present in the ore, in the presence of water in amount of about 1 to 6% by weight of the solubilizing and extracting solution at temperature of about 0° to 20° C., and recovering said uranium and vanadium values from the solubilizing and extracting solution.

3,198,600
PROCESS FOR RECOVERING FLUORINE
Paul Mollard, Sainte-Foy-les-Lyon, and Gilbert Turpin, Paris, France, assignors to Societe d'Electro-Chimie d'Electro-Metallurgie et des Acieries Electriques d'Ugine, Paris, France, a corporation of France
Filed July 28, 1961, Ser. No. 127,635
Claims priority, application France, Aug. 10, 1960, 835,447
7 Claims. (Cl. 23—88)



1. A process for recovery of fluorine in the form of cryolite comprising washing gases containing fluorine to form a solution, at substantially atmospheric pressures heating to a temperature of about 600° C.–1100° C. solid residues which contain fluorine and which result from electrolytic production of aluminum, then flowing through said residues a mixture of steam and a diluting gas devoid

of effect on liberated hydrofluoric acid to obtain hydrofluoric acid, adding said hydrofluoric acid to said solution and precipitating cryolite from said soluton by addng an aluminum salt thereto, said gases containing fluorine being those which issue from cells used in the electrolytic production of aluminum.

3,198,601
PROCESS FOR PRODUCING POTASSIUM SULFATE STARTING FROM KAINITE

Giacinto Veronica and Michele Maggiore, Novara, Italy, assignors to Montecatini, Società Generale per l'Industria Mineraria e Chimica, Milan, Italy, an Italian corporation

No Drawing. Filed Sept. 13, 1961, Ser. No. 137,752
Claims priority, application Italy, Sept. 15, 1960, 15,970/60
3 Claims. (Cl. 23—121)

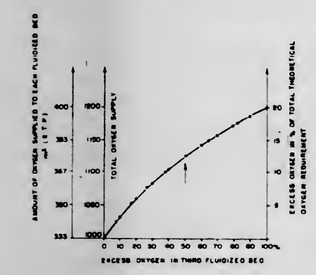
1. A process for producing potassium sulfate from kainite which comprises the steps of:

(a) converting kainite into schoenite with sulfate mother liquor recycled from step h at a temperature between 35° C. and 40° C. to produce an equilibrium solution and schoenite,
(b) separating said equilibrium solution and schoenite,
(c) suspending a portion of said schoenite in said equilibrium solution to produce a suspension,
(d) adding calcium sulfate and syngenite seed crystals at a temperature between about 35° and 40° C. to form a syngenite precipitate,
(e) separating off saidsyngenite precipitate,
(f) dissolving said syngenite with the quantity of water, necessary to convert the remainder of said schoenite to potassium sulfate to produce a potassium sulfate solution containing solid calcium sulfate,
(g) separating the calcium sulfate from the potassium sulfate solution,
(h) leaching the remainder of said schoenite from step b with the separated potassium sulfate solution at 48° C., to obtain potassium sulfate and a sulfate mother liquor, and recycling the sulfate mother liquor to said step (a).

3,198,602
PRODUCTION OF GASES CONTAINING SULFUR DIOXIDE

Georg Wittmann, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Aug. 3, 1962, Ser. No. 214,762
Claims priority, application Germany, Sept. 10, 1958, B 50,280
3 Claims. (Cl. 23—179)



1. In a fluidized bed process for roasting sulfidic iron ore containing lead and at least one of the elements arsenic and antimony with a gas containing free oxygen to produce sulfur dioxide by carrying out the roasting in three successive separate fluidized bed roasting stages, the gas containing free oxygen being supplied as fresh gas to said stages separately to each stage and the roaster gas formed in said stages being withdrawn separately from each stage and the solid particles in each stage being prevented from entering a preceding stage, the improvement for producing completely roasted solid residue substantially free of said lead, arsenic and antimony which comprises: supplying to each of said stages approximately one third of the total amount of said gas containing free oxygen being supplied for the roasting, the amount of free oxygen supplied to the third fluidized bed being in an excess of 10% up to 50% of the amount theoretically required for complete roasting, maintaining a sulfide sulfur content of 38 to 26% by weight in the first stage and a sulfide sulfur content of 19 to 10% by weight in the second stage and maintaining a temperature of about 550° to 800° C. in the first stage, a temperature of at least 800° up to 1,000° C. in the second stage and a temperature of about 550° to 800° C. in the third stage.

3,198,603
METHOD FOR PRODUCING FERRIC OXIDE PARTICLES

Robert B. MacCallum, Fairfield, Conn., and Forrest R. Hurley, Ellicott City, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

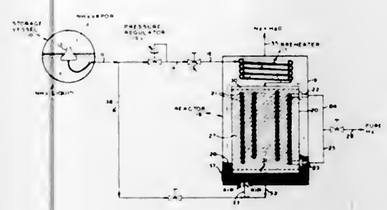
Filed June 19, 1962, Ser. No. 203,629
2 Claims. (Cl. 23—200)

1. A method for producing ferric oxide particles comprising preparing an aqueous solution containing ferric chloride in a quantity less than about 15 wt. percent, expressed as ferric oxide, and ammonium acetate in a quantity such that the ammonium acetate to Fe mole ratio does not exceed about 3 to 1; refluxing the solution for from 2 to 24 hours to induce good particle formation; and separating and drying the particles.

3,198,604
HYDROGEN GENERATING SYSTEM

William C. Pfefferle, Middletown, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed May 28, 1962, Ser. No. 198,275
19 Claims. (Cl. 23—212)

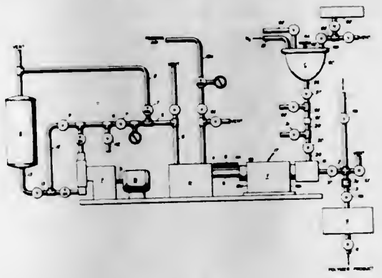


1. A process for the production of hydrogen which comprises contacting gaseous ammonia with a cracking catalyst at an elevated temperature to produce a gaseous mixture containing hydrogen and nitrogen, contacting said gaseous mixture with one side of a noble metal diffusion membrane permeable to hydrogen to separate a diffused gas stream consisting of pure hydrogen from an undiffused gas stream containing residual undiffused hydrogen, admixing said undiffused gas stream with oxygen containing gas to effect the combustion thereof and employing the resultant heat of combustion to maintain the temperature of said cracking catalyst at said elevated temperature.

3,198,605
SYSTEM FOR HANDLING VISCOUS SOLID CATALYST COMPOSITIONS

Charles B. Bayles, Severna Park, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Dec. 4, 1962, Ser. No. 242,316
2 Claims. (Cl. 23—252)



1. A device for preparing and continuously feeding accurately controlled amounts of viscous composition containing solid particulate catalyst to an olefin polymerization reactor operating at super atmospheric pressure comprising a sealed catalyst mixing chamber discharging to a hydraulically controlled metering cylinder, said metering cylinder discharging to said polymerization reactor;

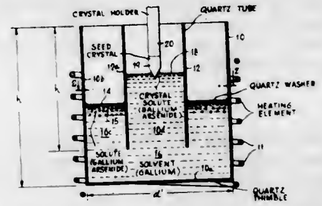
(1) Said mixing chamber having
  (a) an inlet conduit for feeding solid, particulate polymerization catalyst thereto;
  (b) separate inlet conduit for feeding solid catalyst carrier thereto;
  (c) a third conduit for introducing therein inert gas under pressure; and
  (d) an outlet conduit communicating with the charging inlet to said metering cylinder;
(2) Said metering cylinder having
  (a) at one end a discharge outlet adapted to discharge to said reactor and a separate charging inlet to receive catalyst from said catalyst mixing chamber;
  (b) a close fitting piston reciprocally movable in said cylinder;
  (c) a valve for completely closing said discharge outlet when said chamber inlet is open; and
  (d) a valve for completely closing said charge inlet when said discharge outlet is open;
(3) A second cylinder hydraulically actuating -said metering cylinder and having
  (a) a conduit so shaped as to permit alternate feed and discharge of a hydraulic fluid from said second cylinder; and
  (b) a close fitting piston reciprocally movable in said second cylinder;
(4) A piston rod fixedly attached between said pistons; and
(5) A feed conduit communicating with the discharge outlet from said metering cylinder adapted to discharge catalyst from said metering cylinder into said polymerization reactor.

3,198,606
APPARATUS FOR GROWING CRYSTALS

Vincent J. Lyons, Mount Kisco, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 23, 1961, Ser. No. 84,066
1 Claim. (Cl. 23—273)

Apparatus for growing a crystal from a solution containing crystal forming material dissolved in a solvent, comprising an outer container and an inner tubular container disposed in an upright position within said outer container, said inner tubular container being opened at both ends thereof with the lower of its ends being disposed within said outer container and spaced from the bottom of said outer container, a washer joining together said outer container and said inner tubular container and positioned higher than the lower end of said inner tubular container, said washer and the portions of said outer container and inner tubular container that extend below said washer together forming an outer chamber, said washer and said portion of said inner tubular container extending below said washer together forming a liquid impermeable barrier, so that said outer chamber communicates with the inner tubular container only at the bottom of the chamber, whereby the chamber and the inner tubular container may

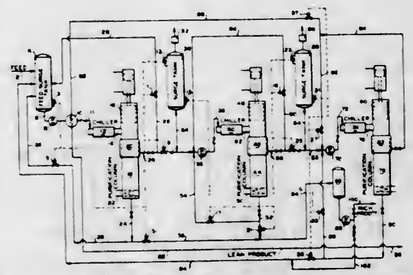


contain a solvent which flows freely therebetween but a solid crystal forming material included within the solvent in said chamber and of a specific gravity less than the specific gravity of said solvent is contained within said chamber against said washer, a crystal holder for positioning a seed crystal in contact with the upper surface of said solvent in said inner tubular container, and a heating coil positioned outside of the outer container for heating the solvent in the outer container and inner tubular container, whereby the solvent in the chamber is maintained at a higher temperature than the solvent in the inner tubular container so that the solvent in the chamber is saturated with dissolved crystal forming material and the solvent in the inner tubular container is supersaturated with dissolved crystal forming material.

3,198,607
FRACTIONAL CRYSTALLIZATION APPARATUS INCLUDING RECYCLE CONTROL

Richard M. Green, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

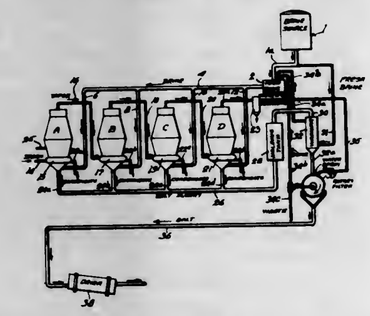
Original application Apr. 2, 1957, Ser. No. 650,256, now Patent No. 3,082,211, dated Mar. 19, 1963. Divided and this application Oct. 8, 1962, Ser. No. 228,890
5 Claims. (Cl. 23—273)



1. A crystallization and purification system for the recovery of a crystallizable material from a liquid multicomponent mixture which comprises in combination stages of alternating crystallizers and purifiers arranged in series, each stage of the series comprising a crystallizer followed by a purifier, within each stage the outlet of each crystallizer communicating with the inlet of each purifier and

each purifier containing means for separating crystals from mother liquor, means for introducing a liquid multicomponent mixture to said crystallization and purification system, means for removing a concentrate of the crystallizable material from said purifiers as a first yield stream, means for removing material containing low concentrations of the crystallizable material from said purifiers as a second yield stream, surge tanks following said purifiers adapted to receive said material containing low concentrations of the crystallizable material from said purifiers, means for introducing the contents of each surge tank to the downstream crystallizer following said surge tank, means for recycling said first and second yield streams from each purifier to the crystallizer preceding said purifier, and means for automatically switching the various crystallizer and purifier stages to total recycle of said first and second yield streams from each purifier to the crystallizer preceding said purifier so as to maintain the level in the surge tanks between a predetermined minimum and maximum.

3,198,608
PROCESS FOR PREPARING CULINARY SALT
Frank George Miller, Lake Bluff, and Elaine Ann Dittmar, Chicago, Ill., assignors to Morton Salt Company, Chicago, Ill., a corporation of Delaware
Filed June 24, 1959, Ser. No. 822,589
10 Claims. (Cl. 23—300)



1. A process for producing a culinary salt having reduced pro-oxidant properties which comprises, treating a sodium chloride brine containing a heavy metal pro-oxidant selected from the group consisting of copper and iron, said copper being present in an amount of from about 0.1 to 2 parts per million (salt basis) and said iron being present in an amount of from about 0.2 to 4 parts per million (salt basis), with an EDTA compound selected from the group consisting of ethylenediaminetetracetic acid and water soluble alkali and alkaline earth metal salts thereof crystallizing salt from said brine, by concentration and evaporation at a pH ranging from neutral through alkaline conditions to produce crystalline salt in supernate brine, recovering said salt from the supernate concentrated brine and removing traces of said ethylenediaminetetracetic acid compounds from said recovered salt.

3,198,609
BRAZED STRUCTURE AND METHOD OF BRAZING
Arthur T. Cape, Monterey, Calif., assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware
Filed Jan. 22, 1964, Ser. No. 339,557
4 Claims. (Cl. 29—196)

1. In the brazing of parts of stainless steel and super alloys, the step of brazing the parts by interposing between the parts to be brazed a brazing alloy consisting of from about 35% to about 70% copper, about 3% to about 20% nickel, and the remainder essentially all manganese, the ratio of manganese to nickel being not less than 2.25:1, and heating the parts and brazing alloy to a brazing temperature within the range of from about 1650° F. to about 1850° F., whereby the parts are brazed to each other, and the nickel is effective to prevent crevice corrosion.



4. A brazed structure comprising metal parts selected from the group consisting of stainless steels and super alloys, and in which it is desired to prevent crevice corrosion resulting from the brazing of such parts, and a brazing alloy fused to and joining said parts, said brazing alloy consisting of from about 35% to about 70% copper, about 3% to about 20% nickel, and the remainder essentially all manganese, the ratio of manganese to nickel being not less than 2.25:1.

3,198,610
THERMALLY STABILIZED METAL ARTICLE AND PROCESS OF MAKING IT
Marshall G. Whitfield, 1 Paul St., P.O. Box 293, Bethel, Conn.
No Drawing. Filed Oct. 11, 1961, Ser. No. 144,290
8 Claims. (Cl. 29—197)

6. A metal article for high temperature service, comprising a base structure made of metal chosen from a group consisting of molybdenum, tungsten, niobium and alloys thereof, and alloys containing a preponderant amount of the foregoing and a metal chosen from a group consisting of iron, nickel and cobalt, said structure bearing on its surfaces a thin adherent layer of a ferrous alloy consisting essentially of about 28% to about 50% of nickel, the balance being substantially all iron, said article further having an adherent coating of aluminum covering the said thin layer of nickel-iron alloy.

3,198,611
TETRAALKYL LEAD ANTIKNOCK BLENDS
Edmund L. Niedzielski, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 15, 1962, Ser. No. 180,018
7 Claims. (Cl. 44—69)

3. A motor fuel composition comprising a mixture of hydrocarbons in the gasoline boiling range of which at least 15% by volume are aromatic hydrocarbons and which mixture of hydrocarbons has an octane rating of at least 80, an antiknock quantity of a tetraalkyl lead antiknock agent and from 0.2 to 1.0 theory of chlorine as a trichloromethyl substituted organic ester having the formula

$$Cl_3C—C(R)_2—O—Ac$$

where R is a C_1–C_2 alkyl and Ac is a C_1–C_3 acyl radical.

3,198,612
ESTERS OF PRIMARY ACETYLENIC ALCOHOLS AS TETRAALKYL LEAD APPRECIATORS
Chien-Wei Liao, Beachwood, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 20, 1962, Ser. No. 225,157
2 Claims. (Cl. 44—69)

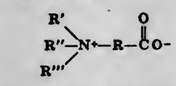
1. A high octane gasoline containing 1 to 6 mls. of tetraalkyl lead per gallon, an aromatic and olefin content totaling at least 30% by volume, and to which has been added a lead appreciator with the formula

$$R—C\equiv C—CH_2—O—\underset{\underset{O}{\|}}{C}—R'$$

wherein R is selected from the group consisting of hydrogen and alkyl having 1 to 3 carbon atoms and R' is an alkyl group having from 1 to 3 carbon atoms in an amount within the range of 0.1 to 3% by volume.

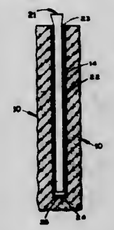
3,198,613
FUEL OIL COMPOSITION
John H. Udelhofen, Glenwood, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Aug. 20, 1962, Ser. No. 218,116
11 Claims. (Cl. 44—71)

1. A heating oil composition comprising a major amount of distillate heating oil and between 0.0001 and 0.1 weight percent of a betaine selected from the class consisting of a betaine containing at least 20 carbon atoms and having the structural formula:



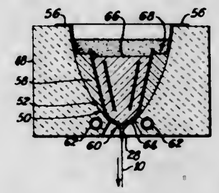
and a bis compound thereof, wherein R is an alkylidene group containing from 1 to 4 carbon atoms, R' is selected from the class consisting of an amino alkyl group, an alkali metal carboxylate group and an alkaline earth metal carboxylate group, R'' is an alkyl group having from 10 to 22 carbon atoms, and R''' is selected from the class consisting of R' and R''.

3,198,614
PILING CONSTRUCTION
Robert P. Powell, P.O. Box 281, Fort Lauderdale, Fla.
Filed Feb. 26, 1962, Ser. No. 175,684
2 Claims. (Cl. 61—49)



1. The method of providing a mechanical joint and water seal between adjacent concrete slab piles which have been driven into water-covered ground and which define between adjacent vertical edges thereof an open top vertical channel which extends from above the high water line to below the high water line, which comprises:
positioning a weight in the bottom of a closed-bottom open-top limp tube of water impervious film plastic and of a transverse cross-section large enough, when distended, to bridge the channel from one pile edge to the other;
feeding the lower end of the tube downwardly into said channel from the top thereof until the lower end of the tube lies below the high water line while maintaining the top of the tube above the high water line; and pouring grout into the open top of the tube until the tube is filled and distended with grout in contact against opposed edges of the channel and the channel is thereby bridged.

3,198,615
METHOD AND APPARATUS FOR MELTING HEAT-SOFTENABLE MATERIALS
Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Aug. 11, 1961, Ser. No. 130,935
8 Claims. (Cl. 65—2)



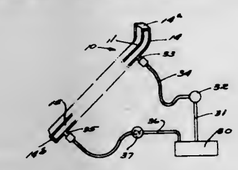
6. In a method of processing heat-softenable material with a heated melter made of oxidizable metal and having walls for retaining molten material, and a feed orifice,
the steps of
coating all exposed surfaces of said walls and said feed orifice of the melter with an oxygen-excluding film of the material,
and melting additional material within the melter as material is fed from said orifice while maintaining the melter in said coated condition to prevent contact between the melter and the surrounding air, thereby preventing oxidation of the melter.

7. In apparatus for processing heat-softenable material,
an electrically heated melter having a feed orifice in the lower portion thereof,
a refractory support cradling said melter in spaced relation, and having an opening through which said feed orifice is exposed,
said support extending above said melter,
means for feeding heat-softenable material into said melter and into the space between said melter and said support to be melted by said melter,
and cooling means in said refractory adjacent said feed orifice whereby material melted in the space between said melter and said support and flowed over the exterior of said orifice is stabilized in oxygen-excluding relation to all exposed exterior surfaces of said melter to prevent oxidation of the melter during operation thereof.

3,198,616
APPARATUS FOR CONVEYING MOLTEN GLASS CHARGES
Robert W. Havens, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Dec. 9, 1960, Ser. No. 74,971
5 Claims. (Cl. 65—169)

1. Apparatus for receiving and delivering a gob of molten glass comprising a chute structure defining a glass gob guiding surface constructed of a porous metal having a preselected porosity and mounted such that its said gob guiding surface is at an incline, a chamber enclosing the back surface of said structure opposite said guiding surface and along the length of the latter, the pores of said chute structure communicating between said guide

surface and said chamber, a source of vaporizable liquid under pressure, an inlet connection to said chamber, a conduit connection between said inlet and said pressure source, an outlet to said chamber spaced from said inlet, and a regulable throttle valve means connected with said outlet for maintaining the vaporizable fluid under a predetermined pressure in said chamber sufficient to force



liquid to bleed uniformly through the pores of said chute structure and maintain its glass gob guiding surface uniformly wet with vaporizable liquid, whereby the heat of a molten glass gob deposited on said wetted surface locally vaporizes said vaporizable liquid and provides a vapor layer thereof on which the gob is conveyed along the chute structure.

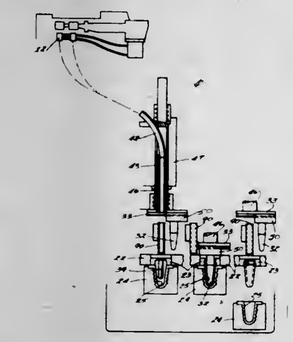
3,198,617

MECHANISM FOR PRESSING CHARGES OF MOLTEN GLASS IN A FORMING MOLD

Robert R. Denman, Toledo, Ohio, and Eustace H. Mumford, Ottawa Lake, Mich., assignors to Owens-Illinois Glass Company, a corporation of Ohio

Continuation of application Ser. No. 845,238, Oct. 8, 1959. This application Oct. 4, 1960, Ser. No. 60,416

4 Claims. (Cl. 65—207)



1. A mechanism for delivering to and shaping successive charges of molten glass in a shaping mold, comprising in combination a base, an upper support member mounted on said base, said upper support member having a vertical opening therethrough, a vertically disposed stationary gob guide section mounted in said opening, a glass shaping mold mounted on said base beneath and in vertical alignment with said stationary gob guide section, a vertically disposed movable intermediate gob guide section, means connected to said upper support member for supporting said intermediate gob guide section between said stationary gob guide section and said shaping mold, a vertically disposed glass shaping plunger, means connected to said upper support member for supporting said plunger between said stationary section and said mold, the vertical axis of said plunger being parallel to said intermediate section, means extending out of said upper support member and connected to said first mentioned means for laterally shifting said intermediate section into and out of alignment with said stationary section, motor means mounted in said upper support member and connected to said second mentioned means for laterally shifting said plunger into and out of vertical alignment with said mold, means mounted in said upper support member and inter-connecting the inner ends of said shifting means for effecting concurrent lateral movement of said plunger and said intermediate section, means for elevating and retracting said mold into and out of position to receive the charges of molten glass, a source of fluid under pressure, hydraulically actuated means mounted in said upper support member and connected to said plunger supporting means, means responsive to movement of said plunger into vertical alignment with the mold for connecting said source of fluid under pressure to said hydraulically actuated means for forcing the plunger downward into the mold, and pressure regulating means interposed said source of fluid under pressure and said hydraulically actuated means for controlling the pressing force of said plunger.

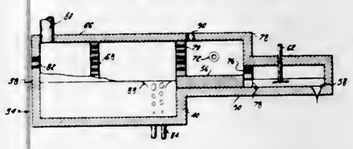
3,198,618

THROATLESS GLASS FURNACE

Harvey L. Penberthy, 2317 47th St. SW., Seattle, Wash.

Filed Mar. 9, 1955, Ser. No. 493,210

5 Claims. (Cl. 65—346)



1. A throatless glass furnace comprising in combination a tank forming melting, fining and conditioning zones which are in communiaction with one another at the surface of a glass mass in said tank, said fining zone having a greater depth than the contiguous shallow conditioning zone, said change in depth being effected by a submerged wall, and means substantially at the floor of said fining zone adjacent said submerged wall for creating a stream of molten glass rising from the bottom of said fining zone along said submerged wall to the surface of the glass mass where it mushrooms out to create an unimpeded flow of surface glass towards said melting zone, said rising stream of molten glass and said flow of surface glass serving to prevent unmolten batch from entering said conditioning zone.

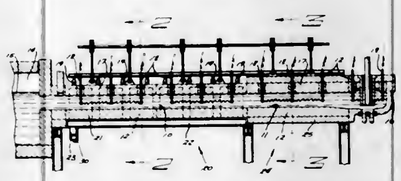
3,198,619

TUBULAR FOREHEARTH FOR GLASS FURNACE

Robert E. Nuzum, Sylvania, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed Dec. 16, 1960, Ser. No. 76,388

3 Claims. (Cl. 65—346)



1. In a glass furnace including a refiner wherein a body of molten glass is continuously undergoing refining, the improvement therein of a forehearth comprising an elongated tubular structure defining a substantially horizontal cylindrical channel, said channel being connected at one end to the glass in the refiner at an outlet submerged in the body of molten glass therein, a glass feeder device connected to the other end of said channel, and a plurality of electrodes mounted on said tubular structure and extending into the glass contained in said channel, the electrodes operable upon being electrically energized for supplying heat to the glass in the channel by Joule effect heating of current passed through said glass disposed therebetween.

3,198,620

SYNTHETIC TOPSOIL COMPOSITION CONTAINING CHELATE-PRODUCING MATERIAL

John D. Larson, P.O. Box 162, Hinsdale, Ill.

No Drawing. Filed May 16, 1962, Ser. No. 195,311

4 Claims. (Cl. 71—1)

1. A composition of a synthetic topsoil comprising an inorganic material consisting of granite, limestone, clay and gypsum with approximately two and one-half times its weight of organic material consisting of peat, horse manure and sewage sludge and a catalyzer consisting of potato yeast culture and hippuric acid, and a chelate-producing material added to said synthetic topsoil consisting of a mixture of 1 to 3 pounds of powdered milk, 1 to 3 pounds of powdered baker's yeast, and 25 to 75 pounds of a compound selected from the group consisting of soybean flour and corn flour, added to 2000 pounds of the ingredients of the synthetic topsoil.

3,198,621

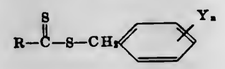
DESTROYING VEGETATION WITH 4-NITROSO 1-PIPERAZINETHIOCARBOXYLATES

John J. D'Amico, Charleston, W. Va., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Original application May 25, 1961, Ser. No. 112,510. Divided and this application June 1, 1964, Ser. No. 382,979

6 Claims. (Cl. 71—2.5)

1. The method of destroying undesired vegetation which comprises applying thereto a phytotoxic concentration of a compound of the structure



where R represents the 4-nitroso-1-piperazine group, Y is halogen and *n* is an integer at least two but less than five.

3,198,622

CHEMICAL-PHYSICAL TREATMENT OF ORES, AND/OR ORE RESIDUES

Eugene Herzog and Laszlo Backer, Nancy, France, assignors to Societe des Acieries de Pompey, Pompey (Meurthe & Moselle), France, a corporation of France

Filed Mar. 5, 1962, Ser. No. 177,278

Claims priority, application France, Mar. 15, 1961, 855,748; July 1, 1961, 863,682, 863,683; July 12, 1961, 867,854; Aug. 19, 1961, 871,162; Aug. 21, 1961, 871,172; Jan. 22, 1962, 885,492

9 Claims. (Cl. 75—1)

1. A process for the treatment of iron oxide ore containing ferrous compounds in association with ferric compounds, said ferrous compounds promoting magnetic transformation of said iron oxide ore for concentrating the iron content thereof and separating it from additional components contained in said ore, which comprises the steps

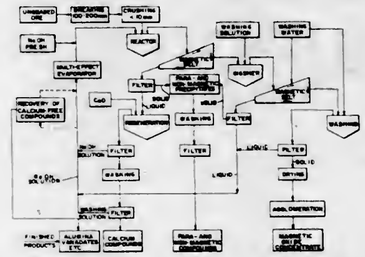
(a) of crushing the ore to a particle size of about 10 mm.;

(b) subjecting the crushed ore to the action of boiling caustic soda solution containing from 300 grams to 500 grams Na_2O per liter; for a time ranging from 10 minutes to 3 hours;

(c) separating in the boiled solution the magnetic iron oxide obtained by the action of said caustic from the non-magnetic components by means of a magnetic field;

(d) rinsing the magnetic iron oxide portion and agglomerating it by cold compression;

(e) separating the solids in the remaining solution of non-magnetic components by decanting and filtering,



washing and removing them, while recovering the dissolved compounds by precipitation with lime;

(f) and recovering the alkaline solution for re-use in the process.

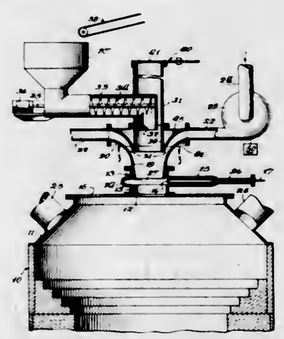
3,198,623

GAS SEALING AND CONTINUOUS CHARGING METHOD FOR BLAST FURNACE

Douglas N. Evans, Ogden Dunes, and Charles D. Elder, Gary, Ind., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed Sept. 1, 1961, Ser. No. 135,653

4 Claims. (Cl. 75—41)



1. In a method for use in conjunction with a furnace maintained at an internal pressure above atmospheric pressure and having an unobstructed upper opening through which charging material is continuously introduced into the furnace, said method preventing the escape of a first gas from within said furnace outwardly through said opening, the steps of:

continuously maintaining said opening in an open condition during the entire normal operation of the furnace;

continuously directing a stream of a second gas directly at said opening;

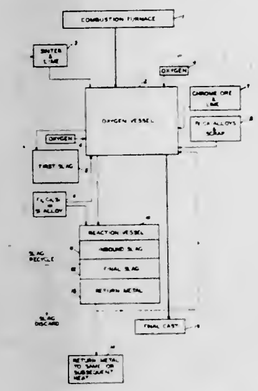
and controlling the velocity of said second gas so that the velocity pressure of the second gas at said opening is at least equal to the static pressure of said

first gas within said furnace, to provide a gas seal at said opening in the form of a first gas-second gas interface.

3,198,624
PROCESS FOR THE MANUFACTURE OF STAINLESS STEEL

Thaddeus F. Bell, Cleveland Heights, and David G. Bowser, Brecksville, Ohio, assignors to Interlake Steel Corporation, a corporation of New York

Filed Aug. 24, 1961, Ser. No. 134,033
9 Claims. (Cl. 75—46)



1. The process of making stainless steel, comprising preparing molten chromium bearing iron having approximately 5% to 25% chromium and approximately 3% to 5% carbon from a chromium bearing coke with about 20% by weight of chromium bearing material based on a chromite ore containing about 50% of Cr_2O_3, and in a combustion type furnace, providing the molten iron with approximately 0.5% to 5% silicon to maintain the temperature sufficiently high and at least at 3100° F. to restrict oxidation of the chromium before oxidation of the carbon, introducing the molten iron into an open refining vessel, maintaining said temperature, and subjecting the molten iron to a stream of oxygen sufficient to produce stainless steel having approximately 12% to 18% chromium and up to 0.12% carbon therein.

3,198,625
PURIFICATION OF ALUMINUM

Philip T. Stroup, New Kensington, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 8, 1961, Ser. No. 87,764
3 Claims. (Cl. 75—68)

1. A method of selectively separating small amounts of certain metallic impurities from aluminum, the impurities consisting of at least one of the group of metals composed of titanium, chromium, vanadium and zirconium, the total amount of said impurities not exceeding 0.05%, said method comprising melting and heating the impure aluminum to 1230 to 1500° F., adding boron thereto in the proportion of at least two atoms of boron for each atom of metallic impurity, stirring the melt with the boron addition therein, halting the stirring and maintaining the melt in a quiescent condition for a period of at least 15 minutes whereby solid particles of a reaction product between boron and the metallic impurity are allowed to settle, and thereafter separating the liquid metal from the solid particles containing boron, said liquid metal containing not more than 0.01% of boron.

3,198,626
URANIUM-CHROMIUM-ALUMINUM TERNARY ALLOY

Gilbert S. Layne and James O. Huml, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 13, 1963, Ser. No. 287,499
2 Claims. (Cl. 75—122.5)

1. A ternary metal alloy comprising on a weight basis about 26.2 weight percent uranium, about 11.4 weight percent chromium and about 62.4 weight percent aluminum.

3,198,627
URANIUM-TUNGSTEN-ALUMINUM TERNARY ALLOY

Gilbert S. Layne and James O. Huml, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 13, 1963, Ser. No. 287,500
2 Claims. (Cl. 75—122.5)

1. A ternary metal alloy comprising on a weight basis about 20.3 weight percent uranium, about 31.4 weight percent tungsten and about 48.3 weight percent aluminum.

3,198,628
URANIUM-TANTALUM-ALUMINUM ALLOY

Gilbert S. Layne and James O. Huml, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 13, 1963, Ser. No. 287,501
2 Claims. (Cl. 75—122.5)

1. A ternary metal alloy comprising on a weight basis about 20.4 weight percent uranium, about 31 weight percent tantalum and about 48.6 weight percent aluminum.

3,198,629
URANIUM-VANADIUM-ALUMINUM TERNARY ALLOY

Gilbert S. Layne and James O. Huml, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

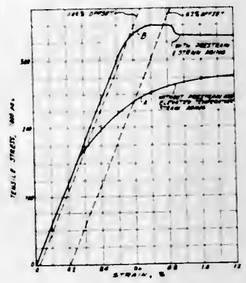
No Drawing. Filed June 13, 1963, Ser. No. 287,502
2 Claims. (Cl. 75—122.5)

1. A ternary metal alloy comprising on a weight basis about 26.3 weight percent uranium, about 11.2 weight percent vanadium and about 62.5 weight percent aluminum.

3,198,630
SUPER STRENGTH STEEL ALLOY COMPOSITION AND PRODUCT AND PROCESS OF PREPARING IT

James P. Tarwater, Parma, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed Sept. 21, 1961, Ser. No. 140,072
12 Claims. (Cl. 75—124)



1. A super strength steel alloy composition, consisting essentially of the following:

About 0.35–0.60% carbon
About 3–7% nickel
About 0.2–0.5% chromium
About 0–2% manganese
About 0–2% silicon
About 0–0.5% molybdenum
About 0.02% vanadium
About 0–5% cobalt

not over about 0.01% each of sulfur and phosphorus, and the remainder being iron with incidental impurities; the metal being characterized by high as-tempered strength accompanied by good ductility.

3,198,631
MEDIUM DUTY, WEAR RESISTANT MACHINE ELEMENT

Douglas E. Jones, 1716 7th St. Menominee, Mich.

No Drawing. Filed May 1, 1961, Ser. No. 106,459
2 Claims. (Cl. 75—128)

1. A wear resistant valve member for an internal combustion engine formed of an alloy having the following composition:

Chromium	15.25–16.00
Nickel	13.50–14.25
Silicon	2.50–2.75
Molybdenum	0.75–1.00
Manganese	0.60–0.70
Carbon	1.90–2.00
Iron	Balance

3,198,632
ELECTROPHOTOGRAPHY

Donal G. Kimble, Maplewood, and Clarence O. McMasters, St. Paul, Minn., and Byron W. Neher, Hudson, Wis., assignors to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Original application Sept. 30, 1955, Ser. No. 537,647, Patent No. 3,138,458. Divided and this application June 5, 1959, Ser. No. 818,473

The portion of the term of the patent subsequent to Nov. 28, 1978, has been disclaimed
6 Claims. (Cl. 96—1)

1. A flexible photoelectrosensitive copy-sheet having a light background which comprises a nonmetallic flexible base, a continuous aluminum layer on said base, and a 0.5 to 10 mils thick photoelectrosensitive layer comprising an admixture of photoconductive insulating substantially white zinc oxide in particulate form and a film forming insulating organic binder comprising a copolymer of a styrene and butadiene bonded directly to said aluminum layer.

3,198,633
PHOTOPOLYMERIZABLE ELEMENTS AND TRANSFER PROCESSES

Abraham Bernard Cohen, Springfield, and Ray Henry Luebbe, Jr., Fair Haven, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 1, 1961, Ser. No. 156,518
11 Claims. (Cl. 96—28)

1. A photopolymerizing element comprising a support bearing a solid uniform photopolymerizable layer having a thickness of 0.00005 to 0.005 inch of a photopolymerizable composition comprising:

(1) an addition polymerizable non-gaseous, ethylenically unsaturated compound containing at least one terminal ethylenic group having a boiling point above 100° C. at normal atmospheric pressure and being capable of forming a high polymer by free-radical initiated chain-propagating addition polymerization,

(2) a free-radical generating addition polymerization initiator activatable by actinic radiation,

(3) at least one variably absorbing basic dye which exhibits metachromasy and is present in molecularly associated form said dye being characterized in that it can exist in molecularly associated and dissociated form, and that upon molecular dissociation the extinction coefficient increases by at least 50% in one of the wavelength regions of intense dye absorption and where said initiator absorbs actinic radiation, and further characterized in that it assumes a molecularly associated form when dissolved in a 0.5% by weight aqueous solution of agar-agar and a molecularly dissociated form when dissolved in a 3% by weight solution of sodium ribonucleate, and

(4) a compatible viscosity modifying agent.

3,198,634
METHOD OF DEPOSITING PARTICULATE SOLID MATERIAL ON SELECTED PORTIONS OF A SUBSTRATE

Paul D. Payne, Jr., Chalfont, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 25, 1956, Ser. No. 593,682
14 Claims. (Cl. 96—35)



1. In the method of depositing particulate solid material on selected portions of a substrate, comprising the steps of:

forming on said substrate a layer made of a composition containing a photosensitizing substance, said photosensitizing substance impeding the transmission of radiant energy of a given form through said composition and said composition having a hardness which increases and a solubility in a given solvent which decreases, in response to exposure of said composition to radiant energy of said given form, by respective amounts directly dependent on both the concentration of said photosensitizing substance and the quantity of radiant energy of said given form to which said composition is exposed;

exposing those regions of said layer overlying said selected portions of said substrate to radiant energy of said form throughout the thickness of said layer, said exposure being sufficient to render said regions substantially less soluble in said given solvent than the unexposed regions of said layer;

depositing said particulate material on at least the exposed portions of the surface of said layer opposing and remote from said substrate,

and washing said layer with said given solvent sufficiently to remove selectively both said unexposed regions of said layer and particles of said material deposited on said unexposed regions,

the improvement which comprises forming said layer so that the the concentration of said photosensitizing substance therein decreases along at least part of its thickness from a given value adjacent said substrate to a lesser value adjacent said opposing surface, whereby all parts of said layer can be hardened approximately uniformly even though the part thereof adjacent said opposing surface is exposed to more radiant energy of said given from than other parts thereof.

3,198,635
NUTRIENT COMPOSITIONS AND PROCESS FOR PREPARING SAME
Philip C. Anderson, Crete, Nebr., assignor to Feed Service Corporation, Crete, Nebr., a corporation of Nebraska
No Drawing. Filed Apr. 17, 1964, Ser. No. 361,539
16 Claims. (Cl. 99—2)

1. A stable, weather-resistant, palatable, animal saliva-soluble nutrient composition in block form for supplying a single metal nutritive element to an animal, which consists essentially of an intimate mixture of an edible, waxy substance which is solid at ambient temperatures and which is a member selected from the group consisting of at least one substantially saturated fatty acid having from about 14 to about 20 carbon atoms, at least one ester of at least one substantially saturated fatty acid having from about 14 to about 20 carbon atoms and at least one alcohol corresponding to at least one substantially saturated fatty acid having from about 14 to about 20 carbon atoms and a member selected from the group consisting of:

(1) a saliva-soluble chelate of citric acid and the nutritive element, and

(2) a saliva-soluble mixture consisting essentially of at least one water-soluble citric acid compound and the nutritive element in the form of a compound selected from the group consisting of a metal oxide, a metal hydroxide and a metal carbonate.

16. A process for preparing a nutrient composition as set forth in claim 1, which comprises bringing said waxy substance and said member in finely divided form, into intimate contact with each other by pressing them together under a pressure of about 2,000 to 3,000 pounds per square inch, so as to form an integral, homogeneous mass.

3,198,636
PRESERVATION OF WINE
Robert J. Bouthilet, Modesto, Calif., assignor to Norda Essential Oil and Chemical Company, New York, N.Y., a corporation of New York
No Drawing. Filed June 8, 1962, Ser. No. 200,917
4 Claims. (Cl. 99—35)

1. A process for preserving wines containing carbohydrates, and susceptible to enzymatic decomposition through fermentation, which comprises incorporating with the perishable material sulfur dioxide and a non-toxic pyrocarbonic acid ester, each in an amount within the range from about 0.005 to about 2% by weight, and in a weight ratio of from about 5:1 to about 1:5 sufficient to lessen microbiological deterioration of the material due to any microorganism selected from the group consisting of *Saccharomyces pastorianus, Saccharomyces elipsoideus, Pichia farinosa, Bacterium butyrifacens, Acetobacter suboxydans, Clostridium acetobutylicum, Penicillium griseofulvum, Aspergillus flavus* and *Rhisopus elegans*, the sulfur dioxide and pyrocarbonic acid ester each synergizing the effectiveness of the other.

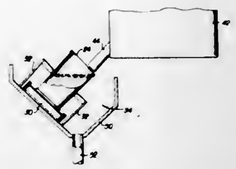
3,198,637
PREPARATION OF FILLED BAKED PRODUCTS AND FILLER COMPOSITION UTILIZED THEREIN
Meade C. Harris, Rutherford, and William J. Merrell, Clifton, N.J., assignors to National Biscuit Company, a corporation of New Jersey
No Drawing. Filed Feb. 18, 1963, Ser. No. 259,380
10 Claims. (Cl. 99—86)

4. The method of preparing a composition suitable as filler and icing for sweet goods and capable of withstanding baking at a temperature of 350°–450° F. for 15 minutes, which comprises the steps of mixing 400 parts of sugar, with shortening in an amount between 40 and 175 parts, salt in an amount up to 6 parts, to form a first mix, then adding between 20 and 130 parts of water, separately adding 180 parts of a member selected from the group consisting of flour and starch and combinations thereof, and blending said ingredients.

3,198,638
METHOD FOR SEASONING FOODSTUFFS AND RESULTING PRODUCTS
Katsuharu Yasumatsu, Ikeda, and Yoshio Nakao, Osaka, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan
No Drawing. Filed July 21, 1961, Ser. No. 125,652
Claims priority, application Japan, July 25, 1960, 35/32,837
21 Claims. (Cl. 99—140)

1. A method for flavor enhancement of foodstuff, which comprises adding at least one member selected from the group consisting of deoxy-5′-inosinic acid, deoxy-5′-guanylic acid, deoxy-5′-xanthylic acid and their non-toxic base salts to the foodstuff.

3,198,639
PROCESS FOR CANNING SPANISH GREEN OLIVES
John Robert Webster, Lindsay, Calif., assignor to Lindsay Ripe Olive Company, Lindsay, Calif., a corporation of California
Filed June 15, 1962, Ser. No. 202,830
4 Claims. (Cl. 99—186)



1. In a process for canning Spanish green olives having corrosive agents therein, in metal cans, and wherein said olives are submerged in a brine with an inert atmosphere thereover in said can, the improvement comprising the steps of; first gently depositing a predetermined quantity of brine in a can, without splashing, to minimize entrapment of air therein; thereafter tumbling said olives into said brine in said can, in spaced relation, to minimize the carrying of air into said brine; then closing said can while providing said inert atmosphere therein.

3,198,640
EXOTHERMIC COMPOSITION
John P. Walsh and Harold F. Bishop, Conneaut, Ohio, assignors to Exomet Incorporated, Conneaut, Ohio, a corporation of Ohio
No Drawing. Filed May 31, 1962, Ser. No. 198,739
4 Claims. (Cl. 106—38.3)

1. The improved dry exothermic composition consisting essentially by weight: granular refractory material 20 to 55%, particulate aluminum 20 to 40%, iron oxide 20 to 35%, potassium fluoborate 0.5 to 3.5%, sodium silicate binder 12 to 16% and sodium chlorate 0.5 to 4.0%.

3,198,641
COMPOSITION FOR MAKING HIGH INDEX BEADS
Charles E. Searight and Ezra M. Alexander, Jackson, Miss., assignors to Cataphote Corporation, Toledo, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 19, 1961, Ser. No. 146,316
3 Claims. (Cl. 106—47)

1. A glass for use in the manufacture of glass beads having an index of refraction of about 1.9 consisting essentially of from about 32 to about 38 mol percent titanium dioxide; from about 3.5 to about 6 mol percent zirconium dioxide; from about 40 to about 43 mol percent barium oxide; from about 13 to about 15 mol percent boric oxide; and about 6 mol percent zinc oxide.

3,198,642
GLASS COMPOSITIONS
Erwin C. Hagedorn, Oregon, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
No Drawing. Filed July 9, 1962, Ser. No. 208,625
6 Claims. (Cl. 106—54)

1. A glass composition having a liquidus temperature of at least 80° F. below the temperature at which the $\log_{10}$ of the viscosity in poises is 5, an index of refraction, N_d^{25}, below 1.5, a fiber softening point below 1425° F., a coefficient of thermal expansion of less than 80×10^{-7}, and a composition consisting essentially of 35–50 weight percent SiO_2, 3–11 weight percent Al_2O_3, 22–38 weight percent B_2O_3, and 15–25 weight percent Rb_2O.

3,198,643
FUSED CAST REFRACTORY
Allen M. Alper, Corning, and Frederick G. Keihn, New City, N.Y., assignors to Corhart Refractories Company, Inc., Louisville, Ky., a corporation of Delaware
Filed July 27, 1962, Ser. No. 212,912
4 Claims. (Cl. 106—59)

1. A fused cast refractory material consisting essentially of, analytically by weight, 40% to 79% MgO, 4% to 58% Cr_2O_3, up to 30% Al_2O_3, up to 18.5% FeO, the sum of MgO plus Cr_2O_3 plus Al_2O_3 plus FeO being at least 82%, up to 5% Se_2O_3, up to 5% SiO_2, up to 10% CaO, up to 7% fluorine and 0.35% to 10% Ti_2O_3, with the ratio of the mols of RO oxides to the sum of the mols of R_2O_3 oxides plus one-half the mols of SiO_2 being at least 2.4.

3,198,644
MORTAR COMPOSITIONS
Anthony J. Simonson, Yardley, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa.
No Drawing. Filed Nov. 15, 1961, Ser. No. 152,681
19 Claims. (Cl. 106—93)

1. A composition capable of being mixed with about 65 to about 75 parts by weight of water to form a masonry and stucco mortar and consisting essentially of, in combination with each 100 parts by weight of Portland cement therein, about 500 to 700 parts by weight of sand, about 0.05 to 0.25 part by weight of a cellulose material selected from the group consisting of methyl cellulose having a viscosity of about 4,000 to 20,000 centipoises in a 2% aqueous solution and 2-hydroxy ethyl cellulose having a viscosity of about 5,000 to 20,000 centipoises in a 2% aqueous solution and about 0.1 to 10 parts by weight of a Bunte salt and a polysulfide selected from the group consisting of alkaline earth metal and alkali metal polysulfides, said Bunte salt and said polysulfide being present in said composition in a weight ratio of about 2:1 to 3:1.

3,198,645
FINELY DIVIDED NITROCELLULOSE PARTICLES AND MANUFACTURE AND USE THEREOF
Mark Plunguian, Newark, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 30, 1962, Ser. No. 220,535
16 Claims. (Cl. 106—170)

10. A composition of matter comprising a smooth, fluid, homogeneous dispersion of tiny irregular fragments of nitrocellulose fibers in water containing from about 0.5% to about 2% by weight, based on said nitrocellulose, of a hydrophilic protective colloid, a substantial majority of said fragments having a maximum dimension of about 2 microns, the remainder of said fragments being tiny, irregular, needle-like fragments less than 3 microns in two dimensions but greater than 3 microns in length and tiny irregular platelets less than 3 microns in thickness but more than 3 microns in diameter, said nitrocellulose fibers being nitrated natural cellulose fibers.

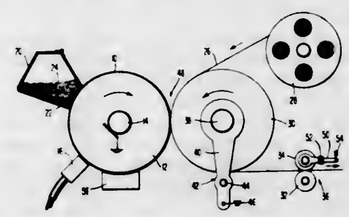
3,198,646
ZINC OXIDE BLENDS AND PROCESSES FOR PRODUCING ZINC PIGMENTS
Alwin C. Eide, Columbus, Ohio, assignor to American Zinc, Lead and Smelting Company, St. Louis, Mo., a corporation of Maine
Filed May 28, 1962, Ser. No. 198,277
5 Claims. (Cl. 106—292)

2. In a process for producing a zinc chromate pigment, the steps of forming a water slurry of equal parts of two nodular zinc oxides having specific surfaces, respectively, of approximately 6.62 and 4.25 square meters per gram and an acicular zinc oxide having a specific surface of 2.71 square meters per gram, stirring the slurry for not less than one hour, then adding sulfuric acid and potassium dichromate to the slurry with continued stirring, then decanting excess chromate liquor and then washing and filtering the resulting zinc chromate.

3,198,647
TREATED PIGMENTS AND PROCESS FOR MODIFYING THE SURFACE OF PIGMENTS
Bernard H. Kress, Lafayette Hill, Pa., assignor to Quaker Chemical Corporation, a corporation of Pennsylvania
No Drawing. Filed Apr. 19, 1961, Ser. No. 103,989
4 Claims. (Cl. 106—308)

1. A pigment provided with a surface coating of an amine modified polyacetal reaction product made under acidic conditions and at reflux temperatures of a salt of an amino alcohol containing at least two hydroxy groups, an alkylene diol, and an aldehyde, said salt being selected from the group consisting of amine salts and quaternary ammonium salts of strong acids and said aldehyde containing not more than eight carbon atoms in monomeric form, said reaction product having at least two aldehyde units and at least two polyhydric alcohol units per molecule.

3,198,648
ELECTROSTATIC RECORDING METHOD
Ernest E. Trimbur II, Malvern, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 30, 1961, Ser. No. 156,063
1 Claim. (Cl. 117—17.5)



A method of recording information which utilizes an endless band of dielectric material conditioned with electrostatic charges and a dry paper record medium

which is softer and rougher than the dielectric material and has a tooth characteristic of greater ink holding force than the combined ink holding force of the tooth characteristic of the endless band and the electrostatic charges thereon, and which comprises:

(a) rotating said endless band of dielectric material past an electrostatic printing station and impressing thereon said electrostatic charges representative of information,

(b) developing the latent electrostatic image by applying electrically conductive dry pigmented ink in powder form to the electrostatic charges on said endless band,

(c) pressing said dry paper record medium against the rotating endless band with such force as to effectuate a transfer of said pigmented ink from the endless band to said record medium, by reason of the tooth characteristic of the record medium, the characteristics of the ink, and the characteristics of the electrostatically charged endless band of dielectric material,

(d) applying additional pressure of a greater magnitude than the transfer pressure to the inked surface of said dry paper record medium to permanently fix the ink particles thereto, and

(e) electrically neutralizing the electrostatically charged regions of said endless band subsequent to said transfer of pigmented ink to said dry paper record medium.

3,198,649

CONTROLLED AND FIXING LIQUID DEVELOPER FOR ELECTRO-PHOTOGRAPHY AND ELECTRO-RADIOGRAPHY

Kenneth Archibald Metcalfe, Graymore, South Australia, and Robert John Wright, Hectorville, South Australia, Australia, assignors to The Commonwealth of Australia, care of the Secretary, Department of Supply, Melbourne, Victoria, Australia

No Drawing. Filed May 12, 1960, Ser. No. 28,524

Claims priority, application Australia, May 13, 1959, 48,757/59

13 Claims. (Cl. 117—37)

1. A controlled and fixing liquid developer for electric-photography and electro-radiography comprising a particulate pigment substance, a control agent coating the said particulate substance and constituting a control coating thereon, said control agent influencing the electrostatic behavior of said substance said control agent including in combination natural and synthetic rubbers, said agent forming a base with the pigment substance, and an electrically insulating carrier liquid for the coated pigment substance, said control agent being sufficiently soluble in said liquid to maintain the outer surface of the control coating in a partly dissolved state to constitute a fixing agent, said agent being sufficiently insoluble in said liquid to insure retention of at least part of the control coating on said substance throughout a developing operation, said coated pigment substance being suspended in the carrier liquid.

13. A method of fixing a developer substance, which is suspended in an electrically insulating liquid carrier, on a surface having an electrostatic image; said method comprising coating said substance with a material influencing the electrostatic behavior thereof and which substance is partly soluble in said carrier dispersing the thusly coated substance in said carrier whereby said material is rendered tacky, applying said carrier with the coated developer substance to said surface to deposit said coated developer substance on said image, and physically bonding said developer substance to said surface by means of said material.

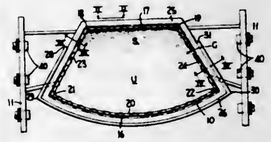
3,198,650

TREATING GLASS SHEETS

George W. Stilley, Freeport, and George R. Nelson, Tarentum, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 26, 1960, Ser. No. 32,000

7 Claims. (Cl. 117—43)



1. In the art of producing partly coated glass sheets, wherein a sheet having a pair of longitudinal edges and a pair of side edges is supported in a horizontal plane, is conveyed through a hot enclosed atmosphere for a time sufficient to reach a surface temperature sufficient to form a metal oxide film on spraying a hydrolizable metal compound thereon, is partially coated by spraying a hydrolizable metal compound onto an area of the heated sheet bounded by one of said pair of longitudinal edges and spaced from the other of said pair of longitudinal edges to form a band of metal oxide film on a surface thereof within said area and is then cooled, the improvement comprising maintaining a body adjacent the periphery of the glass sheet with a portion thereof disposed outwardly of a portion only of said periphery above said horizontal plane to shield a portion only of said periphery during its heating, spraying and cooling, said body having thermal capacity sufficient to abstract heat from the adjacent glass sheet periphery to retard the heating rate of said adjacent periphery during the heating portion of the cycle and cooling said sheet in an open atmosphere after said film is formed while continuing to maintain said body in said relation to said periphery during the subsequent cooling to retard the cooling rate of said periphery during the cooling portion of the cycle, thereby tending to equalize the rate of heating and cooling the glass sheet periphery and that of its area encompassed within said periphery without requiring an expensive lehr to control its cooling.

3,198,651

TREATMENT OF WATER-RESISTANT ACETALIZED POLYVINYL ALCOHOL FIBERS WITH ALKALI METAL BORO HYDRIDE FOR IMPROVED THERMAL STABILITY

Makoto Shiraishi, Kurashiki, Japan, assignor of three-fourths to Kurashiki Rayon Co., Ltd., Okayama Prefecture, Japan, a corporation of Japan, and one-fourth to Air Reduction Company Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 20, 1960, Ser. No. 23,362

Claims priority, application Japan, Apr. 23, 1959, 34/12,769

6 Claims. (Cl. 117—47)

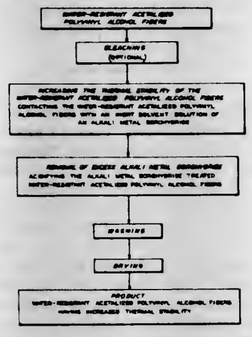
1. The method of improving the thermal stability of water-resistant acetalized polyvinyl alcohol fibers which comprises,

contacting water-resistant acetalized polyvinyl alcohol fibers with a treating agent consisting essentially of an inert solvent solution of an alkali metal boro hydride for a duration of time sufficient to render said treated fibers free from yellowing when subjected to relatively high temperatures,

acidifying said treated fibers to remove excess alkali metal boro hydride from said treated fibers,

washing said acidified fibers thoroughly with water,

and drying said washed fibers to obtain said water-resistant acetalized polyvinyl alcohol fibers having improved thermal stability.



2. The method according to claim 1, wherein said water-resistant acetalized polyvinyl alcohol fibers are bleached by treatment with a bleaching agent prior to said contacting of said fibers with said inert solvent solution of alkali metal boro hydride.

3,198,652

METHOD OF TREATING RESIN IMPREGNATED FIBROUS WEBS TO PREVENT DISCOLORATION AND RESULTING COLOR STABILIZED WEBS

William S. Miller, Ashton-on-Mersey, and Henry M. Duckworth, Middleton, England, assignors to The Calico Printers' Association, Limited, Manchester, England

No Drawing. Filed Mar. 11, 1959, Ser. No. 798,594

Claims priority, application Great Britain, Mar. 17, 1958, 8,412/58

2 Claims. (Cl. 117—62.1)

1. A process of treating a cotton fabric finished with a cured acetone-formaldehyde resin to protect the web against discoloration during storage following exposure to light which comprises impregnating bleached cotton fabric with an aqueous solution comprising an acetone-formaldehyde resin, drying the impregnated fabric, heating the dried fabric in air at a temperature between about 127° to 143° C. to cure the resin and set it upon the fabric, threafter immersing the fabric in an aqueous alkaline hydrogen peroxide solution containing about 0.02 to 2.0 percent by weight of available oxygen having a temperature between about 15° and 100° C. for between about 10 to 60 minutes, removing the fabric from said hydrogen peroxide solution, washing the fabric free of oxidizing material and drying the treated fabric.

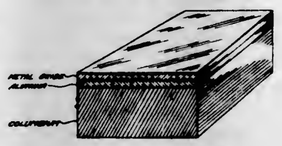
3,198,653

COATED COLUMBIUM ARTICLE

William B. Hall, Starkville, Miss., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Aug. 2, 1962, Ser. No. 214,435

4 Claims. (Cl. 117—70)



1. A coated metal article comprising a base of columbium metal, a first layer of flame sprayed alumina bonded to said base and a second layer of a fired, slip sprayed metallic oxide bonded to said first layer in which said metallic oxide is selected from the group consisting of MgO, BaO, and SiO_2.

3,198,654

COATING SYSTEM

Samuel Porter, Jr., Tarentum, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 21, 1961, Ser. No. 161,186

10 Claims. (Cl. 117—75)



1. A coated article having thereon a coating system comprising a layer of a baked primer of a thermosetting resin, said primer having superimposed thereon a coating of a composition comprising a thermoplastic acrylic interpolymer comprising in polymerized form a member selected from the group consisting of methyl methacrylate and ethyl methacrylate and a thermosetting resinous interpolymer of an unsaturated carboxylic acid amide and at least one other monomer containing a $>C=CH_2$ group, said thermosetting interpolymer containing from about 2 to 50 percent by weight of said amide in polymerized form based on the total weight of said thermosetting interpolymer and being characterized by having at least one hydrogen atom of an amido nitrogen replaced by the structure

$$-\mathrm{CHOR_1}$$
(R above)

wherein R is a member selected from the group consisting of hydrogen and lower alkyl and R_1 is a member selected from the group consisting of hydrogen, alkyl and alkoxyethyl.

3,198,655

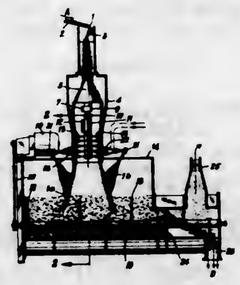
METHOD AND APPARATUS FOR COATING LOOSE PARTICLES WITH A SPRAYABLE BONDING SUBSTANCE

Kurt Gisiger, Zurich, Switzerland, assignor to Fred Fahrni, Zurich, Switzerland

Filed Nov. 15, 1960, Ser. No. 69,386

Claims priority, application Switzerland, Nov. 18, 1959, 811,216, 689,197

11 Claims. (Cl. 117—100)



1. A method for thoroughly coating small solid particles comprising the steps of supplying a quantity of small particles to a distributing device and subjecting the small

particles to the force of gravity, imparting a rotating and spreading direction to the downwardly falling particles, causing each individual particle to follow the path of a helix and causing the group of particles to form a wide hollow cylindrical configuration, subjecting said particles directly, in addition to the forces of gravity, to a positive acting supplemental accelerating force in order to increase the velocity of the falling particles in a downward direction with respect to normal free falling velocity in air, and subjecting said particles to a spray of bonding material.

3,198,656
COLOR COATED CELLULAR INORGANIC AGGREGATE

Richard B. Harlan, San Clemente, Calif., assignor to Colorlite Company, a partnership of California

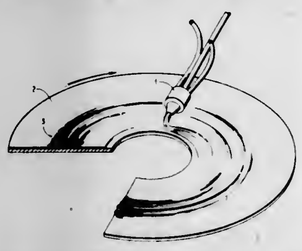
No Drawing. Filed Nov. 19, 1962, Ser. No. 238,796
1 Claim. (Cl. 117—100)

A particle of bloated, cellular inorganic aggregate having a vitrified, glazed surface appearance, said particle being substantially impenetrable to water, said particle being covered with an adherent inorganic ceramic overglaze coating which is fused to said surface, said coating having a color different from the color of said aggregate.

3,198,657
PROCESS FOR SPIN COATING OBJECTS

Philip D. Kimball and Eugene R. Blome, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 17, 1964, Ser. No. 398,478
14 Claims. (Cl. 117—101)



1. In a process for spin coating objects, the steps comprising:
   pouring a synthetic resin paint on a spinning object to be coated from its outer edge to its inner edge,
   continuing pouring the paint on the inner edge until a wave front of paint forms ahead of the point of impact of the poured paint, and
   pouring the paint from the inner edge to the outer edge of the object at a rate such that the paint being poured does not disturb the formed wave front of paint.

3,198,658
PROCESS FOR REPAIRING AN IMPERMEABLE CARBON ARTICLE

Michiomi Kimura, Tokyo, and Takeo Nishikawa, Kanagawa-ken, Japan, assignors to Kabushiki Kaisha Musashinokagaku Kenkyujo, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Feb. 2, 1962, Ser. No. 170,784
Claims priority, application Japan, May 24, 1961, 36/18,424
2 Claims. (Cl. 117—119.2)

1. A process for the preparation of an impermeable carbon article comprising the steps of impregnating the pores of a permeable carbon article selected from the group consisting of graphite and amorphous carbon with triallylcyanurate, polymerizing said triallylcyanurate, which is impregnated in the permeable carbon article, by heating said triallylcyanurate-impregnated permeable carbon article in a medium selected from the group consisting of water, an aqueous solution of potassium chloride and a vapor flow of triallylcyanurate of at least 30 mol percent, and thereafter heating said polymerized triallylcyanurate.

3,198,659
THIN NICKEL COATINGS

Donald J. Levy, Mountain View, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

No Drawing. Filed Apr. 9, 1962, Ser. No. 185,830
7 Claims. (Cl. 117—130)

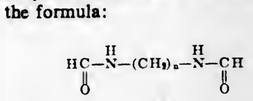
1. An autocatalytic chemical reduction process for continuously plating nickel on objects having a catalytic metal surface comprising the steps of providing an aqueous solution comprised of free nickel ions in the amount of from 10^{-10} to 10^{-2} gram-ions per liter, and a reductant selected from the group consisting of hydrazine and hydrazine derivatives, maintaining said solution at a temperature of from 70° to 100° C. and at a pH of from 6.5 to 11, immersing into said solution an object with a catalytic surface which will catalyze hydrogenation-dehydrogenation reactions maintaining said object in the solution for a predetermined time until a nickel layer of a preselected depth has been deposited and finally withdrawing the object from the solution.

3,198,660
TREATMENT OF CELLULOSIC TEXTILE FABRICS WITH BISFORMAMIDE-FORMALDEHYDE ADDUCTS

Sidney L. Vail and John G. Frick, Jr., New Orleans, and Wilson A. Reeves, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed June 20, 1962, Ser. No. 204,013
6 Claims. (Cl. 117—139.4)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for producing a wrinkle resistant cellulosic textile material that is resistant to acidic and to basic hydrolysis comprising impregnating a cellulosic textile material with an aqueous material containing from 5 to 20% by weight of the reaction product of at least 2 moles of formaldehyde and 1 mole of a bisformamide represented by the formula:



wherein n is an integer of from 1 to 4, and from 0.5% to 5% by weight of an acidic catalyst and heating the thus impregnated cellulosic textile material to dry and cure it.

3,198,661
IMPREGNATED SHOE SOLE LEATHER

William D. Johnson, Madison, Wis., assignor to Oscar Mayer & Company, Inc., Chicago, Ill., a corporation of Illinois

No Drawing. Filed July 31, 1961, Ser. No. 127,830
4 Claims. (Cl. 117—142)

1. The method of impregnating leather with liquid polysulfide polymers which comprises: preparing an impregnating solution by introducing into a mixing container from 45 to 55 parts by weight of ethylene dichloride, adding from 35 to 45 parts of liquid polysulfide polymer warmed to from about 70 to 90° F. and having an average molecular weight of about 4000, an average polymer segment structure of the formula

$$HS(C_2H_4.O.CH_2.O.C_2H_4.S.S.)_{23}.C_2H_4.O.CH_2.O.C_2H_4.SH$$

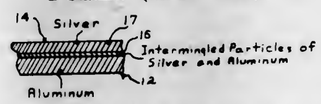
and containing about 2% by weight of trichloro propane

as a cross linking agent, stirring the contents of the mixer sufficiently to produce a uniform solution thereof, adding to the contents of the mixer from 3.1 to 3.2 parts by weight of cumene hydroperoxide and from 2.4 to 2.5 parts by weight of propylene oxide, stirring the resulting mixture for from about 10 to 20 minutes, adding to the contents of the mixer a solution of from 0.1 to 0.11 part of diphenyl guanidine in from 1.77 to 5.31 parts by weight of methyl ethyl ketone, and stirring the resulting mixture for at least about 5 minutes; introducing into an impregnating drum having a diameter of about 60 to 96 inches and a width of about 36 to 60 inches and mounted for rotation with its principal axis horizontally alinged, from about 112 to 120 parts by weight of dry partially tanned leather selected from the group consisting of chrome tanned and chrome retanned leather containing at least about 3 to 5% by weight of Cr_2O_3 from a basic chrome sulfate tanning mixture, having a moisture content not in excess of about 10%, and containing not in excess of about 2% oil or fat liquor, said leather having a surface area of from about 1 to 1.25 sq. ft. per pound; introducing said impregnating solution into said drum; rotating said drum at from about 16 to 20 r.p.m. for about 45 to 75 minutes until said leather is completely impregnated; removing the impregnated leather from the drum and air drying the same for at least about 16 hours; and curing the rubber in the leather by exposing the surfaces thereof to circulating air at a temperature in the range of about 140 to 165° F. for from about 3.5 to 5 hours.

3,198,662
PROCESS OF APPLYING A SILVER LAYER ON AN ALUMINUM ELECTRICAL CONTACT

Philip M. H. Seibert, P.O. Box 9176, Birmingham, Ala.

Filed Aug. 20, 1962, Ser. No. 217,966
2 Claims. (Cl. 117—213)



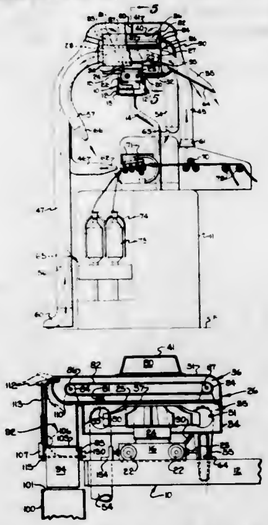
1. The process of fusing a silver layer on an aluminum electrical contact part comprising
   (a) zincating the surface of the aluminum part to remove any aluminum oxides from the surface thereof and to form a protective zinc coating thereon,
   (b) heating the aluminum contact part to a temperature between 400° F. and 900° F., and
   (c) spraying molten silver entrained in a blast of gas under pressure onto the heated aluminum part whereby the gas vaporizes the zinc coating to remove it from the surface of the aluminum part, said silver being sprayed at a sufficient velocity to form a layer of intermingled silver and aluminum particles between .002 inch and .010 inch in thickness on which an outer layer of silver may be formed.

3,198,663
METHOD OF CLEANING SURFACES IN TEXTILE MILLS

Hubert Sohler, Maschinenfabrik, Wangen, Allgau, Germany

Filed July 23, 1962, Ser. No. 211,746
4 Claims. (Cl. 134—21)

1. A method of disposing of fiber waste generated as an incident of a textile manufacturing operation and settling on the floor of a textile mill which comprises
   (a) applying a confined area of suction air currents at the floor level,
   (b) moving said area of suction currents along a predesignated path adjacent the floor and adjacent one side of a row of textile machines to attract and entrap the fiber waste,
   (c) conveying said suction currents and entrapped fiber waste upwardly above said textile machines to an overhead zone traveling in unison with said confined area, while
   (d) directing the suction current through a filter in said traveling overhead zone and entrapping the fiber waste against said filter,

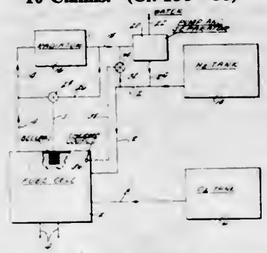


   (e) simultaneously applying a mechanical wiping action against the filter by moving a wiper element, traveling with the overhead zone, across and in contact with said filter to wipe and remove fiber waste from said filter, while
   (f) utilizing said wiping action for moving the fiber waste from said filter into a collection chamber moving with said overhead zone, and
   (g) periodically emptying the collected fiber waste from said collection chamber.

3,198,664
FUEL CELL SYSTEM

Harold Russell Kunz, Vernon, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Nov. 30, 1961, Ser. No. 155,957
10 Claims. (Cl. 136—86)



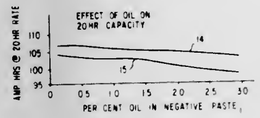
1. In a fuel cell control device, a fuel cell, means for supplying oxidant and fuel under pressure to said cell, a discharge conduit for removing the products of oxidation and excess fuel from said cell, a heat exchanger connected to said conduit for receiving and for cooling said discharge products, a separator through which the cooled products are directed for removing the liquid products of oxidation from the excess fuel, a pump receiving the fuel from the separator for returning the excess fuel to

the fuel supply means, a bypass for the fuel around the heat exchanger and valve means for controlling the amount of fuel bypassing the heat exchanger.

3,198,665
STORAGE BATTERY PLATES AND METHODS FOR THEIR MANUFACTURE

William H. Howell, Fairfield, Conn., assignor to The Electric Storage Battery Company, a corporation of New Jersey

Filed Dec. 2, 1963, Ser. No. 327,342
3 Claims. (Cl. 136—78)



1. The method of increasing both the oxidation and the sulfation resistance of the negative plates of lead acid storage batteries by causing at the time of first formation of said plates a petroleum fraction of mineral origin to be dispersed throughout the charged active material, consisting essentially of particles of pure sponge lead, to form a protective film which comprises

mixing together to form a pastable mixture finely divided negative material, comprising predominantly lead oxide, acid, water, an expander and said petroleum fraction of mineral origin having a boiling point above 300° C. selected from the group consisting of the lubricating oils, petroleum jelly and paraffin in the amount of from 0.05% to about 3% by weight of said finely divided negative material and said expander in their dry states,

said mixing thoroughly dispersing said petroleum fraction throughout said pastable mixture preparatory to formation of said protective film,

pasting said mixture onto the grids of said negative plates,

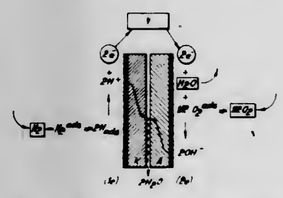
setting said mixture on said grids, and

charging said negative plates to convert electrochemically said negative material to charged active material of sponge lead characterized by having thereon said protective film of said petroleum fraction.

3,198,666
ELECTROCHEMICAL FUEL CELL OPERATION WITH ANTIPOLAR ION EXCHANGE MEMBRANE

Gerhard Grüneberg, Oberhausen-Holten, and Margarete Jung, Frankfurt am Main, Germany, assignors to Varta Aktiengesellschaft, a corporation of Germany, and Siemens-Schuckert-Werke, Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Filed May 3, 1961, Ser. No. 107,427
Claims priority, application Germany May 7, 1960, R 27,918
12 Claims. (Cl. 136—86)



1. Fuel cell for the electrochemical utilization of fluid fuels which comprises means defining a fluid fed fuel electrode and a fluid fed oxygen electrode having a pair of hydrated ion exchange membranes in abutting contact with one another therebetween, said pair of membranes including a hydrogen transferring cation exchange membrane disposed in abutting contact with said fuel electrode and a hydroxyl transferring anion exchange membrane disposed in abutting contact with said oxygen electrode, said membranes serving as electrolyte for the electrodes.

3,198,667
METHOD OF IMPREGNATING POROUS ELECTRODE WITH CATALYST

Elroy M. Gladrow, Edison Township, Middlesex County, and Charles E. Thompson, Fanwood, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

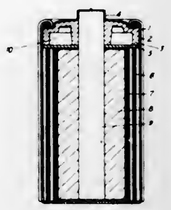
No Drawing. Filed Mar. 31, 1961, Ser. No. 99,683
6 Claims. (Cl. 136—122)

1. In a method for distributing a metal comprising catalyst through the pores of a porous carbon electrode which comprises contacting said electrode with a solution of a water soluble compound containing said metal in combined form, adsorbing said compound on said carbon, heating said electrode in an inert atmosphere to decompose said compound leaving said metal adhered to said carbon in an amount comprising at least 0.1 wt. percent of the resulting metal impregnated carbon electrode, the improvement which comprises reducing the pressure on said electrode to a subatmospheric pressure, passing an inert gas through said porous electrode until said electrode is flooded with said gas, contacting the resulting gas flooded electrode at a pressure in the range of about 1 to 100 mm. Hg with an aqueous solution of said compound wherein the concentration is in the range of about 0.003 to 0.005 mole per liter for a period in the range of about 1 to 5 days, removing said electrode from said solution, heating said carbon electrode with said compound adsorbed thereon in an inert atmosphere until said compound is decomposed leaving said metal adsorbed on said carbon and treating the resulting electrode with hydrogen gas at an elevated temperature to activate said catalyst.

3,198,668
TWO LAYER ZINC ANODE

Gerhard Schneider, Ellwangen, Jagst, Germany, assignor to Pertrix-Union G.m.b.H., Ellwangen, Jagst, Germany, a company of Germany

Filed Feb. 13, 1961, Ser. No. 114,574
Claims priority, application Germany, Feb. 17, 1960, P 24,453
12 Claims. (Cl. 136—130)

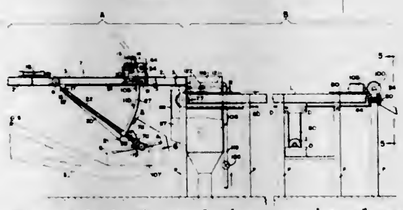


1. A two-layer zinc electrode for a battery cell, said electrode consisting of an expanded zinc sheet and, adjacent thereto, a layer of a particulate zinc alloy having a small differential in potential in relation to the expanded zinc sheet, the zinc alloy being less noble than the expanded zinc sheet, a fibrous sheet being provided for carrying the particulate zinc alloy layer.

3,198,669
METHOD AND APPARATUS FOR HANDLING ANODES

Ivor Granville Pickering, Salt Lake City, Utah, and John Duncan McIver, Severna Park, Md., assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York

Filed Sept. 2, 1964, Ser. No. 393,829
4 Claims. (Cl. 148—1)

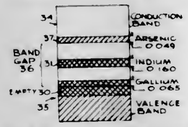


1. The method of transferring a series of copper anodes one at a time from a casting wheel and hanging them by their lugs on a horizontal chain conveyor which comprises mechanically gripping each anode, turning it to an upright position with the lugs extending upwardly, moving it directly to the chain, and while depositing the anode on the chain applying a cooling water spray to insure rapid and complete solidification of the anode lugs so that they will have the strength required to support the anode.

3,198,670
MULTI-TUNNEL DIODE

Samuel Nissim, Pacific Palisades, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Mar. 9, 1961, Ser. No. 94,555
8 Claims. (Cl. 148—1.5)



1. A semiconductor device comprising: a body of semiconductor material, first and second adjacent conductivity regions within said body, said first region being doped to degeneracy by a first type conductivity determining impurity, said second region being doped to degeneracy by an opposite type conductivity determining impurity, an abrupt rectifying junction which exhibits tunneling formed therebetween, additionally introduced impurities in said first region, each of said additional impurities having a discrete empty energy level band within the forbidden band gap of said first region, each of said bands being spaced one from the other in said forbidden band gap to form discrete empty energy bands into which electrons will flow from said second region through said junction at predetermined forward electrical biases applied to said device to form a corresponding plurality of negative resistance regions in the current-voltage characteristics of said device.

3,198,671
METHOD OF MANUFACTURING MONOCRYSTALLINE BODIES OF SEMI-CONDUCTIVE MATERIAL

Johannes Aloysius Maria Dikhoff, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 25, 1961, Ser. No. 84,924
Claims priority, application Netherlands, Jan. 28, 1960, 247,854
2 Claims. (Cl. 148—1.6)

1. A method of growing from a melt a monocrystalline body of semiconductive material with a substantially uniform transverse electrical resistivity characteristic, comprising growing a single crystal under given growth conditions from an active-impurity-containing melt of a semiconductive material with the crystal oriented relative to the liquid-solid interface to produce core-formation, a condition at which active impurities in the melt become incorporated in different concentrations in a core portion and a marginal portion of the grown crystal, each active impurity exhibiting a specific core-formation factor, α, determined by the given growth conditions and defined as the ratio of the said impurity's concentration in the core portion and the said impurity's concentration in the marginal portion of the grown crystal, and providing in the melt from which the crystal is grown at least two active impurities selected from the group consisting of donors and acceptors and having different core-formation factors, α, and in concentrations, c, at which a quantity A is substantially equal to $+1$, wherein

$$A=\frac{\sum(\alpha_d k_d c_d)-\sum(\alpha_a k_a c_a)}{\sum(k_d c_d)-\sum(k_a c_a)}$$

where α_d is the core-formation factor at said given growth conditions of a donor present, α_a is the core-formation factor at said given growth conditions of an acceptor present, k_d is the segregation constant at said given growth conditions of a donor present, k_a is the segregation constant at said given growth conditions of an acceptor present, c_d is the concentration of a donor present expressed in atoms of the donor per cubic centimeter of the semi-conductive material, c_a is the concentration of an acceptor present expressed in atoms of the acceptor per cubic centimenter of the semiconductive material, and Σ is the summation of the bracketed products over all donors and acceptors present in the melt, said core-formation factors and segregation constants being measured for the semiconductive material at, and being determined by, the said given growth conditions employed, both active impurities being of the same conductivity-forming type, one having a core-formation factor above 1 and the other having a core-formation factor below 1.

3,198,672
PREPARATION OF CUPRIC OXIDE SURFACES

Harold George De Hart, Clifton, N.J., assignor, by mesne assignments, to International Protected Metals, Inc., a corporation of New Jersey

No Drawing. Filed July 10, 1961, Ser. No. 122,667
Claims priority, application Republic of South Africa, Aug. 18, 1960, 60/3,383
8 Claims. (Cl. 148—6.14)

7. A coating process which comprises pre-treating a surface to be coated having at least an outer layer consisting essentially of metallic copper with an aqueous strongly alkaline solution having a pH value of at least 12 of an alkaline metal chlorite oxidising agent and from 0.007 to 0.6 gram ion of cyanide per litre until the surface has assumed a naplike appearance of cupric oxide needles and stopping the reaction before the copper oxide needles have grown to such lengths that substantial matting occurs, and bonding a resin coating composition to the thus pretreated surface.

3,198,673
CORROSION RESISTANT COATINGS

Kenneth J. Dooley, Middletown, and Hugh L. Thompson, Meriden, Conn., assignors to The Du-Lite Chemical Corporation, Middletown, Conn., a corporation of Connecticut

No Drawing. Filed June 27, 1961, Ser. No. 119,795
5 Claims. (Cl. 148—6.15)

1. A method of producing on a ferrous part a deep black, smut-free, corrosion resisting coating that produces no material dimensional change of the ferrous

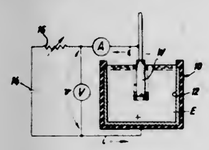
part, said coating consisting essentially of a major proportion of black iron oxide and a minor proportion of iron phosphate in intimate molecular admixture, which comprises coating the ferrous part with black iron oxide, treating the coated part with a solution consisting essentially of a volatile solvent and an acidic phosphatizing agent, and drying the part to remove the volatile solvent, the conditions of said treatment being sufficiently mild so that said black iron oxide coating is not destroyed and is only partially converted into iron phosphate.

3,198,674
INFRARED ABSORBENT ALUMINUM PHOSPHATE COATINGS AND METHOD OF MANUFACTURE
Glen P. Huppke, Beaver Falls, N.Y., assignor to Fiber Products Research Center, Inc., Beaver Falls, N.Y., a corporation of New York
Filed Jan. 25, 1962, Ser. No. 168,649
10 Claims. (Cl. 148—6.15)



3. An aluminum or aluminum alloy article having an surface provided with a closely adherent, extremely thin coating consisting primarily of glassy aluminum phosphate having uniformly suspended therein carbon black of a particle size not substantially exceeding 20 millimicrons, said coating being formed integrally with said article by the reaction under heat of aluminum acid phosphate, and said coating containing 1 part by weight of anhydrous carbon black to from about 2.8 to about 5.6 parts by weight of anhydrous aluminum and phosphoric oxides, whereby the coating is rendered highly infrared absorbent.

3,198,675
ELECTRIC DISCHARGE HEAT TREATMENT OF METALS IN ELECTROLYTES
Kiyoshi Inoue, 182 Yoga Tamagawa Setagaya-ku Tokyo, Japan
Original application Aug. 15, 1960, Ser. No. 49,625. Divided and this application Jan. 2, 1963, Ser. No. 256,790
8 Claims. (Cl. 148—13)



1. In an electric discharge heat-treatment process wherein a metal work piece is immersed in an electrolyte and an electric current is passed through the electrolyte with the work piece as one electrode, at a sufficient voltage and for a sufficient time period to produce, in the latter stage of said process, gaseous-electric discharge heating through the gaseous blanket generated electrolytically and by volatilization at the work piece surface in the initial stages of said process, and thereafter terminating the current flow and allowing the work piece to cool in the electrolyte, the step of locally heating the surface layer of the electrolyte while maintaining the underlying electrolyte at a substantially lower temperature, and lowering the work piece gradually into the electrolyte through the surface layer thereof while passing current through the electrolyte with the work piece as an electrode to generate a layer of gas at the electrode surface without heating the electrode to a temperature higher than that produced in the latter stage of the process.

3,198,676
THERMAL TREATMENT OF ALUMINUM BASE ALLOY ARTICLE
Donald O. Sprowls, Upper Burrell Township, Westmoreland County, and Joseph A. Nock, Jr., Natrona Heights, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 24, 1964, Ser. No. 399,107
8 Claims. (Cl. 148—159)

1. The method of thermally treating articles composed of an alloy consisting essentially of aluminum, 4.5 to 14% zinc, 1.5 to 3.8% magnesium, 0.75 to 2.5% copper and at least one hardening element selected from the group composed of 0.05 to 0.4% chromium, 0.1 to 0.75% manganese, 0.05 to 0.3% zirconium, 0.05 to 0.3% vanadium, 0.05 to 0.3% molybdenum and 0.05 to 0.3% tungsten, wherein the proportion of magnesium to zinc is within the range of 0.2 to 0.5 part of magnesium to 1 part zinc and the copper content does not exceed that of magnesium, said treatment comprising

heating said articles to a temperature between 750 and 1000° F., but below the temperature of incipient fusion, for a sufficient length of time to produce substantially complete solution of the soluble components,

quenching said articles to substantially room temperature,

precipitation hardening said quenched articles in two steps according to the following schedule:

first step: for alloys containing less than 7.5% zinc, heating the articles to 200 to 275° F. and holding for a period of 5 to 30 hours;

for alloys containing more than 7.5% zinc, heating the articles to 175 to 275° F. and holding for a period of 3 to 30 hours;

second step: heating the articles to 315 to 380° F. for a period of 2 to 100 hours, the minimum time and temperature relationship to achieve high resistance to stress corrosion being expressed by the equation:

$$t = 2.0 + \frac{k}{(T-280)^4}$$

where t is the time in hours, T is the precipitation temperature and k is a constant that varies with the zinc and hardening element content of the alloy and the thickness of the article being treated as follows:

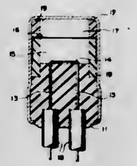
Percent Zn	Hardening elements present			Thickness of Section, inch	K value
	Mn	Cr	Zr, W, Mo, V and/or Cr		
4.5–7.5	X			¼–2	1.6×10^8
4.5–7.5			X	¼–2	6.0×10^7
4.5–7.5	X			Over 2	8.4×10^7
4.5–7.5			X	do	6.0×10^7
7.51–14	X			Under ¼	2.6×10^8
7.51–14		X		do	2.6×10^8
7.51–14			X	do	2.6×10^8
7.51–14	X			¼–1	1.4×10^8
7.51–14		X		¼–1	5.0×10^8
7.51–14			X	¼–1	3.8×10^7
7.51–14	X			Over 1	3.8×10^8
7.51–14		X		do	1.5×10^8
7.51–14			X	do	1.5×10^8

cooling said articles to room temperature, whereby the treated articles acquire a high strength, a high resistance to stress corrosion cracking and a high resistance to tearing.

3,198,677
FOAMED POLYURETHANE GAS-GENERATING COMPOSITIONS CONTAINING INORGANIC OXIDIZER
Richard Ogden Thomas, Alexandria, Va., assignor to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia
No Drawing. Filed July 27, 1962, Ser. No. 213,040
14 Claims. (Cl. 149—19)

1. In a solid, self-combustible gas-generating or monopropellant composition comprising an inert organic polymer binder which does not contain a combined oxidizing element available for combustion and which requires the addition of a separate oxidizer for combustion and a finely-divided, solid, insoluble, inorganic oxidizer dispersed in said binder, said oxidizer being present in an amount which maintains active combustion of said composition, the improvement in which said composition forms the cell walls of an integral foamed cellular structure.

3,198,678
PYROTECHNIC COMPOSITIONS
Samuel Zeman, Huntsville, and Millard F. Scoggin, Jr., Decatur, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa.
Filed Oct. 3, 1960, Ser. No. 60,134
1 Claim. (Cl. 149—44)



A pyrotechnic composition consisting essentially of a fluffy mixture of about 3–15 percent by weight of finely divided aluminum, about 72–89 percent by weight of finely divided lead monoxide, and about 8–15 percent by weight of finely divided polytetrafluoroethylene.

3,198,679
RECAPPING BUTYL TIRES
Alfred N. Iknayan and Albert S. Tavenor, both of Indianapolis, Ind., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 11, 1961, Ser. No. 137,386
10 Claims. (Cl. 156—96)

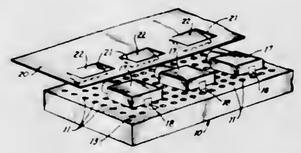


6. In a method of recapping a used tire made of sulfur-cured isobutylene-isoprene copolymer rubber containing 0.5–15% isoprene wherein an unvulcanized recapping material, comprising a highly unsaturated rubbery polymer containing at least 25% of a diolefin selected from the group consisting of butadiene and isoprene compounded for complete vulcanization with sulfur when heated at a temperature 275°–330° F. for a period of 40 min. to 8 hours, is applied to said cured tire and subjected to the just-mentioned heating conditions, whereby the tire is recapped with said highly unsaturated rubbery polymer, the improvement comprising interposing, between the surface of the cured tire to be recapped and said recapping material, a layer of tie gum comprising a highly unsaturated rubbery polymer as previously defined containing no vulcanizing and accelerating ingredients whereby the tie gum is unvulcanizable under the previously mentioned heating conditions, the said tie gum being interposed before carrying out the said heating, whereby the adhesion between the said recapping material and the cured tire is enhanced, the said percentages being by weight.

3,198,680
METHOD OF RETREADING TIRES USING SPRAY CEMENT CONTAINING HIGH CONCENTRATION OF ACTIVATOR
Alfred N. Iknayan, Indianapolis, Ind., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Feb. 19, 1962, Ser. No. 174,270
10 Claims. (Cl. 156—96)

1. A method of adhering a new tread comprising a vulcanizable diene rubber composition to a cured tire comprising a diene rubber composition, comprising in combination the steps of providing a retreading cement of spraying consistency comprising, by weight, 100 parts of diene rubber, 0.5 to 5 parts of sulfur, 0.5 to 5 parts of accelerator of sulfur vulcanization, 1500 to 4000 parts of rubber solvent, and 5 to 160 parts of a migratory accelerator-activator selected from the group consisting of aldehydeamine accelerator-activators, dibutylammonium oleate and morpholine, the said cement being stable at room temperature, spraying said cement on a buffer surface of said carcass, applying the said new tread in an unvulcanized condition, and subjecting the assembly to vulcanizing conditions.

3,198,681
PACKAGE
Ridley Watts, Jr., Cleveland, Ohio, assignor to The American Packaging Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 18, 1961, Ser. No. 103,937
7 Claims. (Cl. 156—196)

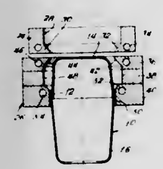


1. The process of forming packages with a platen having a plurality of molds secured thereto comprising, die cutting a sheet to provide a plurality of product-receiving apertures, passing each of the molds through one of the apertures, bringing the sheet into flush abutment with the upper face of the platen with each such mold positioned to extend above the upwardly directed face of the card, heat softening a plastic film, creating a pressure differential to draw the film down over the molds and into bonding abutment with the face of the sheet, and thereafter stripping the sheet and the bonded film from the platen and molds.

3,198,682
METHOD OF FORMING A RESILIENT SURFACE COVERING
Lloyd V. Hassel and Jack H. Witman, East Hempfield Township, Lancaster County, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
No Drawing. Filed Oct. 18, 1960, Ser. No. 63,255
3 Claims. (Cl. 156—298)

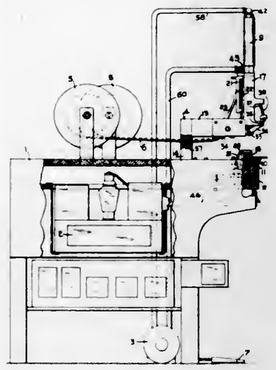
1. In a method of producing a resilient surface covering having a continuous thermoplastic wear layer bonded to a carrier coated with a continuous thermoplastic resin-containing coating composition, wherein gases are formed during the consolidating and fusing of the thermoplastic resin-containing composition which forms said wear layer, the improvement which comprises coating a carrier with a paint containing an organic film former which is activated at a low temperature and an organic film former which is activated at a relatively high temperature, subjecting said coated carrier to a temperature at which the solvent is evaporated and the organic film former activatable at a low temperature is activated to form a coated carrier having an air permeance greater than about 0.3 cubic foot per hour per square foot under a static pressure of 8" of water at a temperature of about 70° F. and at a relative humidity of about 50%, disposing a thermoplastic resin-containing composition on the coated surface of said carrier, and consolidating and fusing said thermoplastic composition under heat and pressure to form a wear-resistant surface bonded to said carrier and to activate the second organic film-forming component.

3,198,683
APPARATUS FOR SEALING AND FOLDING FLANGED EDGES OF CONTAINERS
Richard J. Lee, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Original application Oct. 26, 1960, Ser. No. 65,092, now Patent No. 3,160,999, dated Dec. 15, 1964. Divided and this application Sept. 8, 1964, Ser. No. 394,935
8 Claims (Cl. 156—486)



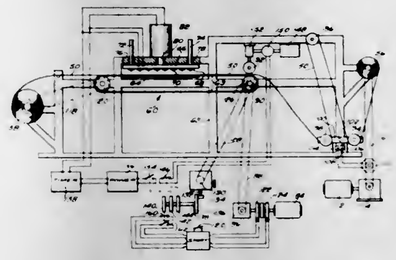
3. Apparatus for sealing and folding flanged edges of a thermoplastic container comprising an upper die and a lower die assemblage, said upper die assemblage being provided with a circular opening of a larger diameter than said container and having a reduced diameter jaw structure on its lower extremity, and means to heat such structure, said lower die assemblage being provided with an upper heat sealing die having a similar opening as and axial to said circular opening of said upper die assembly and having a reduced diameter jaw structure on its upper extremity and means to heat such die and jaw structure, said lower die assemblage also being provided with a cooling die and an insulating section interposed between said cooling die and said heat sealing die, each having a circular opening with a larger diameter than said container therein and means to cool said cooling die, and means for causing relative movement between the upper die assemblage and the lower die assemblage whereby the flanged edges of said container may be pressed together to form a heat sealed joint.

3,198,684
SNAP FASTENER ATTACHING APPARATUS
Irving W. Bemis, Natick, Gordon W. Richmond, Whitman, and Fremont H. Nelson, Sharon, Mass., assignors to United-Carr Incorporated, a corporation of Delaware
Filed Dec. 21, 1959, Ser. No. 3,976
1 Claim. (Cl. 156—518)



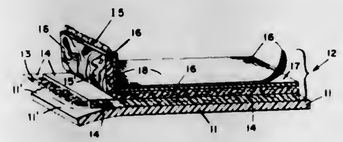
Feeding and attaching apparatus for securing elements to a support material comprising a lower support member, a fixed tool member secured adjacent the forward free end of the lower support member for receiving the support material thereon, an upper support member lying in vertically spaced, substantially parallel relationship to said lower support member and having a discharge opening at the forward free end thereof through which fastener elements will pass, a vertical housing member secured at its lower end to the forward free end of said upper support member immediately above said discharge opening and extending upwardly from said upper support member in substantially right angle relationship thereto and in substantially vertical alignment with said fixed tool member and being in vertically spaced relationship thereto, a vertical reciprocable tool member positioned within said housing member with the bottom actuating end thereof normally lying within said housing, means associated with said reciprocable tool member to effect the desired vertical movement thereof, rotatable fastener element strip-feeding means mounted on said upper support member for discharging fastener elements in a horizontal plane through said discharge opening in the forward end of said upper support member at a point just below the lower end of said vertical housing member and into the path of and in engagement with the actuating head of said vertically reciprocable tool member at the beginning of its downward stroke, a movable fastener element supporting member pivotally mounted to said vertical housing and having a portion normally lying just below the passageway of said upper support member to support a fastener element against the lower end of the tool after same has been placed in the path of the tool and movable out of the way of said tool after the fastener element has been picked up by said reciprocating tool member at the beginning of its downward stroke, and means associated with said vertical housing member and said feeding means for the indexing of said feeding means upon the vertical movement of said reciprocable tool to place a fastener element into the path of and in engagement with said reciprocable tool member on the beginning of its downward stroke to apply same to the supporting material.

3,198,685
APPARATUS FOR HEAT SEALING
Louis Kopito and Henry D. Swartz, Brookline, and Gerald Altman, Newton Center, Mass., assignors to Thermoplastic Industries, Inc., Brockton, Mass., a corporation of Massachusetts
Filed June 16, 1961, Ser. No. 117,691
8 Claims. (Cl. 156—583)



1. A device for welding together registered portions of thermoplastic sheets, said device comprising a pair of elastomeric pressure faces directed toward each other, a pair of rigid backing platens on opposite sides of said pressure faces, one of said backing platens being constrained for movement with respect to the other of said backing platens for compressing said pressure faces toward and releasing said pressure faces from each other, an endless belt including the other of said faces as one of a succession of increments, said endless belt being constrained for cyclic movement, and a heat sealing element movable with said one of said backing platens positioned between said faces in order to heat to welding temperature registered portions of said thermoplastic sheets compressed between said faces in contact with said heat sealing element.

3,198,686
POLISHED SURFACE LAMINATED PLASTIC PANEL AND METHOD OF MAKING THE SAME
Eugene Caligari, Jr., 806 W. 21st St., Norfolk, Va.
Filed July 5, 1961, Ser. No. 121,980
11 Claims. (Cl. 161—6)



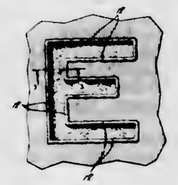
8. A laminated fiber reinforced plastic panel, comprising: a plurality of superposed integrally joined laminae, each including a porous glass fiber sheet impregnated with polyester resin, one of said glass fiber sheets having a decorative pattern impressed on a surface thereof, and a meshed fabric sheet adhered to the back surface of said panel.

3,198,687
HIGHLY EFFECTIVE THERMAL INSULATION
Jean Royet, St.-Maur-des-Fosses (Seine), France, assignor to L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude
Filed Apr. 17, 1961, Ser. No. 103,284
Claims priority, application France, Apr. 27, 1960, 825,470, Patent 1,264,507; Dec. 28, 1960, 848,193
2 Claims. (Cl. 161—43)

1. A thermal insulation structure in vacuo, for low temperature service, comprising substantially parallel radiation-reflecting screens and separating means for said radiation-reflecting screens consisting of a woven fabric whose threads are made of filament formed each one of several tens of twisted fibres of a low thermal conductivity, of a diameter of around one micron, and of a pitch substantially different of the mesh of the fabric, said fabric being loosely woven so that substantial voids are left between the weft threads and between the warp threads of the fabric.



3,198,688
EMBOSSED LAMINATE AND METHOD OF MAKING SAME
Jack P. Yoder, Newark, Del., assignor to The Budd Company, a corporation of Pennsylvania
Filed Aug. 18, 1961, Ser. No. 132,321
4 Claims. (Cl. 161—97)

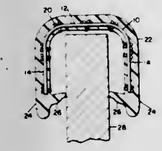


1. The method of producing a laminated article exhibiting an ornamental design, diagram, indicia, or the like, said method comprising the steps of, forming a colored partially cured resinous body, forming a partially cured surface layer for said body by applying to an absorbent paper having a substantially uniform thickness of 1.5 to about 12 thousandths of an inch, a thermosetting resinous material to provide a resinous layer having about 20 to 65%, by weight of thermosetting resin, uniformly penetrated into fibers of said paper, partially curing the impregnated paper by drying, integrally laminating said surface layer to a surface of said body by heat and pressure sufficient to cure said resinous material of said body and said surface layer thereby providing an article having a clear surface layer through which the color of said body is visible, disrupting said surface layer by mechanically fracturing the same throughout areas corresponding to given ornamental design, diagram, indicia, or the like to form diffusely reflecting discrete particles to said body and producing an embossing consisting of said discrete particles of said impreganting resinous material interconnected by discrete fibers of said sheet material, whereby the visual aspect of the diffusely reflecting particles contrasts with the visual aspect of the colored body as viewed through the remainder of the top layer to exhibit the given indicia.

3,198,689
GARNISHING BEAD
Frederick J. Lansing, Rochester, N.Y., assignor to The Schlegel Manufacturing Company, Rochester, N.Y., a corporation of New York
Filed Jan. 29, 1962, Ser. No. 169,465
7 Claims. (Cl. 161—100)

1. A garnishing bead adapted to be immovably clamped and supported on the edge of a body flange to enclose and ornamentally trim the same comprising bendable

supporting frame of metallic material of substantially U-shape in transverse section with a base and opposite side flanges for embracing and enclosing the edge of said body flange, and a coating of flexible, resilient plastic material covering both sides and the edges of said frame flanges, said coating being formed adjacent the edges of



said frame flanges with resilient and compressible fins extending longitudinally of said frame and adapted to project obliquely inwardly of said frame and toward said base thereof for contact with opposite side faces of said body flange to resist removal of said bead therefrom by compressive wedging engagement therewith.

3,198,690
FOAM RUBBER LAMINATE AND METHOD OF MAKING SAME
Joseph C. Starke, Mishawaka, Ind., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Nov. 7, 1960, Ser. No. 67,516
8 Claims. (Cl. 161—159)

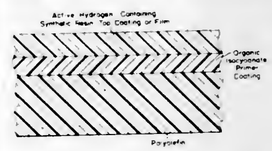
1. A laminate comprising a plurality of foam rubber layers joined together with a vulcanizable rubber adhesive cement containing at least 10 parts by weight of an activated carbon material in its skeletal state per 100 parts by weight of the rubber component, wherein the cement is cured so as to form continuous cement bonds between the layers, which bonds allow and promote the wicking and migration of fluids through their otherwise impermeable barriers.

3,198,691
BEARING MATERIALS AND PRODUCT
Percival Edward Thomas, Ashtead, and Norman Arthur Gardiner, Wibsey, Bradford, England, assignors to British Belting & Asbestos Limited, Cleckheaton, York, England, a British company
No Drawing. Filed Oct. 18, 1961, Ser. No. 145,985
Claims priority, application Great Britain, Oct. 27, 1960, 36,966/60; Aug. 18, 1961, 29,920/61 and 29,921/61
26 Claims. (Cl. 161—184)

1. A moulded composite bearing material made from powdered fluorocarbon resin and powdered epoxy resin and comprising said fluorocarbon resin firmly incorporated in a matrix of said epoxy resin in a cured state, the relative proportions of the fluorocarbon resin to matrix material and its distribution therein being such that the composite bearing material is susceptible to bonding to a support.

3,198,692
POLYOLEFIN LAMINATE
Douglas J. Bridgeford, Danville, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 26, 1963, Ser. No. 261,216
47 Claims. (Cl. 161—188)

9. A laminate comprising surface-oxidized polyethylene-containing active hydrogen joined to a polymeric material containing active hydrogen by a water-resistant strong bond which consists essentially entirely of intermediately disposed thin layer of organic compound having a plurality of —X═C═Y groups wherein X in selected from the group consisting of C and N and Y is selected from the group consisting of O, S and NR wherein R is selected from the group consisting of hydrogen and mono-



valent hydrocarbon radical, and chemically reacted in situ with said surface-oxidized polyethylene and polymeric material.

3,198,693
SCAVENGING MEANS FOR GROOVED PRESS ROLLS
Edgar J. Justus, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Aug. 21, 1964, Ser. No. 391,160
15 Claims. (Cl. 162—272)



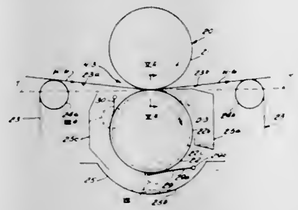
1. A device for cleaning a continuously rotating generally cylindrical press roll shell having a peripheral surface portion presenting alternating generally circumferentially aligned grooves and ridges, said grooves defining a continuous spiral on the periphery of said roll, said device comprising means adapted to present to said ridges a generally axially continuous edge and chaser means for slidably engaging said edge for relative axial movement carrying a plurality of spaced peripherally aligned guide means slidably receivable in closely adjacent grooves on the roll periphery.

5. In combination, a generally cylindrical press roll shell adapted to be mounted for rotation about its centroidal axis and to press a peripheral rotary surface portion thereof against a liquid-containing web material; said surface portion having alternating generally circumferentially aligned grooves and ridges; said grooves having a narrow axial dimension at the roll periphery for receiving liquid pressed from the web material and tending to retain such liquid, being vented to ambient atmosphere at both off-running and on-coming sides of an axial line of contact between the roll shell periphery and the liquid-containing web material from which liquid is pressed into such grooves, and being interposed between lands on said ridges averaging in axial width substantially at least twice the axial widths of said grooves, and wiper means having an axially continuous surface portion extending from close proximity to said roll peripheral surface portion gradually away from such roll surface in the direction of roll rotation for pumping liquid out of the grooves moving past the wiper means.

3,198,694
PRESS ROLL ASSEMBLIES IN PAPER MAKING MACHINE
Edgar J. Justus, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Dec. 10, 1964, Ser. No. 417,326
2 Claims. (Cl. 162—358)

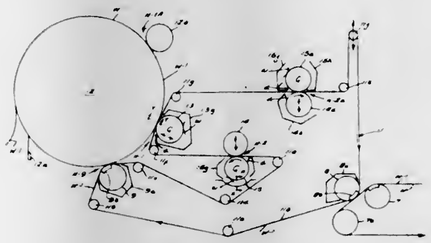
1. In a paper machine press section, in combination, a looped traveling moist felt, a first press roll, a second press roll engaging the felt defining with said first press

roll a press nip for receiving the felt, said second press roll having a generally cylindrical press roll shell mounted for rotation about its centroidal axis and positioned to press a peripheral rotary surface portion thereof against said felt, said surface portion having alternating generally circumferentially aligned grooves and ridges, said grooves having a narrow axial dimension at the roll periphery for receiving water pressed from the felt but also tending to resist flow of water out of the grooves, said ridges each presenting a generally cylindrical outer peripheral land area, generally axially continuous doctor means close to the nip for removing water from said land areas at the oncoming side of the nip during rotation of



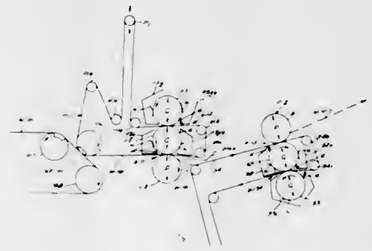
the roll, and guide means positioned relative to a common tangent plane for the first and second rolls for maintaining the moist felt on the side of said plane of the first roll at both the oncoming and off-running sides of the press nip, whereby the felt may have a minimum amount of travel within said grooves, the grooves having an axial dimension at the roll periphery of 0.005 to 0.035 inch and extending radially inwardly to impart to the cross sectional area of each groove a value substantially equal to at least twice the square of the aforesaid groove axial dimension, and the peripheral land areas on said grooved press roll having an average axial dimension that is at least twice the groove axial dimension.

3,198,695
GROOVED PRESS ROLL ASSEMBLIES WITH A YANKEE DRIER
Edgar J. Justus, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Aug. 15, 1963, Ser. No. 302,421
1 Claim. (Cl. 162—359)



In a Yankee drier paper-making machine, in combination, traveling felt means for receiving a moist paper web from a forming surface and placing the web on a hot Yankee drier to effect warming of the water in such moist paper web, a first press roll wrapped by said felt means and defining a first web press nip with the Yankee drier, said first web press nip receiving and dewatering the web and sticking the web to the Yankee drier surface, a second press roll wrapped by said felt means and defining a second web press nip with said Yankee drier at a region on the Yankee drier spaced from said first press nip to further dewater the web by mechanical pressure after it has been stuck to such Yankee drier surface and while the web is being heated by and carried upwardly by such Yankee drier, said second press roll being a grooved roll presenting a peripheral surface portion having a plurality of alternating generally circumferentially aligned grooves and ridges, said ridges presenting smooth generally cylindrical closely spaced land areas for supporting the felt and permitting the felt to bridge the grooves, said grooves being substantially 0.005 to 0.035 inch in axial dimension but being vented to ambient atmosphere at the oncoming and off-running sides of the second press nip defined by said grooved roll to facilitate reception of warmed water from the moist web and through the felt means and into such grooves which present at the grooved roll periphery at such second press nip an average ratio of groove-to-land axial dimensions within the range of 1:2 to 1:20 to minimize return movement of such warmed water at the off-running side of such second press nip from such grooves back through said felt means and into said web moving on the Yankee drier surface, and guide means for said felt means for separating the felt means from both the web and said grooved roll periphery at the immediate off-running side of said second press nip to further minimize the aforesaid return movement of such warmed water.

3,198,696
MULTIPLE GROOVED ROLL PRESS ASSEMBLIES
Edgar J. Justus, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Aug. 15, 1963, Ser. No. 302,423
1 Claim. (Cl. 162—360)



In a paper machine press assembly, in combination, a first traveling looped felt, a suction pickup roll within the felt loop urging the felt against a traveling wet web on a forming surface for transferring the traveling wet web to the outer peripheral surface of said looped felt, a first plain press roll outside the loop of the felt, a second press roll within the felt loop and defining with said first press roll a first web press nip receiving and dewatering the web carried on said felt and a third press roll outside of the felt loop and defining with said second roll a first felt only nip receiving the felt without the web to dewater and condition the felt, both of said second and third press rolls being grooved rolls formed respectively of imperforate press roll shells presenting each to the felt touching the same a peripheral surface portion having a plurality of alternating generally circumferentially aligned grooves and ridges, said ridges on said second press roll presenting to such felt smooth generally continuously cylindrical closely axially spaced land areas for supporting the felt and permitting the felt

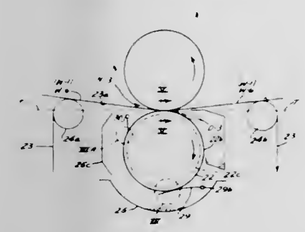
to bridge the grooves and thereby protect against substantial marking in the case of the web at the first web press nip defined by such grooved roll, said grooves being vented to ambient atmosphere at the oncoming and off-running sides of the press nip defined by such grooved roll to facilitate reception of water from the felt at such nip, a second looped felt receiving the web from the first web press nip and conveying the web to and through a second web press nip, and a trio of press rolls defining a divided press with one nip defined by a plain fourth roll and a grooved fifth roll being said second web press nip and the other nip being a felt only press nip defined by said fifth grooved roll of said trio within the second felt loop and the sixth grooved roll of said trio outside the second felt loop, each of the aforesaid second, third, fifth and sixth rolls being characterized by the aforesaid grooved roll structure and further having grooves of narrow axial dimension which on the average along each press nip defined by such roll having a land-to-groove ratio of substantially 2:1 to 20:1; with the narrow grooves having axial dimension within the range of 0.005 to 0.035 inch; and having groove depths such that the values for the groove cross-sectional areas at each such nips are at least twice the square of the aforesaid narrow groove axial dimension at the periphery of the respective roll shell, each of such aforesaid grooved rolls also being provided with saveall means for containing and receiving water removed from the roll lands and grooves remote from each press nip defined by each such grooved roll shell.

3,198,697

PAPER PRESS ROLL ASSEMBLIES

Edgar J. Justus, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed June 26, 1964, Ser. No. 378,217
11 Claims. (Cl. 162—372)



1. A generally cylindrical press roll shell adapted to be mounted for rotation about its centroidal axis and to present to a pressure nip a peripheral rotary surface portion, said surface portion having alternating generally circumferentially aligned grooves and ridges, said grooves having an axial dimension at the roll periphery of 0.005 to 0.035 inch and extending radially inwardly to impart to the cross sectional area of each said groove a value substantially equal to at least twice the square of said groove axial dimension, said ridges each presenting a generally cylindrical outer peripheral land area having an axial dimension of 0.05 to 0.25 inch that is substantially 2 to 20 times said axial groove dimension, as an average along an axial line on the roll periphery, thereby presenting a rotary surface portion with an average effective open area of not more than substantially 33⅓%.

ERRATUM

For Class 167—22 see:
Patent No. 3,198,251

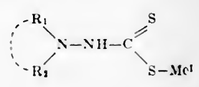
3,198,698

FUNGICIDAL COMPOSITIONS

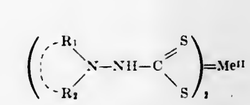
Wolfgang Reuter, Richard Sehring, and Karl Zelle, all of Ingelheim (Rhine), Germany, assignors to C. H. Boehringer Sohn, Ingelheim (Rhine), Germany, a limited partnership of Germany

No Drawing. Filed May 26, 1961, Ser. No. 112,764
Claims priority, application Germany, May 27, 1960, B 58,020
11 Claims. (Cl. 167—22)

1. Compounds having a formula selected from the group consisting of



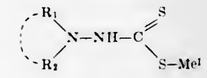
and



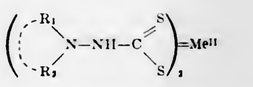
wherein R_1 and R_2 are selected from the group consisting of alkyl with 1 to 6 carbon atoms and, together with the nitrogen to which they are attached, heterocycles selected from the group consisting of piperidino and morpholino, Me^I is the cation of a monovalent metal and Me^{II} is the cation of a divalent metal.

9. The zinc salt of N-morpholino-dithiocarbamic acid.

11. The method of inhibiting fungi, which comprises contacting said fungi with a composition consisting essentially of an inert carrier and 0.05 to 10% by weight of a fungicidally effective compound having a formula selected from the group consisting of



and



wherein R_1 and R_2 are selected from the group consisting of alkyl with 1 to 6 carbon atoms and, together with the nitrogen to which they are attached, heterocycles selected from the group consisting of piperidino and morpholino, Me^I is the cation of a monovalent metal and Me^{II} is the cation of a divalent metal.

3,198,699

METHOD OF COMBATTING NEMATODES WITH FORMALDEHYDE-N-METHYL DITHIOCARBAMIC ACID SALT CONDENSATION PRODUCT

Krijn van den Boogaart, Vlaardingen, Netherlands, assignor to Fabriek van Chemische Producten Vondelingenplaat N.V., a corporation of the Netherlands

No Drawing. Filed June 20, 1962, Ser. No. 203,726
Claims priority, application Netherlands, Apr. 11, 1960, 250,399
10 Claims. (Cl. 167—22)

1. A method of combatting nematodes comprising contacting the nematodes with a condensation product of 1.5 to 3 moles of formaldehyde and one mole of a salt of N-methyl dithiocarbamic acid selected from the group consisting of an alkali metal salt and the ammonium salt.

3,198,700

SEDATIVE TABLET AND METHOD FOR PRODUCING THE SAME

Stanley S. Sidenberg, University Heights, Cleveland, and Frederick J. Bandelin, Lyndhurst, Ohio, assignors to Blessings, Inc., Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed May 29, 1961, Ser. No. 113,095
9 Claims. (Cl. 167—52)

1. The process of preparing a stable, solid dosage chloral hydrate tablet comprising the steps of mixing chloral hydrate and glycine, in the proportion of at least 0.8 part by weight of glycine to 1 part by weight of chloral hydrate, moistened by the presence of a liquid vehicle, granulating the mixture, drying the mass at a temperature substantially below the boiling point of chloral hydrate, and compressing the mass into tablets of predetermined size.

3,198,701

METHOD OF CURBING APPETITE WITH 1-PHENOXY-2-AMINO-PROPANE

Karl Zelle and Otto Thomä, Ingelheim, Germany, assignors, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed July 10, 1962, Ser. No. 208,917
Claims priority, application Great Britain, July 31, 1961, 27,743/61
2 Claims. (Cl. 167—55)

1. The method of curbing the appetite of warm-blooded animals without, at the same time, stimulating the central nervous system of said animals, which comprises orally administering to said animals from 20 to 100 mgm. of a compound selected from the group consisting of 1-phenoxy-2-amino-propane and its non-toxic, pharmacologically acceptable acid addition salts.

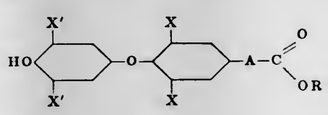
3,198,702

METHOD FOR TREATING SKIN BURNS

Arthur A. Heilbaum, 408 W. 57th St., New York, N.Y.

No Drawing. Filed Mar. 17, 1960, Ser. No. 15,539
10 Claims. (Cl. 167—58)

1. The method of treating burned areas of the skin of animals including humans which comprises applying to said burned areas a composition comprising a vehicle which contains a medicative amount of a compound of the formula:



where X is halogen, X' is from the group consisting of halogen and hydrogen, A is lower divalent aliphatic of from 1 to 3 carbon atoms in chain length, and R is from the group consisting of hydrogen and lower alkyl of not more than 6 carbon atoms in chain length.

3,198,703

METHOD OF PRODUCING SYMPATHOMIMETIC ACTIVITY BY ISOPROPYL-2'-PHENOXYMETHYL-2-IMIDAZOLINE

Don Pierre René Lucien Giudicelli, Fontenay-sous-Bois, Seine, France, assignor to Les Laboratoires Dausse, Paris, France, a corporation of France

No Drawing. Filed May 4, 1961, Ser. No. 107,640
6 Claims. (Cl. 167—65)

1. A method of producing peripheral sympathomimetic activity in a patient which comprises administering to said patient a pharmeceutical composition containing a therapeutically effective amount of a compound selected from the group consisting of isopropyl-2'-phenoxymethyl-2-imidazoline and its pharmeceutically acceptable salts.

3,198,704

ETHYL LINOLEATE EMULSIONS FOR PARENTERAL INJECTION

Krishnabandhu Nath Roy, Calcutta, India, assignor to Martin & Harris (Private) Limited, Calcutta, West Bengal, India, a company of India

No Drawing. Filed Sept. 25, 1961, Ser. No. 140,244
3 Claims. (Cl. 167—65)

1. A pharmaceutical preparation for parenteral injection consisting essentially of an aqueous emulsion of ethyl linoleate and containing glycerol monostearate as the emulsifying agent.

3,198,705

METHOD OF INDUCING HYPOTENSIVE AND GANGLIONIC BLOCKING ACTIVITY

John R. Cummings, Suffern, N.Y., and Arthur K. Hoffmann, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 14, 1963, Ser. No. 250,995
3 Claims. (Cl. 167—65)

1. A method of inducing hypotensive and ganglionic blocking activity in warm blooded animals which comprises orally administering thereto from about 5 mg. to about 50 mg. of N,N-di-tert-butylhydroxylammonium chloride in dosage unit form and a pharmaceutical carrier therefor.

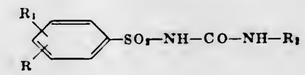
3,198,706

METHODS OF REDUCING BLOOD SUGAR AND COMPOSITIONS THEREFOR

Heinrich Ruschig, Bad Soden, Taunus, Walter Aumüller, Gerhard Korger, Hans Wagner, and Josef Scholz, Frankfurt am Main, and Alfred Bänder, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Original application July 31, 1956, Ser. No. 601,107. Divided and this application Apr. 9, 1962, Ser. No. 185,865
Claims priority, application Germany, Oct. 15, 1955, F 18,659; Jan. 7, 1956, F 19,256
6 Claims. (Cl. 167—65)

4. A process for the lowering of blood sugar in the treatment of diabetes which comprises orally administering an effective amount of a composition having as the essential active ingredient a compound selected from the group consisting of (1) a sulphonyl urea of the formula:



wherein R is selected from the group consisting of hydrogen, chlorine, bromine, methyl and methoxy, R_1 is selected from the group consisting of chlorine and bromine, and R_2 is of 2 to 7 carbon atoms selected from the group consisting of alkyl-, alkenyl-, cycloalkyl- and cycloalkylalkyl, and (2) non-toxic basic addition salts thereof.

6. A process for the lowering of blood sugar in the treatment of diabetes which comprises orally administering an effective amount of a composition having as the essential active ingredient N-(4-chlorobenzenesulphonyl)-N'-n-butylurea.

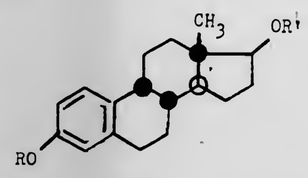
3,198,707

9β-ISOMERS OF ESTRADIOL, PROCESSES OF MAKING THE SAME AND THEIR UTILIZATION

Gerard Nomine, Noisy-le-Sec, Robert Bucourt, Clichy-sous-Bois, and Andre Pierdet, Noisy-le-Sec, France, assignors to Roussel-UCLAF, S.A., Paris, France, a corporation of France

No Drawing. Filed July 30, 1964, Ser. No. 386,370
Claims priority, application France, May 4, 1961, 860,746; Aug. 2, 1961, 869,787
11 Claims. (Cl. 167—74)

11. A process for the promotion of an estrogenic response on the vaginal epithelium substantially free of an estrogenic response on other sites which comprises the administration to warm-blooded animals of between 25 γ/kg. and 2 mg./kg. per day of an estradiol derivative of the formula:



wherein R and R' can be different and represent radicals selected from the group consisting of hydrogen, lower alkyl and the acyl radical of an organic carboxylic acid having from 1 to 18 carbon atoms selected from the group consisting of alkanoic acids, alkenoic acids, cycloalkyl-alkanoic acids, phenyl-alkanoic acids, cycloalkanoic acids and phenyl carboxylic acids.

3,198,708

ANTIPERSPIRANT-DEODORANT COMPOSITION

Hyman Henkin, Bayside, Queens, N.Y., and Ralph Paul Messina, Hackensack, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 14, 1960, Ser. No. 35,893
7 Claims. (Cl. 167—90)

1. A liquid antiperspirant-deodorant composition stable at a temperature of from about 120° F. to about 136° F. comprising an aluminum astringent compound, 0.1 to 0.5% by weight of neomycin sulfate, 0.1 to 2% by weight of glycine, 0.1 to 5% by weight of a water-soluble nonionic surface-active agent and 0.1 to 2% by weight of hydroxypropyl methyl cellulose in an aqueous alcoholic medium containing 5 to 30% by weight of ethanol, said cellulose having a methoxy content of 24.6–25.4%, a hydroxypropoxy content of 4.8–5.4% and a viscosity of about 1200 to about 1800 centipoises in 2% solution in water at 20° C.

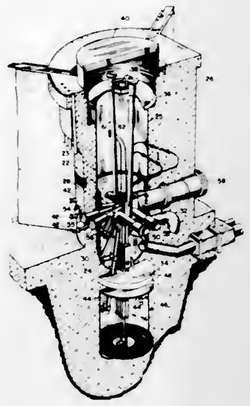
3,198,709

NUCLEAR REACTOR CONTROL ROD ASSEMBLY WITH IMPROVED DRIVING MECHANISM

John W. Macomber, Bay Village, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed May 1, 1963, Ser. No. 277,402
11 Claims. (Cl. 176—35)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A control rod for a nuclear reactor comprising,
a plurality of sections, containing mating members and movable locking members, and
assembly means for selectively securing said sections together, said assembly means including reciprocable members in certain of said sections operably connected to said locking members for moving the same into and out of engagement with said mating members when said control rod is in said nuclear reactor.
4. Apparatus for regulating the power level of a nuclear reactor having a core containing a plurality of fuel elements, said apparatus comprising
a plurality of control rods mounted vertically in said core, each of said control rods comprising
a first section,
at least one other section adjacent said first section, and
a plurality of mating members for selectively securing said first section to said other section,



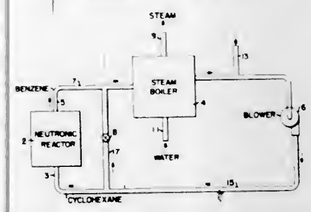
driving means for selectively raising said first section into said core to increase said power level and controlling the lowering of said first section out of said core to decrease said power level,
first means for selectively connecting said driving means to said other section during said raising, and
second means for connecting said driving means to said control rod when said first means is disconnected from said other section to positively lower said control rod.

3,198,710

REACTOR COOLANT SYSTEM

Robert B. Long, Wanamassa, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Nov. 12, 1958, Ser. No. 773,347
12 Claims. (Cl. 176—39)



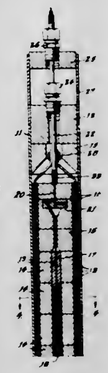
1. An improved process for generating power from a neutronic reactor including a nuclear reaction zone comprising an assembly of fuel elements and conduit means for supplying a cooling medium to said zone and for withdrawing said cooling medium to a steam boiler, the surface of said fuel elements being coated with a dehydrogenation catalyst, which comprises supplying cyclohexane to said reaction zone to cool said fuel elements, catalytically dehydrogenating cyclohexane on the surface of said fuel elements in contact with said dehydrogenation catalyst to produce benzene therefrom, removing benzene with hydrogen and unreacted cyclohexane from said zone to a steam boiler, and hydrogenating said benzene in said steam boiler in heat exchange relationship with water.

3,198,711

THERMOELECTRIC NUCLEAR FUEL ELEMENT

James O. McPartland, Kennewick, and Linden A. Pember, Pasco, Wash., and James A. Christensen, Pittsburgh, Pa., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Aug. 18, 1964, Ser. No. 390,493
2 Claims. (Cl. 176—68)



1. A fuel element for a nuclear reactor comprising an elongated hollow cylindrical body of a sintered ceramic fuel material, a jacket surrounding said cylindrical body, compacted ceramic fuel powder in the opening at the center of said cylindrical body, a coil of metal wire embedded in said compacted fuel powder, an electrical connection from said coil to the exterior of the fuel element, compacted ceramic fuel powder surrounding said cylindrical body, a metal wire grid embedded in said compacted powder and an electrical connection between said wire grid and ground.

3,198,712

PROCESS FOR PRODUCING L-ASPARTIC ACID

Masahiro Takahashi and Yasoji Miura, Tokyo, Shinji Okumura and Moriyoshi Ishida, Kanagawa-ken, and Tetsuo Hino, Tokyo, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Filed May 23, 1963, Ser. No. 282,585
Claims priority, application Japan, May 26, 1962, 37/21,524
19 Claims. (Cl. 195—30)

1. A process for producing L-aspartic acid which comprises mixing *Pseudomonas trifolii* with an aqueous solution containing a fumaric compound selected from the group consisting of fumaric acid and fumarate and an ammonia compound selected from the group consisting of ammonia and ammonium salt, maintaining the resulting mixture at approximately neutral condition whereby L-aspartic acid forms, and recovering L-aspartic acid from said admixture.

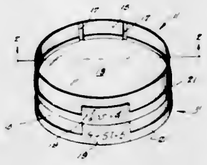
3,198,713

STACKED PETRI DISHES

James B. McCormick, La Grange, Ill., assignor, by mesne assignments, to Ames Atomium, Inc., Billerica, Mass., a corporation of Massachusetts

Filed July 6, 1962, Ser. No. 207,896
1 Claim. (Cl. 195—139)

A plurality of open-topped petri dishes arranged to form a stable stack which includes a base dish and a plurality of overlying dishes supported by said base dish one upon the other, each overlying dish serving as a lid for an underlying dish, said base dish and said overlying dishes being identical to one another and being interchangeable so as to occupy any position in the stack, each of said dishes comprising an imperforate horizontally disposed circular plate adapted to support the contents of the dish on its upper surface, said plate being adapted to overlie the receiving cavity of an underlying dish when the dish of said plate occupies the position of an overlying dish and being adapted to overlie a surface supporting the stack when said dish occupies the position of a base dish, means defining a wall extending upwardly from said plate adjacent the periphery thereof, said wall and plate thereby defining the receiving cavity of said



dish, and a flange depending downwardly from said plate adjacent the periphery thereof, said flange defining a vertically disposed inwardly facing generally cylindrical surface offset outwardly slightly relative to the outer surface of the upper edge of the upwardly extending wall so as to permit the flange of the overlying dishes to be interfitted with the upper edge portion of the upwardly extending wall of an underlying dish, thereby enabling the dishes to form a stable stack, said flange of a dish being located outside and enclosing the receiving cavity of an underlying dish, and elevating the plate of the base dish above the surface supporting the stack.

3,198,714

PROCESS FOR MAKING CARBON ARTICLES FROM CARBON PARTICLES AND FURANE DERIVATIVES

William Johnson and William Watt, Farnborough, England, assignors to United Kingdom Atomic Energy Authority, London, England

No Drawing. Filed Nov. 28, 1958, Ser. No. 776,682
Claims priority, application Great Britain, Dec. 5, 1957, 37,892/57
13 Claims. (Cl. 202—26)

1. A process of manufacturing a shaped carbon article having high density and low permeability comprising the steps of forming a mixture of carbon particles and up to about 20% by weight of a liquid binder material consisting essentially of furfuryl alcohol and being polymerizable to yield a thermosetting resinous material, and which gives a high yield of dense relatively low permeability carbon on decomposition by heat, shaping a charge of the mixture to article form, polymerizing the binder material in said shaped article, and then heating said shaped article to carbonize the binder material.

3,198,715

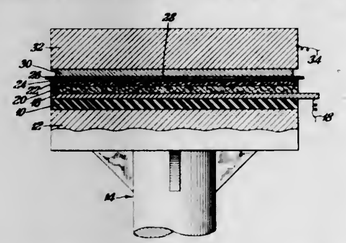
TEST FOR DETERMINING CORROSION RESISTANCE OF STAINLESS STEEL

Robert M. Fowler and Claude R. Bishop, Niagara Falls, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed Dec. 12, 1962, Ser. No. 244,028
7 Claims. (Cl. 204—1)

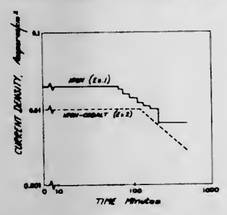
1. A test for determining the relative corrosion resistance of a stainless steel specimen, said test comprising the steps of preparing a polished and degreased surface section of said stainless steel specimen, uniformly saturating an absorptive member, which has a gel coating on at least one surface, with a 0.05 to 0.2 N aqueous electrolyte solution of a chloride salt, chosen from the group consisting of alkali salts and alkaline earth metal salts, to which has

been added from about 0.5 to about 3 grams, per liter of solution of a nitrate composed such that the ratio of nitrate ion to chloride ion is about 6 to 1, intimately contacting the gel coated surface of said electrolyte saturated member and said polished and degreased surface section of said stainless steel specimen, making the stainless steel



specimen anodic by passing a direct current of known density through said stainless steel specimen while maintaining said intimate contact, and then chemically treating any iron salts and chromium salts which were formed as a result of said direct current and which will be embedded in said gel to convert them to salts having a highly distinct and visible color.

3,198,716
MAGNETIC MATERIAL AND METHOD OF PREPARING THE SAME
Fred E. Luborsky, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 21, 1961, Ser. No. 161,033
6 Claims. (Cl. 204—10)



1. In a process of preparing fine particle magnetic material comprising electrolytically depositing fine particles into a liquid metal cathode during an electrodeposition cycle sufficiently long to produce elongated single-domain magnetic particles from an electrolyte comprising ions selected from the class consisting of iron ions, cobalt ions, nickel ions and combinations thereof, while maintaining a quiescent interface between the cathode and the electrolyte, the improvement which comprises progressively lowering the cathode current density during a major portion of the electrodeposition cycle within the range from a maximum of 5 amps./cm.² to a minimum of 0.001 amp./cm.² to maintain a substantially constant maximum coercive force in the electrodeposited particles.

3,198,717
PROCESS FOR PREPARING MAGNETIC MATERIALS
Richard B. Falk, Greenville, Mich., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 6, 1962, Ser. No. 214,852
4 Claims. (Cl. 204—10)

1. A process for preparing magnetic material comprising in sequence

electrolytically depositing fine particles into a liquid metal cathode from an electrolyte in which the metallic ions consist essentially of iron and cobalt,

subjecting the deposited particles to an A.-C. generated magnetic field for a time and an intensity sufficient to improve the magnetic properties of the particles, and

oxidizing said particles to form particles having a core of an alloy of iron and cobalt and a coating surrounding said core, said coating being an oxide of iron and cobalt, the dimensions of each of said particles being that of a single magnetic domain.

3,198,718
METHOD FOR MAKING STRUCTURALLY INTEGRATED FILM RESISTOR ASSEMBLY
Ross A. Quinn, Palo Alto, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Original application May 26, 1960, Ser. No. 31,946, now Patent No. 2,994,846, dated Aug. 1, 1961. Divided and this application Apr. 14, 1961, Ser. No. 103,104
9 Claims. (Cl. 204—15)

2. A method of making a structurally integrated film resistor assembly which comprises boring a plurality of holes of predetermined diameters in an insulative substrate, coating the surfaces of said substrate including the inner surfaces of said holes with a conductive metal of the group consisting of titanium, zirconium and hafnium to form a conductive film thereon, etching the conductive film on the faces of said substrate to form a predetermined conductive film wiring pattern thereon, applying a protective coating to a plurality of low resistivity thin film leads interconnecting the conductive surfaces of said holes, and then converting the conductive films on the inner surfaces of said holes into films of predetermined high resistivity.

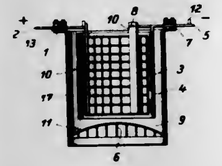
3,198,719
GARDENING TOOL
Charlie G. Stewart, P.O. Box 327, Fairfield, Ala.
Filed Dec. 31, 1962, Ser. No. 248,441
10 Claims. (Cl. 294—50.5)



1. A soil working and vegetation removing tool comprising, elongated shank means having a cross-sectional configuration adapted to enclose a vertical growth of vegetation in offset relation to a longitudinal axis between upper and lower ends of the shank means, fork means connected to said lower end of said shank means terminating in a circular cutting plane for twisting said growth of vegetation in response to rotation of the shank means about said longitudinal axis, coring pivot means connected to said lower end of the shank means and projecting below the circular cutting plane for penetration of the earth, crank means connected to said upper end of the shank means for imparting rotation thereto about the longitudinal axis fixedly established in the earth by said coring

pivot means, expander blade means connected to said lower end of the shank means and extending laterally therefrom at an angle to the fork means to form a saw cutting edge therewith in said circular cutting plane, and means for mounting the expander blade means on the shank means for selective positioning thereof in longitudinally spaced relation to the circular cutting plane and adjustably spaced relation to the fork means within the circular cutting plane, said pivot means comprising an elongated member which is substantially triangular in cross section to form longitudinal folding edges for tightly wrapping the vegetation thereabout, said elongated member tapering toward an earth piercing end away from the shank means for slidable removal of vegetation and earth between the pivot means and the fork means, said fork means including, a pair of claw blades radially extending from said longitudinal axis in spaced relation to said pivot means, each of said claw blades having oppositely facing beveled edge portions extending vertically in confronting spaced relation to the pivot means for cutting earth and wrapping said vegetation about the pivot means in response to rotation of the shank means in one direction, and downwardly extending teeth formed on said beveled edge portions for engaging said vegetation to prevent unwinding thereof.

3,198,720
METHOD OF DETINNING TIN-PLATE
Gustav Knippers, Auf dem Saarnberg 18, Mulheim an der Ruhr Saarn, Germany, and Johann Christian Gröber, Mulheim an der Ruhr, Germany; said Gröber assignor to said Knippers
Filed May 23, 1960, Ser. No. 31,081
Claims priority, application Germany, May 23, 1959, K 37,820
9 Claims. (Cl. 204—121)



4. A process of detinning tin-plate scrap which comprises placing the scrap in an aqueous alkaline electrolytic bath exposed to the atmosphere and containing a cathode and in which said scrap forms the anode and depositing the tin upon said cathode by passage of an electric current through said bath containing 5 to 20% per volume of an aliphatic alcohol of not more than 3 carbon atoms and about 35 to 40 grams of alkali calculated as Na_2O per liter of electrolytic bath.

3,198,721
PROCESS AND APPARATUS FOR DETECTING GAS
Theodore A. Rich. Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 479,322, Jan. 3, 1955. This application Mar. 11, 1960, Ser. No. 15,028
7 Claims. (Cl. 204—157)



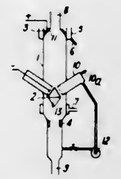
1. The method of detecting a first gas by reaction with a second gas which comprises removing ambient aerosol particles entrained in both gases, converting the treated first gas into an aerosol particle forming substance by reaction with the second gas, and detecting the aerosol particles formed by the reaction process.

3,198,722
ELECTROLYTIC REACTION APPARATUS
Albert B. Callahan, Ross Township, Allegheny County, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Jan. 8, 1962, Ser. No. 164,654
9 Claims. (Cl. 204—219)



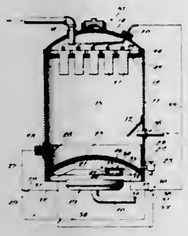
1. Electrolytic reaction apparatus comprising an elongated cell element constituting a receptacle, a supporting structure underlying the cell element and means interposed between the cell element and the supporting structure inhibiting substantial shifting of the cell element as a whole relatively to the supporting structure while permitting movement of portions of the cell element relatively to the supporting structure due to expansion and contraction of the cell element caused by temperature changes, said means including means fastening a localized portion of the cell element only in the region of the transverse center line of the cell element to the supporting structure.

3,198,723
APPARATUS FOR THE CONTINUOUS ELECTROLYTIC REGENERATION OF ION EXCHANGE RESINS
Pierre Chagnon, Cite Layennes-Petite Rosette, and Roger Platzer, Chatillon-sous-Bagneux, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed June 7, 1960, Ser. No. 34,496
Claims priority, application France, June 16, 1959, 797,629
5 Claims. (Cl. 204—299)



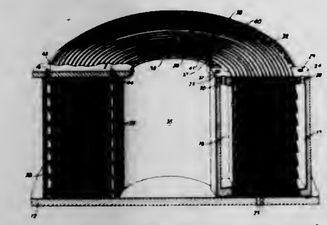
1. Apparatus for the regeneration of granular ion exchange resins employing a constant electric potential between electrodes of opposite polarity between which the grains of resin to be regenerated and an electrolytic solution are located, a vessel in the form of a vertical column, a first electrode mounted within said column, a truncated conical lateral surface for said electrode coaxial with said column having the small base of the cone at the top, an entry for the grains of resin at the top of said column, an annular exit surrounding said column for the electrolytic solution, a second electrode arranged annularly within said column between the entry for the grains of resin and said exit for the solution, an entry for the solution above said first electrode in said column, an exit for the grains of resin at the lower extremity of said column and means for supplying a continuous electric potential to said electrodes.

3,198,724
HOT WATER HEATER WITH ELECTRICAL SCALE CONTROL
John T. Cross and David Cohen, St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Aug. 17, 1960, Ser. No. 50,261
3 Claims. (Cl. 204—299)



1. A hot water heater comprising: a tank for holding water to be heated; means for delivering heat energy through one portion of the tank; an inert, conductive liner; dielectric means securing the liner to the inner surface of said one tank portion to cover said tank portion; an electrode spaced from the liner to have contact with water in the tank; and means causing a direct current of at least approximately 0.8 milliampere per square inch to flow through the water in the tank from the liner to the electrode whereby the liner effectively comprises an anode and the electrode effectively comprises a cathode.

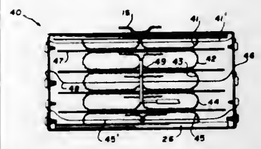
3,198,725
ELECTRODIALYSIS APPARATUS
Paul Kollsman, 100 E. 50th St., New York 22, N.Y.
Continuation of application Ser. No. 701,457, Dec. 9, 1957. This application May 18, 1961, Ser. No. 111,071
The portion of the term of the patent subsequent to July 15, 1974, has been dedicated to the Public
6 Claims. (Cl. 204—301)



1. In an electrodialysis apparatus comprising spaced electrodes, the combination, between the electrodes, of two spaced membranes of ion exchange material defining a liquid passage between them including a passage entrance and a passage exit for liquid passing through the passage; and a flow obstacle structure, said structure comprising a plurality of individual flow obstacle elements of ion exchange material extending from one membrane through said passage to the other membrane, said elements being laterally as well as longitudinally spaced from one another within said passage to obstruct liquid flowing through said passage and produce turbulence by the repeated dividing and recombining of the liquid flow at each individual element.

5. A liquid turbulence promoting membrane spacing structure for electrodialysis cells, said structure comprising an assembly of individual elements of ion exchange material, said elements being laterally as well as longitudinally spaced from one another in the flow path to obstruct the liquid flow and produce turbulence by the repeated dividing and recombining of the flow at each individual element; and means for interconnecting said elements to maintain their spacing from one another, said elements having opposite end surfaces lying in two spaced substantially parallel planes.

3,198,726
IONIZER
Nicolas Trikilis, P.O. Box 152, Wooster, Ohio
Continuation of application Ser. No. 77,110, Dec. 20, 1960. This application Aug. 19, 1964, Ser. No. 390,621
21 Claims. (Cl. 204—320)



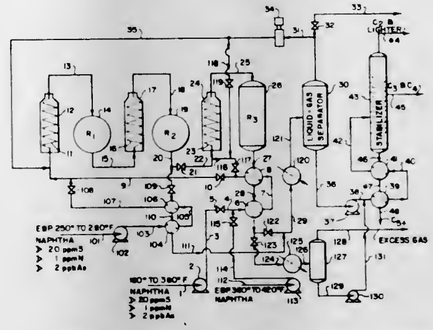
6. An ionizer comprising a plurality of flattened, hollow, tubular, wire-mesh electrodes formed of a substantially rectangular piece of wire mesh, the opposite end portions of which are reversely bent, and are inwardly and reversely folded to form a pair of loops lying in edge-to-edge relationship, all of said electrodes arranged in juxtaposition, the opposite sides of said electrodes being spaced from one another, dielectric means separating the electrodes from one another, and means whereby an electric potential may be established between said electrodes to create an electric discharge.

3,198,727
QUASI-ISOTHERMAL HYDROCARBON CONVERSION AND REACTOR THEREFOR
Philip P. Lifland, Woodbury, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed May 25, 1960, Ser. No. 31,721
8 Claims. (Cl. 208—65)



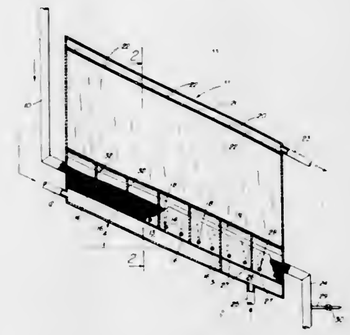
1. A method of hydrocarbon treatment which comprises introducing into a confined reaction path, which is in direct heat transfer relation with fluid heat transfer medium, the total volume of a fluid stream comprising reactable hydrocarbon to pass through said confined reaction path, within said confined reaction path flowing the aforesaid total volume of said fluid stream successively through at least a first contact zone in contact with particle-form solid contact mass material therein, a first heat transfer zone in direct heat transfer relation with removable stationary strips of solid heat transfer medium, a second contact zone in contact with particle-form solid contact mass material therein, a second heat transfer zone in direct heat transfer relation with removable stationary strips of solid heat transfer medium, and a final contact zone in contact with particle-form solid contact mass material therein, and withdrawing reaction products from said confined reaction path at a temperature not more than twenty degrees to fifty degrees Fahrenheit different from the temperature of said fluid stream when introduced into said confined reaction path, the volume of particle-form solid contact mass material in said first contact zone being a minimum, the volume of particle-form solid contact mass material in succeeding contact zones increasing to a maximum in said final contact zone and being proportioned to provide substantially the same amount of reaction in each contact zone as measured by a substantially constant difference between the temperatures of the influent and the effluent streams of each contact zone, the strips of the aforesaid solid heat transfer medium in each heat transfer zone being of metal having a high coefficient of heat transfer, the strips of the aforesaid solid heat transfer medium being in indirect heat transfer relation with the aforesaid fluid heat transfer medium, and the area of the aforesaid strips of solid heat transfer medium in direct contact with said fluid stream in each of said heat transfer zones, the coefficient of heat conductance of the aforesaid solid heat transfer medium and the volume of said fluid stream being proportioned to transfer directly between said flowing stream and said solid heat transfer medium in each heat transfer zone substantially the same amount of heat energy to restore the temperature of the fluid stream leaving each of said heat transfer zones to substantially the temperature of the fluid stream entering the preceding contact zone.

3,198,728
METHOD OF IMPROVING FRONT END OCTANE RATING AND INCREASING "LPG" PRODUCTION
Louis P. Evans, Woodbury, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed June 20, 1962, Ser. No. 203,814
9 Claims. (Cl. 208—65)



1. A method of reforming naptha containing napthenes and paraffins which comprises in a first and dehydrogenation stage contacting dehexanized charge naphtha comprising naphthenes and paraffins having an IBP in the range of about 180° F. to about 200° F. and an EBP in the range of 380° F. to 420° F. in the presence of hydrogen with platinum-group metal reforming catalyst at naphthene-dehydrogenating conditions of vapor inlet temperature in the range of about 800° to about 1,050° F., of pressure in the range of about 500 to about 1,200 p.s.i.g., and of liquid hourly space velocity of at least about 0.5, obtaining dehydrogenation stage reaction products comprising hydrogen and C_1 and heavier hydrocarbons, the C_5 and heavier portion of the aforesaid C_1 and heavier hydrocarbons containing not more than about two to about ten percent of the naphthenes of the aforesaid dehexanized charge naptha, in a second stage contacting substantially all of the aforesaid dehydrogenation stage reaction products with non-noble metal sulfide catalyst at a pressure in the range of about 500 to about 1,500 p.s.i.g., at a vapor inlet temperature in the range of about 800° to about 1,100° F., and at a liquid hourly space velocity of at least 0.5, and recovering (1) reformer gas comprising hydrogen, (2) liquid petroleum gas comprising C_3 and C_4 hydrocarbons and (3) C_5 and heavier hydrocarbons having an octane rating at least 15 octane units higher than the octane rating (Research+3 cc. TEL) of said dehexanized charge naptha of which C_5 and heavier hydrocarbons the C_5 to 220° F. (TBP) fraction has an octane rating about four octane numbers higher than the octane rating (Research+3 cc. TEL) of the C_5 to 220° F. (TBP) fraction of conventionally produced C_5 to 380° F. platinum reformate.

3,198,729
CONTINUOUS CONVERSION OF HYDROCARBONS WITH SENSITIVE CATALYST
John W. Payne, Woodbury, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Jan. 2, 1962, Ser. No. 163,437
10 Claims. (Cl. 208—168)



1. A method for contacting a fluid reactant material with a solid catalytic material which comprises, maintaining a confined downwardly sloping compact moving bed of solid catalytic particle material in a reaction zone, maintaining a plurality of separate and adjacent limited reaction paths along one margin of said moving bed, providing open passageways between said moving bed of solids and said limited reaction paths, passing reactant fluid upwardly through said limited reaction paths, passing catalytic particles through said passageways into suspended contact with said reactant fluid in said reaction paths and under conditions to obtain a desired reactant product, separating reactant product from suspended catalytic particles, returning separated catalytic particles to said bed of solid catalytic particles and recovering reactant product from the elongated reaction zone.

3,198,730
TREATMENT OF CATALYTICALLY CRACKED DISTILLATES
Judson E. Goodrich, San Rafael, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Mar. 30, 1962, Ser. No. 183,769
2 Claims. (Cl. 208—277)

1. In the sulfuric acid treatment of cracked petroleum hydrocarbon distillates, the improvement which comprises carrying out said treatment with a microdispersed

solid sulfuric acid treating agent in which the sulfuric acid is present as such, said agent being prepared by the reaction of benezene, formaldehyde and concentrated sulfuric acid, the reaction being carried out by intimately mixing said components in a solvent selected from the group consisting of halogenated hydrocarbon solvents, and hydrocarbon solvents, said solvent containing a dispersant and maintaining temperatures not exceeding 120° F.

3,198,731
METHOD OF TREATING OIL ON THE SURFACE OF WATER

Earl R. De Lew, Corte Madera, Calif., assignor to Yosemite Chemical Co., San Francisco, Calif., a corporation of California

No Drawing. Filed Sept. 20, 1961, Ser. No. 139,362
12 Claims. (Cl. 210—42)

3. The method of removing an oil spill floating on the surface of a body of water which comprises spraying onto the oil while it is floating on the water a liquid agent which congeals the floating oil on the surface of the water, and after floating oil has congealed separating the congealed mass from the water surface.

3,198,732
TIRE YARN FINISH

Robert A. Olney, Woodside Hills, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 12, 1962, Ser. No. 201,805
10 Claims. (Cl. 252—8.9)

1. A composition of matter consisting essentially of from about 20 to about 70% by weight of an ethylene oxide ether of castor oil containing from about 10 to about 300 ethylene oxide groups per molecule and from about 30 to about 80% by weight of an ethylene oxide derivative of a sorbitol rosinate ester prepared from a fatty acid source containing at least about 35% by weight of rosin acids and said ethylene oxide derivative containing from about 10 to about 100 ethylene oxide groups per molecule.

3,198,733
PROCESS FOR THE CONTROL OF SULFATE-REDUCING BACTERIA

John Dominic Pera and John Miles Sharpley, Memphis, Tenn., assignors to Buckman Laboratories, Inc., Memphis, Tenn., a corporation of Tennessee

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,273
4 Claims. (Cl. 252—8.55)

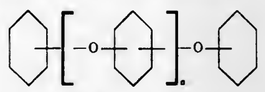
1. In the production of petroleum in a secondary recovery petroleum operation, the method of inhibiting deterioration of the crude oil-water mixture by the growth of sulfate-reducing bacteria in the water by adding to the aqueous fluid 0.5 to 20 parts per million parts of water of a water-soluble N,N-dimethyldithiocarbamate.

3,198,734
LUBRICANTS COMPRISING POLYPHENYL ETHERS AND MIXED METAL SALTS OF FATTY ACIDS

Arnold J. Morway, Clark, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 28, 1961, Ser. No. 120,150
3 Claims. (Cl. 252—17)

1. A method of preparing a lubricating composition which comprises mixing C_2 to C_4 fatty acid and C_7 to C_{30} fatty acid in a ratio of about 4 to 30 mole equivalents of C_2 to C_4 fatty acid per mole equivalent of C_7 to C_{30} fatty acid, with a neutralizing amount of alkaline earth metal base, in a volatile inert hydrocarbon solvent, adding polyphenyl ether of the general formula:



where n is 3 to 6, and heating to a temperature sufficient to evaporate the water of reaction and said volatile hydrocarbon solvent, wherein the amount of resulting metal salt comprises about 5 to 40 wt. percent of the final lubricating composition.

3,198,735
SOLID LUBRICANT COMPOSITION AND METHOD FOR LUBRICATING ANTI-FRICTION BEARING STRUCTURES

Edward R. Lamson, Greentree Road, R.D. 4, Sewell, N.J., and Martin J. Devine, 2560 Prescott Road, Havertown, Pa.

Filed Oct. 20, 1961, Ser. No. 146,664
4 Claims. (Cl. 252—25)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A composition for forming a bonded film for a bearing structure consisting, on a dry-weight basis, of a mixture of at least 60% to 88% of one member selected from the group consisting of PbS, PbO, CdI_2, InF_3, $ZnSo_4$, BiI_3, CdF_2, ZrCl, ZrI, CuCl, NiF_2, BaO, SrO, MoS_2, MoO_3, $MnCl_2$, graphite, Ag_2SO_4, PbI_2 and BaS and from 40% to 12% of a member selected from the group consisting of sodium hexametaphosphate and sodium metaborate in water in amount sufficient to form a water solution of said last named member and also in amount sufficient to form a uniform mixture which upon application to said bearing structure develops thereon after evaporation of said water, solely by means of said last named member as the bonding agent, a thin, dry lubricating film bonded thereto.

3,198,736
LUBRICATING COMPOSITION

Bennett M. Henderson, Edwardsville, Ill., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 18, 1962, Ser. No. 245,378
3 Claims. (Cl. 252—46.7)

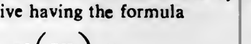
1. A lubricating oil composition comprising a major amount of mineral lubricating oil and from about 1% to about 15% of an oil-soluble copolymer of C-vinyl pyridine, and a mixture of dissimilar C_{12-18} alkyl acrylates, the mol ratio of C-vinyl pyridine to the acrylate ester mixture being in the ratio of 1:1 to 1:20, respectively, and the copolymer having a molecular weight range of from about 50,000 to about 2,500,000 and from about 0.1% to about 5% each of bis(3,5-ditertbutyl-4-hydroxyphenyl) methane and N,N'-bis(di-C_{1-8}-alkylaminophenyl)methane, and from about 0.5% to about 2% of a reaction product of P_2S_5 and terpene.

3,198,737
LUBRICATING COMPOSITIONS AND ADDITIVES THEREFOR

George M. Calhoun, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 23, 1960, Ser. No. 77,781
9 Claims. (Cl. 252—48.6)

1. A lubricating oil comprising a major amount of lubricating oil and from about 0.5% to about 20% by weight of a disulfoxy derivative having the formula



where Z is an oxygen-containing radical selected from the group consisting of —OR''' and —COOR''', where R''' is selected from the group consisting of hydrogen and a C_{1-4} alkyl radical and n is an integer of from 1–4 of an ester of an unsaturated fatty acid having 18 carbon atoms and a polyoxyalkylene diol.

3,198,738
LUBRICATING COMPOSITIONS AND ADDITIVES THEREFOR

Adriaan H. Wagenaar and Maurits Krukziener, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 24, 1961, Ser. No. 98,008
Claims priority, application Netherlands, July 27, 1960, 254,244
5 Claims. (Cl. 252—51.5)

1. An improved mineral lubricating oil composition comprising a major amount of mineral lubricating oil and from 0.1% to 10% by weight of an oil-soluble polyoximino-containing copolymer obtained by polymerizing at reflux temperature and in the presence of a free radical initiator a polymerizable unsaturated carbonyl containing compound selected from the group consisting of a low molecular weight olefinic ketone and a low molecular weight olefinic aldehyde and C_{12-18} alkyl methacrylate in the mol ratio of from about 0.1:1 to about 2:0.1, respectively, and reacting said copolymer with hydroxylamine at a pH of 7–10, to effect conversion of the carbonyl groups to oximino groups, said copolymer having a molecular weight of from 50,000 to 1,000,000.

3,198,739
LUBRICANTS AND POLYMERIC ADDITIVES THEREFOR

Harry F. Richards, Concord, Calif., Stephen A. Herbert, Jr., Weston, Conn., and Robert J. Moore, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 25, 1960, Ser. No. 71,403
4 Claims. (Cl. 252—56)

1. A mineral lubricating oil composition consisting essentially of a major amount of mineral lubricating oil and from about 0.01% to 5% by weight of an oil-soluble copolymer of a C_{12-20} alkyl methacrylate and an ester of methacrylic acid and an alpha, omega C_{5-7} alkanediol in the ratio of 1:10 to 10:1, respectively, said copolymer having a molecular weight of from 10,000 to 500,000.

3,198,740
PACKET OF WATER-SOLUBLE FILM OF POLYVINYL ALCOHOL FILLED WITH DETERGENT COMPOSITION

Henry A. Dunlop, Jr., Woodlawn, and Robert H. Chaffee, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed June 22, 1960, Ser. No. 38,000
3 Claims. (Cl. 252—90)

2. A packet consisting of:
(1) an envelope of polyvinyl alcohol in film form, said film being from about one quarter to about three mils in thickness, and containing no more than about 27% moisture, and enclosed therein
(2) a water-soluble granular synthetic detergent composition consisting essentially of
(a) an anionic non-soap synthetic organic detergent,
(b) sodium tripolyphosphate in an amount to act as a builder for said synthetic detergent, and
(c) a salt hydrate chosen from the group consisting of sodium pyrophosphate decahydrate, potassium pyrophosphate trihydrate, sodium tetraborate decahydrate, sodium perborate tetrahydrate, magnesium sulfate heptahydrate, sodium acetate trihydrate, potasium benzoate trihydrate, sodium thiosulfate pentahydrate, sodium carbonate decahydrate, sodium sulfate heptahydrate and sodium sulfate decahydrate,
said salt hydrate being present, subsequent to the completion of hydration of said sodium tripolyphosphate to the hexahydrate form and the completion of hydration of any other hydratable ingredients of said composition, in an amount such that the water of hydration of said salt hydrate constitutes from about 5% to about 20% of the total weight of said composition, whereby said polyvinyl alcohol film is prevented from becoming brittle at temperatures below about 50° F. by the maintenance of a relative humidity in the atmosphere within said packet of from about 40% to 100% at temperatures from about 0° F. to 50° F. so that said polyvinyl alcohol film forming said packet is resistant to rupture during a substantial delivery and marketing period.

3,198,741
THERMOPLASTIC RESINOUS MATERIALS

Zenon Kazenas, Euclid, Ohio, assignor to Switzer Brothers, Inc., Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed May 26, 1961, Ser. No. 112,785
28 Claims. (Cl. 252—301.2)

1. A process of producing a colored pigment comprising producing a thermoplastic, resinous, condensation product, grinding said condensation product to finely divided form, and incorporating a coloring material in the condensation product at a stage up to and including its production in finely divided form; said resinous condensation product being prepared by completely cocondensing, at a temperature not exceeding 180° C., a fluid reaction mass consisting essentially of a first component (A) selected from the class consisting of (a) a mixture of at least one aldehyde entirely selected from the class consisting of formaldehyde and paraformaldehyde and at least one aralkyl monosulfonamide having two reactive amide hydrogens, where the alkyl portion of the aralkyl group of said monosulfonamide containing about 1 to 3 carbon atoms and being attached directly to the sulfur atom of the sulfonamido group, and (b) a thermoplastic condensation product of the constituents of mixture (a), and a second component (B) selected from the class consisting of (c) a mixture of at least one aldehyde entirely selected from the class consisting of formaldehyde and paraformaldehyde and at least one aminotriazine having at least two amino groups, and (d) a thermofusible partial condensation product of the constituents of mixture (c), the amount of said second component (B) being an amount, not exceeding about 70 mol percent of said first component (A) sufficient to render said completely condensed, thermoplastic, resinous condensation product substantially insoluble in aromatic hydrocarbon solvents but insufficient to render it thermosetting.

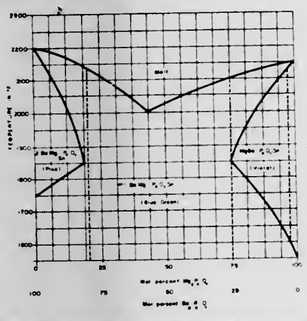
3,198,742
TIN ACTIVATED BARIUM-MAGNESIUM PYROPHOSPHATE PHOSPHORS

Richard C. Ropp, Towanda, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 5, 1962, Ser. No. 242,506
7 Claims. (Cl. 252—301.4)

3. A blue-green emitting barium magnesium pyrophosphate phosphor activated by tin in quantities between about 0.005 to 0.3 gram atoms per mole of pyrophosphate wherein the amount of magnesium calculated as magnesium pyrophosphate is between about 20 and 75 mole percent and the amount of barium calculated as

barium pyrophosphate is between about 25 and 80 mole percent and wherein the total of barium and magnesium equal 100 mole percent.



4. A violet emitting barium-magnesium pyrophosphate phosphor activated by tin in quantities between about 0.005 to 0.3 gram atoms per mole of pyrophosphate wherein the amount of barium calculated as barium pyrophosphate is between about 2.5 to 25 mole percent and the amount of magnesium calculated as magnesium pyrophosphate is between about 75 and 97.5 mole percent and wherein the total of barium and magnesium equal 100 mole percent.

3,198,743

PREPARATION OF FERRIC OXIDE SOLS

Robert B. MacCallum, Fairfield, Conn., and Forrest R. Hurley, Ellicott City, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed June 19, 1962, Ser. No. 203,432
1 Claim. (Cl. 252—313)

A method of producing a ferric oxide sol characterized by a suspension of discrete ferric oxide particles having a uniform size of about 25 millimicrons comprising preparing an aqueous solution of a ferric salt, preparing an aqueous solution of hexamethylene tetramine in sufficient quantity to react with the acid formed as a result of the hydrolysis of said ferric salt, adding both of said solutions to boiling water and refluxing the mixture for sufficient time to induce good ferric oxide particle formation.

3,198,744

PROCESS FOR CONTROLLING FOAMING OF AN AQUEOUS SYSTEM

William A. Lamont, Oak Lawn, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 15, 1960, Ser. No. 56,126
7 Claims. (Cl. 252—321)

1. A process for controlling foaming of an aqueous system which normally tends to foam which comprises providing in said aqueous system a small but sufficient amount to control said foam of an ester of polyoxypropylated glycerol having a molecular weight in the range of 600–1,000 and an aliphatic monocarboxylic acid having 12–22 carbons.

3,198,745

PROCESS FOR BREAKING EMULSIONS OF THE OIL-IN-WATER CLASS

Louis T. Monson, La Puente, and Fred Wm. Jenkins, Buena Park, Calif., assignors to Petrolite Corporation, Brea, Calif., a corporation of Delaware

No Drawing. Filed Nov. 13, 1961, Ser. No. 152,074
16 Claims. (Cl. 252—344)

1. A process for breaking an emulsion comprising an oil dispersed in a non-oily continuous phase, in which the dispersed phase is not greater than about 20%, characterized by subjecting the emulsion to the action of a reagent which includes a high-molal water-dispersible, essentially non-ionic, basic-nitrogen-atom-containing surfactant which is an oxyalkylated derivative of (A) an oxyalkylation-susceptible starting material composed only of carbon, oxygen, hydrogen and nitrogen atoms and selected from the class consisting of an alkylamine containing 8 to 22 carbon atoms, a substituted polyalkylene polyamine wherein the substituent is derived from a fatty acid containing 8 to 22 carbon atoms, and a rosin-derived amine, and of (B) an alkylene oxide having from 2 to 4 carbon atoms selected from the class consisting of ethylene oxide, propylene oxide, butylene oxide, glycid and methylglycid, the molecular weight of the oxyalkylated derivative being within the range of about 1,000 to about 10,000.

9. A process for breaking an emulsion comprising an oil dispersed in a non-oily continuous phase, in which the dispersed phase is not greater than about 20%, characterized by subjecting the emulsion to aeration and to the action of a reagent which includes a high-molal water dispersible, essentially non-ionic, basic-nitrogen-atom-containing surfactant which is an oxyalkylated derivative of (A) an oxyalkylation-susceptible starting material composed only of carbon, oxygen, hydrogen and nitrogen atoms and selected from the class consisting of an alkylamine containing 8 to 22 carbon atoms, a substituted polyalkylene polyamine wherein the substituent is derived from a fatty acid containing 8 to 22 carbon atoms, and a rosin-derived amine, and of (B) an alkylene oxide having from 2 to 4 carbon atoms selected from the class consisting of ethylene oxide, propylene oxide, butylene oxide, glycid and methylglycid, the molecular weight of the oxyalkylated derivative being within the range of about 1,000 to about 10,000.

3,198,746

QUATERNARY AMMONIUM ARYLSULFONATE SOLUTIONS

Manuel M. Baizer, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 11, 1962, Ser. No. 201,242
16 Claims. (Cl. 252—363.5)

1. A solution consisting essentially of water, a hygroscopic tetraalkylammonium arylsulfonate in which each alkyl group contains up to six carbon atoms dissolved in an amount at least 30% by weight of the water and arylsulfonate and more than 10% by weight of the solution of an olefin which dissolved therein but is soluble in an amount less than 10% by weight in pure water, said olefin containing no more than twenty carbon atoms and being selected from the group consisting of olefinic hydrocarbons, alpha,beta mono-olefinic hydrocarbon nitriles, hydrocarbyl esters of alpha,beta mono-olefinic hydrocarbon carboxylic acids and amides of alpha,beta mono-olefinic hydrocarbon carboxylic acids.

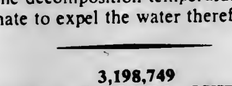
3,198,747

ACID RESISTANT COATING FOR METALLIC SURFACES

George R. Cook, Arlington Heights, and Allan A. Manteuffel, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,198
2 Claims. (Cl. 252—389)

1. A composition for treating bodies subject to attack by sulfuric acid, whereby sulfate corrosion products are formed, consisting of about 60–90% by weight of water, about 0.5–6.0% by weight of a water-soluble, organic wetting agent in the form of a water soluble soap adapted to enhance the penetration of said corrosion products by said composition, about 0.0004–0.16% by weight of a pH indicator having the property of changing in color when acidic material contacted with said composition is neutralized, about 2.5–24% by weight of a base, selected from the group consisting of ammonium, alkali metal and alkaline earth metal hydroxides, oxides and carbonates, and amines, capable of reacting with sulfuric acid to form salts, and about 2.5–24% by weight of an organosilicon polymer of the formula



wherein the R's are radicals selected from the group consisting of alkyl, alkaryl and aralkyl radicals and *n* has a value of about 0–2000.

3,198,748

REFRACTORY OXIDE-ALKALINE EARTH CARBONATE SUPPORTED CATALYST

Carl D. Keith, Summit, Paula M. Kenah, East Orange, and Paul N. Rylander, Newark, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed Sept. 21, 1960, Ser. No. 57,378
11 Claims. (Cl. 252—443)

1. A method for preparing a catalyst which comprises impregnating an alkaline earth carbonate with an aqueous solution of a compound of a metal selected from the group consisting of the transition heavy metals of the periodic table, said compound being hydrolyzable to a catalytica ly active material, hydrolyzing the hydrolyzable compound to deposit the catalytically active material in the alkaline earth carbonate, then intimately admixing a refractory oxide selected from the group consisting of alumina, silica, clay, zirconia and titania with the alkaline earth carbonate the alkaline earth carbonate and refractory oxide being admixed together in proportions, by weight, between about 5 percent and 95 percent of the alkaline earth carbonate and the balance the refractory oxide, and forming the admixture whi e of plastic consistency into a body of the desired shape.

9. A method for preparing a catalyst support which comprises intimately mixing together a refractory oxide selected from the group consisting of alumina, si ica, clay, zirconia and titania, an alkaline earth carbonate and water, the alkaline earth carbonate and refractory oxide being mixed together in the proportions of, by weight, between about 5 percent and 95 percent of the alkaline earth carbonate and the balance the refractory oxide, forming the mixture while of plastic consistency into a catalyst support body of the desired shape, and calcining the shaped catalyst support body at a temperature below the decomposition temperature of the alkaline earth carbonate to expel the water therefrom.

3,198,749

SILICA-ALUMINA-GALLIUM OXIDE CATALYST AND METHOD OF PREPARATION THEREOF

Elroy Merle Gladrow, Edison Township, Middlesex County, N.J., and Richard Joseph De Feo, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 10, 1960, Ser. No. 61,340
4 Claims. (Cl. 252—453)

1. A catalyst composed essentially of 20 to 45 parts by weight of alumina, 79 to 55 parts by weight of silica and 1 to 10 parts by weight of gallium oxide.

3,198,750

MIXED ANTIMONY OXIDE-URANIUM OXIDE OXIDATION CATALYST

James L. Callahan, Cuyahoga County, Ohio, and Berthold Gertisser, Essex County, N.J., assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,331
7 Claims. (Cl. 252—456)

1. A catalyst composition consisting essentially of an active catalytic oxide complex of antimony and uranium as an essential catalytic ingredient, the Sb:U atomic ratio being within the range from about 1:50 to about 99:1; said complex being formed by heating the mixed oxides of antimony and uranium in the presence of oxygen at an elevated temperature of above 500° F. but below their melting point for a time sufficient to form said active catalytic oxide complex of antimony and uranium.

3,198,751

STANNIC OXIDE-ANTIMONY TETROXIDE CATALYST COMPOSITION

James Robert Bethell and David James Hadley, Epsom Downs, and Barrie Wood, Epsom, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Original application Feb. 3, 1960, Ser. No. 6,365, now Patent No. 3,094,565, dated June 18, 1963. Divided and this application Oct. 9, 1962, Ser. No. 229,475
Claims priority, application Great Britain, Feb. 17, 1959, 5,397/59; Mar. 12, 1959, 8,678/59; Apr. 2, 1959, 11,272/59; Apr. 18, 1959, 13,283/59; June 5, 1959, 19,228/59; Oct. 9, 1959, 34,225/59, 34,226/59
1 Claim. (Cl. 252—461)

A catalyst consisting essentially of a mixture of stannic oxide with antimony tetroxide, the atomic ratio of tin to antimony in said catalyst being from about 0.1:1 to about 10:1.

3,198,752

METHOD OF PRODUCING TUNGSTEN OXIDE CATALYST AND PRODUCT THEREOF

George Walter Bridger and Peter Andrew Lemin, both of Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 19, 1961, Ser. No. 160,624
Claims priority, application Great Britain, Dec. 23, 1960, 44,264/60
10 Claims. (Cl. 252—467)

1. An improved process for producing a catalyst for the liquid phase hydration of olefines, which comprises pelleting a composition consisting essentially of tungstic acid, dehydrating the resulting pellets to a bound water content of between 0.2% and 3% by weight under conditions such that they suffer substantially no thermal or mechanical shock, and thereafter reducing the partly dehydrated tungstic acid to a valency state corresponding to an oxide of tungsten having a composiiton in the range WO_3 to $WO_{2.5}$.

9. A pelleted catalyst consisting essentially of tungsten oxide having a reduced tendency to undergo disintegration during use, said composition being made by pelleting a composition consisting essentially of tungstic acid, dehydrating the resulting pellets to a bound water content of between 0.2% and 3% by weight under conditions such that they suffer substantially no thermal or mechanical shock, and thereafter reducing the partly dehydrated tungstic acid to a valency state corresponding to an oxide of tungsten having a composition in the range WO_3 to $WO_{2.5}$.

3,198,753

CATALYST COMPOSITION CONSISTING OF THE OXIDES OF MOLYBDENUM, IRON AND COBALT

Francesco Traina, Novara, Italy, assignor to Montecatini Società Generale per l'Industria Mineraria e Chimica, a corporation of Italy

Filed Mar. 20, 1961, Ser. No. 96,824
Claims priority, application Italy, Mar. 22, 1960, 4,961/60
2 Claims. (Cl. 252—470)

2. A non-supported active catalyst for the catalytic oxidation of methanol to formalydehyde, consisting of molybdenum oxide, iron oxide and cobalt oxide, the

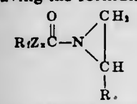
weight ratios of Mo/Fe and Mo/Co in the finished product being respectively between 4.25 and 4.6 and between 20 and 30, and having less than 0.13 g. Cl/100 g. Mo.

3,198,754
AZIRIDINE DERIVATIVES AND POLYMERS THEREOF

Arthur H. Ahlbrecht, Dellwood, and Thomas S. Reid, New Canada Township, Ramsey County, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Jan. 2, 1962, Ser. No. 163,915
6 Claims. (Cl. 260—2)

1. A compound having the formula:



wherein R_f represents a perfluoroalkyl radical, x is 0 to 1, R is a member of the group consisting of hydrogen and lower alkyl radicals, and Z is a divalent linking group of the class consisting of:

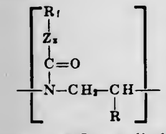
$$-(CH_2)_n-,\ -CH_2-CHCl(CH_2)_m-$$
$$-O-(CF_2)_z-,\ -CF=CR'_f,\ -CR'_fH-$$

and

$$-SO_2-NR''-(CH_2)_m-$$

wherein R'_f is a member of the group consisting of lower perfluoroalkyl radicals and fluorine, R'' is a member of the group consisting of hydrogen and lower alkyl radicals. n is an integer from 3 to 14 and m is an integer from 1 to 12.

5. A solid polymer comprising recurring units represented by the formula:



wherein R_f represents a perfluoroalkyl radical, x is 0 to 1, R is a member of the group consisting of hydrogen and lower alkyl radicals, and Z is a divalent linking group of the class consisting of:

$$-O-(CF_2)_z-,\ -CF=CR'_f-,\ -CR'_fH-$$
$$-O-(CF_2)_z-,\ -CF=CR'_f-,\ -CR'_fH-$$

and

$$-SO_2-NR''-(CH_2)_m-$$

wherein R'_f is a member of the group consisting of lower perfluoroalkyl radicals and fluorine, R'' is a member of the group consisting of hydrogen and lower alkyl radicals, n is an integer from 3 to 14 and m is an integer from 1 to 12.

3,198,755
PREPARATION OF AROMATIC COMPOUNDS

Stafford L. Hopwood, Jr., Stamford, Conn., and Louis A. Errede, Roseville, Minn., assignors, by mesne assignments, to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Division of application Ser. No. 505,904, May 4, 1955, now Patent No. 2,864,865, dated Dec. 16, 1958. Continuation of abandoned application Ser. No. 609,266, Sept. 11, 1956. This application May 2, 1962, Ser. No. 196,543
19 Claims. (Cl. 260—2)

1. The process of preparing a peroxide polymer which comprises pyrolyzing an aromatically unsaturated compound having at least one six-membered cyclic nucleus, said nucleus having at least two methyl groups bonded to nuclear carbon atoms which are in the one and four positions relative to each other and having additional nuclear substitution selected from at least one of the group consisting of the normally gaseous halogen atoms, hydrogen and methyl radicals, at a temperature between about 700° C. and about 1300° C. and at a total pressure not higher than about 400 mm. mercury for a period of not more than one second, quenching the pyrolyzed vapors to a temperature below about 200° C. to produce a quinodimethane and copolymerizing said quinodimethane with at least 0.1 mol of oxygen per mole of quinodimethane to produce a peroxide polymer, said quinodimethane not being subjected to polymerization conditions prior to contact with said oxygen.

11. A solid peroxide polymer consisting essentially of from about 10 to 100 percent of the recurring unit

$$[-O-CH_2-Q-CH_2-O-]$$

and from about 0 to 90 percent of the recurring unit

$$[-CH_2-Q-CH_2-]$$

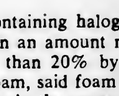
wherein Q is at least one six-membered ring having aromatic unsaturation the remaining nuclear substitution of said Q being selected from at least one of the group consisting of the normally gaseous halogen atoms, hydrogen and methyl radicals.

3,198,756
FLAME RESISTANT, SELF EXTINGUISHING DIELECTRIC LENS MATERIAL COMPRISING A HALOGENATED EPOXY RESIN COMPOSITION

Sven U. K. A. Richter and Herbert S. Schnitzer, Springfield, Mass., assignors, by mesne assignments, to De Bell & Richardson, Inc., Hazardville, Conn., a corporation of Connecticut

No Drawing. Filed Nov. 16, 1959, Ser. No. 852,927
7 Claims. (Cl. 260—2.5)

1. The flame resistant, self-extinguishing, dielectric lens material which comprises the cured, rigid, foamed polymerization product of a resin compound having at least two groups



per molecule and containing halogen atoms attached to the resin molecules in an amount not less than 1%, and not essentially more than 20% by weight based on the total weight of the foam, said foam being uniformly filled with a given quantity, in the range of its capacity, with a metallic powder reactive during combustion with the halogen containing resin, and antimony oxide powder in an amount not less than 1% by weight and not essentially greater, than the weight percentage of halogen present in the foam.

3,198,757
METHOD OF PREPARING POLYURETHANES

Michael A. Ricciardi, Fords, and William J. Considine, Franklin Township, Somerset County, N.J., assignors, by mesne assignments, to M&T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 12, 1961, Ser. No. 116,293
10 Claims. (Cl. 260—2.5)

1. The method of making a cellular polyurethane plastic which comprises mixing an organic compound having reactive hydrogen atoms as determined by the Zerewitinoff reaction having a molecular weight of at least about 500, an organic polyisocyanate, water, and a catalytic amount of (a) a gel catalyst $Sn(OCOR)_2$ and (b) a blowing catalyst R'_3SnX wherein R and R' are hydrocarbon radicals; and X is selected from the group consisting of negative residual portions of an organic carboxylic acid, a mercaptan, an alcohol, a phenol, and a halogen acid.

3,198,758
INORGANIC CEMENT-EPOXY RESIN COMPOSITION CONTAINING ANIMAL GLUE

James Howard Donnelly, 148 Laidley St., San Francisco, Calif.

No Drawing. Filed Dec. 5, 1961, Ser. No. 157,250
8 Claims. (Cl. 260—6)

1. An inorganic cement-epoxy resin composition comprising:
(a) uncured inorganic cement
(b) cement aggregate
(c) from 0.1–300%, based on the combined dry weight of the cement and aggregate, of a thermosetting epoxy resin and an amine curing agent having reactive hydrogens attached to amine groups thereof, the epoxy resin comprising the condensation product of epichlorohydrin and an hydroxyl-containing compound of the group consisting of glycerol and the polyhydric phenols and containing a plurality of vicinal epoxy groups, and
(d) from 0.1–20%, based on the weight of the cement, of animal glue.

3,198,759
ADDITION POLYMER COMPOSITIONS AND METHODS OF PRODUCING THEM

Claude J. Schmidle, Moorestown, N.J., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Jan. 30, 1962, Ser. No. 169,957
4 Claims. (Cl. 260—22)

1. A process for producing an addition polymer composition which comprises dissolving at a concentration of at least 1% in a liquid, essentially aliphatic hydrocarbon medium boiling in the range of 75° C. to 520° C. a drying oil-modified polyester condensation product of a dicarboxylic acid selected from the group consisting of saturated aliphatic dicarboxylic acids having 4 to 12 carbon atoms, phthalic acid, isophthalic acid, and terephthalic acid with an aliphatic polyhydric alcohol having 2 to 6 carbon atoms and 2 to 6 hydroxyl groups, and introducing into the solution at least one monoethylenically unsaturated monomer selected from the group consisting of acrylic acid, methacrylic acid, itaconic acid, acrylamide, methacrylamide, acrylonitrile, methacrylontrile, (C_1—C_4)-alkyl esters of acrylic acid, (C_1–C_4)-alkyl esters of methacrylic acid, vinyl formate, vinyl acetate, vinyl propionate, vinyl chloride and vinylidene chloride and a free-radical initiator at a temperature in the range of room temperature to about 125° C. to effect polymerization and to produce polymer particles stably dispersed in the medium which are undissolved in the medium and have sizes ranging from about 0.1 to 2 microns, the weight ratio of polyester to monomer being from 5:95 to 20:80, and the proportion of initiator being from 0.001 to 10% of the weight of the monomer.

3,198,760
POLYCHLOROPRENE STABILIZED WITH A PHENOL-TERPENE RESIN AND A METAL RESINATE AND PROCESS FOR PREPARATION

William M. Widenor, Pensacola, Fla., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

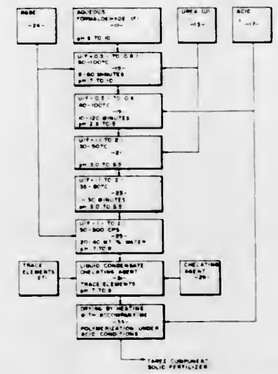
No Drawing. Filed Aug. 15, 1961, Ser. No. 131,468
13 Claims. (Cl. 260—27)

1. A polychloroprene rubber comprising polychloroprene and a stabilizing amount of a stabilizer containing 80–95% of terpene-phenol resin and 20–5% of metal resinate selected from the group consisting of calcium resinate, zinc resinate, and mixtures thereof.

3,198,761
UREA-FORMALDEHYDE COMPOSITIONS AND THEIR MANUFACTURE

James M. O'Donnell, North Smithfield, R.I., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 27, 1961, Ser. No. 106,003
9 Claims. (Cl. 260—29.4)



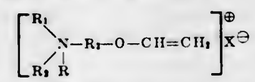
1. A process for producing a stable liquid urea-formaldehyde condensate containing urea in a mole ratio to formaldehyde greater than 1, and characterized by film-forming properties, which comprises admixing urea with aqueous formaldehyde in a mole ratio of urea to formaldehyde within the range of from 0.3:1 to 0.6:1 under temperature conditions for dissolving the urea in the said aqueous formaldehyde; maintaining the resulting urea-formaldehyde solution, as a reaction mixture, at a temperature of from 50 to 100° C. and at a pH of from 7 to 10 for a period of from 5 to 60 minutes; thereafter reducing the pH of the said reaction mixture to a value within the range of from 2.5 to 5.0 and maintaining same at a temperature within the range of from 40 to 100° C. for a period of from 10 minutes to 2 hours; adding additional urea to the resulting reaction mixture in an amount sufficient to provide a mole ratio of total added urea to total added formaldehyde therein greater than 1:1 but not exceeding 2:1 and then heating same for a period of from 1 to 30 minutes at a temperature within the range of from 35 to 80° C., and recovering resulting liquid reaction mixture as said liquid urea-formaldehyde condensate.

3,198,762
COPOLYMERIZATION PRODUCTS OF QUATERNARY VINYL ETHERS AND AQUEOUS EMULSIONS THEREOF

Arthur Maeder, Basel, and Otto Albrecht, Neuewelt, near Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss firm

No Drawing. Filed Dec. 28, 1955, Ser. No. 556,017
Claims priority, application Switzerland, Oct. 30, 1953, 98,108/53; Oct. 5, 1954, 10,959/54
2 Claims. (Cl. 260—29.6)

2. A liquid composition suitable for the dressing of textiles which comprises a stable aqueous dispersion of a copolymerization product of (a) a quaternary mono-vinyl ether which corresponds to the formula:

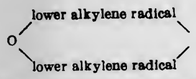


wherein R is a radical selected from the group consisting of lower alkyl radical, glycidyl radical and carboxamido-

methyl radical; R_1 and R_2 taken together form a member selected from the group consisting of



and



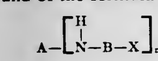
R_3 is a lower alkylene radical in which two carbon atoms are linked to each other; and X is an anion; said quaternary vinyl ether being present in an amount sufficient to make said copolymerization product water dispersible and (b) at least one other monoethylenically unsaturated polymerizable compound.

3,198,763
POLYAMINE STABILIZER FOR OXIDIZABLE ORGANIC MATERIALS

Hans Jakob Peterli, Basel-Land, Switzerland, assignor to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Filed Apr. 6, 1961, Ser. No. 101,083
Claims priority, application Switzerland, Apr. 22, 1959, 72,378/59; Apr. 7, 1960, 3,910/60
17 Claims. (Cl. 260—45.8)

1. An oxidation-resistant composition comprising an auto-oxidizable organic material and 0.001 to 5% by weight of compound of the formula



wherein

A is an n-valent radical of a compound selected from the group consisting of benzene, hydroxy benzene, lower alkoxy benzene, lower alkyl benzene, chlorobenzene, aminobenzene, N-alkylated aminobenzene wherein alkyl is of from 1 to 12 carbon atoms, naphthyl, acenaphthyl, quinoline and diphenylamine,

B is a member selected from the group consisting of a hydroxytrimethylene radical and a divalent saturated hydrocarbon radical containing 3 to 6 carbon atoms, in both of which radicals the α,γ-carbon atoms are bound to the two nitrogen atoms,

X is a member selected from the group consisting of $—NH_2$,



—N-alkylidene of from 4 to 8 carbon atoms, —N-cyclohexylidene, —N-benzylidene and —N-hydroxybenzylidene wherein the acyl group is selected from the group consisting of alkanoyl of from 1 to 4 carbon atoms, benzoyl, amidoadipoyl, and amidoterephthaloyl, and

n is one of the integers 1 and 2.

3,198,764
BACTERIOSTATIC COMPOSITIONS OF ACRYLONITRILE POLYMERS AND 2,2'-THIOBIS (4,5-DICHLOROPHENOL)

Fred J. Lowes, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 16, 1962, Ser. No. 180,308
5 Claims. (Cl. 260—45.95)

1. Bacteriostatic compositions of matter, the essential constituents of which are (1) a fiber-forming acrylonitrile polymer, which polymer contains in the polymer molecule at least 85 weight percent of acrylonitrile, any balance being another monoethylenically unsaturated monomeric material that is copolymerizable with acrylonitrile, and (2) dispersed therein between about 0.5 and 20 weight percent, based on the weight of said fiber-forming acrylonitrile polymer, of 2,2'-thiobis(4,5-dichlorophenol).

3,198,765
BACTERIOSTATIC ACRYLONITRILE POLYMERS

Fred J. Lowes, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 16, 1962, Ser. No. 180,340
6 Claims. (Cl. 260—45.95)

1. Composition of matter, the essential constituents of which are (1) a fiber-forming acrylonitrile polymer which polymer contains in the polymer molecule at least about 85 weight percent of acrylonitrile, the balance being another monoethylenically unsaturated monomer that is compatible with acrylonitrile and (2) at least about 0.5 weight percent based on the weight of said fiber-forming polymer of a phenol selected from the group consisting of 2,3,4,6-tetrachlorophenol and pentachlorophenol.

3,198,766
PREPARATION OF SILICON POLYMERS EMPLOYING UNSATURATED HYDROCARBON MONOMERS

Siegfried Nitzsche and Robert Müller, Burghausen, Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Bavaria, Germany

No Drawing. Filed June 28, 1961, Ser. No. 120,190
Claims priority, application Germany, July 8, 1960, W 28,154
6 Claims. (Cl. 260—46.5)

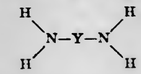
1. A polymerization method comprising mixing and reacting (1) an organic compound containing aliphatic unsaturation selected from the group consisting of hydrocarbon alkenes and alkynes, halogenohydrocarbon alkenes and alkynes, alkenes and alkynes containing carbon, hydrogen and oxygen atoms wherein the oxygen is present in a form selected from the group consisting of ether linkages, —COOH groups, anhydride groups, —OH groups and ester groups, and alkenes and alkynes containing carbon, hydrogen and nitrogen atoms, and (2) a hydrogen-silicon compound containing at least one hydrogen atom bonded directly to silicon in each molecule selected from the group consisting of inorganic hydrogen silanes, organic hydrogen silanes, organic hydrogen polysilanes, organic hydrogen polysiloxanes, organic hydrogen polysilcarbanes, organic hydrogen polysilazanes and mixtures of the foregoing where the organic substituents are selected from the group consisting of alkyl radicals, cycloalkyl radicals, aryl radicals, aralkyl radicals, alkaryl radicals, haloaryl radicals, and haloalkyl radicals, in the presence of (3) a compound selected from the group consisting of (A) a metal compound selected from the group consisting of alkylates, acylates, enolates and halides of Ti, V, Cr, Zr, Nb, Mo, Hf, Ta and W and (B) those compounds which are alternatively soluble in aromatic hydrocarbon, aliphatic hydrocarbon and ether solvents and wetted by these solvents and are unsaturated in the sense of Werner's theory of coordination, selected from the group consisting of metal carbonyls, metal salts of carboxylic acids, metal halides, metal alkylates, metal arylates and metal chelates of Mn, Tc, Re, Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Au, Zr, Cd, Hg, Al, Ga, In and Te, and (4) a metal selected from the group consisting of Mn, Os, Ir, Pt, Rh, Pd and Au.

3,198,767
CONJUGATED ORGANIC POLYMERS

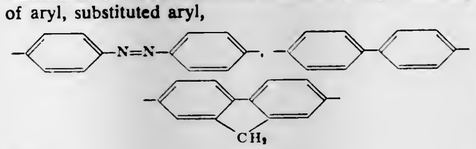
Ken Matsuda, Stamford, Conn., and Lucille T. Morin, St. Blaise-Neuchatel, Switzerland, assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 17, 1961, Ser. No. 96,385
19 Claims. (Cl. 260—65)

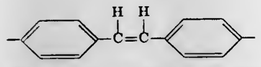
1. A process for preparation of linear, conjugated, organic polymers which consists essentially of reacting (1) a compound selected from the group consisting of (a) hydrazine, (b) those corresponding to the formula



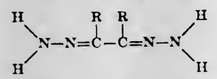
wherein Y is a radical selected from the group consisting of aryl, substituted aryl,



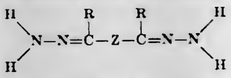
and



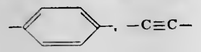
radicals, (c) those corresponding to the formula



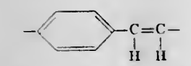
(d) those corresponding to the formula



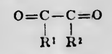
wherein R is a substituent selected from the group consisting of hydrogen, $—NH_2$, —OH and $—CH_3$, radicals and Z is a radical selected from the group consisting of



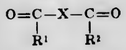
and



radicals and (e) Congo red, with (2) a compound selected from the group consisting of (a) those corresponding to the formula



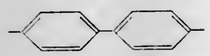
(b) those corresponding to the formula



wherein R^1 and R^2 are substituents selected from the group consisting of hydrogen, alkyl radicals containing 1–5 carbon atoms, inclusive, aryl radicals and alkyl-, alkoxy-, and halo- substituted aryl radicals and X is a radical selected from the group consisting of



and



radicals, (c) benzoquinone, (d) 1,4-naphthoquinone, (e) 1,2-naphthoquinone, (f) acenaphthenequinone, (g) anthraquinone, (h) phenanthraquinone, (i) stilbenequinone and (j) violanthrone at a temperature of from about −30° C. to about 250° C., a pressure of from about atmospheric to 100 p.s.i.g., a mole ratio of reactants (1) and (2) of from about 1 to 2 to about 2 to 1, in the presence of an inert solvent and at a pH of below about 7.

3,198,768
PROCESS FOR THE POLYMERIZATION OF ALDEHYDES

Shinichi Ishida, Itabashi-ku, Tokyo, Japan, assignor to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Apr. 18, 1961, Ser. No. 103,712
Claims priority, application Japan, Apr. 26, 1960, 35/22,103; Nov. 2, 1960, 35/44,091; Nov. 10, 1960, 35/44,352, 35/44,353
5 Claims. (Cl. 260—67)

1. A process for producing crystalline polyether type polyacetaldehyde which comprises polymerizing acetaldehyde monomer in the presence of a catalyst consisting of a composition of zinc di-lower alkyl together with a member of the group consisting of alumina and silica-alumina, said polymerization being conducted in an inert liquid medium and at a temperature between −40° C. to −120° C.

3,198,769
LINEAR 1,3-CYCLOPENTANEDIMETHANOL POLYESTERS OF BIS-PHENYLENE - 4,4' - DICARBOXYLIC ACIDS

Arthur R. Macon, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 28, 1962, Ser. No. 220,032
9 Claims. (Cl. 260—75)

1. A linear condensation polyester of dihydroxy and dicarboxylic bifunctional components wherein greater than 90% of the recurring structural ester units are 1,3-cyclopentanedimethanol esters of a bis-phenylene-4,4'-dicarboxylic acid, said acid being essentially hydrocarbon except for the two carboxyl groups and of 8 to 14 carbon atoms, the polyester having an intrinsic viscosity of at least 0.3 as measured in a mixture of 1 part trifluoroacetic acid and 3 parts methylene chloride by volume at 25° C., and having a polymer melting temperature between about 200° and 325° C.

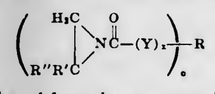
3,198,770
CURABLE FLUORINATED COPOLYMER COMPOSITIONS AND THE CURING THEREOF WITH CERTAIN ALKYLENIMINE DERIVATIVES

Nathaniel L. Watkins, Jr., Maplewood, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Apr. 4, 1960, Ser. No. 19,495
5 Claims. (Cl. 260—77.5)

1. A solid cured product which is incapable of viscous flow at temperatures below about 100° C. and which is a product of (1) a substantially liquid fluorinated copolymer of an alpha-beta ethylenically unsaturated carboxylic acid and at least one terminally unsaturated aliphatic olefinic compound, said olefinic compound being at least half fluorinated and having less than 10 carbon atoms, said copolymer having from 2 to about 15 carboxyl groups per molecule, having from about 0.1 to about 3 milliequivalents of carboxyl groups per gram of copolymer, having monomer units corresponding to between about 0.1 and about 10 mol percent of said unsaturated carboxylic acid, and having a molecular weight below about 50,000, and (2) between about stoichiometric and

about 70 percent excess amount, based on said fluorinated copolymer, of a compound having the formula



wherein Y is selected from the group consisting of oxygen and —NH—, *x* is selected from the group consisting of 0 and 1, R′ and R″ are selected from the group consisting of hydrogen and an alkyl group having from 1 to 4 carbon atoms, *n* is an integer from 2 to 3, and R is an active hydrogen free, *n*-valent radical selected from the group consisting of an aliphatic, aromatic and alicyclic radical.

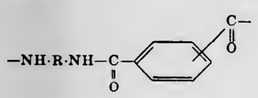
3,198,771

AMORPHOUS POLYAMIDES FROM AROMATIC DICARBOXYLIC ACIDS AND AN ETHYL SUBSTITUTED ALKYLENE DIAMINE

Rudolf Gabler, Zollikerberg, Zurich, Switzerland, assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed June 30, 1961, Ser. No. 120,942
The portion of the term of the patent subsequent to Sept. 22, 1981, has been disclaimed
11 Claims. (Cl. 260—78)

1. A linear amorphous film-forming polyamide of an aromatic dicarboxylic acid selected from the group consisting of terephthalic acid, insophthalic acid and an acid mixture of 90 to 95 percent terephthalic acid and 5 to 10 percent isophthalic acid consisting of recurring structural units of the formula



wherein R is an alkyl-substituted saturated hydrocarbon chain 6 to 10 carbon atoms in length in which the alkyl substitution consists of one ethyl group.

3,198,772

POLYMERIZATION OF VINYL MONOMERS

Rajendra N. Chadha, Takoma Park, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Jan. 9, 1962, Ser. No. 165,227
2 Claims. (Cl. 260—78.4)

1. In the process of polymerizing a member of the vinyl monomer group consisting of vinyl acetate, vinyl butyrate, vinyl propionate, vinyl oleate, vinyl-2-ethyl hexoate, vinyl isodecanoate, methyl methacrylate, ethyl methacrylate, hexyl methacrylate, n-butyl methacrylate, lauryl methacrylate, ethylene glycol dimethacrylate, methyl acrylate, ethyl acrylate, 2-ethyl hexyl acrylate, tridecyl acrylate, allyl acrylate, di-n-butyl itaconate, acrylonitrile, and methacrylonitrile in the presence of a catalyst consisting essentially of free oxygen and an aluminum alkyl compound of the formula:



in which R is a member of the group consisting of hydrogen and an alkyl and R′ is an alkyl, all of said alkyls containing 1 to 8 carbon atoms, which comprises admixing said vinyl monomer group member with said aluminum alkyl compound and exposing said mixture to free oxygen, the improvement whereby the mixture is stabilized to thermal polymerization prior to exposure to free oxygen by complexing the aluminum compound in a 1:1 mole ratio with butyl acrylate in an oxygen free atmosphere prior to admixing it with said vinyl monomer group member.

3,198,773

LARGE SIZE VINYL CHLORIDE POLYMER PARTICLES FROM EMULSION LATEX

Alfred Stoloff, Livingston, N.J., assignor to Allied Chemicals Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 13, 1962, Ser. No. 223,542
2 Claims. (Cl. 260—78.5)

1. A process for the production of large size polymer particles selected from the group consisting of polymers of vinyl chloride and copolymers of vinyl chloride with other ethylenically unsaturated compounds selected from the group consisting of vinyl acetate, vinyl propionate, diethyl maleate and vinylidene chloride from emulsion latex containing said polymers which comprises spray drying the emulsion latex to remove the aqueous phase of the emulsion latex and produce small size particles of polymer, thereafter admixing and dispersing said small size particles of polymer with additional emulsion latex to give a ratio of added solids to original latex solids of 0.25:1–1.5:1 by weight, spray drying said mixture of small particles of polymer dispersed in the emulsion latex to remove the aqueous phase of the mixture and produce large size particles of polymer.

3,198,774

CONTINUOUS PROCESS FOR THE PREPARATION OF BLOCK COPOLYMERS

Robert L. Huxtable and Robert E. Dollinger, both of Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 14, 1961, Ser. No. 152,177
7 Claims. (Cl. 260—83.7)

4. An improved polymerization process for minimizing gel formation in the production of block copolymers which comprises continuously introducing into a polymerization zone a reaction mixture of (a) 1,3-butadiene and styrene, (b) a hydrocarbon diluent selected from the group consisting of paraffins, cycloparaffins and aromatic hydrocarbons having from 3 to 12 carbon atoms per molecule, (c) 0.07 to 2 parts per 100 weight parts of total monomers of an initiator consisting essentially of an organolithium initiator having the formula $R(Li)_x$, wherein R is a hydrocarbon radical selected from the group consisting of aliphatic, cycloaliphatic and aromatic radicals containing up to and including 20 carbon atoms per radical, and X is an integer from 1 to 4, inclusive, and (d) 0.1 to 3 mols of an alkyl halide compound per mol of initiator, said halide having from 1 to 12, inclusive, carbon atoms per molecule, continuously contacting said reaction mixture within said zone at a temperature within the range 0 to 300° F. and under liquid phase conditions to form said copolymer, and continuously withdrawing from said zone said block copolymer as a product of the process.

3,198,775

COPOLYMERS HAVING IMPROVED OPTICAL CLARITY

Richard Emile Delacretaz, Speros Peter Nemphos, and Robert Louis Walter, Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 30, 1962, Ser. No. 183,772
10 Claims. (Cl. 260—85.5)

1. In a process for copolymerizing 5–95 parts by weight of a monovinylidene aromatic hydrocarbon and, correspondingly, 95–5 parts by weight of an unsaturated nitrile of the group consisting of acrylonitrile, methacrylonitrile, and mixtures thereof in an aqueous system in the presence of a free radical-generating polymerization initiator and a suspending agent, the improvement which comprises (1) initiating copolymerization of the monovinylidene aromatic hydrocarbon and unsaturated nitrile monomers in the absence of a suspending agent, (2) continuing copolymerization in the absence of a suspending agent

until 20–40% of the monomers have been converted to polymer, (3) adding a water-soluble suspending agent to the reaction mixture at a stage of the reaction between 20 and 40% conversion, (4) adding 0.05–1% of a water-soluble inorganic salt, based on the weight of the monomers, to the reaction mixture prior to the stage of about 65% conversion, (5) maintaining a substantially constant monomer ratio in the reaction mixture by adding supplemental amounts of the more rapidly-consumed monomer between 30 and 95% conversion, (6) terminating the copolymerization reaction at 95–98% conversion, and (7) removing unreacted monomers by distillation.

3,198,776

METHOD FOR PRODUCING COPOLYMERS OF ETHYLENE AND t-BUTYL ACRYLATE

Mary L. Miller, New York, N.Y., and Carol E. Rauhut, Stamford, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed May 19, 1960, Ser. No. 30,102
6 Claims. (Cl. 260—86.7)

1. A method which comprises polymerizing a composition consisting essentially of from about 0.1% to about 99.9% of a tertiary alkyl ester of a monoethylenically unsaturated monocarboxylic acid, said alkyl group containing from 4–5 carbon atoms, inclusive, and said acid containing from 3–4 carbon atoms, inclusive, and from about 99.9% to about 0.1% of an α-olefin having 2–3 carbon atoms, inclusive, at a temperature of from about −70° C. to about 50° C. and a pressure not higher than about atmospheric in the presence of a chemically inert, oxygen-free solvent and from about 0.001 to 0.1 mole per 100 ml. of said monomer composition, of a catalyst composed of a mixture of (1) a metal alkyl represented by the general formula

$$MR_mR'_n$$

wherein *m* is an integer of from 1–3, inclusive, *n* is an integer of from 0–1, inclusive, M is selected from the group consisting of lithium, aluminum, and zinc, R represents an alkyl radical having from 2–6 carbon atoms, inclusive, and R′ represents a chlorine atom and (2) a compound represented by the general formula

$$M'X_p$$

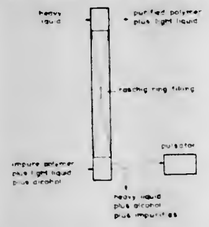
wherein *p* is an integer of from about 3–5, inclusive, M′ is a metal selected from the group consisting of titanium, vanadium, iron, molybdenum and chromium and X represents chlorine and the ratio of (1):(2) is from about 1:5 to about 20:1.

3,198,777

PROCESS FOR PURIFYING POLYMERS

Cornelis E. P. V. van den Berg, Hendrik Hendriks, and Mathias J. G. Muytjens, all of Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

Filed June 7, 1960, Ser. No. 34,517
Claims priority, application Netherlands, June 10, 1959, 240,075
8 Claims. (Cl. 260—88.2)



1. Process for purifying a polymer contaminated with impurities, comprising the following steps: continuously passing upward in a contacting zone, comprising an elongated column containing flow obstructing means and having a polymer exit, the contaminated polymer together with a first liquid countercurrent to a continuously downwardly moving second liquid, said second liquid being heavier than and incompletely miscible with said first liquid; simultaneously pulsating the contents of the contacting zone, to maintain the polymer suspended in the lighter liquid and to insure passage of the polymer in the direction of said polymer exit whereby the impurities are transferred to the downwardly moving heavier liquid; continuously discharging from the bottom of the column a stream of the heavier liquid charged with impurities; continuously controlling said discharge so that the interface between the lighter and the heavier liquids lies in the bottom section of the column, whereby the lighter liquid forms a continuous phase in the column; continuously removing the polymer substantially free of impurities from the top of the column, together with the first liquid and thereafter separating the purified polymer from the first liquid.

3,198,778

PROCESS FOR PREPARING AND VULCANIZING OLEFIN COPOLYMERS CONTAINING UNSATURATION

Giulio Natta, Giovanni Crespi, and Mario Bruzzone, all of Milan, Italy, assignors to Montecatini, Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

No Drawing. Filed Sept. 26, 1960, Ser. No. 58,183
Claims priority, application Italy, Sept. 30, 1959, 16,282/59
12 Claims. (Cl. 260—88.2)

1. A method for preparing high molecular weight unsaturated copolymers of ethylene with a higher alpha-olefin selected from the group consisting of propylene and butene-1, which are sulfur-vulcanizable by processes used conventionally for the vulcanization of unsaturated rubbers, from high molecular weight amorphous and saturated copolymers of ethylene with the selected higher alpha-olefin, which method comprises contacting the saturated copolymer with from about 2 to about 6 parts by weight of chlorine per 100 parts of the amorphous copolymer under conditions such that the chlorine is distributed homogeneously in the copolymer without chemical combination of the chlorine with the copolymer, heating the resulting mass to a temperature not higher than 100° C. until from 1% to 3% by weight of chlorine is homogeneously combined with the copolymer, and then dehydrochlorinating the chlorinated copolymer at a temperature above 160° C. and between 160° C. and about 250° C., until virtually all of the 1% to 3% by weight of chlorine combined with the copolymer in the chlorinating step is removed.

3,198,779

PROCESS OF PRODUCING LOW MOLECULAR WEIGHT HYDROCARBON RESINS

Raymond J. Kray, Berkeley Heights, and Julius P. Rakus, Mount Freedom, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 15, 1961, Ser. No. 152,664
5 Claims. (Cl. 260—93.7)

1. The process of producing a synthetic hydrocarbon resin which comprises thermally cracking a polybutene-1 resin having a molecular weight of at least 50,000 and an isotactic content of a least 10% by weight by introducing said polybutent-1 resin into a thermal cracking zone maintained at a temperature of from 250° to 450° C. under a pressure of from 0.001 to 25 mm. of mercury and under non-oxidizing conditions, and maintaining said polybutene-1 resin in said zone until the molecular weight

of the resultant synthetic hydrocarbon is within the range of from 3,000 to 45,000, and thereafter recovering the synthetic hydrocarbon resin from the thermal cracking zone.

3,198,780

LOW TEMPERATURE POLYMERIZATION OF ETHYLENE IN THE PRESENCE OF AN ALUMINUM ALKYL COMPOUND AND OXYGEN CONTAINING COMPOUND

George A. Mortimer, La Marque, and Luigi Boghetich, Texas City, Tex., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 29, 1961, Ser. No. 163,019
5 Claims. (Cl. 260—94.9)

1. A process for producing normally solid polymers of ethylene which comprises polymerizing ethylene at pressures at about 5,000 p.s.i. to about 50,000 p.s.i. and at temperatures from about —50° C. to about 300° C. in the presence of from about 10 p.p.m. to about 1,000 p.p.m. by mole based on ethylene of an initiator consisting of an alkyl aluminum compound and an oxygen containing component selected from the group consisting of oxygen and peroxygen compounds capable of generating free radicals under said reaction conditions and constituting from about 0.1 mole to about 3 moles per mole of alkyl aluminum employed.

3,198,781

PRODUCTS OF PROTEINS CONTAINING ADDED N-ACYLHOMOCYSTEINE GROUPS

Reinhold Benesch and Ruth E. Benesch, New York, N.Y., assignors to Research Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application May 14, 1959, Ser. No. 813,077, now Patent No. 3,111,512, dated Nov. 19, 1963. Divided and this application July 3, 1962, Ser. No. 207,374
6 Claims. (Cl. 260—117)

1. Disulfide compositions made by the oxidation of proteins containing added N-acylhomocysteine groups.

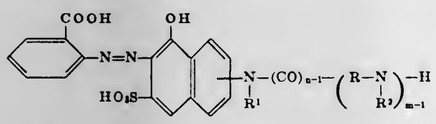
3,198,782

METALLISED AZO HALOPYRIMIDINE DYESTUFFS

Herbert Francis Andrew and Donald Buckley, both of Manchester, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain

No Drawing. Filed June 21, 1961, Ser. No. 118,537
Claims priority, application Great Britain, July 12, 1960, 24,259/60
4 Claims. (Cl. 260—146)

1. The 1:2 chromium complexes of dyestuffs of the formula



wherein R is a divalent radical selected from the group consisting of m- and p-phenylene radicals and such radicals having substituent sulphonic acid groups; R^1 and R^2 are selected from the group consisting of hydrogen and lower alkyl radicals; T represents a trihalogenopyrimidyl radical wherein the halogen atoms are selected from the group consisting of chlorine and bromine atoms; and *m* and *n* are integers of from 1 to 2 provided that when *m* is 1, *n* is 1.

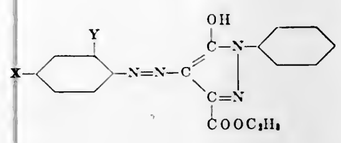
3,198,783

AZOPYRAZOLONE DYES FOR POLYESTER FIBERS

Charles E. Lewis, Somerville, N.J., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Aug. 8, 1961, Ser. No. 129,998
3 Claims. (Cl. 260—163)

1. A compound of the formula:



wherein X and Y are selected from the group consisting of nitro and chloro, and are not the same.

3,198,784

PROCESS OF PRODUCING SUCROSE BENZOATES

Richard W. Griscom, Raymond W. Ingwalson, and Howard F. Reeves, Jr., Chattanooga, Tenn., assignors, by mesne assignments, to Velsicol Chemical Corporation, a corporation of Tennessee

No Drawing. Filed July 25, 1962, Ser. No. 212,453
5 Claims. (Cl. 260—234)

1. A process of producing sucrose benzoate comprising the steps of dissolving benzoyl chloride in a mutual solvent for benzoyl chloride and sucrose benzoate selected from the group consisting of benzene, toluene, xylene, ethyl benzene, chlorobenzene, chlorotoluene, methylene dichloride, chloroform, carbon tetrachloride, tetrachloroethylene, diethyl ether, and di-isopropyl ether, dissolving sucrose in water to form an aqueous sucrose solution, mixing the benzoyl chloride solution and sucrose benzoate solution in a reaction zone in such proportions that the ratio of benzoyl chloride to sucrose is between six and ten moles of benzoyl chloride to one mole of sucrose, agitating the two solutions, reacting an alkali selected from the group consisting of potassium and sodium hydroxide with said solutions while agitating the same and maintaining the temperature of the solutions at between —10° C. and 50° C.

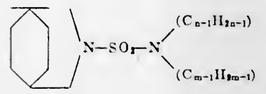
3,198,785

SULFAMOYL AZABICYCLONONANES AND DERIVATIVES THEREOF

William J. Houlihan, Mountain Lakes, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Filed Apr. 17, 1964, Ser. No. 360,742
6 Claims. (Cl. 260—239)

1. A compound of the formula



wherein each of *m* and *n* is a positive whole number of at most 5.

6. 3-chlorosulfonyl-3-azabicyclo[3,2,2]nonane.

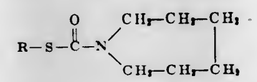
3,198,786

ALKYL HEXAMETHYLENE-THIOLCARBAMATES

Harry Tilles, El Cerrito, and Ralston Curtis, Los Altos, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 27, 1964, Ser. No. 362,949
9 Claims. (Cl. 260—239)

1. A compound of the formula:



wherein R is a lower alkyl radical.

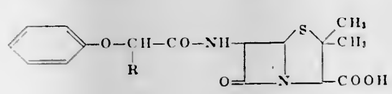
3,198,787

6-[(α-PHENOXY-LOWER ALKANOYL)-AMIDO]-PENICILLANIC ACID SALTS OF PROPIONYL ERYTHROMYCIN

Guy Hagemann, Nogent-sur-Marne, Lucien Penasse, Paris, and Gerard Nominé, Noisy-le-Sec, France, assignors to Roussel UCLAF, Paris, France, a corporation of France

No Drawing. Filed Jan. 23, 1962, Ser. No. 168,250
Claims priority, application France, Jan. 25, 1961, 850,721; Apr. 21, 1961, 859,498; Dec. 5, 1961, 881,001
5 Claims. (Cl. 260—239.1)

1. The acid addition salt of a 6-[(α-phenoxy-lower alkanoyl)-amido]-penicillanic acid and the propionic acid ester of erythromycin, said 6-[(α-phenoxy-lower alkanoyl)-amido]-penicillanic acid having the formula



wherein R is selected from the group consisting of hydrogen and lower alkyl.

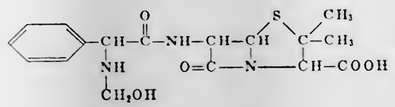
3,198,788

N-METHYLOL-α-AMINOBENZYL-PENICILLIN

Edmund Stanley Granatek, Baldwinsville, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,807
3 Claims. (Cl. 260—239.1)

1. A member selected from the group consisting of a compound of the formula



and the alkali metal salts thereof.

3,198,789

CERTAIN 3-AMINO-5-PHENYL-1,3-DIHYDRO-2H-1,4-BENZODIAZEPIN-2-ONE COMPOUNDS

Stanley C. Bell, Philadelphia, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,581
5 Claims. (Cl. 260—239.3)

1. The composition of matter having a molecular structure in which there is attached, to the 3-position of the 5-phenyl-1,3-dihydro-2H-1,4-benzodiazepin-2-one nucleus, the monovalent basic NH_2 group.

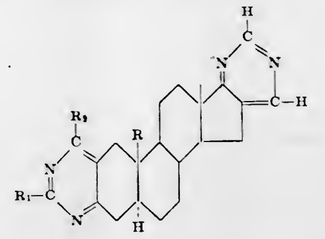
3,198,790

STEROIDAL DIPYRIMIDINES

Pietro de Ruggieri, Carmelo Gandolfi, and Umberto Guzzi, Milan, Italy, assignors to Ormonoterapia Richter S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed May 10, 1963, Ser. No. 279,626
Claims priority, application Italy, May 12, 1962, 9,514/62
12 Claims. (Cl. 260—239.5)

1. Compounds of the formula:



wherein R is a member selected from the group consisting of hydrogen and methyl, and R_1 and R_2 are members selected from the group consisting of hydrogen and amino.

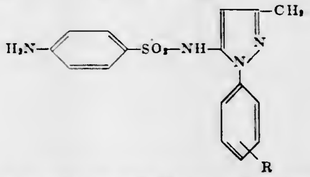
3,198,791

NEW SULFANILAMIDO-PYRAZOLES AND PROCESS OF PREPARING THEM

Rudi Weyer, Frankfurt am Main, Walter Aumüller, Kelkheim, Taunus, Gerhard Korger and Rudolf Fuhsgänger, Frankfurt am Main, and Alfons Häussler, Oberursel, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 24, 1961, Ser. No. 104,772
Claims priority, application Germany, Apr. 26, 1960, F 31,083; Feb. 15, 1961, F 33,204
4 Claims. (Cl. 260—239.9)

1. A member selected from the group consisting of sulfanilamido pyrazoles of the formula



in which R is a member selected from the group consisting of chlorine and alkoxy of 1–4 carbon atoms, and the salts of physiologically tolerable bases of said pyrazoles.

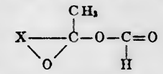
3,198,792

10α METHYL, 9β HORMONAL STEROIDS

Engbert Harmen Reerink, Pieter Westerhof, and Hendrik Frederik Louis Schöler, all of Weesp, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 12, 1962, Ser. No. 201,824
21 Claims. (Cl. 260—239.55)

19. A 10α-methyl,9β,8β,13β,14α hormonal steroid of the pregnane series having more than 19 carbon atoms in the molecule, wherein the C_{17} carbon atom of the steroid nucleus together with its substituents forms the group



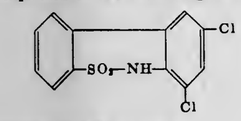
wherein X is the C_{17} carbon atom.

3,198,793
6-DIBENZO(c,e)-o-THIAZINE-5-DIOXIDE AND PROCESSES FOR THEIR PRODUCTION

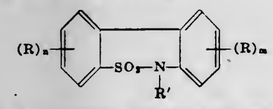
Josef Hilger and Friedrich Muth, Leverkusen-Bayerwerk, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Sept. 26, 1961, Ser. No. 140,701
Claims priority, application Germany, Sept. 27, 1960, F 32,211
9 Claims. (Cl. 260—243)

1. The compound of the following formula



5. A compound of the formula



in which R is a member selected from the group consisting of halo, nitro and trifluoro-methyl; R' is a member selected from the group consisting of lower alkyl, lower alkanoyl, phenyl-sulfonyl, and halo-phenyl-sulfonyl; and *m* and *n* are integers of 1–4.

3,198,794
PYRENYLMETHYL QUATERNARY AMMONIUM SALTS

Robert L. Clarke, Bethlehem, N.Y., and Johannes S. Buck, deceased, late of Albany, N.Y., by Phillis G. Buck, executrix, Ridgewood, N.J., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application July 25, 1960, Ser. No. 45,230. Divided and this application Sept. 28, 1961, Ser. No. 145,526
12 Claims. (Cl. 260—247)

8. N - (1 - pyrenylmethyl) - N - methylmorpholinium halide.

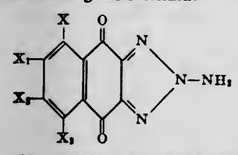
12. A quaternary ammonium salt represented by the formula $ZZ'Z''N^+—CH_2—C_{16}H_9An^-$, wherein $C_{16}H_9$ represents pyrenyl, An^- represents an anion, and the moiety $ZZ'Z''N^+$ is a member of the group consisting of (A) wherein Z, Z' and Z'' are members of the group consisting of lower-alkyl, cycloalkyl having from 3 to 7 ring carbon atoms and phenyl-lower-alkyl, (B) pyridinium, (C) piperidinium, (D) morpholinium, (E) quinolinium, and (F) said members substituted by a member of the group consisting of hydroxy, cyano, lower-alkanoylamino, carbamyl and carbo-lower-alkoxy.

3,198,795
CERTAIN TRIAZOLO-NAPHTHOQUINONE COMPOUNDS

William Lindsay Mosby, North Plainfield, and Mary-Louise Silva, Somerville, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

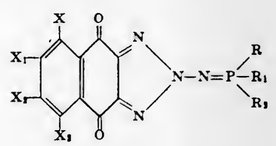
No Drawing. Filed May 2, 1963, Ser. No. 277,469
4 Claims. (Cl. 260—247.5)

1. A compound having the formula:



wherein X, X_1, X_2 and X_3 are individually selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, amino and nitro radicals; no more than one X being amino and no more than one X being nitro in any instance.

3. A compound having the formula:



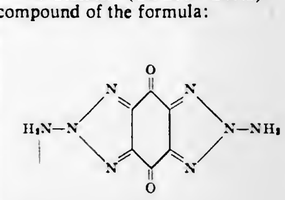
wherein X, X_1, X_2 and X_3 are individually selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy, amino, lower alkanamido and nitro radicals, no more than one X being amino and no more than one X being nitro in any instance; and
R, R_1 and R_2 are individually intended to represent lower alkyl, phenyl, tolyl, chlorophenyl, methoxyphenyl, naphthyl, di-(lower alkyl)amino, morpholino, pyrrolidino, piperidino and piperazino moieties.

3,198,796
DERIVATIVES OF BENZOBISTRIAZOLES

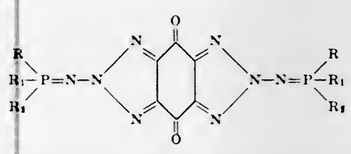
William Lindsay Mosby, North Plainfield, and Mary-Louise Silva, Somerville, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 21, 1963, Ser. No. 303,659
4 Claims. (Cl. 260—247.5)

1. The compound of the formula:

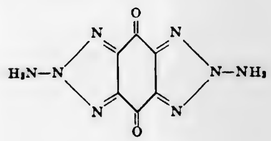


2. The compound of the formula:



wherein R, R_1 and R_2 are individually selected from the group consisting of lower alkyl, phenyl, halophenyl, lower alkylphenyl, lower alkoxyphenyl, di-lower alkylamino, naphthyl, morpholino, pyrrolidino, piperidino and piperazino.

3. A process which comprises treating a compound of claim 2 with an aqueous strong acid at a temperature between 50° C. and reflux in the presence of a water miscible solvent, and recovering the product of the formula:

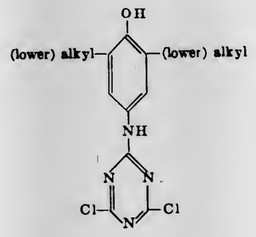


3,198,797
2,4-DICHLORO-6-DIALKYLHYDROXY-ANILINO-1,3,5-TRIAZINES

Martin Dexter, White Plains, Martin Knell, Ossining, and Eric A. Roskin, Bronx, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Original application Feb. 21, 1961, Ser. No. 87,520. Divided and this application Apr. 4, 1963, Ser. No. 273,539
2 Claims. (Cl. 260—249.5)

1. Compounds of the formula:



3,198,798
PHTHALIMIDO- AND ISOINDOLINYL-ALKYL-PIPERAZINES AND THEIR PREPARATION

Bernard L. Zenitz, Colonie, and Lewis P. Albro, Greenbush, N.Y., assignors to Sterling Drug, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 2, 1962, Ser. No. 235,114
9 Claims. (Cl. 260—268)

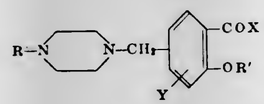
1. 1 - carbo-lower-alkoxy-4-[(2-phthalimido)A]piperazine, wherein A is alkylene of from two to ten carbon atoms.

3,198,799
DERIVATIVES OF PIPERAZINOMETHYL-SALICYLIC ACID

Gilbert L. Regnier, Sceaux, Seine, and Roger J. Canevari, l'Hay-les-Roses, Seine, France, assignors to société en nom collectif dite: "Science Union et cie Societe Francaise de Recherche Medicale," a corporation of France

No Drawing. Filed Apr. 12, 1963, Ser. No. 272,539
Claims priority, application Great Britain, Apr. 12, 1962, 14,206/62; Aug. 7, 1962, 30,180/62
6 Claims. (Cl. 260—268)

1. A base having the formula:



(I)

in which:

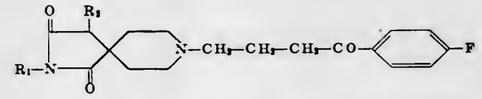
(a) R represents a substituent selected from within the group consisting of:
hydrogen atom, formyl, acetyl, carbethoxy and —COO—CH_2—C_6H_5,
phenyl,
substituted phenyl wherein the only substituent is selected from the group consisting of halo, trifluoromethyl lower alkyl up to C_5, lower alkoxy up to C_5, methylenedioxy, nitro and amino,
(b) R' represents a member of the group consisting of hydrogen atom, acetyl, and lower alkyl radical up to C_5,
(c) Y represents a member of the group consisting of a hydrogen atom, hydroxyl OH and methyl —CH_3,
(d) X represents a member of the group consisting of hydroxyl OH, lower alkoxy up to C_5,
and the addition salt of said base with an acid.

3,198,800
2,8-(PARA-F-4-OXO-BUTYL)-DIAZASPIRO[4,5]-DECANE-1,3-DIONES

Ernst Jucker, Ettingen, and Rudolph Süess, Bettingen, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed May 7, 1964, Ser. No. 365,792
12 Claims. (Cl. 260—294)

1. A compound selected from the group consisting of succinimides having the formula



in which R_1 is a member of the group consisting of lower alkyl and benzyl, and R_2 is a member of the group consisting of hydrogen, lower alkyl, benzyl, phenethyl, monosubstituted benzyl and monosubstituted phenethyl, wherein the substituent is one of chlorine, bromine, trifluoromethyl, methyl, ethyl, methoxy and ethoxy, and nontoxic, therapeutically useful acid addition salts thereof.

3,198,801
METHYL 1-AMINOPIPERIDINE-4-CARBOXYLATE

Philip M. Carabateas, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 9, 1962, Ser. No. 236,705
1 Claim. (Cl. 260—294.3)

Methyl 1-aminopiperidine-4-carboxylate.

3,198,802
ETHYL 4-PHENYL-1-(1-PYRENYLMETHYL) PIPERIDINE-4-CARBOXYLATE

Robert L. Clarke, Bethlehem, N.Y., and Johannes S. Buck, deceased, late of Albany, N.Y., by Phillis G. Buck, executrix, Ridgewood, N.J., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application July 25, 1960, Ser. No. 45,230. Divided and this application Dec. 28, 1964, Ser. No. 429,700
1 Claim. (Cl. 260—294.3)

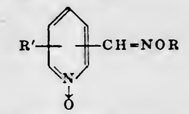
Ethyl 4 - phenyl-1-(1-pyrenylmethyl)piperidine-4-carboxylate.

3,198,803
O-ETHERS OF PYRIDINEALDOXIME-1-OXIDES

Wilhelm Mathes, Ludwigshafen, Rhine, Germany, and John P. Da Vanzo, Portage Township, Kalamazoo County, Mich., assignors to Dr. F. Raschig, G.m.b.H., Ludwigshafen (Rhine), Germany, a company

No Drawing. Filed June 30, 1961, Ser. No. 120,940
25 Claims. (Cl. 260—296)

1. A compound selected from the class consisting of (1) compounds of the formula



wherein R' is selected from the class consisting of hydrogen and methyl; and R is hydrocarbon selected from the class consisting of alkyl of from one to twelve carbon atoms, inclusive, alkenyl of from three to twelve carbon atoms, inclusive, aralkyl of from seven to twelve carbon atoms, inclusive, aralkenyl of from eight to twelve carbon atoms, inclusive, cyclopentyl, cyclohexyl, cyclopentenyl, cyclohexenyl, cyclopentylalkyl and cyclopentenylalkyl of from six to twelve carbon atoms, inclusive, and cyclohexylalkyl and cyclohexenylalkyl of from seven to twelve carbon atoms, inclusive; and (2) pharmacologically acceptable acid addition salts thereof.

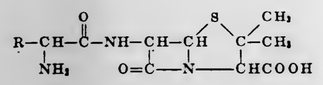
3,198,804
α-AMINOMETHYLPENICILLIN DERIVATIVES

David A. Johnson, Fayetteville, and Charles A. Panetta, East Syracuse, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

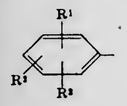
Filed Jan. 6, 1965, Ser. No. 423,677
10 Claims. (Cl. 260—306.7)

1. A member selected from the group consisting of an amphoteric antibacterial compound and the nontoxic pharmaceutically acceptable salts thereof; *said amphoteric antibacterial compound being prepared by the process which comprises* mixing

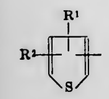
(a) an aminopenicillin selected from the group consisting of the acids of the formula



wherein R is a member selected from the group consisting of hydrogen, alkyl, cycloalkyl, indolylalkyl, naphthyl, benzyl, furyl and radicals having the formulae

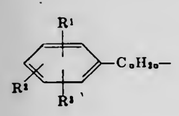


and



wherein R^1, R^2 and R^3 are each a member selected from the group consisting of hydrogen, nitro, di(lower)alkylamino, (lower)alkanoylamino, (lower)alkanoyloxy, (lower)alkyl, (lower)alkoxy, sulfamyl, chloro, iodo, bromo, fluoro and trifluoromethyl and salts thereof with at least an equimolar weight of

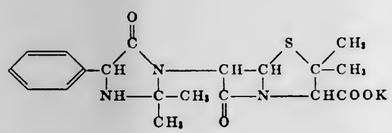
(b) a carbonyl compound selected from the group consisting of cyclobutanone, cyclopentanone, cyclohexanone, cycloheptanone, and aldehydes of the formula R^7CHO wherein R^7 is a member selected from the group consisting of (lower)alkyl and the radicals of the formula



wherein R^1, R^2 and R^3 have the meaning set forth above and *n* is an integer from 0 to 6 inclusive

(c) at a pH within the range of about pH 5.5 to about pH 9.5.

10. The compound of the formula

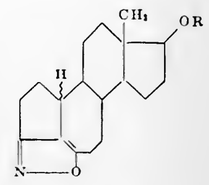


3,198,805
A-NOR-B-HOMO-STEROIDS HAVING ISOXAZOLE SUBSTITUENT AND PROCESS OF PREPARATION

Georges Muller, Nogent-sur-Marne, and Andre Polttevin, Les Lilas, France, assignors to Roussel-UCLAF, S.A., Paris, France, a corporation of France

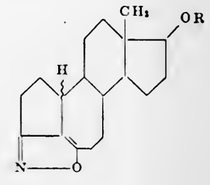
No Drawing. Filed Oct. 19, 1962, Ser. No. 231,823
Claims priority, application France Oct. 30, 1961, 877,425
6 Claims. (Cl. 260—307)

1. A compound of the formula

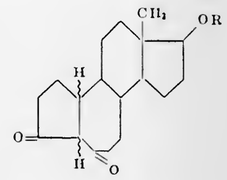


wherein R is selected from the group consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid having from 1 to 8 carbon atoms.

4. The process of producing an isoxazolo derivative of an A-nor-B-homo steroid of the formula



wherein R is selected from the group consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid having from 1 to 8 carbon atoms, which comprises the steps of heating a compound of the formula



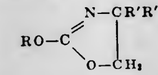
wherein R has the above-noted meaning with about one molecular equivalent of a compound selected from the group consisting of hydroxylamine and its salts in the presence of an inert organic solvent selected from the group consisting of lower alkanols, lower alkanoic acids and mixtures thereof at a temperature between about 50° C. and 150° C., isomerizing the resulting 3-oximino derivative by contacting with a lower alkanoic acid at about room temperature, cyclizing the isomerized 3-oximino derivative by treatment with a dehydrating agent selected from the group consisting of (a) refluxing formic acid and (b) phosphorus oxychloride in pyridine at about −10° C. to +10° C., and recovering said isoxazolo derivative of an A-nor-B-homo steroid.

3,198,806
2-ALKOXY-2-OXAZOLINES

George E. Ham, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,643
3 Claims. (Cl. 260—307)

1. A compound having the formula



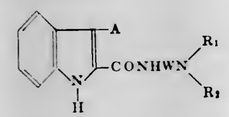
wherein R is a radical selected from the group consisting of alkyl, hydrocarbon aralkyl and cycloalkyl radicals and R′ and R″ are radicals selected from the group consisting of H, alkyl, cycloalkyl and phenyl radicals and wherein each of the radicals R, R′ and R″ contains not more than 8 carbon atoms and each cycloalkyl radical contains 5 to 6 carbon atoms in the cycloalkyl ring.

3,198,807
SUBSTITUTED CARBOXAMIDE INDOLES AND INDOLINES

Michel Leon Thominet, Paris, France, assignor to Societé d'Etudes Scientifiques et Industrielles de l'Ile-de-France, a society of France

No Drawing. Filed July 17, 1962, Ser. No. 210,555
Claims priority, application France, July 25, 1961, 869,013, 869,014
11 Claims. (Cl. 260—319)

11. A compound selected from the class consisting of substituted indole carboxamides, non-toxic acid addition salts of said indole carboxamides, corresponding indoline carboxamides and non-toxic acid addition salts of said corresponding indoline carboxamides, said substituted indoles being of the formula:



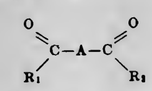
in which A is lower alkoxy; W is alkylene of 2–4 carbon atoms; and R_1 and R_2 are lower alkyl.

3,198,808
PRODUCTION OF PYRROLIDONE

Walter Himmele, Walldorf, and Nikolaus von Kutepow, Karlsruhe-Rueppurr, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Oct. 25, 1962, Ser. No. 233,127
Claims priority, application Germany, Oct. 28, 1961, B 64,578; Nov. 3, 1961, B 64,646
6 Claims. (Cl. 260—326.5)

1. A process for the production of pyrrolidone which comprises contacting a compound of the formula



wherein A represents a member selected from the group consisting of $—CH_2—CH_2$ and $—CH=CH—$ and R_1 and R_2 each denotes a member from the group consisting of —OH, $—NH_2$ and $—ONH_4$, with ammonia and hydrogen in the liquid phase at elevated temperature and increased pressure in the presence of a catalyst selected from the class consisting of cobalt, nickel and mixtures thereof, said catalyst having been sintered at a temperature between above 600° C. and 20 to 100° C. below its melting point and reduced with hydrogen at a temperature between 150° and 600° C.

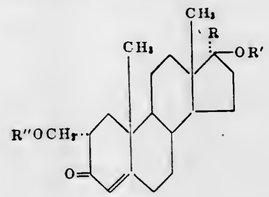
3,198,809
MICROBIOLOGICAL REDUCTION PROCESS AND STEROID PRODUCTS PRODUCED THEREBY

Eldon D. Nielson, Winston-Salem, N.C., Pat B. Hamilton, Ponca City, Okla., and Moises Riano and David Rosi, East Greenbush, and George P. Peruzzotti, North Greenbush, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 7, 1963, Ser. No. 322,029
36 Claims. (Cl. 260—343.2)

1. The process for producing a 2-hydroxymethyl steroid which comprises subjecting a 2-hydroxymethylene steroid to the reductive fermentative enzymatic action of a microorganism of an order selected from the group consisting of Actinomycetales, Moniliales, Mucorales, Sphaeriales and Spirogyrales.

14. A compound of the formula



wherein R is a member of the group consisting of hydrogen, lower-alkyl and lower-alkynyl; and R′ and R″ are members of the group consisting of hydrogen and lower-alkanoyl.

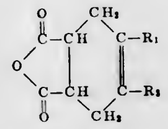
20. A member of the group consisting of 2α-hydroxymethyltestololactone and lower-alkanoyl esters thereof.

3,198,810
BICYCLIC ESTER-LACTONES

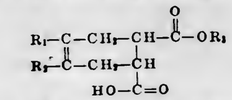
James C. Wygant, Creve Coeur, and Erhard J. Prill, Des Peres, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 144,589, Oct. 12, 1961. This application Aug. 3, 1964, Ser. No. 387,204
3 Claims. (Cl. 260—343.3)

1. The method for producing a bicyclic ester-lactone, said method comprising (1) monoesterifying an alkyl-Δ^4-tetrahydrophthalic anhydride of the formula

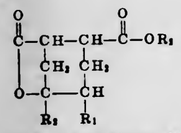


wherein R_1 is the group $—C_nH_{2n-1}$, where *n* is a whole number from 0 to 6, and R_2 is an unsubstituted alkyl group containing up to 6 carbon atoms, with a monohydric unsubstituted alkanol containing up to 17 carbon atoms, wherein said anhydride and said unsubstituted alkanol are present in about mole equivalent amounts, at a temperature of from about 50° to about 150° C. to form the acid-ester having the formula



wherein R_1 and R_2 are as aboved defined, and R_3 is an unsubstituted alkyl radical containing up to 17 carbon atoms, and (2) then intramolecularly cyclizing said acid-ester at a temperature of from about room temperature to about 150° C. in the presence of from about 0.1 to about 5 weight percent, based on the said anhydride ini-

tially charged to the reaction mixture, of perchloric acid, as catalyst, to form a bicyclic ester-lactone defined by the structural formula



wherein R_1, R_2 and R_3 are as above defined, and recovering the said bicyclic ester-lactone as product.

3,198,811

1,2,3,4,5,6,7,7 - OCTACHLORO - 3,6 - METHANO - 1,2,3,6 - TETRAHYDROPHTHALIC ACID AND ANHYDRIDE

Edward D. Weil, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed June 12, 1961, Ser. No. 116,253
4 Claims. (Cl. 260—346.3)

1. A compound selected from the group consisting of 1,2,3,4,5,6,7,7 - octachloro - 3,6-methano-1,2,3,6-tetrahydrophthalic acid and 1,2,3,4,5,6,7,7-octachloro-3,6-methano-1,2,3,6-tetrahydrophthalic anhydride.

4. 1,2,3,4,5,6,7,7 - octachloro - 3,6 - methano - 1,2,3,6-tetrahydrophthalic anhydride.

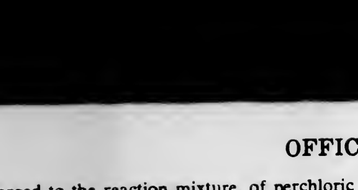
3,198,812

WATER SOLUBLE REACTIVE ANTHRAQUINONE DYES

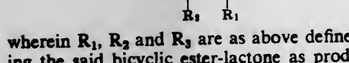
Guenter Krehbiel and Helmut Preugschas, both of Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda - Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Jan. 3, 1962, Ser. No. 164,169
Claims priority, application Germany, Jan. 14, 1961, B 60,848
4 Claims. (Cl. 260—372)

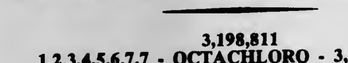
1. Dyes of the formula:



in which $Z^{\oplus}$ denotes a cationic radical selected from the group consisting of protons and alkali metal cations and Y denotes a member selected from the group consisting of



and



3,198,813

1,4-PREGNADIENE-11α,17α,21-TRIOL-3,20-DIONE AND ESTERS THEREOF

Arthur Noble, Roseland, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed July 31, 1964, Ser. No. 386,749
The portion of the term of the patent subsequent to May 26, 1981, has been disclaimed
4 Claims. (Cl. 260—397.45)

1. A member of the group consisting of 1,4-pregnadiene-11α,17α,21-triol-3,20-dione and the 21-lower alkanoyl esters thereof.

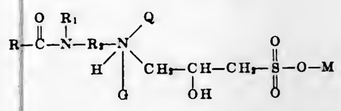
3,198,814

DETERGENT SULFONATE AND SULFATE SALTS OF CERTAIN AMPHOTERIC SULFONATES

Hans S. Mannheimer, Toms River, N.J., assignor to said Mannheimer and John J. McCabe, Jr., as joint venturers

No Drawing. Filed Oct. 13, 1961, Ser. No. 144,849
8 Claims. (Cl. 260—401)

1. A salt of the formula:



with R being a hydrocarbon radical of 6–24 carbon atoms; R_1 is selected from the group consisting of (a) hydrogen, (b) alkyl radicals of 1–6 carbon atoms, (c) hydroxy alkyl radicals of 2–6 carbon atoms, and (d) 1–15 mole alkylene oxide adducts of (c); R_2 being selected from the group consisting of (e) alkylene groups of 2–6 carbon atoms, (f) hydroxy alkylene groups of 2–6 carbon atoms, and (g) 1–15 mole alkylene oxide adducts of (f); each mole of said alkylene oxides being of 2–4 carbon atoms, Q being selected from the group consisting of (b), (c) and (d), M is selected from the group consisting of hydrogen and alkali metals; and G is a radical selected from the group consisting of $R_f—O—(C_2H_4O)_y—SO_3—$ and $R_f—O—SO_3—$, R_f is a hydrocarbon radical selected from the group consisting of alkyl and only ethylenically unsaturated hydrocarbon radicals of 6–20 carbon atoms and aliphatic-aromatic hydrocarbon radicals with a maximum of 20 carbon atoms and having at least 6 carbon atoms on the aliphatic portion thereof; and y is 1–10.

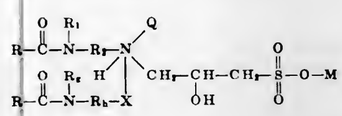
3,198,815

FATTY AMIDO AMINO SULFONATE AND SULFATE SALTS OF AMPHOTERIC SULFONATES

Hans S. Mannheimer, Toms River, N.J., assignor to Hans S. Mannheimer and John J. McCabe, Jr., as joint venturers

No Drawing. Filed Aug. 7, 1964, Ser. No. 388,290
5 Claims. (Cl. 260—401)

1. A salt of the formula:



with each R being a hydrocarbon radical of 6–24 carbon atoms; R_1 is selected from the group consisting of (a) hydrogen, (b) alkyl radicals of 1–6 carbon atoms, (c) hydroxy alkyl radicals of 2–6 carbon atoms, and (d) 1–15 mole alkylene oxide adducts of (c); R_2 being selected from the group consisting of (e) alkylene groups of 2–6 carbon atoms, (f) hydroxy alkylene groups of 2–6 carbon atoms, and (g) 1–15 mole alkylene oxide adducts of (f); each mole of said alkylene oxides being of 2–4 carbon atoms; Q being selected from the group consisting of (b), (c) and (d); M is selected from the group consisting of hydrogen and alkali metals; R_g is selected from the group consisting of hydrogen, an alkyl radical of 1–8 carbon atoms, an hydroxy alkyl radical of 2–8 carbon atoms and 1–15 mole alkylene oxide adducts of the available hydroxy groups in said hydroxy alkyl radical, said alkylene oxide being of 2–4 carbon atoms; R_h is a group selected from the class consisting of alkylene, aromatic and aromatic-aliphatic hydrocarbon groups having a maximum of 12 carbon atoms; X is a radical selected from the group consisting of $—SO_3$ and $—O—SO_3$.

3,198,816

SELECTIVE HYDROGENATION OF FATTY OILS

Mykola Zajcew, Newark, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,882
11 Claims. (Cl. 260—409)

1. A method for hydrogenating unsaturated fatty oils which comprises treating the oil with hydrogen under hydrogenation conditions including a temperature in the range of about 40 to 200° C. and pressure in the range of atmospheric to about 1000 p.s.i. in the presence of a catalyst comprising a solid support having deposited thereon palladium metal and a modifying material selected from the group consisting of

(a) bismuth subacetate, bismuth acetate $BiCl_3$ and BiOCl, and

(b) mixture of a compound of group (a) and silver, and

(c) mixtures of a compound of group (a) and a silver compound of the group consisting of silver acetate, Ag_2SO_4 and $AgNO_3$,

the palladium metal being present in the range of .001 to 10 percent by weight, and the modifying material being present in the range of .005 to 10 percent by weight, based upon the weight of said oil, being in the range of about 0.00005 to 0.1 percent.

3,198,817

INSOLUBLE CHELATES OF TITANIUM, ZIRCONIUM, HAFNIUM AND THORIUM

Horst G. Langer, Cochituate, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 8, 1960, Ser. No. 67,919
8 Claims. (Cl. 260—429.1)

1. A solid crystalline metal chelate in acid form corresponding to the following:

$$M \cdot X$$

wherein the metal M is selected from the group consisting of titanium, zirconium, hafnium and thorium in the tetravalent form, and X represents a chelating radical formulated in accordance with the following:

$$(HOOCCH_2)_2N \cdot R \cdot (H_2O)_x$$

wherein R is selected from the group consisting of H and

$$—[(CH_2)_nN(Y)]_mY$$

wherein Y is independently selected from the group consisting of hydroxyethyl groups, $—CH_2COOH$ and $—CH_2CH_2COOH$, not more than two Y's being hydroxyethyl; n is an integer having a value in the range 2, 3, 4 and m is in integer having a value in the range 0, 1, 2, 3, 4; x is an integer having a value in the range 0, 1, 2, 3, 4.

3,198,818

PROCESS FOR SEPARATING ORGANOTIN COMPOUNDS

John E. Santo, Jackson Heights, N.Y., assignor, by mesne assignments, to M. T. Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 22, 1960, Ser. No. 50,827
12 Claims. (Cl. 260—429.7)

1. A process for separating a mixture consisting essentially of a tetrahydrocarbontin having the formula R_4Sn and a trihydrocarbontin compound having the formula R_3SnX, wherein R is selected from the group consisting of alkyl and aryl radicals having 2 to 18 carbon atoms and X is selected from the group consisting of chloride, hydroxide, and $OSnR_3$, comprising contacting said mixture with methyl alcohol resulting in the solution of the trihydrocarbontin compound in the methyl alcohol, and the tetrahydrocarbontin remaining in a separate phase, and then separating the two phases.

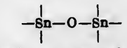
3,198,819

STABILIZED ORGANO-STANNOXANES AND PREPARATION THEREOF

Carl R. Gloskey, Stirling, N.J., assignor, by mesne assignments, to M.T. Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 29, 1961, Ser. No. 120,504
18 Claims. (Cl. 260—429.7)

1. The method of stabilizing an organic distannoxane containing the group



wherein all of the substituents attached to the tin atoms are hydrocarbon groups against deterioration which comprises adding to said organic distannoxane at least 0.1% of an organic carboxylic acid, and heating the mixture so-formed to a temperature of at least about 100° C. and below the boiling point of said distannoxane.

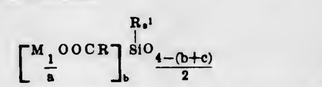
3,198,820

SILICONE-SILICATE POLYMERS

Arthur N. Pines, Synder, and Eugene A. Zientek, Kenmore, N.Y., assignors to Union Carbide Corporation, a corporation of New York

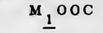
No Drawing. Filed Dec. 12, 1960, Ser. No. 75,097
34 Claims. (Cl. 260—448.2)

1. An organosilicon polymer consisting essentially of: (A) from 10 to 90 parts by weight of siloxane groups represented by the formula:

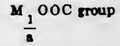


(I)

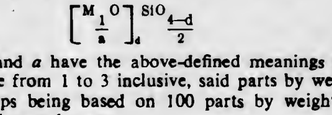
wherein M is a cation that forms a water soluble silicate selected from the group consisting of the sodium, potassium, lithium, rubidium and tetra(alkyl)ammonium cations, a is the valence of the cation represented by M and has a value of at least one, R is a member selected from the group consisting of the unsubstituted divalent hydrocarbon groups and



substituted divalent hydrocarbon groups, each



is connected to the silicon atom through at least 2 carbon atoms of the group represented by R, R^1 is a monovalent hydrocarbon group, b has a value from 1 to 3 inclusive, c has a value from 0 to 2 inclusive and $(b+c)$ has a value from 1 to 3 inclusive and (B) from 10 to 90 parts by weight of groups represented by the formula:



(II)

wherein M and a have the above-defined meanings and d has a value from 1 to 3 inclusive, said parts by weight of said groups being based on 100 parts by weight of the organosilicon polymer.

3,198,821

ARYL (ISOTHIOCYANATOALKOXYLATES)

Thomas K. Brotherton, South Charleston, and John W. Lynn, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 27, 1962, Ser. No. 190,768
3 Claims. (Cl. 260—454)

1. A compound of the formula:

$$B[O—(C_kH_{2k})NCS]_z$$

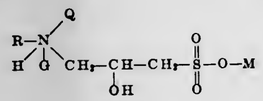
wherein k is an integer having a value of from 1 to 10 inclusive, z is an integer having a va ue of from 2 to 6 inclusive, and B is a polyvalent aromatic hydrocarbon group containing from 6 to 14 carbon atoms inclusive.

3,198,822
QUATERNARY AMMONIUM SULFATES AND SULFONIC ACID SALTS

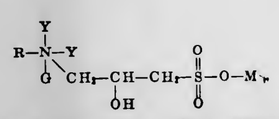
Hans S. Mannheimer, Toms River, N.J., assignor to said Mannheimer and John J. McCabe, Jr., as joint venturers

No Drawing. Filed Oct. 13, 1961, Ser. No. 144,850
8 Claims. (Cl. 260—458)

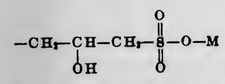
1. A compound of the formula selected from the group consisting of:



and

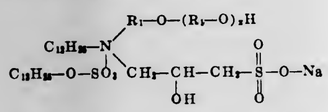


with R being a hydrocarbon radical selected from the group consisting of alkyl and ethylenically unsaturated aliphatic hydrocarbon radicals and alkyl substituted mononuclear aromatic radicals of 6–24 carbon atoms, with the alkyl portion thereof being of at least 3 carbon atoms; each Y is a radical selected from the class consisting of (a) alkyl radicals of 1–6 carbon atoms and (b) $—R_1—O—(R_1—O)_x—H$, with R_1 being an alkylene group of 2–4 carbon atoms and x being 0–15; Q is selected from the group consisting of hydrogen, (a), (b) and



M is selected from the group consisting of hydrogen and alkali metals; and G is a radical selected from the group consisting of sulfonate radicals of organic anionic detergent sulfonic acid salts and sulfate radicals of organic anionic detergent sulfate, said sulfate and sulfonate radicals having a terminal hydrocarbon radical of 6–20 carbon atoms said terminal hydrocarbon radical being selected from the group consisting of alkyl, ethylenically unsaturated aliphatic hydrocarbon groups and alkyl substituted mononuclear aromatic radicals wherein the alkyl portion is at least 6 carbon atoms salts.

6. A compound of the formula:



with R_1 being an alkylene radical of 2–4 carbon atoms; and x is 0–15.

3,198,823
PROCESS FOR MANUFACTURING α-SULPHOXY-ISOBUTYRIC ACID AND α-HYDROXYISOBUTYRIC ACID

Hiroshi Akabayashi and Hiroshi Negishi, Toshima, Kita-ku, Tokyo, Japan, assignors to Nissan Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed July 3, 1962, Ser. No. 207,268
Claims priority, application Japan, July 8, 1961, 36/23,944; Oct. 4, 1961, 36/35,439; Dec. 6, 1961, 36/43,546; Dec. 20, 1961, 36/46,013
8 Claims. (Cl. 260—458)

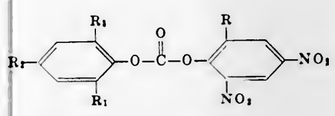
1. A process for producing α-sulphoxyisobutyric acid and α-hydroxyisobutyric acid which comprises oxidizing a tertiarybutyl sulfate selected from the group consisting of mono-tertiarybutyl sulfate, di-tertiarybutyl sulfate and mixtures thereof by contacting said butyl sulfate with an oxidant selected from a group consisting of nitric acid, nitrogen peroxide, nitrogen peroxide with oxygen, dinitrogen trioxide and mixtures thereof at a temperature between 0° C. and 60° C. in the presence of sulphate-ion in the reaction system.

3,198,824
ASYMMETRICAL CARBONATE ESTERS OF 2,4-DINITRO-6-LOWER ALKYL PHENOL AND PHENOL OR PHENOLS SUBSTITUTED BY CHLORINE, NITRO OR LOWER ALKYL

Krijn van den Boogaart, Vlaardingen, Netherlands, assignor to Fabriek van Chemische Producten Vondelingenplaat N.V., Schiedam, Netherlands, a Dutch corporation

No Drawing. Filed Mar. 21, 1961, Ser. No. 97,170
Claims priority, application Great Britain, Mar. 21, 1960, 9,984/60
12 Claims. (Cl. 260—463)

1. An asymmetrical bisaryl carbonate having the formula



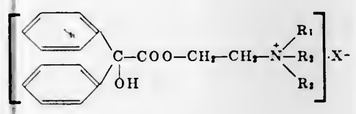
wherein R_1, R_2 and R_3 are selected from the group consisting of hydrogen, lower alkyl, chlorine and nitro groups and R is lower alkyl.

3,198,825
QUATERNARY AMMONIUM SALTS OF ORGANIC CARBOXYLIC ACID ESTERS OF 1-DIALKYL-AMINOETHANOLS-2

Karl Zelle, Franz Adickes, and Helmut Wick, Ingelheim (Rhine), Germany, assignors, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

Filed Nov. 10, 1960, Ser. No. 68,517
Claims priority, application Germany, Mar. 19, 1955, B 34,944
4 Claims. (Cl. 260—473)

1. A quaternary compound of the formula



wherein

R_1 and R_2 are each selected from the group consisting of methyl, ethyl and isopropyl,
R_3 is alkyl of 6 to 11 carbon atoms, inclusive, and
X is a non-toxic, pharmacologically acceptable anion.

3,198,826
ALKYL MERCAPTOMETHYLPHOSPHONIC ACIDS

George M. Calhoun, Cleveland, Ohio, assignor to Shell Oil Company, a corporation of Delaware

No Drawing. Original application Apr. 13, 1959, Ser. No. 805,686, now Patent No. 3,112,271, dated Nov. 26, 1963. Divided and this application Aug. 30, 1963, Ser. No. 305,809
2 Claims. (Cl. 260—500)

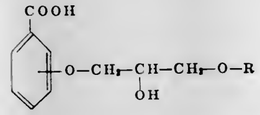
1. As a compound a C_{10-18} alkyl mercaptomethylphosphonic acid.

3,198,827
HYDROXY-BENZOIC ACID ETHERS AND SALTS THEREOF

Gerhard Ohnacker, Biberach an der Riss, Germany, assignor, by mesne assignments to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed May 9, 1961, Ser. No. 108,754
Claims priority, application Germany, May 9, 1960, T 18,350
10 Claims. (Cl. 260—521)

1. A compound selected from the group consisting of hydroxy-benzoic acid ethers of the formula



wherein R is selected from the group consisting of alkyl of 1 to 10 carbon atoms and cyclohexyl, their alkali metal salts and their alkaline earth metal salts.

3,198,828
COMPOUNDS OF CITRIC ACID

Erich Matter, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland

No Drawing. Filed Dec. 23, 1960, Ser. No. 77,797
Claims priority, application Switzerland, Dec. 29, 1959, 82,382
6 Claims. (Cl. 260—534)

1. An amide of citric acid in which one



group of the citric acid radical is linked with one nitrogen atom of an alkylene diamine radical, the nitrogen atoms of which are separated from each other by 2 to 6 carbon atoms and which is further substituted at one nitrogen atom by an aliphatic hydrocarbon radical selected from the group consisting of dodecyl, hexadecyl, octadecyl and octadecenyl, and the second and third



groups of the citric acid radical are each linked with a member selected from the group consisting of

(a) an alkylene diamine radical as defined above in this claim,
(b) an aliphatic monoamine radical selected from the group consisting of ethanolamine and aminoethyl ethanolamine,
(c) an aliphatic polyamine radical selected from the group consisting of N:N-dimethylamino trimethylene diamine, ethylene diamine and diethylene triamine,
(d) a hydrazine radical,
(e) a hydroxyl group, and
(f) an aliphatic polyamine radical selected from the group consisting of ethylene diamine and diethylene triamine, which radical is linked at a second nitrogen atom with one



group of a second citric acid radical, the remaining



groups of this second citric acid radical being connected with a member selected from the group consisting of the radicals (a), (b), (c), (d) and (e) as defined above in this claim,
the radicals (a), (b), (c), (d) and (f) being in any case attached to the

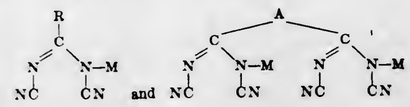
groups at a nitrogen atom.

3,198,829
N,N' DICYANOAMIDINES AND METHODS OF PREPARATION

John Thomas Shaw, Middlesex, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing, Original application June 29, 1961, Ser. No. 120,537. Divided and this application May 14, 1962, Ser. No. 195,018
5 Claims. (Cl. 260—551)

1. A compound selected from the group consisting of



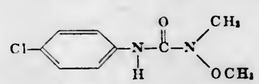
wherein M is a metal selected from the group consisting of alkaline earth metals, alkali metals and copper; R is a member selected from the group consisting of hydrogen, alkyl of up to 18 carbons and carbocyclic aryl of less than three 6-membered rings; and A is a member selected from the group consisting of alkylene of up to 18 carbons and carbocyclic arylene of less than three 6-membered rings.

3,198,830
PROCESS FOR PREPARING N-CHLOROPHENYL-N'-METHOXY-N'-METHYL

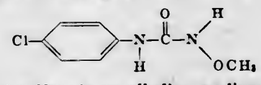
Otto Scherer, Gerhard Hörlein, and Rudolf Hübner, all of Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 1, 1961, Ser. No. 106,440
Claims priority, application Germany, Apr. 17, 1958, F 25,522
3 Claims. (Cl. 260—553)

1. The process for preparing a compound of the formula



which comprises reacting a compound of the formula



with dimethyl sulfate in an alkaline medium.

3,198,831
PROCESS FOR THE PRODUCTION OF N,N-DIETHYLTOLUAMIDES

Frederick G. Van Stryk, Guelph, Ontario, Canada, assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 19, 1962, Ser. No. 188,885
4 Claims. (Cl. 262—558)

1. A continuous, vapor-phase process for the preparation of N,N-diethyltoluamide which comprises continuously introducing diethylamine and toluic acid, in a molar ratio of amine to acid between about 2:1 and about 6:1, into a reaction zone containing a boron phos-

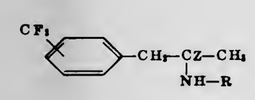
phate catalyst, passing said amine and said acid in intimate contact with each other over said catalyst at a rate corresponding to a contact time of up to about 2 minutes, the temperature being in the range of 250° to 350° C., continuously removing the vaporized amide from said reaction zone and condensing said amide.

3,198,832
PREPARATION OF TRIAMINOGUANIDINE
Lawrence Elnathan Benjamin, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Apr. 25, 1963, Ser. No. 275,509
6 Claims. (Cl. 260—564)

1. A process for preparing triaminoguanidine which comprises reacting an acid-addition salt of triaminoguanidine with an excess of liquid ammonia free of water at a temperature at which such ammonia is in a liquid state thereby producing free-base triaminoguanidine.

3,198,833
1-(TRIFLUOROMETHYLPHENYL) - 2 - LOWER-ALKYL AMINOPROPANES AND ACID ADDITION SALTS THEREOF
Laszlo G. Beregi, Boulogne, Pierre J. Hugon, Rueil-Malmaison, Jean-Claude R. Le Douarec, Versailles, and Henri Lucien Schmitt, Paris, France, assignors to societe en nom collectif dite: Science-Union & Compagnie-Societe Francaise de Recherches Medicales, Suresnes, France, a French society
No Drawing. Filed Nov. 1, 1961, Ser. No. 149,190
Claims priority, application Monaco, Nov. 5, 1960, 269; application France, Apr. 4, 1961, 857,671; July 4, 1961, 866,962
4 Claims. (Cl. 260—570.8)

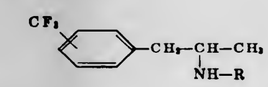
1. A compound selected from the group consisting of (a) 1 - (trifluoromethylphenyl) - 2-lower-alkylaminopropanes of the formula



wherein Z is selected from the group consisting of hydrogen and methyl and wherein R is a lower-alkyl radical having up to a maximum of five carbon atoms, and (b) pharmaceutically acceptable acid addition salts thereof.

3,198,834
OPTICAL ISOMERS OF TRIFLUOROMETHYLATED PHENETHYLAMINES
Laszlo G. Beregi, Boulogne-sur-Seine, Pierre Hugon, Ruell-Malmaison, Jean-Claude Le Douarec, Versailles, and Henri Schmitt, Paris, France, assignors to societe en nom collectif dite: "Science Union et Cie, Societe Francaise de Recherche Medicale," Suresnes, Seine, France, a French society
No Drawing. Filed July 27, 1964, Ser. No. 385,507
5 Claims. (Cl. 260—570.8)

1. An optically active isomer, selected from the group consisting of the *d* and *l* isomers of (I) a compound having the following formula:



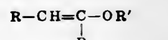
wherein R is a lower-alkyl radical having up to a maximum of 5 carbon atoms, and (II) an acid addition salt thereof.

3,198,835
PYRENYL METHYL TERTIARY AMINO AMINES
Robert L. Clarke, Bethlehem, N.Y., and Johannes S. Buck, deceased, late of Albany, N.Y., by Phillis G. Buck, executrix, Ridgewood, N.J., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 25, 1960, Ser. No. 45,230
8 Claims. (Cl. 260—570.9)

1. A compound, Y—CH_2—$C_{16}H_9$, wherein Y represents tertiary-amino and $C_{16}H_9$ represents pyrenyl, and where tertiary-amino is a member of the group consisting of:
(a) di-lower-alkylamino,
(b) dicycloalkylamino in which cycloalkyl has from 3 to 7 ring members,
(c) N-(cycloalkyl)-lower-alkylamino in which cycloalkyl has from 3 to 7 ring members,
(d) polymethylenimino of from 5 to 7 ring members,
(e) 4-morpholinyl,
(f) di-(phenyl-lower-alkyl)amino,
(g) N-(phenyl-lower-alkyl)-lower-alkylamino, and
(h) said members (a)–(g), inclusive, substituted by a member of the group consisting of lower-alkyl, halogen, hydroxy and cyano.

3,198,836
PROCESS FOR THE PREPARATION OF POLYENECARBONYL COMPOUNDS
Roman Marbet, Riehen, and Ulrich Schwieter, Basel, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed May 2, 1961, Ser. No. 107,058
Claims priority, application Switzerland, May 11, 1960, 5,399/60
14 Claims. (Cl. 260—586)

1. A process for the preparation of polyenecarbonyl compounds comprising the steps of reacting an aldehyde containing a double bond in the α,β- and γ,δ-positions relative to the aldehyde group in the presence of a lower aliphatic alkanol and an acidic condensing agent selected from the group consisting of mineral acids, Lewis acids, and strong acidic organic acids with an excess quantity of an enol ether of the formula



wherein R is selected from the group consisting of hydrogen and a lower alkyl group, wherein at least one R in the above formula is a lower alkyl group, and R′ is a lower alkyl group,
to form a reaction product, and hydrolyzing the reaction product with an acid.

3,198,837
PROCESS FOR THE PURIFICATION OF METHYL ETHYL KETONE
Jürgen Smidt, Munich-Solln, Hugo Kojer, Munich, Rudolf Rüttinger, Deisenhofen, and Rolf Sieber, Cologne-Longerich, Germany, assignors to Consortium für Elektrochemische Industrie G.m.b.H., Munich, Germany
No Drawing. Filed Dec. 21, 1961, Ser. No. 161,261
Claims priority, application Germany, Dec. 24, 1960, C 23,030
1 Claim. (Cl. 260—593)

A process for purifying methyl ethyl ketone obtained in the oxidation of butylene in the presence of a platinum metal catalyst containing chlorides which in addition to water and aldehydes contains chlorination products as impurities which comprises contacting such methyl ethyl ketone with a 20 to 30% aqueous alkali metal hydroxide, the ratio of such methyl ethyl ketone to aqueous alkali metal hydroxide being 2:1 to 1:20 by volume. at a temperature of 90 to 150° C. under superatmospheric pressure for a period of 1 to 30 minutes, separating off the organic phase and recovering purified methyl ethyl ketone from such organic phase by distillation.

3,198,838
PRODUCTION OF LIQUID BOROHYDROCARBONS
Earl A. Wellmuenster, Kenmore, and Joel A. Zaslowsky, Niagara Falls, N.Y., assignors, by mesne assignments, to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Oct. 12, 1955, Ser. No. 540,140
7 Claims. (Cl. 260—606.5)

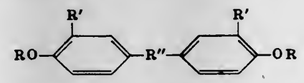
1. A method for the production of a liquid borohydrocarbon which comprises reacting diborane and an unsaturated hydrocarbon selected from the group consisting of ethylene, propylene and acetylene and mixtures thereof at 130–300° C. in vapor phase while the reactants are in admixture with a diluent gas, the molar ratio of unsaturated hydrocarbon to diborane being within the range from 1:10 to 10:1, the diluent gas comprising from 20 to 60 percent by volume of the reaction mixture and the volume of acetylene not exceeding 60 percent of the total volume of the unsaturated hydrocarbon.

3,198,839
PROCESS FOR THE PREPARATION OF MERCAPTANS
Charles Yvan Philippe Lalet, Caen, Calvados, France, assignor to Société Anonyme dite: Societe Nationale des Petroles d'Aquitaine, Paris, France, a company of France
No Drawing. Filed Oct. 5, 1962, Ser. No. 228,723
13 Claims. (Cl. 260—609)

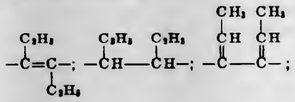
1. A process for the preparation of mercaptans which comprises reacting at a temperature of at least 170° C. an oxygen-containing organic compound selected from the group consisting of carboxylic acids, alcohols, aldehydes and ketones with a sulphur-containing compound selected from the group consisting of sulphur, hydrogen sulphide, carbon disulphide, calcium sulphide and ammonium sulphide, in the presence of rhenium heptasulphide as catalyst.

3,198,840
DERIVATIVES OF DIPHENYL SYNTHETIC ESTROGENS
Emil Kaiser, Chicago, and Byron M. Shinn, Western Springs, Ill., assignors, by mesne assignments, to Armour Pharmaceutical Company, a corporation of Delaware
No Drawing. Filed May 11, 1960, Ser. No. 28,238
7 Claims. (Cl. 260—613)

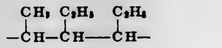
1. A compound selected from the class consisting of hexane, hexene, and hexadiene derivatives, said compound having the following structure:



wherein R and R′ are selected from a group consisting of hydrogen and a methylallyl radical, provided that when R is hydrogen R′ is a methylallyl radical, and that when R′ is hydrogen R is a methylallyl radical and R″ is selected from the group consisting of:



and

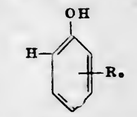


3,198,841
ALCOHOLS FROM UNSATURATED HYDROCARBONS AND CARBONYL COMPOUNDS
Jay K. Kochi, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 24, 1961, Ser. No. 154,875
10 Claims. (Cl. 260—618)

1. A process for preparing a monohydroxylic adduct of a vinyl compound and a carbonyl compound by reacting (1) a vinyl compound selected from the group consisting of vinyl alkylenes having from 4 to 10 carbon atoms and vinyl benzenes having from 8 to 16 carbon atoms with (2) a carbonyl compound selected from the group consisting of acyclic alkyl monoketones having from 1 to 30 carbon atoms and acyclic alkyl monoaldehydes having from 1 to 30 carbon atoms, the molar ratio of the carbonyl compound to the vinyl compound being from 1:1 to 2:5, in a saturated aliphatic ether solvent having from 2 to 10 carbon atoms, said ether being selected from the group consisting of acyclic saturated aliphatic ethers and alicyclic saturated aliphatic ethers, in the presence of a metal selected from the group consisting of alkali metals and alkaline earth metals at a temperature from about —70° C. to about +50° C. and at a pressure from about 300 mm. to about 2000 mm., and hydrolyzing the metal salt thus obtained to the corresponding alcohol.

3,198,842
ALLYLATION OF PHENOL
Paul J. Berrigan, Niagara Falls, N.Y., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 18, 1962, Ser. No. 189,243
7 Claims. (Cl. 260—624)

1. The Soxhlet-type continuous process of ortho-allylating a phenol by percolating a solution of β,γ-alkenyl halide, wherein the halogen is selected from the group consisting of chlorine and bromine, in a substantially anhydrous inert non-polar hydrocarbon solvent through a solid alkali metal salt of the phenol having the structure



wherein R is non-acetylenic hydrocarbon of up to 8 carbon atoms and *n* is a whole number from 0 to 4 inclusive, at a temperature from about 0° C. to about 100° C., separating by distillation from the resulting solution containing the corresponding ortho-β,γ-alkenyl phenol unreacted β,γ-alkenyl halide together with solvent and recycling the distillate for re-percolation through the unreacted solid alkali metal salt of said phenol until substantially all of said alkali metal salt of said phenol is converted.

3,198,843
PURIFICATION OF GLYCERINE
Robert S. Barker, Port Washington, N.Y., assignor to Halcon International, Inc., a corporation of Delaware
No Drawing. Filed Jan. 26, 1962, Ser. No. 169,110
5 Claims. (Cl. 260—637)

1. A process for the purification of glycerine obtained from the fermentation of molasses and containing impurities boiling close to the range of glycerine which comprises: contacting an aqueous solution of said glycerine with from 0.1 to 10 wt. percent of hydrogen peroxide an from 0.001 to 1.0 wt. percent based on glycerine of a water soluble compound selected from the group consisting of molybdates, vanadates, tungstates and chromates, said water soluble compounds having a cation selected from the group consisting of alkali metals, alkaline earth metals and ammonium; stripping the contacted glycerine

of impurities boiling at a temperature less than that of glycerine, distilling the stripped glycerine; withdrawing a distillate containing purified glycerine; contacting said purified glycerine with an adsorbent and withdrawing a water white glycerine product.

3,198,844

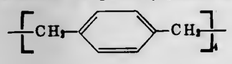
CYCLIC PRODUCTS OF PARA-XYLYLENE

Louis A. Errede, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed July 12, 1961, Ser. No. 123,416
8 Claims. (Cl. 260—668)

1. In a process for making cyclic dimers, trimers and tetramers of a para-xylylene, the step of adding a solid poly-para-xylylene free inert organic solvent solution of a para-xylylene maintained at a temperature not above about —45° C. to an inert hydrocarbon liquid maintained at a temperature not below about —10° C., said addition being conducted in the absence of molecular oxygen at a rate such that the para-xylylene solution is substantially instantaneously warmed to the temperature of the inert hydrocarbon.

6. Cyclic tetramers of para-xylylene of the formula:



3,198,845

PROCESS FOR THE CONDENSATION OF AROMATIC COMPOUNDS WITH UNSATURATED HYDROCARBONS

Raymond A. Franz, Kirkwood, and Richard N. Moore, Creve Coeur, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 8, 1962, Ser. No. 236,433
10 Claims. (Cl. 260—668)

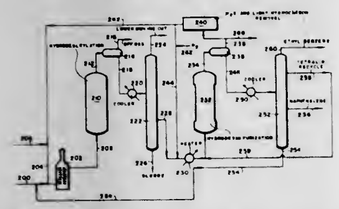
1. A process for producing substituted aromatic compounds which comprises the condensation of an olefin hydrocarbon of 2 to 15 carbon atoms with an aromatic compound having attached to a nuclear carbon atom a saturated carbon atom to which is attached at least one hydrogen atom, said aromatic compound being an alkyl substituted carbocyclic aromatic compound having alkyl substituents of from 1 to 10 carbon atoms, at an elevated temperature and pressure in the presence of a modifying agent which comprises a halogen containing compound which at the elevated temperatures and pressures of the condensation reaction form a hydrogen halide selected from the group consisting of HCl, HBr and HI.

3,198,846

COMBINATION HYDRODEALKYLATION AND DESULFURIZATION PROCESS

Edward A. Kelso, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed June 8, 1961, Ser. No. 115,699
1 Claim. (Cl. 260—672)



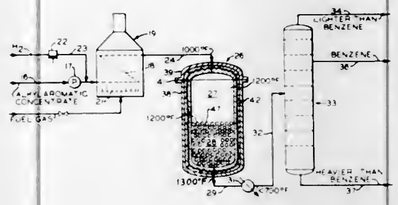
A method which comprises admixing a hydrocarbon stream containing alkylated precursors of naphthalene with a hydrogen-rich gaseous stream, heating the admixed stream to a temperature sufficient to initiate a thermal hydrodealkylation reaction, passing said heated stream through a catalyst-free hydrodealkylation zone under hydrodealkylation conditions including a temperature of 1000° F. to 1600° F., a pressure of 500 p.s.i.g. to 1500 p.s.i.g., a hydrogen to hydrocarbon mol ratio of 0.6 to 12 mols of hydrogen per mol of hydrocarbon feed, and a residence time of 2 to 120 seconds, removing the reaction products from said zone, cooling said products to a hydrodesulfurization temperature, passing said cooled products through a hydrodesulfurization zone under hydrodesulfurization conditions including a temperature of 600° F. to 1000° F., a pressure of 100 to 200 p.s.i.g., a space velocity of 0.5 to 10.0 volumes of feed per volume of catalyst per hour, and a hydrogen feed rate of 500 to 10,000 s.c.f. of hydrogen per barrel of hydrocarbon feed and in contact with a hydrodesulfurization catalyst chosen from the metals of Groups VI and VIII of the Periodic Chart and the compounds thereof, removing the stream as an effluent from said hydrodesufurization zone, separating said effluent into a naphthalene-rich fraction, a heavy unconverted and partially converted alkyl naphthalene precursor fraction, a tetralin fraction and a gaseous light fraction, recycling said tetralin fraction to said hydrodesulfurization zone, and recovering substantially sulfur-free naphthalene from said effluent.

3,198,847

PROCESSES FOR EXOTHERMIC THERMAL HYDRODEALKYLATION

William C. Lanning, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 5, 1961, Ser. No. 136,067
7 Claims. (Cl. 260—672)



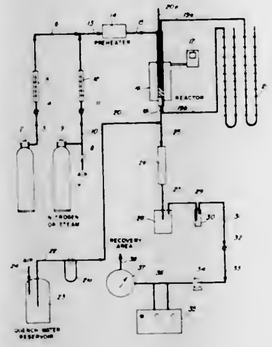
1. The process of conducting an exothermic thermal hydrodealkylation of an alkylaromatic hydrocarbon selected from the group consisting of toluene, ortho xylene, meta xylene, and para xylene in a reaction chamber at least the upper ¼ of which is unpacked to form a preliminary reaction zone and at least the lower ⅓ of which is packed with a permeable bed of solids to form a final reaction zone, comprising the steps of mixing the selected alkylaromatic hydrocarbon with from 3 to 8 mols of hydrogen per mol of hydrocarbon, preheating the mixture to between about 1000 and 1100° F. to start the reaction, introducing said mixture into said upper preliminary zone in a manner causing constant mixing and a constant temperature therein of about 1150 to 1250° F. with a residence time therein sufficient for over 50 percent of the reaction to occur therein, passing said reacting mixture and resulting products down through said final reaction zone in substantially linear flow with an adiabatic increase in temperature to about 1250 to 1350° F. at the bottom of the bed, and next quenching the remaining mixture and products of reaction to below 1100° F. before passing the same to any enlarged unpacked chamber and separating out the hydrodealkylated resulting aromatic hydrocarbon.

3,198,848

CATALYTIC CONVERSION OF ISOBUTYLENE AND PROPYLENE TO ALLENE AND METHYL ACETYLENE THEREOF

John Happel, Hastings on Hudson, and Charles J. Marsel, New York, N.Y., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed July 6, 1961, Ser. No. 122,146
7 Claims. (Cl. 260—678)



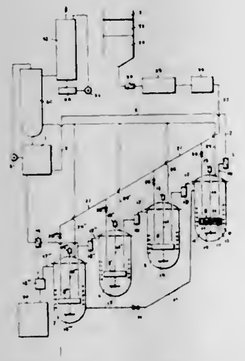
1. An improved process for production of mixtures containing methyl acetylene and allene which comprises contacting an olefin selected from the group consisting of propylene and isobutylene and mixtures thereof with a silver catalyst at pressures of 100 mm. to atmospheric pressure, flow rates from 3,500 v./v./hr. at standard conditions (0° C., 760 mm. Hg) to 14,000 v./v./hr., and at temperatures from about 600° C. to about 900° C.

3,198,849

METHOD AND APPARATUS FOR EFFECTING SULFONATION

Mario Ballestra, Via Pertinace 2/4, Genoa, Italy

Filed Sept. 22, 1960, Ser. No. 57,755
Claims priority, application Italy, July 4, 1960, 636,961
9 Claims. (Cl. 260—686)



2. A method for carrying out a continuous exothermic sulphonation reaction between a liquid compound to be treated selected from the group consisting of alkylated hydrocarbon, phenol, aliphatic acid, and aliphatic alcohol, and gaseous sulphur trioxide, in a plurality of reaction containers, connected in series in a cascade arrangement to produce a sulphonic acid which comprises the steps of continuously measuring and supplying a measured and predetermined amount of sulphur trioxide, dividing the continuously supplied sulphur trioxide into a series of predetermined portions, feeding each sulphur trioxide portion directly to each reaction container continuously measuring and supplying a measured and predetermined amount of said liquid compound to the first reaction container of the series for passage seriatim through the series, proportioning the supply of each of said sulphur trioxide portions with the amount of said continuously supplied liquid compound to produce a predetermined sulphonation reaction in each container between said liquid compound and less than the stoichiometric quantity of sulphur trioxide, resulting in a totally reacted product in the last reaction container at the end of the series between stoichiometric quantities of said liquid compound and said sulphur trioxide.

3,198,850

THERMOSETTING SURFACE-COATING COMPOSITIONS COMPRISING A POLYEPOXIDE, AN ALKYLATED AMINOPLAST, AND A COPOLYMER OF AN HYDROXYALKYL ESTER OF AN α,β-UNSATURATED CARBOXYLIC ACID

Allen Melvin Levantin, Philadelphia, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Apr. 11, 1962, Ser. No. 186,661
6 Claims. (Cl. 260—834)

1. A composition consisting essentially of a compatible mixture of (A) 65 to 85% by weight of a thermoplastic copolymer of a mixture of 5 to 15% by weight of an hydroxyalkyl ester of an α,β-monoethylenically unsaturated carboxylic acid, the hydroxyl of each hydroxyalkyl group being at least two carbon atoms removed from the carbon atom of the adjacent —COO— radical in the ester, 0 to 4% by weight of a copolymerizable α,β-monoethylenically unsaturated carboxylic acid, and at least one other copolymerizable monoethylenically unsaturated compound devoid of carboxyl and alcoholic hydroxyl groups, (B) 10 to 25% by weight of a thermosetting alcohol-modified aminoplast resin condensation product of formaldehyde condensed with a member selected from the group consisting of urea, N,N'-ethyleneurea, dicyandiamide, and aminotriazines, alkylated by an alcohol selected from the group consisting of cyclohexanol and alkanols having 1 to 6 carbon atoms, and (C) 5 to 20% by weight of a resin-forming polyepoxide containing at least two vic-epoxy groups and having an epoxy equivalency of about 100 to 1025.

3,198,851

POLYURETHANES FROM NON-HYDROXYL POLYEPOXIDES, BF_3-AMINE CATALYST AND ALTERNATIVELY A VINYL CHLORIDE CONTAINING RESIN

Kenneth L. Hoy, St. Albans, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 23, 1961, Ser. No. 90,922
19 Claims. (Cl. 260—836)

1. A polymerizable, curable composition of matter for producing polyurethanes which comprises: (a) a substantially hydroxyl-free monomeric polyepoxide; (b) an organic polyisocyanate in sufficient amounts to provide from about 0.05 to about 1.5 isocyanate groups for each epoxide group of said polyepoxide; and (c) at least 0.05 percent by weight, based on the weight of said polyepoxide, of boron trifluoride-amine complex, said complex being stable at room temperature but capable of dissociation at a temperature within the range of from about 60° centigrade to about 300° centigrade to release free boron trifluoride.

3,198,852
POLYAMIDE COMPOSITIONS STABILIZED WITH POLYOXYMETHYLENE

David Tanner, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 9, 1960, Ser. No. 74,785
9 Claims. (Cl. 260—857)

1. A shaped article comprising an intimate mixture of from about 75 to about 98% by weight of a fiber forming synthetic linear polyamide which contains recurring carbonamide groups as an integral part of the main polymer chain and from about 2 to about 25% by weight of a modifier composition selected from the group consisting of ester and diether polyoxymethylene derivatives, said modifier composition having a reaction rate constant for thermal degradation at 222° C. of less than 1%.

3,198,853
COMPOSITION RESISTANT TO STRESS-CRACKING IN SOLVENTS COMPRISING GRAFT COPOLYMER-RESIN BLEND CONTAINING DIAMINE

Robert L. Bergen, Jr., Cheshire, Conn., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed May 23, 1962, Ser. No. 196,878
8 Claims. (Cl. 260—876)

1. A thermoplastic composition comprising

A. 0.1 to 2 parts by weight of an organic diamine selected from the group consisting of p,p'-diaminodiphenylmethane and aliphatic diamines having from 2 to 6 carbon atoms, and

B. 100 parts by weight of a thermoplastic blend comprising

(a) at least 25 parts of a graft copolymer, and

(b) correspondingly not more than 75 parts of a separately prepared resinous copolymer,

the said graft copolymer being a graft copolymer of

C. from 25 to 95 parts by weight of styrene and acrylonitrile, the weight ratio of styrene:acrylonitrile being from 65:35 to 90:10, on correspondingly

D. from 75 to 5 parts by weight of polybutadiene rubber,

and the said separately prepared resinuous copolymer being a copolymer of

E. from 65 to 90 parts by weight of a monomer selected from the group consisting of styrene and alpha-methyl styrene, and correspondingly

F. from 35 to 10 parts by weight of acrylonitrile,

the said blend (B) being ordinary subject to cracking when immersed in organic solvent liquids under stress, but the said organic diamine (A) serving to improve the resistance of the composition to such cracking.

3,198,854
PREPARATION OF BUTADIENE-STYRENE-ALKYL METHACRYLATE POLYMERS

Paul F. Warner, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed June 26, 1961, Ser. No. 119,602
8 Claims. (Cl. 260—879)

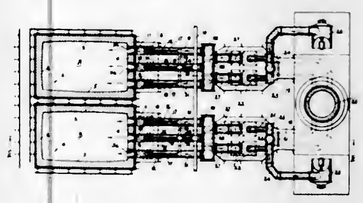
7. A butadiene-styrene-butyl methacrylate polymer having a random type structure and low ash content formed by the process which consists of preparing a copolymer of a butadiene and a styrene in a ratio within the range of 20:80 to 90:10 by weight in the presence of a catalyst consisting of an alkali metal as the sole catalytic component thereof, adding a butyl methacrylate to the alkali metal copolymer complex in an amount within the range of 70:30 to 95:5 by weight, reacting same for a time within the range of 0.1 to 1.0 hour, subsequently quenching the alkali metal and alkali polymer thus formed, and recovering said polymer from the resulting solution.

8. A process for the preparation of a butadiene-styrene-butyl methacrylate polymer which consists of reacting in a solvent butadiene and styrene in amounts within the range of 20:80 to 90:10 by weight in the presence of about 1 percent of an alkali metal as the sole catalyst therefor at a temperature of about 180° to 190° F., adding butyl methacrylate in an amount within the weight ratio of 70:30 to 95:5 by weight to the resulting complex, allowing same to react for a time of about 0.1 to 1.0 hour, subsequently quenching the alkali metal and polymer thus produced, and recovering said polymer from the resulting solution.

3,198,855
METHOD OF OPERATING SOAKING PITS

Walter Suydam, Mount Lebanon Township, Allegheny County, Pa., assignor to Loftus Engineering Corporation, a corporation of Maryland

Filed Apr. 24, 1962, Ser. No. 189,820
10 Claims. (Cl. 263—52)



3. In the operation of a gas-fired soaking pit for heating metal ingots to rolling temperature wherein the cycle of operation includes charging the ingots into the furnace, heating them rapidly to a predetermined temperature in an initial phase of the cycle in an atmosphere of burning gas and air in which there is a predetermined normal air-to-gas ratio and thereafter subjecting the ingots to a soaking phase to secure substantially uniform penetration of heat therethrough, the steps of effecting the initial phase of the heating cycle by firing the pit with a plurality of gaseous fuel burners while supplying combustion air and fuel gas directly into the pit in a predetermined normal ratio, thereafter in the soaking phase supplying combustion air and gas directly into the pit from a single high velocity burner in which air and gas are maintained in the same normal ratio and idling the other burners, the air being discharged from the high velocity burner into the pit at a velocity of not less than 200 feet per second whereby the high kinetic energy of the resulting jet of air and gaseous fuel from the burner renders unnecessary the introduction of air in excess of said normal ratio to secure diffusion of the flames through the pit.

3,198,856
METHOD OF FABRICATING A COMPOSITE NUCLEAR FUEL CORE ELEMENT

Joseph P. Hammond, Knoxville, and Thomas D. Watts, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

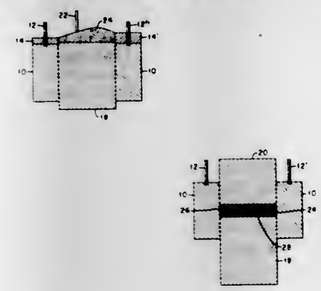
Filed May 29, 1963, Ser. No. 288,072
7 Claims. (Cl. 264—.5)

1. The method of fabricating a composite core of nuclear fuel material and a filler material which comprises:

(a) charging a die across its width with a first metal powder containing said nuclear fuel material;

(b) shaping the upper surface of said first metal powder charge by scraping the top portion to a desired contour, said contour being selected to provide a variation in powder depth across the width of said die;

(c) placing a second metal powder filler material, within said die, on the top of said first metal powder, to bring the powder level up to a selected level;

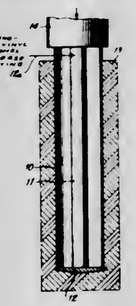


(d) and simultaneously pressing said first and second metal powders to form a form-retaining composite metal compact.

3,198,857
METHOD OF TREATING A MOLD FOR CONCRETE WITH A BOND RELEASE COATING MATERIAL

Robert W. Childers, Midvale, N.J., and Richard K. Snow, St. Petersburg, Fla., assignors to Raymond International Inc., New York, N.Y., a corporation of New Jersey

Filed May 8, 1962, Ser. No. 193,180
12 Claims. (Cl. 264—32)



4. The method of forming a tubular concrete shell in the earth, which comprises: forming a hole in the earth extending to a desired depth of penetration, precoating a mandrel of substantially smaller sectional dimensions than said hole, with a coating composition comprising as an essential active ingredient the reaction product in boiling water of polyvinyl alcohol and the lignitic waste material from the sulphite paper process, so disposing said mandrel within said hole as to provide an annular space between the earth and mandrel, filling said annular space with liquid concrete, allowing the concrete to harden and set, and thereupon withdrawing the mandrel.

3,198,858
PLASTER COMPOSITION AND METHOD

Waldemar C. Hansen, Valparaiso, Ind., and Joseph D. McNulty, Chicago, Ill., assignors to McNulty Bros. Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed May 27, 1964, Ser. No. 370,661
7 Claims. (Cl. 264—35)

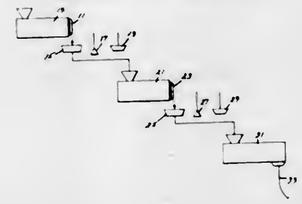
4. A non-toxic, substantially lime-free plaster characterized by superior trowelability consisting essentially of gypsum, from about 0.2% to about 1.0% based on the weight of gypsum of an insoluble soap, from about 5% to about 20% based on the weight of gypsum of clay, and sand.

7. A method of plastering, comprising combining with sand, water and gypsum from about 0.2% to about 1.0% by weight of an insoluble soap based on the weight of gypsum to provide a substantially lime-free, non-toxic plastic mixture, spraying the resultant mixture on a wall surface, and troweling the mixture to develop a plaster layer of the order of 1/16" thick having a compressive strength of at least about 1500 p.s.i. and having a surface characterized by the substantial absence of cat faces.

3,198,859
METHOD OF FORMING FOAMED PLASTIC ARTICLES

Arthur R. Tomlinson, Garden City, Pa., assignor to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware

Filed June 4, 1963, Ser. No. 285,359
5 Claims. (Cl. 264—55)

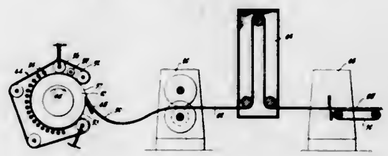


1. A method of forming articles of low density from a foamable polyolefin material by extrusion including the steps of providing a foamed mass of molten polyolefin material and shaping the same into expanded particles, heating the shaped particles along with a gas generating agent to cause the polyolefin material to foam and expand as it assumes a molten condition, extruding the foamed and expanded molten polyolefin material as a stream of desired shape, and quenching the extruded shaped stream.

3,198,860
METHOD FOR THE MANUFACTURE OF VINYL FLOOR COVERINGS

Ernest J. Kimmel, Mogador, and Charles O. Slemmons, Akron, Ohio, assignors to The General Tire & Rubber Company, a corporation of Ohio

Filed Mar. 16, 1962, Ser. No. 180,174
4 Claims. (Cl. 264—77)



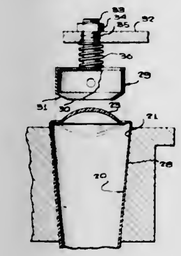
1. A method of manufacturing vinyl terrazzo floor tile comprising the steps of:

(a) forming a consolidated body having a cylindrical peripheral surface from mixed colored granules of vinyl plastic;

(b) polishing the peripheral surface of said body; and

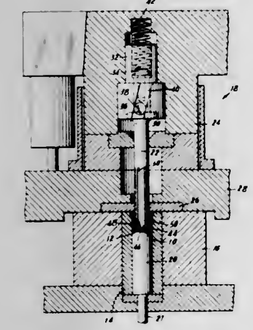
(c) continuously removing a web from the polished peripheral surface of said log.

3,198,861
METHOD OF FORMING A THERMOPLASTIC BOTTLE HAVING A CONVEX REVERSIBLE CURVATURE AT THE BOTTOM
Jackson Marvel, Wellesley, Mass., assignor to Continental Can Company, Inc., a corporation of New York
Filed Aug. 25, 1961, Ser. No. 133,826
6 Claims. (Cl. 264—98)



1. A method of forming a bottle having a concavely curved recessed bottom comprising the steps of forming a bottle having a projecting convexly curved bottom, and then pressing in the bottom whereby the curvature of the bottom is reversed and the bottom becomes permanently recessed and concavely curved.

3,198,862
METHOD OF AND APPARATUS FOR IMPACT MOLDING GALVANIC CELL CATHODES
Helmut K. Amthor, Rocky River, and Phillip B. Doll, Lakewood, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed June 15, 1962, Ser. No. 202,793
10 Claims. (Cl. 264—161)



1. A process for impact molding a cathode in place in a cell container comprising the steps of dispensing an excess of cathodic mix into said cell container, driving a ram provided with internal passage means for expelling said excess of said cathodic mix from beneath the bottom face of said ram into said cathodic mix, removing said excess of said cathodic mix through said passage means while the remainder of said cathodic mix is molded into a cathode between said ram and said cell container, rotating said ram a slight amount prior to withdrawal from said container whereby said excess of said cathodic mix in said passage means is sheared and severed off from said formed cathode and then removing said ram from said container thus forming a finished cathode-container structure.

3,198,863
PROCESS OF CURING URETHANE THREADS UTILIZING SLOW AND FAST CURING AGENTS
Robert E. Lauer, Groveville, and George C. McCormick, Burlington, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed May 2, 1963, Ser. No. 277,439
12 Claims. (Cl. 264—184)

1. A method of making urethane thread which comprises mixing a thread-making urethane prepolymer with a slow-reacting urethane curing agent, extruding said mixture in filamentary form into an aqueous bath having a fast-reacting urethane curing agent dissolved therein to produce a thread having a cured surface layer and an incompletely cured core, removing said thread from said bath and heating said thread at an elevated temperature to complete the curing thereof.

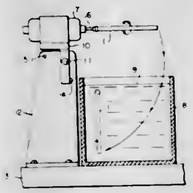
3,198,864
METHOD OF MAKING WATERPROOF BOOTS BY SLUSH-MOLDING
George H. Bingham, Jr., Westminster, Md., assignor to Cambridge Rubber Company, Taneytown, Md., a corporation of Maryland
Filed Jan. 23, 1962, Ser. No. 168,099
6 Claims. (Cl. 264—250)



1. That method of making, by the slush-molding process, a waterproof, snug-fitting boot having a bottom structure which is thicker and less flexible than the upper and which has a solid heel at its rear end and downward projections at its forepart portion, said method comprising as steps: providing a hollow one-piece metallic mold whose inner surface contour is a replica, but in reverse, of the outer surface of the boot to be made, employing said mold, according to conventional slush-molding procedure, in preparing an embryo boot of the desired external contour but whose bottom structure is of substantially the same thickness and flexibility as its upper, and wherein the heel and said projections are hollow, fusing this embryo boot just sufficiently to permit it to be withdrawn as a unit from the mold, withdrawing the embryo boot from the mold and so introducing material into the embryo boot as to fill the cavities in its bottom structure and to build up an outer sole or bottom of the desired character, and so treating the resultant assembly as permanently to bond the material of the embryo boot with the material which was so introduced while completing the fusing of the embryo boot.

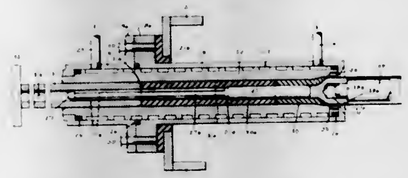
3,198,865
METHOD OF APPLYING A MICROPOROUS PLASTIC MEMBRANE FILTER ON A SUPPORT
David B. Porter, Watertown, and Richard A. Paine, Bedford, Mass., assignors to Millipore Filter Corporation, Bedford, Mass., a corporation of Massachusetts
Filed Sept. 28, 1960, Ser. No. 59,114
3 Claims. (Cl. 264—271)

1. The method of manufacturing a filter supported on a perforated support, which comprises forming a thin solid coating of a base material upon the outer surface of the support and over the perforations therein, applying over the base material a plastic film-forming solution, treating the film-forming solution to convert it into a thin flexible plastic filter film having substantially transverse pores of effective diameter less than ten microns upon the outer periphery of the base material and over said perforations, and removing the base material while leaving



the plastic film in situ, loosely overlying the support and the perforations, thereby producing a filter in which the film is supported against external filtration pressure by the tube and in which substantially the entire area of the film is effective to filter fluids therethrough.

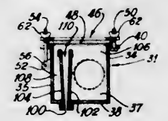
3,198,866
METHOD AND APPARATUS FOR PRODUCING PLASTIC TUBULAR MEMBERS
Robert A. Covington, Jr., Wilmington, Del., and Benjamin K. Daubenspeck, Stratford, George R. Eckstein, Fairfield, and Justin H. Whipple, Milford, Conn., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Feb. 6, 1962, Ser. No. 171,366
19 Claims. (Cl. 264—297)



1. A method of producing a succession of dimensionally stable tubular members which comprises:
(a) forming thick-walled, elongated tubular slugs of substantially uniform wall thickness and of greater wall thickness, less length and no greater outside diameter than the tubular members being produced from a linear polyolefin composed to the extent of at least 90% of polyethylene and which is between about 60 and 85% crystalline,
(b) heating said slugs to a temperature between about 115° F. and 210° F. at which they may be readily deformed upon the application of a suitable force thereto but substantially below the crystalline melting point of said polyolefin,
(c) successively pushing said slugs while at such a temperature through a confined passage of annular cross-section by the application of a force to one end thereof,
(i) said passage having a portion which increases in its mean diameter and decreases in the cross-sectional area in relation to these dimensions of the slugs to bring about corresponding changes of dimensions of the wall of each slug as it is forced through said passage,
(d) and discharging the slugs in their modified tubular form from said confining passage.

7. Apparatus for producing plastic tubing that has been worked in directions both longitudinally and transversely of the axis thereof, which comprises:
(a) a die structure having an elongated passage therethrough which is of annular cross-section,
(i) the initial portion of said passage having an outer wall of substantially greater diameter than the inner wall thereof,
(ii) the portion of said passage adjacent the discharge end of said die having a gradually increasing mean diameter and gradually decreasing cross-sectional area,
(b) a hollow ram alined with said die passage having an annular cross-section which is substantially the same as that of the initial portion of said passage,
(c) means for reciprocating said ram under a substantial force between a position in which the forward end of said ram is spaced a substantial distance from the receiving end of said die structure to a position well within said die structure but inwardly of the discharge end thereof,
(d) means for heating thick-walled, elongated tubular slugs of substantially uniform wall thickness and of plastic material, and
(e) means for presenting successive heated slugs from said heating means into a position between said ram and said die structure in alinement with the passage through the latter when the ram is retracted,
(f) said means for reciprocating said ram causing the successive slugs so delivered to be forced into and through the die structure.

3,198,867
METHOD FOR PROCESSING SLURRY
Edward G. Siggers, Granville, Ohio, and Arthur D. Denny, Erlton, N.J., assignors to Owens-Corning Fiberglas Corporation, Toledo, Ohio, a corporation of Delaware
Filed Dec. 13, 1960, Ser. No. 75,588
4 Claims. (Cl. 264—299)



1. A method of delivering slurry of cementitious material from a supply into a mold including pumping slurry from a supply into an elongated unvented chamber at spaced inlets therein to fill the chamber with slurry, and extruding the slurry solely by the pumping pressure on the slurry over upwardly extending weirs in the chamber thence downwardly through a discharge passage between the weirs to deliver the slurry into a mold substantially free of interstitial air.

3,198,868
PROCESS FOR VULCANIZING PRE-SHAPED ARTICLES FORMED FROM VULCANIZABLE POLYMERIC MATERIALS
Giovanni Pedretti and Luigi Corbelli, Ferrara, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy
Filed July 15, 1960, Ser. No. 43,048
Claims priority, application Italy, July 17, 1959, 11,963/59
4 Claims. (Cl. 264—347)

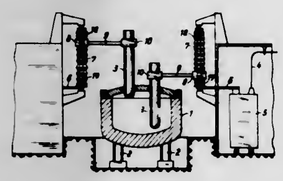


1. A process for obtaining vulcanized manufactured shaped articles comprising an elastomeric, amorphous copolymer of ethylene and a higher alpha-olefin selected

from the group consisting of propylene and butene-1, which copolymer contains from about 40 mol percent to about 65 mol percent of the higher alpha-olefin in the macromolecule, has a molecular weight of from about 50,000 to about 500,000, and is vulcanizable with the aid of organic peroxides, said process consisting of the steps of impregnating the article with a solution of an organic peroxide in a solvent therefor which does not swell the copolymer and in which the concentration of the organic peroxide is from about 20 grams to about 100 grams per liter of the solvent, to effect diffusion of the organic peroxide in the article prior to vulcanization, and heating the impregnated article at a vulcanizing temperature between 180° C. and 230° C.

ELECTRICAL

3,198,869
CURRENT-FEEDING TO THE ELECTRODES OF AN ELECTRIC ARC FURNACE
Gustav-Adolf Sixel, Dusseldorf, Kaiserswerth, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany, a corporation of Germany
Filed Mar. 22, 1963, Ser. No. 267,289
Claims priority, application Germany, Mar. 28, 1962, B 66,570
7 Claims. (Cl. 13—14)



1. Apparatus for feeding current to the electrodes of an electric arc furnace comprising

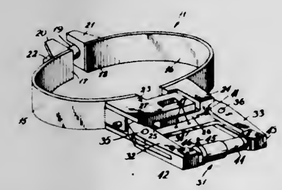
a furnace pot,

electrodes movable vertically into said furnace pot,

current feeding means to said electrodes including a first immovable conduit part and a second conduit part joining the vertical movements of said electrodes, and

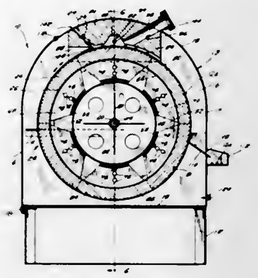
contact brushes secured to said second conduit part and slidingly engaging said first conduit part during the vertical movement of said second conduit part, in order to feed current from said first immovable conduit part to said second movable conduit part.

3,198,870
ELECTRODE HOLDER
John A. Simpkin, Marietta, Ohio, and Edward T. Brown, Niagara Falls, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Apr. 17, 1963, Ser. No. 273,584
3 Claims. (Cl. 13—16)



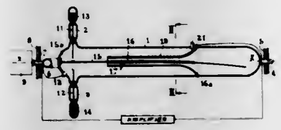
1. An electrode holder comprising two semi-circular clamping bands of resilient material for supportably embracing an electrode, said bands pivotally connected at their rear ends, and each having projecting surfaces on their front ends, the projecting surface on one band adapted to ride over the projecting surface on the other band to bring the bands together and close their grip about an electrode, said projecting surfaces each having a slot therein for the insertion of a holding wedge when the slots in each surface are in alignment, a pair of clamping arms pivotally connected at a point intermediate their ends, said clamping arms having inwardly projecting jaws for gripping the projecting surfaces on the clamping bands to compress said bands together and bring the openings in the projecting surfaces of the bands into alignment, and movement inducing means at the other end of the clamping arms for moving the ends of the arms about their pivot points to open and close the grip of the jaws at the other end of the arms.

3,198,871
ROTARY FURNACE
Herbert W. Westeren, Barrington, and William C. Diman, Warwick, R.I., assignors to C. I. Hayes, Inc., Cranston, R.I., a corporation of Rhode Island
Filed June 26, 1961, Ser. No. 119,475
8 Claims. (Cl. 13—21)



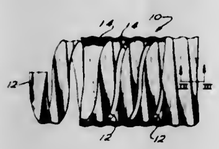
1. In apparatus for fabricating small spherical elements, a furnace construction including a housing having a work drum mounted for rotation therein, heating means located in said furnace and vertically spaced above said work drum, means for feeding small metallic pieces in elongated form into said housing and onto said work drum, means for rotating said work drum for carrying said elongated pieces into close proximity to said heating means, wherein the heat generated by said heating means causes said elongated pieces to reach the melting point thereof and form into small spheres, means for collecting the newly formed spheres after they are discharged from said work drum, said work drum including a hub and a plurality of imperforate segments mounted on said hub and defining the periphery of said drum, and a heat absorbing cloth covering said segments and defining the outer peripheral surface of said drum for receiving the small elongated pieces thereon, said cloth absorbing the heat from said heating means so that the surface thereof is not distorted by the heat generated by said heating means, wherein said elongated pieces located on said cloth form into spherical elements when brought to the melting point thereof by said heating means.

3,198,872
TONE GENERATOR
Gerhard Finkenbeiner, Paris, France (23 Alaska Ave., Bedford, Mass.)
Filed Mar. 14, 1961, Ser. No. 95,696
Claims priority, application France Mar. 15, 1960
1 Claim. (Cl. 84—1.04)



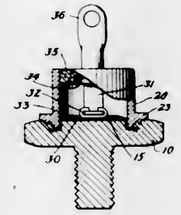
Tone generator for producing different percussion actuated instrument sounds such as bell sounds, piano sounds, etc., comprising a vibrating glass member mounted by an end and having a free end, means for striking this member and vibrating same, detector means for detecting the vibration thus produced and converting same into electrical signals, amplifier means for amplifying these signals and transforming them into sounds, and means for altering the mean position of said vibrating member relative to said vibration detecting means so as to superimpose an oscillating displacement of the vibrating member to the struck vibration of the vibrating member, thereby modulating said signals and sounds to include the full peal effect characteristic of percussion actuated instruments.

3,198,873
FLEXIBLE CONDUITS HAVING ELECTRICAL CONDUCTORS THEREIN
Rodney F. Ryan, Lancaster, Pa., and Richard G. Walsh, Indianapolis, Ind., assignors to Atlas Corporation, New York, N.Y., a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,727
1 Claim. (Cl. 174—47)



An electrically conductive flexible hose conduit having a thin plastic wall and embedded therein a relatively wide thin metal conductor strip wound along the length of the conduit with side edges being closely spaced between adjacent windings and providing an embedded construction with a conductive surface adjacent substantially the entire inner wall area of the conduit, said composite wall being corrugated circumferentially of the conduit and at the ends thereof having leads extending from said strip, the portion of the plastic wall overlying each end of said metal strip at the ends of the conduit being raised and the inner end of a lead being disposed in contact with the strip, a plastic sleeve encasing each lead and being split at its inner end section with one sleeve portion underlying the edge of the conduit wall and the other sleeve portion overlying said lead and strip connection, and plastic sheet members folded over the conduit wall surfaces in the area of said connections and adjacent lead portions, the plastic material of said sleeve and sheet elements of each lead connection being integrally fused with the wall material of the conduit and forming an encapsulation incorporated therewith as a localized extension of the end wall of the conduit.

3,198,874
SEMI-CONDUCTOR HOUSINGS AND METHOD OF MAKING THE SAME
Warren F. Dahl, Philadelphia, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed Jan. 23, 1961, Ser. No. 84,439
13 Claims. (Cl. 174—52)

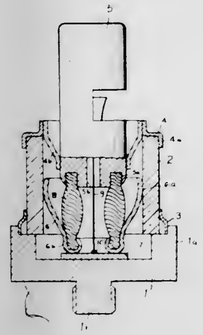


1. A tube like part of circular cross section adapted for use as a component in the assembly of a housing for a solid state device or the like said tube having a plurality of circular circumferential flanges including a leading flange, a first following flange, and a second following flange axially spaced along the tube wall and integral therewith, said flanges having diameters greater than that of the outer tube wall, the leading flange being positioned at one end of the tube, a web portion connecting said tube with said leading flange, said web portion being thinner than the tube wall and extending angularly downwardly and outwardly from said tube wall, the leading flange having a smaller diameter than that of the first following flange, the first following flange having a smaller diameter than that of the second following flange, the adjacent faces of the leading and first following flanges together with the intermediate tube wall portions forming an annular outwardly opening primary recess leading to the tube wall and wherein the face of the first following flange which is presented toward the leading flange is provided with a secondary annular recess which branches off the primary recess.

3,198,875
HOUSING FOR SEMI-CONDUCTOR RECTIFIER
Eduard Keller, Wettingen, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed Apr. 26, 1963, Ser. No. 275,968
Claims priority, application Switzerland, May 3, 1962, 5,316/62
4 Claims. (Cl. 174—52)

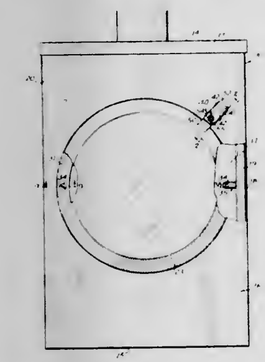
1. In a semiconductor device, the combination comprising a metallic housing part forming a base, a semiconductor element in the form of a disc mounted on said base, a hollow cylinder of ceramic material upstanding on said base and secured thereto and surrounding said semiconductor element, a connecting bolt extending downwardly into said ceramic cylinder, a first funnel-shaped ring member having a downwardly convergent portion located within said ceramic cylinder, said convergent portion being soldered at its lower end to said connecting bolt and the upper end of said first ring member being soldered to the upper end of said ceramic cylinder thereby to close off the space between said ceramic cylinder and connecting bolt, a second funnel-shaped ring member located within said ceramic cylinder, the upper part of said second funnel-shaped ring being soldered to the inner wall of said ceramic cylinder and said second ring being convergent in the downward direction and terminating in a flat annular base in electrical con-

tact with the upper face of said semiconductor disc element, and a flexible annular copper cable within said second funnel-shaped ring, the upper end of said annular



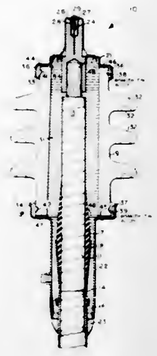
cable being secured to the lower end of said connecting bolt and the lower end of said annular cable being secured to the base part of said second funnel-shaped ring.

3,198,876
RINGLESS SOCKET METER BOX
Clifford E. Sloop, 2230 10th St., Columbus, Ga.
Filed Apr. 26, 1963, Ser. No. 276,041
10 Claims. (Cl. 174—52)



1. In a meter box for supporting an electrical meter of the type having a disk-shaped base with a pair of surfaces and a transparent cover protruding forwardly from said base, said transparent cover being generally cylindrical and of a smaller diameter than said base, said meter box being of the type having a front plate through which said meter is inserted from outside the meter box and adjacent which said base is disposed, the combination therewith of a hollow cylindrical cuff concentric with said opening and carried by said front plate for surrounding said base, an annular flange protruding inwardly from said cuff and against which a surface of said base abuts to limit the movement of said meter in one direction, said cuff having a depth equal to or greater than the thickness of said base such that when said base is received by said meter box said base is entirely within the confines of said cuff, and means protruding over the other surface of said base for limiting the movement of said meter in the other direction.

3,198,877
POTHEAD CLOSURE SEALED WITH BISMUTH-TIN ALLOY
John W. Olson, Dobbs Ferry, Josephine M. Pechan, Yonkers, and Joseph B. O'Mara, Hastings on Hudson, N.Y., assignors, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Feb. 9, 1962, Ser. No. 172,142
6 Claims. (Cl. 174—74)



1. A pothead comprising:
(a) a hollow ceramic body member having an outer wall and at least one open end, said wall being tapered away from said end,
(b) a metal closure covering said end and extending over said wall,
(c) an alloy comprising 45–60% by weight of bismuth and 55–40% by weight of tin filling an annular space between said wall and said closure,
(d) said alloy being free from bonding to said wall, and
(e) said alloy forming a mechanically wedged seal between said wall and said closure due to the taper of said wall.

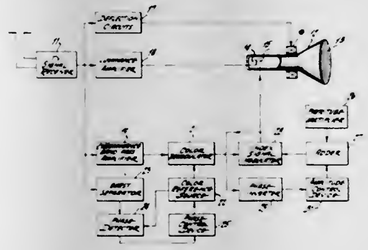
3,198,878
INSULATOR ASSEMBLIES OF COMPOSITE GLASS FIBERS AND RESIN
Alexandre Kaczerginski, Vichy, Allier, France, assignor to Societe Europeenne d'Isolateurs en Verre Sediver, Paris, France, a corporation of France
Filed Oct. 2, 1961, Ser. No. 142,109
Claims priority, application France, Oct. 4, 1960, 840,253, Patent 1,276,072
9 Claims. (Cl. 174—176)



1. A connecting element for insulator assemblies of electric power transmission lines, comprising a body of synthetic resin with a rod-shaped shank portion and an integral hood portion depending from said shank portion and diverging therefrom, said body being reenforced with glass fibers extending only longitudinally thereof and integrally through said shank and hood portions, and an external circumferential reenforcing hoop on said body along a portion of the length thereof.

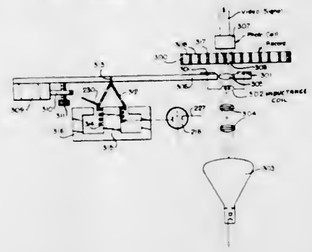
8. An insulator assembly comprising a connecting element having a hollow shank portion in the form of a surface of revolution and an integral hood portion of larger diameter than said shank portion depending from said shank portion and diverging therefrom, said element being formed of a body of glass fibers embedded in an organic resin with the fibers disposed along the elements of said surface of revolution, a binding of glass fibers coated with an organic resin wound around the exterior of said element in planes transverse to the longitudinal axis of said element and disposed in the junction zone of the shank and hood portions of the connecting element whereat the hood portion depends from said shank portion, an insulator disc of electrically insulating material connected to said element and provided with a head projecting from the top of said disc, and the lower end of said hood portion being enlarged and embracing said head of said insulator disc and pressed therearound with a circumferential binding of glass fibers impregnated with a synthetic resin.

3,198,879
COLOR TELEVISION INDEXING SYSTEM FOR REDUCING COLOR DISTORTION
Robert E. Flory, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 8, 1961, Ser. No. 115,817
13 Claims. (Cl. 178—5.4)



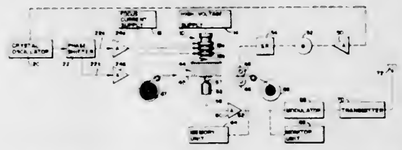
1. In a color television image-reproducing system including a cathode ray tube having a luminescent screen comprising a plurality of vertically oriented phosphor strips capable of emitting light of different colors when impinged by an electron beam, and a plurality of index strips aligned with said phosphor strips and capable of producing indexing signals when impinged by an electron beam, and in which an electron beam is deflected in a series of vertically spaced parallel lines transverse to said phosphor and index strips, a system for phase-modulating an indexing wave derived from said indexing signals by color representative signals to produce a sampling wave for controlling the intensity of said electron beam, said system comprising: a phase and amplitude modulator having first and second input terminals and an output terminal, means for impressing an indexing wave and color representative signals respectively on said first and second input terminals; and a feedback circuit coupling said output terminal to said first input terminal for compensating for any undesired phase shift of said indexing wave so as to produce at said output terminal a sampling wave having a phase determined substantially entirely by said color representative signals for control of the intensity of said electron beam.

3,198,880
PHOTOGRAPHIC DISC REPRODUCTION OF TELEVISION SIGNALS
Pierre Marie Gabriel Toulon, New York, N.Y., assignor, by mesne assignments, to William D. Hall, Elliott I. Pollock, and George Vande Sande, Washington, D.C., a partnership
Original application Sept. 3, 1952, Ser. No. 307,607, now Patent No. 2,972,660, dated Feb. 21, 1961. Divided and this application Feb. 20, 1961, Ser. No. 92,117
6 Claims. (Cl. 178—6.7)



1. A device for supplying video signals to a television receiver comprising a record having a series of substantially parallel lines respectively representing the lines of a television raster and having variations to represent those of the television picture, detecting means including a light source and light pick-up means for scanning the lines and generating a video signal varying according to the variations along the substantially parallel lines, a video output circuit connected to said light pick-up means, said video output circuit being adapted to be connected to a television receiver to deliver said video signals thereto, and means for successively advancing said record with reference to said detecting means so that said substantially parallel lines are scanned in sequence.

3,198,881
FILM SCANNING TRANSMISSION SYSTEM USING FIBER OPTICS
Herman P. Knocklein, Mineola, N.Y., assignor to Avien, Inc., Woodside, N.Y.
Filed Mar. 19, 1962, Ser. No. 180,697
2 Claims. (Cl. 178—6.7)



1. A data transmission system for use with transparent film or the like comprising:
a first cathode ray tube provided with deflection coil means adapted to form a circular sweep;
a plurality of optical fibers disposed in side-by-side configuration, one end of said fibers being disposed in the neck portion of said cathode ray tube in circular side-by-side configuration and adapted to be scanned by said circular sweep, the other end of said optical fibers terminating at the face plate of said tube and being unfurled and disposed in linear side-by-side configuration, whereby said circular sweep is converted to a uniform linear sweep characterized by absence of retrace;
first transport means adapted to transport a film transparency having photographic indicia thereon past said tube face plate whereby said transparency is scanned

by said linear sweep emanating from said tube face plate;

means to synchronize the speed of said first transport means with said linear sweep means;

a photomultiplier disposed on the opposite side of said transparency in alignment with said linear sweep whereby light beams emanating from said face plate from said linear sweep are adapted to pass through said transparency, said light beams being coded by said indicia formed on said transparency whereby said coded light pattern is adapted to be converted to an intelligence-bearing electrical signal by said photomultiplier;

means to transmit said intelligence-bearing electrical signal as a modulated radio signal;

means to generate a synchronizing signal synchronized to said linear sweep, said means comprising a portion of said plurality of optical fibers of said first cathode ray tube in combination with the linear sweep scanning of said transparency whereby when said sweep scans said portion of said plurality of optical fibers a pulse is generated which is converted by said photomultiplier to a synchronizing signal;

receiver means adapted to receive and demodulate said radio signal and said synchronizing signal;

a second cathode ray tube substantially identical to said first cathode ray tube, said radio signal being operatively connected to the intensity and deflection electrodes of said second tube, said second cathode ray tube being provided with a second deflector coil means adapted to form a second circular sweep;

a second plurality of optical fibers disposed in said second cathode ray tube with one end of said second plurality of fibers being disposed in the neck portion of said second cathode ray tube in circular side-by-side configuration and adapted to be scanned by said second circular sweep, the other end of said second plurality of optical fibers terminating at the face plate of said second tube and being disposed in linear side-by-side configuration whereby said second circular sweep is converted to a second uniform linear sweep characterized by absence of retrace, said second circular sweep being modulated by said received signal to define a second coded light pattern;

second transport means adapted to move unexposed negative film material past said second cathode ray tube, said synchronizing signal being adapted to synchronize the speed of said second transport means with that of said first transport means and to synchronize said second linear sweep with said first linear sweep whereby said raw film is scanned by said second linear sweep to thereby expose said raw film with said coded light pattern in said second sweep; and

means to develop said exposed raw film to thereby reproduce said transparency.

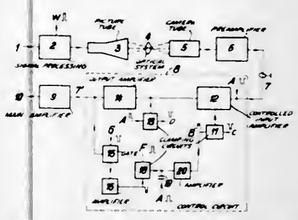
3,198,882

METHOD AND SYSTEM FOR AUTOMATICALLY CONTROLLING THE GAIN OF TELEVISION SIGNALS REFERENCE PULSE

Emil Sennhenn, Darmstadt-Arheilgen, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany

Continuation of application Ser. No. 33,471, June 2, 1960. This application June 7, 1963, Ser. No. 286,418
Claims priority, application Germany, June 9, 1959, F 28,646; Mar. 2, 1960, F 30,660
7 Claims. (Cl. 178—7.1)

6. A method of automatically controlling the gain in a television signal amplifier, comprising the steps of deriving from selected recurring portions of a television signal delivered by the amplifier a control pulse of predetermined polarity and of a variable amplitude depending upon a varying characteristic of said portions of said television signal; providing a reference pulse occurring simultaneously with said control pulse and having a predetermined constant amplitude with a polarity opposite to that of said control pulse; forming the difference between the amplitude of said control pulse and the ampli-



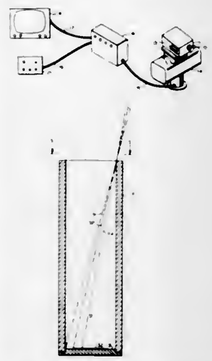
tude of said reference pulse; deriving from said difference a control voltage varying with variations of said amplitude of said control pulse; and using said control voltage for capacitively controlling the gain of the televsion amplifier.

3,198,883

CAMERA PROTECTIVE APPARATUS

Willy Borberg, Briarcliff Manor, and Louis P. Raitiere, Pleasantville, N.Y., assignors to General Precision, Inc., a corporation of Delaware

Filed July 11, 1962, Ser. No. 209,144
6 Claims. (Cl. 178—7.2)



1. In combination with a camera including a lens and a shutter, protective apparatus, comprising,

a hollow tube mounted on said camera with its axis parallel to the optical axis of said camera,

said tube having one end open and facing in the same direction as said lens,

a photosensitive element mounted in the other end of said tube with its active surface facing said one end,

said active surface being in the form of a flat strip around the periphery of said tube, and

means operatively connected to said element for closing said shutter in response to a predetermined amount of light incident on said surface.

3,198,884

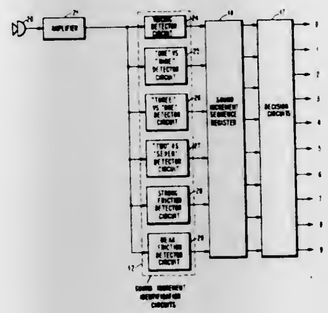
SOUND ANALYZING SYSTEM

William C. Dersch, Los Gatos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Aug. 29, 1960, Ser. No. 52,548
20 Claims. (Cl. 179—1)

1. A system for the analysis of sound including the combination of means responsive to the sound and providing signals representative of the sound, a number of

circuit means, each individually responsive to a different selected time varying property of the signals, the different properties occurring as successive incremental parts of the sound being analyzed and selection circuit means



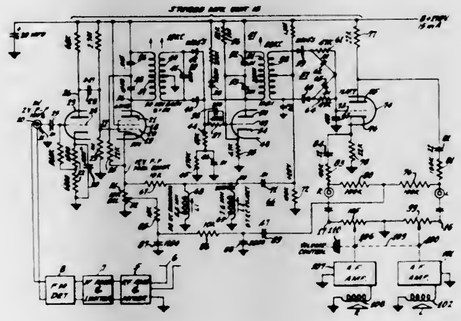
controlled by the time of operation of the different individual circuit means and responsive to both the nature and the relative times of occurrence of the selected time varying properties for identifying particular manifestations in the sound as the sound occurs.

3,198,885

F.M. STEREOPHONIC RADIO SIGNAL RECEIVERS HAVING COMBINED PRE-DETECTION DE-EMPHASIS AND FILTERING CIRCUIT

Allen Le Roy Limberg, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Feb. 16, 1962, Ser. No. 173,642
4 Claims. (Cl. 179—15)



1. A multiplex decoding circuit for stereophonic frequency modulation receiving systems comprising:

(a) a signal input circuit for connection to a frequency modulation receiver to receive pre-emphasized subcarrier sideband signals therefrom modulated in accordance with one of a pair of stereophonically-related audio signals,

(b) a subcarrier detector for deriving the audio signal information from said subcarrier sideband signals,

(c) a combined filter and de-emphasis circuit coupling said signal input circuit to said subcarrier detector,

(d) said filter circuit including a series resonant circuit tuned to a frequency higher than that of said subcarrier, said higher frequency corresponding to the center frequency of an unwanted signal which may modulate the main frequency modulation carrier wave, and an inductor connected in parallel with said series resonant circuit to resonate with the effective capacitance thereof at the frequency of the first named subcarrier, and

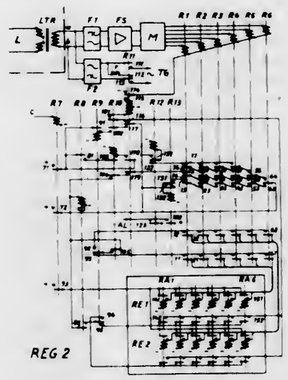
(e) a resistor coupled between said signal input circuit and said filter circuit, said resistor being of a value with respect to the other parameters of said filter circuit such that said filter circuit and resistor attenuate said subcarrier sidebands substantially symmetrically on an arithmetic scale with respect to said subcarrier frequency to de-emphasize the higher audio frequencies derived at said subcarrier detector in a manner substantially complementary to the pre-emphasis of said one of a pair of stereophonically related signals.

3,198,886

CIRCUIT ARRANGEMENT FOR TRANSMISSION OF SIGNALS

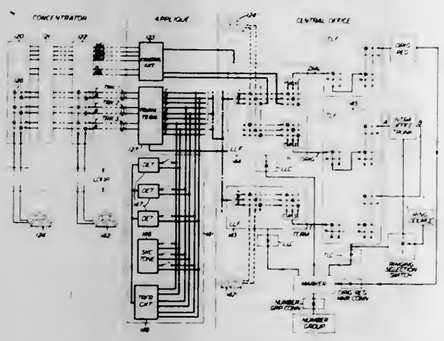
Thorkild Olofsson Baumbach, Hagersten, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Nov. 2, 1960, Ser. No. 66,718
Claims priority, application Sweden, Nov. 19, 1959, 10,846/59
1 Claim. (Cl. 179—18)



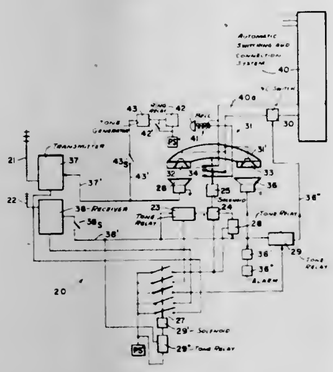
An automatic telephone system comprising a sender and a receiver connected by a line for transmitting voice frequently signals, said receiver including receiving relays energized by receiving voice frequency signals sent out from the sender through said line, registering means connected in circuit with said relays for registering said signals, and a return signal relay for sending a return signal through the line to the sender in response to a voice frequency signal receiver from the sender, said receiving relays and said registering means each having switch contacts connected in circuit and coacting to cause production of said return signal upon registration of the sent voice frequency signal in the registering means; hold circuit means for the return signal relay for holding the same energized until de-energization of the receiving relays and at least for a period of time such that the return signal has a predetermined minimum duration, and switch contact means actuated by the return signal relay and held during the sending of said return signal and thereafter for a predetermined period of time to interrupt the circuit connection between the receiving relays and the registering means, thereby preventing registration of any signal received by said receiving relays.

3,198,887
DISTRIBUTED TELEPHONE LINE CONCENTRATOR
Chester E. Brooks, Montvale, and William C. Sand, Chatham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 20, 1961, Ser. No. 153,468
21 Claims. (Cl. 179—18)



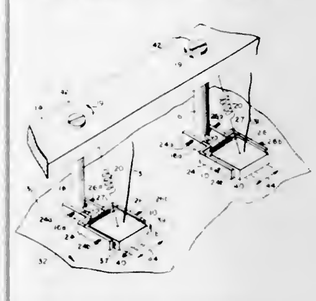
1. A telephone line concentrator system including a central office, a plurality of trunks connected to said office, a plurality of substations remote from said office, remote switching means for connecting said substations to said trunks under control of said central office, and means in said central office responsive to the establishment of a connection between said substations over two of said trunks for connecting said substations to a single one of said trunks.

3,198,888
RADIO TELEPHONE COMMUNICATION SYSTEM
Jerome H. Lemelson, 8B Garfield Apartments, Metuchen, N.J.
Filed Aug. 30, 1960, Ser. No. 52,826
7 Claims. (Cl. 179—41)



1. In an automatic communication system the combination of:
(a) an automatic telephone switching system having a plurality of terminal wire pairs connected thereto and connectable to each other by means of signals generated on any of said wire pairs,
(b) a telephone connected to one of said wire pairs having a unitary mouth-earpiece which is movable from a predetermined position on said telephone whereby it opens a switch and connects the output of the ear and mouth piece of said telephone with said automatic switching system,
(c) a coupling device associated with said telephone having electro-mechanical means adapted, when operated, to close said switch of said telephone,
(d) a control means for operating said electro-mechanical means including a relay which is responsive to a predetermined signal received thereby which operates said electro-mechanical means,
(e) a short wave receiver having an output connected to said relay,
(f) portable control apparatus including a short-wave transmitter adapted for transmitting signals to the receiver of said coupling apparatus,
(g) a second short wave transmitter located in the general vicinity of said telephone and adapted to receive and transmit voice signals generated at the speaker of said mouthpiece of said telephone,
(h) a second short wave receiver at said portable control apparatus adapted to receive signals transmitted by said second short wave transmitter whereby to establish a communication link therewith,
(i) means at said control apparatus for generating a plurality of selection and connection signals when manually operated,
(j) means connected to the output of said receiver at said telephone for converting said selection and connection signals generated at said portable apparatus into signals generated on the output of said telephone in simulation of conventional selection and connection signals generated by conventional dial operated telephones,
(k) relay means including means for generating a signal at said portable apparatus and relay means responsive thereto at said telephone coupling apparatus for actuating said electro-mechanical means to open the switch of said telephone and break the circuit therewith and said automatic switching system under the control of the operator of said portable apparatus when it is desired to disconnect a communication link.

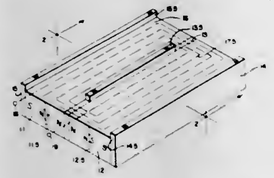
3,198,889
FLYING HEAD MOUNT
Robert J. Eulberg, Hudson, Wis., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 9, 1960, Ser. No. 48,439
10 Claims. (Cl. 179—100.2)



9. Data storage apparatus comprising:
(a) a movable storage member provided with a magnetizable recording surface having at least one record storage track;
(b) a transducer device having a bearing surface, the bearing surface being disposed in proximity to a portion of said recording surface, said device and said recording surface having relative motion in one direction;

(c) a fluid cushion between said surfaces and exerting a separating force thereon;
(d) means maintaining said transduced device with respect to said storage member, said maintaining means comprising:
(1) a support means having a pivot axis substantially normal to the magnetizable record surface and being selectively rotatable about the axis;
(2) a holding means mounting the transducer device, said holding means comprising two independent side-by-side members pivotally connected at one of their ends to the support means and at their other ends to the transducer device, the device being thereby spaced from the support means and such that rotation of the support means is effective to position the transducer device transversely with respect to the one direction for permitting fine magnetic coupling between said transducer device and said record storage track.

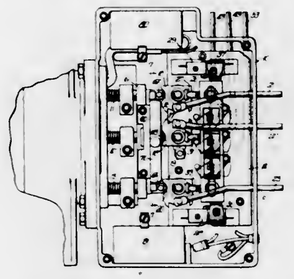
3,198,890
HIGH FIDELITY SOUND REPRODUCER
Stanley R. Rich, West Hartford, Conn., assignor, by mesne assignments, to Alfred H. Rosen, Newton, Mass.
Filed June 14, 1961, Ser. No. 117,000
10 Claims. (Cl. 179—115.5)



1. Loudspeaker comprising an electrically conductive diaphragm, means providing a magnetic field having lines of force directed substantially parallel to said diaphragm, said diaphragm being disposed within said field, voice coil means disposed adjacent one side only of said diaphragm adapted to induce eddy currents therein in responce to modulated currents flowing in said voice coil means, said voice coil means being spaced from said diaphragm so that within prescribed limits said diaphragm may move toward and away from said voice coil means without contacting the same, and means including said diaphragm as a wall member thereof for providing a chamber at said one side of said diaphragm.

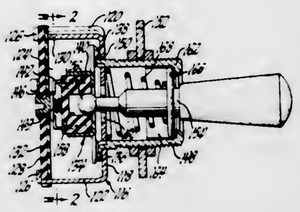
3,198,891
MECHANISM FOR CONTROLLING THE POWER UNIT OF AN ELECTRIC HOSPITAL BED
Francis J. Burst, Batesville, and Thomas G. Spofford, Columbus, Ind., assignors to Hill-Rom Company, Inc., Batesville, Ind., a corporation of Indiana
Filed July 24, 1962, Ser. No. 212,079
19 Claims. (Cl. 200—5)

1. Mechanical means for controlling the closing of circuits to the reversible motor of an electric hospital bed through a pair of spaced apart electric switches each of which is operable to operate the motor in one of two directions, comprising:
(1) a plurality of shuttle bars disposed between the switches with each mounted for longitudinal movement from a neutral position in one direction to engage and operate one of the switches and for longitudinal movement from the neutral position in the opposite direction to engage and operate the other one of the switches;
(2) means individual to each shuttle bar for moving that bar from neutral in both directions;



(3) and means individual to each shuttle bar for restricting longitudinal movement of that shuttle bar from neutral sufficiently to prevent operation of said switches thereby while leaving the other shuttle bars free to operate the switches.

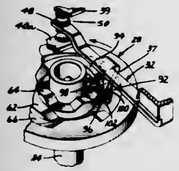
3,198,892
CENTER BIASED ACTUATOR SWITCH MECHANISM
Edward L. Barcus, Anderson, Ind., and Howard I. Slone, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Nov. 28, 1958, Ser. No. 777,107, now Patent No. 3,027,807, dated Apr. 3, 1962. Divided and this application Nov. 16, 1961, Ser. No. 152,895
1 Claim. (Cl. 200—6)



A switch mechanism comprising a housing including oppositely disposed end walls enclosed by a continuous rectangular side wall, a plurality of spaced contacts fixed to one of said end walls interiorly of said housing and facing the other of said end walls, a contact carrier member having oppositely disposed arms, bearing members on said arms slidably engaging the other of said end walls, said contact carrier member further having spaced wall portions bent toward said end wall having the spaced contacts fixed thereto, said contact carrier member being confined between said rectangular side wall for movement along a first axis, a contact support member confined within said spaced wall portions of said carrier member for movement therewith along said first axis and relative thereto along a second axis at right angles to said first axis, plural spaced bridging contacts carried by said contact support member in sliding abutting engagement with said one end wall for simultaneous selective bridging connection of adjacent ones of said plural fixed contacts, an exteriorly accessible actuator member connected to said contact support member for selectively moving the latter with said carrier member along said first axis, and rela-

tive to said carrier member along said second axis, and self-centering spring means to automatically return said actuator upon release of the latter to a circuit-opening position.

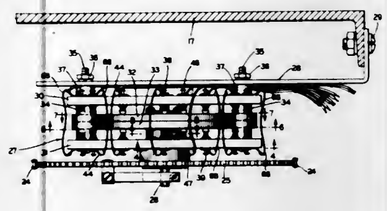
3,198,893
SWITCH HAVING AN ARC PREVENTING CAM ARRANGEMENT
George C. Mapelsden, Easton, Conn., assignor to General Electric Company, a corporation of New York
Filed Oct. 26, 1962, Ser. No. 233,270
3 Claims. (Cl. 200—6)



1. A manually operated switch comprising a housing, a manually operable shaft extending into said housing, a rotatable cam in said housing and attached to said shaft for rotation thereby, detent means engaging said shaft to releasably hold said shaft in two spaced positions of rotation and to prevent said shaft from stopping between said positions, a movable contact operable between a first fixed contact and a second fixed contact, a follower section on said movable contact, said cam including at least one annular cam track formed on one surface thereof for operating said follower section between said two fixed contacts in a continuous operation controlled by said detent means, said cam track having a switching surface portion including a first abruptly sloped arcuate section arranged to coact with said follower section for rapidly disengaging said movable contact from said first fixed contact, an arcuate step section at the disengaging end of said first section for holding said movable contact in positive disengagement with said first and second contacts for a finite period and a second abruptly sloped arcuate section facing in the same general direction as said first slope at the opposite end of said step portion and arranged to coact with said follower section for rapidly engaging said movable contact with said second fixed contact, said cam being positioned on said shaft so that said switching surface portion moves quickly past said follower section as said shaft passes between the two spaced positions determined by said detent means, whereby a single switching action is performed and the flow of arcing current between said first and second fixed contacts through said movable contact is prevented.

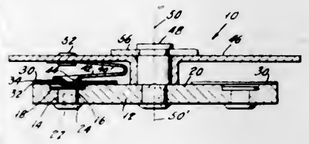
3,198,894
ROTARY SWITCH CONSTRUCTION WITH ADJUSTMENT MEANS FOR FILING APPLIANCE
Newton J. Krug, Canton, Ohio, assignor to Diebold, Incorporated, Canton, Ohio, a corporation of Ohio
Filed Apr. 30, 1963, Ser. No. 276,711
10 Claims. (Cl. 200—11)

7. In motor-driven file equipment of the type wherein a plurality of record-carrying trays are mounted between spaced tray support means for moving the trays in an endless orbit of travel and for stopping a selected tray at an access opening in a housing surrounding the trays, and wherein a reversible motor is operatively connected to the tray support means and controlled by a selector switch for each tray for moving said trays in said orbit of travel; the combination of an electric circuit including a rotary switch having a shaft rotatable on an axis, a first rotary plate fixedly mounted on the shaft, a second rotary plate adjustably mounted on the shaft, means for rotatably adjusting the second rotary plate on the shaft, the first rotary plate having a clockwise arcuate conductor and a circular common conductor, the second rotary plate having a counterclockwise arcuate conductor and a circular common conductor, all of said conductors being concentrically disposed about the axis of the rotatable shaft, one of the clockwise arcuate conductor and the counterclockwise arcuate conductor extending through an arc equal to substantially 180°, the other of the clockwise arcuate conductor and counterclockwise arcuate conductor extending through an arc of slightly less than 180° and supplementing the portion of a circle covered by said one arcuate conductor, there being a dielectric stop space in the circle between the ends of the one and the other arcuate



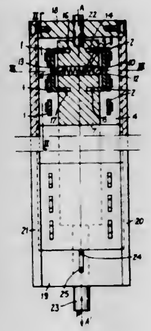
conductors, the conductors on each rotary plate being electrically interconnected, a plurality of spaced first contacts, means mounting said first contacts engageable with and disposed in the path of travel of the clockwise arcuate conductor on the first rotary plate, a plurality of spaced second contacts, means mounting said second contacts engageable with and disposed in the path of travel of the counterclockwise arcuate conductor on the second rotary plate, and means mounting each of the contacts of each of the first and second sets of contacts electrically connected to one of the selector switches, whereby actuation of a selector switch closes the circuit through a corresponding contact and arcuate conductor and whereby operation of the motor continues until said corresponding contact engages the stop space in the circular path of travel of the conductors.

3,198,895
ROTARY ELECTRICAL SWITCH WITH RECESSED CONTACTS AND SEALING MEANS
Samuel L. Richman, White Plains, N.Y., assignor to Sonotone Corporation, Elmsford, N.Y., a corporation of New York
Filed Feb. 6, 1963, Ser. No. 256,580
12 Claims. (Cl. 200—14)



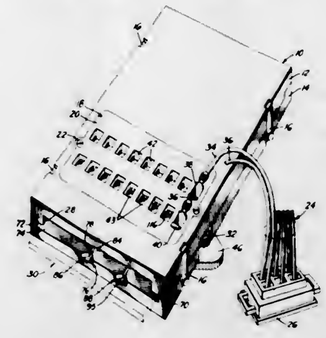
1. An electrical switch comprising in combination, a plurality of stationary contacts; said stationary contacts operatively positioned to form a group; said stationary contacts mounted to an insulator means electrically isolating the individual stationary contacts of said group; a continuous conductive element fixedly mounted to said insulator means in overlying relationship with respect to said group of stationary contacts; said continuous conductive element having spaced portions thereof overlying selected ones of said stationary contacts, and normally space-separated therefrom, while in registry therewith; actuating means mounted to said insulator means and adjustably positioned to simultaneously distort a selected plurality of said spaced portions of said conductive element towards the selected ones of said stationary contacts in registry therewith; said distorted portions making good electrical contact with said selected ones of said stationary contacts, whereby said distorted conductive element provides a conductive path between said selected ones of said stationary contacts.

3,198,896
TWO-POSITION ELECTRICAL CHANGE-OVER SLIDE SWITCHES
Jean Clavel, Nanterre, France, assignor to L'Electro-Commutation (Elcom), Zainvillers-Vagney, France, a French body corporate
Filed June 19, 1961, Ser. No. 118,054
Claims priority, application France, June 23, 1960, 830,849, Patent 1,268,593
4 Claims. (Cl. 200—16)



1. A two-position electrical change-over slide switch, comprising two support members of insulating material mounted to oppose each other, each of said support membres carrying a plurality of sets each of three flat strip-like fixed contacts of conductive material, equispatially arranged in line, each set of three fixed contacts on one support member lying opposite a set of three fixed contacts on the other support member, a bar-shaped slider of insulating material mounted to slide between said opposed sets of fixed contacts, a plurality of U-shaped moving contacts, allocated one for each set of fixed contacts, carried in pairs on opposite sides of said slider, a plurality of spring means, one for each pair of said U-shaped moving contacts, located within said slider, each spring means normally biassing its associated pair of U-shaped moving contacts outwardly away from said slider to apply said moving contacts in self-aligning manner each against its allocated set of fixed contacts, the base of the U of each U-shaped moving contact being of such size as to bridge across only either two adjacent ones of its allocated set of three fixed contacts, a stud of insulating material between each of said U-shaped contacts and its associated spring means, a frame carrying said support members, said frame including an apertured end plate secured at each end of said frame, a rod secured to each end of said slider, said rods respectively passing through said apertures in said end plates to form operating members to operate the switch and to guide the slider in its sliding movement, each sub-assembly of a pair of opposed sets of three fixed contacts, with their associated pair of U-shaped moving contacts constituting a separate cell, said switch thus comprising a plurality of said cells all arranged in succession along the axis of sliding movement of said slider, and said frame being grooved freely to receive said support members of insulating material.

3,198,897
DOMESTIC APPLIANCE TIMER WITH CARD ACTUATED SWITCHES
Robert O. Scofield, Sr., and George F. Seagreaves, Warren, and Robert C. Woofter, Cortland, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 9, 1961, Ser. No. 143,916
10 Claims. (Cl. 200—46)



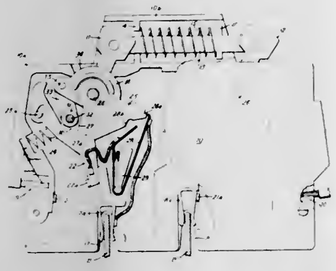
1. A timer comprising, an upper housing having a terminal block opening, a lower housing connected to said upper housing and forming an open ended rectangular channel between said terminal block opening and said lower housing, said channel having first and second spaced parallel guide tracks in the bottom thereof, shift track portions interconnecting said guide tracks at each end thereof to form a closed circuit and a flared entrance to said guide tracks at one end of said closed circuit, a spring biased piston at the opposite end of said channel from said flared entrance and extending into said channel from one side thereof toward the other end of said closed circuit, means forming a drive slot in a side of said channel opposite said piston, a pinion extending through said slot into said channel, a generally flat rectangular program card narrower than said channel adapted to be inserted in said channel through the open end thereof and having an upper program side and lower guide side and rack along one edge thereof, said guide side having a guide lug engageable with said first guide track through said track entrance to guide said card during movement thereof from said open end of said channel toward said piston, said piston engaging said card to force said lug along one of said shift track portions from said first guide track to said second guide track and said rack into engagement with said pinion when said program card is pushed from one end of said channel toward said piston, a terminal block removably positioned in said terminal block opening and supporting a timer switch, said switch having a fixed contact and a movable contact, said movable contact carried on a follower switch arm extending from said terminal block into said channel adjacent said upper program side, said upper program side having embossments in alignment with said switch arm when said guide lug is in said second guide track, and means for driving said pinion to move said program card out of said channel, thereby to selectively actuate said timer switch.

3,198,898

MULTIPLE CIRCUIT BREAKER ASSEMBLY

Benjamin A. Piteo, Jr., Forestville, Conn., assignor to General Electric Company, a corporation of New York

Filed June 7, 1963, Ser. No. 286,261
3 Claims. (Cl. 200—50)



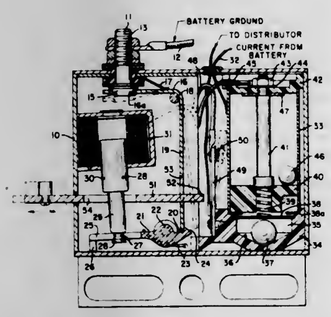
1. A multiple circuit breaker assembly comprising a pair of snap-action electric circuit breakers mounted in end-to-end relation in a common casing and having individual rotary handles mounted in spaced apart substantially coplanar relation, said handles having external manually engageable portions projecting outside said casing movable in like direction to effect simultaneously circuit opening and circuit closing movement of their respective circuit breakers, a rectilinearly movable coupling rod connecting said external manually engageable portions together for simultaneous movement, and a single handle biasing spring of helical configuration surrounding said rod and having two ends, one of its ends engaging said rod, and its other end engaging said casing to bias both said handles to open circuit positions.

3,198,899

CIRCUIT BREAKER FOR VEHICLES INCLUDING INERTIA-OPERATED SWITCH

Arthur A. Hitchcock, Cridersville, Ohio, assignor to A.C.B. Corporation, Cridersville, Ohio, a corporation of Ohio

Filed Apr. 1, 1963, Ser. No. 269,589
4 Claims. (Cl. 200—61.45)



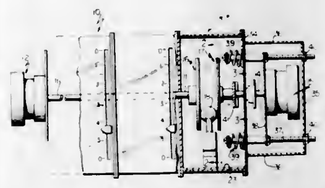
1. An inertia-operated switch for motor driven vehicles having a storage battery comprising a binding post for receiving the ground lead from the storage battery, a spring biased lever of conductive material for engaging said binding post for establishing the ground connection, a metallic catch lever releasably holding said spring biased lever in operative position, solenoid means including an armature for actuating said catch lever to release said spring biased lever for breaking the ground connection, means to energize said solenoid means in the event of an impact followed by a slight time delay such as occasioned by some slight vehicle motion, said energizing means comprising an upright cylindrical housing of electrically conductive material adapted to receive current from the storage battery, a member of electrical insulating material at the base of said housing having a chamber provided with a conical ramp surface constituting the bottom wall thereof, a relatively heavy ball in said chamber and moveable along said ramp surface, said housing an opening in the bottom wall thereof, a contact plate beneath said bottom wall and normally seated against said insulating member and moveable by impact of said ball thereagainst into engagement with the edge of said housing opening, an electrically conductive spring bearing against said plate to hold same out of contact with said housing, and an electrical connection between said spring and said solenoid so that movement of said plate by said ball against said cylinder enables current from the storage battery to flow from said cylinder through said contact plate and spring to energize said solenoid and thereby cause breaking of the ground connection for the storage battery.

3,198,900

APPARATUS FOR DETECTING A CHANGE IN ROTATIONAL SPEED

Eli Levy, Bloomfield, N.J., and John Harry Fasal, New York, N.Y., assignors to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey

Filed May 7, 1963, Ser. No. 278,638
10 Claims. (Cl. 200—61.46)



1. In apparatus for detecting a change in rotational speed, the combination of a pair of concentrically aligned rotatable shafts each having an end adjacently spaced from the other, a timing motor for each shaft arranged for rotating said shafts at the same speed in opposite directions, a wheel mounted on each of said shafts for rotation therewith and being spaced apart from each other, a member having a circular zone operatively engaged by said wheels at diametrically opposite points thereof to effect rotation of said member, a movably mounted element for rotatably supporting said member in a given position, and switch means operable by said element upon movement thereof, whereby, upon a change in rotational speed of either of said shafts, said member will be displaced to effect operation of said switch means.

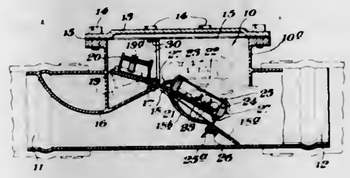
3,198,901

ADJUSTABLE FLOW-RESPONSIVE TILT SWITCH

Nuruddin F. Kapadi, Post Kondivara Taluka, Sangameshwar, District Ratnagirl, Bombay, India

Filed Oct. 10, 1962, Ser. No. 229,577
Claims priority, application Great Britain, Oct. 23, 1961, 37,885/61
2 Claims. (Cl. 200—81.9)

1. A gravity switch comprising a mounting plate adapted for mounting in a fluid passage rearward of a venturi therein, a horizontal axis whereabout said mounting plate is arranged to pivot under the action of fluid flowing in said fluid passage, a cylindrical switch casing pivotally secured by one end, to said mounting plate so as to extend transversely relative to said horizontal axis, to one side thereof, slidable locking means attached to the end of said casing remote from said one end, said slidable locking means securing said switch casing to said mounting plate so as to be adjustable about its pivot in a plane perpendicular thereto, end caps each arranged sealingly to enclose a respective end of said switch casing, a first terminal and a second terminal mounted at opposite ends of said switch casing, said terminals, being spaced by a switch gap, said first terminal having an end portion and a trough-like portion projecting therefrom towards said second terminal, first and second electrical leads respectively ducted by said end caps to said first and second terminals, a plurality of balls of good electrical conductivity arranged to roll in said trough-like



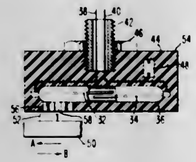
portion between a first position in response to movement of said plate due to fluid flow in said fluid passageway wherein said balls contact said trough-like portion and a second position in response to gravity due to the absence of fluid flow in said fluid passageway wherein a first one of said balls contacts said trough-like portion, a second one of said balls contacts said second terminal and a third one of said balls, interposed between said first and second balls, ensures electrical contact therebetween whereby to complete an electrical circuit between said first and second electrical leads, and adjustable counterbalancing means disposed, on said plate, at the other side of said horizontal axis to said switch casing, said counterbalancing means being adjusted so as to cause said mounting plate to pivot, and said balls to move from said first position to said second position, when the flow of fluid in said passageway drops below a predetermined level.

3,198,902

PROXIMITY MAGNETIC REED SWITCH ASSEMBLY

Emile C. Deshautreaux, Jr., 2121 4th St., Kenner, La.

Filed May 28, 1962, Ser. No. 198,100
4 Claims. (Cl. 200—87)



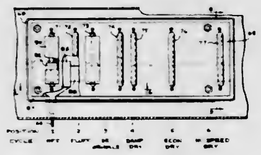
1. A switch assembly which comprises:
(a) a pair of cooperating electrical contacts, at least one of which is made of magnetic material having spaced apart first and second portions, said second portion being adapted to either make or break electrically with at least a portion of the other contact of said pair;
(b) first means to normally bias open said contacts;
(c) second means establishing a magnetic pole of one polarity in said other contact at its said portion, said pole having a field strength which, by itself, is insufficient to overcome said bias and close said contacts, but which is sufficient to maintain said contacts closed after said bias has been overcome; and
(d) control mechanism for selectively enveloping said one contact first portion with either a like or an unlike magnetic field of sufficient strength so that said second portion thereby is either repelled from or attracted to close with said other contact portion, respectively, where said control mechanism comprises a first pair of spaced apart unlike magnetic poles each permanently located adjacent to said one contact first portion so as to envelop same with a magnetic field, a second pair of spaced apart unlike magnetic poles each permanently located opposite an unlike pole of said first pair so that a flux path is created therebetween whose normal reluctance is such as to cause the field from the associated pole of said first pair to be of a strength insufficient to affect the state of said contact pair, and a body of magnetic material relatively physically movable with respect to said one contact first portion which can be selectively moved into the field of either one of the poles of said second pair so that the reluctance of its associated flux path decreases which in turn increases the field strength of the associated pole of said first pair of poles to thereby make or break said contacts.

3,198,903

CONTROL SWITCH ASSEMBLY, PARTICULARLY FOR APPLIANCES SUCH AS CLOTHES DRYERS

Glenn R. Chafee, Jr., Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed July 12, 1962, Ser. No. 209,466
3 Claims. (Cl. 200—87)

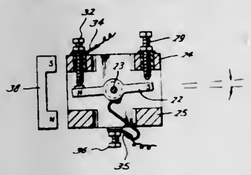


1. A switch assembly including a housing, a plurality of magnetic reed switches secured within said housing in spaced relation to each other and each including a pair of normally separated magnetic reed elements deflectable into engagement with each other, a permanent magnet having one pole facing said reed switches and the other pole facing away from said reed switches, means extending through said housing for moving said magnet along a predetermined path within said housing, said predetermined path extending across said reed switches so that said magnet may be moved selectively into proximity with a single reed element of each of said reed switches to complete a flux path extending from said one pole through said single reed element of said selected reed switch to the other reed element of said selected reed switch, said magnet being large enough to bridge the space adjacent two of said reed switches, and a shield of magnetic material extending between said two adjacent reed switches and part of the way around one of said adjacent reed switches thereby to form a magnetic shield which shunts the flux away from the other of said adjacent reed switches until said magnet is directly opposite said other adjacent reed switch.

3,198,904
MAGNETICALLY ACTUATED SWITCHING MECHANISM FOR WELL WORKING TOOL

Harry C. Ehlert, Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas

Original application Jan. 30, 1961, Ser. No. 85,933, now Patent No. 3,105,550, dated Oct. 1, 1963. Divided and this application May 31, 1963, Ser. No. 284,670
6 Claims. (Cl. 200—87)

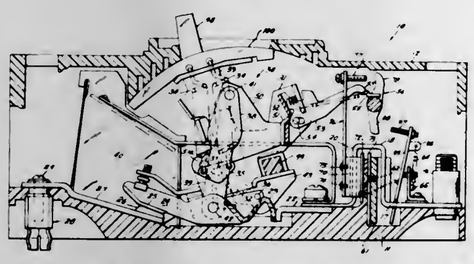


1. In combination, a magnetic field influenced control unit comprising, a pair of pole pieces spaced apart transversely of their longitudinal extent, a permanent magnet comprising a rocker lever extended longitudinally in the direction of the longitudinal extent of said pole pieces and fulcrumed intermediate its ends within the space between said pole pieces for swing travel toward and from one of the pole pieces and with its projecting lever arms constituting poles of opposite polarity and whose lines of force pass through the pole pieces and bias lever swing action for normally presenting one of the lever arms toward said one pole piece and which permanent magnet lever responds to the imposition thereon through said pole pieces of opposing lines of force from a magnetic field for a swing action away from said one pole piece, a pair of mating contacts controlling current flow for the actuation of a working means, means mounting one contact for travel with rocker lever travel and other means mounting the other contact in the travel path of said one contact whereby the swing travel of said rocker lever effects the opening and the closing of the contacts and magnetic field means having longitudinally spaced apart poles for field influencing cooperation with said pole pieces, said field means and said control unit being arranged for relative movement into and out of field influencing cooperation.

3,198,905
CIRCUIT BREAKER HAVING IMPROVED INDUCTIVE HEATER FOR BIMETAL TRIP MEANS

Carl E. Gryctko, Haddon Heights, N.J., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 25, 1961, Ser. No. 133,879
1 Claim. (Cl. 200—88)

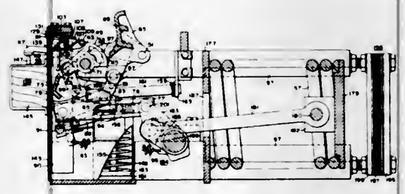


A circuit breaker including a first and a second terminal, means for connecting said terminals including cooperating contacts and a conducting strap serially connected to each other, a mechanism for operating said contacts into and out of engagement, and trip means connected to said mechanism for automatic tripping thereof upon the occurrence of predetermined abnormal circuit conditions, said trip means including a device inductively coupled directly to said strap and heated through the action of current flowing in said strap; said device comprising a closed loop of magnetic material with said strap passing therethrough; said trip means also including a non-current carrying elongated bimetal element, a first end of said bimetal element secured to said closed loop in heat conducting relation thereto and the opposite end of said bimetal element cantilevered outward from said closed loop, and freely extending beyond the boundaries of said closed loop, towards said trip means; said opposite end operatively positioned for deflective engagement with said trip means; and calibrating means cooperating with said free end so that a predetermined heating of said element will bring about a deflection thereof sufficient to trip said mechanism.

3,198,906
CIRCUIT BREAKER WITH STORED ENERGY OPERATING MECHANISM

Russell E. Frink, Forest Hills, and Paul Olsson, Penn Hills, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 18, 1960, Ser. No. 2,994
13 Claims. (Cl. 200—92)



1. In a circuit breaker having separable contacts and means releasable to effect automatic separation of said contacts, stored-energy means releasable to effect a closing operation of said circuit breaker, a linkage, a motor, connecting means operatively connecting said motor with said linkage, upon energization of said motor said connecting means operating through said linkage when said linkage is in thrust transmitting position to charge said released stored-energy means, means breaking said linkage from the thrust transmitting position to a partially collapsed position after said stored-energy means is charged, when said linkage is moved to said partially collapsed position said connecting means being positioned so as to not interfere with continued operation of said motor, means latching said partially collapsed linkage, said partially collapsed linkage being collapsible to release said stored-energy means to effect a closing operation of said circuit breaker, and means for releasing said latching means to allow said partially collapsed linkage to collapse.

3,198,907
ELECTRICALLY OPERATED CIRCUIT BREAKER

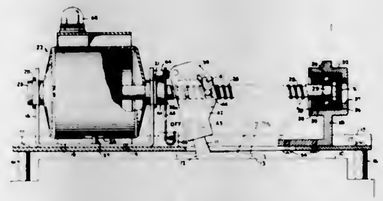
Harry W. Archer, New Britain, and David B. Powell, Bristol, Conn., assignors to General Electric Company, a corporation of New York

Filed Nov. 14, 1960, Ser. No. 68,716
2 Claims. (Cl. 200—92)

1. A motor operated electric circuit breaker comprising:

(a) a casing of insulating material;
(b) an operating handle projecting from said casing;
(c) an electric motor;
(d) an elongated threaded operating shaft connected to said motor for rotation thereby;

(e) means supporting said electric motor and said operating shaft on said casing for reciprocating longitudinal movement as a unit in a direction parallel to the axis of said shaft;
(f) means biasing said motor and said shaft to a normal position while permitting resilient longitudinal movement of said motor and said shaft in each direction away from said normal position;
(g) a travelling nut carried by said operating shaft and operatively connected to said circuit breaker operating handle;

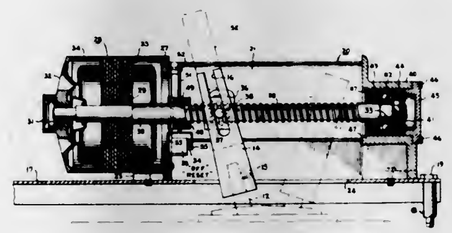


(h) said handle being reciprocably movable between limiting stops;
(i) said operating shaft and said motor moving longitudinally with respect to said casing after said handle has encountered one of said limiting stops;
(j) limit switch means mounted on said casing, and
(k) operating means connected between said motor and said limit switch and operated in response to said longitudinal movement of said shaft and said motor for operating said limit switch.

3,198,908
MOTOR OPERATED CIRCUIT BREAKER

Julius H. Staak, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York

Filed Nov. 14, 1960, Ser. No. 68,728
3 Claims. (Cl. 200—92)

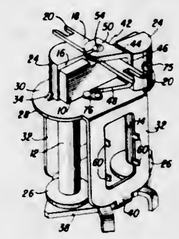


1. An electrically operated switching device comprising an electric switch having an insulating enclosure and a manually operable handle projecting from said insulating enclosure, an electric motor mounted adjacent said insulating casing and including a field winding and an armature, said armature having an elongated operating shaft having a threaded portion intermediate the ends thereof, means supporting said armature and said shaft for reciprocating longitudinal movement relative to said field winding, a travelling nut in engagement with said threaded portion, means connecting said travelling nut to said manually operable handle, and said shaft, resilient means opposing said longitudinal movement of said shaft, and means limiting movement of said handle, whereby continued rotation of said shaft after said handle encounters said limiting means causes longitudinal movement of said shaft and said armature against said biasing means.

3,198,909
RELAY STRUCTURE WITH IMPROVED ARMATURE PIVOT

Leonard J. Greshel, Cohasset, Mass., and Gerald E. Bosler, Galion, Ohio, assignors to North Electric Company, Galion, Ohio, a corporation of Ohio

Filed Mar. 24, 1960, Ser. No. 17,431
19 Claims. (Cl. 200—104)

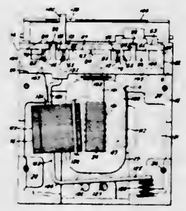


13. A relay structure comprising, in combination, a pair of spaced parallel coil cores defining a pair of poles adjacent their upper ends, a lower strap secured to and interconnecting the lower end portions of said cores, a yoke including an upper strap portion secured to and interconnecting said cores immediately below said poles, said yoke including a pair of depending portions extending downwardly from said upper strap portion to said lower strap and fixedly secured at their lower ends to said lower strap, an armature mounting bracket secured to one of the said poles above said upper strap portion and including spaced upper and lower portions extending into the space between said poles, the lower portion of said bracket having a cylindrical socket therein, a screw threaded through the upper portion of said bracket and having a cylindrical socket therein, said sockets defining a pivot axis parallel to and midway between the axes of said cores, and an armature having a pair of balls secured to the upper and lower surfaces thereof which balls define a pivot axis located centrally of the armature, said balls being intimately journalled respectively in said sockets and pivotally mounting said armature on said bracket in statically and dynamically balanced condition with the end portions thereof juxtaposed to said poles, said balls and sockets retaining said armature against side play for movement about a fixed pivot axis.

3,198,910
ELECTROMAGNETIC RELAY HAVING REMOVABLE CONTACT AND COIL ASSEMBLIES

James R. Burch, Normal, and Richard L. Chace, Bloomington, Ill., assignors to General Electric Company, a corporation of New York

Filed July 11, 1962, Ser. No. 209,015
20 Claims. (Cl. 200—104)



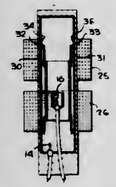
2. An electromagnetic relay comprising, an insulating housing having a cavity with a restricted open end opening at a side of the housing, a plurality of fixed contacts mounted on said housing side clear of the open end of the cavity and arranged in two parallel spaced exposed

rows on opposite sides of said open end, said open end having a predetermined width dimension extending parallel to the direction of spacing of said rows, a contact carrier removably mounted between said spaced rows for reciprocation relative to said fixed contacts, a plurality of bridging contacts carried by the carrier in spaced relation along its length for cooperation with said fixed contacts, a coil releasably supported within said cavity and having a predetermined thickness dimension in alignment with and extending parallel to the width dimension of said open end, and a magnetic armature assembly mounted within the cavity for movement relative to the housing and releasably connected to said carrier to effect reciprocation thereof in response to energization and deenergization of the coil, the thickness dimension of said coil being less than the width dimension of said open end so that the coil can be installed and removed relative to the housing by movement thereof into and out of said cavity through the open end without disturbing said fixed contacts and said housing when said carrier is removed from the housing.

3,198,911
MECHANICALLY LATCHED MERCURY SWITCHES

Irving L. Mitchell, Rockville Centre, N.Y., assignor to Ebert Electronics Corp., Queens Village, N.Y., a corporation of New York

Filed Mar. 29, 1963, Ser. No. 268,975
7 Claims. (Cl. 200—112)



1. A mercury plunger latch relay, comprising a container having therein a pool of mercury, a first contact permanently contacting said pool of mercury, a second contact, a magnetic plunger, means normally isolating said second contact from said mercury while said plunger is in one position relative to said pool of mercury, said pool of mercury being raised in response to increased immersion of said plunger in a second position with respect to said pool of mercury to a level adequate to achieve contact with said second contact, activatable magnetic means for selectively effecting movement of said plunger to said one position and to said second position, and latch means located internally of said container for retaining said plunger in its last position preceding de-activation of said magnetic means, said latch means including at least one spring member fastened to said plunger for frictional engagement with said container at said plunger positions, the frictional force exerted during said engagement being sufficient to retain said plunger in said last position and being less than the force exerted on said plunger upon activation of said magnetic means.

3,198,912
FUSED PLUG MEANS

Paul C. Savoca, Brooklyn, N.Y., and Anthony D. Marasco, Norwalk, Conn., assignors to J. B. Nottingham & Co., Inc., New York, N.Y., a corporation of New York

Filed Oct. 31, 1961, Ser. No. 149,058
1 Claim. (Cl. 200—115.5)

A fused electrical connector comprising a molded plug member formed of electrical insulating material, the outer end of said plug member being provided with a pair of spaced elongated parallel cylindrical cavities, the outer ends of said cavities having a countersunk portion, a pair of fuse housings each including a substantially cylindrical electrical non-conducting central portion, each of said housing having a substantially circular bottom plate formed of electrical conducting material at the lower ends thereof, an internally threaded cover member being secured to the upper portion of each of said housings, and being formed of electrical conducting material, a tubular sleeve member formed of electrically conductive material, said bottom conductor plates each having a central opening formed therethrough and the central portions of said fuse housings having a bore formed therethrough, each of said tubular sleeve members extending through the opening in one of said bottom conductor plates, each of said tubular sleeve members being adapted to be electrically connected with the terminal end of an electrical conductor, said fuse housings along with the



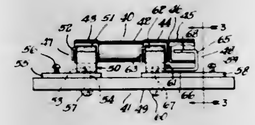
bottom conductor plates and cover members secured thereto all being embedded into said plug member, a portion of said cover members being seated in the countersunk portion of the associated cavities, a pair of electrical prongs, said prongs including outwardly extending cylindrical portions of electrically conductive material, the lower ends of said prongs having an externally threaded sleeve depending therefrom for threading within the threaded cover members, an elongated fuse member slidably fitted within the bore through the center portion of each of said housings, retainer means disposed between and in contact with the lower portion of each of said prongs and the upper portion of one of said fuse members, each of said prongs including an enlarged flange portion covered with electrical insulating material and adapted to be received within the outer end of one of said cavities when the prong member is threaded into operative position.

3,198,913
ELECTRIC FUSES AND FUSE HOLDERS THEREFOR

Harris I. Stanback, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Mar. 13, 1961, Ser. No. 95,180
2 Claims. (Cl. 200—119)

2. The combination comprising a mounting panel, a first fuse clip mounted on said mounting panel, a second fuse clip mounted on said mounting panel, said fuse clips respectively being constructed and arranged to clampingly engage opposite end ferrules of a ferrule type cartridge fuse, interference means adjacent said second fuse clip on the opposite side thereof from said first fuse clip, said interference means including a projection having a fixed end portion and a free end portion, said free end portion of said projection being disposed closer than said fixed end portion to said second fuse clip, and a ferrule type car-

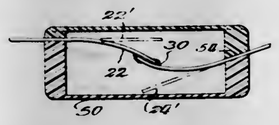


tridge fuse having first and second opposite end ferrules respectively clampingly engaged by said first and second fuse clips, said second end ferrule having a generally cylindrical extension thereon having an open outer end, and said free end portion of said interference means being received in said cylindrical extension on said second end ferrule of said ferrule type cartridge fuse.

3,198,914
THERMALLY OPERATED ELECTRICAL DISCONNECT DEVICE

Joseph G. Baran, Northbrook, and Albert E. Feinberg, Chicago, Ill., assignors to Advance Transformer Co., Chicago, Ill., a corporation of Illinois

Filed Apr. 18, 1962, Ser. No. 188,323
7 Claims. (Cl. 200—142)



1. A thermally operated electrical disconnect device comprising in combination a hollow housing having a pair of opposite side walls and a link extending out of the housing through said opposite side walls and consisting of a pair of electrically conductive elements connected interior of the housing by a low melting point solder connection, at least one of said side walls having a pass-through slot formed therein and the respective element free end being tightly threaded through said slot, said pass-through slot being slanted relative to the side wall so as to direct the element to assume a condition upon melting of the solder connection disposed in a plane divergent from the plane occupied by the other conductive element of the link.

3,198,915
INTERLOCKING CONSTRUCTION FOR ARC CHUTE HOUSING

Ernest Wortmann, Drexel Hill, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed July 17, 1961, Ser. No. 124,411
10 Claims. (Cl. 200—144)

1. A circuit breaker comprising a pair of cooperating contacts and an arc chute operatively positioned and constructed to receive and extinguish electric current arcs drawn between said cooperating contacts upon separation thereof; said arc chute comprising a plurality of spaced plates and a housing wherein said plates are disposed; said housing comprising spaced sidewalls to which said plates are fixedly secured along the side edges thereof; said sidewalls having rearwardly extending portions defining pockets open at the bottoms thereof; said housing

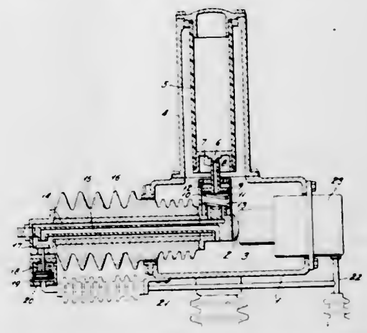


also comprising a backwall whose upper end is entered into said pockets to prevent upward movement of said backwall.

3,198,916
VENTED MOVABLE RESISTOR CONTACT FOR AIR BLAST CIRCUIT BREAKERS

Haakon Forwald, Ludvika, Sweden, assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Nov. 29, 1962, Ser. No. 240,883
3 Claims. (Cl. 200—148)

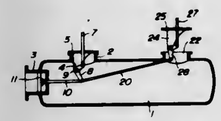


1. An air blast circuit breaker comprising a conductive container permanently filled with air, insulator support means connected to and supporting said conductive container; said container having first and second main cooperating contacts therein; a bushing insulator having a central conductor extending therethrough; said bushing insulator extending through said container; said first main contact being connected to the end of said central conductor; said second contact being electrically connected to said container; a resistor disposed in said container having a first and second end; said first end of said resistor connected to said container; a first and second auxiliary cooperating contact; said first auxiliary contact comprising a stationary contact secured to said second end of said resistor in insulated relation with respect to said container; said second auxiliary contact including a stationary portion and a movable portion carried by said stationary portion; said stationary portion of said second auxiliary contact being mechanically and electrically connected to said end of said central conductor; said second auxiliary contact being movable with respect to said first auxiliary contact; said second auxiliary contact having an orifice extending therethrough; said orifice being connectable to open air when said second auxiliary contact moves to a disengaged position with respect to said first auxiliary contact: said central conductor having a channel therein connectable to open air; and a blocking valve for said channel; said channel in said central conductor communicating with said orifice in said second auxiliary contact when said blocking valve is opened; said second auxiliary contact being carried on said blocking valve.

3,198,917
METHOD OF ASSEMBLING THE ACTUATING MECHANISM FOR AIR-BLAST CIRCUIT BREAKERS

Tetsuo Kobayashi and Zenichi Nakano, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Mar. 19, 1963, Ser. No. 266,290
Claims priority, application Japan, Apr. 26, 1962, 37/16,006
1 Claim. (Cl. 200—148)

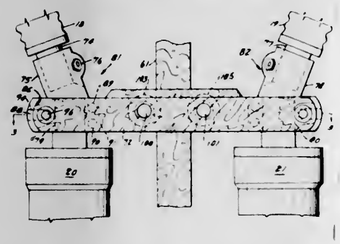


In an air-blast circuit breaker of the type including an air reservoir, at least one porcelain bushing upstanding from said air reservoir for supporting an interrupter unit and also serving as a vent tube, an insulating rod vertically extending through said porcelain bushing for actuating said interrupter unit, a piston-cylinder assembly arranged at one end of said air reservoir, and a link mechanism arranged in said air reservoir and including an actuating link connected at one end with the piston of said piston-cylinder assembly and a bell crank lever connected at one end with the other end of said actuating link and at the other end with the bottom of said insulating rod, a method of assembling the actuating mechanism including said link mechanism and a bearing bracket therefor having a seating plate comprising inserting said actuating link and said bell crank lever into the air reservoir through the cylinder of said piston-cylinder assembly, pulling said bell crank lever out of the vent aperture formed in the wall of said air reservoir and to which said porcelain bushing is to be secured, assembling the bearing bracket to said bell crank lever exteriorly of said air reservoir, inserting the parts thus assembled into the interior of said air reservoir through said vent aperture, fixing the seating plate of the bearing bracket to said vent aperture, and securing said porcelain bushing to the top of said seating plate to extend vertically therefrom, said steps being repeated progressively as many times as correspond to the number of said porcelain bushings.

3,198,918
BRACING AND SUPPORT STRUCTURE FOR OIL CIRCUIT BREAKERS

James R. McCloud, Los Angeles, Calif., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 13, 1961, Ser. No. 88,829
3 Claims. (Cl. 200—150)

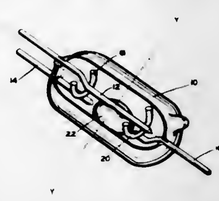


1. In an oil circuit breaker, including a first and second elongated bushing supported from the top of said oil circuit breaker, and a first and second interrupter secured to the ends of said first and second elongated bushings; said first and second interrupters having reaction forces generated thereon during circuit breaker operation having at least components toward one another; a bracing structure connected to end portions of said first and second elongated bushing adjacent said first and second respective interrupters; said bracing structure including an elongated insulated bracing member extending from said end portion of said first elongated bushing to said end portion of said second elongated bushing and a first and second positive clamp means; said first and second positive clamp means having respective first clamping portions rigidly connected to said end potrions of said first and second elongated bushings; said first and second positive clamp means having respective second clamping portions rigidly connected to respective end surfaces of said elongated insulating bracing member; said elongated bracing member being comprised of a first and second parallel spaced rod; the end surfaces of said first and second parallel spaced rods respectively extending beyond said first and second end portions of said first and second elongated bushings and on either side of said first and second end portions.

3,198,919
MERCURY SWITCH

Roman Tettke, Sr., Rutherford, and William U. Henrich, Cedar Grove, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Aug. 1, 1962, Ser. No. 214,026
3 Claims. (Cl. 200—152)

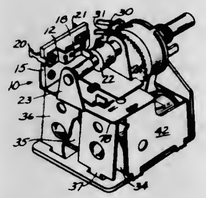


1. An electrical switch comprising a tubular envelope, said envelope being movable about a longitudinal axis and about a lateral axis, a common electrode extending into the envelope in parallel relation to the longitudinal axis thereof, a second electrode extending into the envelope in parallel relation to the longitudinal axis and in spaced relation to the common electrode, a third electrode extending into the envelope and in parallel relation to the longitudinal axis and in spaced relation to the common electrode, said second and third electrodes having inner ends thereof positioned within said envelope in spaced relation one to the other, a U-shaped contact member mounted at its base to the inner end of said second electrode, and another U-shaped contact member mounted at its base to the inner end of said third electrode, said U-shaped contact members forming a mercury passage between its upper end and being positioned in spaced relation one to the other and to the lateral axis of said envelope, and a globule of mercury continuously engaging said common electrode and arranged to selectively contact said U-shaped contact members upon a tilt of the envelope about said lateral axis, and the selected U-shaped contact member retaining the globule of mercury in said selected contacting relation upon the switch envelope being tilted about the longitudinal axis thereof and releasing the globule of mercury through the passage formed between its upper ends upon said tubular envelope being tilted back about its lateral axis.

3,198,920
APPARATUS FOR OPERATING AN ELECTRIC SWITCH

Wayne A. Barden, Elkhart, Ind., and Stanley O. Bender, Asheville, N.C., assignors to CTS Corporation, Elkhart, Ind., a corporation of Indiana

Filed Dec. 22, 1961, Ser. No. 161,718
5 Claims. (Cl. 200—153)

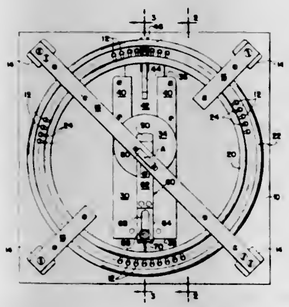


4. In a remotely controlled switching device, the combination of a frame, a switch mounted on the frame, a shaft journalled on the frame, a toothed circular member fixedly secured to the shaft and provided with a cam surface, means normal to the periphery of the toothed circular member engaging the cam surface and the switch, and electromagnetic means for rotating the toothed circular member incrementally through a predetermined angle for actuating the switch.

3,198,921
CIRCULAR MULTIPLE CONTACT INDEXING SWITCH APPARATUS

Henry H. Clinton, Ridgewood, Clinton, Conn.

Filed June 1, 1962, Ser. No. 199,444
9 Claims. (Cl. 200—153)



9. Electrical switch apparatus comprising an annular series of spaced terminal posts each having a switch arm movable radially of the series of terminal posts and biased radially inwardly, an inner contact ring normally engaged by the switch arms and a coaxial outer contact ring engageable by said switch arms, support means rotatable on the center of said series of terminal posts, radially reciprocable switch actuating means mounted on said support means to engage and move radially outwardly said switch arm to switch it from the inner to the outer contact ring, movable indexing means mounted on said support means to cooperate with the series of terminal posts, and driven crank means interconnecting said switch actuating means and said indexing means to move each switch arm in sequence from said inner ring to said outer ring and back.

3,198,922
HANDLE FOR PILOT'S LEVER

Etienne Rohacs, Saint-Gratien, France, assignor to Société anonyme dite: Société d'Applications des Machines Motrices

Filed May 22, 1962, Ser. No. 196,680
Claims priority, application France, May 25, 1961, 862,789
5 Claims. (Cl. 200—157)



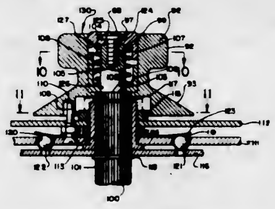
1. An aircraft pilot's handle unit having control buttons thereon, comprising:

(a) a vertically disposed pilot's handle shaped to impose a fixed position to the pilot's hand when grasped;
(b) a pair of control buttons on the top rear surface of said handle and disposed adjacent to each other so that either may be actuated by the pilot's thumb;
(c) one of said buttons being an ordinary push type unit;
(d) the second of said buttons controlling the trim system of the aircraft;
(e) a third control button on the front surface of said handle adjacent to the top thereof and in line with said one button;
(f) a trigger pivotally mounted on said handle between said first and third buttons and of sufficient length so that when in the inoperative position it extends over and covers said one electric control button to prevent accidental depression thereof;
(g) the trigger when in the operative position extending down over said third control button so that it may be pressed by the forefinger of the pilot to thereby activate said third control button; and
(h) said second control button having four positions for dive, climb, left turn, and right turn.

3,198,923
ROTOR INDICATING DEVICE

Robert W. Tripp, Eastchester, N.Y., assignor to Inductosyn Corporation, Carson City, Nev., a corporation of Nevada

Original application May 10, 1961, Ser. No. 109,078, now Patent No. 3,105,142, dated Sept. 24, 1963. Divided and this application Feb. 4, 1963, Ser. No. 255,777
7 Claims. (Cl. 200—167)



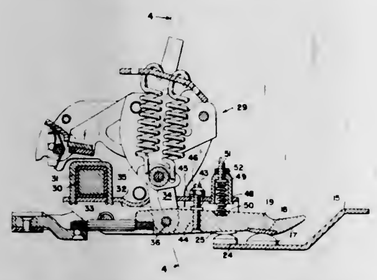
1. A rotor indicating device comprising a shaft having an axis, an adjustable handle on said shaft, said shaft having a plurality of rotary positions having a uniform spacing corresponding to movement of said shaft through equal

angles from one position to the next position, means for arresting the movement of said shaft at each of said positions, and means including a coupling between said shaft and said handle having an array of uniformly spaced members for selectively locating said handle on said shaft in various uniformly spaced rotary positions having an angular spacing with respect to the axis of said shaft the same as the corresponding angular spacing of said shaft positions.

3,198,924
INDEPENDENT MEANS FOR ADJUSTING CONTACT PRESSURE AND CONTACT ARM POSITION

John C. Brumfield, Philadelphia, and Wilson W. Poulton, Jr., Broomall, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 21, 1962, Ser. No. 174,767
11 Claims. (Cl. 200—170)

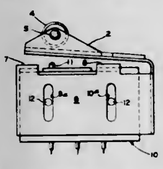


7. A circuit breaker comprising a pair of cooperating contacts; a contact arm carrying one of said contacts; operating means connected to said contact arm for moving said contact arm between a first and a second position wherein said contacts are disengaged and engaged, respectively; first means connected to said contact arm for establishing said first position; and adjustable second means connected to said contact arm for establishing pressure between said contacts when said arm is in said second position; said second means constructed and operatively positioned such that said first position remains fixed while said second means is adjusted; said operating means including a carrier having a pivot means to which said contact arm is mounted; said second means comprising spring means urging said contact arm about said pivot means toward the other of said contacts; said spring means positioned more remote from said pivot means than said first means.

3,198,925
MINIATURE SWITCH ACTUATOR WITH ADJUSTABLE MOUNTING MEANS

Charles G. Starrantino, Fair Lawn, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Aug. 27, 1962, Ser. No. 219,684
5 Claims. (Cl. 200—172)

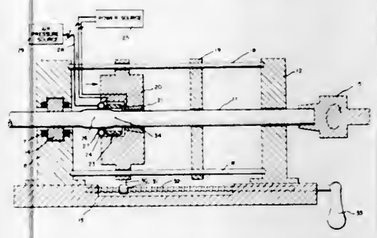


1. An actuating mechanism for operating a switch by moving a plunger with limited travel, comprising a U-shaped body, a leaf spring secured to the body for engaging the plunger to operate the switch and having a portion extending along the base of the U, stop means formed by the base of the U for limiting movement of the leaf spring toward the body, and means for adjustably mounting the switch within the body with the leaf spring engaging the stop means and the plunger and operating the switch without plunger overtravel.

3,198,926
METHOD FOR UPSETTING ELONGATED ARTICLES

Robert B. Melmoth, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Sept. 7, 1961, Ser. No. 136,662
4 Claims. (Cl. 219—7.5)

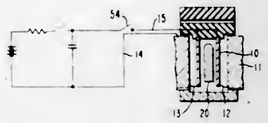


1. A method of upsetting an elongated metallic article in a plane perpendicular to its axis comprising the steps of rotating said elongated article, heating a first portion of said article to soften said first portion, securing the article on one side of said first portion against axial displacement, impinging a cooling fluid upon the surface of said first portion, partially supporting said article against radial displacement only by guide means adjacent to said first portion, applying an axial thrust to said article from the other side of said first portion, heating a second portion of said article sufficiently to soften said second portion, impinging a cooling fluid upon the surface of said second portion, progressively moving said guide means away from said upset first portion with respect to said elongated article through successive portions at a predetermined rate while maintaining the axial thrust on and rotation of said article to upset said second portion so that said second portion forms a continuous mass with said first portion.

3,198,927
ELECTROMAGNETIC COMPRESSION APPARATUS

Henry Joseph Stinger, Mendenhall, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Original application July 21, 1960, Ser. No. 44,461, now Patent No. 3,149,372, dated Sept. 22, 1964. Divided and this application June 25, 1964, Ser. No. 378,017
4 Claims. (Cl. 219—7.5)

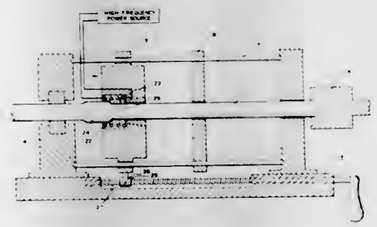


1. Electromagnetic apparatus for subjecting a mass of material to concentrated shock and pressure waves comprising high power electrical supply means, a first fixed position conductor member provided with a cavity therein, a second movable conductor member positioned in said cavity and spaced from said first conductor member, means for supporting a mass of material adjacent said second conductor member, electrical means connecting said power supply means to said first and second conductor members for applying rapid high power electrical impulses thereto to cause sudden currents to flow in said conductor members in directions which create high intensity opposing magnetic field effects with a resultant reaction on said conductors tending to move said conductors in a direction such that high energy pressure impulses and shock waves are applied to said mass of material by said second conductor.

3,198,928
METHOD FOR UPSETTING ELONGATED ARTICLES

William D. Allison, Grosse Pointe Farms, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Aug. 28, 1961, Ser. No. 134,236
4 Claims. (Cl. 219—7.5)



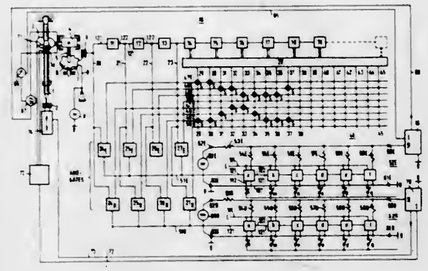
1. A method of upsetting an elongated metallic article in a plane perpendicular to its axis comprising the steps of heating a first portion of said article to sufficiently soften said first portion, securing the article on one side of said first portion against axial movement, partially supporting said article against radial displacement only by guide means adjacent to said first portion, applying an axial thrust to said article from the other side of said first portion sufficiently to upset said first portion, heating a second portion of said article sufficiently to soften said second portion, progressively moving said guide means away from said upset first portion with respect to said article through successive portions at a predetermined rate while maintaining the axial thrust on said article to upset said second portion so that said second portion forms a continuous mass with said first portion.

3,198,929
ELECTRIC CONTROL APPARATUS FOR ZONE MELTING OF SEMICONDUCTOR RODS

Hans Stut, Lochham, near Munich, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Dec. 6, 1962, Ser. No. 243,973
Claims priority, application Germany, Dec. 7, 1961, S 77,026
5 Claims. (Cl. 219—10.77)

1. Electric control apparatus for floating-zone melting of semiconductor rods, comprising two coaxial rod-end holders jointly defining a rod axis, an electric heating device movable along said axis for producing a molten zone in the rod being processed, holder displacing means for axially displacing one of said holders relative to the other to vary the cross section of the molten zone, electric power supply means connected to said device and being controllable for varying the heating energy transmitted to the rod being processed, a digital control system connected to said displacing means and said power supply means for conjointly controlling said cross section and said heating power in dependence upon the travel of said heating device along the rod axis, said control system having counting-pulse transmitter means in operative connection with said heating device for issuing a given number of pulses for given travel steps of said device, and said



system having two programming means for presetting a travel-responsive power program and a travel-responsive cross-section program respectively, whereby the heating power supplied to the zone and the zone cross section are controlled in unit increments of change corresponding to the steepness of the respective programs.

3,198,930
CHAIN WELDING

Don M. Glendenning and Eugene W. Onulak, Huntington, Ind., assignors to The Locke Steel Chain Company, Huntington, Ind., a corporation of Connecticut

Filed Feb. 4, 1963, Ser. No. 255,977
5 Claims. (Cl. 219—93)



1. The method of securing an attachment to a selected link of a continuous chain, comprising the steps of periodically advancing said link to a first station, projection welding said attachment to said link at said first station, transferring said link to and continuously feeding it through an arc welding station, and welding said attachment to said link as the link and attachment are continuously fed past said latter station.

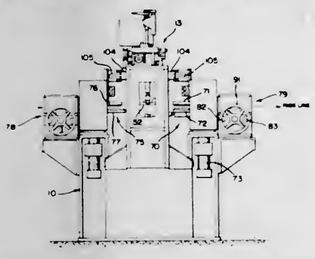
3,198,931
SHEARWELDER

Raymond T. Klempay, Youngstown, Ohio, assignor to The McKay Machine Company, Youngstown, Ohio, a corporation of Ohio

Filed Jan. 10, 1963, Ser. No. 250,546
11 Claims. (Cl. 219—124)

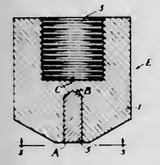
1. In a shearwelder having a pass line to receive leading and trailing ends of strip material, centering means to position said trailing end, clamp means to hold said trailing end, shearing means in said pass line for trimming said trailing end, retaining pin means to hold said shearing means in alignment, means to hold said trailing end above said pass line while a leading end is introduced,

stop means to limit the travel of said leading end a short distance past said shearing means, centering means to align said leading end with said trailing end, clamp means



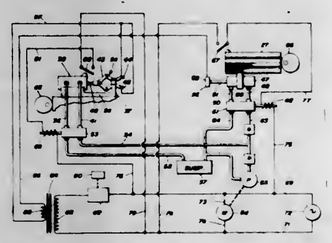
to hold said leading end while said shearing means trims said end, and means displacing said shearing means in the pass line to clamp, spread, and weld said ends.

3,198,932
ARC ELECTRODE
Merle H. Weatherly, Indianapolis, Ind., assignor to Union Carbide Corporation, a corporation of New York
Filed Mar. 30, 1962, Ser. No. 183,880
35 Claims. (Cl. 219—145)



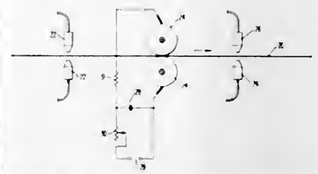
1. A non-consumable electrode capable of maintaining a stable electrical arc in a reactive gas atmosphere comprising a fluid cooled metal holder having a high heat conductivity and an insert of at least one metal taken from the class consisting of zirconium, thorium, lanthanum and strontium, provided in said holder as the arc attaching portion of said electrode.

3,198,933
METAL FORMING APPARATUS
Edward C. Hall, Holden, Mass.
(% Hall Inc., 96 Dewey St., Worcester, Mass.)
Filed Mar. 15, 1963, Ser. No. 265,486
3 Claims. (Cl. 219—154)



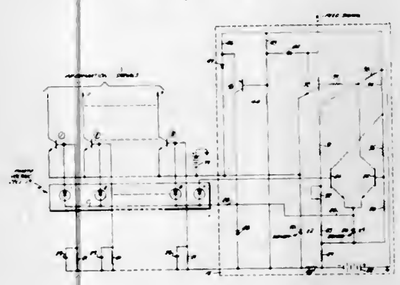
1. A metal-forming apparatus, comprising
(a) a multi-station workhead in which an elongated rod is introduced at a first station and is moved successively from one station to another for subsequent machining operations,
(b) a heating means including a first electrode movable from an operative position adjacent one of the stations laterally of the rod at which position the electrode makes electrical contact with the rod, to an inoperative position removed from the said station,
(c) electrical apparatus for causing the heating means to head the rod when it is in operative position, and
(d) upsetting means located at the said one of the stations in line with the rod and movable longitudinally toward and away from the rod for electrical contact with the rod in that station and including a second electrode forming part of the heating means, the upsetting means being operative when the said first electrode is in the said operative position.

3,198,934
WOUND-PAPER CAPACITORS AND MANUFACTURING METHOD AND APPARATUS
William Dubilier, New Rochelle, N.Y., assignor to Cornell-Dubilier Electric Corporation, South Plainfield, N.J., a corporation of Delaware
Filed June 27, 1961, Ser. No. 120,000
5 Claims. (Cl. 219—384)



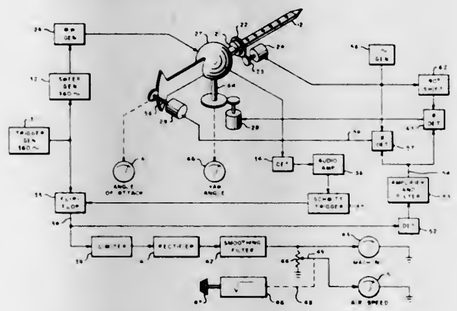
1. The method of treating capacitor paper comprising the steps of passing bare dielectric paper between opposed electrodes in contact with the bare opposite surfaces of the paper and therewith applying to the paper the limited electrical energy stored in a recharge-restricted capacitor proportioned in relation to the paper to eliminate conductive particles therefrom, and thereafter subjecting opposite surfaces of the paper directly to suction for removal of loose particles remaining after the electrical treatment as aforesaid.

3,198,935
RECORD READER
George W. Floyd, Los Angeles, Calif., assignor, by mesne assignments, to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 27, 1960, Ser. No. 78,747
7 Claims. (Cl. 235—61.11)



1. A reading control circuit for a record member comprising a record member having groups of information marks including a timing mark for each group of information marks, photovoltaic sensing means comprising a plurality of separate sensing elements arranged and spaced in accordance with the arrangement of information and timing marks, each of said sensing elements providing an electrical signal in response to light impinging thereon, circuit means connected to the sensing means for separately receiving the electrical signals corresponding to each sensed information mark and normally arranged in a non-conductive mode whereby an electrical signal of an amplitude greater than a predetermined threshold level corresponding to a sensed information mark from said sensing means in combination with a conditioning signal is necessary to render same conductive, and switching circuit means connected to the sensing means for receiving only the electrical signal corresponding to a sensed timing mark and switchable in response thereto, said switching circuit means being further connected to said circuit means to condition the conductivity thereof whereby said conditioned circuit means will provide simultaneous output signals corresponding only to each sensed information mark upon receiving said electrical signal representative of the sensed information mark.

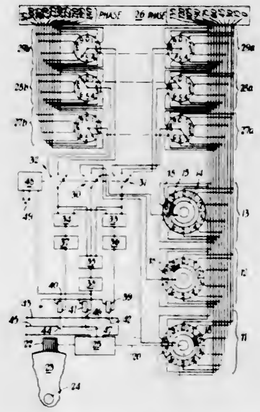
3,198,936
SYSTEM FOR DETERMINING MACH NUMBER VELOCITY
Robert A. Flower, White Plains, N.Y., assignor to General Precision Inc., a corporation of Delaware
Filed June 5, 1962, Ser. No. 200,180
9 Claims. (Cl. 235—151)



1. A system for determining the Mach number velocity of a supersonic aircraft comprising,
means carried by the nose of said aircraft for generating an air pressure cone having a cone angle dependent on the Mach number velocity of the aircraft,
means carried by said aircraft for radiating microwave signals in a wavefront forming a portion of the surface of a cone and for directing said wavefront toward the interior surface of said air pressure cone and for receiving echo signals reflected by said air pressure cone, the apex of the radiated cone being in substantial coincidence with the apex of said air pressure cone,
and means operated by said echo signals producing an output representative of the Mach number velocity of said aircraft.

3,198,937
DIGITAL POSITION-INDICATING UNITS ADAPTED FOR USE IN APPARATUS FOR DETECTING AND SETTING THE POSITION OF A MOVABLE OBJECT, SUCH AS A ROTATABLE SHAFT; AND SUCH APPARATUS
Antony Martin Wooster, 91 North St., Burwell, Cambridge, England
Filed Mar. 16, 1962, Ser. No. 180,285
Claims priority, application Great Britain, Mar. 17, 1961, 9,935/61
10 Claims. (Cl. 235—154)

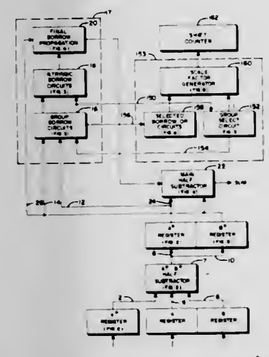
1. Apparatus for detecting and setting the position of a movable object, comprising: a signal generator having a series of output channels and adapted to provide simultaneously a corresponding series of output electrical signals of generally similar character but distinguished from one another by serially progressive differences of one of three characteristics thereof, namely amplitude, frequency and phase; a digital position-indicating unit comprising a plurality of successively linked sections, including a first and a last section, each of which sections comprises a plurality of sequentially disposed input stator elements, each adapted to have applied to it a respective input electrical signal, and a reversibly moving part which, on continued movement without reversal, assumes in sequence each of a plurality of sequential positions, each corresponding to a respective one of the input stator elements, to each of which sequential positions the moving part returns periodically on said continued movement, the moving part of the said first of the sections being adapted for mechanical connection to, and thereby for movement proportional to movement of, the movable object whose position is to be indicated, and the moving part of each succeeding section being so connected to the respective preceding section that, on movement of the moving arm of the said preceding section from one to the other of a selected pair of mutually adjacent sequential positions thereof, and dependent on the direction of movement thereof, the moving arm of the said succeeding section



is moved from that one of its sequential positions which it previously occupied to a respective one of the two positions sequentially adjacent thereto, each section further comprising an output stator element and the moving part of each section being so shaped, and so disposed relative to the output stator element and to the input stator elements of the respective section, that in each of its sequential positions it provides between the output stator element and the input stator element which corresponds to that sequential position one of two relationships, namely a capacitive coupling and an absence of such coupling, and between the output stator element and each other input stator element the other of those two relationships, and the input stator elements of each section being connected each to a respective one of the signal generator output channels, in such manner that each input stator element of a section, except those two input stator elements to which correspond the said selected pair of mutually adjacent sequential positions of the moving part of that section, is connected to a signal generator output channel which is serially between the two output channels thereof to which the sequentially preceding and sequentially following input stator elements of that section are respectively connected, whereby each section of the position-indicating unit is adapted to provide at its output conductor an output signal which is distinctive of the sequential posi-

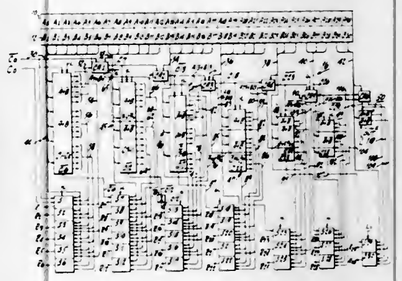
tion of its moving part; a plurality of position-selector switches, each corresponding to a respective one of the sections of the position-indicating unit, each having a plurality of input terminals of which each corresponds to a respective one of the input stator elements of that section and is connected to the same signal generator output channel thereof; an output terminal for each position-selector switch, connectable to any selected one of the input terminals thereof, whereby each position-selector switch is adapted to provide at its said output terminal an output signal which is distinctive of the selected one of its input terminals; comparator means adapted to compare an output signal from a section of the position-indicating unit with an output signal from the corresponding position-selector switch and to provide three mutually alternative output indications, indicating respectively that the output signal from the section of the position-indicating unit is distinctive of an input stator element thereof which is connected to a signal generator output channel which is serially before, the same as, and serially after the output channel to which is connected that input terminal of the position-selector switch to which the output terminal thereof is also connected; reversible motor means operatively connected to vary the position of the said movable object whose position is to be set; motor switch means responsive to the said output indications of the comparator means to energise the motor means so as to move the said movable object in the direction required to produce the second-mentioned output indication of the comparator means and, on such second-mentioned output indication being provided by the comparator means, to stop the motor means; and comparator input switch means adapted to apply to the comparator means first the output signals from the last section of the position-indicating unit and from the position-selector switch corresponding thereto and then, in turn, the output signals from each other section and from the respective position-selector, in inverse succession ending with the first section and the position-selector switch corresponding thereto.

3,198,938
SCALE FACTOR DEVICE
George F. Marette, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 9, 1962, Ser. No. 193,526
14 Claims. (Cl. 235—164)



9. A device for generating the scale factor of a binary number comprising: a half-subtractor; means for applying a zero value to said half-subtractor as one operand and the negative absolute value of said binary number to said half-subtractor as a second operand, said half-subtractor producing difference digits and borrow digits; a plurality of group borrow enable circuits each responsive to a predetermined group of said difference digits for generating a group borrow enable signal when all of the difference digits of the group are zero; a group borrow circuit corresponding to each of said group borrow enable circuits, each of said group borrow circuits being responsive to a group select signal, a predetermined group of said difference digits, and a predetermined group of said borrow digits for producing a group borrow signal at one of a plurality of outputs; group select means responsive to said group borrow enable signals for applying a group select signal to the group borrow circuit corresponding to the highest order group borrow enable circuit which does not produce a group borrow enable signal; and means responsive to said group select means and the output from said selected group borrow circuit for producing an indication of the scale factor of said binary number.

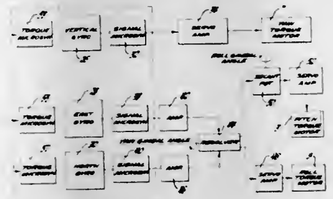
3,198,939
HIGH SPEED BINARY ADDER-SUBTRACTOR WITH CARRY RIPPLE
Walter A. Helbig, Woodland Hills, and Ronald J. Woldrich, Northridge, Calif., assignors to Radio Corporation of America, a corporation of Delaware
Filed Oct. 17, 1961, Ser. No. 145,695
7 Claims. (Cl. 235—175)



1. In a binary adder, the combination comprising a sum stage arranged to receive input signals representing two summand signals A_k and B_k and input carry signals C_k and C_{k-1} and to provide an output representing either a binary sum of said summand and carry signals or the logical sum of said summand signals, said stage comprising a first gating circuit for receiving as inputs a signal (A_k+B_k) and a signal representing the complement of said carry signal C_k and providing an output only when both said first circuit inputs are present, a second gating circuit for receiving as inputs said carry signal C_{k-1} and the complements of said summand signals A_k and B_k and providing an output only when all said second circuit inputs are present, and a third gating circuit for receiving as inputs said summand signals A_k and B_k and the carry signal C_{k-1} and providing an output only when all said third circuit inputs are present, the outputs of said gates being connected to a common junction point to provide said sum stage output.

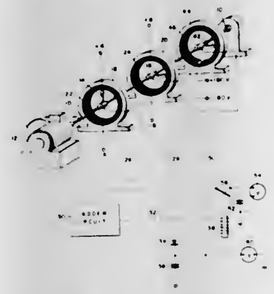
3,198,940
INERTIAL NAVIGATION SYSTEM
Edward J. Loper, Waukesha, and Kenneth J. Schlager, Wauwatosa, Wis., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 1, 1959, Ser. No. 844,815
9 Claims. (Cl. 235—187)

1. A latitude computer comprising a stable platform adapted for rotation about three mutually orthogonal axes, a north gyroscope, an east gyroscope ,and a vertical gyroscope mounted on the platform with their input axes mutually orthogonal, each of said gyroscopes including a signal generator and a torque motor connected with its output shaft, a stabilization servo system connected between the signal generators and the platform, a north erection loop including an east pendulum mounted on the platform, a north gyroscope memory device connected between the east pendulum and the torque motor on the north gyroscope, an east erection loop including a north pendulum mounted on the platform, an east gyroscope memory device connected between the north pendulum and the torque motor on the east gyroscope whereby the platform is



erected to the local vertical direction, a vertical erection loop including a vertical gyroscope memory device connected between the east gyroscope memory device and the torque motor on the vertical gyroscope whereby the platform is oriented with the input axis of the east gyroscope pointed east and signal quantities corresponding to the earth rate sensed by the gyroscopes are developed by the respective memory devices, and computer means connected with the north gyroscope memory device and the vertical gyroscope memory device for developing a latitude signal quantity corresponding to the arctangent of the ratio of the signal quantities developed thereby.

3,198,941
ANALOG COMPUTER
Joshua L. Halbert, Jr., Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Aug. 27, 1962, Ser. No. 219,600
4 Claims. (Cl. 235—191)



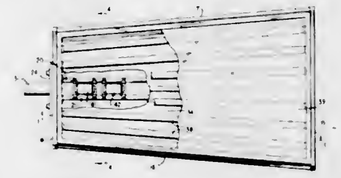
1. In an analog computer including a rotatable shaft, a pair of electrical wipers mounted on the shaft, said wipers being arcuately spaced by a 90° angle, a pair of rigid potentiometers mounted so as to be coaxial with the shaft, each potentiometer having a coil therein wound so that the voltage on the corresponding wiper is proportional to the sine of the angle through which the wiper has rotated, an adder circuit for adding the voltages from said wipers and producing an output signal, means for indicating the maximum output voltage from the adder circuit thus indicating the resultant amplitude of the input voltages to said pair of potentiometers, a third wiper mounted on said shaft and arcuately lined up with one of the other two wipers, a third rigid potentiometer mounted so as to be coaxial with the shaft, said third potentiometer having a coil therein wound so that the voltage on the third wiper is proportional to the number of degrees the wiper is from a predetermined position, the improvement comprising:

a voltage indicating means;

a normally open switch in a line leading from the third wiper to said voltage indicating means; and

means operated at substantially the same time as the output voltage from the adder circuit is at a maximum to close said normally open switch whereby the phase angle between said resultant and the input voltage to the potentiometer having the wiper lined up with said third wiper is indicated.

3,198,942
FLUORESCENT LIGHT FIXTURE
Dominick J. Di Lello, South Plainfield, N.J., and Cornelius J. Young, 9 Condit Road, Mountain Lakes, N.J.; said Di Lello assignor to said Young
Filed Apr. 5, 1963, Ser. No. 270,834
6 Claims. (Cl. 240—25)



1. A fluorescent lighting fixture for cantilever mounting at one end to a supporting standard comprising a casing including interconnected, spaced end and side walls and a top wall, a cantilever frame including a pair of spaced channel members secured at each end to first, interior rigid plate members, said casing enclosing said frame and being secured thereby by fastening means between said end walls and said plates, one or more ballast units, means connected to the channel members to mount said ballast units between said channel members in heat conducting, contact relationship with the top wall of the casing, a second rigid plate exterior to one said end wall and being inconnected through said wall with one interior plate member, coupling means rigidly connected with the exterior plate whereby to adapt the fixture to cantilever mounting on a supporting standard, a reflector carried by and within the casing, said reflector having a central, upwardly facing pocket enclosing the spaced channel members of the cantilever frame and said ballast units, and two downwardly facing, open channels, one to either side of said pocket, and wherein a plurality of tube socket means are provided at each end of each reflector channel whereby to support a plurality of fluorescent tubes in each said reflector channel.

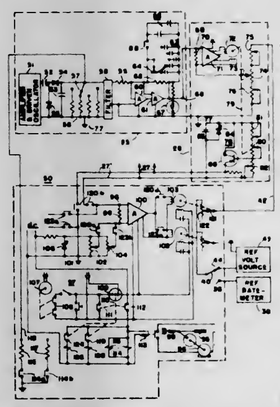
3,198,943
PANEL TYPE ILLUMINATION DEVICE AND CONNECTOR THEREFOR
John M. Pistey, Fairfield, Conn., assignor to General Electric Company, a corporation of New York
Filed May 1, 1961, Ser. No. 108,704
9 Claims. (Cl. 240—51.11)



1. An electric illumination device comprising a generally flat electric lamp, said lamp having a peripheral outline including a plurality of sides, an elongated pe-

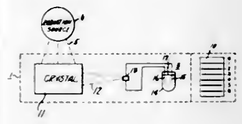
ripheral slot formed in one of said sides between two oppositely disposed lamp bases, each of said lamp bases including a contact means facing toward the other opposed lamp base, and an elongated lamp connector for energizing said lamp, said connector being disposed within said peripheral slot and interengageable with the contacts of said lamp bases thereby to form a lamp and connector combination, said elongated lamp connector having a hollow housing and a plurality of lead wires disposed within the housing.

3,198,944
X-RAY EMISSION ANALYZER WITH STANDARDIZING SYSTEM AND NOVEL SWITCH MEANS
Avery D. Furbee, Milwaukee, Wis., assignor to General Electric Company, a corporation of New York
Filed Nov. 6, 1961, Ser. No. 150,387
1 Claim. (Cl. 250—51.5)



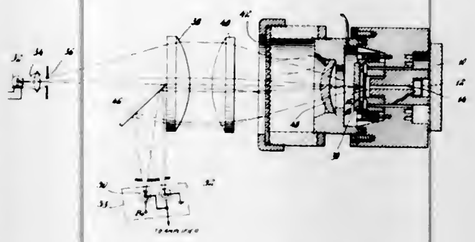
In an X-ray emission analyzer having a source of primary X-rays for exciting chemical elements in a sample of unknown element quantity to emit X-radiation that is characteristic of an element, detector means for the characteristic radiation of one element that develops electric pulses the development rate of which depends upon the quantity of the element present in the sample, means for integrating said pulses to develop a first voltage that is proportional to the quantity of the element, means for accommodating a standard specimen including the same element in said primary rays to the exclusion of said sample, which standard specimen causes a second voltage to be developed by said detector and integrating means on a first occasion, means for establishing and storing a voltage having a predetermined relationship with the second voltage, means for comparing said second voltage only with said same established voltage during a standardizing interval on another occasion, means responsive to the difference between said established voltage and said second voltage on the other occasion for effecting the desired proportionality between the first voltage and the quantity of the element, said integrating means including a resistor and capacitor combination on which capacitor said first voltage normally appears as the output voltage that is indicative of the quantity of the element, and switch means in circuit for disconnecting said capacitor in a precharged condition to retain the first output voltage that was developed with the sample of unknown element quantity in the primary X-rays, said switch means being adapted to reconnect said capacitor in its precharged condition after the standard specimen is removed from the primary X-rays at the end of the standardizing interval.

3,198,945
RADIATION DOSIMETER PROVIDING A VISUAL REPRESENTATION OF TOTAL DOSE
Roger A. Dewes and Edmund E. Goodale, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
Filed May 16, 1961, Ser. No. 110,522
5 Claims. (Cl. 250—71.5)



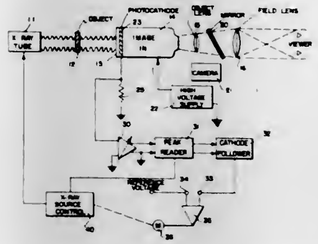
3. A radiation dosimeter comprising a phosphor crystal which emits light, the intensity of which is proportional to the intensity of radiation, a photovoltaic cell which provides an electric current output which is proportional to the intensity of light, means to optically couple said phosphor crystal to said photovoltaic cell, a visual current integrator to provide a color indication in response to the total electrical charge passed therethrough, and means to serially connect the output current of said photovoltaic cell to pass through said visual current indicator whereby the color indication of said visual current integrator is indicative of the total radiation dose.

3,198,946
APPARATUS FOR SENSING POSITION OF A RADIATION REFLECTOR
John G. Atwood, West Redding, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Oct. 26, 1960, Ser. No. 65,073
14 Claims. (Cl. 250—83.3)



1. A position sensing device for measuring changes in the position of a radiation reflector which comprises radiation source means; means for directing radiation from said source means onto said reflector; radiation limiting means positioned optically between said source means and said reflector for dividing the radiation into discrete bands before it is incident on said reflector; optical imaging means positioned to form a real image of said limiting means in the reflected radiation from said reflector; radiation directing means positioned along the optical axis of the reflected radiation to direct a first portion of each band of the radiation from said real image in a first direction and direct a second portion of each band of the radiation from said real image in a second direction; and detector means responsive to both of said first and second portions of radiation.

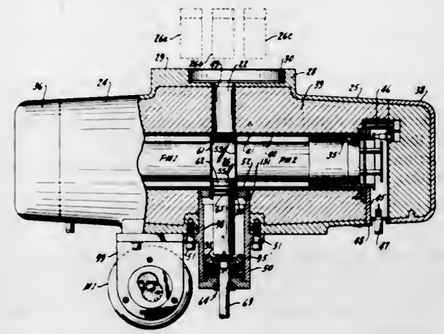
3,198,947
APPARATUS FOR PRODUCING VISUAL IMAGES OF X-RAYED OBJECTS
Robert A. Arrison, Jr., Wellesley, and Cornelius G. van der Velden, Framingham, Mass., assignors, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Feb. 21, 1961, Ser. No. 90,741
5 Claims. (Cl. 250—99)



1. Apparatus for providing a visual image of an X-rayed object comprising an X-ray generator adapted to emit a beam of X-rays through said object; a high voltage source coupled to said X-ray generator, the quantum energy of said emitted X-rays being related to the value of said high voltage; an image intensifier element disposed in a manner to receive said X-ray beam after it has passed through said object, said image intensifier having an input phosphor and an output phosphor, said input phosphor being adapted to emit light in response to impingent X-rays; a photoelectric cathode included within said image intensifier element and disposed in juxtaposition to said input phosphor, said photoelectric cathode being adapted to emit electrons in response to light impingent upon it from said input phosphor; means adapted to accelerate said electrons emitted from said photo cathode to said output phosphor for producing a visual image thereon at increased brightness relative to the brightness of said input phosphor; signal generating means coupled to said photo cathode and adapted to provide as an output a voltage signal having an amplitude varying in accordance with variations in the number of electrons emitted from said photo cathode; amplifying means coupled to the output of said signal generator and adapted to provide as an output said signal generator output signal amplified by a preselected factor; a balancing amplifier having first and second input terminals and adapted to provide an output in response to any difference in voltage between said first and second input terminals; a source of reference voltage coupled to said first input terminal, said second input terminal being coupled to the output of said amplifier means; means responsive to the output of said balancing amplifier for varying the value of said high voltage in a manner tending to decrease any voltage imbalance between said first and second input terminals on said balancing amplifier.

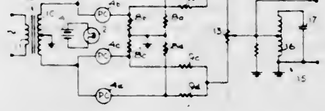
3,198,948
APPARATUS FOR MEASURING ACTIVITY LEVELS OF RADIOACTIVE SAMPLES
Robert E. Olson, Glen Ellyn, Ill., assignor to Packard Instrument Company, Inc., Brookfield, Ill., a corporation of Illinois
Filed Apr. 15, 1963, Ser. No. 273,110
21 Claims. (Cl. 250—106)

1. A light-tight sample transfer mechanism comprising, in combination, a stationary detection well, shutter means for effecting a light-tight seal adjacent the upper end of said well, an elevator disposed within said well, sealing means carried by said elevator for effecting a light-tight seal with the wall of said well during periods when said shutter means are open, drive means for effecting vertical movement of said elevator, said sealing means being normally spaced from the wall of said well as said sealing means are carried vertically through said well so as to be



free of rubbing contact therewith, and means for effecting deformation of said sealing means outwardly into engagement with the wall of said well as an incident to vertical movement of said elevator so as to establish a light-tight seal between said elevator and the wall of said well.

3,198,949
LINE FOLLOWING APPARATUS FOR A GRAPHICAL RECORDER INCLUDING SYMMETRICAL PHOTOCELL ARRANGEMENTS
Andres O. Holdo, San Gabriel, Calif., assignor to F. L. Moseley Co., a corporation of California
Filed Nov. 21, 1960, Ser. No. 70,502
16 Claims. (Cl. 250—202)

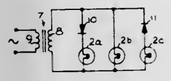


1. A line following apparatus for generating signals of particular polarity and magnitude in accordance with the position of a line following element relative to a particular line segment comprising a source of illumination, a plurality of photocells positioned to receive light emanating from said source of illumination, means for providing a reference potential at a circuit midpoint between said photocells, means electrically connecting said photocells in a circuit having an electrically symmetrical arrangement with respect to the reference potential, means for applying potentials of equal magnitude but opposite polarity to corresponding points in said circuit, and means mechanically linked to the line following element and responsive to the signals derived from said circuit for controlling the position of the line following element.

3,198,950
LINE FOLLOWING APPARATUS HAVING A LIGHT SOURCE ENERGIZED BY SELECTED PHASES OF A REFERENCE VOLTAGE
Francis L. Moseley, Pasadena, Calif., assignor to F. L. Moseley Co., a corporation of California
Filed Nov. 21, 1960, Ser. No. 70,813
15 Claims. (Cl. 250—202)

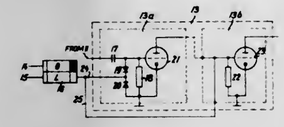
1. A line sensing device for an automatic line following apparatus comprising a single photocell, a plurality of lamps, a source of reference voltage, means for energizing

certain of the respective lamps with different selected portions of the waveform occurring at different times in the cycle of said reference voltage, means for reflecting light from said lamps towards said photocell, and means for



generating a signal from said photocell which is indicative of the position of said line sensing device relative to a portion of said reflecting means having a distinguishing reflecting capability.

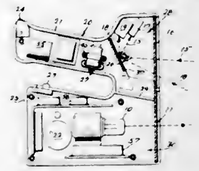
3,198,951
PHOTOELECTRIC CONTROL DEVICE FOR A FLAW DETECTOR FOR MOVING WEBS
Felix Lentze, Darmstadt, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed May 31, 1962, Ser. No. 198,911
Claims priority, application Germany, May 31, 1961, L 39,107
5 Claims. (Cl. 250—219)



1. In a flaw detector for moving webs, having means for directing a light beam toward a surface of a moving web including means for converging the light beam to a light spot on the web and for moving the spot perpendicularly to the direction of movement of the web, further having photoelectric means positioned to be responsive to the reflection of said light spot by the web and producing a flaw detector signal, further having a control signal generator responsive to the passage of said light spot over the edges of the web and producing an enabling signal when said spot enters and a disabling signal when it leaves the web, the combination comprising: circuit means including a variable differentiating stage and a gate connected to said photoelectric means so as to be responsive to said flaw detector signal, circuit means for feeding said enabling and disabling signals to said gate for gating said flaw detector signal, switch means connected to said differentiating stage for controlling the variation thereof, and circuit means for feeding said enabling and disabling signals to said switch means so that the time constant of said differentiating stage is increased after said enabling signal and decreased after said disabling signal.

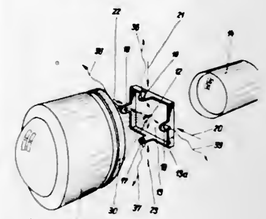
3,198,952
PHOTOSENSITIVE OBSTACLE AND CURB DETECTION DEVICE FOR THE BLIND
Thomas A. Benham, Haverford, and Joel Malvern Benjamin, Jr., Philadelphia, Pa., assignors to The Corporation of Haverford College, Philadelphia, Pa., a non-profit corporation
Filed Sept. 15, 1961, Ser. No. 138,524
25 Claims. (Cl. 250—221)

1. A device for use by the blind employing energy in the visible or near visible light frequency ranges and employing a triangulation system comprising a light source, a first means for focusing light from that source into a beam that is capable of producing a small spot of light on a surface at some distance, a second means for focusing light reflected from said spot onto detector means, means to pulse the light, gate means synchronized with the pulse means to gate signals from the detector means to permit passage of any signal only when pulses of light are being emitted and to discriminate against all



signals at all other times, and stimulator means responsive to signals from the detector means passing through the gate to alert the user that signals from the detector means are passing through the gate.

3,198,953
AUTOMATICALLY POSITIONED SUN MASK FOR SIGHTING DEVICES
Johannes Peters, Deisenhofen, near Munich, Germany, assignor to Bolkow-Entwicklungen Kommanditgesellschaft, Ottobrunn, near Munich, Germany
Filed Nov. 15, 1961, Ser. No. 152,602
Claims priority, application Germany, Nov. 16, 1960, B 60,097
8 Claims. (Cl. 250—237)



1. A device for masking sun rays in optical systems for position finding, bearing and sighting devices and the like, comprising an optical system having an intermediate image plane, a mask for keeping away the sun rays from the image plane of the device located in said intermediate image plane, and adjusting means connected to said mask including means exposed to the sun to move said mask in accordance with movement of the sun, said mask being mounted on a transparent plate, said optical system including an intermediary plane, said plate being light permeable and heat resistant, said mask including a metal pin located at the center of said plate.

3,198,954
OVERSPEED ANTICIPATION DEVICE
Markus A. Eggenberger and Paul H. Troutman, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Nov. 3, 1961, Ser. No. 149,912
4 Claims. (Cl. 290—40)

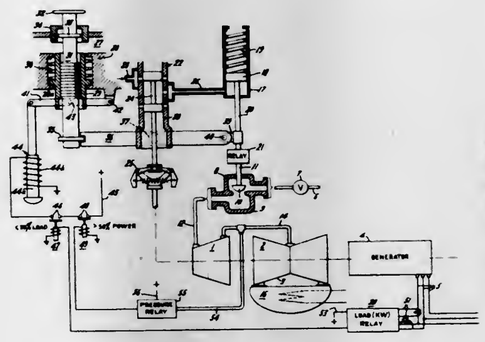
1. Overspeed anticipating device for a prime mover driving a generator supplying an electrical load, said prime mover and generator both having rotors, comprising:

valve means controlling the flow of motive fluid to said prime mover,

speed responsive means connected to operate said valve means to hold the prime mover and generator at a selected operating speed,

load reference means cooperating with said speed responsive means for increasing the opening of said valve means beyond that effected by said speed responsive means to control the rate of energy flow to the prime mover for applying load to the generator at said selected speed,

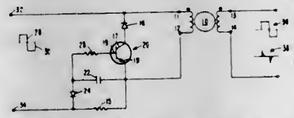
first means responsive to a condition of the motive fluid in said prime mover indicative of prime mover instantaneous power,



second means responsive to the instantaneous real load on said generator, the difference between power and load measured by said first and second means providing energy to accelerate or decelerate the rotors, and

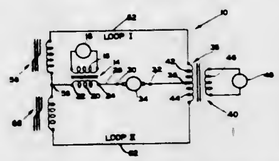
means reducing the valve opening effect of said load reference means when the first and second means together indicate a pre-selected condition of power and load unbalance, whereby the flow of energy to the prime mover is adjusted before significant rotor speed change takes place.

3,198,955
BINARY MAGNETIC MEMORY DEVICE
David H. Schaefer, Oxon Hill, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed June 29, 1961, Ser. No. 120,803
21 Claims. (Cl. 307—88)
(Granted under Title 35, U.S. Code (1952), sec. 266)



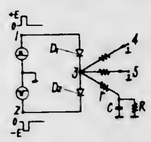
3. A nondestructive readout device for a magnetic binary element which is capable of being stabilized in either of two stable magnetic remanent states comprising a state changing winding coupled to said magnetic binary element, means for applying readout signals to said state changing winding, said readout signals each having a first portion of one polarity and a second portion of opposite polarity, sensing means for detecting a change in the stable remanent state of the binary element when said first portion of said readout signal is applied to said state changing winding, and control means connected to said sensing means for controlling the application of said second portion of said readout signal to said state changing winding whereby said control means prevents said second portion of said readout signal from being applied to said state changing winding when said first portion of said readout signal is applied thereto and said sensing means detects no change in the remanent state of said magnetic binary element.

3,198,956
PULSE FORMING CIRCUIT
Robert L. James, Bloomfield, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Nov. 16, 1961, Ser. No. 152,863
13 Claims. (Cl. 307—88)



1. A circuit for providing an output in accordance with a signal comprising a pair of saturable reactors, a center-tapped alternating reference source connected in series with the saturable reactors, and a source of signal voltage and an output connected between the center tap of the reference source and a point between the reactors for cooperating with the reference source to saturate one of the reactors in each half cycle to provide an output in accordance with the signal.

3,198,957
HIGH SPEED MEMORY BISTABLE DYNATRON CIRCUIT
Kazuo Husimi and Tsuneori Koshiba, Tokyo, Japan, assignors to Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan, a public corporation of Japan
Filed Jan. 31, 1961, Ser. No. 86,134
Claims priority, application Japan, Feb. 15, 1960, 35/4,397, 35/4,398
5 Claims. (Cl. 307—88.5)

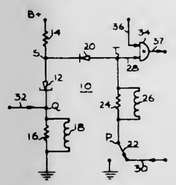


1. A high speed memory network comprising a first and a second pulse source, each having a pair of output terminals, one of each of said pair of output terminals being connected to a point of reference potential, a pair of homopolarly serially connected negative resistance elements having dynatron characteristics connected together at a junction and each connected respectively to the other terminal of each of said pair of output terminals of said pulse sources, control signal means for applying a control signal to the junction of said negative resistance elements, output means connected to said junction and energy storage means including a capacitor connected between said junction and said point of reference potential to store the control signal for retention by periodic generative action of pulses from said pulse sources for random read out at any time.

3,198,958
BISTABLE CIRCUIT
Samuel Nissim, Pacific Palisades, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Aug. 25, 1961, Ser. No. 133,857
11 Claims. (Cl. 307—88.5)

1. A switch circuit for selectively affecting coupling between first and second conductors comprising: a first circuit branch including a circuit element having a negative resistance operating region bounded by two positive

resistance operating regions and biasing means for establishing first and second stable operating states for said circuit element; a second circuit branch including a unidirectional current conducting element; means coupling said second circuit branch to said first circuit branch such that said unidirectional element is back biased by a low voltage when said circuit element is in its first stable state and by a high voltage when said circuit element is in its second stable state; means selectively establishing the operating state of said circuit element; means connecting said



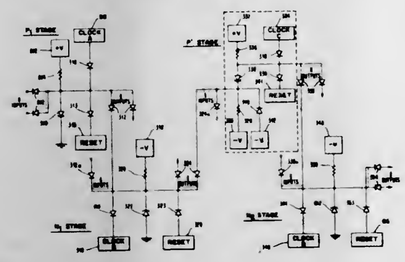
first conductor to said first circuit branch; means applying pulse information to said first conductor sufficient in amplitude to overcome said back bias and initiate current flow in said unidirectional element in accordance with said pulse information when said circuit element is in its low-voltage state but insufficient in amplitude to overcome said back bias when said circuit element is in its high-voltage state; and means connecting said second conductor to said unidirectional element for sensing current flow therein.

3,198,959

LOGIC SYSTEM EMPLOYING TUNNEL DIODE THAT IS BOTH D.C. AND CLOCK-PULSED BIASED

Brian Elliott Sear, Oreland, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 14, 1962, Ser. No. 173,251
12 Claims. (Cl. 307—88.5)



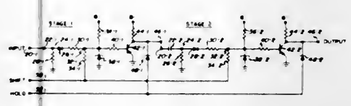
1. A logic circuit comprising, a tunnel diode characterized by a peak current value,
input means connected to one terminal of said tunnel diode,
output means connected to said one terminal,
bias means connected to said tunnel diode, to bias said tunnel diode for bistable operation,
said bias means supplying current having a magnitude near to, but below, the peak current value of said tunnel diode,
pulse supplying means connected to said tunnel diode to provide regularly recurring current pulses having a magnitude sufficient to drive said tunnel diode past the peak current value thereof in response to a predetermined signal condition at said input means,
and reset means for driving said tunnel diode back to the original operating condition.

3,198,960

SHIFT REGISTER UTILIZING A HOLDING PULSE TO OBVIATE INTERSTAGE SIGNAL STORAGE MEANS

Joseph F. Kruy, West Newton, Mass., assignor to Honeywell Inc., a corporation of Delaware

Filed Apr. 24, 1962, Ser. No. 189,807
10 Claims. (Cl. 307—88.5)



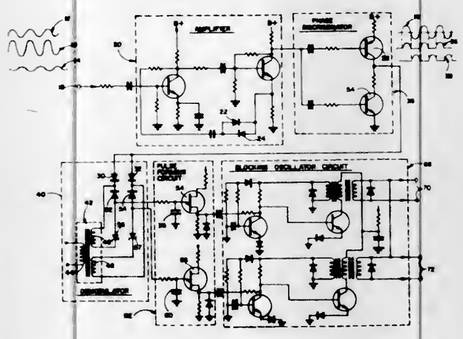
1. A shift register circuit comprising, in each of a plurality of serially connected stages, a tunnel diode having a pair of terminals, said diode being connected to a D.C. source such at said diode may be forward-biased and operated at one or the other of two stable states, a transistor having input and output elements, means connecting said terminals in current-controlling relation to said transistor input elements, means including a differentiating network and a first asymmetrically conductive device for coupling an input signal to said pair of terminals, said input signal being adapted when active to switch said diode to one of its two stable states, means for coupling a shift signal to said pair of terminals, said shift signal being adapted when active to switch said diode to the other of its two stable states, and means including a second asymmetrically conductive device for coupling a hold-pulse signal to the output elements of said transistor to selectively control the current flowing between said output elements.

3,198,961

QUANTIZER PRODUCING DIGITAL-OUTPUT WHOSE POLARITY AND REPETITION-RATE ARE RESPECTIVELY DETERMINED BY PHASE AND AMPLITUDE BY ANALOG-INPUT

Larry R. Millsap, Anaheim, Calif., assignor to North American Aviation, Inc.

Filed June 26, 1962, Ser. No. 205,348
11 Claims. (Cl. 307—88.5)



1. A circuit for converting analog input signals of different-phases into trains of output pulses whose repetition rate corresponds to the amplitude of the input signals, comprising:
phase-discriminator means for discriminating between the phases of said input signals, said discriminator means comprising an output element that acts as a high-impedance source of output signals;

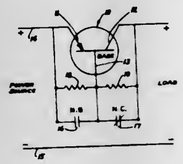
demodulator means for demodulating the output of said phase discriminator means, said demodulator means comprising a pair of switching diodes;
means for applying a reference signal to said demodulator means for causing said switching diodes to become alternately conductive;
a pair of capacitors;
means for causing the different-phase output signals from said phase discriminator to be directed by said alternately conductive switching diodes to the one said capacitors that corresponds to a given phase of input signal; and
means, comprising a pair of voltage-sensitive elements connected to respective capacitors, for producing a pulse when said capacitor accumulates a predetermined charge.

3,198,962

TRANSISTORIZED CONTROL SYSTEM

Leon R. Lease, Mankato, Minn., assignor to Electrol Equipment, Inc., a corporation of Minnesota

Filed Oct. 22, 1962, Ser. No. 232,106
11 Claims. (Cl. 307—88.5)



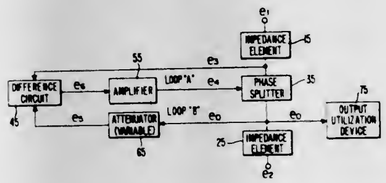
1. A control system including a transistor and a single pole-double throw switch means, one of the pairs of contacts of said switch means being normally open and the other pair of contacts being normally closed, the common terminal of said pairs of contacts of said switch means being connected to the base of said transistor, the other terminal of one of said pairs of contacts being connected to the emitter of said transistor and the other terminal of the other of said pairs of contacts being connected to the collector of said transistor, a first resistor connected between the emitter and base of said transistor and another resistor connected between the base and collector of said transistor.

3,198,963

ELECTRONIC CIRCUIT FOR GENERATING LINEAR TIME-BASE WAVEFORMS

Charles P. Halsted, Oreland, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Jan. 14, 1963, Ser. No. 251,324
18 Claims. (Cl. 307—88.5)



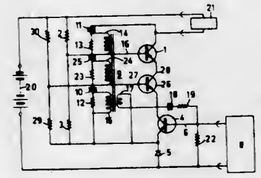
1. A linear time-base generator comprising a pair of impedance elements each having first and second terminals, means for connecting the first terminals of said impedance elements respectively to sources of potential, phase-splitting means having an input terminal and a pair of output terminals, means for connecting the output terminals of said phase-splitting means respectively to the second terminals of said impedance elements, first and second feedback loops, a difference circuit having a pair of input terminals and an output terminal, circuit means coupling said first and second feedback loops between respective ones of said pair of output terminals of said phase-splitting means and respective ones of said pair of input terminals of said difference circuit, and circuit means for operatively connecting said output terminal of said difference circuit to the input terminal of said phase-splitting means.

3,198,964

TRANSISTOR SWITCH HAVING A PLURALITY OF TRANSISTORS CONNECTED IN SERIES

Gottfried Grunwaldt, Hamburg, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 22, 1963, Ser. No. 267,112
Claims priority, application Germany, Apr. 10, 1962, P 29,163
14 Claims. (Cl. 307—88.5)



1. A transistor switch for switching voltages exceeding the maximum permissible blocking voltage of an individual transistor comprising: n transistors where n is an integer greater than one each having control, common and output electrodes, means connecting the common-output electrode path of the transistors in series with each other and with a load circuit and said series connected common-output electrode paths and load circuit across a voltage source, $(n-1)$ voltage dividers connected across said voltage source each having a tap at a different preselected voltage, means connecting the control electrodes of all but the first transistor each to a different voltage tap such that the static open switch voltage between successive control electrodes in the series circuit does not exceed the maximum permissible blocking voltage for each transistor, n close coupled inductive windings, n capacitors, means connecting one winding and one capacitor in series to form n series connected inductive capacitive circuits, means connecting the inductive-capacitive circuits in series between the output electrode of the last transistor in the series connected circuit and the common electrode of the first transistor, means connecting the control electrodes of all but the first transistor each to a different inductive-capacitive circuit, and means including a control current source connected to the control electrode of said first transistor for selectively controlling the conduction state of said first and subsequent transistors to selectively provide a conductive path between the load circuit and the voltage source.

3,198,965

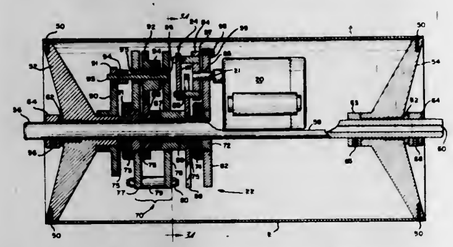
DRIVE MECHANISM FOR A STEPPING SWITCH

James S. Roberts, Brookfield, Wis., assignor to Milwaukee Chaplet & Mfg. Company, Inc., Milwaukee, Wis.

Original application June 30, 1961, Ser. No. 121,241. Divided and this application Dec. 14, 1962, Ser. No. 244,643
7 Claims. (Cl. 307—141)

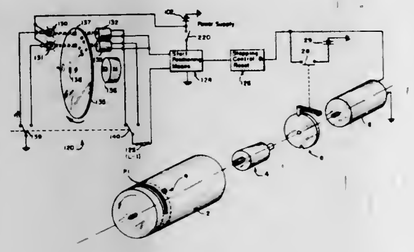
1. A drive system for an interval timer comprising a shaft,

a memory device rotatably mounted on said shaft,
motor means secured to said shaft,
a Geneva wheel rotatably mounted on said shaft,



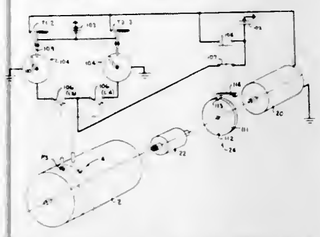
reduction gear means connecting said wheel to said memory device,
and rotatable means operatively connected to said motor means for advancing said Geneva wheel in a step by step manner, whereby the motion of said Geneva wheel is transferred to said memory device.

3,198,966
STEPPING SWITCH SYSTEM FOR SPACING THE STEPS BY NON-DISCRETE TIME INTERVALS
James S. Roberts, Brookfield, Wis., assignor to Milwaukee Chaplet & Mfg. Company, Inc., Milwaukee, Wis.
Original application June 30, 1961, Ser. No. 121,241. Divided and this application Dec. 14, 1962, Ser. No. 244,644
7 Claims. (Cl. 307—141)



1. A stepping control system for a stepping switch for spacing the steps by predetermined non-discrete time intervals comprising
a memory device,
means carried by said memory device for defining a control program,
a motor for driving said memory device,
dead centering means for stopping said motor at a predetermined motor position,
a pulse source means for providing pulses at predetermined time intervals, each pulse having a time base at least as long as required to move said motor from a previous position to said predetermined motor position,
means for establishing an interruptible bypass path around said dead centering means,
means for establishing a path to said motor through said bypass in response to the presence of a pulse from said pulse source and to reset said bypass after the motor has arrived at said predetermined position in response to the end of said pulse, and
means responsive to said dead centering means when said motor is not in said predetermined position for breaking the path to said motor through said bypass and for establishing an alternate path to said motor via said dead centering means,
whereby the appearance of the pulse starts the motor and thereby establishes a circuit through the dead centering means, the motor moves to the predetermined position and in doing so establishes through the dead centering means the only path to the motor and then that path is interrupted, after which the pulse disappears and the system resets itself.

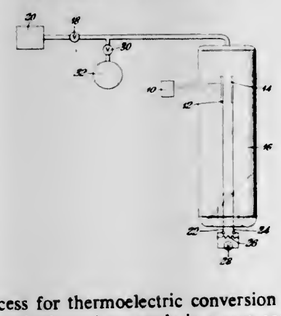
3,198,967
VARIABLE INTERVAL STEPPING SWITCH
James S. Roberts, Brookfield, Wis., assignor to Milwaukee Chaplet & Mfg. Company, Inc., Milwaukee, Wis.
Filed June 30, 1961, Ser. No. 121,241
12 Claims. (Cl. 307—141.4)



5. A stepping switch for stepping through a cycle of electrical events in steps each of a discrete time interval and for selecting for each step one discrete interval from a plurality of such intervals, and comprising in combination
a plurality of timing means, each for operating for a different predetermined discrete time interval and for resetting itself for its own discrete time interval at the end of each discrete time interval of operation thereof;
a revolvable electric motor;
a starting switch for said motor;
circuit means for connecting said starting switch to said motor;
motor control switching means connected in said circuit means for providing a plurality of electrical paths therethrough, each of said paths being selectively opened and closed in accordance with a predetermined program encoded on the hereinafter defined memory device;
a timer selection means for selecting one of said plurality of timing means and for disabling the remainder of said plurality in accordance with a predetermined program on the next-said memory device;
a memory device driven by said motor and having a part thereof a means for defining said predetermined program
including a programming means for enabling all of said timing means responsive to movement of said memory device to a predetermined position by said motor,
said memory device means for defining also including means for engaging and operating said timer selection means in accordance with said program responsive to said memory device being driven by said motor to such predetermined position;
said motor control means having a means for disabling one of said plurality of paths in response to said programming means arriving at said predetermined position;
said motor control means further including a means for keeping selected one of said paths, each selected path corresponding respectively to one of said timers, disabled during the discrete time interval of operation of its respective timer and to enable completion of a circuit through said path in response to the respective timer having run for its time interval, thereby to start said motor;

a first dead centering means for keeping said timing means disabled until said motor reaches a predetermined position and for starting the timing means selected by said selection means responsive to said motor arriving at a predetermined motor position; and
second dead centering means for maintaining a path through said switching means between said motor and said starting switch whenever said motor is not in said predetermined motor position, and for opening such path when said motor is in position, said motor control means including said second dead center means,
all the above-recited plurality of paths to said motor being disabled during the discrete time interval that the selected one of said timing means is running, timing means selected to run not starting until until the motor arrives at dead center.

3,198,968
THERMOELECTRIC CONVERSION PROCESS AND APPARATUS
Ralph Forman, Rocky River, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Feb. 3, 1961, Ser. No. 86,881
6 Claims. (Cl. 310—4)



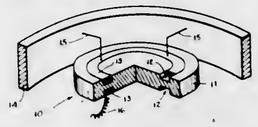
1. A process for thermoelectric conversion comprising disposing a cathode and an anode in a rare gas having an ionization potential greater than the thermionic work function of said cathode, said cathode having a thermionic work function greater than the thermionic work function of said anode, said cathode being connected to said anode by electrically conductive means; and increasing the temperature of said cathode and the pressure of said gas until the concentration of gas ions is sufficiently high to substantially neutralize the space charge surrounding said cathode, said anode being continuously maintained at a temperature below the temperature of said cathode.

3,198,969
PYROELECTRIC GENERATOR
Carl Kolm, Bolton, and Peter H. Fowler, Watertown, Mass., assignors, by mesne assignments, to Sonus Corporation, Cambridge, Mass., a corporation of Delaware
Filed Mar. 3, 1961, Ser. No. 93,237
6 Claims. (Cl. 310—4)



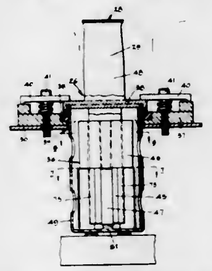
1. An electrical generating system comprising, in combination, a pyroelectric transducer having a pair of electrodes, said transducer being capable of developing a voltage between said electrodes in response to changes in its temperature, an electrical load connected to said transducer, a radiant heat source, a heat sink, a relatively efficient heat absorbing surface on said transducer, and means for rotating said transducer so that said surface cyclically faces said heat source and then said heat sink.

3,198,970
PIEZOELECTRIC VIBRATION TRANSDUCER
Jack Kritz, Westbury, N.Y., assignor to American Bosch Arma Corporation, a corporation of New York
Filed June 9, 1961, Ser. No. 115,988
14 Claims. (Cl. 310—8.2)



1. In a device of the character described, a flexure mode, free-edge, vibrating disc of vibration-transmissive inert material, said disc having an annular recess in one major surface thereof, and an annular body of piezoelectric material bonded to said disc in said recess, said annular body being substantially in the region of the nodal circle of said disc for the fundamental mode of flexural vibration thereof, whereby said inert disc is caused to vibrate in flexure upon application of an alternating electrical field to said piezo-electric material.

3,198,971
MAGNETOSTRICTIVE APPARATUS FOR CLEANING SHEET MATERIAL
James W. McAuley and William E. McCown, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Original application May 17, 1957, Ser. No. 659,934, now Patent No. 2,981,268, dated Apr. 25, 1961. Divided and this application Apr. 10, 1959, Ser. No. 805,609
3 Claims. (Cl. 310—26)



2. In apparatus for cleaning sheet material by sonic means, a magnetostrictive transducer comprising a core formed of a plurality of relatively thin laminations, an acoustical horn secured to the laminations at one end of the core, and means for clamping the opposite free ends of the laminations together in face-to-face contacting relationship.

3,198,972
DYNAMOELECTRIC MACHINE
Robert L. Larson, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 3, 1961, Ser. No. 129,001
11 Claims. (Cl. 310—68)

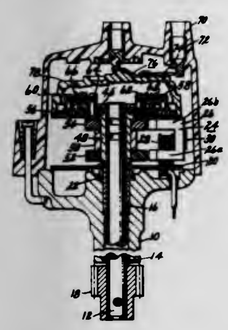
1. In combination, an alternating current generator having an output winding, a heat sink member formed of metal material supported by said generator, an opening

in said heat sink member, a semi-conductor diode positioned in said opening, rib means projecting from an



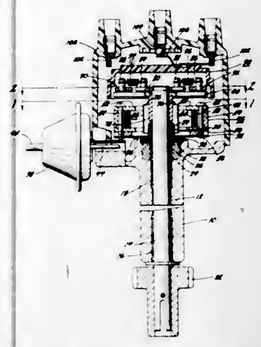
outer surface of said heat sink member at least partially encircling said diode opening, and means electrically connecting said output winding with said diode.

3,198,973
DISTRIBUTOR HAVING MAGNETIC PICK-UP COIL
Brooks H. Short and Richard L. Konopa, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 13, 1961, Ser. No. 95,418
12 Claims. (Cl. 310—70)



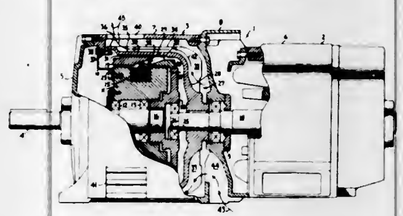
1. A distributor comprising, a support member, a shaft rotatably suported by said support member, a timing plate, a coil winding assembly carried by said timing plate including a substantially U-shaped core and a coil winding, a sleeve member carried by said shaft, a permanent magnet carried by said sleeve member, first and second pole pieces carried by said sleeve member and positioned at opposite ends of said permanent magnet, said pole pieces each having circumferentially spaced pole tips located in alignment with a respective leg of said U-shaped core member, vacuum control means for shifting said timing plate, and centrifugal advance mechanism for rotating said permanent magnet and pole pieces relative to said shaft in response to changes in shaft speed.

3,198,974
IGNITION DISTRIBUTOR
Charles L. Dusenberry, Chesterfield, and Harry A. Williamson, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 16, 1961, Ser. No. 126,406
19 Claims. (Cl. 310—70)



1. An ignition timer comprising, a base member, a timing plate supported by said base member, a permanent magnet and coil winding supported by said timing plate, pole piece means formed of magnetic material engaging opposite ends of said permanent magnet and said coil winding, a shaft rotatable in said base, and a rotor formed of magnetic material carried by said shaft adjacent said pole piece means, said rotor member varying an air gap formed between it and one of said pole piece means as it rotates.

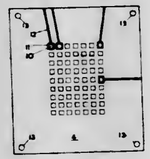
3,198,975
EDDY CURRENT COUPLING
Alec Fisher, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Mar. 2, 1962, Ser. No. 177,020
6 Claims. (Cl. 310—105)



1. An eddy current coupling comprising:
a housing member;
first and second axially aligned shafts rotatably supported by said housing;
a flux-concentrating member mounted on said first of said shafts for rotation therewith;
an inductor member adapted to be rotatably driven by the second of said shafts, said inductor member comprising an annular inductor drum portion concentrically overlying said flux-concentrating member and having an imperforate web portion supporting one end of said drum portion thereof on said second shaft;
air inlet apertures defined in said housing adjacent the said supported end of said drum;
fan means on said web portion adapted to draw air into said housing and direct the air over the outer surface of said drum portion to remove heat therefrom;

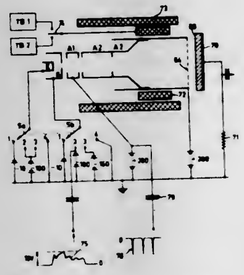
air exhaust apertures defined in said housing adjacent the other end of said drum portion whereby upon rotation of said second of said shafts air is drawn into said housing by said fan means, and directed over the outer surface of said drum portion toward the other end of said drum portion; and
sealing means in said housing cooperating with said other end of said drum portion to direct air flowing over said drum portion through said exhaust apertures and block entrance of air flowing into the interior of said drum portion.

3,198,976
ELECTRIC DISCHARGE TUBES AND APPLICATIONS THEREOF
Arthur T. Starr, New Barnet, England, assignor to Rank Precision Industries Limited, London, England, a British company
Filed Apr. 24, 1961, Ser. No. 104,916
Claims priority, application Great Britain, Apr. 28, 1960, 14,874
15 Claims. (Cl. 313—86)



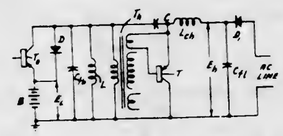
1. An electric discharge tube comprising a two dimensional matrix of apertures in an electron-impervious member, electron-emitting means for generating an electron beam of adequate cross-sectional area to flood said matrix, an individual conductive annulus around each aperture and having an individual lead extending to the outside of the tube for the selective application thereto of a beam switching potential, a first anode for accelerating elemental electron beams defined through said apertures, and receiving means positioned to be impinged upon by the elemental electron beams.

3,198,977
INTERLINE READ-OUT SYSTEM FOR STORAGE TUBE
Brian William Manley, Sussex, England, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 29, 1962, Ser. No. 220,315
Claims priority, application Great Britain, Sept. 7, 1961, 32,247/61
20 Claims. (Cl. 315—12)



1. An electrical signal storage system comprising a charge storage tube having a target for storing electric charges, said target comprising a secondary-emissive storage surface composed of an insulating material and an electrically conductive backplate, means for projecting a beam of electrons onto said target surface, a collector electrode positioned near said target for collecting secondary emission electrons from said target, beam intensity control means in said tube, means for applying an input signal to said intensity control means thereby to modulate the beam current, means for focusing and scanning said modulated beam over a first path on said target storage surface thereby to write a charge pattern on said surface determined by said input signal, means for reading out the charge pattern of information stored in said first path comprising means for maintaining said beam in a constant current focused condition and means for scanning said beam over a second path on said surface in close proximity to said first path, said read-out means further comprising means for controlling said beam during a read scan so that an effective velocity of said beam is produced which is greater than the first secondary emission cross-over point of said target material and in which the secondary emission coefficient is maintained greater than unity, and an output circuit responsive to signals produced by said read scan for deriving an output signal determined by the charge pattern stored in said first path.

3,198,978
LOW D.C. POWER HORIZONTAL DEFLECTION CIRCUIT
Donald R. Taylor, Jr., Philadelphia, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Sept. 30, 1960, Ser. No. 59,712
7 Claims. (Cl. 315—27)



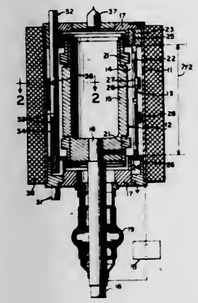
1. A combined horizontal deflection and power supply system for a television receiver, comprising a horizontal output stage including a semiconductor device, a deflection inductor connected to said stage, a high voltage supply transformer also connected to said stage for supplying high voltage to the picture tube of the television receiver, an energy-storage capacitor coupled to said inductor to supply energy thereto, a charging circuit for said capacitor, means for supplying high-voltage D.C. power to said circuit to store energy in said capacitor, a switching semiconductor device connected across said circuit to control the energy-storage in said capacitor and the transfer of stored energy to said inductor, and means for supplying control pulses from said transformer to said switching device.

3,198,979
SLOW WAVE CIRCUIT WITH FLEXIBLE SUPPORT
Joseph E. Sidoti, Middletown, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey
Filed July 16, 1962, Ser. No. 209,906
6 Claims. (Cl. 315—39.3)

3. An electron discharge device comprising, in combination,
(a) first extended electron emitting electrode means,
(b) second extended electrode means being spaced from said first electrode means for forming an interaction region therebetween,

(c) an array of axially aligned conducting elements connected to said second electrode means and distributed along the length thereof,

(d) first and second spaced apart shorting means connecting the ends of said conducting elements, said second shorting means being a flexible member, thin with respect to said first shorting means,

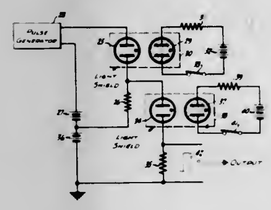


(e) coupling means for extracting microwave energy from said array,

(f) means for generating a voltage between said first and second electrode means which establishes a unidirectional electric field in said interaction region, and

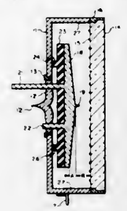
(g) means for establishing a unidirectional magnetic field in crossed relation with respect to said electric field whereby electrons emitted from said first electrode into said interaction region deliver energy to a slow-wave on said second electrode means.

3,198,980
LIGHT-SENSITIVE GLOW DISCHARGE APPARATUS
Harold F. Martin, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 27, 1957, Ser. No. 686,699
12 Claims. (Cl. 315—84.5)



3. An electrical gate circuit, comprising a first cold-cathode, gas-filled diode, a first resistor connected in series with said first diode, a first electric lamp positioned to illuminate said first diode, a pulse generator connected and operable to supply, across said first diode and said first resistor in series, sequential pulses of voltage exceeding the striking voltage of said first diode, each of the aforesaid pulses having a duration longer than is required to strike a glow discharge in said first diode when that diode is illuminated by said first lamp but shorter than is required to strike a glow discharge in said first diode in the absence of illumination, a first electrical control circuit operable selectively to supply and not to supply electric current to said first lamp for selectively lighting and extinguishing that lamp, whereby, upon the application of each of said pulses of voltage across said diode and said first resistor in series, a substantial pulse of voltage appears across said first resistor if said first lamp is lit, a second cold-cathode, gas-filled diode, a second resistor connected in series with said second diode, a second electric lamp positioned to illuminate said second diode, coupling means connected and operable to supply, across said second diode and said second resistor in series, only upon the appearance of a substantial pulse of voltage across said first resistor, a pulse of voltage exceeding the striking voltage of said second diode, the last-mentioned pulse having a duration longer than is required to strike a glow discharge in said second diode when that diode is illuminated by said second lamp but shorter than is required to strike a glow discharge in said second diode in the absence of illumination, and a second electrical control circuit operable selectively to supply and not to supply electric current to said second lamp for selectively lighting and extinguishing that lamp, whereby, upon the application of each of said pulses of voltage across said first diode and said first resistor in series, a substantial pulse of voltage appears across said second resistor if both of said first and second lamps are lit.

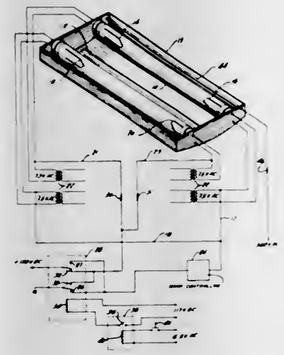
3,198,981
GLOW LAMP AND PHOTOSENSITIVE ASSEMBLY
Norman L. Du Bois, Thornwood, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed June 19, 1962, Ser. No. 203,660
11 Claims. (Cl. 315—84.5)



1. A glow lamp comprising, a gas-tight envelope having a transparent end face, a filling gas at low pressure within said envelope, means rendering the inner surface of said transparent face conductive, a conical conductive cathode disposed within said envelope, said conical cathode facing said transparent face, and means applying direct potential between said inner conductive surface and said conical conductive cathode.

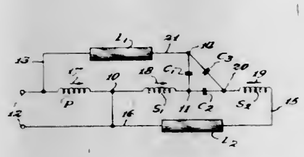
3,198,982
FLUORESCENT LIGHT REVERSING CIRCUIT FOR FACSIMILE TRANSMITTERS
Robert Benson, Chicago, Ill., and Ansis Zilgalvis, Los Angeles, Calif., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Jan. 13, 1961, Ser. No. 82,568
5 Claims. (Cl. 315—97)

4. Apparatus for illuminating copy in a facsimile transmitter comprising a pair of fluorescent lamps positionally arranged in parallel alignment transverse to the path of travel of the copy and each having constantly energized filaments at either end, each lamp having its ends electrically connected to the opposite ends of the other lamp, a direct current power source, a first relay having double pole, double throw contacts in connection between said power source and said fluorescent lamps, said contacts being operable to reverse the polarity of power to said fluorescent lamps, a copy-feed switch actuatable by the leading edge of each piece of copy fed to the facsimile transmitter, a second relay operable responsive to said copy-feed switch for energizing said first relay to actuate



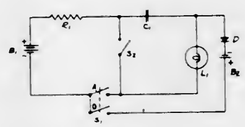
said contacts, an insulated electrode adjacent to and extending the length of said fluorescent lamps and a fluctuating high voltage source connected to said electrode.

3,198,983
APPARATUS FOR IGNITING AND OPERATING GASEOUS DISCHARGE DEVICES
Albert E. Feinberg, Chicago, Ill., assignor to Advance Transformers Co., Chicago, Ill., a corporation of Illinois
Filed July 9, 1962, Ser. No. 208,352
8 Claims. (Cl. 315—144)



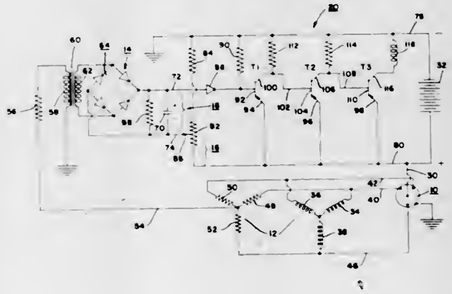
1. In a device of the character described adapted seriatim to ignite and series operate a pair of gaseous discharge devices from an alternating current source and which comprises a three-winding transformer having a primary winding, a high leakage reactance first secondary winding and a second secondary winding, the windings adapted to be connected end to end in the order named, and in which electrical leads are provided for connecting one device in a conducting loop which includes at least said first secondary winding, said loop being connected exteriorly to terminals of the second secondary winding, and which loop is required to have a series capacitor therein and leads are provided for connecting the second device in a second conducting loop which includes at least both secondary windings series-connected therein, means for blocking the direct current resulting from abnormal operation of the second gaseous discharge device through the first secondary winding without affecting the normal operation of the apparatus which comprises a delta arrangement of three condensers presenting three terminals, two terminals connected respectively to the secondary windings between said windings, and the third terminal of said delta arrangement being connected to one of said leads adapted to connect with the first gaseous discharge device.

3,198,984
REPEATING FLASH CIRCUIT FOR AN ELECTRIC LAMP
Anton Franke, Danvers, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 3, 1959, Ser. No. 857,205
2 Claims. (Cl. 315—171)



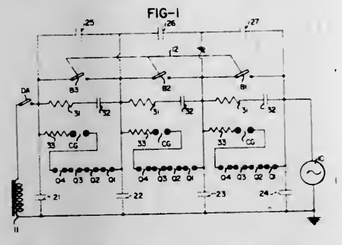
2. An electric flashing circuit comprising: a lamp filament; a condenser; a resistance; a battery for charging said condenser connected to said condenser through said resistance; a switch connected to discharge said condenser across said filament when closed; and a circuit in shunt to said filament to preheat the same prior to disharging said condenser across it, said circuit including a separate battery and a diode connected in series opposition to the voltage of said condenser when the latter is charged by the first-mentioned battery, and in which the diode is connected to pass current in the direction of current flow from said separate battery but not from said first-mentioned battery.

3,198,985
ELECTRONIC CRUISE CONTROL SYSTEM FOR MOTOR VEHICLES
John W. Haskell, Vestal, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 11, 1960, Ser. No. 21,478
5 Claims. (Cl. 317—5)



1. A speed regulating system for a motor vehicle including, a direct current source, means developing an alternating current signal from said direct current source having a frequency proportional to vehicle speed, differentiating means for said alternating current speed signal, rectifying means having an input comprising said differentiated speed signal and an output comprising a direct current signal having a voltage proportional to vehicle speed, means deriving a source of direct current reference voltage from said direct current source, manual means for adjusting said reference voltage to select the desired speed level, means comparing the reference voltage and the speed signal voltage for obtaining a difference voltage, an amplifier responsive to said difference voltage, and vehicle speed control means actuated by the output of said amplifier for maintaining vehicle speed substantially constant at the manually preselected speed level.

3,198,986
HIGH VOLTAGE SWITCHING APPARATUS
Elmer L. Luehring, Cleveland Heights, and Joseph D. Hoffman, Shaker Heights, Ohio, assignors to Joslyn Mfg. and Supply Co., a corporation of Illinois, High-Voltage Equipment Company Division, Cleveland, Ohio
Filed July 12, 1962, Ser. No. 209,339
7 Claims. (Cl. 317—11)

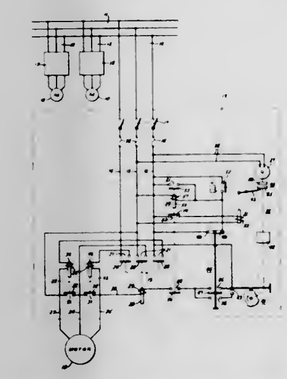


1. For use with high voltage switching equipment comprising a plurality of "*n*" vacuum interrupter units electrically in series with one another and mechanically connected to operate substantially together,

a plurality of "*n*" deliberately provided circuits each comprising a path in shunt around a different one of said interrupters for substantially dividing voltage equally over the interrupters,

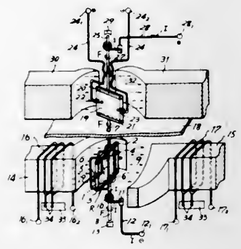
and an additional plurality of "*n*" circuits each comprising a path in shunt around a different one of said interrupters with said last mentioned paths each comprising the series circuit of a current limiting means and a plurality of at least two quench gaps.

3,198,987
ELECTRIC CONTROLLER
Russell A. Brown, Bloomington, Ill., assignor to General Electric Company, a corporation of New York
Filed Mar. 8, 1963, Ser. No. 263,911
13 Claims. (Cl. 317—13)



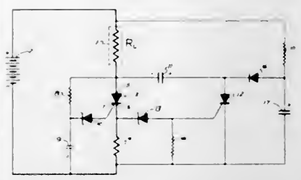
1. In an electric controller, a switching device energizable from the voltage source for controlling energization of a load from the voltage source, a starting timer energizable from the voltage source for controlling energization of the switching device, said timer being operable to effect energization of the switching device a preselected time after the timer is energized, and means including said switching device for controlling energization of said timer, said switching device being effective when energized to prevent energization of said timer and being effective when deenergized to permit energization of said timer.

3,198,988
NON-CONTACT POINT RELAY FOR A.C. AND D.C. HAVING DIRECTIONAL AND TIME-LIMITING PROPERTIES
Yoriyuki Nieda, 5 Matsugaoka Kanagawa-ku, Yokohama, Japan
Filed Mar. 15, 1961, Ser. No. 96,014
Claims priority, application Japan, Mar. 18, 1960, 35/8,402
8 Claims. (Cl. 317—27)



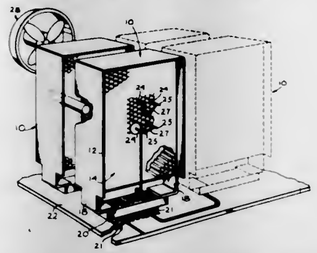
1. In a non-contact point relay for A.C. and D.C. having directional and time-limiting properties, the combination comprising upper and lower magnetic poles, an electroconductive rotary shaft disposed between said upper and lower poles, upper and lower semiconductor plates secured to said rotary shaft, coil means wound on said lower semiconductor plate and being parallel to said rotary shaft, and output wires extending from said upper semiconductor plate whereby said upper and lower semiconductor plates are rotated by current therethrough with flux produced by said coil means and said upper semiconductor plate produces an electromotive force.

3,198,989
ELECTRONIC SWITCH DEVICE WITH COMMUTATING CAPACITOR
William J. Mahoney, Darien, Conn., assignor to American Machine & Foundry Co., New York, N.Y., a corporation of New Jersey
Filed Mar. 30, 1961, Ser. No. 99,454
8 Claims. (Cl. 317—33)



1. In an electrical apparatus for commutating a controlled rectifier which when conducting supplies energizing current to a load from a source of power, the combination with the load of a first and second electrical storage device, charging means connected to said second storage device to charge that storage device from said source when the controlled rectifier is nonconducting, transfer circuit means connected to said first and second storage devices to transfer stored electrical energy from said second storage device to said first electrical storage device when the controlled rectifier is conducting, and commutating circuit means including said first storage device for selectively connecting said first storage device so charged to the controlled rectifier to commutate that rectifier when conducting to supply said load, whenever a predetermined undesired electrical condition exists in said load.

3,198,990
ELECTRONIC CIRCUIT MODULES HAVING CELLULAR BODIES AND METHOD OF MAKING SAME
Leonard Katzin, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Dec. 1, 1961, Ser. No. 156,448
12 Claims. (Cl. 317—100)



1. A support member for intercoupled electronic components,

the support member having a thin-walled cellular configuration with cells regularly disposed throughout the member, the cells defining apertures for receiving the electronic components and extending in a honeycomb structure substantially throughout the cellular portion of the support member,

the cell walls of the support member being deformable to provide areal contact with electronic components which may be inserted, and thermal conductive paths and a common electrical connection connected to the cell walls.

11. The method of providing an electronic circuit module which includes the steps of:

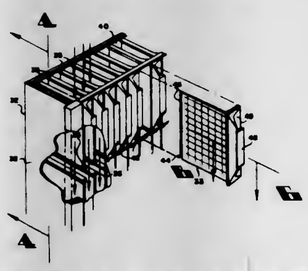
inserting electrical components in separate cells of a cellular structure, with the leads of the components extending substantially normal to at least one selected plane;

placing a sheet over the extended leads, the sheet bearing indicia denoting wiring interconnections to be made;

forming the interconnections in accordance with the indicia;

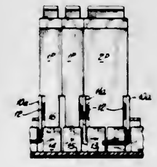
and removing the sheet to leave the cellular construction and the exposed components.

3,198,991
AIR COOLED ELECTRONIC ENCLOSURE
David L. Barnett, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed Feb. 26, 1964, Ser. No. 347,538
2 Claims. (Cl. 317—100)



1. In combination, an enclosure having a back and an open-sided front, a plurality of circuit boards removably mounted in said enclosure, said boards being arranged in vertically spaced horizontal rows wherein corresponding boards in said rows are axially aligned in columns, the surfaces of juxtapositioned boards extending from said front to said back defining between them a plurality of vertically arranged passageways, a plurality of handle forming surfaces for connection one to each of said boards for selectively removing the boards from said enclosure, the handles of said handle forming surfaces extending outwardly of said enclosure, said handle forming surfaces forming a panel for closing the passageways and said enclosure, means causing air flow through said passageways, at least one of said handle forming surfaces being removable from the panel closing said enclosure without substantially reducing the effect of air flow through said enclosure.

3,198,992
CIRCUIT BREAKER AND PANELBOARD
Alexander R. Norden, New York, N.Y., assignor to Murray Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York
Filed Oct. 29, 1962, Ser. No. 233,738
21 Claims. (Cl. 317—119)

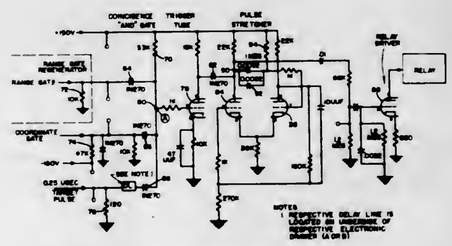


1. In a panelboard having different polarity power busses from which parallel bus blades accessibly project in an array along the busses, the blades of one bus being so disposed in the array that any two adjacent blades are of different polarity;

detachable circuit breaker units, each including an exposed side contact surface for wiping engagement with one side only of a bus blade, and each breaker unit being disposed to the engaged side of the bus blade,

and means on the panelboard coacting with the breaker units for operatively positioning said units between the blades in the array, with the side contact surfaces thereof each contiguous a blade.

3,198,993
COINCIDENCE GATE GENERATOR
David Sigel, Verona, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Aug. 3, 1962, Ser. No. 214,775
1 Claim. (Cl. 317—149)



An electrical control circuit comprising:

means for mixing a multiplicity of input signals;

trigger generation means, coupled to said mixing means, for providing a trigger signal upon the simultaneous occurrence of input signals;

pulse stretching means, coupled to the output of said trigger generation means, for stretching the trigger signal generated thereby;

relay means which are normally in the energized unswitched state; and

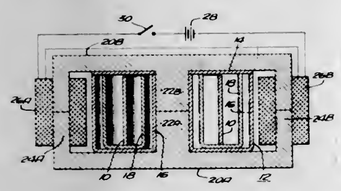
relay driver means, having its input coupled to said pulse stretcher means, and its output coupled to said relay means, for switching said relay means by de-energizing said relay, thereby providing faster switching, said relay driver including,

an electronic valve means, having a control electrode,

a storage means, coupled to said electron valve means' control electrode, for providing long duration bias pulsing to sustain the relay during the de-energized switching time, and

rectifying means, coupled to the output of said stretching means, and to said storage means, for rectifying the output pulse generated by the stretching means.

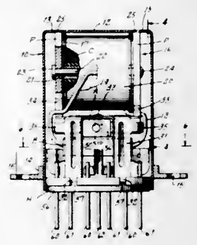
3,198,994
SUPERCONDUCTIVE MAGNETIC-FIELD-TRAPPING DEVICE
Alvin F. Hildebrandt, La Crescenta, Daniel D. Elleman, La Canada, and Frank C. Whitmore, Altadena, Calif., assignors to California Institute Research Foundation, Pasadena, Calif., a corporation of California
Filed Nov. 29, 1961, Ser. No. 155,595
1 Claim. (Cl. 317—158)



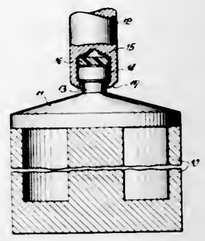
Apparatus for establishing a magnetic field at a desired region comprising a cylinder which is hollow having walls made of a material having the property of superconduction when said material is cooled below a critical temperature, a yoke comprising a central core and an outer-leg portion, said yoke and outer-leg portion being split whereby the two portions thereof may be fitted together, said two portions being inserted and fitted together with said core inserted within the center of said cylinder and with said outer leg portion and enclosing said cylinder, means for applying a magnetomotive force to a leg of said yoke for establishing a magnetic field through said core with the lines of flux parallel to the axis of said cylinder, means for cooling said cylinder walls below said critical temperature, and means for discontinuing the application of said magnetomotive force whereby a magnetic field is trapped within the center of said cylinder, and when the portions of said yoke are pulled apart and removed from said cylinder the magnetic field remains behind.

3,198,995
POLARIZED ELECTROMAGNETIC RELAY
Alfred H. Grebe, Cheshire, Conn., assignor to Allied Control Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 9, 1961, Ser. No. 143,905
9 Claims. (Cl. 317—172)

1. A polarized relay comprising a magnetizing coil, a core member extending through the coil, a pair of spaced pole pieces secured to the core member, each pole piece including a generally U-shaped portion having a pair of spaced end parts, a non-magnetic unit secured to the pole pieces, and extending across the space between the pole pieces, an armature carried by the non-magnetic unit and pivotal about an axis which is normal to and intersects the axis of the coil, said armature being positioned between the U-shaped portions of the pole pieces and including a permanent magnet and a magnetic member at each end of the permanent magnet and in intimate contact therewith, one end of each magnetic member facing a corresponding end part of the U-shaped portion of one pole piece, the other end of each magnetic member facing a corresponding end part of the U-shaped portion of the other pole piece.

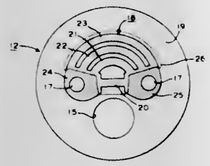


3,198,996
ELECTROMAGNET ACTUATOR HAVING A SHOCK ABSORBING MEANS
Siegfried Vollprecht, Wernau (Neckar), Germany, assignor to Junkers & Co. G.m.b.H., Wernau (Neckar), Germany
Filed June 19, 1963, Ser. No. 289,100
Claims priority, application Germany, June 20, 1962, J 21,971
7 Claims. (Cl. 317—195)



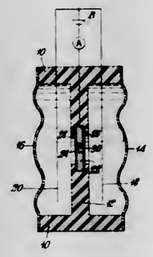
1. In an electromagnetic actuator, in combination, an electromagnet having an exposed face; an armature member having a face corresponding and arranged adjacent to said exposed face of said electromagnet and movable towards and away from the same; and a rod-shaped motion-transmitting member located adjacent said armature member, one of said members being formed with a bore having an open end and an opposite closed end and the other of said members having an elongated projection formed extending therefrom and including a free end portion, said elongated projection being formed with an annular groove between the remainder of said other member and said free end portion, said free end portion of said projection being received in said bore and said one member having an annular projection extending into said groove for connecting said members to each other; and yieldable means located in said bore, engaging said closed end thereof and said free end portion of said projection for yieldably resisting movement of said projection toward said closed end of said bore.

3,198,997
CAPACITOR HAVING A PRINTED PLURAL RESISTOR PATTERN BETWEEN TERMINALS
John H. Fabricius, Stamford, Vt., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Dec. 17, 1959, Ser. No. 860,193
2 Claims. (Cl. 317—230)



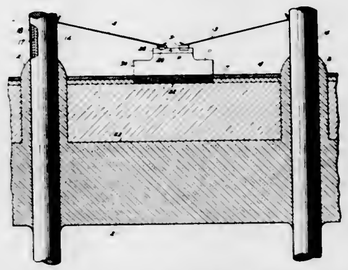
1. An electrical capacitor cover for closing a capacitor casing, said cover having two layers, the first of said layers being of relatively rigid organic plastic dielectric material, the other of said layers being of resilient dielectric material underlying said first layer, a pair of spaced openings extending through said cover for receiving capacitor terminals, an additional aperture through said first layer disposed laterally of said pair of openings for allowing expansion of said second layer therethrough, a resistive coating having multiple spaced paths of unequal length on the surface of said first layer connecting said openings and disposed laterally of said openings opposite said aperture, the resistance of each respective path being less than the resistance of the next adjacent shorter path.

3,198,998
ELECTROCHEMICAL DETECTOR AND ELECTROLYTE THEREFOR
Robert A. Powers, Lakewood, and Demetrios V. Louzos, Rocky River, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Feb. 19, 1960, Ser. No. 9,791
2 Claims. (Cl. 317—231)



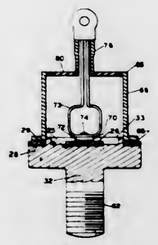
1. An electrochemical detector comprising a housing; a partition within the housing dividing the housing into a pair of compartments and provided with an aperture communicating the compartments; a flexible diaphragm within a wall of each of the compartments; a platinum detecting cathode electrode situated within the aperture of the partition; an anode electrode in each of the compartments and electrically connected to the detecting cathode electrode; and an electrolyte substantially filling both compartments and which is a solution of a reversible redox system selected from the group consisting of bromine-alkali metal bromide, iodine-alkali metal iodide, ferricyanide-ferrocyanide, ceric-cerous, and ferric-ferrous, in combination with from about 2 to about 22 parts per million of a mercury ion.

3,198,999
NON-INJECTING, OHMIC CONTACT FOR SEMICONDUCTIVE DEVICES
Lawrence K. Baker, Reading, and Thomas E. Magill, Allentown, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 18, 1960, Ser. No. 16,002
4 Claims. (Cl. 317—234)



1. An ohmic connection between a header and a semiconductive body comprising a ternary alloy interface which includes a portion of the semiconductive body, and approximately equal parts by weight of gold and copper.

3,199,000
MOUNT FOR SEMICONDUCTORS
Paul W. Nippert, Worthington, Ohio, assignor to The Nippert Electric Products Company, Columbus, Ohio, a corporation of Ohio
Filed July 11, 1960, Ser. No. 43,699
13 Claims. (Cl. 317—234)

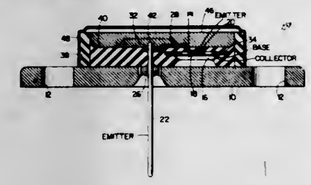


1. In combination, a work-hardened metal piece including an upper surface and an integral stem extending from a lower surface; a metal element brazed to said upper surface; a solid state semiconductor thermally fused to the upper surface of said element, the coefficient of expansion of said metal element being substantially similar to the coefficient of expansion of said solid state semiconductor.

3,199,001
TEMPERATURE STABLE TRANSISTOR DEVICE
Jerry F. Dyben, New Haven, Ind., assignor to Microtronics, Inc., New Haven, Ind.
Filed Dec. 8, 1960, Ser. No. 74,710
10 Claims. (Cl. 317—234)

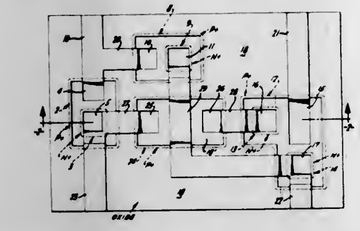
7. A transistor device comprising a metallic mounting plate, a transistor crystal having base, emitter and collector portions, said crystal being mounting on said plate in heat-transferring relation, and an element of thermal

negative coefficient of resistance material electrically directly connected across said emitter and base portions, said crystal and at least a portion of said element being



potted in a material which is thermally conductive but electrically non-conductive, said potting material being in intimate thermal contact with said mounting plate.

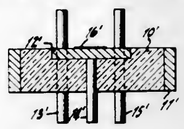
3,199,002
SOLID-STATE CIRCUIT WITH CROSSING LEADS AND METHOD FOR MAKING THE SAME
Robert L. Martin, Jr., Palo Alto, Calif., assignor, by mesne assignments, to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Apr. 17, 1961, Ser. No. 103,564
4 Claims. (Cl. 317—234)



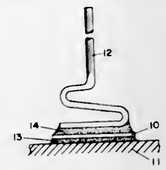
1. A solid-state electrical circuit structure comprising a body of semiconductor that contains p-type and n-type regions defining a plurality of functional circuit elements, said body having a surface, a layer of insulation on said surface, and a plurality of conductive strips that extend over said layer of insulation and electrically interconnect said functional circuit elements, said body of semiconductor also containing a conductive region of conductive semiconductor material that is adjacent to said surface and is bounded by a pan-shaped junction, two separate ones of said conductive strips extending through said layer of insulation into contact with different portions of said conductive region, said conductive region forming the only direct electrical connection between said two strips, said layer of insulation extending across said conductive region between said two strips, and a third separate one of said conductive strips extending over said layer of insulation across the conductive region between said two strips, said layer separating and insulating said third strip from said conductive region and said two strips, whereby the electrical connection defined by said third strip crosses without connecting to the electrical connection defined by said two strips and conductive region in series.

3,199,003
ENCLOSURE FOR SEMICONDUCTOR DEVICES
Norman C. Turner, Hopatcong, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 26, 1961, Ser. No. 147,810
3 Claims. (Cl. 317—235)

1. A semiconductor device enclosure comprising an insulating disk having two opposing faces, said disk consisting of a material selected from the group consisting of beryllium oxide and aluminum oxide; a metallic ring surrounding said disk; a metallic platform on one face of said disk, said platform embedded in said disk so that the upper surface of said platform is continuous with said one face of said disk but insulated from said ring; a first metallic lead from the bottom of said platform through said disk extending out the other face of said disk; at least one additional lead through said disk insulated from both said platform and said ring and extending out of both said faces; a semiconductor device mounted on said platform; a connecting means between each said additional lead and said device; and a metallic can over the platform side of said disk sealed to the periphery of said ring.



3,199,004
CONNECTIONS IN SEMICONDUCTOR DEVICES
Donald C. Dickson, Jr., Phoenix, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 10, 1961, Ser. No. 94,800
2 Claims. (Cl. 317—240)



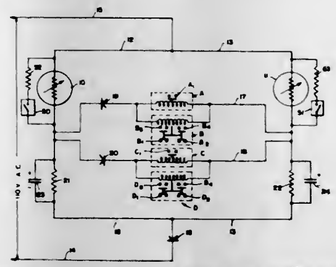
1. In a semiconductor device which has a semiconductor die of silicon material with a diffused PN junction therein and having parallel faces on opposite sides of said junction with thin films of metal plated on said faces, an improved system of connections providing mechanical, thermal and electrical connections to said die and including in combination, a mounting structure forming part of an enclosure for said die and having walls on the interior of said enclosure whose entire surface is of bare copper material, said mounting structure having a base portion on which said die is mounted with one side of said die facing said base portion, a lead structure of copper material having a portion on the interior of said enclosure whose entire surface is of bare copper material, and indium-bearing solder connections connecting said one side of said die directly to said bare copper surface of said mounting base and connecting the other side of said die to said bare copper surface of said lead structure, said solder connections consisting of about 5% by weight of indium, about 2.5% by weight of silver, and the balance of lead, and said solder connections forming bonds to said silicon die and to said mounting base and lead structure having comparatively great resistance to thermal fatigue as a result of the said composition of said solder connections.

3,199,005
REMOTE MOTOR CONTROL SWITCHING SYSTEM
William J. Ashworth, New Albany, Miss., assignor to Artnell Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 6, 1962, Ser. No. 235,769
16 Claims. (Cl. 318—16)

1. A wave energy actuated remote control system comprising

(a) a pair of wave energy responsive impedance means connected in parallel in a balanced bridge circuit having connection with a source of uni-directional electrical energy,

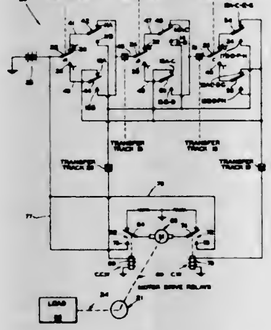
(b) said bridge circuit having a bridge line including means permitting current flow therethrough toward one only of said impedance means and including the operating coil of a relay,



(c) said impedance means being normally exposed to the same ambient wave energy and being of the kind wherein the resistance to current flow therethrough is determined by the amount of wave energy applied to said impedance means, and

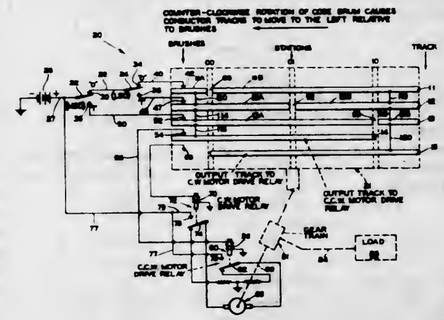
(d) the relay coil in said bridge line being energized by a current flow therein only when a different amount of wave energy is applied to said one impedance means than to the other.

3,199,006
SWITCHING LOGIC MEANS FOR A DISCRETE SERVOMOTOR MECHANISM
Harold Moreines, Springfield, and Hugh D. Stewart, Westwood, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Jan. 23, 1963, Ser. No. 253,302
2 Claims. (Cl. 318—33)



1. A position control means for a movable object, said control means comprising in combination, a reversible motor, first means for controlling clockwise rotation of the motor, second means for controlling counterclockwise rotation of the motor, a drum rotatably positioned by the motor, a first pair of segmental conductor tracks carried by the drum, a first operator-operative switch, said first switch being selectively operable in one sense to effect energization of one of said first pair of segmental conductor tracks, said first switch being selectively operable in another sense to effect energization of another of said pair of segmental conductor tracks, a second pair of segmental conductor tracks carried by the drum, a second operator-operative switch, said second switch being selectively operable in one sense to effect energization of one of said second pair of segmental conductor tracks, said second switch being selectively operable in another sense to effect energization of another of said second pair of segmental conductor tracks, a third pair of segmental conductor tracks carried by the drum, a third operator-operative switch, said third switch being selectively operable in one sense to effect energization of one of said third pair of segmental conductor tracks, said third switch being selectively operable in another sense to effect energization of another of said third pair of segmental conductor tracks, means for electrically connecting a source of electrical energy to the first operator-operative switch, a first transfer track carried by the drum for electrically connecting at least one of the first pair of conductor tracks to the second operator-operative switch, a second transfer track carried by the drum for electrically connecting at least one of the second pair of segmental conductor tracks to the third operator-operative switch, a third pair of segmental conductor tracks carried by the drum and including in one of the segmental conductor tracks of said third pair a plurality of insulated portions, another segmental conductor track of said third pair of segmental conductor tracks including a plurality of other insulated portions, a first output conductor track carried by the drum and electrically connected to said first means for controlling clockwise rotation of the motor, a second output conductor track carried by the drum and electrically connected to the second means for controlling counterclockwise rotation of the motor, and an electrical network including brush means cooperating with said conductor tracks for interconnecting the first, second and third pairs of conductor tracks and said first, second, and third switches to said first and second output conductor tracks and therethrough selectively to said first and second control means, said brush means cooperating with the aforesaid insulated portions of said third pair of segmental conductor tracks in effecting selected positions of the movable object, the selected position of the movable object being effected by that one of the insulated portions of the third pair of segmental conductor tracks determined by the selected positions of the first, second, and third operator-operative switches.

3,199,007
SWITCHING LOGIC MEANS FOR A TWO-DIGIT THREE POSITION SERVOMOTOR MECHANISM
Hugh D. Stewart, Westwood, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Jan. 23, 1963, Ser. No. 253,303
2 Claims. (Cl. 318—33)



1. A position control means for a movable object, said control means comprising in combination, a reversible motor, first means for controlling clockwise rotation of the motor, second means for controlling counterclockwise

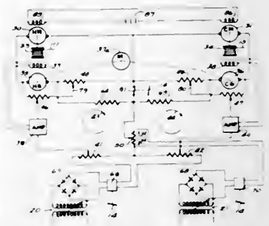
rotation of the motor, a drum rotatably positioned by the motor, a first pair of conductor tracks carried by the drum, a first brush cooperatively arranged in relation to the first pair of conductor tracks and arranged so as to selectively make contacting relation with one and then the other of said first pair of conductor tracks upon rotation of the drum in one sense, a second pair of conductor tracks carried by the drum, a second brush arranged in cooperative relation with said second pair of conductor tracks and arranged to selectively make contacting relation with one and then the other of said second pair of conductor tracks upon rotation of the drum in said one sense, a third pair of conductor tracks carried by the drum, a third brush arranged in cooperative relation with said third pair of conductor tracks and arranged to selectively make contacting relation with one and then the other of said third pair of conductor tracks upon rotation of the drum in said one sense, a first output conductor track carried by the drum, a first output brush arranged in cooperative relation with the first output conductor track and electrically connected to the first means for controlling clockwise rotation of the motor, a second output conductor track carried by the drum, a second output brush arranged in cooperative relation with the second output conductor track and electrically connected to the second means for controlling counterclockwise rotation of the motor, said first output conductor track being electrically connected to said one track of said first, second, and third pairs of conductor tracks, and the second output conductor track being electrically connected to said other track of said first, second, and third pairs of conductor tracks, a first operator-operative switch, said first switch being selectively operable in one sense to apply electrical energy to the first brush, said first switch being selectively operable in another sense to apply electrical energy to the second brush, a second operator-operative switch, said second switch being selectively operable in one sense to apply electrical energy to said first switch, said second switch being selectively operable in another sense to apply electrical energy to said third brush, means for electrically connecting a source of electrical energy to the second operator-operative switch, the first pair of conductor tracks including therebetween a first insulated portion, the second pair of conductor tracks including therebetween a second insulated portion, and the third pair of conductor tracks including therebetween a third insulated portion, said first, second, and third insulated portions being arranged sequentially in spaced relation, the first, second, and third brushes cooperating with the aforesaid insulated portions in effecting selected positions of the movable object, the selected position of the movable object being effected by that one of the insulated portions determined by the selected positions of the first and second operator-operative switches.

3,199,008
PLURAL MOTOR SPEED CONTROL BY ARMATURE VARIATION AND RELATIVE LOAD CONTROL
David W. Stone, Milwaukee, Wis., assignor to Harnischfeger Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 1, 1961, Ser. No. 135,573
3 Claims. (Cl. 318—67)

1. Control apparatus for control of the speeds of two electric motors having fixed field circuits and variable armature circuits comprising:

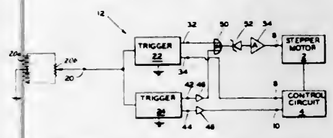
first and second armature power supply circuits for said first and second motors;

first and second sources of control signal voltage for said circuits, said circuits comprising means for substantially uniformly affecting the armature circuits and the absolute speeds of both motors in response to a signal from said first source and for differentially affecting the armature circuits and the absolute speeds of both motors in response to a signal from said second source; and



means responsive to unequal loading on said motors when they are hoisting, to increase the output of said power supply circuit for the underloaded motor and to decrease the output of said power supply circuit for the overloaded motor to load said motors equally, said means comprising means sensitive to the total losses in the armature circuits providing signals to said power supply circuits tending to balance the losses.

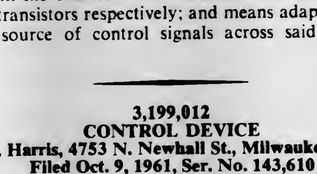
3,199,009
STEPPER MOTOR SERVO AMPLIFIER
Charles I. Lien, New York, N.Y., and Benjamin Strunk, Clifton, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Dec. 12, 1962, Ser. No. 244,193
14 Claims. (Cl. 318—138)



3. A device for driving a stepper motor when an applied D.C. analog signal exceeds a predetermined range, comprising a pair of trigger circuits connected to receive the signal, one circuit being triggered when the signal exceeds one limit of the range, and the other being triggered when the D.C. signal exceeds the other limit of the range, both trigger circuits providing a first level output signal when in an untriggered state and a second level output signal when in a triggered state, power amplifier means connecting a source of potential to the stepper motor and connected to the trigger circuit and controlled by the output level signal therefrom for providing power to the stepper motor when either circuit is triggered and the second level output signal is applied thereto, a direction rotation control network connected to the trigger circuits for receiving the outputs therefrom to rotate the stepper motor in one direction when a second level output signal is received from one trigger circuit and in the other direction when a second level output signal is received from the other trigger circuit.

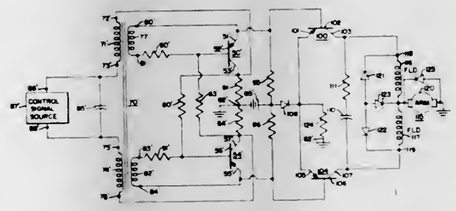
3,199,010
VARIABLE SPEED DIGITAL CONVERTER MOTOR
Horace M. Robinson, Los Angeles, and Gerald W. Middy, La Canada, Calif., assignors to Space Ship, Incorporated, Los Angeles, Calif., a corporation of Nevada
Filed Aug. 22, 1960, Ser. No. 50,892
9 Claims. (Cl. 318—165)

1. In a synchronous variable speed motor: a stator member; a rotor member; a plurality of primary winding sections for one of the members, and capable of separate excitation; said primary winding sections defining field axes located in spaced relationship about the axis of the corresponding member; circuit means cooperable with a common alternating current source for exciting said windings; means for amplitude modulating the excitation of the winding sections in multiphase relationship and at a frequency less than the frequency of the alternating current source whereby the maximum field strength is rotated



angularly about the said one member at a speed proportional to the modulating frequency; the other member having salient poles influenced by the field of said one member; and short circuited winding means carried by the other member and linked by the flux when the rotor operates at a power angle greater than zero.

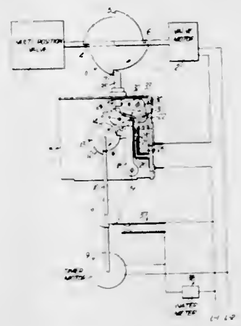
3,199,011
SATURABLE CORE PULSE WIDTH MOTOR CONTROL APPARATUS
Daniel J. Sikorra, Champlin, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed May 31, 1961, Ser. No. 113,885
17 Claims. (Cl. 318—341)



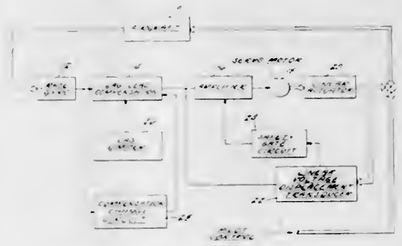
1. Apparatus of the class described comprising: first and second transistors each having a collector electrode, a base electrode, and an emitter electrode; a saturable transformer having first, second, third and fourth windings; resistance means; means connecting said first winding, said resistance means and said second winding in series relationship across said emitter electrodes; first and second servos each having a control winding; means connecting the control windings of said first and second servos in series across said emitter electrodes; a source of energizing potential; means connecting said potential source from a junction intermediate said control windings to the collector electrodes of said first and second transistors; means connecting said third and fourth windings from the emitter to base electrodes of said first and second transistors respectively; and means adapted to connect a source of control signals across said resistance means.

3,199,012
CONTROL DEVICE
John L. Harris, 4753 N. Newhall St., Milwaukee 11, Wis.
Filed Oct. 9, 1961, Ser. No. 143,610
7 Claims. (Cl. 318—466)

1. A control device comprising a first flexible switch blade, a second flexible switch blade, said switch blades being biased in the same direction, co-operating contacts carried by said switch blades, means including a switch operator arranged for moving said switch blades against their bias with said contacts separated to a predetermined position and for releasing the same, a latch arranged to support the blade adjacent said switch operator for causing the contacts to engage when the switch operator releases the switch blades, and means for releasing said latch to permit disengagement of said contacts.



3,199,013
RATE RESPONSIVE COMPENSATION CHANGE CIRCUIT
Charles B. Brahm, Ellington, and John E. Games, Granby, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 31, 1963, Ser. No. 284,707
10 Claims. (Cl. 318—489)

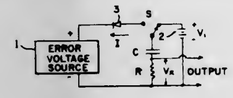


1. A stability augmentation system for a craft comprising means for producing an error signal proportional to the rate of craft motion about an axis, circuit means compensating said error signal to produce a correction signal, a control surface on said craft, servo means including an actuator responsive to said correction signal and to said error signal for actuating said control surface to thereby counteract said craft motion, and means responsive to a predetermined rate of change of craft motion about said axis in one direction for a specified minimum time interval for disabling said circuit means and eliminating said correction signal.

3,199,014
MINIMUM ERROR DETECTING CIRCUIT
Franz L. Putzrath, Oaklyn, N.J., assignor to the United States of America as represented by the Secretary of the Air Force
Filed May 19, 1961, Ser. No. 111,410
1 Claim. (Cl. 320—1)

A circuit for detecting when the minimum value of a unipolar signal occurs, said circuit comprising: a condenser, a resistor and a unidirectional device; means opera-

tive to first charge said condenser to a predetermined voltage greater than the expected minimum value of said signal and then to form a circuit containing, to the exclusion of all other elements connected in or thereto, said signal, said unidirectional device, said charged condenser and said resistor connected in series in a closed loop, with



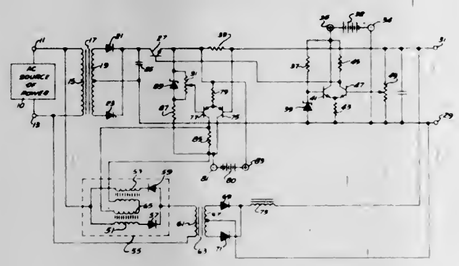
the polarities of said charged condenser and said signal in opposition and with said unidirectional device poled for conduction in the condenser discharging direction; and an output circuit coupled across said resistor whereby an output voltage proportional to the discharge current of said condenser is produced in said output circuit.

3,199,015

CONTROL CIRCUIT INCLUDING A FAST ACTING TRANSISTOR REGULATOR IN PARALLEL WITH A SLOW ACTING MAGNETIC AMPLIFIER REGULATOR

Robert E. Lackey, Saratoga County, and Stanley A. Lackey, Warren County, N.Y., assignors to Espey Mfg. & Electronics Corp., Saratoga Springs, N.Y., a corporation of New York

Filed Oct. 23, 1961, Ser. No. 146,986
7 Claims. (Cl. 321—19)



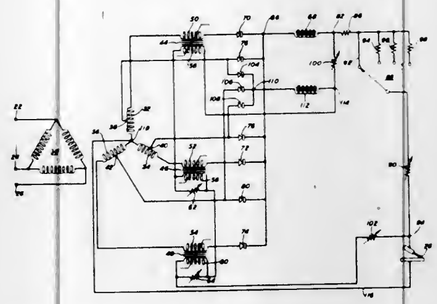
1. In a regulated power supply system wherein A.-C. current from a power source is converted and supplied to an output by a transfer circuit as D.-C. current, the improvement therein to prevent output fluctuation when there are sudden changes in the load, comprising, a low efficiency dynamic response first regulating means in said transfer circuit including rectifier means coupled to said power source, filter means fed by said rectifier means, and a transistor and load resistor fed by said filter means and responsive to the signal applied to the control side of said transistor; first sensing means across the output and coupled to said transistor control side to rapidly change the current value supplied across said transistor and load resistor in response to changes in the output load; a high efficiency slow second regulating means in said transfer circuit including a magnetic amplifier regulating the input from said power source to said second regulating means; and, second sensing means, sensing the current supplied across said transistor and load and coupled to said magnetic amplifier to change the input from said power source when there is a change in the load, said first and second regulating means being in parallel between said power source and said output.

3,199,016

POWER SUPPLY REGULATING SYSTEM

William J. Greene, Scotch Plains, and Evans H. Daggett, Murray Hill, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 13, 1959, Ser. No. 852,882
12 Claims. (Cl. 321—25)



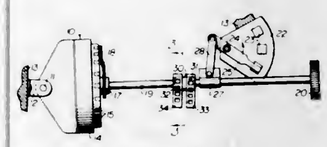
1. In a current regulating system, in combination, a saturable magnetic core, a main winding and a control winding each coupled to said core, first and second rectifiers, first and second choke coils, feedback resistance means, means connecting an alternating current source to a load by way of said main winding, said first rectifier, said first choke coil and said feedback means in that order, means for obtaining from said a ternating current source a power supply of alternating current of materially less than the full voltage of said source, means establishing a path for said power supply of reduced voltage to said load by way of said second rectifier, said second choke coil and said control winding in that order, and a bridging resistor connected between the junction of the first choke coil and the said feedback means and the junction between the second choke coil and the said control winding.

3,199,017

VOLTAGE CONTROL MECHANISM UTILIZING A SINGLE CONTROL KNOB

Edward B. Graves, South Euclid, and Gerald V. Lyons, Cleveland, Ohio, assignors to Picker X-Ray Corporation, Waite Manufacturing Division, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Jan. 12, 1961, Ser. No. 82,237
18 Claims. (Cl. 323—43.5)



1. A voltage control comprising:
(a) major and minor controls each having a range of voltage adjustment positions;
(b) a control arm connected to one of the controls for moving the control through a plurality of adjustments from one position to another independent of the other control;
(c) means interposed between the controls and connecting the other control to the control arm to permit adjustment of the other control through a plurality of adjustments from one position to another independent of the one control; and,

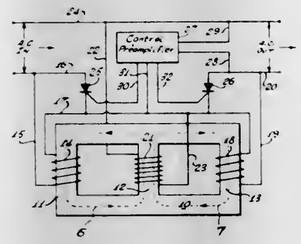
(d) camming means interposed between said control arm and said other control to index said other control one position each time said one control is moved through a predetermined number of positions.

3,199,018

ALTERNATING CURRENT LINE REGULATOR

F. Sutherland Macklem, 291 S. Main St., New Canaan, Conn.

Filed Jan. 24, 1963, Ser. No. 253,575
13 Claims. (Cl. 323—45)



1. An alternating current line regulator comprising: a pair of input terminals for an A.C. source to be regulated and a pair of output terminals; primary flux generating means coupled in parallel between said input and output terminals; first and second control windings connected in series between said input and output terminals; gating means, each having at least three electrodes, one of said electrodes serving to control the current passage between the remaining two electrodes, connected in parallel with each of said control windings for shorting a selective one thereof; core means for magnetically coupling each of said control windings to said primary flux generating means; and means, coupled in parallel between said input and output terminals and coupled to said gating means control electrode, for detecting variations in A.C. voltage and selectively closing said gating means to compensate therefor.

11. An alternating current line regulator comprising a pair of input terminals for an A.C. source to be regulated and a pair of output terminals; a three legged magnetic core; a primary winding in an autotransformer configuration coupled in parallel between said input and output terminals and disposed on one leg of said core; first and second control windings, disposed respectively on the remaining two legs of said core, each including a variable tap thereon, said control windings being connected in series by said variable taps between said input and output terminals; gate means connected in parallel with each of said control windings for shorting a selective one thereof; and means coupled in parallel between said input and output terminals and coupled to said gating means, for detecting variations in A.C. voltage and selectively closing said gating means to compensate therefor.

3,199,019

FEEDBACK MEANS FOR SYSTEMS HAVING REACTIVE LOADS

John O. Cooney, Jr., Waverly, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 22, 1960, Ser. No. 57,788
8 Claims. (Cl. 323—52)

1. A sweep circuit for radar apparatus and the like comprising a resolver, said resolver having a pair of rotor windings, a stator winding and a compensating winding, said stator winding and said rotor windings being magnetically coupled, said compensating winding being positioned within the magnetic field between said stator winding and said rotor windings, amplifier means, said amplifier means being connected to said stator winding, input means for supplying a sweep waveform to said amplifier means, feedback means for supplying a feedback signal to said amplifier means, said amplifier means providing an energizing signal to said stator winding which is proportional to the difference between said sweep waveform and said feedback signal, said stator winding and said compensating winding being connected in series relation in a closed feedback loop around said amplifier means, a capacitor having one terminal referenced to



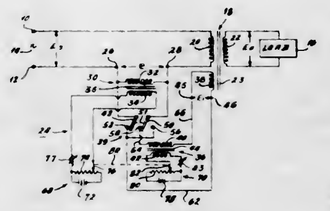
ground and the other terminal connected between said stator winding and said compensating winding to define a low impedance path to ground for the higher frequency components so that the higher frequency components of said feedback signal are transmitted through a magnetic circuit comprising said stator winding and said compensating winding, and said capacitor defining a high impedance path to ground for the lower frequency and direct current components so that the lower frequency and direct current components of said feedback signal are conducted through the series connected stator winding and compensating winding.

3,199,020

VOLTAGE CONTROL DEVICE

Erwin B. Hilker, deceased, late of St. Louis, Mo., by Annamary Hilker, administratrix, St. Louis, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

Filed July 5, 1961, Ser. No. 122,389
13 Claims. (Cl. 323—89)

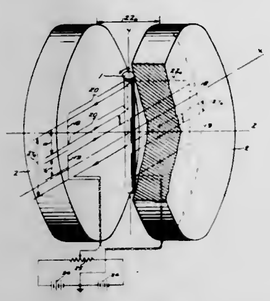


1. A voltage control device comprising a first circuit including a first variable impedance device, a second circuit coupled across said first circuit and including a second variable impedance device, means for connecting a source of voltage in said second circuit to provide a voltage across said first circuit, means for selectively reversing the phase of said voltage, and means for varying the impedance values of said impedance devices to vary the magnitude of said voltage.

3,199,021
APPARATUS FOR IMPROVING THE HOMOGENEITY OF A MAGNETIC FIELD

Weston A. Anderson, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Dec. 19, 1960, Ser. No. 76,679
11 Claims. (Cl. 324—.5)



1. Apparatus for improving the homogeneity of a certain volume of magnetic field by removing a particular undesired field gradient including, electrically conductive means for providing a plurality of spaced apart current paths in each of a pair of essentially parallel planes, the spacing between said current paths being larger than any distance traversing their cross section, said pair of planes positioned on opposite sides of the volume of magnetic field to be corrected so as to define a gap therebetween, said electrically conductive means in each of said planes being thin in the direction taken across the gap so that said spaced apart current paths lie entirely in said pair of essentially parallel planes and lying on opposite sides of a plane through the volume of magnetic field and perpendicular to said parallel planes, said electrically conductive means being connected so as to provide when energized in each of said parallel planes two opposing directions of current flow on one side of said plane through said volume of magnetic field and two opposing directions of current flow on the other side of said plane through said volume of magnetic field, and said electrically conductive means being disposed so that when energized the currents flowing in opposing directions will flow substantially parallel to said plane through said volume of magnetic field.

3,199,022
PENETRATION CONTROL FOR NUCLEAR MAGNETISM WELL LOGGING

Robert J. S. Brown, Fullerton, and John E. Coolidge, Anaheim, Calif., assignors, by direct and mesne assignments, of one-half to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois, and one-half to California Research Corporation, San Francisco, Calif., a corporation of Delaware

Filed June 29, 1961, Ser. No. 120,693
5 Claims. (Cl. 324—.5)

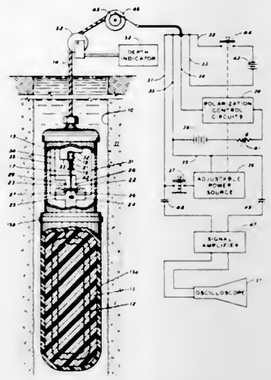
1. Apparatus for controlling the region of sensitivity for detection of spin magnetic induction well logging signals from precessing nuclei in a well bore and the surrounding earth formation, comprising:

(a) a polarization coil,

(b) current supplying means to produce a current for energizing said polarizing coil to produce a polarization field in said nuclei,

(c) means for changing said current from said current supplying means to reduce said polarization field to a strength less than the earth's magnetic field in certain regions of said earth formations beyond a predetermined radial distance from the center of said coil,

(d) means for interrupting current from said current supplying means to terminate said polarization field in regions of said well bore and earth formation radially spaced from the center of said coil where the strength of said field is at least as great as the earth's magnetic field in a time period short with respect to the reciprocal angular frequency of said precessing nuclei,

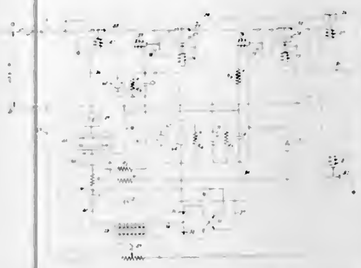


(e) and means supported on said coil for producing local field inhomogeneities in said well bore and selected regions of said earth formation contiguous to said well bore to destroy detectable spin magnetic induction signals from precessing nuclei in said well bore and selected contiguous regions.

3,199,023
METHOD AND APPARATUS FOR NONDESTRUCTIVELY TESTING ELECTRICAL INSULATION BY SENSING LEVELS OF IONIZATION OCCURRING IN THE INSULATION

Bhupendrakumar V. Bhimani, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Nov. 27, 1959, Ser. No. 855,919
6 Claims. (Cl. 324—54)

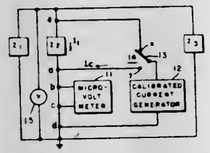


1. In a method of testing electrical insulation wherein an undesirable charge build-up occurs in the insulation due to the testing thereof, the steps which consist of applying a predetermined direct current voltage across the insulation, at some predetermined time interval after the voltage has been applied sensing a first level of ionization occurring in the insulation, and interrupting the application of the voltage prior to disruptive breakdown of the insulation being tested in the event that only ionization above a predetermined second level is sensed.

3,199,024
APPARATUS AND METHOD FOR DETERMINING THE IMPEDANCE OF A COMPONENT IN A COMPLEX NETWORK WITHOUT REMOVING THE COMPONENT FROM THE NETWORK

Ron Manly, Hawthorne, and William G. Miller, Burbank, Calif., assignors to the United States of America as represented by the Secretary of the Army

Filed Oct. 4, 1961, Ser. No. 142,992
19 Claims. (Cl. 324—57)

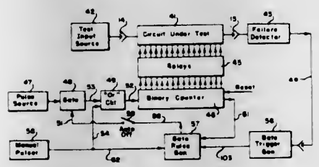


1. A device for measuring the impedance of a network having leads connected in a complex electrical system comprising: a calibrated current generator having two terminals, one of said terminals of said generator being connected at a first point on one of said leads of said network, a switching means having a switch arm connected to the other terminal of said generator and a first contact connected to another of said leads of said network, said switching means having a second contact connected to said one lead at a second point closer to said network than that to which said one terminal of said generator is connected, a micro-voltmeter having terminals connected to said one lead between said first and second points, and a voltmeter connected across said network.

3,199,025
APPARATUS INCLUDING SWITCHING MEANS FOR SELECTIVELY VARYING THE OPERATING PARAMETERS OF A CIRCUIT UNDER TEST

Norman L. Stone, Westbury, and John D. Cavallari, Jr., Rosedale, N.Y., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Aug. 1, 1960, Ser. No. 46,429
3 Claims. (Cl. 324—73)

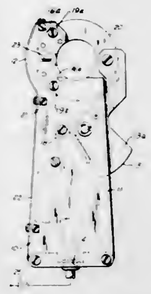


1. A circuit tolerance tester for an electronic circuit having an input and an output and a plurality of circuit components operatively connected therebetween, which comprises a plurality of relay switches for switching corresponding components of said electronic circuit between predetermined upper and lower operating parameters of the components respectively, means for applying a test input signal to said circuit, a failure indicator, means for supplying the output of said circuit to said failure indicator, a binary counter having a plurality of binary stages, said relay switches being connected to be actuated by said binary stages respectively whereby successive actuations of the counter produce successive different combinations of positions of said switches, a source of repetitive pulses, a gate circuit, means for supplying said pulses through said gate circuit to said counter to produce successive actuations thereof, means responsive to said failure indicator for closing said gate when the output of said electronic circuit falls outside a predetermined range, and manually-operable means for opening said gate.

3,199,026
D.-C. CLAMP-ON METER INCLUDING A HALL PLATE FLUX DETECTOR

Donald Leibowitz, Bronx, N.Y., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed May 1, 1961, Ser. No. 106,759
5 Claims. (Cl. 324—127)



1. A D.-C. ammeter, comprising in combination, a handle having an opening lengthwise therethrough; a fixed clamp holder affixed to said handle; a moveable clamp holder, pivotly affixed to said handle; thumb actuation pressure means on said moveable clamp holder adapted when pressed to pivotly move said clamp holder to and away from said fixed clamp holder; spring means tending to maintain said moveable clamp holder towards said fixed clamp holder; inner and outer magnetic pole pieces held by said fixed clamp holder, both having arcuate pole faces adapted to partially encircle a cable, the outer fixed pole piece including one member of a pair of interleaving mating members; a pivoting magnetic pole piece having an arcuate shaped face cooperating with said fixed pole pieces arcuate faces so as to encircle a cable between all said faces, and having the other member of said pair of interleaving mating members; a rectangular Hall crystal disposed between said inner and outer fixed pole faces so that one edge thereof is parallel to a cable encircled by said pole faces, said Hall crystal having output leads; Hall crystal excitation leads passing through said handle opening to opposed sides of said crystal so as to send a Hall excitation current therethrough at right angles to the magnetic field created by a current carrying cable encircled by said pole faces; whereby when an excitation current source feeds an excitation current through said Hall crystal, the magnetic field created by a current carrying cable encircled by said pole faces will cause a measureable Hall voltage drop across said crystal at right angles to said excitation current and said magnetic field to provide a signal in said output leads, corresponding to the magnitude of the D.-C. current passing through said cable.

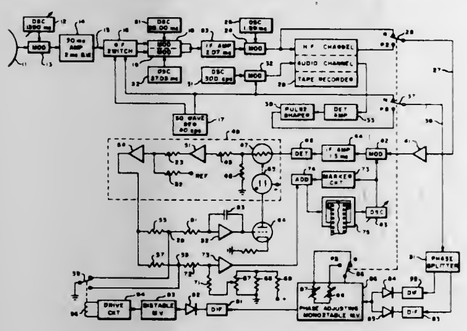
3,199,027
POWER LEVEL SPECTRUM RECORDER AND ANALYZER

Samuel Belchis, Hartsdale, Seymour Feldon, Jamaica, and Lester I. Goldfischer, New Rochelle, N.Y., assignors to General Precision, Inc., a corporation of Delaware

Filed Sept. 11, 1961, Ser. No. 137,283
2 Claims. (Cl. 324—140)

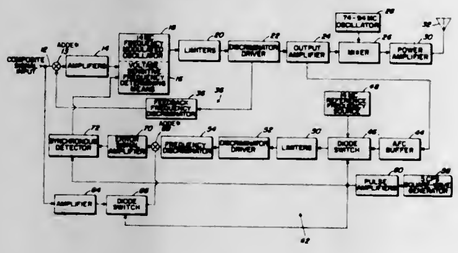
1. Apparatus for indicating the relative power level of first and second unidirectional voltages which appear alternately on a time shared basis on a single transmission channel, comprising, a variable voltage divider connected to said transmission channel, a first direct coupled amplifier connected to the output of said voltage divider, a reference source of unidirectional voltage having a polarity opposite to that of the output of said first amplifier,

means for combining said reference voltage with the output voltage of said first amplifier to obtain a combined voltage, a second direct coupled amplifier having its input energized by said combined voltage, means connected to the output of said second amplifier for controlling said



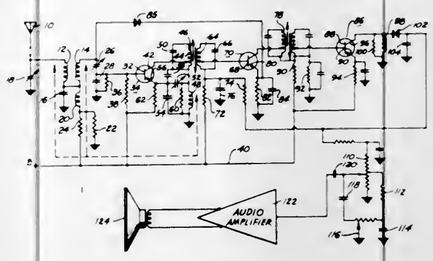
voltage divider to make the output of said second amplifier zero during the appearance of said first voltage on said single channel, and means for indicating the amplitude of the output of said second amplifier during the appearance of said second voltage on said single channel.

3,199,028
DUAL FEEDBACK DIRECT FREQUENCY MODULATION SYSTEM
Frank D. McLin and Glenn W. Sellers, Cedar Rapids, and David B. Hallock, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Aug. 6, 1962, Ser. No. 214,932
6 Claims. (Cl. 325—148)



1. A direct frequency modulation system including carrier frequency stabilizing means, said system comprising: an oscillator having a voltage sensitive output frequency determining network that is biased to establish a predetermined operational carrier frequency; means adapted to receive modulating signals over a wide range of frequencies and couple the same to said frequency determining network to cause said oscillator to be frequency modulated thereby; and first and second feedback networks connected in parallel between the output of said oscillator and said frequency determining network whereby said carrier frequency, exclusive of modulation thereon, is maintained substantially constant, and wherein said first feedback loop includes means whereby said received modulating signals are fed back to suppress oscillator distortion, noise, and short term carrier frequency shifts, and wherein said second feedback loop includes means whereby long term carrier frequency shifts are suppressed.

3,199,029
AUTOMATIC GAIN CONTROL SYSTEM
Harold J. Laurent, Baltimore, Md., assignor to The Bendix Corporation, Towson, Md., a corporation of Delaware
Filed May 3, 1961, Ser. No. 107,358
1 Claim. (Cl. 325—319)



An automatic gain control for a superheterodyne radio receiver, comprising

a double tuned antenna circuit including a first tuned circuit and a second tuned circuit approximately critically coupled to said first,

a converter stage receiving signal from said second tuned circuit and providing an intermediate frequency output,

an intermediate frequency amplifier including a transistor connected in common emitter circuit configuration with a feedback resistor bypassed for intermediate frequencies in said emitter circuit and means for biasing the base-emitter junction of said transistor,

means for detecting the intermediate frequency output of said amplifier and for providing a direct potential proportional to the amplitude of the output of said intermediate frequency amplifier,

means applying said direct potential to the bias means of said intermediate frequency amplifier in a manner tending to reduce the bias and hence the gain of said amplifier,

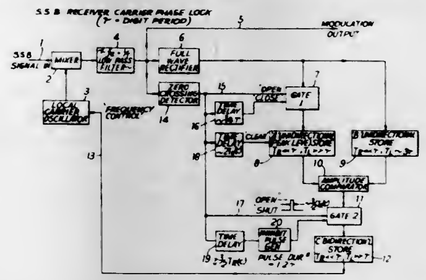
a diode connected between said second tuned circuit and the emitter resistor of said amplifier, and

means for biasing said diode for non-conduction at the potential said amplifier emitter assumes for small signals, said diode bias changing in a manner tending to increase conduction by the change in emitter potential reflecting a reduction in amplifier bias by said detector potential.

3,199,030
RECEIVERS FOR SUPPRESSED-CARRIER SINGLE-SIDEBAND TRANSMISSIONS OF BINARY-PULSE SIGNALS
Alan John Henry Oxford, Ampfield, Richard Thomas Albert Standford, Fareham, and James Alexander Galloway, North End, Portsmouth, England, assignors to The Plessey Company Limited, Ilford, England, a British company
Filed Dec. 4, 1962, Ser. No. 243,201
Claims priority, application Great Britain, Dec. 7, 1961, 43,886/61
8 Claims. (Cl. 325—329)

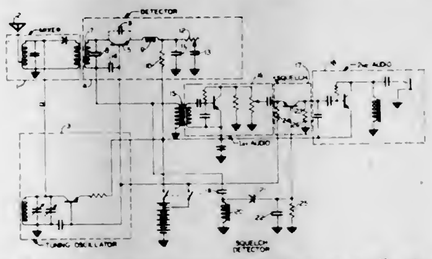
1. A receiver for the suppressed-carrier single-sideband transmission of continuous signals in digital code, which includes means for inserting a substitute carrier into the received waveform, said means including a local oscillator which comprises means responsive to the occurrence and position of a peak-voltage maximum positioned

asymmetrically between successive zero crossings, of the output waveform and operative to automatically adjust the



frequency of the said oscillator in such sense as to reduce the such asymmetric maximum.

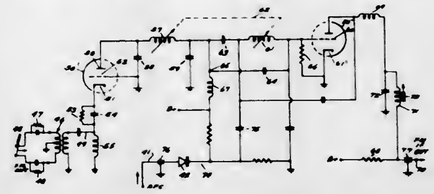
3,199,031
GENERATION AND USE OF CONTROL SIGNAL IN SUPERREGENERATIVE RECEIVERS
Jack R. Harris, United States Navy (3026 Flagler Ave., Key West, Fla.), and Ray P. Murray, 28 Sierra Vista Drive, Monterey, Calif.
Filed May 3, 1962, Ser. No. 192,290
12 Claims. (Cl. 325—429)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A radio receiving system comprising an audio stage and a superregenerative detector adapted to receive an external signal; an active device for switching said audio stage on and off; means for sensing the shift in the quench frequency of said superregenerative detector; and means for causing said sensing means to operate said active device to switch said audio stage on and off in response to the shift in quench frequency occasioned by the presence and absence of said external signal, said last named means including means to maintain said audio stage switched off during the entire interval when said external signal is absent.

3,199,032
FM TUNER WITH AUTOMATIC FREQUENCY CONTROL
Robert C. A. Eland, Pasadena, Calif., assignor to Standard Kollsman Industries, Inc., Melrose Park, Ill., a corporation of Illinois
Original application Aug. 26, 1958, Ser. No. 757,248, now Patent No. 3,135,922, dated June 2, 1964. Divided and this application July 16, 1962, Ser. No. 209,928
3 Claims. (Cl. 325—453)

1. A tuner of broadcast FM modulated signals for an FM receiver comprising an oscillator-mixer stage for generating a frequency and heterodyning the signals with said frequency; said oscillator-mixer stage having an input grid for combinedly receiving said frequency and signals; a frequency determining circuit connected to said input grid; said frequency determining circuit comprising a first and second parallel path, having common first and second end terminals; said first parallel path including a series connected inductor and first capacitor having a common junction terminal; said second parallel path including a second capacitor; said second terminal connected to said input grid and said first terminal connected to the source of said signals; said first and second capacitor forming a



capacity divider circuit, with the values thereof selected to place said first terminal at ground potential; a junction silicon diode circuit connected to said frequency determining circuit and connectable to a bias voltage from the FM detector stage of the receiver to effect automatic changes in the oscillator frequency by variable capacitive action in the diode and thereby establish effective AFC for the FM detector operation.

3,199,033
CONDITION RESPONSIVE CIRCUITS WITH PLURAL OUTPUT OF RELAXATION OSCILLATOR BALANCED
Carl E. Atkins, Montclair, and Robert L. Ziolkowski, South Plainfield, N.J., assignors to Tung-Sol Electric Inc., a corporation of Delaware
Filed Aug. 10, 1964, Ser. No. 388,644
9 Claims. (Cl. 328—5)



1. A condition responsive circuit comprising

(a) a source of energy;

(b) a relaxation oscillator coupled to said source, said oscillator yielding two output signals;

(c) means for differentiating one of said output signals to produce a first series of pulses;

(d) means for converting the other of said output signals into a second series of pulses of polarity opposite to that of said first series of pulses;

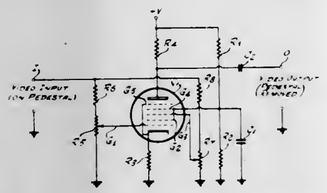
(e) means for summing said pulses; and

(f) condition responsive means for changing the magnitude of one of said series of pulses to vary the summation effected by said last mentioned means.

3,199,034
PEDESTAL CANCELLATION AND VIDEO TRANSMISSION CIRCUIT
Vernon H. Ritter, Boalsburg, Pa., assignor to HRB-Singer, Inc., State College, Pa., a corporation of Pennsylvania
Filed May 23, 1961, Ser. No. 112,017
14 Claims. (Cl. 328—54)

2. A pedestal cancellation circuit comprising a current amplifier device having a current input terminal, a current output terminal, and two current control terminals, said current amplifier device having one value of transconductance with respect to signals applied to one current control terminal and a different value of transconductance with respect to signals applied to the other cur-

rent control terminal; a current input impedance coupled to said current input terminal; a current output impedance coupled to said current output terminal; means for coupling a common input signal to each of said current



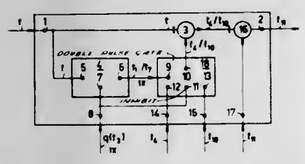
control terminals; said input signal comprising a signal superimposed upon a pedestal; and means for independently adjusting the magnitude of the input signal applied to each current control terminal to produce an output in the form of a pedestal-free signal.

3,199,035

SYSTEM FOR SHIFTING PULSES OCCURRING AT ARBITRARY INSTANCES OF CLOCK PULSE CYCLES TO A FIXED INSTANT OF THE PULSE CYCLES

Hans Kok and Antonie Wijbe van't Slot, Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 11, 1961, Ser. No. 82,095
Claims priority, application Netherlands, Jan. 21, 1960, 247,609
4 Claims. (Cl. 328—63)



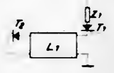
1. A system for shifting pulses to a predetermined position with respect to a clock pulse cycle, said system comprising a source of input pulses, a source of clock pulses for providing pulse cycles of a predetermined number of sequential clock pulses, each pulse cycle comprising first and second pulse instants one-half cycle apart, third and fourth pulse instants lagging said first and second instants, a fifth pulse instant subsequent said fourth instant, and a stop pulse instant, first and second storing one-shot generators having first and second input terminals, respectively, first and second setting terminals, respectively, and first and second output terminals, respectively, means providing a gating pulse connected to said clock pulse source and having a third input terminal and a third output terminal, double gate means connected to said clock pulse source and having a starting terminal and a fourth output terminal, means applying said input pulses to said first setting terminal and said third input terminal, means connecting said first output terminal to said second setting terminal, means connecting said third output terminal to said starting terminal, means connecting said fourth output terminal to said first input terminal, means connecting said second input terminal to said clock pulse source whereby pulses are applied to said second input terminal at said fifth instants, and output circuit means connected to said second output terminal, said gating pulse providing means providing a gating pulse at its output terminal at the next of said first and second instants following an input pulse and subsequent the occurrence of a stop pulse instant, with only one gating pulse following any stop pulse instant, said double gate means providing an output pulse at said third and fourth instants following the occurrence of a gating pulse at said first and second instants, respectively.

3,199,036

CIRCUITS FOR GENERATING WAVE TRAINS

Claude Bruant and Edmond Crampon, Montrouge, and Jacques Martinat, Fresnes, France, assignors to Societe Alsacienne de Constructions Mecaniques, Paris, France, a corporation of France

Filed July 5, 1961, Ser. No. 121,955
Claims priority, application France, Aug. 8, 1960, 835,280
6 Claims. (Cl. 328—67)



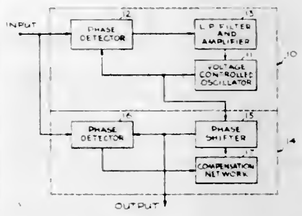
1. In a wave train generating circuit, the combination including a pair of gating element means, each of said gating element means having a cathode, anode and gate; means for alternately applying a pulse to said gates, so as to render conductive the respective gating element to which the pulse is applied; and energy-storage device having a predetermined characteristic impedance, means for connecting said gating means to said energy-storage device whereby said energy-storage device is charged when one gating element means of said pair in rendered conductive, and whereby said energy-storage device is discharged when the other gating element means is rendered conductive, whereby there is a charging current and a discharging current carried respectively by said gating element means; means for supplying a positive voltage to the anode of one of said gating element means; and load means having an impedance, as seen from said energy-storage device, not greater than the characteristic impedance, connected to produce a pulse for at least every charging current, so as to produce a wave train, said load means being in the anode circuit of one of said gating element means, a first terminal of said energy-storage device being connected to the cathode of said one of said gating element means, a second and a third terminal being respectively connected to the anode and cathode of the other of said gating element means, and a fourth terminal of said energy-storage device being connected to a current return point.

3,199,037

PHASE-LOCKED LOOPS

Ross E. Graves, Pacific Palisades, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio

Filed Sept. 25, 1962, Ser. No. 226,117
12 Claims. (Cl. 328—155)



1. In combination,
a phase-locked loop circuit responsive to a frequency varying input signal for generating an output signal having substantially the same instantaneous frequency as said input signal, and

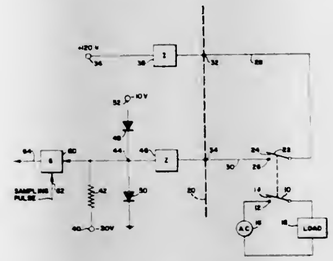
a phase correction circuit including a phase shifter responsive to said input signal and said output signal for shifting the phase of said output signal by means of said phase shifter an amount substantially equal to the phase error of said first loop.

3,199,038

CONTACT CLOSURE DETECTOR

John W. Cannon, San Diego, Calif., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Feb. 1, 1961, Ser. No. 86,477
3 Claims. (Cl. 328—171)



1. A protector circuit for detecting the closure of a remote switch comprising: a contact pair ganged to said switch and operative therewith between open and closed positions, a first voltage source, a first impedance connecting said voltage source to one contact of the contact pair, a second voltage source, a first and second diode connected in series at a junction point and joining said second voltage source to a point of reference potential through said first diode, the junction point and the second diode respectively, a second impedance connecting said junction point to the other contact of said contact pair, a third voltage source, a third impedance connecting said junction point to said third voltage source, a gate, and means connecting the gate to said junction point whereby the potential at said junction is supplied as an input to the gate; said second, third and reference potentials having values to permit said first diode to be forward biased and said second diode to be reverse biased when said contact pair is open; and said first, second, third and reference potentials having values to permit said second diode to be forward biased and the first diode to be reversed biased when said contact pair is closed.

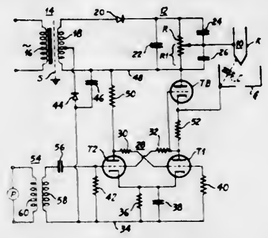
3,199,039

MEANS FOR CONTROLLING AN ELECTRON BEAM

Rolf B. Lochinger, Middlesex County, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 26, 1962, Ser. No. 247,798
4 Claims. (Cl. 328—258)

2. Bias means for varying the intensity of current in an electron device having a cathode and a control electrode, said bias means comprising
(a) a resistor,
(b) a variable impedance device having two main electrodes and a control electrode,
(c) means for connecting one of said main electrodes to said cathode through at least a portion of said resistor,
(d) means for connecting the other of said main electrodes to said control electrode of said electron device,
(e) means for applying a first potential across at least a portion of said resistor,
(f) means for applying a second potential across said main electrodes, said first and second potentials being in series aiding relation with respect to said cathode and the control electrode of said electron device, and



(g) means connected to said control electrode of said variable impedance device to vary the impedance thereof, whereby to vary the intensity of said beam.

3,199,040

CRYSTAL FREQUENCY DISCRIMINATOR

James E. Coogan, Palo Alto, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

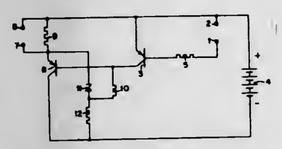
Filed Sept. 6, 1962, Ser. No. 221,925
1 Claim. (Cl. 329—117)

A frequency discriminator comprising:
(a) an input terminal adapted to have an A.C. signal voltage applied thereto,
(b) a first crystal resonant at a first predetermined frequency mounted between first and second electrodes,
(c) a second crystal resonant at a second predetermined frequency mounted between third and fourth electrodes,
(d) coupling capacitor means coupling said first and third electrodes to said input terminal,
(e) first load resistor means connected across said first and second electrodes,
(f) second load resistor means connected across said third and fourth electrodes,
(g) first and second capacitors series connected between said second and fourth electrodes,
(h) an inductor connected between the common connection of said first and second capacitors and the common connection of said first and third electrodes,
(i) first rectifier means coupled to said second electrode and having an output,
(j) second rectifier means poled opposite to said first rectifier means and having an output,
(k) first capacitor storage means coupled to the output of said first rectifier means,
(l) second capacitor storage means coupled to the output of said rectifier means, and
(m) circuit balancing means coupled between the outputs of said first and second rectifier means and having an output terminal.

3,199,041
D.C. TRANSISTOR AMPLIFIER INCLUDING A ZENER DIODE

Richard Peretz, Watermael-Boitsfort, Belgium, assignor to Ateliers de Constructions Electriques de Charleroi (ACEC), Brussels, Belgium, a joint-stock company of Belgium

Filed Oct. 23, 1962, Ser. No. 232,537
1 Claim. (Cl. 330—19)



A high gain transistor amplifier fed by a D.C. voltage source, comprising in combination:

(a) a first and a second transistor;

(b) the collector of said first transistor directly connected to the base of said second transistor;

(c) an emitter load resistance for said second transistor;

(d) a feeding resistance connected to said D.C. voltage source;

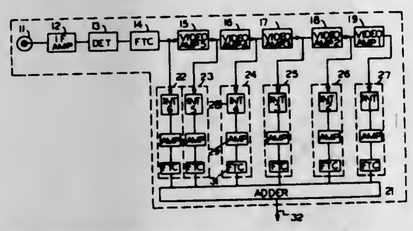
(e) a Zener diode connected between the emitter of said second transistor and said feeding resistance;

(f) a collector resistance for said first transistor connected to the common point of said Zener diode and feeding resistance.

3,199,042
CONSTANT FALSE ALARM RATE VIDEO AMPLIFIER SYSTEM

Oliver H. Bauer, Baltimore, Md., assignor to The Bendix Corporation, Towson, Md., a corporation of Delaware

Filed June 7, 1961, Ser. No. 115,531
9 Claims. (Cl. 330—124)



6. A constant false alarm rate video amplifier comprising a plurality of cascaded successively saturating video stages, an adding circuit having an input from each of said successive video stages, a signal level detector for each of said video stages, and means responsive to the signal level detected at each stage for successively disabling the input to said adding circuit from each stage upon saturation of the video stage supplying said input.

3,199,043
CURRENT TRANSFORMER AMPLIFIER MULTIPLEXING ARRANGEMENT

Karl Hinrichs, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California

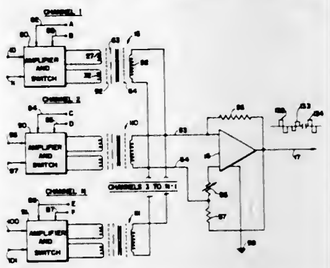
Filed Jan. 8, 1962, Ser. No. 164,844
8 Claims. (Cl. 330—124)

7. A multiplexing arrangement for sampling input signals and providing output signals representative of the input signals, and including a plurality of channels, the improvement comprising

amplifier and switching means in each of said channels for receiving input signals and for selectively providing output signals,

means connected with each of said amplifier and switching means for receiving switching signals and controlling the operation of said amplifier and switching means,

a current transformer in each channel having at least one primary winding and at least one secondary



winding, the primary winding of the current transformer of each channel being connected with the respective amplifier and switching means of each channel,

an output amplifier, and

the secondary windings of all the current transformers being connected in parallel and to said output amplifier, said current transformers serving as current summing nodes of the output amplifier.

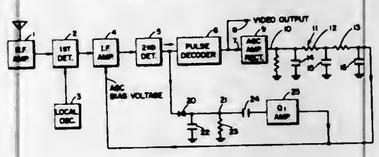
ERRATUM

For Class 330—129 see:
Patent No. 3,198,424

3,199,044
AUTOMATIC GAIN CONTROL APPARATUS FOR PULSE SIGNAL HANDLING SYSTEMS

George F. Morris, Pittsford, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed May 14, 1962, Ser. No. 194,556
7 Claims. (Cl. 330—134)

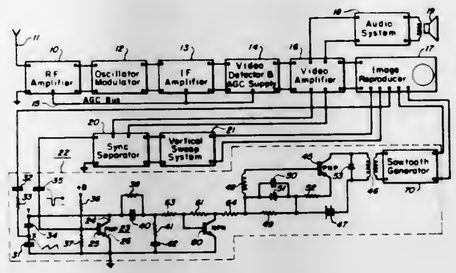


1. A navigation radio receiver for detecting pairs of pulses of radio frequency energy of prescribed spacing, said receiver comprising a variable gain amplifier, a detector coupled to said amplifier for producing pairs of voltage pulses corresponding to said pairs of pulses of radio frequency, a decoder coupled to the output of said detector for producing an output pulse when pulses of said prescribed spacing occur in the detector output; a first automatic gain control circuit, said circuit being coupled between the output of said decoder and the gain control electrode of said amplifier for continuously adjusting the amplifier gain according to output pulse amplitude, a second automatic gain control circuit, said second circuit being coupled between the input of said decoder and said gain control electrode, and a blocking condenser in said second circuit for affecting said gain control electrode only in response to signal voltages which change relatively rapidly.

3,199,045
AUTOMATIC FREQUENCY CONTROL SYSTEM

Daniel J. Herick, Des Plaines, and Petrus A. van Berkum, Elmhurst, Ill., assignors to Zenith Radio Corporation, a corporation of Delaware

Filed Aug. 9, 1961, Ser. No. 130,290
7 Claims. (Cl. 331—8)

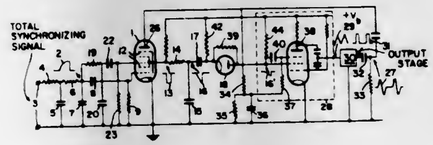


1. A phase-controlled system comprising: a semiconductor device having a base zone of one conductivity interposed between emitter and collector zones of opposite conductivity and constituting therewith base-emitter and base-collector junctions; a first source for producing an alternating-current signal the phase of which is to be measured; a second source for producing a signal to be used as a phase reference; a storage capacitor; a first signal path, including said first source and said capacitor connected in series with said emitter and collector junctions, for charging said capacitor in one sense; a second signal path, including said first and second sources and said capacitor connected in series across only one of said base-emitter and base-collector junctions, for charging said capacitor in the opposite sense; said second source being poled to cause conduction selectively in one of said signal paths and in an amount determined by the sense and extent of deviation of said signals from a predetermined phase condition; and filter means for deriving from said capacitor a substantially direct current potential representing phase changes of said signals from said predetermined phase condition.

3,199,046
OSCILLATOR WITH AFC AND GATE-CONTROLLED DIRECT SYNCHRONIZATION

Wouter Smeulers, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 19, 1961, Ser. No. 139,087
Claims priority, application Netherlands, Oct. 17, 1960, 256,943
12 Claims. (Cl. 331—10)

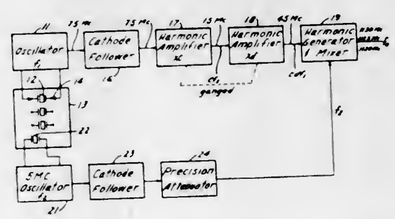


1. An oscillator frequency control system comprising, an oscillator circuit having a pulsatory output voltage and a frequency control input, a source of pulsatory synchronizing signals, a current control device having at least first and second electrodes, means connecting said second electrode to a bias voltage source, means applying said synchronizing signals to said first electrode with a polarity with respect to said bias source which tends to make said device conductive, means applying said pulsatory output voltage to said second electrode whereby the polarity of the pulses of said pulsatory output voltage block said device, whereby said synchronizing signals are passed by said device only when said synchronizing signals and pulses do not coincide, and means connecting the second electrode of said current control device to said oscillator circuit frequency control input for direct synchronization thereof, whereby said synchronizing pulses are applied to said oscillator circuit only when said oscillator circuit is out of synchronization with said signals.

3,199,047
SIGNAL GENERATOR

Le Roy T. Cushman, 11761 Los Arboles, Sunnyvale, Calif.

Filed Aug. 21, 1961, Ser. No. 132,793
3 Claims. (Cl. 331—40)



2. In a signal generator, means for generating a first signal having a preselected precision frequency, means for generating a second signal having a precision fixed frequency independent of and differing from the frequency of the first signal, means operatively connected to the means for generating a second signal for precisely attenuating the second signal, and means operatively coupled to the means for generating a first signal and to the means for attenuating the second signal for mixing said first and second signals to provide a combined signal having a plurality of precision frequencies with upper and lower precision side band frequencies separated in frequency from the frequency of the first signal by a frequency equal to the frequency of the second signal, said means operatively coupled to the means for generating a first signal and to the means for attenuating the second signal including a series resonant circuit for eliminating harmonics of the second signal, said series resonant circuit including first and second serially connected components, said first component being coupled to the means for precisely attenuating the second signal, said second component being coupled to said means for generating a first signal, the output from the junction between the first and second components being connected to the input of the means for mixing said first and second signals.

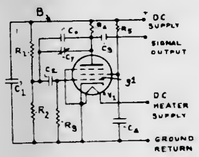
3,199,048
WHITE NOISE GENERATOR UTILIZING CENTER-TAPPED SERIES CONNECTED IMPEDANCES

Royal V. O'Reilly and Pierre J. Sandborg, Altadena, Calif., assignors to Colorsound Mfg. Co. Inc., Covina, Calif., a corporation of Alaska

Filed Sept. 11, 1961, Ser. No. 137,399
10 Claims. (Cl. 331—69)

1. Apparatus for generating a noise signal constituted by a wide band of frequencies comprising a pair of impedance elements connected in series across a source of direct current potential having one side grounded, a tap at the center point of said series connected impedances

for taking off the noise signal, and a capacitor connected in parallel with said series connected impedances, said capacitor having a reactance value sufficiently large to place

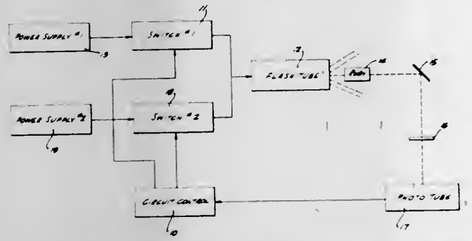


the non-grounded end of said series connected impedances at essentially ground potential for substantially all audio frequencies.

3,199,049
OPTICAL MASER SYSTEM FOR OBTAINING SHORT PULSES OF EMITTED ENERGY

James H. Morse, Malibu, and Eric J. Woodbury, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Aug. 18, 1961, Ser. No. 132,392
9 Claims. (Cl. 331—94.5)



1. A method of operating an optical maser for controlling the output pulse thereof which comprises exciting the maser material to a level below the stimulated emission level with a relatively large amount of pumping energy supplied over a relatively long time, sensing the emission of coherent light from the maser material, and then exciting the maser material to the level for stimulated emission with a relatively small amount of pumping energy supplied over a relatively short time.

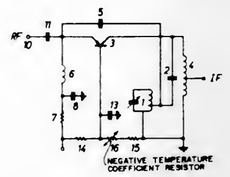
4. A system for operating an optical maser for controlling the output pulse thereof which comprises a body of optical maser material, maser material excitation means operatively associated with the maser material, power supply means operatively connected to the excitation means for energizing the excitation means, sensing means for detecting the excitation state of the maser material by sensing radiation emitted therefrom, and switching means cooperatively connected to the sensing means the excitation means and the power supply means for controlling the excitation state of the maser material by controlling the connection of the power supply means to the excitation means.

3,199,050
TRANSISTOR OSCILLATOR HAVING VOLTAGE DEPENDENT RESISTOR FOR FREQUENCY STABILIZATION

Ewald Schleenbecker, Fellinghausen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 26, 1962, Ser. No. 175,531
Claims priority, application Germany, Mar. 13, 1961, P 26,748
7 Claims. (Cl. 331—109)

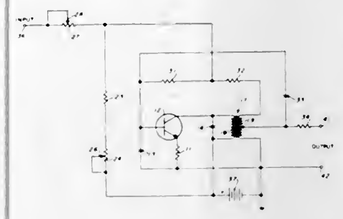
1. A frequency stabilized transistor oscillator comprising a transistor having emitter, base and collector electrodes, a source of operating voltage having first and second terminals, means connecting said emitter and collector electrodes to said first and second terminals respectively, means for regeneratively interconnecting at least two of said electrodes to produce oscillations, a voltage divider having a tap, means connecting said voltage divider between said first and second terminals, and means connecting said base electrode to said tap, said voltage divider comprising non-linear resistor means connected to vary the ratio of emitter-base voltage to operating voltage in the same sense as variations in said operating voltage whereby the frequency of said oscillations is stabilized with variation of said operating voltage.



3,199,051
OSCILLATOR WITH FREQUENCY MODULATING IRON CORE REACTOR

Richard A. Hills, La Jolla, Calif., and Frank C. De Bolt, Corpus Christi, Tex., assignors to the United States of America as represented by the Secretary of the Navy

Filed June 15, 1962, Ser. No. 202,924
1 Claim. (Cl. 331—109)
(Granted under Title 35, U.S. Code (1952), sec. 266)

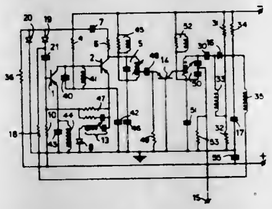


A voltage-controlled oscillator comprising a transistor having a base electrode, an emitter electrode and a collector electrode, a power supply having a positive and a negative terminal, a capacitor coupled between said base electrode and said negative terminal, a resistor coupled between said emitter electrode and said negative terminal, a transformer having a saturable iron core and a primary winding and a secondary winding, said primary winding being connected between said collector electrode and said positive terminal, a capacitor connected in shunt with said primary winding, said secondary winding having a center tap, a capacitor connected between said center tap and said base electrode, two series-connected resistors connected between said base electrode and one end of said secondary winding, the other end of said secondary winding being connected to said negative terminal of said power supply, an input terminal for connection to a signal source, a resistor connected between said input terminal and the junction of said series-connected resistors, an adjustable resistor connected between said junction and said positive terminal for controlling the magnetizing current in said secondary winding, an output terminal, and a resistor connected between said output terminal and said center tap.

3,199,052
CRYSTAL OSCILLATOR

Marie Marcel Antoine Arnold Ghislain Verstraelen, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 11, 1961, Ser. No. 137,326
Claims priority, application Netherlands, Sept. 9, 1960, 255,784
5 Claims. (Cl. 331—116)

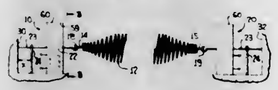


1. A transistor crystal oscillator comprising first and second transistors, each having at least an emitter, a collector and a base electrode, a direct current connection between the collector of said first transistor and the base of said second transistor, positive feedback circuit means connected between the collector of said second transistor and the base of said first transistor, an emitter direct current path for said second transistor, said direct current path comprising negative feedback resistance means, means connecting said negative feedback resistance means between the emitter of said second transistor and the base of said first transistor, a source of operating current, means connecting said source between the emitters and collectors of said transistors, crystal means, and means connecting said crystal means in parallel with at least a portion of said direct current path.

3,199,053
TAPERED SPRING REVERBERATION DELAY LINE

David A. Bunger, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed Sept. 18, 1964, Ser. No. 397,482
17 Claims. (Cl. 333—30)



1. In an electroacoustic transmission system, a mechanical delay line, electromechanical transducer means responsive to applied electrical signals to excite vibrations in said line, mechanicoelectrical transducer means remote from said first-named means and responsive to said vibrations in said line to produce electrical signals representative thereof, said delay line comprising a single helical spring having a continuously variable helix diameter along at least a portion of the physical length thereof to vary the effective acoustic length of said spring as a function of the frequency of said vibrations, wherein the helix radius along at least a portion of the physical length of said spring is tapered monotonically from a first radius to a second radius, said radius having valves such that vibrations undergo a change in mode of propagation along said tapered portions at a helix radius defined by

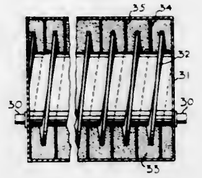
$$R=\frac{1}{4}\left(\frac{a}{\pi f}\right)^{1/2}\left(\frac{E}{\rho}\right)^{1/4}$$

centimeters, where a is the radius of the spring wire, f is the frequency of said vibrations, E is Young's modulus of elasticity, and ρ is the density of said spring.

3,199,054
SHIELDED DELAY LINE

James E. Holland, Rolling Hills, and Earl M. Polzin, Palos Verdes Estates, Calif., assignors, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio

Filed Oct. 17, 1960, Ser. No. 63,198
10 Claims. (Cl. 333—31)

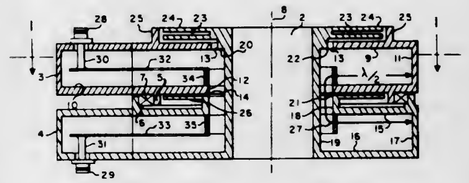


1. A device for receiving and transmitting waves of electromagnetic energy, comprising: an elongated member, formed of a material having a dielectric constant substantially higher than air, and having an electrically conductive layer on opposed surfaces thereof and having a convoluted form such that at least first and second portions of said member are disposed in side-by-side adjacency; means for launching an electromagnetic energy wave within said elongated member affixed to at least one end thereof; shielding means disposed between said first and second portions; and a material for absorbing electromagnetic energy radiated from said elongated member disposed upon at least a portion of the surface of said shielding means adjacent said elongated member.

3,199,055
MICROWAVE ROTARY JOINT

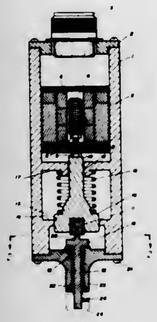
Henry S. Keen, Commack, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Oct. 30, 1963, Ser. No. 320,151
4 Claims. (Cl. 333—98)



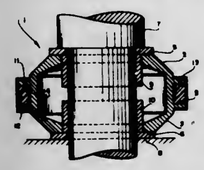
1. A microwave rotary joint, including two hollow body members each having a conductive interior surface in substantially the form of that of a figure of revolution of a re-entrant generatrix about an axis and each having an opening bounded by two respective circular edges each of which is centered on said axis and lies in a plane perpendicular to said axis, said openings being juxtaposed and conformal to each other, means electrically coupling the respective adjacent circular edges of said openings together, effectively joining said interior surfaces to provide a resonant cavity in the form of a transmission line short circuited at its ends and having an electrical length of one-half wavelength at a design center frequency, each of said members including a distribution system disposed at least in part within said resonant cavity and connecting a respective external transmission line in substantially identical relationship to a plurality of feed points in said cavity, said feed points being in circular symmetry about said axis and separated by arcuate intervals of less than one-half wavelength.

3,199,056
ADJUSTABLE TRANSFORMER AND CORE FOR TRACER MECHANISM
Alexander P. Cameron, Pittsburgh, Pa., assignor to Voss Engineering Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 14, 1961, Ser. No. 117,149
2 Claims. (Cl. 336—130)



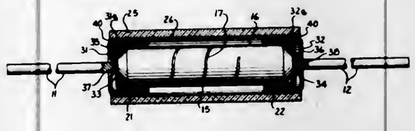
1. In a stylus holder for tracer mechanism a housing having a radially etxending integral partition wall with an electrical transformer mounted on one side of said wall, a transformer core mounted to be axially movable in a central bore of said transformer, said housing having a cover plate at one end and an end cap with a shank portion at the other, a radial flange spaced between said end cap and partition wall formed integrally with said housing, a core operator having a constricted end extending through a bore in said partition wall and rigidly secured to said transformer core, said core operator having an enlarged body portion extending through an opening of said radial flange and forming a shoulder for seating one end of a coil spring the other end of which abuts said partition wall to normally bias said core operator and core in a downward direction toward the end cap, said radial flange functioning to retain said core operator in a central position in said housing, a stylus bar extending through an opening in the shank portion of said end cap having a stylus at one end and abutting said core operator at its other end, said transformer core, core operator and stylus bar being movable in an axial direction only.

3,199,057
LOAD CELL TRANSDUCER
Philip Gindes, West Covina, and Karl H. Imhof, Pico Rivera, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 3, 1963, Ser. No. 277,738
4 Claims. (Cl. 338—5)



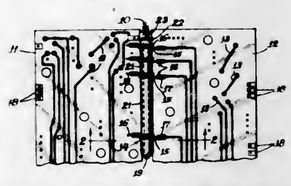
1. An electro-mechanical force sensitive element comprising a pair of frusto-conical sections, a cylindrical portion joining the bases of said sections to provide a hollow body, the narrow end portion of the frusto-conical sections lying about the central axis of the body and extending outwardly away from the cylindrical portion, a flat load-bearing surface at each narrow end portion, the walls of said sections being thicker adjacent said flat load bearing surface than at the junction of said sections and the cylindrical portion, a pair of annular rings integral with the cylindrical portion adjacent the bases of said sections and spaced slightly from the junction of said sections and the cylindrical portion, a series of at least eight strain sensitive elements bonded to the cylindrical portion between said annular rings, alternate elements having their sensitive axis disposed at right angles to each other, and diametrically opposed elements having the same sensitive axes, and means for connecting said elements for use in a bridge circuit, each arm of said bridge consisting of two series-connected diametrically opposed elements.

3,199,058
PRECISION RESISTOR
Howard A. Cramer and William E. McLean, Independence, Kans., assignors to Electra Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed Mar. 9, 1962, Ser. No. 178,631
8 Claims. (Cl. 338—237)



1. An encapsulated resistor or the like comprising, in combination, a circuit element, cooperating inner and outer terminal caps at each end of the element, a rigid cylinder surrounding said element, said inner terminal caps being connected to the element and providing electrical connection therewith and said outer terminal caps being dimensioned to engage the ends of the cylinder for sealing thereto, the outer terminal caps being in the form of thin flexible metal diaphragms having an inwardly projecting central protuberance secured to the cooperating inner caps over a limited area at the axis to take up differential expansion of the circuit element and the cylinder which surrounds it incident to abrupt temperature changes, and axial lead wires secured to the outer caps.

3,199,059
ELECTRICAL CONNECTOR HINGE
Michel S. Masse, Hollywood, and Jerome B. Murray, Los Angeles, Calif., assignors, by mesne assignments, to The Bendix Corporation, Baltimore, Md., a corporation of Delaware
Filed Jan. 22, 1962, Ser. No. 167,645
2 Claims. (Cl. 339—4)



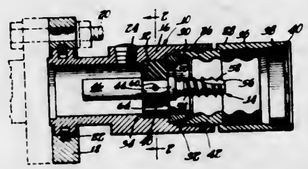
2. Electrical connector hinge apparatus for mechanically and electrically interconnecting printed circuit boards of the type having conductor strips thereon, said connector hinge including in combination, an elongated support shaft of insulating material, a plurality of L-shaped metallic hinges each having a base portion with an opening therein for mounting on said support shaft, a plurality of tubular spacers of insulating material interspacing pairs of said hinges on said support shaft in a given relationship, one of said hinges in each pair having a curvature formed in its base portion whereby a resilient contact is formed between the base portions of said hinges in each pair, one of said hinges in each pair being mechanically and electrically connected to one of said circuit boards with the other of said hinges being similarly connected to another of said circuit boards, said circuit boards being pivotal around the axis of said support shaft in any given relationship to each other, said resilient contact between said hinges facilitating said pivoting action and maintaining positive electrical continuity between said hinges, thereby permitting electrical interconnection of said circuit boards.

3,199,060
CABLE CONNECTOR ASSEMBLY
Anthony D. Marasco, Norwalk, Conn., assignor to J. B. Nottingham & Co., Inc., New York, N.Y., a corporation of New York
Filed Sept. 11, 1962, Ser. No. 222,816
1 Claim. (Cl. 339—60)



A cable connector assembly for connecting heavy-duty cables such as used in welding systems and the like comprising first and second body means formed of resilient electrical insulating material, first and second conventional cable portions, said first body means being molded about the terminal end of said first cable portion, said second body means being molded about the terminal end of said second cable portion, each of said cables having three conductors therein, the three conductors of each of said cables extending therefrom and being molded within the associated body means, said first body means including an integral projecting portion of reduced non-circular cross sectional dimension extending longitudinally from the center part of one end portion thereof and extending longitudinally beyond all remaining portions of said first body means, an outwardly extending rib means of substantially semi-circular cross sectional configuration being formed completely around the periphery of said projecting portion and being spaced a substantial distance from the outer end of said projecting portion, a first pair of electrical coupling means being embedded within said body means, each of said first pair of electrical coupling means being electrically connected with one of the conductors embedded within the associated body means, each of said first pair of electrical coupling means extending longitudinally outwardly beyond the end of said projecting portion, and being surrounded for a portion of the extent thereof beyond said projecting portion by a portion of electrical insulating material integral with said projecting portion, an additional electrical coupling means being embedded within said first body means and comprising an elongated body of electrically conductive material having a cavity formed therein and opening through the end face of said projecting portion, the wall of said elongated body being provided with a plurality of longitudinally extending slots to provide inherent resiliency thereto, a substantially cylindrical sleeve member being disposed in surrounding engaging relationship to said elongated body, said second body means including a recessed portion complementary to said projecting portion formed in one end portion thereof for snugly receiving the projecting portion of said first body means, said second body means having a groove formed therein complementary to said rib on the projecting portion of said first body means, and extending peripherally around and in communication with said recessed portion for snugly receiving said rib, said groove being spaced a substantial distance from the outer end of said second body means, said second body means having embedded therein a pair of electrical coupling means each comprising an elongated body of conductive material having a cavity formed therein opening into said recessed portion for receiving said first pair of electrical coupling means embedded within said first body means, the wall of each of said bodies embedded in said second body means being provided with a plurality of longitudinally extending slots to provide inherent resiliency thereto, a substantially cylindrical sleeve member being disposed in surrounding engaging relationship to each of said bodies embedded in said second body means, said second body means being provided with further recessed portions intermediate said first recessed portion thereof and each of the embedded hollow resilient electrical coupling means, said further recessed portions receiving the longitudinally extending electrical insulating portions surrounding said first pair of electrical coupling means embedded in said first body means, and a further electrical coupling means embedded within said second body means and comprising an elongated substantially cylindrical portion extending within said first mentioned recessed portion of said second body means and being received snugly within said resilient hollow electrical coupling means embedded within said first body means.

3,199,061
COAXIAL CONNECTOR
Ernest H. Johnson, Chicago, and William E. Voigt, Thornton, Ill., assignors to Andrew Corporation, Orland Park, Ill., a corporation of Illinois
Filed Jan. 31, 1963, Ser. No. 255,235
19 Claims. (Cl. 339—100)

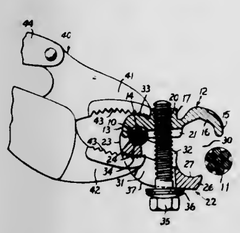


1. A high-frequency connector comprising:
(a) an outer shell having therein a tubular outer conductor connector portion and means for clampingly securing said tubular portion to the end portion of a cable outer conductor of substantially the same inner dimension as said tubular portion to form an outer conductor joint of substantially continuous inner dimension,
(b) at least one annular insulator within the shell, and
(c) a center conductor supported by the insulator,
(d) the rearward portion of the center conductor having thereon an exterior threaded termination for screw-in attachment to the corresponding conductor of a cable, and
(e) a conical flare, of maximum diameter exceeding the root diameter of the threads on the termination, by an amount small compared to the crest diameter of the threads on the termination, at the inner end of the termination, so that tightening of the screw-in connection produces a force fit of the leading portion of the cable conductor on the conical flare to establish firm contact around the entire circumference and form an inner conductor joint of substantially continuous outer dimension.

3,199,062
PARALLEL GROOVE CONNECTOR FOR HOT-STICK APPLICATION

Harley R. Wantz, Jr., Rock Hill, Mo., assignor to Jasper Blackburn Corporation, St. Louis, Mo., a corporation of Missouri

Filed Mar. 1, 1962, Ser. No. 176,539
3 Claims. (Cl. 339—109)

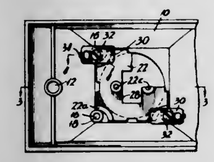


1. An electrical connector comprising:
(a) a pair of mating body sections, said body sections having a tap wire groove and a main wire groove therebetween,
(b) each body section being provided with an outer arcuate surface, said surfaces being opposed substantially about a tap wire placed in the tap wire groove, the arcuate surfaces directing opposed clamping forces applied to the arcuate surfaces substantially across the tap wire so as to hold the body sections open for insertion of a main wire into the main wire groove and to preclude free rotation of the body sections, and
(c) fastening means interconnecting said body sections and selectively closing the body sections onto the main wire groove while the body sections are held tight to the tap wire by clamping forces applied to the arcuate surfaces, the body sections swinging about the tap wire.

3,199,063
ELECTRICAL ACCESSORIES AND FLUSH COVER PLATES THEREFOR

William Henry Stuart, Abbotsford, Victoria, Australia, assignor to Ring-Grip (Australasia) Pty. Ltd., Abbotsford, Victoria, Australia, a company of Victoria, Australia

Filed Mar. 16, 1962, Ser. No. 180,194
Claims priority, application Australia, Mar. 20, 1961, 2,712/61, Patent 251,407
2 Claims. (Cl. 339—123)

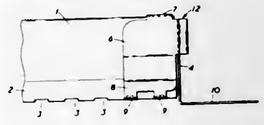


2. An assembly comprising a flush cover plate and an accessory detachably secured to the back thereof, said cover plate having spaced holes extending therethrough whereby it may be secured to a wall by screws, said cover plate being also formed with a relatively large hole through which the forward end of the accessory is exposed, a seating on the back of the cover plate about said relatively large hole therein, coacting seating means on the forward end portion of the accessory, coacting means on the cover plate and on the adjacent forward portion of the accessory for locating said accessory in each of a plurality of alternative angular positions spaced 90° apart, and operable securing means extending rearwardly from the back of the cover plate and having a laterally extending securing portion in contact both with the cover plate and with the accessory and accessible only from the back of the cover plate and positively and detachably securing the accessory to the back of the cover plate.

3,199,064
EDGE CONNECTORS FOR PRINTED CIRCUIT PANELS

Antony Brasher Clewes, Sherwood, Nottingham, England, assignor to United-Carr Incorporated, a corporation of Delaware

Filed July 27, 1961, Ser. No. 127,208
1 Claim. (Cl. 339—134)



An edge connector comprising a body member, an end piece, and a series of contacts, said body member provided with a base portion and a pair of walls in parallel spaced relation with each other integral with and extending from said base portion, each of said walls having an external surface and an internal surface, said internal surfaces defining a longitudinal slot, said body member having at least one terminal end, each of said external surfaces provided with an integral tapered flange extending therefrom proximate said base portion, said end piece comprising an end wall and laterally spaced side walls extending from said end wall, each of said side walls having a top edge, a bottom edge, an inwardly extending leg integral with said top edge and an outwardly inclined flange integral with said bottom edge, each of said flanges having engagement legs extending inwardly of said flange, said flanges engaging said tapered flanges of said body member and said legs engaging the upper surfaces of said walls of said body member whereby said terminal end is closed off and said end piece having means of engaging a support and said contacts being engaged within said walls.

3,199,065
ELECTRICAL CONTACT DEVICE

Orville I. Thompson, Deerfield, Ill., assignor to De Vry Technical Institute, Inc., Chicago, Ill., a corporation of Illinois

Filed Apr. 28, 1961, Ser. No. 106,225
9 Claims. (Cl. 339—149)

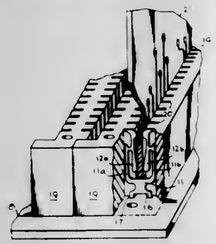


1. An electrical contact comprising a sheet of electrically conducting resilient material having a flat wall, said sheet having a flat face terminating in parallel opposite sides and disposed at an acute angle to the wall, one of the sides of said face being connected to the wall through a bend extending through an angle in excess of 90°, said sheet having a flat strip portion terminating in parallel opposite sides and disposed approximately parallel to the wall, one of the sides of said strip portion being connected to the side of the face opposite the wall by a bend less than 90°, and a normally flat support extension having parallel sides disposed at an acute angle to the strip portion, one of the sides of the support extension being connected to the strip portion through a bend of greater than 90° and the other side of the support extension abutting the wall, and means defining two parallel flat surfaces spaced from each other, the flat wall of the sheet abutting one of the surfaces and the portion of the flat wall adjacent to the face being free to move relative to said surface, the other surface of said means being adapted to compress a contact member between said surface and the strip portion.

3,199,066
ELECTRICAL CONNECTOR

William C. Eledge, Sunland, and Leonard Katzin, Reseda, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed May 27, 1963, Ser. No. 283,401
7 Claims. (Cl. 339—176)

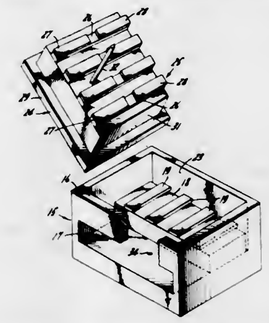


1. An electrical connector useful for contacting an electrical conductor upon a circuit-bearing board or the like and adapted to be supported and extend away from the surface of a support means made of electrically insulative material, said connector being made from a sheet of electrically conductive, resilient material and comprising:
a base portion adapted to be fixedly held by the support means;
an elongated arm portion extending from said base portion in a direction generally away from said base portion and away from the surface of said support means when said base portion is held thereby and is resiliently movable with respect thereto, said arm portion having an extension near that extremity thereof which is remote from said base portion; and
an elongated contact portion supported at a position longitudinally intermediate its extremities and on a first side thereof by said arm portion by means of the extension thereon, said contact portion extending generally parallel to and being spaced apart from said arm portion and pivotally movable with respect thereto about said extension, said contact portion having a first and a second contact area delineated on a second side thereof which is opposite said first side, said contact portion being recessed between said contact areas so that a plane tangent to said contact areas is also generally parallel to said arm portion but with that part of said second side intermediate said contact areas being recessed from said tangent plane.

3,199,067
PRINTED CIRCUIT MULTIPLE CONNECTOR

Guy Robert Stutzman, R.R. 2, Greenwood, Ind.

Filed Apr. 4, 1963, Ser. No. 270,778
2 Claims. (Cl. 339—176)
(Granted under Title 35, U.S. Code (1952), sec. 266)

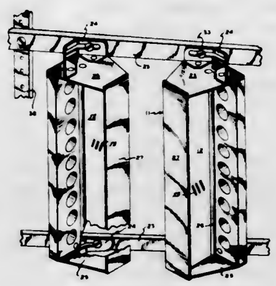


1. A connector for making electrical connections to a printed circuitry board having a plurality of terminal contacts comprising,
a frame having a longitudinally extending slot in one side thereof for receiving a printed circuitry board, and an opening in a side adjacent to said side having said slot and communicating with said slot,
a block having a plurality of terminal contacts thereon, said block being positioned in the bottom portion of said opening in a position remote from said slot with said plurality of terminal contacts being disposed in a plane parallel with said side having said opening,
a contact plug slidably movable in said opening in a direction perpendicular to said terminal contacts, said plug having a plurality of conductor strips mounted on a resilient cushion, said conductor strips being engageable one each with a terminal contact on said printed circuitry board and a terminal contact on said blocks,
means for locking said contact plug in said frame, and
locking means on said contact plug for locking said board in said frame.

3,199,068
MULTIPLE TERMINAL MOUNTING DEVICE

Charles J. Neenan, Westport, Conn., assignor to The Thomas & Betts Co., a corporation of New Jersey

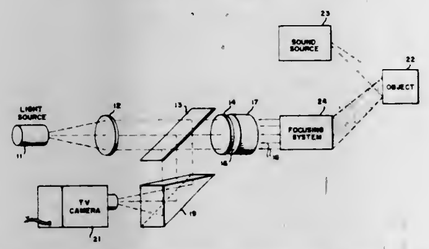
Filed Dec. 12, 1961, Ser. No. 158,821
10 Claims. (Cl. 339—198)



8. A multiple terminal mounting device comprising
a connector board having opposite faces, and
a plurality of connector elements secured to said board

and extending from the opposite faces thereof for connection of cable terminals therewith,
a supporting rail for said board,
brackets secured to the ends of the board,
each bracket having a first planar face disposed at substantially right angles to the plane of the board and a second planar face at an angle to said first planar face and each face adapted to be selectively secured to the rail in parallel abutment therewith to thus dispose the board at one of two angles to the rail.

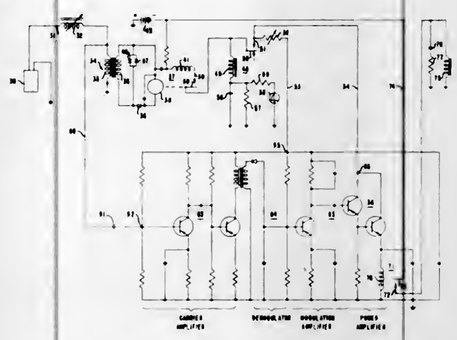
3,199,069
ACOUSTICAL-TO-OPTICAL IMAGE CONVERTER
John B. Lord, Summit, N.J., and Victor Harris, Edmonds, Wash., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 7, 1962, Ser. No. 193,028
7 Claims. (Cl. 340—1)



4. A system for deriving an optical image varying in accordance with an acoustical signal comprising:
(a) a vibratory element for receiving said acoustical signal and producing local surface perturbations in accordance therewith;
(b) an optically polished light reflecting surface on said vibratory element;
(c) means for directing a collimated beam of monochromatic light upon said optically polished light reflecting surface;
(d) means for deriving an optical image of said collimated light beam as reflected by said reflecting surface, said last named means including;
(e) an optical flat placed within the path of said collimated light beam and parallel to said light reflecting surface; and
(f) means for spacing said optical flat from said light reflecting surface a sufficient distance to cause optical interference between the collimated light beam passing through said optical flat and the light reflected by said reflecting surface;
(g) said means for spacing comprising a plurality of selectively expansible spacing members interposed between said optical flat and said light reflecting surface; and
(h) means for selectively expanding and contracting said spacing members.

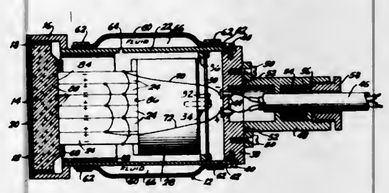
3,199,070
SONIC CONTROL CIRCUITRY
William E. Baier, Jr., Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,399
18 Claims. (Cl. 340—5)

14. A remotely controlled system requiring no consumption of power when in a standby condition and which is responsive to a modulated carrier wave signal of a preselective carrier frequency comprising:
a normally unenergized and inoperative receiver, said receiver including means for demodulating said carrier wave;
a source of power;
first normally unenergized circuit means connected to the input of said receiver and responsive to an input signal of said preselected carrier frequency for



connecting said receiver to said source of power to render said receiver operative, said circuit means including a circuit tuned to said predetermined carrier frequency and switching means responsive to the output signal from said tuned circuit; and,
means responsive to the output signals from said receiver for affecting the desired control function.

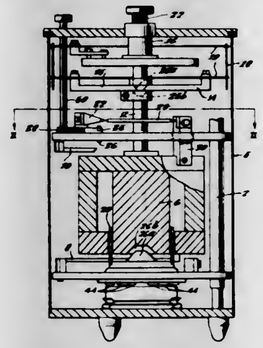
3,199,071
ELECTROACOUSTIC TRANSDUCER CONSTRUCTION SUITABLE FOR OPERATION IN DEEP WATER
Frank Massa, Cohasset, Norfolk, Mass., assignor, by mesne assignments, to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Apr. 20, 1961, Ser. No. 104,420
16 Claims. (Cl. 340—10)



1. The improvement of an electroacoustic transducer assembly for generating underwater sound comprising the combination of electromechanical transducer means having first and second plane surfaces spaced from each other and capable of being set into vibration by the application of an alternating current to said transducer means, a fixed housing structure defining an enclosure for said transducer means, a vibratile plate flexibly mounted to said housing structure, and secured to said first plane surface of said transducer means, a solid weight member having a plane surface secured to said second plane surface of said transducer means, flexible suspension means for supporting said solid weight member in said housing structure, a flexible chamber member defining an exteriorly sealed compartment, said exteriorly sealed compartment being in internal fluid communication with the enclosure of said housing structure through a passageway formed in said housing structure, a fluid disposed within the enclosure of said housing structure and within said exteriorly sealed compartment, said fluid being capable of easily flowing between the enclosure of said housing

structure and the exteriorly sealed compartment, and electrical terminal means on said housing structure for connecting external electrical power to said transducer means.

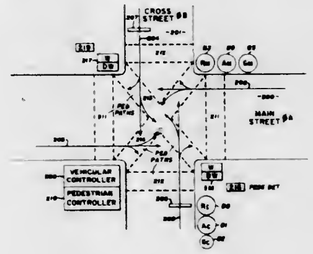
3,199,072
VARIABLE OSCILLATION PERIOD SEISMOMETERS
Patrick Lever Willmore, Edinburgh, Scotland, and David Vivian Connell, London, England, assignors to Hilger & Watts Limited, London, England, a British company
Filed Oct. 12, 1962, Ser. No. 230,125
12 Claims. (Cl. 340—17)



1. A seismometer comprising, in combination, an instrument body, a mass member, resilient support means connected between the body and said member to constrain said member to move along a line about an equilibrium position, an additional resilient device comprising an elongate elastic element and an elongate compression force transmission element, said elements being secured to each other at one of their respective ends, the other end of the compression force transmission element being attached to said member and the other end of the elastic element being adjustably attached to said body, the elastic element being capable of transmitting a compressive force through said transmission element to the mass element when it is displaced from its equilibrium position so as to increase its period of oscillation in dependence upon the adjustment of said elastic element, and adjustable damping means adjacent said member regulatable in co-relation to the altered period of oscillation thereof.

3,199,073
VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL SYSTEM
Arthur E. Hilliker, Pulaski, N.Y., assignor to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
Filed Apr. 30, 1962, Ser. No. 191,169
2 Claims. (Cl. 340—36)

1. A traffic control system for an intersection comprising a main street and a cross street, and having at least one pedestrian movement through said intersection, said system comprising a vehicular controller having at least one actuated movement, signal means for the main and cross street traffic movements connected to said vehicular controller, detector means associated with at least the cross street traffic movement connected to said vehicular controller, a cam unit in said vehicular controller for rotation through a plurality of discrete positions for presenting the right-of-way signal display to the signal means associated with the main and cross street traffic movement, timing means for timing the duration of the right-of-way signal display intervals to the vehicle movements, said vehicular controller normally presenting the right-of-way signal display to the main street traffic movement and having timing, stop, cycle, and motor circuits, a pedestrian controller means connecting said vehicular controller timing, stop, cycle, and motor circuits through said pedestrian controller, the timing and stop circuits of said vehicular controller being normally completed through said pedestrian controller whereby said vehicle controller is cycled only in response to vehicle actuations when no pedestrian detector actuations are received, said pedestrian controller having a cam unit rotatable through a plurality of discrete positions for presenting a right-of-way signal display to the pedestrian movement, pedestrian signal means and pedestrian detector means connected to said pedestrian controller, means operable upon actuation of said pedestrian detector means to open the vehicular controller timing circuit, and to complete said vehicular cycle circuit to cycle said vehicular controller into its main street clearance position, means connecting said pedestrian controller to said vehicle con-

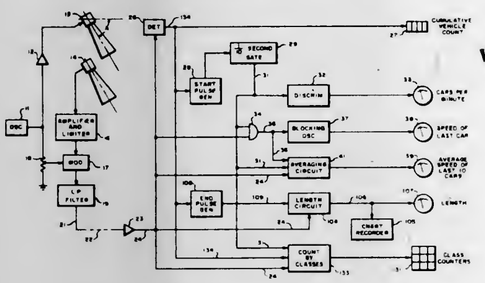


troller operable upon completion of the main street clearance interval to cycle the pedestrian controller cam unit to present the walk signal to the pedestrian movement, and to open said traffic signal circuits to change all the vehicle signal means to stop, timing means in said pedestrian controller to time the duration of the pedestrian walk signal interval, and operable upon completion of said interval to cycle said pedestrian controller to present a clearance signal indication to said pedestrian movement while maintaining the stop indication to said vehicle movements, skip means in said vehicle controller operable in the absence of a vehicle actuation of said cross street detector means and upon completion of the pedestrian clearance signal indication to complete said motor circuit to cycle said vehicular controller cam unit to skip the right-of-way signal display to said cross street and return said vehicular controller cam unit to a rest position in which the proceed signal is displayed to the main street and means in said pedestrian controller to change the pedestrian signal indication from clearance to stop.

3,199,074
AUTOMOBILE TRAFFIC FLOW ANALYZER
Everett B. Hales, Hawthorne, and John P. McGuire, Briarcliff Manor, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Filed June 8, 1962, Ser. No. 200,997
12 Claims. (Cl. 340—38)

1. An automobile traffic flow analyzer comprising,
means generating a beam of acoustic radiation having an ultrasonic frequency,
means directing said beam toward a traffic lane adapted to carry vehicles having movement relative to the beam-directing means whereby echoes containing Doppler information are reflected from the vehicles,
means receiving and converting said echoes into electrical manifestations representative thereof,

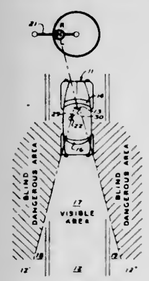
means deriving an electrical signal from said electrical manifestations, said electrical signal including trains of Doppler frequency oscillations incorporated therein, each of said trains representing the entire echo received from a single vehicle,



means for selecting a timed portion of each of said trains for deriving a gated sample therefrom, all samples having the same time duration,

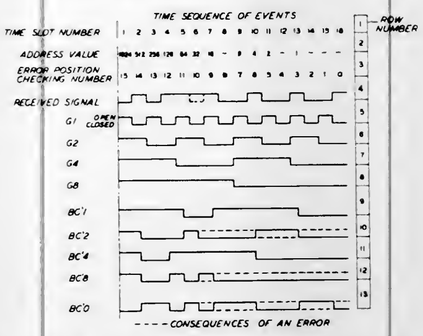
and means indicating the number of Doppler oscillations in each said gated sample as speed of last car.

3,199,075
SIGNAL CONTROLLED ADJUSTABLE REAR VIEW MIRROR
George H. Simmons, 20 Mill Wood Road, Mill Valley, Calif.
Filed Nov. 13, 1961, Ser. No. 151,698
2 Claims. (Cl. 340—98)



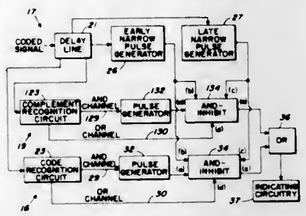
1. A signal controlled adjustable rear view mirror comprising, in combination with a vehicle equipped with an electrical circuit and also equipped with a directional signal lever connected into said circuit for closing and opening the same and with a first pair of signal lamps on the left front and left rear of the vehicle connected in series into said electrical circuit and a second pair of signal lamps on the right front and right rear of the vehicle connected in series into said electrical circuit; said lamps being selectively energized in pairs upon the selective throw of said lever to close said electrical circuit, a rotatably mounted shaft, a rear view mirror on said shaft for rotation therewith whereby the angular relation of said rear view mirror to the direction of travel of said vehicle may be shifted in response to the selective throw of said directional signal lever, a pair of solenoids connected into said electrical circuit; said solenoids being selectively energized in response to the selective throw of said directional signal lever, a solenoid shaft slidably mounted in said pair of solenoids for axial movement to and fro in response to the energization of said solenoids, and means on said solenoid shaft engageable with said rotatably mounted shaft to effect rotation thereof clockwise and counter-clockwise in response to the throw of said directional signal lever thereby angularly to shift said rear view mirror automatically.

3,199,076
CODE PERMUTATION ERROR CORRECTION AND DETECTION
Wilton T. Rea, Bernardsville, and Allen W. Roberts, South Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 3, 1958, Ser. No. 747,554
14 Claims. (Cl. 340—146.1)



14. A pulse code transmission system having a pulse error-correction encoding circuit, said circuit comprising means for separating a first train of consecutive intelligence-determining pulses to leave spaces therein for a plurality of error-correcting encoding pulses for correcting an error in said train if an error occurs during transmission, a plurality of branch circuits, means in said encoding circuit coupling each pulse of said train to a different combination of said branch circuits, means in each of said branch circuits responsive to pulses coupled thereto for controlling the condition of a different error-correction encoding pulse, means in said encoding circuit for inserting said error-correction encoding pulses in said spaces to produce a second sequential train having intelligence and error-correcting encoding pulses interspersed therein, a single transmission channel connected to said error-correction encoding circuit, and means for impressing said second train on said channel.

3,199,077
CODE AND COMPLEMENT TESTING DEVICE
Wallace W. Prather, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Aug. 21, 1961, Ser. No. 139,566
6 Claims. (Cl. 340—146.1)



1. An electrical pulse checking device for testing the output of apparatus capable of producing a coded signal having *n* bits spaced between a pair of framing pulses, each

of which bits may consist of either a pulse or the absence of a pulse whereby the output signal may be coded in a preselected manner, said checking device comprising: first decoding means for receiving a first coded signal having *n* bits spaced between a pair of framing pulses, said first decoding means including first gate means; second decoding means for receiving a second coded signal having *n* bits, each of which is complementary to the corresponding bit of said first coded signal and spaced between a pair of framing pulses corresponding to the framing pulses of said first coded signal, said second decoding means including second gate means; first and second pulse generating means each of which is connected to said first and second gate means, said pulse generating means receiving said coded signals and precluding an output pulse from said gate means unless the framing pulses of said received coded signals are spaced a predetermined distance; selector means connected to said decoding means for causing an output pulse to be produced from said first decoding means only when the bits of said received first coded signal correspond to a preselected code, and for causing an output pulse to be produced from said second decoding means only when the bits of said received second coded signal correspond to the complement of said preselected code; and indicating means connected to receive singularly said outputs from said decoding means to indicate that the apparatus tested is functioning properly.

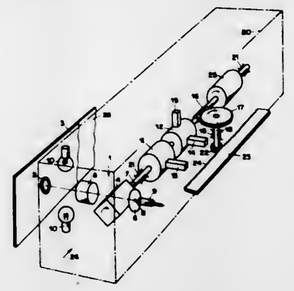
3,199,078
CHARACTER IDENTIFICATION DEVICE
John E. Gaffney, Jr., Poughkeepsie, and Arthur A. Kusnick, Peekskill, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 5, 1960, Ser. No. 6,938
24 Claims. (Cl. 340—146.3)



10. An apparatus for detecting a handwritten character comprising in combination: means for tracing a character; means responsive to the tracing means to indicate the relative position of a stroke with respect to another stroke of the character; means responsive to the tracing means to indicate the direction of movement and sequence of movements of the tracing means; and means responsive to the position-responsive means, and the direction and sequence responsive means, and independent of the horizontal or vertical registration of the tracing means, for identifying the character traced.

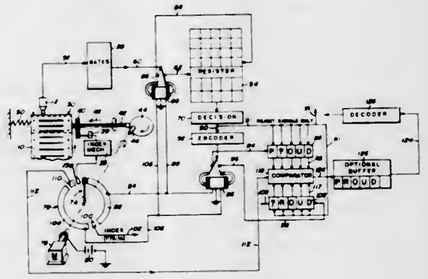
3,199,079
APPARATUS FOR READING CHARACTERS RECORDED ON A CARRIER BY PRODUCING CORRESPONDING ELECTRICAL IMPULSES
Rudolf Kühne, Bern, Switzerland, assignor to Ruf-Buchhaltung Aktiengesellschaft, Zurich, Switzerland
Filed Aug. 15, 1960, Ser. No. 49,745
Claims priority, application Switzerland, Aug. 17, 1959, 77,047/59; June 23, 1960, 7,143/60
10 Claims. (Cl. 340—146.3)

1. Apparatus for reading characters recorded on a carrier by producing corresponding electrical impulses, comprising in combination: means for supporting said carrier, an optical scanning device for scanning said carrier, column by column, including an optical deflecting element rotatably mounted about an axis substantially parallel to and remote from the plane of said carrier and an object lens interposed between said carrier and said deflecting element, a light-sensitive electrical element mounted so as to receive images of successive points on said carrier through said scanning device, a magnetic



drum rotatable with said deflecting element, a magnetized trace on the periphery of said drum, a reading head adapted to deliver electrical impulses corresponding to grid lines of the carrier read off said trace, and gate means connected to said light-sensitive element operable to pass electrical impulses delivered from said reading head in response to said images received by said light-sensitive element.

3,199,080
LINE READING MACHINE
Jacob Rabinow, Takoma Park, and William Fischer, Silver Spring, Md., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 21, 1961, Ser. No. 90,724
10 Claims. (Cl. 340—146.3)



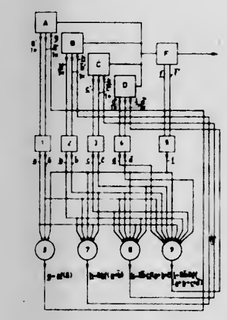
1. In a reading machine for lines of characters, means for scanning a first line in a first direction and for scanning the same line in the opposite direction, decision means responsive to the scan outputs for identifying the characters that are scanned, means to remember the characters identified for each scan of the line, and means including a comparator for comparing the remembered characters for the first and second-mentioned scan to provide character identifying signals that includes any characters recognized for one scan but not the other.

3,199,081

CIRCUIT ARRANGEMENT FOR GIVING PERMISSION TO TRANSMIT TO ONE OF A NUMBER OF SOURCES OF INFORMATION ACCORDING TO A FIXED PRIORITY

Hans Kok and Folutianus Theodorus Antonius van Bergen, Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 6, 1961, Ser. No. 93,557
Claims priority, application Netherlands, Mar. 7, 1960, 249,158
5 Claims. (Cl. 340—147)



5. A signal transmitting circuit comprising a plurality of signal sources connected to a common output transmission channel, and means for selectively permitting transmission by said sources, said signal sources each comprising means providing a first control signal indicating the respective source is prepared to transmit signals, means responsive to a second control signal for permitting the respective source to transmit information to said channel, and means indicating the end of a signal message, said transmission channel comprising means for providing a third control signal upon the passage of signals thereto from said sources, and means for providing a fourth control signal upon the reception of an end of message signal from a signal source, said means for selectively permitting transmission comprising a separate logical circuit corresponding to each of said signal sources, each logical circuit having a first input terminal connected to receive the first control signal of the corresponding signal source, second and third input terminals connected to receive said third and fourth control signals, respectively, and an output terminal connected to apply said second control signal to the corresponding signal source, said logical circuit being responsive to the simultaneous occurrence of at least signals at said first and second input terminals for initiating said second control signal at said output terminal, and being responsive to at least the occurrence of signals at said third input terminal for stopping said second signal at said output terminal.

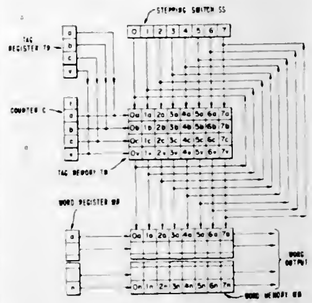
3,199,082

MEMORY SYSTEM

Luther H. Haibt, Croton-on-Hudson, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 27, 1959, Ser. No. 855,627
18 Claims. (Cl. 340—172.5)

1. In a memory system; a tag memory for storing a plurality of identifying tags and vacancy tags; a tag register for storing an identifying tag; a counter for storing a vacancy tag; means coupled to said tag register, counter, and tag memory for causing the tags stored in said tag memory to be compared with at least one of said tags stored in said tag register and said counter; and means



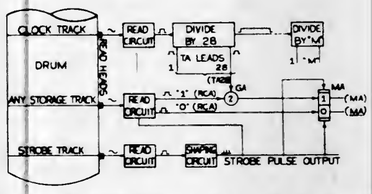
responsive to said comparison operation for causing at least one of said tags stored in said tag register and said counter to be transferred into said tag memory.

3,199,083

ARRANGEMENTS FOR HANDLING BINARY NUMBERS

Robin Devenish Allum, Liverpool, Victor Edmund Mann, Taplow, and David Gerald Bryan and Ronald George Knight, Aldwych, London, England, assignors to Automatic Telephone & Electric Company Limited, Liverpool, and Standard Telephones and Cables Limited, London, England

Filed Aug. 18, 1960, Ser. No. 50,429
1 Claim. (Cl. 340—172.5)



A circuit arrangement for selecting the highest value number from a plurality of binary numbers comprising a first storage device for storing said binary numbers in a plurality of groups, means for reading corresponding binary numbers of all said groups simultaneously from said first storage device in serial form from the highest order binary digit to the lowest, a second storage device for storing the highest binary number previously read, an individual circuit provided for each group of numbers stored on said first storage device and to which the numbers of the appropriate group are applied as they are read, each said individual circuit including a first memory device for remembering a previous binary digit read, a circuit common to all said individual circuits, said common circuit including a second memory device for remembering the highest value digit previously read from all the groups and for remembering the value of the current binary digit of the number stored in said second storage device whereby a "1" digit applied to an individual circuit is passed to said common circuit firstly if said first memory device indicates that the previous binary digit was "1" and secondly if said first memory device indicates that the previous binary digit was "0" and said second memory device indicates that the digit previously read from all the groups was "0" said common circuit being rendered effective on a "1" digit being passed thereto from an individual circuit only if said second memory device indicates that the current

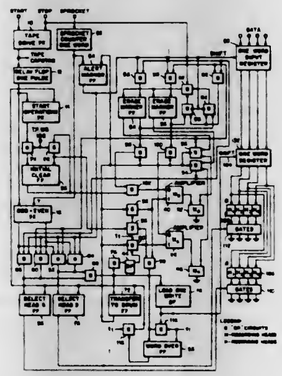
binary digit in said second storage device is "0" and means in said second storage device responsive to the effective condition of said common circuit for replacing the current binary digit "0" in the second storage device by the binary digit "1" for changing the value of the subsequent binary digits in said second storage device to "0" to enable a new number to be stored therein.

3,199,084

DATA TRANSLATOR

Arthur J. Gehring, Jr., Haddonfield, N.J., and Lloyd Wesley Stowe, Broomall, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 22, 1960, Ser. No. 70,992
8 Claims. (Cl. 340—172.5)



7. In combination, a magnetic drum having a timing track and having data tracks about its circumference, a tape-drive bistable circuit adapted to be set by a start signal and adapted to be reset by a stop signal, a first pulse producing means adapted to produce a pulse when said circuit is set, a start-operations bistable circuit adapted to be set by said pulse producing means, a first coincidence gate adapted to provide an output therefrom upon the coincidence of a word reference pulse and the set condition of said start-operations bistable circuit, an initial-clear bistable circuit adapted to be set by the output of said coincidence gate, a second coincidence gate adapted to provide an output therefrom upon the coincidence of said word reference pulse and the set condition of said initial-clear bistable circuit, means coupling the output of said second coincidence gate to reset said initial-clear bistable circuit, an odd-even bistable circuit adapted to be set by said first pulse producing means, a first input register for storing one word of input data from an input source, sprocket means for detecting when one word of data is read into said register, means coupling said sprocket means to trigger said odd-even bistable circuit, a marker-alert bistable circuit adapted to be set by said sprocket means, a second one word register coupled to said first one word register, said marker-alert bistable circuit when set causing the data stored in said first register to be shifted into said second register, a first set of data recording heads, a second set of data recording heads, said first and second sets of heads being oppositely disposed about said drum in engagement with said data tracks, means for transferring the data stored in said second register to said sets of data recording heads, a first marker transducer in engagement with said timing track, a second marker transducer in engagement with said timing track oppositely located about said drum, a first marker head gate coupled to said first marker transducer for passing a marker pulse therethrough, a second marker head gate coupled to said second marker transducer for passing marker pulse therethrough, a first three-input select-head gate, a second three-input select-head gate, a third three-input select-head gate, a fourth three-input select-head gate, the set output of said marker-alert bistable circuit being coupled to one input of each of said first, second, third and fourth select-head gates, means coupling the set output of said odd-even bistable circuit to the second inputs of said first and third select-head gates, means coupling the reset output of said odd-even bistable circuit to the second inputs of said second and fourth select-head gates, means coupling the output of said first marker head gate to the third inputs of said first and fourth select-head gates, means coupling the output of said second marker head gate to the third inputs of said second and third select-head gates, a first select-head bistable circuit adapted to be set by the output of said first and second select-head gates, a second select-head bistable circuit adapted to be set by the output of said third and fourth select-head gates, means coupling the set output of said first select-head bistable circuit to energize said first set of data recording heads, means coupling the set output of said second select-head bistable circuit to energize said second set of data recording heads, means coupling the outputs of said first, second, third, and fourth select-head gates to provide a common "select" signal, means responsive to said "select" signal for actuating said transferring means for a fixed interval of time to permit said second register to transfer data to said data heads, a transfer-to-drum bistable circuit adapted to be set by said "select" signal, a word-over delay signal producing means responsive to said "select" signal actuating means, said word-over delay signal being coupled to reset said transfer-to-drum bistable circuit, said first and second select-head bistable circuits, and said start-operations bistable circuit, said transfer-to-drum bistable circuit when set being adapted to inhibit said first and second marker head gates, and to reset said marker-alert bistable circuit, a first two-input "and" gate adapted to be energized by the coincidence of an output from said first marker head gate and a set output from said marker-alert bistable circuit, a second two-input "and" gate adapted to be energized by the coincidence of an output from said second marker head gate and a set output from said marker-alert bistable circuit, a third two-input "and" gate adapted to be inhibited by the presence of the set output of said marker-alert bistable circuit, a fourth two-input "and" gate adapted to be inhibited by the presence of the set output of said marker-alert bistable circuit, a first erase-marker bistable circuit adapted when set to provide an enabling signal to said second marker head gate and when reset to provide an enabling signal to one input of said third "and" gate, a second erase-marker bistable circuit adapted when set to provide an enabling signal to said first marker head gate and when reset to provide an enabling signal to said fourth "and" gate, means coupling the outputs of said marker head gates to the other inputs of said third and fourth "and" gates, means coupling the outputs of said third and fourth "and" gates and said stop signal to set said first and second erase-marker bistable circiuts, means coupling the output of said first "and" gate to reset said first erase-marker bistable circuit, means coupling the output of said second "and" gate to reset said second erase-marker bistable circuit, a first inhibit gate adapted to be actuated by the reset output of said first erase-marker bistable circuit and adapted to be inhibited by the set output of said transfer-to-drum bistable circuit, a second inhibit gate adapted to be actuated by the reset output of said second erase-marker bistable circuit and adapted to be inhibited by the set output of said transfer to drum bistable circuit, means responsive to said first inhibit gate for writing zeroes on said magnetic drum by said second marker transducer, means responsive to said

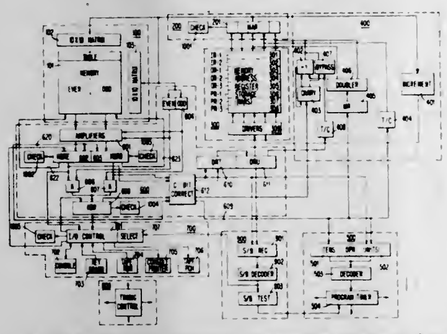
second inhibit gate for writing zeroes on said magnetic drum by said first marker transducer, a predetermined delay means responsive to said "select" signal, a third inhibit gate adapted to be actuated by said predetermined delay means and adapted to be inhibited by said set output of said transfer-to-drum bistable circuit, a fixed pulse producing means coupled to said third inhibit gate and adapted to provide signals to said first and second marker transducers for causing ones to be written on said drum, means coupling the output of said second coincidence gate to cause a one to be written by said second marker transducer onto said drum, and means coupling the set output of said initial-clear bistable circuit to said second marker transducer for causing zeroes to be written on said magnetic drum when said initial-clear bistable circuit is in its set state.

3,199,085

COMPUTER WITH TABLE LOOKUP ARITHMETIC UNIT FEATURE

William H. Rhodes, Poughkeepsie, James G. Brenza, Lake Carmel, and Wayne D. Winger, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 20, 1960, Ser. No. 77,112
21 Claims. (Cl. 340—172.5)



1. In a memory-centered computer, a memory having a multiplicity of distinctly addressable locations, each capable of storing a digit and a flag, a certain group of serially-addressed locations being reserved for an add table, and other groups of serially-addressed locations containing augend and addend operands, memory addressing means jointly controlled by the digit value of a particular order of a first operand, and by the combined value of the equal order of the second operand and the carry from the adjacent order, for addressing the memory location at which the sum and carry are stored as a digit and a flag respectively, means for accepting from said memory location the sum value, means for storing that value, and carry means responsive to a flag for introducing the carry into the addition of the next higher digits of said operands.

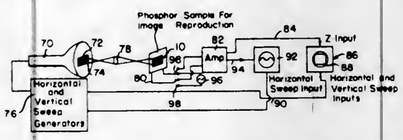
3,199,086

DEVICES EXHIBITING INTERNAL POLARIZATION AND APPARATUS FOR AND METHODS OF UTILIZING THE SAME

Hartmut P. Kallmann, Bronx, N.Y., Joseph Rennert, Paramus, N.J., and Fred Chernow, Brooklyn, N.Y., assignors, by mesne assignments, to Rahn Corporation, Boston, Mass., a corporation of Massachusetts

Filed Nov. 25, 1960, Ser. No. 71,627
34 Claims. (Cl. 340—173)

29. In combination, a layer of a photoconductive insulating material exhibiting the property of persistent internal polarization after exposure to radiation and a polarizing voltage; an electrode structure on each side of said body comprising a layer of insulating material and a plurality of strips of electrically conducting material, the conducting material being on each side of said body between said layer and a surface of said body, the strips on each electrode being parallel to and spaced from one another and lying in a direction perpendicular to the direction of the strips on the other electrode, the electrode on one side of said body being substantially transparent to radiation to which the photoconductive insulating material is photo responsive; means for populating electron traps in the photoconductive insulating body comprising a source of radiation positioned to irradiate the body through said radiation transparent electrode; means for pulling electrons outwardly from



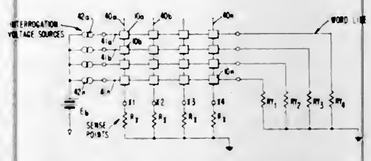
both sides of said body comprising a source of alternating voltage having two terminals, circuit means for connecting a selected strip on one electrode to one terminal and a selected strip on the other electrode to another terminal of said alternating voltage source and switching means for disconnecting said electrodes from said alternating voltage source to thereby polarize a selected location on said body determined by the overlapping area of the selected electrode strips; and means for again irradiating said body through said radiation transparent electrode to read out the magnitude of the stored charge.

3,199,087

LATCHING CIRCUIT

Henry R. Foglia, North White Plains, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 30, 1960, Ser. No. 79,594
10 Claims. (Cl. 340—173)



1. A latching circuit comprising first and second resistance means serially connected, means for energizing said first and second resistance means, said first means being semiconductive and having a region when energized exhibiting a first level of conductivity at a given ambient temperature and a second higher level of conductivity at a different ambient temperature, said region having substantially linear conductivity variation, said second means having a higher conductivity than said first means at said given ambient temperature, and said first means responding to external irradiation, so that said circuit is latched into a self-sustaining state of operation by the heat dissipation of said first means when said different ambient temperature is achieved, said first means being operated within said region, said first and second temperatures being within the said linear conductivity variation region, and means for insulating said first means to maintain an equilibrium state between the heat generated by said first means and the heat dissipated by it when said circuit is latched into said self-sustaining state of operation.

3,199,088

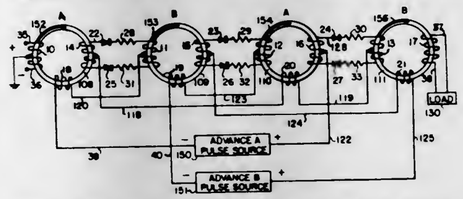
MAGNETIC SHIFT REGISTER

John O. Paivinen, Palo Alto, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Continuation of applications Ser. Nos. 396,603 and 396,605, Dec. 7, 1953, and Ser. No. 420,135, Mar. 31, 1954. This application Sept. 23, 1958, Ser. No. 762,863
93 Claims. (Cl. 340—174)

36. A reversible magnetic shift register comprising a plurality of magnetic cores arranged in an electrical row, each of said cores being capable of assuming either of

two stable states of magnetic remanence, a plurality of coupling circuits, each of said magnetic cores being coupled to each adjacent magnetic core by two of said coupling circuits, a first of said two coupling circuits comprising a first winding means wound on a given individual one of said magnetic cores and a second tapped winding means wound on next succeeding one of said magnetic cores, a second of said two coupling circuits comprising a second tapped winding means wound on said given magnetic core and a second winding means wound on said next preceding magnetic core, first terminals of said first and second winding means being connected to first end terminals of said first tapped winding and said second tapped winding respectively, a plurality of circuit means, individual ones of said plurality of circuit means connecting the second terminals of each of said first and second windings to the second end terminals of the associated first tapped winding and second tapped winding respectively, each of said circuit means comprising a first asymmetrically conducting device having an anode and a cathode, a second asymmetrically conducting device having an anode and a cathode, a first resistance, and a second resistance connected in series arrangement in such a manner that the anode of said first asymmetrical device is connected to the said second ter-



minal of the associated winding means and the anode of said second asymmetrical device is connected to the said second end terminal of the associated tapped winding means, a junction between the said first and second resistive means of each of said plurality of circuit means, the junctions associated with the coupling circuits comprising the associated first winding and the associated first tapped windings being connected to the tap of the first tapped winding associated with the magnetic core immediately preceding the two magnetic cores coupled together by the coupling circuit comprising the associated junction, the junctions associated with the coupling circuits comprising second windings and second tapped windings being connected to the tap of the second tapped winding associated with the magnetic core immediately following the two magnetic cores coupled together by the coupling circuit comprising the associated junction, a third means adapted to apply electrical pulses upon the tap of the first tapped winding of the last magnetic core in said row, a fourth means adapted to apply electrical impulses upon the tap of the first tapped winding of the next to last magnetic core in said row, a fifth means adapted to apply electrical pulses to the tap of the second tapped winding of the first magnetic core in said row, and a sixth means adapted to apply electrical pulses to the tap of the second tapped winding of the second magnetic core in said row.

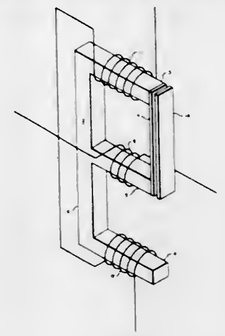
3,199,089

PERMANENT MAGNETIC STORAGE DEVICE

Edgar Astrove, Scarsdale, Albino Cassella, Bronx, and Alan L. Goldman, Yonkers, N.Y., assignors to General Precision, Inc., a corporation of Delaware

Filed Apr. 10, 1961, Ser. No. 101,794
20 Claims. (Cl. 340—174)

10. A permanent magnetic storage unit with nondestructive readout comprising, an E-shaped core of magnetic material having windings on each of the legs, the windings on said outside legs being opposite in sense and connected in series for connecting to a utilization device, a shorting bar of high permeability magnetic material in engagement with one outside leg and the central leg of said E-shaped core to provide two dissimilar magnetic circuits each of which shares the center leg of the E-



shaped core, and active bistable magnetic means magnetically coupled with said shorting bar to saturate said bar in a predetermined direction when the bistable means occupies a preselected state to render said two magnetic circuits similar.

3,199,090

MAGNETIC STORAGE DEVICE

Harry T. Mortimer, Anaheim, Calif., assignor to North American Aviation, Inc.

Filed Dec. 4, 1961, Ser. No. 156,586
4 Claims. (Cl. 340—174)



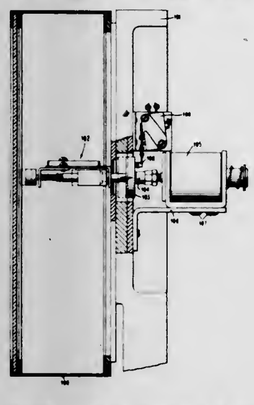
1. Magnetic storage apparatus for storing a number of units of information comprising a body of magnetic material providing a closed magnetic path, a plurality of apertures in said body spaced from each other in the direction of said magnetic path, mutually adjacent ones of said apertures providing at least two pairs of apertures, an interrogation winding on said body for providing magnetic flux through said closed loop path, a source of periodic clock signals connected to said winding, a first input and a first output winding on that portion of said body between the apertures of a first one of said pairs of apertures for respectively providing and sensing a local magnetic flux pattern extending substantially normal to said closed magnetic path between the apertures of said first pair, a second input and a second output winding on that portion of said body between the apertures of a second one of said pairs of apertures for respectively providing and sensing a local magnetic flux pattern extending substantially normal to said closed magnetic path between the apertures of said second pair, input means for selectively and individually energizing said first and said periodic clock signal source to said input means, and second input windings, a synchronizing connection from output means coupled with said output windings.

3,199,091

COMPUTER CONTROLLED FILE PROTECT

Earl D. Barkhuff, Henry E. Childs, Frederick A. Schultz, and Donald N. Streeter, all of Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 7, 1960, Ser. No. 1,002
7 Claims. (Cl. 340—174.1)



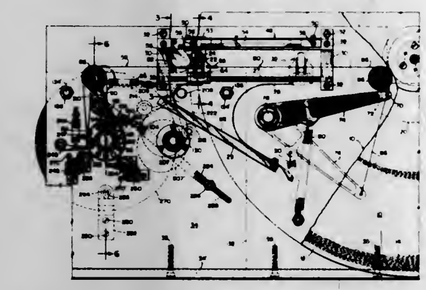
1. In a computer system including a magnetic tape unit having a cartridge for carrying a magnetic tape therein and a tape transport for receiving said cartridge, an erase circuit for coaction with said magnetic tape, a two position erase circuit control switch mounted on said transport for controlling the commissioning of said erase circuit in a first position and the decommissioning of said erase circuit in a second position, a two position switch controller mounted on said cartridge in operating relation to said control switch whereby when said controller is in a first position said control switch is in its first position and when said controller is in its second position said control switch is in its second position, a solenoid including an actuator mounted on said transport, said actuator being in a position to operate said controller to change the position of said control switch when said solenoid is energized, and means under control of said computer for energizing said solenoid.

3,199,092

ELECTROMAGNETIC TRANSDUCER APPARATUS

Paul R. Hoffman, Woodlyn, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 30, 1960, Ser. No. 79,631
2 Claims. (Cl. 340—174.1)



2. Electromagnetic transducer control and positioning apparatus comprising:

(a) an electromagnetic transducer including one or more read-record heads,

(b) a rotatable record member having a magnetizable surface thereon, said magnetizable surface being divisible into a plurality of discrete recording areas or tracks circularly disposed in concentric fashion around said record member,

(c) means automatically, adjustably biasing said transducer toward said record member,

(d) means to rotate said record member,

(e) means engageable with said transducer for rectilinearly guiding said transducer in straight line motion over the magnetizable surface of said record member in hydrodynamic airbearing relationship therewith,

(f) a cam plate adjacent to one end of said spaced members,

(g) a cam follower carried by said transducer engageable with said cam plate effective thereby for displacing said transducer relative to said record member, preventing said transducer from accidentally contacting and damaging the surface of the record member,

(h) a pair of concentric escapements each having a projecting member,

(i) oppositely disposed electromagnets each including a clapper engageable with a respective one of said projecting members and effective when energized to control the movement of the associated escapement member,

(j) a spiral cam operably associated with said escapement members,

(k) a cam follower operably engageable with said spiral cam and arcuately movable relative thereto and including means biasing the same in one direction and effective upon movement of said cam for effecting movement of said transducer,

(l) an elongated loading arm including a coiled spring biasing the same in one direction and operably associated with said transducer member effective when released to drive the transducer to a selected track position on said record member, drive means selectively engageable with said cam for moving said transducer in a direction opposite to that in which it is driven by means of said loading arm, and

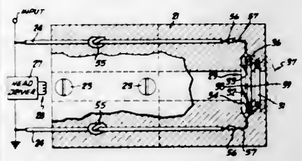
(m) electrical control means operably associated with said escapement members effective to control the incremental advancement of said escapement members effectively positioning said transducer adjacent the tracks of said record member in response to energization of said electromagnetic means.

3,199,093

ERASURE PREVENTION CONTROL FOR MAGNETIC TAPE RECORDER

Walter J. Cheney, San Mateo, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed June 29, 1962, Ser. No. 206,513
13 Claims. (Cl. 340—174.1)



1. A control mechanism for a magnetic tape machine of the type that is provided with a tape supply reel, comprising:

a magnetic reed switch mounted on said machine adjacent to said reel, said switch being operable between open and closed positions and including means urging said switch toward one of said positions;

means mounted on said machine adjacent to said switch for magnetically biasing said switch to the other of said positions; and

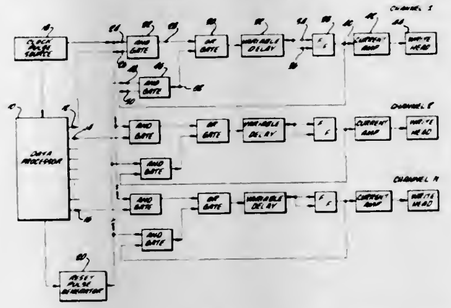
means detachably mounted on said reel for altering said field at said switch for operation to said one position under the urging of said first-named means.

3,199,094

PLURAL CHANNEL RECORDING SYSTEM

Jogindra M. Bakshi, Pasadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 8, 1962, Ser. No. 229,037
5 Claims. (Cl. 340—174.1)



5. In a system for simultaneously transmitting information bits in synchronism with a source of clock pulses to the outputs of a plurality of separate channels in response to a binary input information signal in each channel in the form of two distinct voltage levels representing the two binary digits, the combination comprising in each channel:

first gating means receiving the digital information signal and a series of clock pulses from said source for passing output pulses representing bits of the digital information signal upon the coincident receipt of one level of the digital information signal and the clock pulses;

switching means for switching between first and second stable states to develop output signals of different magnitudes in response to successive input pulses of digital information;

second gating means responsive to the first state of the switching means and a reset pulse applied simultaneously to the second gating means in each channel for generating a reset pulse signal;

and means including a variable delay circuit for coupling the output pulses of the first and second gating means to the input of the switching means, whereby the switching means in the several channels can be operated in the same time relation in response to either digital information pulses or to reset pulses.

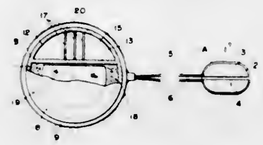
3,199,095

ABSORBED-MOISTURE ALARM UTILIZING ELECTROLYTIC ACTION BY SPECIAL GALVANIC COUPLE

Hiroo Ashida, 68 Gamo-cho 5-chome, Joto-ku, Osaka, Japan

Filed Feb. 13, 1961, Ser. No. 88,974
Claims priority, application Japan, Oct. 5, 1960, 35/40,860
1 Claim. (Cl. 340—235)

A color-presenting absorbed-moisture alarm comprising an insulator support, a pair of dissimilar metal electrodes mounted in spaced relation on the support, an indicator comprising a container, a similar pair of dissimilar metal electrodes mounted in spaced relation in the container, an electrolytic solution in said container and indicator means in said container responsive to a current flow therethrough by a change in color, and electric leads connecting said pairs of electrodes in electrical circuit wherein the support for the electrodes comprises a Y-shaped member, and teeth formed on the facing legs of the Y.

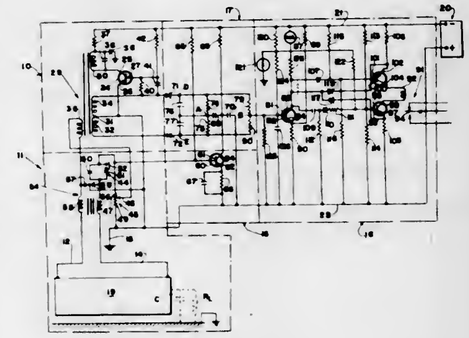


3,199,096

CAPACITY ALARM SYSTEM

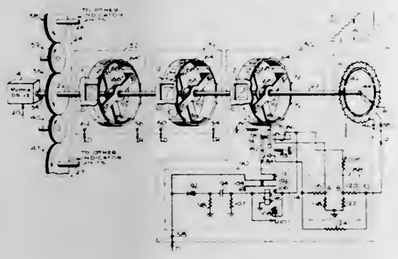
Samuel M. Bagno, Belleville, N.J., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey

Filed Sept. 14, 1960, Ser. No. 56,008
4 Claims. (Cl. 340—258)



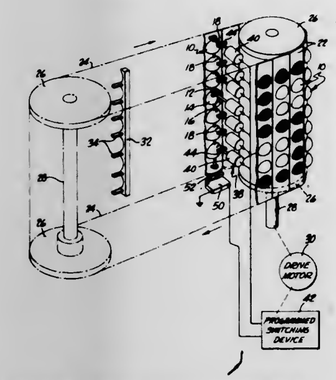
1. A capacitance operated indicating system comprising a source of alternating current electrical energy, antenna means energized by said source for providing a capacitance across an area to be protected, capacity monitoring means including impedance elements connected to said antenna means to form a bridge circuit therewith, phase sensitive detector means having an input connected to said monitoring means and having an output for producing at said output a signal which changes in value when said capacitance changes in value, electrically operable means, rate sensitive means connected between said detector means output and said electrically operable means for operating said electrically operable means when the output of said detector means changes at greater than a predetermined rate, and voltage responsive means connected between said detector means output and said electrically operable means to provide a current path between said detector means and said electrically operable means to operate said electrically operable means independently of said rate sensitive means when an excessive change in the output signal of said detector means results from an excessive degree of unbalance of said bridge.

3,199,097
INDICIA WHEEL DISPLAY APPARATUS HAVING MAGNETIC CLUTCHING TO DRIVE SHAFT
Richard A. Hartley, Tarzana, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Sept. 14, 1959, Ser. No. 839,863
15 Claims. (Cl. 340—324)



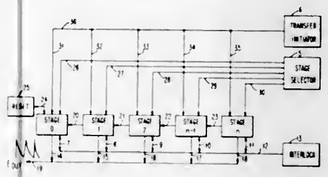
9. A display apparatus comprising: a single drive means; a plurality of display means movable through a plurality of predetermined stop positions; a plurality of permanent magnet coupling means having a phase-synchronous, self-limiting, torque-transfer characteristic for coupling said display means to said drive means, thereby producing movement of each display means through said stop positions, said torque-transfer characteristic being a function of the permanent magnetic attraction between members of said coupling means; and means including analog comparing means responsive to applied data signals for arresting the motion of said display means at selected ones of said stop positions, said coupling means being releasable to permit continued movement of said drive means when motions of said display means are arrested.

3,199,098
DISPLAY APPARATUS HAVING SPHERES MOUNTED ON RODS
Samuel A. Schwartz, 324 Langton Ave., Los Altos, Calif.
Filed Feb. 14, 1963, Ser. No. 258,444
11 Claims. (Cl. 340—324)



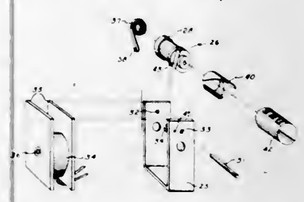
1. A variable display system comprising:
a multiplicity of rods fixed in seriatim in an endless loop that includes a viewing plane;
a number of spherical elements mounted on each rod, having hemispheres of contrasting colors, each element having a write gear;
means for transporting said rods and elements in such endless loop; and
means for engaging the write gears selectively to present the desired hemispheres for display in the viewing plane.

3,199,099
MULTI-STAGE BINARY-CODED-DECIMAL TO DECIMAL CONVERSION MEANS HAVING PARALLEL INPUT AND SERIAL OUTPUT
Ernie G. Nassimbene, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 9, 1962, Ser. No. 172,302
5 Claims. (Cl. 340—347)



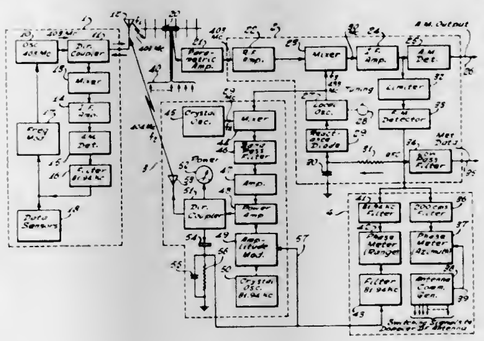
1. A converter for use with an associated stage selecting means having an output on one of a plurality of output lines to convert, under control of transfer initiating means, the output of the stage selecting means to a series of pulses indicative of the particular output line having an output on it at the time of transfer initiation comprising:
a converter serial output line,
a plurality of energizable stages,
one energizable stage which produces a pulse on said converter serial output line upon energization connected to each of said output lines for energization thereby,
interlock means connected to said stages such that only the stage last energized remains energized,
transfer means connected to all of said stages responsive to said transfer initating means operable to cause energization of a number of said energizable stages upon initiation of transfer which number is indicative of the output line then having an output on it, and
reset means connected to at least one of said stages.

3,199,100
ELECTRICAL INDICATING MEANS
Harrison F. Edwards, Pleasantville, N.Y., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Filed Mar. 16, 1965, Ser. No. 443,766
4 Claims. (Cl. 340—373)



1. An indicating device comprising a U-shaped frame including a base portion and upstanding spaced legs, a field assembly including laterally spaced magnetizable plates with an electromagnetic coil winding disposed therebetween, said spaced plates being confined between said spaced legs with the axis of said coil being normal to said plates, a non-magnetic rotary member of approximate cylindrical shape, pintle means for rotatably mounting said member about an axis parallel to said plates adjacent the ends of said legs of said U-shaped frame, a sawtooth shaped band of magnetizable material surrounding the periphery of said rotary member, and indicia bearing element overlying said band, and spring means cooperating with one end of said rotary member and one of said spaced legs of said U-shaped frame for biasing said member to a fixed position wherein said band presents a substantially maximum air gap between said plates.

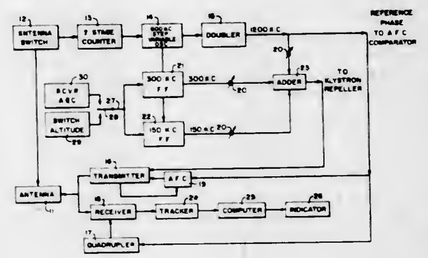
3,199,101
RADIOSONDE AND TRACKING SYSTEM
Paul G. Hansel, Greenvale, N.Y., assignor to Servo Corporation of America, Hicksville, N.Y., a corporation of New York
Filed Sept. 16, 1960, Ser. No. 56,598
7 Claims. (Cl. 343—7.6)



1. A radiosonde and tracking system, comprising a tracking station having means for generating a carrier wave, means for modulating the carrier wave with a signal of predetermined frequency, means for transmitting the signal modulated carrier wave, directional coupling means having a leakage output, and feedback means including tracking station modulation detecting means coupled to receive said leakage output to develop a feedback signal therefrom, said feedback means feeding said signal to said modulating means in a phase reverse to that of said modulation to cancel the inherent distortion therein; radiosonde means for receiving the tracking station transmitted wave, and including means for detecting said modulation signal, radiosonde means for collecting meteorological information, and converting such information into data signals, a source of radiosonde carrier waves, means for modulating said radiosonde carrier waves with said modulation signal and data signals, and means for retransmitting the modulated radiosonde carrier waves to said tracking station; said tracking station further comprising means for receiving said modulated radiosonde carrier waves, and means coupled to said last mentioned means for tracking said radiosonde.

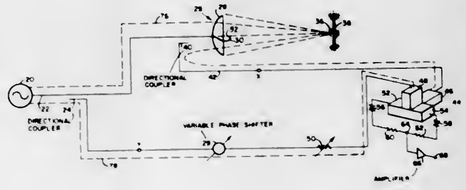
3,199,102
FM DOPPLER RADAR NAVIGATION SYSTEM
Nicholas M. Papanicolaou, Baltimore, Md., assignor to The Bendix Corporation, Towson, Md., a corporation of Delaware
Filed June 12, 1961, Ser. No. 116,440
10 Claims. (Cl. 343—8)

2. A Doppler navigation system comprising a transmitter frequency modulated by a plurality of harmonically related modulation frequencies, means for detecting the Doppler spectrum associated with components of all of said modulation frequencies at a particular frequency



which is a higher than first order harmonic of all of said modulation frequencies, and means for cyclically varying by a few percent one of said modulation frequencies.

3,199,103
DISPLACEMENT DETECTOR
Carroll F. Augustine, Farmington, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Aug. 12, 1959, Ser. No. 833,267
9 Claims. (Cl. 343—12)



1. A microwave gage for detecting object displacement from a reference position comprising
a stable microwave frequency source,
antenna means,
linear microwave phase comparator means having first and second inputs and an output,
first directional coupling means connecting said microwave frequency source to the first input of said comparator means for providing a reference signal to said comparator means,
second directional coupling means coupling said source to said antenna means and coupling the signal reflected by the object received by said antenna means to the second input of said comparator means,
variable microwave attenuator means in the connection between said first coupling means and said comparator means for controlling the magnitude of said reference signal,
the output of said linear phase comparator means providing a signal the amplitude of which is proportional to the relative phase difference between the signals applied to said inputs of said linear phase comparator means and hence is proportional to object displacement and the polarity of which indicates the direction of object displacement from said reference position, so that the object displacement in one direction may be indicated as positive and object displacement in the opposite direction may be indicated as negative,
calibration means to adjust the phase of the reference signal relative the phase of the reflected signal so

that the amplitude of the signal at the output of said microwave phase comparator means is a predetermined value when the object is at the reference position.

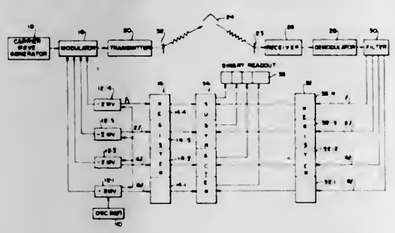
3. Apparatus for detecting relative object displacement comprising a klystron tube for generating a high frequency periodic signal, an antenna having an elliptical arc reflector directed towards said object, an antenna feed being located at one of the elliptical arc foci and the object being located at the other of said elliptical arc foci, a magic T having a pair of input arms and a pair of output arms connected so that signals entering the input arms will leave the output arms in different phases, a first and second directional coupler, said first directional coupler connecting said klystron to one input arm of said magic T and connecting said klystron to said antenna, said second directional coupler connecting said antenna to said klystron and connecting said antenna to the other input arm of said magic T, a diode being connected to each output arm of the magic T, said diodes being oppositely polarized, and said diode ends being connected at a summing point.

3,199,104

DISTANCE MEASURING SYSTEM WITH DIRECT BINARY READOUT

William A. Miller, Suffolk County, N.Y., assignor to Fairchild Stratos Corporation, Hagerstown, Md., a corporation of Maryland

Filed May 18, 1962, Ser. No. 195,849
16 Claims. (Cl. 343—12)



14. A system for measuring the range between a first and a second point comprising at one point: means for producing a first signal, means for transmitting said first signal to the other point, first means responsive to and synchronized by at least a portion of said first signal for producing a continually changing first number, means for receiving the transmitted first signal upon return from the other point, and second means responsive to and synchronized by at least a portion of said received first signal for producing a second number which is also continually changing, said second number differing at any one instant from said first number by an amount corresponding to the range between said first and second points.

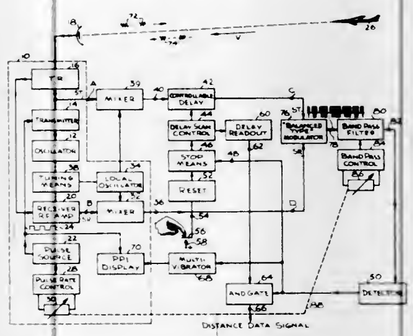
3,199,105

DISTANCE MEASURING SYSTEMS

Emory Lakatos, Santa Monica, Calif., assignor to Thompson Ramo Wooldridge Inc., Canoga Park, Calif., a corporation of Ohio

Filed Feb. 26, 1960, Ser. No. 11,378
12 Claims. (Cl. 343—13)

10. A system for using periodically transmitted oscillatory pulses as directly received, and also as received after reflection, to determine the time relationship between an individual directly received pulse and the reflected representation of the same pulse despite an extremely low signal-to-noise ratio, including in combination signal storage means responsive to both the directly received and the reflected oscillatory pulses for reproducing the same, the signal storage means including means for controllably delaying the directly received pulses with continuously varying delays which change at a rate selected to provide an interval of pulse overlap, a balanced modulator coupled to the signal storage means and responsive to the reproduced pulses for developing from the reproduced pulses a product signal including as a



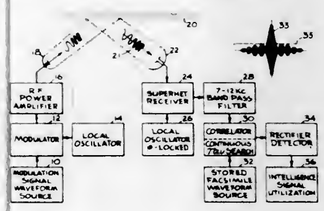
lower side band a carrier which is pulse modulated in accordance with time agreement between the pulses during the pulse overlap interval, the carrier including regularly spaced frequency components, and band pass filtering means coupled to the balanced modulator and selected to be frequency-sensitive over a band sufficient to encompass at least one of the frequency components in the product signal.

3,199,106

TIME DISTORTION TOLERANT SIGNALLING SYSTEM

Philip R. Karr, Torrance, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio

Filed Apr. 2, 1962, Ser. No. 184,603
5 Claims. (Cl. 343—17.2)



1. An echo ranging system comprising
means for generating and transmitting pulses of frequency modulated carrier wave energy, which pulses are characterized in that the instantaneous phase of the frequency modulated wave varies both logarithmically and nonlogarithmically with time as compared to the instantaneous phase of a constant frequency reference wave,
means for receiving moving-object-returned echo pulses, and
correlation means, responsive to said echo pulses and operative to compare the same with a time delayed, substantial replica of at least one transmitted pulse, for producing output signals only when the velocity of the object returning said echo pulses is within a preselected range of velocities.

5. In an echo ranging system for detection of objects having velocities within a preselected range of velocities,
transmitter means for transmitting pulses of oscillatory wave energy, which pulses are characterized in that during each pulse the transmitted wave amplitude varies as the function of time

$$f(t)=\cos[k \log (t+s)-at]$$

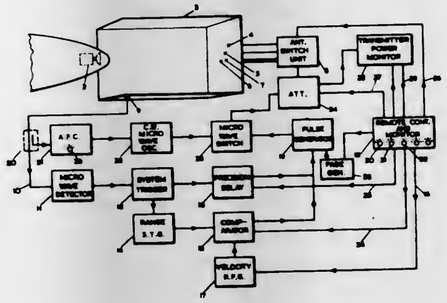
wherein
t is the elapsed time from the beginning of the pulse,
k is a constant,
s is a fixed time constant, and
a is a finite constant determinative of the rate at which the time variation of phase departs from a pure logarithmic function,
receiver means for receiving object-returned echo pulses, and
correlation means responsive to said echo pulses for comparing the same with a time delayed facsimile of a transmitted pulse in a manner such that output signals are produced only in response to echoes from objects having velocities within said range of velocities.

3,199,107

RADAR TESTING EQUIPMENT

Kenneth D. Mills, Ancaster, Ontario, Canada, assignor to Canadian Westinghouse Company Limited, Hamilton, Ontario, Canada, a company of Canada

Filed Sept. 4, 1962, Ser. No. 223,865
16 Claims. (Cl. 343—17.7)



1. A test equipment for a radar system comprising a signal generator for producing signals simulating the signals received by the radar system reflected from a target, an anechoic chamber, a plurality of antennas mounted at one end of said chamber, switching means to selectively connect any one of said antennas to said signal generator and permit radiation of said signals from said antennas in accordance with a predetermined sequence creating a simulation of relative angular motion between said radar system and a target, a further antenna mounted near the opposite end of said chamber and means to utilize the signal received by said further antenna to control the operation of said signal generator.

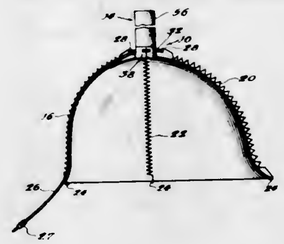
3,199,108

VERTICAL-RADIATOR ANTENNA

Benedikt A. Munk, Park Forest, Ill., assignor to Andrew Corporation, Orland Park, Ill., a corporation of Illinois

Filed Mar. 25, 1963, Ser. No. 267,491
10 Claims. (Cl. 343—718)

2. A helmet antenna comprising:
(a) a vertical radiator, and
(b) a ground-plane structure at the base of the radiator comprising a plurality of helically coiled spring members free for tension expansion and extending in an at least partially radial direction from the base of the radiator,



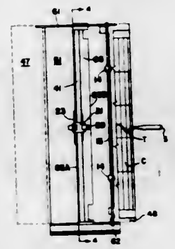
(c) the spring members having attachment means on the ends thereof adapted for securing said ends to the lower edge of a helmet and being of electrical length slightly in excess of a quarter wavelength at the operating frequency of the radiator.

3,199,109

CHART SEVERING MEANS FOR STRIP CHART TRANSPORT MECHANISM

Domenic Battaglini, Rochester, Richard G. Beach, Greece, and Harvey A. Klumb, Pittsford, N.Y., assignors to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York

Filed June 24, 1960, Ser. No. 38,495
10 Claims. (Cl. 346—24)



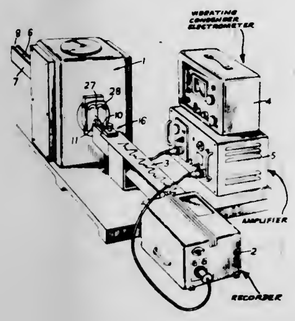
1. In combination, a recording mechanism having a platen, stylus means and means constructed and arranged for driving strip chart across said platen; means constructed and arranged for supporting strip chart spaced from said platen; guide means on said recording mechanism and extending across said platen transverse to the direction of strip chart movement; cutting means supported on said guide means and having a point movable toward and away from said platen, and said cutting means being movable along said guide means substantially to the extent of strip chart width, and with said point moved toward said platen into a position wherein point to platen spacing is less than strip chart to platen spacing; said stylus means being positioned to mark said chart at portions thereof being driven toward said cutting means.

3,199,110

DEVICE FOR RECORDING VARIATIONS IN THE FILLING OF CIGARETTE ROD ALONG ITS LENGTH

Gordon Francis Wellington Powell, Deptford, London, England, assignor to Molins Machine Company Limited, London, England, a British company

Filed Mar. 5, 1962, Ser. No. 177,593
Claims priority, application Great Britain, Mar. 7, 1961, 8,289/61
3 Claims. (Cl. 346—25)



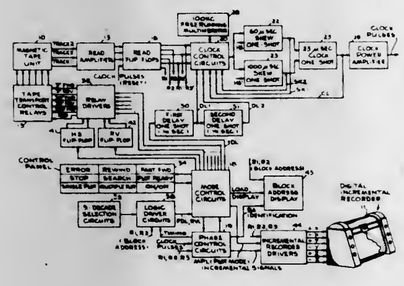
1. A device for recording variations in the filling of a cigarette along its length, comprising a radiation gauge adapted to gauge variations in the mass of the cigarette along its length, a recorder having a stylus adapted to record gauge readings on a record strip and electrically connected to be responsive to the output of the radiation gauge so that the stylus movements correspond to fluctuations of the gauge output and a conveyor for moving the rod through the gauge and simultaneously moving the record strip at the same speed through the recorder, a clamp movable with the conveyor and arranged to grip an end of the record strip so that the strip travels at the same speed as the cigarette, and a pusher attached to the clamp and positioned to propel the cigarette through the gauge.

3,199,111

GRAPHICAL DATA RECORDER SYSTEM

Alan K. Jennings, Anaheim, Ronald D. Cone, Bellflower, and Eugene Seid, Los Angeles, Calif., assignors to California Computer Products, Inc., Downey, Calif., a corporation of California

Filed May 21, 1962, Ser. No. 196,134
23 Claims. (Cl. 346—29)



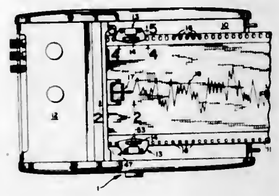
9. A system for providing continuous and discontinuous graphic plots in response to input data, comprising, a recorder system including a record medium and an incrementally movable plotting instrument, and means responsive to the input data for providing differential vector increment input signals which control the plotting instrument in incremental movements relative to the record medium, such that each incremental movement of the plotting instrument is initiated from the location of termination of the last previous movement of the plotting instrument, the incremental movements each being of the same dimensional order of magnitude as the width of the line provided by the plotting instrument, thereby to provide arbitrary symbol capability.

3,199,112

ELECTRICAL MEASURING APPARATUS

Raymond D. Brunson, Sunnyvale, Paul A. Gilovich, San Jose, and Stuart K. Kingman, Portola Valley, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed May 8, 1962, Ser. No. 193,088
10 Claims. (Cl. 346—32)



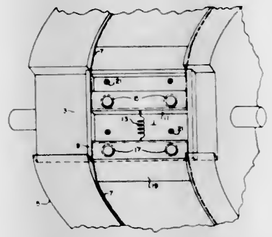
1. In a graphic recorder of the strip chart variety, means for receiving an unknown voltage that is to be measured, means for moving a graph paper across a flat surface of said recorder, a hold-down clamp means for securing said paper to said recorder surface, said hold-down clamp means including a flat member disposed to bear against said paper, a plurality of rods extending from said flat member each protruding through a hole in said flat surface, said plurality of rods each having a seating collar fixed adjacent said flat member, another supporting collar fixed to its end and a compression spring disposed between and exerting a force upon said supporting collar and the underside of said flat surface, a pen for recording a curve on said paper which curve is representative of the value of said unknown voltage, means for generating a reference voltage representative of the position of said pen upon said paper, chopper means for comparing said unknown voltage to said reference voltage to generate an A.C. signal at a given frequency, amplifier means for amplifying said A.C. signal, a servo-motor having one phase winding energized by an A.C. power supply of said given frequency and having another phase winding energized by said amplified A.C. signal, means on said amplifier means for changing the gain of said amplifier, said means for generating a reference voltage comprising a potentiometer having a movable pick-off arm movable by said servo-motor, a voltage reference resistor connected in series with said pick-off arm and an anti-hunting network across which said reference voltage is generated, and means for obtaining various ranges of voltage drop from said voltage reference resistor as said pick-off arm moves between extreme positions on said potentiometer.

3,199,113

RECORDING DRUM RECORD LATCH

Henry R. Barta, Dallas, Tex., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 19, 1962, Ser. No. 231,786
6 Claims. (Cl. 346—138)



1. A thin, single-unit record latch adapted to fit in a shallow notch on the periphery of a record drum and to maintain a flexible sheet record around said record drum in a manner such that said sheet record substantially encircles the circumference of said record drum, comprising,

(a) a base member having a first holding means formed on one end for connecting to an end of said sheet record and guide elements formed on each side,

(b) a slide member having a second holding means formed thereon for connecting to the other end of said sheet movably mounted between said guide elements of said base member,

(c) a spring mechanism for biasing said slide member in a direction such that said second holding means tends to move toward said first holding means.

3,199,114

DEVICE FOR ELIMINATING THE GLARE OF AUTOMOBILE HEADLIGHTS

Pierre Mallfaud, 95 Blvd. Jourdan, Paris 14, France

Filed Feb. 18, 1963, Ser. No. 259,129
Claims priority, application France, Feb. 19, 1962, 888,428
6 Claims. (Cl. 351—45)



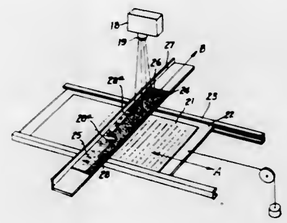
6. A pair of eye glasses adapted to be worn in front of the eyes of an observer, a glare screen adapted to eliminate the glare of automobile headlights provided in the left-hand portion of each of the eye glass lenses, each glare screen being transparent and of triangular configuration and enclosing the projection in perspective on the surface thereof the locus of the real appearances of headlights of vehicles approaching the observer, a portion of each of said screens being subdivided into unitary triangular zones of dark-tint which have an elongated shape and a common apex with the screen, each zone being separated from the other by a narrow band of lighter tint than that of said unitary triangular zones.

3,199,115

METHOD FOR MAKING A SOUND MOTION PICTURE FILM WITH WORDS THEREON

Max Lasky, 574 Torrence Lane, Cincinnati, Ohio

Filed Apr. 29, 1963, Ser. No. 278,512
3 Claims. (Cl. 352—5)



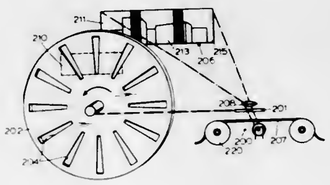
1. A method for producing an audio visual emphasis motion picture film comprising the following steps; providing a visual motion picture film and photographing thereon a vocalizing subject; providing a sound recording film and recording thereon the sound of the vocalizing photographed on the visual motion picture film; providing a beat measuring tape and recording thereon a series of beats indicating the start of each word of the vocalizing photographed on the visual motion picture film; providing a word exposure film and photographing thereon words in fully illuminated exposure in synchronism with the beats of said beat measuring tape while simultaneously photographing legible semi-illuminated words in spaced relationship to said fully illuminated words, whereby said semi-illuminated words are adapted to be projected on a screen simultaneously with the fully illuminated words; and finally providing an unexposed motion picture film and photographically superimposing thereon the visual motion picture film, the sound recording film, and the word exposure film to provide a composite film whereby, upon projection of said composite film semi-illuminated words and fully illuminated words are projected in synchronism with the vocal expression of the visual motion film.

3,199,116

PROJECTION OF STEREOSCOPIC PICTURES

Karl F. Ross, 305 Broadway, New York 7, N.Y.

Filed May 29, 1962, Ser. No. 198,684
4 Claims. (Cl. 352—58)

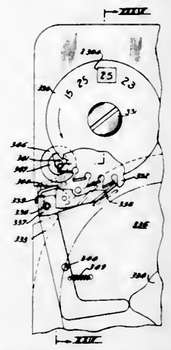


1. A system for displaying stereoscopic pictures, comprising a viewing surface, projector means for consecutively flashing upon said surface a succession of images within an interval less than the period of visual retention of the human eye, said images together constituting a parallax panoramagram, a pair of rotatable disks coaxially disposed forwardly of said surface and provided

with peripherally spaced slots through which different parts of each image are visible to the eyes of a viewer in front of said disks upon initial alignment of the respective slots thereof, and mechanism for rotating said disks in opposite directions with progressive displacement of the aligned positions of said slots across said surface in timed relationship with the projection of said images.

3,199,117
COUNTER AND CONTROL STRUCTURES FOR MOTION PICTURE CAMERAS
Jacques Bolsey, Hartsdale, N.Y., assignor, by mesne assignments, to Bolsey Corporation of America, New York, N.Y.
Filed Apr. 21, 1960, Ser. No. 23,853
8 Claims. (Cl. 352—172)

1. In a motion picture camera, in combination, a toothed counter wheel; support means supporting said wheel for rotation about its axis; a yieldable pin having an operating position cooperating with said wheel to limit the latter to one direction of rotation; means carried by said support means for placing said pin in said operating position thereof only when a magazine is in the camera; and pawl means cooperating with said wheel for indexing the latter during exposure of film in the camera, whereby

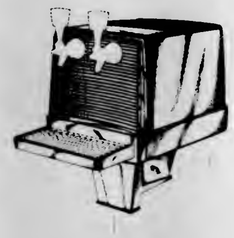


when a magazine is out of the camera said pin will not be in its operative position.

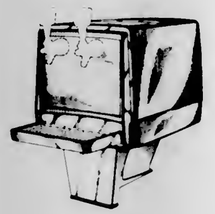
DESIGNS

AUGUST 3, 1965

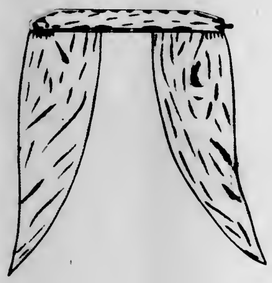
201,784
BEVERAGE DISPENSER, OR SIMILAR ARTICLE
James R. Reichow, Edina, Minn., assignor to The Cornelius Company, a corporation of Minnesota
Filed July 10, 1964, Ser. No. 80,797
Term of patent 14 years
(Cl. D2—3)



201,785
BEVERAGE DISPENSER, OR SIMILAR ARTICLE
James R. Reichow, Edina, Minn., assignor to The Cornelius Company, a corporation of Minnesota
Filed July 10, 1964, Ser. No. 80,805
Term of patent 14 years
(Cl. D2—3)



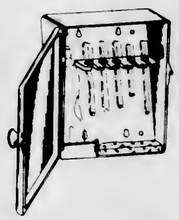
201,786
SCARF TURBAN
Ruby Kalensky, 1030 Hollywood Blvd., Hollywood, Fla.
Filed Jan. 23, 1963, Ser. No. 73,289
Term of patent 14 years
(Cl. D3—13)



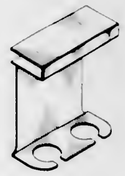
201,787
NECKTIE
Vern L. Settergren, 1527 W. Palamaritas Drive, Phoenix, Ariz.
Filed Aug. 31, 1964, Ser. No. 81,518
Term of patent 14 years
(Cl. D3—16)



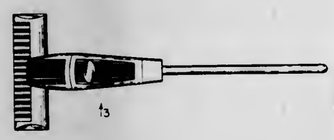
201,788
CABINET FOR TOOTHBRUSHES AND SIMILAR ARTICLES
James A. Robertson, 1507 Blossom Hill Road, Pittsburgh, Pa.
Filed Mar. 25, 1963, Ser. No. 74,093
Term of patent 3½ years
(Cl. D4—3)



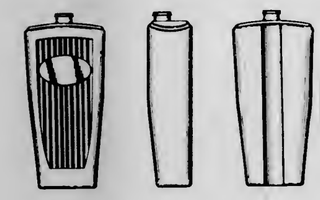
201,789
TOOTHBRUSH HOLDER OR SIMILAR ARTICLE
Eli M. Milakovich, 14311 E. 4th St., Whittier, Calif.
Filed Sept. 21, 1964, Ser. No. 81,819
Term of patent 14 years
(Cl. D4—3)



201,790
FLOOR WAXING MACHINE
Olin C. Hershberger and Chester B. Derr, Thompson, Conn., assignors to Astro Inc., Thompson, Conn., a corporation of Connecticut
Filed May 15, 1964, Ser. No. 80,041
Term of patent 14 years
(Cl. D9—2)



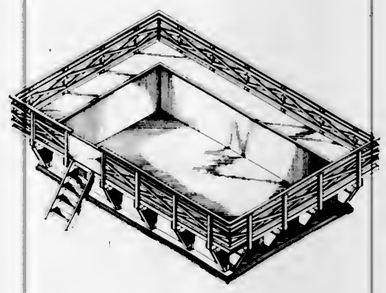
201,791
LIQUID DISPENSER FOR A FLOOR TREATING MACHINE
Olin C. Hershberger and Chester B. Derr, % Astro Incorporated, Box 277, Thompson, Conn.
Filed May 15, 1964, Ser. No. 80,042
Term of patent 14 years
(Cl. D9—2)



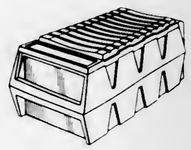
201,792
COMBINED WASHING AND SCRAPING TOOL FOR PAINT ROLLERS
Alvin E. Seibel, 1528 Roosevelt Drive, Chowchilla, Calif.
Filed June 1, 1964, Ser. No. 80,220
Term of patent 14 years
(Cl. D9—2)



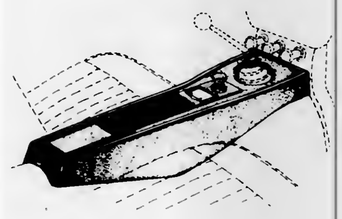
201,793
SWIMMING POOL
John K. Rains, 86 Trenton Ave., White Plains, N.Y.
Filed Apr. 26, 1963, Ser. No. 74,638
Term of patent 14 years
(Cl. D13—1)



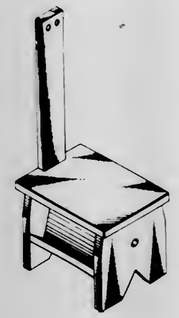
201,794
COMBINATION PORTABLE CAR CONSOLE AND ARM REST
John A. Gale, Wayzata, Minn., assignor to Child's Play Products, Inc., Willmar, Minn., a corporation of Minnesota
Filed Aug. 10, 1964, Ser. No. 81,209
Term of patent 14 years
(Cl. D14—6)



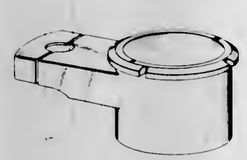
201,795
AUTOMOBILE ACCESSORY CONSOLE
Jack Nimetz, 9119 Manchester Road, Silver Spring, Md., and Benjamin B. Weitz, 7611 Maple Ave., Takoma Park, Md.
Filed Nov. 16, 1964, Ser. No. 82,626
Term of patent 7 years
(Cl. D14—6)



201,796
STOOL
Eleanor M. Rolley, Truckee, Calif. (104 4th St., No. G, Broderick, Calif.)
Filed Apr. 18, 1963, Ser. No. 74,501
Term of patent 14 years
(Cl. D15—8)



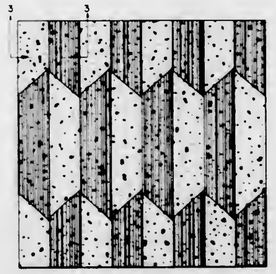
201,797
DISPENSER FOR ADDING CHEMICALS TO TOILET FIXTURES OR THE LIKE
Martin A. Johnson, 11633 Hesby St., North Hollywood, Calif.
Filed Nov. 5, 1964, Ser. No. 82,495
Term of patent 14 years
(Cl. D16—2)



201,798
BUNDLE STRAP
William P. Miller, Elizabeth, N.J., assignor to The Thomas & Betts Co., Incorporated, Elizabeth, N.J., a corporation of New Jersey
Filed Apr. 23, 1964, Ser. No. 79,672
Term of patent 14 years
(Cl. D17—5)



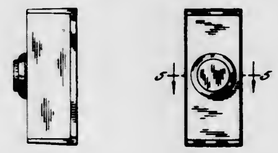
201,799
ACOUSTICAL CORRECTION TILE
James R. Radcliffe, Williamsville, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed July 27, 1964, Ser. No. 81,023
Term of patent 14 years
(Cl. D18—2)



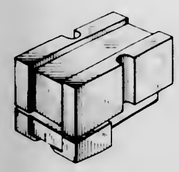
201,800
HAIR CLIPPER
Courtney A. Leubner, Oakbrook, Ill., assignor to Supreme Products Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 6, 1964, Ser. No. 82,509
Term of patent 14 years
(Cl. D22—3)



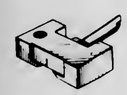
201,801
PUSH SWITCH OR SIMILAR ARTICLE
Norman William Stevenson, Macclesfield, England, assignor to V. & E. Friedland Limited, Macclesfield, England, a British company
Filed Dec. 17, 1963, Ser. No. 77,832
Claims priority, application Great Britain June 18, 1963
Term of patent 14 years
(Cl. D26—13)



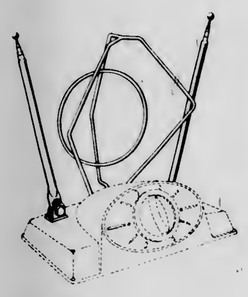
201,802
PHONOGRAPH CARTRIDGE
Robert Louis Deschamps, West Chicago, and Marvin B. Lorig, Skokie, Ill., assignors, by mesne assignments, to said Lorig
Filed June 26, 1964, Ser. No. 80,605
Term of patent 14 years
(Cl. D26—14)



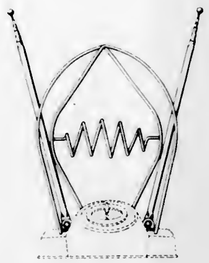
201,803
PHONOGRAPH NEEDLE
Robert Louis Deschamps, West Chicago, and Marvin B. Lorig, Skokie, Ill., assignors, by mesne assignments, to said Lorig
Filed June 26, 1964, Ser. No. 80,606
Term of patent 14 years
(Cl. D26—14)



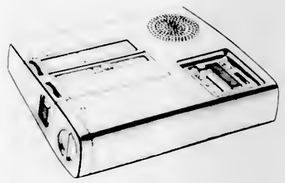
201,804
TELEVISION ANTENNA FOR INDOOR USE
Marvin P. Middlemark, 99—05 63rd Drive, Rego Park, New York 74, N.Y.
Filed June 1, 1964, Ser. No. 80,206
Term of patent 14 years
(Cl. D26—14)



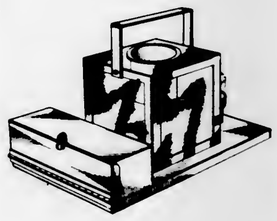
201,805
TELEVISION ANTENNA FOR INDOOR USE
Marvin P. Middlemark, 99—05 63rd Drive, Rego Park, New York, N.Y.
Filed June 1, 1964, Ser. No. 80,207
Term of patent 14 years
(Cl. D26—14)



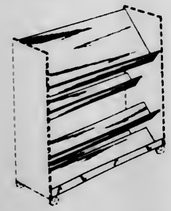
201,806
DICTATING MACHINE
Eliot F. Noyes, New Canaan, Conn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 29, 1964, Ser. No. 83,199
Term of patent 14 years
(Cl. D26—14)



201,807
COMBINATION BAIT AND TACKLE KIT
Paul B. Burkett, 502 W. Main St., Dothan, Ala.
Filed June 26, 1964, Ser. No. 80,599
Term of patent 14 years
(Cl. D31—4)



201,808
MOBILE SHELF UNIT OR THE LIKE
Kim Yamasaki, Lombard, Ill., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 77,899
Term of patent 14 years
(Cl. D33—2)



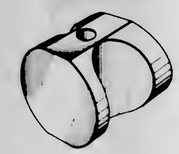
201,809
BOOK END
George B. Greenwood, 3652 Brookgrove, Grove City, Ohio
Filed Feb. 13, 1964, Ser. No. 78,627
Term of patent 3½ years
(Cl. D33—3)



201,810
BRACKET
Carmin A. Castellano, Sunset Hills, Pa., assignor to Consolidated Molded Products Corporation, Scranton, Pa., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 82,312
Term of patent 14 years
(Cl. D33—3)



201,811
GOLF PUTTER HEAD
Ervin E. Kroll, 824 N. Logan St., McMinnville, Oreg.
Filed Sept. 15, 1964, Ser. No. 81,736
Term of patent 14 years
(Cl. D34—5)



201,812
POOL SLIDE
Iwo Bontempi, North Massapequa, N.Y., assignor to Swimco Inc., Copiague, N.Y.
Filed Feb. 19, 1965, Ser. No. 83,896
Term of patent 14 years
(Cl. D34—5)



201,813
SLED
Floyd A. Sutter, 3250 Logan Ave. N., Minneapolis, Minn.
Filed May 21, 1964, Ser. No. 80,097
Term of patent 14 years
(Cl. D34—15)



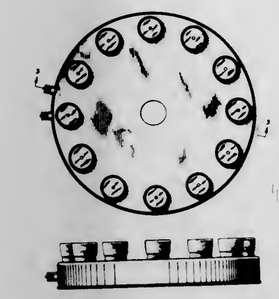
201,814
PUSH TOY OR SIMILAR ARTICLE
Jarvis W. Rockwell, 3003 W. Wilson Ave., Chicago, Ill.
Filed Mar. 1, 1965, Ser. No. 84,020
Term of patent 14 years
(Cl. D34—15)



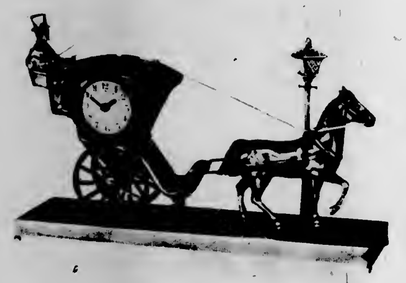
201,815
SNOW VEHICLE
Leonard E. Greenberg, 195 Brewster Road, West Hartford, Conn.
Filed Mar. 2, 1965, Ser. No. 84,049
Term of patent 14 years
(Cl. D34—15)



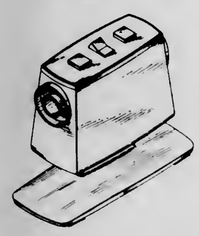
201,816
ILLUMINABLE CHRISTMAS TREE STAND OR SIMILAR ARTICLE
Anthony Shales, 474 County Line Road, Huntingdon Valley, Pa.
Filed July 22, 1963, Ser. No. 75,910
Term of patent 3½ years
(Cl. D35—3)



201,817
CLOCK
Benjamin Levy, 1703 Exeter Road, Hewlitt, Long Island, N.Y.
Filed June 30, 1964, Ser. No. 80,647
Term of patent 7 years
(Cl. D42—7)



201,818
MOTOR DRIVEN POWER UNIT
Dave Chapman and Robert C. Le Sueur, Chicago, Ill., assignors to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Oct. 19, 1964, Ser. No. 82,229
Term of patent 14 years
(Cl. D44—1)



201,819
SALT SHAKER
Victor J. Bergeron, 20 Cosmo Place, Hillsborough, Calif.
Filed Feb. 23, 1965, Ser. No. 83,922
Term of patent 14 years
(Cl. D44—22)



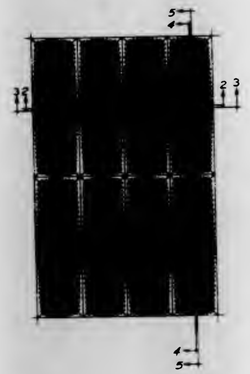
201,820
PEPPER SHAKER
Victor J. Bergeron, 20 Cosmo Place, Hillsborough, Calif.
Filed Feb. 23, 1965, Ser. No. 83,923
Term of patent 14 years
(Cl. D44—22)



201,821
RING
Louis Solomon, Chicago, Ill.
Filed Feb. 26, 1964, Ser. No. 78,790
Term of patent 14 years
(Cl. D45—10)



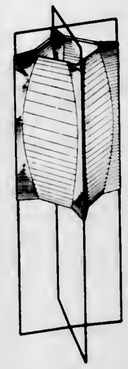
201,822
PRISMATIC PANELING FOR LIGHTING FIXTURES
Carl X. Meyer, St. Louis County, Mo., assignor to Emerson Electric Co., a corporation of Missouri
Filed Jan. 24, 1964, Ser. No. 78,353
Term of patent 14 years
(Cl. D48—16)



201,823
PORTABLE FLUORESCENT LAMP
Richard Haywood Rogers, Toronto, Ontario, Canada, assignor to Consolidated Electronic Equipment Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed May 18, 1964, Ser. No. 80,011
Term of patent 14 years
(Cl. D48—20)



201,824
LAMP
Leo H. Klausen, 338 Hillcrest Ave., Willowdale, Ontario, Canada
Filed July 20, 1964, Ser. No. 80,922
Term of patent 14 years
(Cl. D48—20)



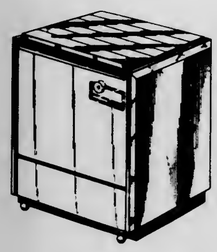
201,825
LAMP HEAD FOR A BARRICADE FLASHER SIGNAL UNIT
Sidney A. Heenan, Park Ridge, Ill., assignor to Elastic Stop Nut Corporation, Union, N.J., a corporation of New Jersey
Filed Mar. 13, 1964, Ser. No. 78,989
Term of patent 14 years
(Cl. D48—24)



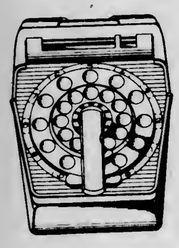
201,826
COMBINED SINGLE ARM OUTDOOR LIGHTING STANDARD, STREET SIGN, AND LUMINAIRE
Donald Deskey, New York, and Alexander Lurkis, Hollis wood, N.Y.
Filed Feb. 17, 1964, Ser. No. 78,703
Term of patent 14 years
(Cl. D48—31)



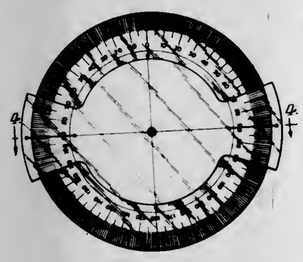
201,827
PORTABLE DISHWASHER
Raymond C. Sandin, Winnetka, and James R. Cochrane, Chicago, Ill., assignors to General Electric Company, a corporation of New York
Filed Dec. 14, 1964, Ser. No. 83,014
Term of patent 7 years
(Cl. D49—1)



201,828
STAMP DISPENSING MACHINE
James H. Walker, Los Angeles, Calif., assignor of one-half to Leland L. Dills and one-half to Richard W. Callaway, both of Arcadia, Calif.
Filed Oct. 7, 1964, Ser. No. 82,068
Term of patent 14 years
(Cl. D52—2)



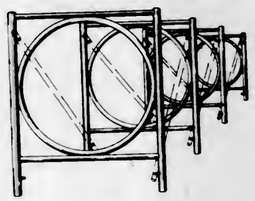
201,829
PROTRACTOR
Joseph O. Marcoline, 9137 S. 89th Ave., Hickory Hills, Ill.
Filed May 13, 1963, Ser. No. 74,864
Term of patent 14 years
(Cl. D52—6)



201,830
BATHROOM SCALE
Dana W. Mox, Glenview, Ill., assignor to Hanson Scale Company, Northbrook, Ill., a corporation of Illinois
Filed July 13, 1964, Ser. No. 80,825
Term of patent 14 years
(Cl. D52—10)



201,831
SCAFFOLD FRAME
Arthur C. Borgman, 530 5th Ave., Franklin Square, N.Y.
Filed Apr. 24, 1963, Ser. No. 74,596
Term of patent 14 years
(Cl. D54—1)



201,832
RIVET SETTING TOOL
George A. Fuller, Jr., Wenham, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Sept. 28, 1964, Ser. No. 81,884
Term of patent 14 years
(Cl. D54—10)



201,833
RIVET SETTING TOOL
Richard Wadler, Lexington, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Sept. 28, 1964, Ser. No. 81,889
Term of patent 14 years
(Cl. D54—10)



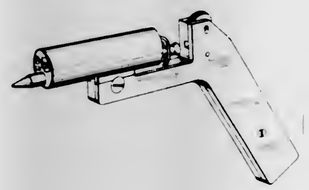
201,834
SPOON OR SIMILAR ARTICLE
Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed May 9, 1963, Ser. No. 74,833
Term of patent 3½ years
(Cl. D54—12)



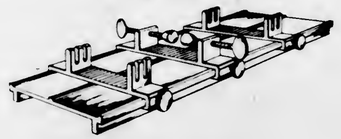
201,835
FORK OR OTHER SIMILAR ARTICLE OF FLATWARE
Tsuneo Murase, 15015 Gramercy Place, Apt. 3–C, Gardena, Calif.
Filed July 28, 1964, Ser. No. 81,044
Term of patent 7 years
(Cl. D54—12)



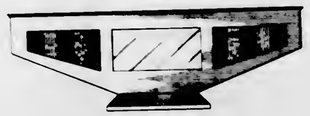
201,836
ROD CEMENT EXTRUDER
Eugene G. Frederick, Beverly, and George H. Cooper, Byfield, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Nov. 15, 1963, Ser. No. 77,449
Term of patent 14 years
(Cl. D54—13)



201,837
ASSEMBLY JIG OR SIMILAR ARTICLE
Henry S. Rose, Los Angeles, and James B. Russell, Altadena, Calif., assignors to American Russkit Company, Los Angeles, Calif., a corporation of California
Filed May 19, 1964, Ser. No. 80,058
Term of patent 14 years
(Cl. D54—13)



201,838
COMBINED AQUARIUM AND PHONOGRAPH CABINET
Robert E. Jackson, 4008 Trinity St., Los Angeles, Calif.
Filed July 28, 1964, Ser. No. 81,043
Term of patent 14 years
(Cl. D56—4)



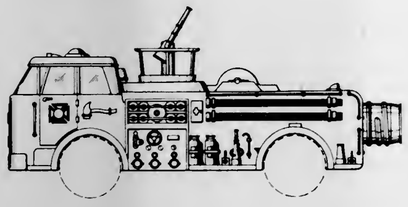
201,839
INSULATED JUG
Arne Nils Erkers, Styckjunkaregatan, Stockholm, Sweden
Filed Feb. 3, 1964, Ser. No. 78,481
Term of patent 14 years
(Cl. D58—5)



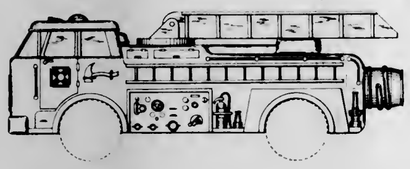
201,840
BOTTLE
Jules Lawrence Hauser, Lake Success, N.Y., assignor to Hammer Food Products Corporation, Brooklyn, N.Y., a corporation of New York
Filed June 9, 1964, Ser. No. 80,335
Term of patent 14 years
(Cl. D58—8)



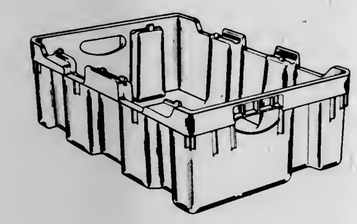
201,841
BOTTLE OR SIMILAR ARTICLE
Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 73,913
Term of patent 14 years
(Cl. D58—9)



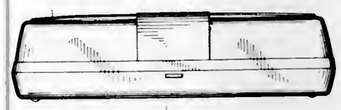
201,842
BOTTLE OR SIMILAR ARTICLE
Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Mar. 13, 1963, Ser. No. 73,951
Term of patent 14 years
(Cl. D58—9)



201,843
STACKING AND NESTING BOX
David C. Johnson, 809 Liberty St., Erie, Pa.
Filed July 8, 1963, Ser. No. 75,691
Term of patent 14 years
(Cl. D58—12.6)



201,844
DISPLAY BOX
Samuel Braun, Rye, N.Y., assignor to B.C.N. Design Products, Inc., Amityville, N.Y., a corporation of New York
Filed Sept. 30, 1964, Ser. No. 81,955
Term of patent 14 years
(Cl. D58—12.7)

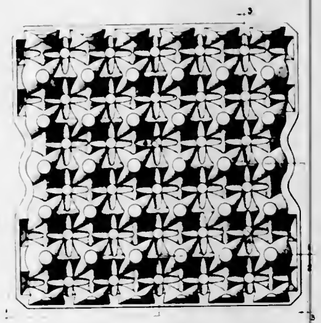


201,845
JEWELRY BOX
Jerome Shiffman, 128 Cartage Road, Scarsdale, N.Y.
Filed Dec. 4, 1964, Ser. No. 82,916
Term of patent 7 years
(Cl. D58—12.7)

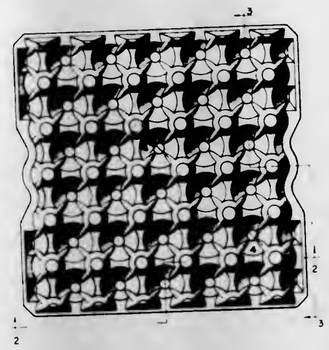


201,846
COMPARTMENTED TRAY
Hugh R. Weiss, Montclair, N.J., assignor to The Pantasote Company, Passaic, N.J., a corporation of New Jersey
Filed May 5, 1964, Ser. No. 79,830
Term of patent 14 years
(Cl. D58—13)

201,847
MOLDED PULP EGG TRAY
Joseph B. Fleming, Jr., and Floyd H. Porter, Dallas, Tex., assignors to Fleming & Sons, Inc., a corporation of Texas
Filed Oct. 19, 1964, Ser. No. 82,215
Term of patent 14 years
(Cl. D58—13)



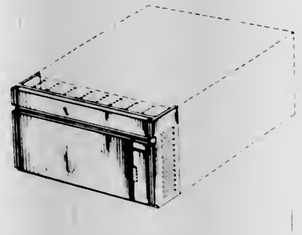
201,848
MOLDED PULP EGG TRAY
Joseph B. Fleming, Jr., and Floyd H. Porter, both of Dallas, Tex., assignors to Fleming & Sons, Inc., a corporation of Texas
Filed Nov. 5, 1964, Ser. No. 82,536
Term of patent 14 years
(Cl. D58—13)



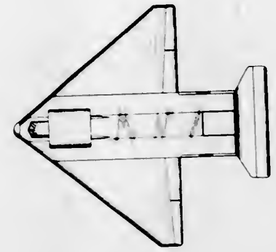
201,849
CAN END
Dwight B. Smith, Laguna Beach, Calif., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 12, 1965, Ser. No. 83,397
Term of patent 14 years
(Cl. D58—26)



201,850
AIR CONDITIONER CABINET OR SIMILAR ARTICLE
John K. Wagner, Marengo, and Richard F. Sharp, Cedar Rapids, Iowa, assignors, by mesne assignments, to Amana Refrigeration, Inc., Middle Amana, Iowa, a corporation of Delaware
Filed July 8, 1964, Ser. No. 80,753
Term of patent 14 years
(Cl. D62—4)



201,851
COMBINATION PASSENGER CARGO AIR TRANSPORT
Vincent J. Burnelli, Silver Spring, Md.; Hazel G. Burnelli, executrix of said Vincent J. Burnelli, deceased
Filed Feb. 5, 1964, Ser. No. 78,531
Term of patent 14 years
(Cl. D71—1)



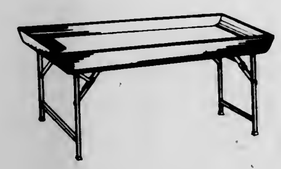
201,852
INK MARKING INSTRUMENT
Harold Bruce Housman, Washington, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 4, 1963, Ser. No. 77,285
Term of patent 3½ years
(Cl. D74—17)



201,853
PENCIL SHARPENER
Georges Dessonnaz, 28 Blvd. de Grancy, Lausanne, Switzerland
Filed Mar. 13, 1964, Ser. No. 78,992
Claims priority, application Switzerland Sept. 13, 1963
Term of patent 14 years
(Cl. D74—21)



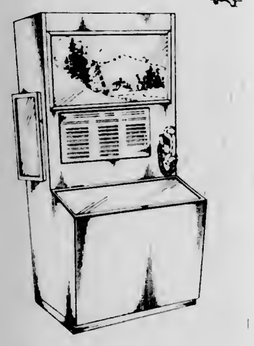
201,854
DISPLAY TABLE OR THE LIKE
Morris Rand, Boston, Mass., assignor to Rand Associates, Inc., South Boston, Mass., a corporation of Massachusetts
Filed May 10, 1963, Ser. No. 74,836
Term of patent 14 years
(Cl. D80—2)



201,855
CLOTHES HANGER
Carl E. Gingher, 304–328 Depot St., Scranton, Pa.
Filed Apr. 27, 1964, Ser. No. 79,708
Term of patent 14 years
(Cl. D80—8)



201,856
CUSTOMER RESERVATION CABINET
Philip M. Evans, 119 W. Denny Way, Seattle, Wash.
Filed Oct. 21, 1963, Ser. No. 77,060
Term of patent 7 years
(Cl. D80—11)



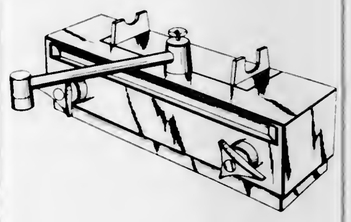
201,857
HOLDER FOR BOBBY PINS OR THE LIKE
Purl M. Enger, 2201 4th St. NW., Austin, Minn.
Filed Jan. 12, 1965, Ser. No. 83,396
Term of patent 3½ years
(Cl. D86—10)



201,858
TIRE
Arthur C. Blankenship, Detroit, Mich., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 28, 1964, Ser. No. 81,904
Term of patent 14 years
(Cl. D90—20)



201,859
COMBINED DISHWASHER AND FAUCET FIXTURE
Raymond W. Young, Toledo, Ohio, assignor to Gerity Products, Inc., Toledo, Ohio, a corporation of Michigan
Filed Sept. 14, 1964, Ser. No. 81,721
Term of patent 14 years
(Cl. D91—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3RD DAY OF AUGUST, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Bigelow, Floyd E., Jr. Portable building and apparatus for the transportation and erection of the same. Re. 25,827, 8–3–65, Cl. 20—2.
Dow Chemical Co., The: *See*—
Moore, John. Re. 25,831.
Kewanee Machinery & Conveyor Co.: *See*—
Mighell, Russell L. Re. 25,832.
Laboratory Equipment Corp.: *See*—
Wagner, Harold C. Re. 25,829.
Mighell, Russell L., to Kewanee Machinery & Conveyor Co. Balanced conveyor hopper. Re. 25,832, 8–3–65, Cl. 198—98.
Moore, John, to The Dow Chemical Co. Method for dyeing acrylonitrile polymer fibers. Re. 25,831, 8–3–65, Cl. 264—78.
Shull, Stanley A., to Xerox Corp. High speed printers for computers. Re. 25,830, 8–3–65, Cl. 101—93.
Wagner, Harold C., to Laboratory Equipment Corp. Process of using a metal oxide flame spray stick. Re. 25,829, 8–3–65, Cl. 117—105.2.
Ward, Charles W. Collapsible bag. Re. 25,826, 8–3–65, Cl. 190—52.
Wooster, Philip A. Paper roll dispenser. Re. 25,828, 8–3–65, Cl. 242—55.2.
Xerox Corp.: *See*—
Shull, Stanley A. Re. 25,830.

LIST OF PLANT PATENTEES

Carlton Rose Nurseries: *See*—
Verbeek, Gysbert. 2,546.
Verbeek, Gysbert, to Carlton Rose Nurseries. Rose plant. 2,546, 8–3–65, Cl. 20.

LIST OF DESIGN PATENTEES

Amana Refrigeration, Inc.: *See*—
Wagner, John K., and Sharp. 201,850.
American Can Co.: *See*—
Housman, Harold B. 201,852.
American Russkit Co.: *See*—
Rose, Henry S., and Russell. 201,837.
Astro Inc.: *See*—
Hershberger, Olin C., and Derr. 201,790.
B.C.N. Design Products, Inc.: *See*—
Braun, Samuel. 201,844.
Bergeron, Victor J. Salt shaker. 201,819, 8–3–65, Cl. D44—22.
Bergeron, Victor J. Pepper shaker. 201,820, 8–3–65, Cl. D44—22.
Blankenship, Arthur C., to United States Rubber Co. Tire. 201,858, 8–3–65, Cl. D90—20.
Bontempi, Iwo, to Swimco Inc. Pool slide. 201,812, 8–3–65, Cl. D34—5.
Borgman, Arthur C. Scaffold frame. 201,831, 8–3–65, Cl. D54—1.
Braun, Samuel, to B.C.N. Design Products, Inc. Display box. 201,844, 8–3–65, Cl. D58—12.7.
Brunswick Corp.: *See*—
Yamasaki, Kim. 201,808.
Burkett, Paul B. Combination bait and tackle kit. 201,807, 8–3–65, Cl. D31—4.
Burnelli, Vincent J., deceased (H. G. Burnelli, executrix of said V. J. Burnelli). Combination passenger cargo air transport. 201,851, 8–3–65, Cl. D71—1.
Calloway, Richard W.: *See*—
Walker, James H. 201,828.
Castellano, Carmin A., to Consolidated Molded Products Corp. Bracket. 201,810, 8–3–65, Cl. D33—3.
Chapman, Dave, and R. C. Le Sueur, to Scovill Mfg. Co. Motor driven power unit. 201,818, 8–3–65, Cl. D44—1.
Child's Play Products, Inc: *See*—
Gale, John A. 201,794.
Cochrane, James R.: *See*—
Sandin, Raymond, and Cochrane. 201,827.
Colgate-Palmolive Co.: *See*—
Douglas, Livingston C. 201,841.
Douglas, Livingston C. 201,842.
Consolidated Electronic Equipment Ltd.: *See*—
Rogers, Richard H. 201,823.
Consolidated Molded Products Corp.: *See*—
Castellano, Carmin A. 201,810.
Cooper, George H.: *See*—
Frederick, Eugene G., and Cooper. 201,836.
Cornelius Co., The: *See*—
Reichow, James R. 201,784.
Reichow, James R. 201,785.
Derr, Chester B.: *See*—
Hershberger, Olin C., and Derr. 201,790.
Derr, Chester B.: *See*—
Hershberger, Olin C., and Derr. 201,791.
Deschamps, Robert L., and M. B. Lorig. Phonograph cartridge. 201,802, 8–3–65, Cl. D26—14.
Deschamps, Robert L., and M. B. Lorig. Phonograph needle. 201,803, 8–3–65, Cl. D26—14.
Deskey, Donald, and A. Lurkis. Combined single arm outdoor lighting standard street sign, and luminaire. 201,826, 8–3–65, Cl. D48—31.
Dessonnas, Georges. Pencil sharpener. 201,853, 8–3–65, Cl. D74—21.
Dills, Leland L.: *See*—
Walker, James H. 201,828.
Douglas, Livingston C., to Colgate-Palmolive Co. Bottle or similar article. 201,841, 8–3–65, Cl. D58—9.
Douglas, Livingston C., to Colgate-Palmolive Co. Bottle or similar article. 201,842, 8–3–65, Cl. D58—9.
Elastic Stop Nut Corp.: *See*—
Heenan, Sidney A. 201,825.
Emerson Electric Co.: *See*—
Meyer, Carl X. 201,822.
Enger, Purl M. Holder for bobby pin or the like. 201,857, 8–3–65, Cl. D86—10.
Erkers, Arne N. Insulated jug. 201,839, 8–3–65, Cl. D58—5.
Evans, Philip M. Customer reservation cabinet. 201,856, 8–3–65, Cl. D80—11.
Fleming, Joseph B., Jr., and F. H. Porter, to Fleming & Sons, Inc. Molded pulp egg tray. 201,847, 8–3–65, Cl. D58—13.
Fleming, Joseph B., Jr., and F. H. Porter, to Fleming & Sons, Inc. Molded pulp egg tray. 201,848, 8–3–65, Cl. D58—13.
Fleming & Sons, Inc.: *See*—
Fleming, Joseph B., Jr., and Porter. 201,847.
Fleming, Joseph B., Jr., and Porter. 201,848.
Frederick, Eugene G., and G. H. Cooper, to United Shoe Machinery Corp. Rod cement extruder. 201,836, 8–3–65, Cl. D54—13.
Friedland, V. & E., Ltd.: *See*—
Stevenson, Norman W. 201,801.
Fuller, George A., Jr., to United Shoe Machinery Corp. Rivet setting tool. 201,832, 8–3–65, Cl. D54—10.
Gale, John A., to Child's Play Products, Inc. Combination portable car console and arm rest. 201,794, 8–3–65, Cl. D14—6.
General Electric Co.: *See*—
Sandin, Raymond, and Cochrane. 201,827.
Gerity Products, Inc.: *See*—
Young, Raymond W. 201,859.
Gingher, Carl E. Clothes hanger. 201,855, 8–3–65, Cl. D80—8.
Greenberg, Leonard E. Snow vehicle. 201,815, 8–3–65, Cl. D34—15.
Greenwood, George B. Book end. 201,809, 8–3–65, Cl. D33—3.
Hammer Food Products Corp.: *See*—
Hauser, Jules L. 201,840.
Hanson Scale Co.: *See*—
Mox, Dana W. 201,830.
Hauser, Jules L., to Hammer Food Products Corp. Bottle. 201,840, 8–3–65, Cl. D58—8.
Heenan, Sidney A., to Elastic Stop Nut Corp. Lamp head for a barricade flasher signal unit. 201,825, 8–3–65, Cl. D48—24.
Hershberger, Olin C., and C. B. Derr, to Astro Inc. Floor waxing machine. 201,790, 8–3–65, Cl. D9—2.
Hershberger, Olin C., and C. B. Derr. Liquid dispenser for a floor treating machine. 201,791, 8–3–65, Cl. D9—2.
Housman, Harold B., to American Can Co. Ink marking instrument. 201,852, 8–3–65, Cl. D74—17.
International Business Machines Corp.: *See*—
Noyes, Eliot F. 201,806.
Jackson, Robert E. Combined aquarium and phonograph cabinet. 201,838, 8–3–65, Cl. D56—4.
Johnson, David C. Stacking and nesting-box. 201,843, 8–3–65, Cl. D58—12.6.

Johnson, Martin A. Dispenser for adding chemicals to toilet fixtures or the like. 201,797, 8–3–65, Cl. D16—2.
Kalensky, Ruby. Scarf turban. 201,786, 8–3–65, Cl. D3—13.
Klausen, Leo H. Lamp. 201,824, 8–3–65, Cl. D48—20.
Kroll, Ervin E. Golf putter head. 201,811, 8–3–65, Cl. D34—5.
Le Sueur, Robert C.: *See*—
Chapman, Dave, and Le Sueur. 201,818.
Leubner, Courtney A., to Supreme Products Corp. Hair clipper. 201,800, 8–3–65, Cl. D22—3.
Levy, Benjamin. Clock. 201,817, 8–3–65, Cl. D42—7.
Lorig, Marvin B.: *See*—
Deschamps, Robert L., and Lorig. 201,802.
Deschamps, Robert L., and Lorig. 201,803.
Lurkis, Alexander: *See*—
Deskey, Donald, and Lurkis. 201,826.
Manderfield, Ellen B., to Oneida Ltd. Spoon or similar article. 201,834, 8–3–65, Cl. D54—12.
Marcoline, Joseph O. Protractor. 201,829, 8–3–65, Cl. D52—6.
Meyer, Carl X., to Emerson Electric Co. Prismatic paneling for lighting fixtures. 201,822, 8–3–65, Cl. D48—16.
Middlemark, Marvin P. Television antenna for indoor use. 201,804, 83–65, Cl. D26—14.
Middlemark, Marvin P. Television antenna for indoor use. 201,805, 8–3–65, Cl. D26—14.
Milakovich, Eli M. Toothbrush holder or similar article. 201,789, 8–3–65, Cl. D4—3.
Miller, William P., to Thomas & Betts Co. Bundle strap. 201,798, 8–3–65, Cl. D17—5.
Mox, Dana W., to Hanson Scale Co. Bathroom scale. 201,830, 8–3–65, Cl. D52—10.
Murase, Tauneo. Fork or other similar article of flatware. 201,835, 8–3–65, Cl. D54—2.
National Can Corp.: *See*—
Smith, Dwight B. 201,849.
National Gypsum Co.: *See*—
Radcliffe, James R. 201,799.
Nimetz, Jack, and B. B. Weltz. Automobile accessory console. 201,795, 8–3–65, Cl. D14—6.
Noyes, Eliot F., to International Business Machines Corp. Dictating machine. 201,806, 8–3–65, Cl. D26—14.
Oneida Ltd.: *See*—
Manderfield, Ellen B. 201,834.
Pantasote Co., The: *See*—
Weiss, Hugh R. 201,846.
Porter, Floyd H.: *See*—
Fleming, Joseph B., Jr., and Porter. 201,847.
Fleming, Joseph B., Jr., and Porter. 201,848.
Radcliffe, James R., to National Gypsum Co. Acoustical correction tile. 201,799, 8–3–65, Cl. D18—2.
Rains, John K. Swimming pool. 201,793, 8–3–65, Cl. D13—1.
Rand Associates, Inc.: *See*—
Rand, Morris. 201,854.
Rand, Morris, to Rand Associates, Inc. Display table or the like. 201,854, 8–3–65, Cl. D80—2.
Reichow, James R., to The Cornelius Co. Beverage dispenser, or similar article. 201,784, 8–3–65, Cl. D2—3.
Reichow, James R., to The Cornelius Co. Beverage dispenser, or similar article. 201,785, 8–3–65, Cl. D2—3.
Robertson, James A. Cabinet for toothbrushes and similar articles. 201,788, 8–3–65, Cl. D4—3.
Rockwell, Jarvis W. Push toy or similar article. 201,814, 8–3–65, Cl. D34—15.
Rogers, Richard H., to Consolidated Electronic Equipment Ltd. Portable fluorescent lamp. 201,823, 8–3–65, Cl. D48—20.
Rolley, Eleanor M. Stool. 201,796, 8–3–65, Cl. D15—8.
Rose, Henry S., and J. B. Russell, to American Russkit Co. Assembly jig or similar article. 201,837, 8–3–65, Cl. D54—13.
Sandin, Raymond, and J. R. Cochrane, to General Electric Co. Portable dishwasher. 201,827, 8–3–65, Cl. D49—1.
Scovill Mfg. Co.: *See*—
Chapman, Dave, and Le Sueur. 201,818.
Seibel, Alvin E. Combined washing and scraping tool for paint rollers. 201,792, 8–3–65, Cl. D9—2.
Settergren, Vern L. Necktie. 201,787, 8–3–65, Cl. D3—16.
Shales, Anthony. Illuminable Christmas tree stand or similar article. 201,816, 8–3–65, Cl. D35—3.
Shiffman, Jerome. Jewelry box. 201,845, 8–3–65, Cl. D58—12.7.
Smith, Dwight B., to National Can Corp. Can end. 201,849, 8–3–65, Cl. D58—26.
Solomon, Louis. Ring. 201,821, 8–3–65, Cl. D45—10.
Stevenson, Norman W., to V. & E. Friedland Ltd. Push switch or similar article. 201,801, 8–3–65, Cl. D26—13.
Supreme Products Corp.: *See*—
Leubner, Courtney A. 201,800.
Sutter, Floyd A. Sled. 201,813, 8–3–65, Cl. D34—15.
Swimco Inc.: *See*—
Bontempi, Iwo. 201,812.
Thomas & Betts Co.: *See*—
Miller, William P. 201,798.
United Shoe Machinery Corp.: *See*—
Frederick, Eugene G., and Cooper. 201,836.
Fuller, George A., Jr. 201,832.
Wadler, Richard. 201,833.
United States Rubber Co.: *See*—
Blankenship, Arthur C. 201,858.
Wadler, Richard, to United Shoe Machinery Corp. Rivet setting tool. 201,833, 8–3–65, Cl. D54—10.
Wagner, John K.: *See*—
Sharp, Richard F., and Wagner. 201,850.
Wagner, John K., and R. F. Sharp, to Amana Refrigeration, Inc. Air conditioner cabinet or similar article. 201,850, 8–3–65, Cl. D62—4.
Walker, James H.; ½ to L. L. Dills, and ½ to R. W. Calloway. Stamp dispensing machine. 201,828, 8–3–65, Cl. D52—2.
Weiss, Hugh R., to The Pantasote Co. Compartmented tray. 201,846, 8–3–65, Cl. D58—13.
Weltz, Benjamin B.: *See*—
Nimetz, Jack, and Weltz. 201,795.
Yamasaki, Kim, to Brunswick Corp. Mobile shelf unit or the like. 201,808, 8–3–65, Cl. D33—2.
Young, Raymond W., to Gerity Products, Inc. Combined dishwasher and faucet fixture. 201,859, 8–3–65, Cl. D91—3.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3RD DAY OF AUGUST, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

A.C.B. Corp.: *See*—
Hitchcock, Arthur A. 3,198,899.
ACF Industries, Inc.: *See*—
Smith, Russell F. 3,198,128.
A.G.S. Development & Sales Corp.: *See*—
Aler, Richard P. 3,198,233.
Aaron, Charles, to Cameron Machine Co. Automatic variable speed rewind drive. 3,198,453, 8–3–65, Cl. 242—65.
Abbott Laboratories: *See*—
Kirkland, Walter D., and Oda. 3,198,368.
Ablon, Meyer H., 50% to R. E. Stein. Adjustable three-knife paper cutter and trimmer. 3,198,051, 8–3–65, Cl. 83—446.
Acieries de Pompey, Societe des: *See*—
Herzog, Eugene, and Backer. 3,198,622.
Adams, Jack, deceased; J. A. Gruschus, executrix. Tractor trailer dumping hopper vehicle. 3,198,579, 8–3–65, Cl. 298—35.
Adams, Ul. Fishing device. 3,197,909, 8–3–65, Cl. 43—42.37.
Addressograph-Multigraph Corp.: *See*—
Grupe, William F. 3,198,168.
Adelman, Barnet R., to Thompson Ramo Wooldridge Inc. Propellant composition and method. 3,197,957, 8–3–65, Cl. 60—35.4.
Adickes, Franz: *See*—
Zelle, Karl, Adickes, and Wick. 3,198,825.
Advance Transformer Co.: *See*—
Barsn, Joseph G., and Feinberg. 3,198,914.
Feinberg, Albert E. 3,198,983.
Advancecraft Aluminum Industries, Inc.: *See*—
Nida, Edmund A. 3,197,932.
Aerotec Industries, Inc.: *See*—
Sciafani, Joseph R. 3,198,008.
Aerovox Corp.: *See*—
Golenpaul, Charles, and De La Fuente. 3,198,329.
Agfa Aktiengesellschaft: *See*—
Kiper, Gerd. 3,198,100.
Mueller, Manfred, and Schulz. 3,198,099.
Mueller, Manfred, and Schulz. 3,198,101.
Aghnides, Elie P. Aerator structure and legged diaphragm therefor. 3,198,440, 8–3–65, Cl. 239—432.
Agrashell Inc.: *See*—
Davison, Brian K. 3,198,332.
Ahlbrecht, Arthur H., and T. S. Reid, to Minnesota Mining and Mfg. Co. Aziridine derivatives and polymers thereof. 3,198,754, 8–3–65, Cl. 260—2.
Ahmuty, George S. Golf club including grip locating means. 3,198,520, 8–3–65, Cl. 273—81.4.
Air Products and Chemicals, Inc.: *See*—
Kurzinski, Edward F., Jones, Reider, and Speary. 3,198,436.
Air Reduction Co., Inc.: *See*—
Shiraishi, Makoto. 3,198,651.
Greene, William J., and Daggett. 3,199,016.
Ajinomoto Co., Inc.: *See*—
Takahashi, Masahiro, Miura, Okumura, and Ishida. 3,198,712.
Akabayashi, Hiroshi, and H. Negishi, to Nissan Kagoku Kogyo Kabushiki Kaisha. Process for manufacturing α sulphoxylsobutyric acid and α-hydroxylsobutyric acid. 3,198,823, 8–3–65, Cl. 260—458.
Akers, Edward G.: *See*—
Wilson, Woodrow S., and Akers. 3,198,392.
Akron Brass Co.: *See*—
Allenbaugh, George G., Jr. 3,198,477.
Alberti, Robert E., and A. C. Martyn, to Caterpillar Tractor Co. Package of annular seals. 3,198,323, 8–3–65, Cl. 206—46.
Albrecht, Otto: *See*—
Maeder, Arthur, and Albrecht. 3,198,762.
Albro, Lewis P.: *See*—
Zeenitz, Bernard L., and Albro. 3,198,798.
Aldeborgh, David H., to Standard Gage Co., Inc. Adjustable setting master for dial depth gages. 3,197,877, 8–3–65, Cl. 33—169.
Aleck, Benjamin J., to Arde-Portland, Inc. Method of forming a high tensile strength pressure vessel. 3,197,851, 8–3–65, Cl. 29—421.
Aler, Richard P., to A.G.S. Development & Sales Corp. Wheel traction aid device. 3,198,233, 8–3–65, Cl. 152—218.
Alexander, Ezra M.: *See*—
Searight, Charles E., and Alexander. 3,198,641.
Alleman, Ronald D. Animation device. 3,197,900, 8–3–65, Cl. 40—78.
Alleman, Ronald D. Animation device. 3,197,901, 8–3–65, Cl. 40—78.
Allen, Orris J., to Sulton Products, Inc. Camper jack. 3,198,486. 8–3–65, Cl. 254—45.
Allen-Harper, Inc.: *See*—
Allen, Kenneth M., and Harper. 3,198,272.
Allen, Kenneth M., and C. H. Harper, to Allen-Harper, Inc. Packaging machine scales. 3 198 272, 8–3–65, Cl. 177—60.
Allenbaugh, George G., Jr., to Akron Brass Co. Self locking valve. 3,198,477. 8–3–65, Cl. 251—77.
Aller, Willis F., to The Sheffield Corp. Gaging device. 3,197,873, 8–3–65, Cl. 33—147.
Allied Chemical Corp.: *See*—
Kray, Raymond J., and Rakus. 3,198,779.
Lewis, Clifford J., and Dunn. 3,198,599.
Stoloff, Alfred. 3,198,773.
Allied Control Co., Inc.: *See*—
Grebe, Alfred H. 3,198,995.
Allison, William D., to Ford Motor Co. Method for upsetting elongated articles. 3,198,928, 8–3–65, Cl. 219—7.5.
Alloyd Corp., The: *See*—
Bakish, Robert, Irish, and Marinow. 3,198,167.
Allum, Robin D., V. E. Mann, D. G. Bryan, and R. G. Knight, to Automatic Telephone & Electric Co. Ltd., and Standard Telephones and Cables Ltd. Arrangements for handling binary numbers. 3,199,083, 8–3–65, Cl. 340—172.5.
Alper, Allen M., and F. G. Keihn, to Corhart Refractories Co., Inc. Fused cast refractory. 3,198,643, 8–3–65, Cl. 106—59.
Altman, Gerald: *See*—
Kopito, Louis, Swartz, and Altman. 3,198,685.
Aluminum Co. of America: *See*—
Sprowls, Donald O., and Nock. 3,198,676.
Stroup, Philip T. 3,198,625.
Alyea, Harold W., W. P. Chapman, and E. D. Jurasinski, to Johnson Service Co. Capacity controlled compressed fluid source. 3,198,421, 8–3–65, Cl. 230—21.
Amano, Yasuhiko: *See*—
Kato, Masumi, and Amano. 3,197,796.
Amdur, Milton G., C. D. Nissley, J. C. Risner, and J. M. Sansone, to Metal Reclaiming Associates Inc. Metal recovery apparatus. 3,198,505, 8–3–65, Cl. 266—37.
American Bosch Arma Corp.: *See*—
Kritz, Jack. 3,198,970.
American Brake Shoe Co.: *See*—
Ratkowski, Thomas A. 3,197,894.
American Cyanamid Co.: *See*—
Benjamin, Lawrence E. 3,198,832.
Cummings, John R., and Hoffmann. 3,198,705.
Lewis, Charles E. 3,198,783.
Matsuda, Ken, and Morin. 3,198,767.
Miller, Mary L., and Rauhut. 3,198,776.
Mosby, William L., and Silva. 3,198,795.
Mosby, William L., and Silva. 3,198,796.
Shaw, John T. 3,198,829.
American Home Products Corp.: *See*—
Bell, Stanley C. 3,198,789.
American Hospital Supply Corp.: *See*—
Staunt, Martin. 3,197,869.
American Machine & Foundry Co.: *See*—
Benith, Benedict R. 3,198,050.
Gamberini, Goffredo. 3,198,581.
Mahoney, William J. 3,198,989.
American Optical Co.: *See*—
Phaneuf, Roland A., and Bazinet. 3,198,059.
American Packaging Corp., The: *See*—
Watts, Ridley, Jr. 3,198,681.
American Radiator & Standard Sanitary Corp.: *See*—
Huston, William D. 3,198,010.
American Seal-Kap Corp. of Delaware: *See*—
Orshansky, Elias, Jr. 3,198,289.
American Sign & Indicator Corp.: *See*—
Holcomb, John E. 3,197,904.
American Zinc, Lead and Smelting Co.: *See*—
Elde, Alwin C. 3,198,646.
Amea Atomium, Inc.: *See*—
McCormack, James B. 3,198,713.
Ametek, Inc.: *See*—
Tucker, Vincent W., Gayring, Kaelber, and Kagi. 3,197,897.
Ampex Corp.: *See*—
Cheney, Walter J. 3,199,093.
Amthor, Helmut K., and P. B. Doll, to Union Carbide Corp. Method of and apparatus for impact molding galvanic cell cathodes. 3,198,862, 8–3–65, Cl. 264—161.
Anaconda Wire and Cable Co.: *See*—
Olson, John W., Pechan, and O'Mara. 3,198,877.
Ancet, Victor M. J., and M. Fayolle, known as Marcel, to Brelic International Inc. Weft thread cutting device for shuttleless looms. 3,198,216, 8–3–65, Cl. 139—302.
Ancraft Products Co.: *See*—
Nyberg, Ernest W., and Virta. 3,198,164.
Anderson, Geoffrey B., to Charles Pitt (Barton Stacey) Ltd. Road vehicles. 3,198,364, 8–3–65, Cl. 214—505.
Anderson, George W. Inflating means for life saving devices. 3,198,384, 8–3–65, Cl. 222—5.
Anderson, John A., to Grove Valve and Regulator Co. Resilient seal members of elongated cross section for fluid-flow control valves. 3,198,483. 8–3–65, Cl. 251—327.
Anderson, Kelvin G., to W. R. Grace & Co. Method for transporting dielectric material. 3,198,409, 8–3–65, Cl. 226—1.
Anderson, Philip C., to Feed Service Corp. Nutrient compositions and process for preparing same. 3,198,635, 8–3–65, Cl. 99—2.

Anderson, W. M., Co.: *See*—
Witt, Albert L. 3,198,561.
Anderson, Warren D. Cleat guard. 3,198,160, 8–3–65, Cl. 114—218.
Anderson, Weston A., to Varian Associates. Apparatus for improving the homogeneity of a magnetic field. 3,199,021, 8–3–65, Cl. 324—.5.
Andrew Corp.: *See*—
Johnson, Ernest H., and Voigt. 3,199,061.
Munk, Benedikt A. 3,199,108.
Andrew, Herbert F., and D. Buckley, to Imperial Chemical Industries Ltd. Metallised azo halopyrimidine dyestuffs. 3,198,782, 8–3–65, Cl. 260—146.
Andrews, Thomas D. H., and A. C. Walker, to Dowty Technical Developments Ltd. Boats, amphibious vehicles and other waterborne vessels. 3,198,161, 8–3–65, Cl. 115—14.
Anken Chemical & Film Corp.: *See*—
Koretz, Harry. 3,198,104.
Ankersen, Borge R. Barrel salt bath furnaces. 3,198,504, 8–3–65, Cl. 266—33.
Annat, Robert B., to Massey-Ferguson (United Kingdom) Ltd. Tractor weight transfer control. 3,198,547, 8–3–65, Cl. 280—405.
Anolytic Systems Co.: *See*—
Williamson, Glenn E. 3,197,803.
Anschuts & Co. G.m.b.H.: *See*—
Hintze, Johannes. 3,197,882.
Archer, Harry W., and D. B. Powell, to General Electric Co. Electrically operated circuit breaker. 3,198,907, 8–3–65, Cl. 200—92.
Arcos Corp.: *See*—
Mikurak, John. 3,198,116.
Arde-Portland, Inc.: *See*—
Aleck, Benjamin J. 3,197,851.
Argue, Gary R., and R. W. Haisty, to Texas Instruments Inc. Gallium arsenide devices. 3,198,012, 8–3–65, Cl. 73—362.
Armour Pharmaceutical Co.: *See*—
Kaiser, Emil, and Shinn. 3,198,840.
Armstrong Cork Co.: *See*—
Hassel, Lloyd V., and Witman. 3,198,682.
Arnett, Joseph W.: *See*—
Dawbarn, Henry D., and Arnett. 3,197,953.
Arnold, Robert B.: *See*—
Sargent, William C., and Arnold. 3,197,818.
Arnott, Leslie J., to Gullick Ltd. Roof supporting means for mines. 3,197,966, 8–3–65, Cl. 61—45.
Arrison, Robert A., Jr., and C. G. van der Velden, to Laboratory For Electronics, Inc. Apparatus for producing visual images of X-rayed objects. 3,198,947, 8–3–65, Cl. 250—99.
Artisan Industries Inc.: *See*—
Baird, James L. 3,198,241.
Artnell Co.: *See*—
Ashworth, William J. 3,199,005.
Arvin Industries, Inc.: *See*—
Brighton, John C. 3,198,426.
Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Ishida, Shinichi. 3,198,768.
Ashida, Hiroo. Absorbed-moisture alarm utilising electrolytic action by special galvanic couple. 3,199,095, 8–3–65, Cl. 340—235.
Ashkouti, Joseph A., and G. M. Bright. Folding furniture. 3,197,789, 8–3–65, Cl. 5—110.
Ashley, Walter M., Jr., to International Harvester Co. Hydraulic reservoir diffuser. 3,198,376, 8–3–65, Cl. 220—86.
Ashworth, William J., to Artnell Co. Remote motor control switching system. 3,199,005, 8–3–65, Cl. 318—16.
Astrove, Edgar, A. Cassella, and A. L. Goldman, to General Precision, Inc. Permanent magnetic storage device. 3,199,089, 8–3–65, Cl. 340—174.
Ateliers de Constructions Electriques de Charlerol (A.C.E.C.): *See*—
Peretz, Richard. 3,199,041.
Athnos, Robert L. Matchbook and give-away article container combined. 3,198,822, 8–3–65, Cl. 206—29.
Atkins, Carl E., and R. L. Ziolkowski, to Tung-Sol Electric Inc. Condition responsive circuits with plural outputs of relaxation oscillator balanced. 3,199,033, 8–3–65, Cl. 328—5.
Atkinson, Guy F., Co.: *See*—
Corfield, Joseph W. 3,197,967.
Atlantic Refining Co., The: *See*—
Barta, Henry R. 3,199,113.
Atlantic Research Corp.: *See*—
Thomas, Richard O. 3,198,677.
Atlas Chemical Industries, Inc.: *See*—
Olney, Robert A. 3,198,782.
Atlas Corp.: *See*—
Ryan, Rodney F., and Walsh. 3,198,873.
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Loveland, Malcolm W. 3,198,812.
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Baker, Lawrence K., and T. E. Magill, to Western Electric Co., Inc. Non-injecting, ohmic contact for semiconductive devices. 3,198,999, 8–3–65, Cl. 317—234.
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Beregi, Laszlo G., P. Hugon, J.-C. Le Douarec, and H. Schmitt, to Societe en nom Collectif dite: "Science Union et Cie Societe Francaise de Recherche Medicale" Sureanes. Optical isomers of trifluoromethylated phenethylamines. 3,198,834, 8–3–65, Cl. 260—570.8.
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Bright, Robert G., to Bright Mfg. Co. Ltd. Sealing strips, beadings or mouldings. 3,197,821, 8–3–65, Cl. 20—69.

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Brown, Neil F., M. W. Lutz, and H. J. Kimmerle, to G. H. Tennant Co. Scrubbing machine. 3,197,798, 8–3–65, Cl. 15—320.

Brown, Robert J. S., and J. E. Coolidge, ½ to Borg-Warner Corp., and ½ to California Research Corp. Penetration control for nuclear magnetism well logging. 3,199,022, 8–3–65, Cl. 324—.5.

Brown, Ronald W., and W. Earhart, to The Trane Co. Induction unit. 3,198,246, 8–3–65, Cl. 165—35.

Brown, Russell A., to General Electric Co. Electric controller. 3,198,987, 8–3–65, Cl. 317—13.

Brown, Thoburn C., to Clark Equipment Co. Joint for metal floor sections and the like. 3,197,934, 8–3–65, Cl. 52—595.

Bruant, Claude, E. Crampon, and J. Martinat, to Societe Alsacienne de Constructions Mecaniques. Circuits for generating wave trains. 3,199,036, 8–3–65, Cl. 328—67.

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Brucken, Byron L., and V. A. Williamitis, to General Motors Corp. Filter for a dry cleaning apparatus. 3,198,334, 8–3–65, Cl. 210—209.

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Brundage, Robert W. Hydraulic pump or motor. 3,198,127, 8–3–65, Cl. 103—1.62

Brunsing, Rex L., 3% to W. Kieckhefer, and 4% to G. A. and P. A. Coats. Multi-can package and connector for cans. 3,198,326, 8–3–65, Cl. 206—65.

Brunson, Raymond D., P. A. Gilovich, and S. K. Kingman, to Varian Associates. Electrical measuring apparatus. 3,199,112, 9–3–65, Cl. 346—32.

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Bullard, David E., to Caterpillar Tractor Co. Vehicle retarder system. 3,198,585, 8–3–65, Cl. 303—7.

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Nissim, Samuel. 3,198,958.
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Burch, Elton W., to Thin-Flex, Inc. Garment fastener. 3,197,838, 8–3–65, Cl. 24—263.

Burch, James R., and R. L. Chace, to General Electric Co. Electromagnetic relay having removable contact and coil assemblies. 3,198,910, 8–3–65, Cl. 200—104.

Burger, Fremont W. Gyroscopic presentation. 3,197,881, 8–3–65, Cl. 33—204.

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Halsted, Charles P. 3,198,963.
Hanson, Richard D. 3,198,024.
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Burst, Francis J., and T. G. Spofford, to Hill-Rom Co., Inc. Mechanism for controlling the power unit of an electric hospital bed. 3,198,890, 8–3–65, Cl. 200—5.

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Callahan, James L., and B. Gertisser, to The Standard Oil Co. Mixed antimony oxide-uranium oxide oxidation catalyst. 3,198,750. 8–3–65, Cl. 252—456.

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Cape, Arthur T., to Coast Metals, Inc. Brazed structure and method of brazing. 3,198,609, 8–3–65, Cl. 29—196.

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Cartoux, Henri, and F. Dubroux, to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques. Cast iron protection. 3,197,828, 8–3–65, Cl. 22—216.5.

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Chafee, Glenn R., Jr., to General Electric Co. Control switch assembly, particularly for appliances such as clothes dryers. 3,198,903, 8–3–65, Cl. 200—87.

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Clarke, John S., and J. P. Soltau, to Joseph Lucas (Industries) Ltd. Internal combustion engine exhaust afterburner. 3,197,956, 8–3–65, Cl. 60—30.
Clarke, Robert L., and J. S. Buck (deceased, by P. G. Buck, executrix), to Sterling Drug Inc. Pyrenylmethyl quaternary ammonium salts. 3,198,794, 8–3–65, Cl. 260—247.
Clarke, Robert L., and J. S. Buck (deceased, by P. G. Buck, executrix), to Sterling Drug Inc. Ethyl 4-phenyl-1-(1-pyrenylmethyl) piperidine-4-carboxylate. 3,198,802, 8–3–65, Cl. 260—294.3.
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Close, Ross A. Action for automatic firearms and machine guns. 3,198,077, 8–3–65, Cl. 89—174.
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Colangelo, Monte V. Fishing lure. 3,197,910, 8–3–65, Cl. 43—42.51.
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Colonius, Ray E., and C. R. Onsrud to Onsrud Machine Works, Inc. Tandem head profiler. 3,198,080, 8–3–65, Cl. 90—13.5.
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Cook, George R., and A. A. Manueuffel, to The Pure Oil Co. Acid resistant coating for metallic surfaces. 3,198,747, 8–3–65, Cl. 252—389.
Cooke, Edgar O. Cutting edge member. 3,197,895, 8–3–65. Cl. 37—143.
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Cross, John T., and D. Cohen, to Whirlpool Corp. Hot water heater with electrical scale control. 3,198,724, 8–3–65, Cl. 204—299.
Crosswell, Flay D., to Overhead Door Corp. Upwardly acting door and seal means therefor. 3,198,242, 8–3–65, Cl. 160—190.
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Crutcher, William C., to General Electric Co. Controlled humidifier. 3,198,433, 8–3–65, Cl. 236—44.
Cullinan, Joseph M. Collapsible table. 3,198,144, 8–3–65, Cl. 108—48.
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Cummings, John R., and A. K. Hoffmann, to American Cyanamid Co. Method of inducing hypotensive and ganglionic mid blocking activity. 3,198,705, 8–3–65, Cl. 167—65.
Cunningham, Arthur R., deceased: T. W. Cunningham and The First National Bank of Leesburg, executors. Crop conditioner. 3,197,947, 8–3–65, Cl. 56—1.
Cunningham, Thomas W.: *See*—
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Curran, Kenneth E., P. Ver Planck, and J. A. Carlson, said Carlson and Ver Planck, assors., to said Curran, Mobile batching apparatus. 3,198,494, 8–3–65, Cl. 259—154.
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Skillin, Walter F. 3,198,532.
Cushman, Le Roy T. Signal generator. 3,199,047, 8–3–65, Cl. 331—40.
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Keen, Henry S. 3,199,055.
Stone, Norman L., and Cavallari, Jr. 3,199,025.
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Dahl, Frederick L., J. H. Hoke, and S. Cohen, to Kollsman Instrument Corp. Gear head assembly. 3,198,028, 8–3–65, Cl. 74—409.
Dahl, Warren F., to Standard Pressed Steel Co. Semi-conductor housing and method of making the same. 3,198,874, 8–3–65, Cl. 174—52.
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Forster, Hans-Joachim M. 3,197,960.
Müller, Alf J. 3,198,036.
D'Amico, John J., to Monsanto Co. Destroying vegetation with nitroso 1-piperazine-ethlocarboxylates. 3,198,621, 8–3–65, Cl. 71—2.5.
Danford, Tiras J., to Harrington Mfg. Co., Inc. Hitch structure for mounting a rotary mower laterally offset to one side of a tractor. 3,197,948, 8–3–65, Cl. 56—25.4.
Dark, John W. Monorail systems. 3,198,139, 8–3–65, Cl. 105—145.
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D'Azzo, Edward P. 3,197,875.
Daubenspeck, Benjamin K.: *See*—
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Davis, Paul K., to Pacific Roller Die Co., Inc. Pipe cutting and handling apparatus. 3,198,043, 8–3–65, Cl. 82—53.1.
Davis, Wilbur A. Open end wrench with slidable jaw insert. 3,198,041, 8–3–65, Cl. 81—129.
Davis, Willie T.: *See*—
Rager, Edgar A., Davis, and Day. 3,198,086.
Davison, Brian K., to Agrashell Inc. Hydroxy-oxo-aluminum polycol compounds and the preparation thereof. 3,198,332, 8–3–65, Cl. 260—209.
Davy and United Engineering Co. Ltd.: *See*—
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Dawbarn, Henry D., and J. W. Arnett, to W. R. Grace & Co. Polypropylene rope. 3,197,953, 8–3–65, Cl. 57—147.
Day, Franklin F.: *See*—
Rager, Edgar A., Davis, and Day. 3,198,086.
D'Azzo, Edward P.: to H. Daroff & Sons, Inc. Sleeve measuring device. 3,197,875, 8–3–65, Cl. 33—169.
Dean, John H. Dog leash. 3,198,175, 8–3–65, Cl. 119—109.
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De Benedetti, Harold B., to Tidewater Oil Co. Determination of the state of lubricated bearings for rotating shafts. 3,198,590, 8–3–65, Cl. 308—126.
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De Feo, Richard J.: *See*—
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Delange, Maurice, H. Huet, and P. Vertes, to Commissariat A L'Energie Atomique. Methods and apparatus in which a mass of solid material is subjected to two successive treatments by gases. 3,198,598, 8–3–65, Cl. 23—14.5.
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De Waern, Bror A. Wobble plate anchor control mechanism. 3,198,022, 8–3–65, Cl. 74—60.
Dewes, Roger A., and E. E. Goodale, to General Electric Co. Radiation dosimeter providing a visual representation of total dose. 3,198,945, 8–3–65, Cl. 250—71.5.
De Witte, Jacobus C. M., and A. J. H. Goedhart, to Stamicarbon N.V. Valve actuator. 3,198,034, 8–3–65, Cl. 74—625.
Dexter, Martin, M. Knell, and E. A. Roskin, to Geigy Chemical Corp. 2,4 - dichloro-6-dialkylhydroxy-anilino-1,3,5-triazine. 3,198,797, 8–3–65, Cl. 260—249.5.
Diamond, George B., to Glen Gardner Corp. Applicator attachment for pressure dispenser. 3,197,801, 8–3–65, Cl. 15—552.
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Di Lello, Dominick J., and C. J. Young; said Di Lello assor. to said Young. Fluorescent light fixture. 3,198,942, 8–3–65, Cl. 240—25.
Di Malo, Vincent. Line snubbing device. 3,198,290, 8–3–65, Cl. 188—65.1.
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Westeren, Herbert W., and Diman. 3,198,871.
Di Perna, Cosmo J., to Socony Mobil Oil Co., Inc. Laboratory method of and apparatus for determining low speed road octane numbers of fuels. 3,198,002, 8–3–65, Cl. 73—35.
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Driesch, Theodore W., and W. H. Wood, to General Electric Co. Conveyor snatcher. 3,198,308, 8–3–65, Cl. 198—24.
Dubilier, William, to Cornell-Dubilier Electric Corp. Wound-paper capacitors and manufacturing method and apparatus. 3,198,934, 8–3–65, Cl. 219—384.
DuBois, Norman L., to General Precision, Inc. Glow lamp and photosensitive assembly. 3,198,981, 8–3–65, Cl. 315—84.5.
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Dunlop, Henry A., Jr., and R. H. Chaffee, to The Procter & Gamble Co. Packet of water-soluble film of polyvinyl alcohol filled with detergent composition. 3,198,740, 8–3–65, Cl. 252—90.
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Dwyer, James L., R. J. Haberlin, and G. A. Lothrop, to W. R. Grace & Co. Printing of container closure gaskets. 3,198,109, 8–3–65, Cl. 101—129.
Dwyer, Raymond J. Machine for enveloping and sealing articles. 3,197,939, 8–3–65, Cl. 53—180.
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Eide, Alwin C., to American Zinc, Lead and Smelting Co. Zinc oxide blends and processes for producing zinc pigments. 3,198,646, 8–3–65, Cl. 106—292.
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Ellis, Donald T., R. J. Haberlin, and R. E. Fogg, to W. R. Grace & Co. Engraved roll application of sealing compounds. 3,198,111, 8–3–65, Cl. 101—170.
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Ennis, James W. Clip for securing door jambs. 3,197,823, 8–3–65, Cl. 20—92.
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Evans, Louis P., to Socony Mobil Oil Co., Inc. Method of improving front end octane rating and increasing "LPG" production. 3,198,728, 8–3–65, Cl. 208—65.
Every, Richard L., T. O. Edmond, and R. D. Phillips, to Continental Oil Co. Method for simultaneously transporting two immiscible fluids by pipeline. 3,198,201, 8–3–65, Cl. 137—1.
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Falk, Richard B., to General Electric Co. Process for preparing magnetic materials. 3,198,717, 8–3–65, Cl. 204—10.
Fallek, Joseph. Dust mop cleaner. 3,197,794, 8–3–65, Cl. 15—142.
Fangman, Charles N., F. E. Kronenberg, and I. R. Lamport, to Caterpillar Tractor Co. Friction couple cooling device. 3,198,295, 8–3–65, Cl. 188—264.
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Farez, Claude, to "Charvo." Stacking devices for sheet articles. 3,198,513, 8–3–65, Cl. 271—1.
Farmery, George K., and W. M. Page, to Clayton Dewandre Co. Ltd. Dual control valve for vehicle brake systems. 3,198,586, 8–3–65, Cl. 303—52.
Farquhar, Melville T., to Reynolds Metals Co. Bottle carrier and blank therefor or the like. 3,198,378, 8–3–65, Cl. 220—108.
Farr, Peter, and P. H. Martyn, to Dowty Mining Equipment Ltd. Control system for mine roof supports. 3,198,083, 8–3–65, Cl. 91—1.
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Feinberg, Albert E., to Advance Transformer Co. Apparatus for igniting and operating gaseous discharge devices. 3,198,983, 8–3–65, Cl. 315—144.
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Fenner, Ralph L. Moisture sensing device. 3,198,011, 8–3–65, Cl. 73—337.5.
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Frommelt, Horace A., and Watling. 3,197,841.
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Finkenbeiner, Gerhard. Tone generator. 3,198,872, 8–3–65, Cl. 84—1.04.
Finlayson, Logan J., and E. H. Cagley, to W. H. Kistler Stationery Co. Method of forming coded cards for data-processing machines. 3,198,048, 8–3–65, Cl. 83—36.
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Florsheim, Leonard S., and W. Wanielista, to Robertson Photo-Mechanix, Inc. Motor operated copyboard. 3,198,069, 8–3–65, Cl. 88—24.
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Förster, Hans-Joachim M., to Daimler-Benz Aktiengesellschaft. Hydraulic system for power steering and gear shifting of motor vehicles. 3,197,960, 8–3–65, Cl. 60—52.
Forte, James A. Paint brush with elongated, adjustable handle. 3,197,795, 8–3–65, Cl. 15—160.
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Frederiksen, Harald D., to The Regents of the University of Minnesota. Wave attenuator. 3,197,963, 8-3-65, Cl. 61—5.

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Fry, Jeremy J., to Rotork Engineering Co. Ltd. Valve actuators. 3,198,033, 8-3-65, Cl. 74—625.

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Furst, Stefan, and W. Maassen, to W. Reiners. Device for preventing double threads in automatic coil winding machines. 3,198,446, 8-3-65, Cl. 242—35.6.

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Garner, Fay T. Pusher vehicle. 3,198,551, 8-3-65, Cl. 280—481.

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Girz, Alexander, to Schreyer & Co. Electric single-track vehicular toy. 3,198,136, 8-3-65, Cl. 104—148.

Gish, Lyman C., and W. H. Finckel, Jr., to Packaging Corp. of America. Carrier carton. 3,198,380, 8-3-65, Cl. 220—115.

Gisiger, Kurt, to F. Fahrni. Method and apparatus for coating loose particles with a sprayable bonding substance. 3,198,655, 8-3-65, Cl. 117—100.

Giudicelli, Don P. R. L., to Les Laboratories Dausse. Method of producing sympathomimetic activity by isopropyl-2'-phenoxymethyl-2-imidazoline. 3,198,703, 8-3-65, Cl. 167—65.

Gladrow, Elroy M., and C. E. Thompson, to Esso Research and Engineering Co. Method of impregnating porous electrode with catalyst. 3,198,667, 8-3-65, Cl. 136—122.

Gladrow, Elroy M., and R. J. De Feo, to Esso Research and Engineering Co. Silica-alumina-gallium oxide catalyst and method of preparation thereof. 3,198,749, 8-3-65, Cl. 252—453.

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Gray, Robert A., Jr., to Mueller Brass Co. Multi-way valve unit having particular O-ring valve and seat structure. 3,198,211, 8-3-65, Cl. 137—625.4.

Grayson, Richard D., to International Telephone and Telegraph Corp. Water heater control. 3,198,432, 8-3-65, Cl. 236—21.

Grebe, Alfred H., to Allied Control Co., Inc. Polarized electromagnetic relay. 3,198,995, 8-3-65, Cl. 317—172.

Grebner, Fritz, W. Koelsch, and W. Lauterbach, to Rheinbau G.m.b.H. Apparatus for producing a girder. 3,198,219, 8-3-65, Cl. 140—112.

Green, Duane L., to E. I. du Pont de Nemours and Co. Process for dyeing polypropylene filaments containing inorganic alkaline earth metal compounds with 1-aminoanthraquinone dyes and the product obtained thereby. 3,198,596, 8-3-65, Cl. 8—39.

Green, Richard M., to Phillips Petroleum Co. Fractional crystallization apparatus including recycle control. 3,198,607, 8-3-65, Cl. 23—273.

Greene, William J., and E. H Daggett, to Air Reduction Co., Inc. Power supply regulating system. 3,199,016, 8-3-65, Cl. 321—25.

Greenwood, Eugene C. Metering and shut-off valve having straight-through flow characteristics. 3,198,479, 8-3-65, Cl. 251—121.

Grell, Frank, Sr., 49% to E. O. Cornell. Liquid power booster. 3,198,085, 8-3-65, Cl. 91—142.

Greshel, Leonard J., and G. E. Bosler, to North Electric Co. Relay structure with improved armature pivot. 3,198,909, 8-3-65, Cl. 200—104.

Griffith, Owen S. Grass mower attachment for edge-trimming. 3,197,950, 8-3-65, Cl. 56—255.

Grinnell Corp.: *See*—
Boteler, Henry W. 3,198,205.

Griscom, Richard W., R. W. Ingwalson, and H. F. Reeves, Jr., to Velsicol Chemical Corp. Process of producing sucrose benzoates. 3,198,784, 8-3-65, Cl. 260—234.

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Grove Valve and Regulator Co.: *See*—
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Bryant, Austin U. 3,198,481.

Gruneberg, Gerhard, and M. Jung, to Varta Aktiengesellschaft, and Siemens-Schuckert-Werke Aktiengesellschaft. Electrochemical fuel cell operation with antipolar ion exchange membrane. 3,198,666, 8-3-65, Cl. 136—86.

Grunert, Heins, to Bohme Fettchemie G.m.b.H. Process for bleaching cotton with aqueous alkaline bleaching baths and the products obtained thereby. 3,198,597, 8-3-65, Cl. 8—111.

Grunwaldt, Gottfried, to North American Philips Co. Inc. Transistor switch having a plurality of transistors connected in series. 3,198,964, 8-3-65, Cl. 307—88.5.

Grupe, William F., to Addressograph-Multigraph Corp. Machines for processing printing plates and the like. 3,198,168, 8-3-65, Cl. 118—202.

Gruschus, Jeanine A.: *See*—
Adams, Jack. 3,198,579.

Gryctko, Carl E., to I-T-E Circuit Breaker Co. Circuit breaker having improved inductive heater for bimetal trip means. 3,198,905, 8-3-65, Cl. 200—88.

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Guichet, Niles F. Dental instrument unit. 3,197,868, 8-3-65, Cl. 32—22.

Gulf Ports Steamship Co. Ltd.: *See*—
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Gullick Ltd.: *See*—
Arnott, Leslie J. 3,197,966.

Guth, Lauren W., and H. W. Thurman, to General Electric Co. Support system for a food waste disposer. 3,198,443, 8-3-65, Cl. 241—100.5.

Gutierrez, Julian: *See*—
Hultgren, Ralph J., and Gutierres. 3,198,438.

Guzzi, Umberto: *See*—
De Ruggieri, Pietro, Gandolfi, and Guzzi. 3,198,790.

HRB-Singer, Inc.: *See*—
Ritter, Vernon H. 3,199,034.

Haberle, Willi, to Dahpe A.G., Firma. Machine for the manufacture of deep-drawn hollow articles from thermoplastic synthetic material. 3,197,816, 8-3-65, Cl. 18—19.

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Dwyer, James L., Haberlin, and Lothrop. 3,198,109.

Hackman, Frank W.: *See*—
Hickin, Robert J., Hackman, and Heins. 3,198,416.

Hadley, David J.: *See*—
Bethell, James R., Hadley, and Wood. 3,198,751.

Haefling, Francis P., to The National Machinery Co. Floating tap type nut tapper. 3,197,792, 8-3-65, Cl. 10—139.

Hagedorn, Erwin C., to Owens-Illinois Glass Co. Glass compositions. 3,198,642, 8-3-65, Cl. 106—54.

Hagemann, Guy, L. Penasse, and G. Nomine, to Roussel UCLAF. 6-[(α-phenoxy-lower alkanoyl)-amido]-penicillanic acid salts of propionyl erythromycin. 3,198,787, 8-3-65, Cl. 260—239.1.

Hagen, Marcus W.: *See*—
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Hague, Robert Z., H. H. Laucks, and C. C. Treff, to Moog Servocontrols, Inc. Positioner. 3,198,084, 8-3-65, Cl. 91—37.

Hahn, Archie, Jr.: *See*—
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Hahn, Robert S.: *See*—
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Haibt, Luther H., to International Business Machines Corp. Memory system. 3,199,082, 8-3-65, Cl. 340—172.5.

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Haisty, Robert W., and J. W. Ross, to Texas Instruments Inc. Method for removal of hydrogen halide from a process stream. 3,197,942, 8-3-65, Cl. 55—71.

Haisty, Robert W.: *See*—
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Halbert, Joshua L., Jr., to Esso Production Research Co. Analog computer. 3,198,941, 8-3-65, Cl. 235—191.

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Colton, John W., and Sherwin. 3,197,941.

Hales, Everett B., and J. P. McGuire, to General Precision, Inc. Automobile traffic flow analyzer. 3,199,074, 8-3-65, Cl. 340—38.

Hall, Edward C. Metal forming apparatus. 3,198,933, 8-3-65, Cl. 219—154.

Hall, Thomas A., to Youngstown Sheet and Tube Co. Metallurgical furnace roof. 3,198,148, 8-3-65, Cl. 110—99.

Hall, William B., to United States of America, Air Force. Coated columbium article. 3,198,653, 8-3-65, Cl. 117—70.

Hall, William D.: *See*—
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Halle, Roger J. Door and window structures for buildings. 3,198,297, 8-3-65, Cl. 189—46.

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Halsted, Charles P., to Burroughs Corp. Electronic circuit for generating linear time-base waveforms. 3,198,963, 8-3-65, Cl. 307—88.5.

Ham, George E., to The Dow Chemical Co. 2-alkoxy-2-oxazolines. 3,198,806, 8-3-65, Cl. 260—307.

Hambach, August J., to Maremont Corp. Precision winder. 3,198,447, 8–3–65, Cl. 242—43.

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Hammond, Joseph P., and T. D. Watts, to United States of America, Atomic Energy Commission. Method of fabricating a composite nuclear fuel core element. 3,198,856, 8–3–65, Cl. 264—.5.

Hammond, Leonard W. Core-pulling mechanism for casting dies. 3,197,825, 8–3–65, Cl. 22—93.

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Hansel, Paul G., to Servo Corp. of America. Radiosonde and tracking system. 3,199,101, 8–3–65, Cl. 343—7.6.

Hansen, Waldemar C., and J. D. McNulty, to McNulty Bros. Co. Plaster composition and method. 3,198,858, 8–3–65, Cl. 264—36.

Hanson, Richard D., to Burroughs Corp. Mechanical movement. 3,198,024, 8–3–65, Cl. 74—125.

Happel, John, and C. J. Marsel, to National Lead Co. Catalytic conversion of isobutylene and propylene to allene and methyl acetylene thereof. 3,198,848, 8–3–65, Cl. 260—678.

Harbers, Henry C., to Western Unit Corp. Spring suspension assembly with brake hop control. 3,198,542, 8–3–65, Cl. 280—104.5.

Harlan, Richard B., to Colorlite Co. Color coated cellular inorganic aggregate. 3,198,656, 8–3–65, Cl. 117—100.

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Harris, Jack R., and R. P. Murray. Generation and use of control signal in superregenerative receivers. 3,199,031, 8–3–65, Cl. 325—429.

Harris, John L. Control device. 3,199,012, 8–3–65, Cl. 318—466.

Harris, Meade C. R., and W. J. Merrell, to National Biscuit Co. Preparation of filled baked products and filler composition utilized therein. 3,198,837, 8–3–65, Cl. 99—86.

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Hartert, Erwin, and H. G. Schwarz, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Drying of wet solid sodium cyanide. 3,197,883, 8–3–65, Cl. 34—10.

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Hartley, Nelson, to Hartley Controls Corp. Constant volume feeder for flowable granular material. 3,196,386, 8–3–65, Cl. 222—55.

Hartley, Richard A., to The Bunker-Ramo Corp. Indicia wheel display apparatus having magnetic clutching to drive shaft. 3,199,097, 8–3–65, Cl. 340—324.

Hartshorn, William I., Jr. Combination waste and vent fitting for wall hung water closet. 3,198,554, 8–3–65, Cl. 285—64.

Harvey, Albert J., to Engraved Stationery Manufacturers Research Institute, Inc. Automatic feeder for presses. 3,198,115, 8–3–65, Cl. 101—316.

Harvey, Douglas J., to General Motors Corp. Method and apparatus for producing a fine-grain solder. 3,197,862, 8–3–65, Cl. 29—528.

Haskell, John W., to General Motors Corp. Electronic cruise control system for motor vehicles. 3,198,985, 8–3–65, Cl. 317—5.

Hassel, Lloyd V., and J. H. Witman, to Armstrong Cork Co. Method of forming a resilient surface covering. 3,198,682, 8–3–65, Cl. 156—296.

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Cohn, Johann G. E., and Hauel. 3,197,955.

Hauf, Lazare. Loading device for machine working on tubular workpieces. 3,198,349, 8–3–65, Cl. 214—1.

Haughton, Paul F., and J. H. Espy, to Combustion Engineering, Inc. End core design for use as a closure on centrifugal casting molds. 3,197,827, 8–3–65, Cl. 22—113.5.

Haumann, George, to The Coe Mfg. Co. Hydraulic veneer lathe. 3,198,226, 8–3–65, Cl. 144—209.

Haussler, Alfons: *See*—
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Hawkins, Harry O. Wheel chair with posture adjustment. 3,198,575, 8–3–65, Cl. 297—328.

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Helbig, Walter A., and R. J. Woldrich, to Radio Corp. of America. High sped binary adder-subtractor with carry ripple. 3,198,939, 8–3–65, Cl. 235—175.

Held, Richard A. Method for teaching manual skills. 3,197,888, 8–3–65, Cl. 35—29.

Heilbaum, Arthur A. Method for treating skin burns. 3,198,702, 8–3–65, Cl. 167—58.

Hellberg, Gustav S., to Produktions-Service, Aktiebolaget. Method of perforating webs containing resin. 3,198,045, 8–3–65, Cl. 83—13.

Helmer, Robert. Thermal-molecular heating system. 3,198,176, 8–3–65, Cl. 122—26.

Henderson, Bennett M., to Shell Oil Co. Lubricating composition. 3,198,736, 8–3–65, Cl. 252—46.7.

Hendriks, Hendrik: *See*—
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Henkin, Hyman, and R. P. Messina, to Colgate-Palmolive Co. Antiperspirant-deodorant composition. 3,198,708, 8–3–65, Cl. 167—90.

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Tettke, Roman, Sr., and Henrich. 3,198,919.

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Herick, Daniel J., and P. A. van Berkum, to Zenith Radio Corp. Automatic frequency control system. 3,199,045, 8–3–65, Cl. 331—8.

Herrmann, Robert, to Veeder-Root Inc. Hubodometer. 3,198,430, 8–3–65, Cl. 235—95.

Herrschaft, William. Structural assemblies. 3,197,822, 8–3–65, Cl. 20—92.

Herzog, Eugene, and L. Backer, to Societe des Acieries de Pompey. Chemical-physical treatment of ores and/or ore residues. 3,198,622, 8–3–65, Cl. 75—1.

Hickin, Robert J., F. W. Hackman, and S. M. Heins, to Packaging Corp. of America. Method of preventing wicking and moisture and vapor absorption and penetration in paperboard cartons, and cartons produced by such method. 3,198,416, 8–3–65, Cl. 229—14.

Hiersteiner, Walter L., to Tension Envelope Corp. Expandable container. 3,198,420, 8–3–65, Cl. 229—68.

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Hildebrandt, Alvin F., D. D. Elleman, and F. C. Whitmore, to California Institute Research Foundation. Superconductive magnetic-field-trapping device. 3,198,994, 8–3–65, Cl. 317—158.

Hiley, Alan R. Stump cutting apparatus. 3,198,224, 8–3–65, Cl. 144—2.

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Hills, Richard A., and F. C. De Bolt, to United States of America, Navy. Oscillator with frequency modulating iron core reactor. 3,199,051, 8–3–65, Cl. 331—109.

Hills, William H., and D. E. Fisher, to Monsanto Co. Yarn crimping apparatus. 3,197,837, 8–3–65, Cl. 28—1.

Himmele, Walter, and N. von Kutepow, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of pyrrolidone. 3,198,808, 8–3–65, Cl. 260—326.5.

Hine, Sheldon H. Illuminating apparatus. 3,198,097, 8–3–65, Cl. 95—11.

Hinrichs, Karl, to Beckman Instruments, Inc. Current transformer amplifier multiplexing arrangement. 3,199,043, 8–3–65, Cl. 330—124.

Hintze, Johannes, to Anschutz & Co. G.m.b.H. Directional gyroscopic instrument. 3,197,882, 8–3–65, Cl. 33—222.

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Hi-Voltage Equipment Co., a division of Joslyn Mfg. and Supply Co.: *See*—
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Hoadley, Robert B. Keeper for electrical cords. 3,197,830, 8–3–65, Cl. 24—16.

Hoch, Robert S., and R. W. Elliott, to Phillips Petroleum Co. Well operation. 3,198,250, 8–3–65, Cl. 166—4.

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Holdo, Andres O., to F. L. Moseley Co. Line following apparatus for a graphical recorder including symmetrical photocell arrangements. 3,198,949, 8–3–65, Cl. 250—202.

Holland, James E., and E. M. Polzin, to Thompson Ramo Wooldridge Inc. Shielded delay line. 3,199,054, 8–3–65, Cl. 333—31.

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Hoy, Kenneth L., to Union Carbide Corp. Polyurethanes from non-hydroxyl polyepoxides BF3-amine catalyst and alternatively a vinyl chloride containing resin. 3,198,851, 8–3–65, Cl. 260—836.

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Layne, Gilbert S., and Huml. 3,198,627.
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Hunt, Russell G., and M. Fabre. Dispensing arrangement. 3,198,402, 8–3–65, Cl. 222—251.

Hunter, Paul H., to Union Carbide Corp. Blow molded container. 3,198,375, 8–3–65, Cl. 220—60.

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Husimi, Kazuo, and T. Koshiba, to Nippon Telegraph and Telephone Public Corp. High speed memory bistable dynatron circuit. 3,198,957, 8–3–65, Cl. 307—88.5.

Huston, William D., to American Radiator & Standard Sanitary Corp. Liquid level gauge. 3,198,010, 8–3–65, Cl. 73—313.

Huxtable, Robert L., and R. E. Dollinger, to Phillips Petroleum Co. Continuous process for the preparation of block copolymers. 3,198,774, 8–3–65, Cl. 260—83.7.

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Ice-O-Matic, Inc.: *See*—
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Iknayan, Alfred N., to United States Rubber Co. Method of retreading tires using spray cement containing high concentration of activator. 3,198,680, 8–3–65, Cl. 156—96.

Iknayan, Alfred N., and A. S. Tavenor, to United States Rubber Co. Recapping butyl tires. 3,198,679, 8–3–65, Cl. 156—96.

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Ilmer, Erwin, to C. A. Voigt. Resilient support for rotor assembly. 3,197,983, 8–3–65, Cl. 68—24.

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Imperial Chemical Industries Ltd.: *See*—
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Inductosyn Corp.: *See*—
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Ingersoll-Rand Co.: *See*—
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Oelke, Erwin S., Kurt, and Beaumont. 3,198,264.
Robertson, Anthony E. 3,198,425.

Ingold, Fritz, to Brevets Aero-Mecaniques S.A. Hydraulic presses. 3,198,108, 8–3–65, Cl. 100—257.

Ingwalson, Raymond W.: *See*—
Griscom, Richard W., Ingwalson, and Reeves. 3,198,784.

Inland Steel Co.: *See*—
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Inoue, Kiyoshi. Electric discharge heat treatment of metals in electrolytes. 3,198,675, 8–3–65, Cl. 148—13.

Insley Mfg. Corp.: *See*—
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Institute of Medical Sciences, The: *See*—
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International Business Machines Corp.: *See*—
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Dersch, William C. 3,198,884.
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Gaffney, John E., Jr., and Kusnick. 3,199,078.
Halbt, Luther H. 3,199,082.
Kimball, Philip D., and Blome. 3,198,657.
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Rhodes, William H., Brenza, and Winger. 3,199,085.

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International Protected Metals, Inc.: *See*—
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International Telephone and Telegraph Corp.: *See*—
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Johnson, George S. 3,197,849.

Intrater, Josef, and L. R. Hill; said Intrater assor. to Electronics & Alloys, Inc., and said Hill assor. to General Instrument Corp. Method of forming thermoelectric units with attached contact terminals. 3,197,845, 8–3–65, Cl. 29—155.5.

Inventions Management Corp.: *See*—
Roosa, Vernon D. 3,198,412.

Irish, Donald B.: *See*—
Bakish, Robert, Irish, and Marinow. 3,198,167.

Ishida, Moriyoshi: *See*—
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Ishida, Shinichi, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for the polymerization of aldehydes. 3,198,768, 8–3–65, Cl. 260—67.

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Melton, James O., and Wilkinson. 3,198,508.

James, Robert L., to The Bendix Corp. Pulse forming circuit. 3,198,956, 8–3–65, Cl. 307—88.

Jansen, Heinz-Dieter, to Olympia Werke AG. Electromagnetic clutch and brake with resilient transmitting means. 3,198,302, 8–3–65, Cl. 192—18.

Jedco Corp.: *See*—
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Jeffrey Galion Mfg. Co.: *See*—
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Jenkins, Fred W.: *See*—
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Jenniffgs, Alan K., R. D. Cone, and E. Seid, to California Computer Products, Inc. Graphical data recorder system. 3,199,111, 8–3–65, Cl. 346—29.

Jepson, Ivar, and W. L. Chambers, to Sunbeam Corp. Beater ejecting means for an electric food mixer. 3,198,490, 8–3–65, Cl. 259—1.

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Johnson, David A., and C. A. Panetta, to Bristol-Myers Co. α-Aminomethylpenicillin derivatives. 3,198,804, 8–3–65, Cl. 260—306.7.

Johnson, Elmer, and J. W. E. Hanes, to Johnson-Woodruff Co. Pipe coupling with lug engaging rotatable collar. 3,198,555, 8–3–65, Cl. 285—91

Johnson, Ernest H., and W. E. Voigt, to Andrew Corp. Coaxial connector. 3,199,061, 8–3–65, Cl. 339—100.

Johnson, George S., to International Telephone and Telegraph Corp. Tool for inserting and extracting removable electrical contacts. 3,197,849, 8–3–65, Cl. 29—203.

Johnson, Howard L., and J. A. Junck, to Caterpillar Tractor Co. Fluid motor control system. 3,198,088, 8–3–65, Cl. 91—420.

Johnson, Philip C., to F. & F. Koenigkramer Co. Method of making safety side rails. 3,197,852, 8–3–65, Cl. 29—446.

Johnson Service Co.: *See*—
Alyea, Harold W., Chapman, and Jurasinski. 3,198,421.

Johnson, William, and W. Watt, to United Kingdom Atomic Energy Authority. Process for making carbon articles from carbon particles and furane derivatives. 3,198,714, 8–3–65, Cl. 202—26.

Johnson, William D., to Oscar Mayer & Co., Inc. Impregnated shoe sole leather. 3,198,661, 8–3–65, Cl. 117—142.

Johnson-Woodruff Co.: *See*—
Johnson, Elmer, and Hanes. 3,198,555.

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Johnston, Donald N. Gate valve operating mechanism. 3,198,478, 8–3–65, Cl. 251—85.

Jones, Douglas E. Medium duty, wear resistant machine element. 3,198,681, 8–3–65, Cl. 75—128.

Jones, Frank and R. H., to Tickopres Ltd. Rotary web printing machine with photo-electric controlled feeding means. 3,198,114, 8–3–65, Cl. 101—228.

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Jones, Frank and R. H. 3,198,114.

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Jucker, Ernest, and R. Suess, to Sandos Ltd. 2,8-(para-F-4-oxo-butyl)-diazaspiro[4,5]decane-1,3-dionес. 3,198,800, 8–3–65, Cl. 260—294.

Junck, John A., and J. E. Scheidt, to Caterpillar Tractor Co. Metering slot configuration for hydraulic control valves. 3,198,212, 8–3–65, Cl. 137—625.37.

Junck, John A.: *See*—
Johnson, Howard L., and Junck. 3,198,088.

Jung, Margarete: *See*—
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Jurasinski, Edward D.: *See*—
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Justus, Edgar J., to Beloit Corp. Scavenging means for grooved press rolls. 3,198,693, 8–3–65, Cl. 162—272.

Justus, Edgar J., to Beloit Corp. Press roll assemblies in paper making machine. 3,198,694, 8–3–65, Cl. 162—358.

Justus, Edgar J., to Beloit Corp. Grooved press roll assemblies with a Yankee drier. 3,198,695, 8–3–65 Cl. 162—359.

Justus, Edgar J., to Beloit Corn. Multiple grooved roll press assemblies. 3,198,696, 8–3–65, Cl. 162—360.

Justus, Edgar J., to Beloit Corp. Paper press roll assemblies. 3,198 697, 8–3–65 Cl. 162—372.

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Kabushiki Kaisha Koparn: *See*—
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Kacserginski, Alexandre, to Societe Europeenne d'Isolateurs en Verre Sediver. Insulator assemblies of composite glass fibers and resin. 3,198,878, 8–3–65, Cl. 174—176.

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Kagi, Albert: *See*—
Tucker, Vincent W., Gayring, Kaelber, and Kagi. 3,197,897.

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Kaiser, Emil, and B. M. Shinn, to Armour Pharmaceutical Co. Derivatives of diphenyl synthetic estrogens. 3,198,840, 8–3–65, Cl. 260—613.

Kallenbach, Paul C., H. M. Oglesby, and E. F. Thomson, to Whirlpool Corp. Compressor mounting structure for use in air conditioner apparatus. 3,198,324, 8–3–65, Cl. 206—46.

Kallmann, Hartmut P., J. Rennert, and F. Chernow, to Rahn Corp. Devices exhibiting internal polarization and apparatus for and methods of utilizing the same. 3,199,086, 8–3–65, Cl. 340—173.

Kamin, Ernest F. Body for refuse-collection vehicle. 3,198,355, 8–3–65, Cl. 214—82.

Kammerer, Archer W., Jr.: *See*—
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Kapadi, Nuruddin F. Adjustable flow-responsive tilt switch. 3,198,901, 8–3–65, Cl. 200—81.9.

Karkut, Henry E., to Henry E. Karkut, Inc. Combined paint applicator and handle pump. 3,197,800, 8–3–65, Cl. 15—547.

Karkut, Henry E., Inc.: *See*—
Karkut, Henry E 3.197,800.

Karpf, Nikolaus. Camera range-finder adjustment system. 3,198,098, 8–3–65, Cl. 95—44.

Karr, Philip R., to Thompson Ramo Wooldridge Inc. Time distortion tolerant signalling system. 3,199,106, 8–3–65, Cl. 343—17.2.

Kato, Masami, and Y. Amano, to Nippon Denso Kabushiki Kaisha. Driving device for a window wiper. 3,197,796, 8–3–65, Cl. 15—250.17.

Katzin, Leonard: *See*—
Eledge, William C., and Katzin. 3,199,066.

Katzin, Leonard, to The Bunker-Ramo Corp. Electronic circuit modules having cellular bodies and method of making same. 3,198,990, 8–3–65, Cl. 317—100.

Kaup, Otmar, to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft. Frame for a fork liftiug vehicle. 3,198,278, 8–3–65, Cl. 180—54.

Kayatz, Karl-Heinz, to Fuller Co. Cement clinker cooler comprising roller-bearing supported vibrating grates. 3,197,887, 8–3–65, Cl. 34—164.

Kazenas, Zenon, to Switzer Brothers, Inc. Thermoplastic resinous materials. 3,198,741, 8–3–65, Cl. 252—301.2.

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Keith, Carl D., and G. Soustruznik, to Engelhard Industries, Inc. Catalytic oxidation unit and radiant gas burner. 3,198 240, 8–3–65, Cl. 158—116.

Keith, Carl D., P. M. Kenah, and P. N. Rylander, to Engelhard Industries, Inc. Refractory oxide-alkaline earth carbonate supported catalyst. 3,198,748, 8–3–65, Cl. 252—443.

Keller, Eduard, to Brown, Boveri & Cie., Aktiengesellschaft. Housing for semi-conductor rectifier. 3,198,875, 8–3–65, Cl. 174—52.

Keller, Walter F., to Honeywell, Inc. Control apparatus. 3,197,959, 8–3–65, Cl. 60—35.54.

Kelso, Edward A., to Esso Research and Engineering Co. Combination hydrodealkylation process and desulfurization. 3,198,846 8–3–65, Cl. 260—672.

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Keith, Carl D., Kenah, and Rylander. 3,198,748.

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Kerstetter, Donald R., to Sylvania Electric Products Inc. Clad materials and process of fabricating the same. 3,197 847, 8–3–65, Cl. 29—182.3.

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Kice, Russell W., and J. W. Blender fitting. 3,198,584. 8–3–65, Cl. 302—51.

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Kienel, Gerhard, to W. C. Heraeus, G.m.b.H. Vacuum sputtering pump. 3,198,422, 8–3–65, Cl. 230—69.

Kiger, Raymond I.: *See*—
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Kimball, Philip D., and E. R. Blome, to International Business Machines Corp. Process for spin coating objects. 3,198,657, 8–3–65, Cl. 117—101.

Kimble, Donal G., C. O. McMasters, and B. W. Neher, to Minnesota Mining & Mfg. Co. Electrophotography. 3,198,632, 8–3–65, Cl. 96—1.

Kimmel, Ernest J., and C. O. Slemmons, to The General Tire & Rubber Co. Method for the manufacture of vinyl floor coverings. 3,198,860, 8–3–65, Cl. 264—77.

Kimmerle, Harlie J.: *See*—
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Kimmlinger, Kenneth T., and W. T. Meyer, to M. H. Delrick Co. Composite refractory wall. 3,197,930, 8–3–65, Cl. 952—378.

Kimura, Michiomi, and T. Nishikawa, to Kabushiki Kaisha Musashinokagaku Kenkyujo. Process for preparing an impermeable carbon article. 3,198,658, 8–3–65, Cl. 117—119.2.

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Kinetic Heating Corp.: *See*—
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Kiper, Gerd, to Agfa Aktiengesellschaft. Between-the-lens shutter for single-lens reflex cameras. 3,198,100, 8–3–65, Cl. 95—63.

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Kirby, Kenneth, K. R. T., and C. W. 3,198,093.

Kirby, Kenneth, K. R. T., and C. W., to Kirby's (Engineers) Ltd. Apparatus for creasing and/or cutting cardboard and analogous flexible sheet material. 3,198,083, 8–3–65, Cl. 93—58.2.

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Kirby's (Engineers) Ltd.: *See*—
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Kirkell, Leon H., to Blairsville Machine Products Co. Towel dispensing cabinet and control mechanism. 3,198,591, 8–3–65, Cl. 312—38.

Kirkland, Walter D., and J. T. Oda, to Abbott Laboratories. Container closure. 3,198,368, 8–3–65, Cl. 215—37.

Kirsch Co.: *See*—
Ford, James A. 3,198,243.

Kistler, W. H., Stationery Co.: *See*—
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Kitterman, Donald M., to Pacific Industries, Inc. Pouring spout. 3,198,393, 8–3–65, Cl. 222—109.

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Knippers, Gustav, and J. C. Grober; said Grober assor. to said Knippers. Method of detinning tin-plate. 3,198,720, 8–3–65, Cl. 204—121.

Knocklein, Herman P., to Avien, Inc. Film scanning transmission system using fiber optics. 3,198,881, 8–3–65, Cl. 178—6.7.

Knoth, Harold M., to Deere & Co. Wafering machine convertible die structure. 3,198,141, 8–3–65, Cl. 107—14.

Kobayashi, Tetsuo, and Z. Nakano, to Hitachi, Ltd. Method of assembling the actuating mechanism for air-blast circuit breakers. 3,198.917, 8–3–65, Cl. 200—148.

Kochi, Jay K., to Shell Oil Co. Alcohols from unsaturated hydrocarbons and carbonyl compounds. 3,198,841, 8–3–65, Cl. 260—618.

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Kojer, Hugo: *See*—
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Kok, Hans, and A. W. van 't Slot, to North American Philips Co., Inc. System for shifting pulses occurring at arbitrary instances of clock pulse cycles to a fixed instant of the pulse cycles. 3,199,035, 8–3–65, Cl. 328—63.

Kok, Hans, and F. T. A. Van Bergen, to North American Philips Co., Inc. Circuit arrangement for giving permission to transmit to one of a number of sources of information according to a fixed priority. 3,199,081, 8–3–65, Cl. 340—147.

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Kollsman, Paul. Electrodialysis apparatus. 3,198,725, 8–3–65, Cl. 204—301.

Kolm, Carl, and P. H. Fowler, to Sonus Corp. Pyroelectric generator. 3,198,969, 8–3–65, Cl. 310—4.

Koninklijke Nederlandsche Hoogorens en Staalfabrieken N.V.: *See*—
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Kopelman, Ahron W. Dispenser cap with deformable cone assembly. 3,198,406, 8–3–65, Cl. 222—545.

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Köppen, Heinz, to Zeiss Ikon Aktiengesellschaft. Photographic camera. 3,198,096, 8–3–65, Cl. 95—10.

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Updegraff, Loy A. 3,198,583.

Koran, Hugo F. Score moistening device. 3,198,092, 8–3–65, Cl. 95—58.

Koretz, Harry, to Anken Chemical & Film Corp. Portable photocopying apparatus. 3,198,104, 8–3–65, Cl. 95—77.5.

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Kramer, Ernest H. Bait holding fish hook. 3,197,912, 8–3–65, Cl. 43—44.4.

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Kramer, Walter E., and L. A. Joo, to The Pure Oil Co. Polyamide resins from dialkali metal dipyridyl compounds. 3,197,442, 7–27–65, Cl. 260—78.

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Krehbiel, Guenter, and H. Preugschas, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Water-soluble reactive anthraquinone dyes. 3,198,812, 8–3–65, Cl. 260—372.

Kress, Bernard H., to Quaker Chemical Corp. Treated pigments and process for modifying the surface of pigments. 3,198,647, 8–3–65, Cl. 106—308.

Krits, Jack, to American Bosch Arma Corp. Piezoelectric vibration transeducer. 3,198,970, 8–3–65, Cl. 310—8.2.

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Krug, Newton J., to Diebold, Inc. Rotary switch construction with adjustment means for filing appliance. 3,198,894, 8–3–65, Cl. 200—11.

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Krupp, Robert F., to Gerber Products Co. Machine for unloading retort crates. 3,198,361, 8–3–65, Cl. 214—310.

Kruse, James A., and T. E. Austin, to North American Aviation, Inc. Brased joint and method of making the same. 3,198,556, 8–3–65, Cl. 285—93.

Kruy, Joseph F., to Honeywell Inc. Shift register utilising a holding pulse to obviate interstage signal storage means. 3,198,960, 8–3–65, Cl. 307—88.5.

Kuhne, Rudolf, to Ruf-Buchhaltung Aktiengesellschaft. Apparatus for reading characters recorded on a carrier by producing corresponding electrical impulses. 3,199,079, 8–3–65, Cl. 340—146.3.

Kuns, Alfred, to Deggendorfer Werft Und Eisenbau Ges. m.b.H., Firma. Barge construction. 3,198,156, 8–3–65, Cl. 114—29.

Kuns, Harold R., to United Aircraft Corp. Fuel cell system. 3,198,664, 8–3–65, Cl. 136—86.

Kurashiki Rayon Co., Ltd.: *See*—
Shiraishi, Makoto. 3,198,051.

Kurt, Ewald H.: *See*—
Oelke, Erwin S., Kurt, and Beaumont. 3,198,264.

Kurtz, Leonard D. Suture needle. 3,197,997, 8–3–65, Cl. 72—377.

Kursinski, Edward F., R. D. Jones, R. Reider, and J. R. Speary, to Air Products and Chemicals, Inc. Apparatus for supplying a plurality of fluids to a combustion zone. 3,198,436, 8–3–65, Cl. 239—132.

Kusnick, Arthur A.: *See*—
Gaffney, John E., Jr., and Kusnick. 3,199,078.

Kysor Heater Co.: *See*—
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Laboratoires Dausse, Les: *See*—
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Laboratory For Electronics, Inc.: *See*—
Arrison, Robert A., Jr., and van der Velden. 3,198,947.

Lackey, Robert E. and S. A., to Espey Mfg. & Electronics Corp. (Saratoga Industries Division). Control circuit including a fast acting transistor regulator in parallel with a slow acting magnetic amplifier regulator. 3,199,015, 8–3–65, Cl. 321—19.

Lackey, Stanley A.: *See*—
Lackey, Robert E. and S. A. 3,199,015.
La Corata, Christopher F. Shoe brush. 3,197,799, 8–3–65, Cl. 15—529.
L'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude: *See*—
Mahieux, Francis. 3,197,971.
Nelson, Warren L., and Salama. 3,197,970.
Royet, Jean. 3,198,687.
Lajoie, Peter A., to Western Electric Co., Inc. Apparatus for transferring and orienting articles. 3,198,311, 8–3–65, Cl. 198—33.
Lakatos, Emory, to Thompson Ramo Wooldridge Inc. Distance measuring syatems. 3,199,105, 8–3–65, Cl. 343—13.
Lalet, Charles Y. P., to Societe Nationale des Petroles d'Aquitaine, Societe Anonyme dite: Process for the preparation of mercaptans. 3,198,839, 8–3–65, Cl. 260—609.
Lamont, William A., to Nalco Chemical Co. Process for controlling foaming of an aqueous syatem. 3,198,744, 8–3–65, Cl. 252—321.
Lamport, Ivan R.: *See*—
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Lamson, Edward R., and M. J. Devine. Solid lubricant composition and method for lubricating anti-friction bearing structures. 3,198,735, 8–3–65, Cl. 252—25.
Langer, Horst G., to The Dow Chemical Co. Insoluble chelates of titanium, zirconium, hafnium and thorium. 3,198,817, 8–3–65, Cl. 260—429.1.
Lanning, William C., to Phillips Petroleum Co. Processes for exothermic thermal hydrodealkylation. 3,198,847, 8–3–65, Cl. 260—672.
Lansing, Frederick J., to The Schlegel Mfg. Co. Garnishing bead. 3,198,689, 8–3–65, Cl. 161—100.
Larsen, Raymond B., C. W. De Karske, W. B. Edwards, Jr., A. H. Higgins, and R. W. Bonnema, to Uptime Corp. Serial card reader. 3,198,831, 8–3–65, Cl. 209—110.
Larsen, Robert T., to Outboard Marine Corp. Engine. 3,198,162, 8–3–65, Cl. 115—17.
Larson, John D. Synthetic topsoil composition containing chelate-producing material. 3,198,620, 8–3–65, Cl. 71—1.
Larson, Robert L., to General Motors Corp. Dynamoelectric machine. 3,198,972, 8–3–65, Cl. 310—68.
Lasky, Max. Method for making a sound motion picture film with words thereon. 3,199,115, 8–3–65, Cl. 352—5.
Lasoff, Jacob, to W. R. Grace & Co. Apparatus for forming closures on packages. 3,197,938, 8–3–65, Cl. 53—135.
Laaswell, Fred D., Jr. Fruit harvester. 3,197,952, 8–3–65, Cl. 56—328.
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Lauer, Robert E., and G. C. McCormick, to Thiokol Chemical Corp. Process of curing urethane threads utilizing slow and fast curing agents. 3,198,863, 8–3–65, Cl. 264—184.
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Laxo, Ed, deceased; T. E. Laxo, executrix, to T. E. Laxo. Can body making machine. 3,197,999, 8–3–65, Cl. 72—401.
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Laxo, Ed. 3,197,999.
Layne, Gilbert S., and J. O. Huml, to The Dow Chemical Co. Uranium-chromium-aluminum ternary alloy. 3,198,626, 8–3–65, Cl. 75—122.5.
Layne, Gilbert S., and J. O. Huml, to The Dow Chemical Co. Uranium-tungsten-aluminum ternary alloy. 3,198,627, 8–3–65, Cl. 75—122.5.
Layne, Gilbert S., and J. O. Huml, to The Dow Chemical Co. Uranium-tantalum-aluminum alloy. 3,198,628, 8–3–65, Cl. 75—122.5.
Layne, Gilbert S., and J. O. Huml, to The Dow Chemical Co. Uranium-vanadium-aluminum ternary alloy. 3,198,629, 8–3–65, Cl. 75—122.5.
Lease, Leon R., to Electrol Equipment, Inc. Transistorized control system. 3,198,962, 8–3–65, Cl. 307—88.5.
Le Douarec, Jean-Claude R.: *See*—
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Le Douarec, Jean-Claude: *See*—
Beregi, Laszlo G., Hugon, Le Douarec, and Schmitt. 3,198,834.
Lee, Richard J., to The Dow Chemical Co. Apparatus for sealing and folding flanged edges of containers. 3,198,683, 8–3–65, Cl. 156—486.
Lee, Roger D., and R. E. Harold, to Electro-Hydraulics Ltd. Self-advancing mine roof supports. 3,197,965, 8–3–65, Cl. 61—45.
Lefer, Samuel. Pressurized dispensers. 3,198,394, 8–3–65, Cl. 222—135.
Le Grand, Richard D., to Monsanto Co. Dual temperature melting apparatus. 3,197,813, 8–3–65, Cl. 18—8.
Leibowitz, Donald, to General Precision Inc. D.C. clamp-on meter including a Hall plate flux detector. 3,199,026, 8–3–65, Cl. 324—127.
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Lemelson, Jerome H. Radio telephone communication system. 3,198,888, 8–3–65, Cl. 179—41.
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Lentze, Felix. Licentia Patent-Verwaltungs-G.m.b.H. Photoelectric control device for a flaw detector for moving webs. 3,198,951, 8–3–65, Cl. 250—219.
Leonard, George H., to Hamlin Leonard Associates, Inc. Angular position indicator for rotatable element. 3,198,165, 8–3–65, Cl. 116—115.5.
Leonard, Hamlin, Associates, Inc.: *See*—
Leonard, George H. 3,198,165.
Levantin, Allen M., to Rohm & Haas Co. Thermosetting surface-coating compositions comprising a polyepoxide, an alkylated aminoplast, and a copolymer of an hydroxyalkyl ester of an α,β-unsaturated carboxylic acid. 3,198,850, 8–3–65, Cl. 260—834.
Levy, Donald J., to Lockheed Aircraft Corp. Thin nickel coatings. 3,198,659, 8–3–65, Cl. 117—130.
Levy, Eli, and J. H. Fasal, to Specialties Development Corp. Apparatus for detecting a change in rotational speed. 3,198,900, 8–3–65, Cl. 200—61.46.
Lewis, Charles E., to American Cyanamid Co. Azopyrazolone dyes for polyester fibers. 3,198,783, 8–3–65, Cl. 260—163.
Lewis, Clifford J., and W. S. Dunn, to Allied Chemical Corp. Recovery of uranium and/or vanadium values from ores containing the same. 3,198,599, 8–3–65, Cl. 23—14.5.
Lewis, George D.: *See*—
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Lewis, Martin J., to Franklin Machine Products Co., Inc. Swing-type faucet. 3,198,210, 8–3–65, Cl. 137—616.5.
Lewis, William D., and S. A. Rogers, to E. I. du Pont de Nemours and Co. Permeation apparatus. 3,198,335, 8–3–65, Cl. 210—321.
Leybold Holding A.G.: *See*—
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Libbey-Owens-Ford Glass Co.: *See*—
McAuley, James W., and McCown. 3,198,971.
Licencia Talalmanyokat Ertekesito Vallalat: *See*—
Pásztor, Mihály. 3,197,919.
Licentia Patent-Verwaltungs-G.m.b.H.: *See*—
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Lien, Charles L., and B. Strunk, to The Bendix Corp. Stepper motor servo amplifier. 3,199,009, 8–3–65, Cl. 318—138.
Lilland, Philip P., to Socony Mobil Oil Co., Inc. Quasi-isothermal hydrocarbon conversion and reactor therefor. 3,198,727, 8–3–65, Cl. 208—65.
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Limberg, Allen L., to Radio Corp. of America. F.M. stereophonic radio signal receivers having combined pre-detection de-emphasis and filtering circuit. 3,198,885, 8–3–65, Cl. 179—15.
Lindblom, Gordon P., G. D. Ortloff, and J. T. Patton, to Esso Production Research Co. Method of reducing fluid loss in well treatment. 3,198,268, 8–3–65, Cl. 175—72.
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Lindner, Harold and A. Leakproof bottled liquid malliable container. 3,198,374, 8–3–65, Cl. 220—39.
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Lippke, Donald E., and C. J. Kinsey, to Sta-Rite Products, Inc. Portable pumping station. 3,198,122, 8–3–65, Cl. 103—25.
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Cencel, Joseph A. 3,198,021.
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LoBello, Leon. Water carrier for farm tractor. 3,198,397, 8–3–65, Cl. 222—176.
Lochinger, Rolf B., to Radio Corp. of America. Means for controlling an electron beam. 3,199,039, 8–3–65, Cl. 328—258.
Locke, Robert A., G. Pohevitz, J. Kolar, P. H. Smith, and K. R. Strandberg, to Sperry Rand Corp. Keyboard controlled recording machine. 3,198,427, 8–3–65, Cl. 234—18.
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Gindes, Philip, and Imhof. 3,199,057.
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Levy, Donald J. 3,198,659.
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Long, Arch O., Sr. Method and apparatus for feeding flatwork ironers. 3,198,315, 8–3–65, Cl. 198—102.
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Long, William R. 3,198,313.
Long, Robert B., to Esso Research and Engineering Co. Reactor coolant system. 3,198,710, 8–3–65, Cl. 176—39.
Long, William R., to Long Mfg. Co. Grain bin loader and unloader. 3,198,313, 8–3–65, Cl. 198—64.
Longenecker, Levi S. Rotary scrap charging. 3,198,354, 8–3–65, Cl. 214—18.
Loomans, Bernard A., and A. K. Brennan, Jr., to Baker Perkins Inc. Continuous mixer. 3,198,491, 8–3–65, Cl. 259—6.
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Loper, Edward J., and K. J. Schlager, to General Motors Corp. Inertial navigation system. 3,198,940, 8–3–65, Cl. 235—187.
Lord, John B., and V. Harris, to United States of America, Navy. Acoustical-to-optical image converter. 3,199,069, 8–3–65, Cl. 340—1.
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Lorenz, Ben, and J. W. Barry, to United States of America, Navy. Animated transparency for teaching foreign languages demonstrator. 3,197,890, 8–3–65, Cl. 35—35.
Lorenz, Jerome L., to Honeywell Inc. Arming circuit with pressure responsive discharge switch. 3,198,118, 8–3–65, Cl. 102—70.2.
Lorenz, Wilhelm T., to R.I.V. Anstalt zur Verwaltung von Real- und Immaterialvermogen. Fluid regulator. 3,198,214, 8–3–65, Cl. 138—37.
Lothes, Herbert G., to Baker Perkins, Inc. Method and means for preparing dough. 3,198,142, 8–3–65, Cl. 107—30.
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Loveland, Malcolm W., to Atlas-Pacific Engineering Co. Fruit orientor. 3,198,312, 8–3–65, Cl. 198—33.
Lowes, Fred J., Jr., to The Dow Chemical Co. Bacteriostatic compositions of acrylonitrile polymers and 2,2'-thiobis(4,5-dichlorophenol). 3,198,764, 8–3–65, Cl. 260—45.95.
Lowes, Fred J., Jr., to The Dow Chemical Co. Bacteriostatic acrylonitrile polymers. 3,198,765, 8–3–65, Cl. 260—45.95.
Luborsky, Fred E., to General Electric Co. Magnetic material and method of preparing the same. 3,198,716, 8–3–65, Cl. 204—10.
Lucas, Joseph, (Industries) Ltd.: *See*—
Clarke, John S., and Soltau. 3,197,956.
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Luehring, Elmer L., and J. D. Hoffman, to Hi-Voltage Equipment Co., a division of Joslyn Mfg. and Supply Co. High voltage switching apparatus. 3,198,966, 8–3–65, Cl. 317—11.
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Cox, De Witt C. 3,198,487.
Luketa, Frank J. Cable meter for trawlers. 3,198,488, 8–3–65, Cl. 254—192.
Luil, Le Grand H. Reaching type loader. 3,198,359, 8–3–65, Cl. 214—140.
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Pike, Rufus F., and Thompson. 3,198,169.
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Santo, John E. 3,198,818.
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Ricciardi, Michael A., and Considine. 3,198,767.
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MacCallum, Robert B., and F. R. Hurley, to W. R. Grace & Co. Method for producing ferric oxide particles. 3,198,603, 8–3–65, Cl. 23—200.
MacCallum, Robert B., and F. R. Hurley, to W. R. Grace & Co. Preparation of ferric oxide sols. 3,198,743, 8–3–65, Cl. 252—313.
Macklem, F. Sutherland. Alternating current line regulator. 3,199,018, 8–3–65, Cl. 323—45.
Macomber, John W., to United States of America, National Aeronautics and Space Administration. Nuclear reactor control rod assembly with improved driving mechanism. 3,198,709, 8–3–65, Cl. 176—35.
Macon, Arthur R., to E. I. du Pont de Nemours and Co. Linear 1,3-cyclopentanedimethanol polyesters of bis-phenylene-4,4'-dicarboxylic acids. 3,198,769, 8–3–65, Cl. 260—75.
Madson, Leo D., to United States Steel Corp. Method and apparatus for controlling dust in a rotary drilling operation. 3,198,267, 8–3–65, Cl. 175—69.
Maeder, Arthur, and O. Albrecht, to Ciba Ltd. Copolymerization products of quaternary vinyl ethers and aqueous emulsions thereof. 3,198,762, 8–3–65, Cl. 260—29.6.
Maestro Corp.: *See*—
Van Antwerp, Robert L. 3,198,528.
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Baker, Lawrence K., and Magill. 3,198,999.
Mahieux, Francis, to L'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude. Process for storing ozone. 3,197,971, 8–3–65, Cl. 62—48.
Mahoney, William J., to American Machine & Foundry Co. Electronic switch device with commutating capacitor. 3,198,989, 8–3–65, Cl. 317—33.
Maillard, Bernard, to Breveta Aero-Mecaniques S.A. Automatic firearm with a recoiling barrel. 3,198,075, 8–3–65, Cl. 89—33.
Mairson, Irving W. Pleated draperies. 3,198,244, 8–3–65, Cl. 160—348.
Majeski, Bruno. Dual purpose vehicle. 3,198,571, 8–3–65, Cl. 296—26.
Malifaud, Pierre. Device for eliminating the glare of automobile headlights. 3,199,114, 8–3–65, Cl. 351—45.
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Malloy, John R., and T. Hommel, to United States Banknote Corp. Photographic printers. 3,198,103, 8–3–65, Cl. 95—76.
Manley, Brian W., to North American Philips Co., Inc. Interline read-out system for storage tube. 3,198,977, 8–3–65, Cl. 315—12.
Manly, Ron, and W. G. Miller, to United States of America, Army. Apparatus and method for determining the impedance of a component in a complex network without removing the component from the network. 3,199,024, 8–3–65, Cl. 324—57.
Mann, Victor E.: *See*—
Allum, Robin D., Mann, Bryan, and Knight. 3,199,083.
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Mannheimer, Hans S. 3,198,815.
Mannheimer, Hans S.; said Mannheimer and J. J. McCabe, Jr., joint venturers. Detergent sulfonate and sulfate salts of certain amphoteric sulfonates. 3,198,814, 8–3–65, Cl. 260—401.
Mannheimer, Hans S., to H. S. Mannheimer and J. J. McCabe, Jr. Fatty amido amino sulfonate and sulfate salts of amphoteric sulfonates. 3,198,815, 8–3–65, Cl. 260—401.
Mannheimer, Hans S.; said Mannheimer and J. J. McCabe, Jr., joint venturers. Quaternary ammonium sulfates and sulfonic acid salts. 3,198,822, 8–3–65, Cl. 260—458.
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Mapelsden, George C., to General Electric Co. Switch having an arc preventing cam arrangement. 3,198,893, 8–3–65, Cl. 200—6.
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Marasco, Anthony D., to J. B. Nottingham & Co., Inc. Cable connector assembly. 3,199,060, 8–3–65, Cl. 339—60.
Marbet, Roman, and U. Schwieter, to Hoffman-La Roche Inc. Process for the preparation of polyenecarbonyl compounds. 3,198,836, 8–3–65, Cl. 260—586.
Marchand, Jean A., to Glaverbel. Horse for the transport of materials in sheet form. 3,198,472, 8–3–65, Cl. 248—346.
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Hambach, August J. 3,198,447.
Marette, George F., to Sperry Rand Corp. Scale factor device. 3,198,938, 8–3–65, Cl. 235—164.
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Marland, Joseph A., and C. W. Hill; said Hill assor. to said Marland. One-way clutch with lubricant containing housing. 3,198,305, 8–3–65, Cl. 192—113.
Marple, Walter L., to Whirlpool Corp. Automatic laundry apparatus having a super wash cycle. 3,197,980, 8–3–65, Cl. 68—12.
Marsel, Charles J.: *See*—
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Martin, Alan. Rivet tool. 3,197,987, 8–3–65, Cl. 72—11.4.
Martin, Harold F., to International Business Machines Corp. Light-sensitive glow discharge apparatus. 3,198,980, 8–3–65, Cl. 315—84.5.
Martin & Harris (Private) Ltd.: *See*—
Roy, Krishnabandhu N. 3,198,704.
Martin, Hollinshead T., A. I. Ericsson, and I. J. Vilcins, to Lignode Corp. Ligature joint and seal therefor. 3,197,831, 8–3–65, Cl. 24—16.
Martin, Otto L. Fifth wheel coupling device. 3,198,549, 8–3–65, Cl. 280—432.
Martin, Robert L., Jr., to Fairchild Camera and Instrument Corp. Solid-state circuit with crossing leads and method for making the same. 3,199,002, 8–3–65, Cl. 317—234.
Martin, Samuel W., to Pitney-Bowes, Inc. Document handling means. 3,198,517, 8–3–65, Cl. 271—74.
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Marvel, Jackson, to Continental Can Co., Inc. Method of forming a thermoplastic bottle having a convex reversible curvature at the bottom. 3,198,861, 8–3–65, Cl. 264—98.
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Maskell, John S., to Babcock & Wilcox Ltd. Air register with movable vanes. 3,198,235, 8–3–65, Cl. 158—1.5.
Massa, Frank, to Dynamics Corp. Electroacoustic transducer construction suitable for operation in deep water. 3,199,071, 8–3–65, Cl. 340—10.
Masse, Michel S., and J. B. Murray, to The Bendix Corp. Electrical connector hinge. 3,199,059, 8–3–65, Cl. 339—4.
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Holz, Harold O. 3,198,473.
Doll, Robert M. 3,198,474.
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Massey-Ferguson (United Kingdom) Ltd.: *See*—
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Massoubre, Jean-Marie, to Compagnie Generale des Etablissements Michelin, raison sociale Michelin and Cie. Method of repairing pneumatic tires and patches therefor. 3,198,234, 8–3–65, Cl. 152—367.

Mathes, Wilhelm, and J. P. Da Vanzo, to Dr. F. Raschig G.m.b.H. O-ethers of pyridine-aldoxime-1-oxides. 3,198,803, 8–3–65, Cl. 260—296.

Mathews, John J., to Kollsman Instrument Corp. Brake means. 3,198,293, 8–3–65, Cl. 188—163.

Matsuda, Ken, and L. T. Morin, to American Cyanamid Co. Conjugated organic polymers. 3,198,767, 8–3–65, Cl. 260—65.

Matter, Erich, to Ciba Ltd. Compounds of citric acid. 3,198,828, 8–3–65, Cl. 260—534.

Maurzen Iron Works, Ltd.: *See*—
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Mawson, Jack F., I. D. Rattee, and I. Seltzer, to Imperial Chemical Industries Ltd. Step-wise process for coloring and finishing cellulose materials wherein a cationic dye-fixing agent is employed with the resin finishing agent. 3,198,595, 8–3–65, Cl. 8—18.

Maxon, Glenway, Jr. Tilting dump truck with receptacle discharging means and directional chute. 3,198,495, 8–3–65, Cl. 259—171.

Maxwell, Palmer M. High pressure medical injection direct from a fluid containing ampule. 3,198,385, 8–3–65, Cl. 222—41.

Mayberry, Billy T.: *See*—
Rice, Bartlett, and Mayberry. 3,197,880.

Mayer, Oscar, & Co., Inc.: *See*—
Johnson, William D. 3,198,661.

Mayrath Machinery Co., Inc.: *See*—
Mayrath, Martin, Pike, and Kendall. 3,198,320.

Mayrath, Martin, C. E. Pike, and J. W. Kendall, to Mayrath Machinery Co., Inc. Center driven auger conveyor. 3,198,320, 8–3–65, Cl. 198—213.

Maytag Co., The: *See*—
Smith, Thomas R. 3,197,884.
Smith, Thomas R. 3,197,885.

McAuley, James W., and W. E. McCown, to Libbey-Owens-Ford Glass Co. Magnetostrictive apparatus for cleaning sheet material. 3,198,971, 8–3–65, Cl. 310—26.

McCabe, John J., Jr.: *See*—
Mannheimer, Hans S. 3,198,814.
Mannheimer, Hans S. 3,198,822.

McCauley, Herbert J. Seat belt buckle. 3,197,832, 8–3–65, Cl. 24—78.

McCloud, James R., to I-T-E Circuit Breaker Co. Bracing and support structure for oil circuit breakers. 3,198,918, 8–3–65, Cl. 200—150.

McCormick, George C.: *See*—
Lauer, Robert E., and McCormick. 3,198,863.

McCormick, James B., to Ames Atomium, Inc. Stacked Petri dishes. 3,198,713, 8–3–65, Cl. 195—139.

McCormick, Rayna H. Bowling ball display rack. 3,198,338, 8–3–65, Cl. 211—14.

McCown, William E.: *See*—
McAuley, James W., and McCown. 3,198,971.

McDaniel, Henry R. Automotive road spray shield. 3,198,545, 8–3–65, Cl. 280—154.5.

McDonald, Taylor M., 50%, to Irvin B. Wheeler. Dispenser container. 3,198,401, 8–3–65, Cl. 222—196.4.

McDowell, Robert C., to McDowell-Wellman Engineering Co. Bulk material loading system. 3,198,353, 8–3–65, Cl. 214—14.

McDowell-Wellman Engineering Co.: *See*—
McDowell, Robert C.: 3,198,353.

McGay, John B., to Rockwell Mfg. Co. Pressure sensitive device with sealed motion transmitting lever. 3,198,089, 8–3–65, Cl. 92—94.

McGhee, Clarence L. Outdoor advertising device including projection means. 3,198,066, 8–3–65, Cl. 88—24.

McGuire, John P.: *See*—
Hales, Everett B., and McGuire. 3,199,074.

McIver, John D.: *See*—
Pickering, Ivor G., and McIver. 3,198,669.

McKay Machine Co., The: *See*—
Klempay, Raymond T. 3,198,931.

McKinney, Ralph E., to Hoover Ball and Bearing Co. Apparatus for discharging bulk material from bins. 3,198,395, 8–3–65, Cl. 222—166.

McLane, Sherman T.: *See*—
Moody, Ralph J., and McLane. 3,198,444.

McLean, William E.: *See*—
Cramer, Howard A., and McLean. 3,199,058.

McLin, Frank D., G. W. Sellers, and D. B. Hallock, to Collins Radio Co. Dual feedback direct frequency modulation system. 3,199,026, 8–3–65, Cl. 325—148.

McMasters, Clarence O.: *See*—
Kimble, Donal G., McMasters, and Neher. 3,198,632.

McMullen, Wayne W., and L. S. Goulden. Hydraulic torque cylinder. 3,198,539, 8–3–65, Cl. 280—43.17.

McNemar, Walter L., to F. D. Kees Mfg. Co. Flush top recessed hinge. 3,197,805, 8–3–65, Cl. 16—128.

McNinch, Joseph H., Jr., and R. J. Della Flora, to The De Vilbiss Co. Airless spray gun with variable output. 3,198,439, 8–3–65, Cl. 239—332.

McNulty Bros. Co.: *See*—
Hansen, Waldemar C., and McNulty. 3,198,858.

McNulty, Joseph D.: *See*—
Hansen, Waldemar, C., and McNulty. 3,198,858.

McPartland, James O., L. A. Pember, and J. A. Christensen, to United States of America, Atomic Energy Commission. Thermoelectric nuclear fuel element. 3,198,711, 8–3–65, Cl. 176—68.

McVay, Robert B.: *See*—
Gilmore, Merwin W., Bishop, and McVay. 3,198,174.

Mead, George N. J. Electro-magnetic pump. 3,198,119, 8–3–65, Cl. 103—1.

Mears, K. D. Power operated loin knife. 3,198,808, 8–3–65, Cl. 17—1.

Melcher, Conway H., to General Electric Co. Motorized railroad truck. 3,198,138, 8–3–65, Cl. 105—49.

Melenchuk, Samuel, to General Motors Corp. Turbine blade lock. 3,198,485, 8–3–65, Cl. 253—77.

Melmoth, Robert B., to Ford Motor Co. Method for upsetting elongated articles. 3,198,926, 8–3–65, Cl. 219—7.5.

Melton, James O., and T. B. Wilkinson, to Jamco, Inc. Spacer for insertion between adjacent convolutions of a coil spring. 3,198,308, 8–3–65, Cl. 267—61.

Mennesson, André L., to Societe Industrielle de Brevets & d'Etudes S.I.B.E. Carburetors for internal combustion engines. 3,198,497, 8–3–65, Cl. 261—46.

Mennesson, André L., to Societe Industrielle de Brevets et d'Etudes S.I.B.E. Pressure carburetors. 3,198,498, 8–3–65, Cl. 261—144.

Merker, Herbert, and K. Loos, to Kabelschlepp G.m.b.H. Link chain for guiding electric cables and the like. 3,197,954, 8–3–65, Cl. 59—78.1.

Merrell, William J.: *See*—
Harris, Meade C., and Merrel. 3,198,637.

Merrick Scale Mfg. Co.: *See*—
Williams, Harold L. 3,198,429.

Messina, Ralph P.: *See*—
Henkin, Hyman, and Messina. 3,198,708.

Mesamer, Edwin E. Method and apparatus for conditioning bags for loading. 3,197,936, 8–3–65, Cl. 53—29.

Messori, Adolfo, to Fiat Societa per Azioni. Adjustable seat back for vehicle seats. 3,198,577, 8–3–65, Cl. 297—365.

Metal Reclaiming Associates Inc.: *See*—
Amdur, Milton G., Nissley, Risner, and Sansone. 3,198,505.

Metallgesellschaft Aktiengesellschaft: *See*—
Ertl, Dietrich, and Steuernagel. 3,197,943

Metcalfe, Kenneth A., and R. J. Wright, to The Commonwealth of Australia. Controlled and fixing liquid developer for electrophotography and electro-radiography. 3,198,649, 8–3–65, Cl. 117—37.

Meyer, Frank L. Suspended-ceiling hanger for drapery traverse rods. 3,198,471, 8–3–65, Cl. 248—265.

Meyer, Walker T.: *See*—
Kimmlinger, Kenneth T., and Meyer. 3,197,930.

Micale, Angelo. Shirring foot. 3,198,150, 8–3–65, Cl. 112—134.

Micale, Angelo. Adjustable finger attachment for sewing machines. 3,198,151, 8–3–65, Cl. 112—152.

Micale, Angelo. Finger guard and goods guide for sewing machines. 3,198,152, 8–3–65, Cl. 112—153.

Michigan Carton Co.: *See*—
Fahey, Richard J. 3,198,091.

Micropoulou, Evangelia A. Method of forming letters and numbers readable by the blind. 3,197,889, 8–3–65, Cl. 35—35.

Microtronics, Inc.: *See*—
Dyben, Jerry F. 3,199,001.

Middy, Gerald W.: *See*—
Robinson, Horace M., and Middy. 3,199,010.

Mifsud, Joseph F., to Esso Production Research Co. Seismic method of prospecting. 3,198,281, 8–3–65, Cl. 181—.5.

Mikurak, John, to Arcos Corp. Elastomer die swellable into engagement with a cylinder by solvent contained in the ink. 3,198,116, 8–3–65, Cl. 101—377.

Miller, Frank G., and E. A. Dittmar, to Morton Salt Co. Process for preparing culinary salt. 3,198,608, 8–3–65, Cl. 23—300.

Miller, Mary L., and C. E. Rauhut, to American Cyanamid Co. Method for producing copolymers of ethylene and t-butyl acrylate. 3,198,776, 8–3–65, Cl. 260—86.7.

Miller, Raymond J., and W. R. Smith, to Ford Motor Co. Adjustable steering column. 3,198,030, 8–3–65, Cl. 74—493.

Miller Tilt-Top Trailer, Inc.: *See*—
Moll, Jack E. 3,198,365.

Miller, William A., to Fairchild Stratos Corp. Distance measuring system with direct binary readout. 3,199,104, 8–3–65, Cl. 343—12.

Miller, William G.: *See*—
Manly, Ron, and Miller. 3,199,024.

Miller, William S., and H. M. Duckworth, to The Calico Printers Association, Ltd. Method of treating resin impregnated fibrous webs to prevent discoloration and resulting color stabilized webs. 3,198,652, 8–3–65, Cl. 117—62.1.

Millipore Filter Corp.: *See*—
Porter, David B., and Paine. 3,198,865.

Mills, Kenneth D., to Canadian Westinghouse Co. Ltd. Radar testing equipment. 3,199,107, 8–3–65, Cl. 343—17.7.

Millsap, Larry R., to North American Aviation, Inc. Quantizer producing digital-output whose polarity and repetition-rate are respectively determined by phase and amplitude of analog-input. 3,198,961, 8–3–65, Cl. 307—88.5.

Milwaukee Chaplet & Mfg. Co., Inc.: *See*—
Roberts, James S. 3,198,965.
Roberts, James S. 3,198,966.
Roberts, James S. 3,198,967.

Mindrum, Kenneth H., to Clark Equipment Co. Clamp pad for roll clamping mechanism. 3,198,568, 8–3–65, Cl. 294—89.

Miner, W. H., Inc.: *See*—
Mulcahy, Harry W., and Ellis. 3,198,346.

Mineralac Electric Co.: *See*—
Loudon, James. 3,198,463.

Minich, Geza S. Hydraulic motor and pump combinations. 3,198,126, 8–3–65, Cl. 103—118.

Minnesota Mining and Mfg. Co.: *See*—
Ahlbrecht, Arthur H., and Reid. 3,198,754.
Errede, Louis A. 3,198,844.

Minnesota Mining and Mfg. Co.: *See*—Continued
Hopwood, Stafford L., Jr., and Errede. 3,198,755.
Kimble, Donal G., McMasters, and Neher. 3,198,632.
Neher, Byron W. 3,198,110.
Stack, Thomas N. 3,198,248.
Watkins, Nathaniel L., Jr. 3,198,770.

Mishler, Max L. Ice fishing drill. 3,198,266, 8–3–65, Cl. 175—18.

Mitchell, Alfred T.: *See*—
Floros, James, Sosey, and Mitchell. 3,198,566.

Mitchell, Ebb V. Twist drill sharpener. 3,197,924, 8–3–65, Cl. 51—219.

Mitchell, George A. Photographic camera with an adjustable semi-reflector for photographic film exposure. 3,198,102, 8–3–65, Cl. 95—64.

Mitchell, Irving L., to Ebert Electronics Corp. Mechanically latched mercury switches. 3,198,911, 8–3–65, Cl. 200—112.

Miura, Yasoji: *See*—
Takahashi, Masahiro, Miura, Okumura, and Ishida. 3,198,712.

Molins, Desmond W., and H. A. Stone, to Molins Machine Co., Ltd. Apparatus for transferring rod-like articles. 3,198,350, 8–3–65, Cl. 214—6.

Molins Machine Co. Ltd.: *See*—
Molins, Desmond W., and Stone. 3,198,350.
Powell, Gordon F. W. 3,198,110.

Moll, Jack E., to Miller Tilt-Top Trailer, Inc. Pivotable platform trailer. 3,198,365, 8–3–65, Cl. 214—505.

Mollard, Paul, and G. Turpin, to Societe d'Electro-Chimie d'Electro-Metallurgie et des Acieries Electriques d'Ugine. Process for recovering fluorine. 3,198,600, 8–3–65, Cl. 23—88.

Monsanto Co.: *See*—
Baizer, Manuel M. 3,198,746.
D'Amico, John J. 3,198,621.
Delacretaz, Richard E., Nemphos, and Walter. 3,198,775.
Franz, Raymond A., and Moore. 3,198,845.
Hills, William H., and Fisher. 3,197,837.
Hull, William T., Jr., and Parets. 3,198,445.
Le Grand, Richard D. 3,197,813.
Mortimer, George A., and Boghetich. 3,198,780.
Wygant, James C., and Prill. 3,198,810.

Monson, Louis T., and F. W. Jenkins, to Petrolite Corp. Process for breaking emulsions of the oil-in-water class. 3,198,745, 8–3–65, Cl. 252—344.

Montecatine, Societa Generale per l'Industria Mineraria e Chimica: *See*—
Natta, Giulio, Crespi, and Bruzzone. 3,198,778.
Pedretti, Giovanni, and Corbelli. 3,198,868.
Traina, Francesco. 3,198,753.
Veronica, Giacinto, and Maggiore. 3,198,601.

Moody, Ralph J., and S. T. McLane to Owens-Corning Fiberglas Corp. Method and apparatus for packaging filamentary materials. 3,198,444, 8–3–65, Cl. 242—18.

Moody, Roy A.: *See*—
Caveney, Jack E., and Moody. 3,197,829.

Moog Servocontrols, Inc.: *See*—
Hasne, Robert Z. Laucks, and Treff. 3,198,084.

Moore, Cecil L., to E & R Laboratory Service Corp. Inertia machine. 3,198,124, 8–3–65, Cl. 108—71.

Moore, Ralph W., and J. E. Bowling, Jr., to The Pangborn Corp. Throwing wheel and parts therefor. 3,197,920, 8–3–65, Cl. 51—5.

Moore, Richard N.: *See*—
Frans, Raymond A., and Moore. 3,198,845.

Moore, Robert J.: *See*—
Richards, Harry F., Herbert, and Moore. 3,198,739.

Moore, Roland J., ½ to L. H. King. Corrugated fastener stick. 3,198,057, 8–3–65, Cl. 85—17.

Moore, William C., to Welch Allejn, Inc. Blood sample holder. 3,198,064, 8–3–65, Cl. 88—14.

Moos, Frans, to Schnellpressenfabrik Frankenthal Albert & Cie. Aktiengesellschaft. Multicolor sheet fed rotary printing machine. 3,196,112, 8–3–65, Cl. 101—174.

Moreines, Harold, and H. D. Stewart, to The Bendix Corp. Switching logic means for a discrete servomotor mechanism. 3,199,008, 8–3–65, Cl. 318—33.

Morey, Everett D., and J. Bochan, to General Electric Co. Filter pan particularly suited for use in clothes washers and the like. 3,197,981, 8–3–65, Cl. 68—18.

Morin, Lucille T.: *See*—
Matsuda, Ken, and Morin. 3,198,767.

Morris, George F., to General Dynamics Corp. Automatic gain control apparatus for pulse signal handling systems. 3,199,044, 8–3–65, Cl. 330—134.

Morse, James H., and E. J. Woodbury, to Hughes Aircraft Co. Optical maser system for obtaining short pulses of emitted energy. 3,199,049, 8–3–65, Cl. 331—94.5.

Morse, Stanley H., to Primore Sales, Inc. Valve and swivel coupling for refrigeration systems. 3,198,480, 8–3–65, Cl. 251—148.

Mortimer, George A., and L. Boghetich, to Monsanto Co. Low temperature polymerisation of ethylene in the presence of an aluminum alkyl compound and oxygen containing compound. 3,198,780, 8–3–65, Cl. 260—94.9.

Mortimer, Harry T., to North American Aviation, Inc. Magnetic storage device. 3,199,090, 8–3–65, Cl. 340—174.

Morton Salt Co.: *See*—
Miller, Frank G., and Dittmar. 3,198,608.

Morway, Arnold J., to Esso Research and Engineering Co. Lubricants comprising polyphenyl ethers and mixed metal salts of fatty acids. 3,198,734, 8–3–65, Cl. 252—17.

Mosby, William L., and M.-L. Silva, to American Cyanamid Co. Certain triazolo-naphthoquinone compounds. 3,198,796, 8–3–65, Cl. 260—247.5.

Mosby, William L., and M.-L. Silva, to American Cyanamid Co. Derivatives of benzobistriazoles. 3,198,796, 8–3–65, Cl. 260—247.5.

Moseley, Francis L., to F. L. Moseley Co. Line following apparatus having a light source energised by selected phases of a reference voltage. 3,198,950, 8–3–65, Cl. 250—202.

Moseley, F. L., Co.: *See*—
Holdo, Andres O. 3,198,949.
Moseley, Francis L. 3,198,950.

Motorola, Inc.: *See*—
Dickson, Donald C., Jr. 3,199,004.
Rice, Daniel J., Bartlett, and Mayberry. 3,197,880.

Muehlhausen, Charles H., to Oliver Corp. Bale guiding means. 3,198,356, 8–3–65, Cl. 214—83.3.

Mueller Brass Co.: *See*—
Gray, Robert A., Jr. 3,198,211.

Mueller, Manfred, and W. Schuls, to Agfa Aktiengesellschaft. Automatic camera with self-timer. 3,198,099, 8–3–65, Cl. 95—53.3.

Mueller, Manfred, and W. Schuls, to Agfa Aktiengesellschaft. Combined shutter and diaphragm assembly. 3,198,101, 8–3–65, Cl. 95—63.

Mueller, Otto. Differential transmission. 3,198,035, 8–3–65, Cl. 74—650.

Mulcahy, Harry W., and J. T. Ellis, Jr., to W. H. Miner, Inc. Hydraulic friction draft gear. 3,198,346, 8–3–65, Cl. 213—43.

Müller, Alf J., to Daimler-Benz Aktiengesellschaft. Axle gear construction. 3,198,036, 8–3–65, Cl. 74—710.

Muller, Georges, and A. Poittevin, to Roussel-UCLAF, S.A. A-nor-B-homo-steroids having isoxasole substituent and process of preparation. 3,198,805, 8–3–65, Cl. 260—307.

Muller, Robert: *See*—
Nitzsche, Siegfried, and Muller. 3,198,766.

Mullins, William D., Jr., and W. H. Quick, to North American Aviation, Inc. Stable reference apparatus. 3,198,019, 8–3–65, Cl. 73—505.

Mumford, Eustace H.: *See*—
Denman, Robert R., and Mumford. 3,198,617.

Munk, Benedikt A., to Andrew Corp. Vertical-radiator antenna. 3,199,108, 8–3–65, Cl. 343—718.

Munse, Robert A., to The Bishop and Babcock Corp. Front mounting clip with spring arm. 3,198,232, 8–3–65, Cl. 151—41.75.

Muns, William, to Publication Corp. Apparatus and method for positioning a sheet or film and imposing registering means therein. 3,198,047, 8–3–65, Cl. 83—88.

Murray, Hilton B. Rotary storage rack. 3,198,594, 8–3–65, Cl. 312—238.

Murray, Jerome B.: *See*—
Masse, Michel S., and Murray. 3,199,059.

Murray Mfg. Corp.: *See*—
Norden, Alexander R. 3,198,992.

Murray, Ray P.: *See*—
Harris, Jack R., and Murray. 3,199,031.

Murray, Thomas O. Corrugated wall board. 3,198,342, 8–3–65, Cl. 211—86.

Muth, Friedrich: *See*—
Hilger, Josef, and Muth. 3,198,798.

Muytjens, Mathias J. G.: *See*—
Van den Berg, Cornelis E. P. V., Hendriks, and Muytjens. 3,198,777.

Myers, William D., to Baker Oil Tools, Inc. Multiple zone selective cross-over apparatus. 3,198,257, 8–3–65, Cl. 166—136.

Naito, Kakuji, to Kabushiki Kaisha Seisan Nihon Sha. Integral reclosable bag. 3,198,228, 8–3–65, Cl. 150—3.

Nakano, Zenichi: *See*—
Kobayashi, Tetsuo, and Nakano. 3,198,917.

Nakao, Yoshio: *See*—
Yasumatsu, Katsuharu, and Nako. 3,198,658.

Nalco Chemical Co.: *See*—
Lamont, William A. 3,198,744.
Wolfson, Leonard L. 3,198,005.

Nasimbene, Ernie G., to International Business Machines Corp. Multi-stage binary-coded-decimal to decimal conversion means having parallel input and serial output. 3,199,099, 8–3–65, Cl. 340—347.

Nastas, George, to Ford Motor Co. Automatic choke. 3,198,185, 8–3–65, Cl. 123—119.

National Biscuit Co.: *See*—
Harris, Meade C., and Merrell. 3,198,637.

National Cash Register Co., The: *See*—
Horst, William R., and Coll. 3,198,068.

National Lead Co.: *See*—
Happel, John, and Marsel. 3,198,848.

National Machinery Co., The: *See*—
Haefling, Francis P. 3,197,792.

National Steel Corp.: *See*—
Usmiani, Andrew A., and Wallace. 3,198,147.

Natta, Giulio, G. Crespi, and M. Brussone, to Montecatine, Societa Generale per L'Industria Mineraria e Chimica. Process for preparing and vulcanising olefin copolymers containing unsaturation. 3,198,778, 8–3–65, Cl. 260—88.2.

Needle Industries Ltd.: *See*—
Sanders, Norman T. 3,197,864.

Neenan, Charles J., to The Thomas & Betts Co. Multiple terminal mounting device. 3,199,068, 8–3–65, Cl. 339—198.

Negishi, Hiroshi: *See*—
Akabayashi, Hiroshi, and Negishi. 3,198,823.

Neher, Byron W., to Minnesota Mining and Mfg. Co. Lithographic printing plate with polymer coated metal image. 3,198,110, 8–3–65, Cl. 101—149.2.

Neher Byron W.: *See*—
Kimble, Donal G., McMasters, and Neher. 3,198,632.

Nelson, Fremont H.: *See*—
Bemis, Irving W., Richmond, and Nelson. 3,198,684.

Nelson, George R.: *See*—
Stilley, George W., and Nelson. 3,198,650.

Nelson, Warren L., and C. Salama, to l'Air Liquide Societe Anonyme Poul l'Etude et l'Exploitation des Procedes Georges Claude. Method for the purification of hydrogen. 3,197,970, 8–3–65, Cl. 62—17.

Nemphos, Speros P.: *See*—
Delacretas, Richard E., Nemphos, and Walter. 3,198,775.

Nerlich, Wilhelm, to Deutsche Babcock und Wilcox Dampfkesselwerke AG. Weather shelter for working platform for the erection of factory chimneys. 3,198,285, 8–3–65, Cl. 182—128.

Neustadter, Irving. Restoration tooth and tooth unit. 3,197,867, 8–3–65, Cl. 32—10.

Neway Equipment Co.: *See*—
Rager, Edgar A., Davis, and Day. 3,198,086.

Nickles, Dan C., deceased (F. L. Nickles, executrix). Rotary drill bit nonreturn valve assembly. 3,198,269, 8–3–65, Cl. 175—318.

Nickles, Freddie L.: *See*—
Nickles, Dan C. 3,198,269.

Nida, Edmund A., to Advancecraft Aluminum Industries, Inc. Building partition structure. 3,197,932, 8–3–65, Cl. 52—474.

Nieda, Yoriyuki. Non-contact point relay for A.C. and D.C. having directional and time-limiting properties. 3,198,988, 8–3–65, Cl. 317—27.

Niedzielski, Edmund L., to E. I. du Pont de Nemours and Co. Tetraalkyl lead antiknock blends. 3,198,611, 8–3–65, Cl. 44—69.

Nielson, Eldon D., P. B. Hamilton, M. Riano, D. Rosi, and G. P. Peruzzotti, to Sterling Drug Inc. Microbiological reduction process and steroid products produced thereby. 3,198,809, 8–3–65, Cl. 260—343.2.

Nippert Electric Products Co., The: *See*—
Nippert, Paul W. 3,197,843.
Nippert, Paul W. 3,197,857.
Nippert, Paul W. 3,199,000.

Nippert, Paul W., to The Nippert Electric Products Co. Method of forming a mount of semiconductors. 3,197,843, 8–3–65, Cl. 29—155.5.

Nippert, Paul W., to The Nippert Electric Products Co. Method of producing cup-shaped conductive semi-conductor housing. 3,197,857, 8–3–65, Cl. 29—480.

Nippert, Paul W., to The Nippert Electric Products Co. Mount for semiconductors. 3,199,000, 8–3–65, Cl. 317—234.

Nippon Denso Kabushiki Kaisha: *See*—
Kato, Masumi, and Amano. 3,197,796.

Nippon Telegraph and Telephone Public Corp.: *See*—
Husimi, Kazuo, and Koshiba. 3,198,957.

Nishikawa, Takeo: *See*—
Kimura, Michiomi, and Nishikawa. 3,198,658.

Nissan Kagoku Kogyo Kabushiki Kaisha: *See*—
Akabayashi, Hiroshi, and Negishi. 3,198,823.

Nissim, Samuel, to Bunker-Ramo Corp. Multi-tunnel diode. 3,198,670, 8–3–65, Cl. 148—1.5.

Nissim, Samuel, to The Bunker-Ramo Corp. Bistable circuit. 3,198,958, 8–3–65, Cl. 307—88.5.

Nissley, Clarence D.: *See*—
Amdur, Milton G., Nissley, Risner, and Sansone. 3,198,506.

Nitzsche, Siegfried, and R. Muller, to Wacker-Chemie G.m.b.H. Preparation of silicon polymers employing unsaturated hydrocarbon monomers. 3,198,766, 8–3–65, Cl. 260—46.5.

Noble, Arthur, to Schering Corp. 1,4-pregnadiene-11α,17α, 21-triol-3,20-dione and esters thereof. 3,198,813, 8–3–65, Cl. 260—397.45.

Nock, Joseph A., Jr.: *See*—
Sprowls, Donald O., and Nock. 3,198,676.

Noll, George C.: *See*—
Brekelbaum, Erwin, Bushong, Noll, and Klos. 3,198,345.

Nomine, Gerard: *See*—
Hagemann, Guy, Penasse, and Nomine. 3,198,787.

Nomine, Gerard, R. Bucourt, and A. Pierdet, to Roussel-UCLAF, S.A. 9β-isomers of estradiol, processes of making the same and their utilization. 3,198,707, 8–3–65, Cl. 167—74.

Norda Essential Oil and Chemical Co.: *See*—
Bouthillet, Robert J. 3,198,636.

Norden, Alexander R., to Murray Mfg. Corp. Circuit breaker and panelboard. 3,198,992, 8–3–65, Cl. 317—119.

Norlander, William A., to Clark Equipment Co. Carriage rotating mechanism for lift trucks and the like. 3,198,023, 8–3–65, Cl. 74—91.

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Kruse, James A., and Austin. 3,198,556.
Millsap, Larry R. 3,198,961.
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Kok, Hans, and Van Bergen. 3,199,081.
Kok, Hans, and Van't Slot. 3,199,035.
Manley, Brian W. 3,198,977.
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Savoca, Paul C., and Marasco. 3,198,912.

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Nuzum, Robert E., to Owens-Illinois Glass Co. Tubular forehearth for glass furnace. 3,198,619, 8–3–65, Cl. 65—346.

Nyberg, Ernest W., and A. W. Virta, to Ancraft Products Co. Layout machine. 3,198,164, 8–3–65, Cl. 116—115.

Oatley, Arthur F. Safety device for cooker hobs. 3,198,189, 8–3–65, Cl. 126—24.

O'Brien, Helen T. Slipper cast. 3,198,192, 8–3–65, Cl. 128—83.5.

O'Brien, Thomas F. Piercing valve. 3,198,206, 8–3–65, Cl. 137—315.

Oda, Jim T.: *See*—
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O'Donnell, William R., and W. Steiman, to Valve Corp. of America. Atomizer pump. 3,198,403, 8–3–65, Cl. 222—321.

Oelke, Erwin S., E. H. Kurt, and R. W. Beaumont, to Ingersoll-Rand Co. Double head piston downhole drill. 3,198,264, 8–3–65, Cl. 173—73.

Ogawa, Paul K., to Baker Perkins Inc. Transfer apparatus. 3,198,309, 8–3–65, Cl. 198—24.

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Olson, Ole N.: 33.93% to J. J. Salinas, 33.93% to A. J. Pasmas, 17.86% to Central Indiana Real Estate & Development Corp., 7.14% to Johnston Container Corp., and 7.14% to H. B. Livengood. Revolver cartridge clip. 3,197,907, 8–3–65, Cl. 42—89.

Olson, Robert E., to Packard Instrument Co., Inc. Apparatus for measuring activity levels of radioactive samples. 3,198,949, 8–3–65, Cl. 250—106.

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Colonius, Ray E., and Onsrud. 3,198,080.

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O'Reilly, Royal V., and P. J. Sundborg, to Colorsound Mfg. Co. Inc. White noise generator utilizing center-tapped series connected impedances. 3,199,048, 8–3–65, Cl. 331—69.

Orlando, Matthew, to M. Orlando, and L. Schub. Extrusion apparatus. 3,198,221, 8–3–65, Cl. 141—263.

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Orozco Cosio, Othon. Combination for locks with movable toggle holder and safety dome. 3,197,985, 8–3–65, Cl. 70—419.

Orshansky, Elias, Jr., to American Seal-Kap Corp. of Delaware. Railway truck brake. 3,198,289, 8–3–65, Cl. 188—59.

Osterrath, Hans. Process of working strip. 3,197,995, 8–3–65, Cl. 72—347.

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Ota, Sadayasu, K. Okano, and K. Hayashi, to Kabushiki Kaisha Morita Seisakusho. Dental apparatus. 3,198,574, 8–3–65, Cl. 297—191.

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Ownby, Warren G., to Camco, Inc. Magnetic signaling well tubing nipple. 3,198,255, 8–3–65, Cl. 166—65.

Oxford, Alan J. H., R. T. A. Standford, and J. A. Galloway, to The Plessey Co. Ltd. Receivers for suppressed-carrier single-sideband transmissions of binary-pulse signals. 3,199,030, 8–3–65, Cl. 325—329.

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Parks, William E. Rotatable chance device. 3,198,522, 8–3–65, Cl. 273—142.

Parks, William W., to Vapor Corp. Inline valve. 3,198,204, 8–3–65, Cl. 137—219.

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Patrick, Malcolm W., to Hupp Corp. Ventilating apparatus and method. 3,198,500, 8–3–65, Cl. 263—19.

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Paulson, Carl G.: *See*—
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Payne, John W., to Socony Mobil Oil Co., Inc. Continuous conversion of hydrocarbons with sensitive catalyst. 3,198,729, 8–3–65, Cl. 208—168.

Payne, Paul D., Jr., to Philco Corp. Method of depositing particulate solid material on selected portions of a substrate. 3,198,634, 8–3–65, Cl. 96—35.

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Penberthy, Harvey L. Throatless glass furnace. 3,198,618, 8–3–65, Cl. 65—346.

Penasse, Lucien: *See*—
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Pera, John D., and J. M. Sharpley, to Buckman Laboratories, Inc. Process for the control of sulfate-reducing bacteria. 3,198,733, 8–3–65, Cl. 252—8.55.

Péras, Lucien, to Regie Nationale des Usines Renault. Automatic chain tensioning devices. 3,198,025, 8–3–65, Cl. 74—242.11.

Peretz, Richard, to Ateliers de Constructions Electriques de Charleroi (ACEC). D.C. transistor amplifier including a Zener diode. 3,199,041, 8–3–65, Cl. 330—19.

Perfect Circle Corp.: *See*—
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Perkin-Elmer Corp., The: *See*—
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Perkins, William E., to United States of America, Army. Piezoelectric-powered gun firing mechanism. 3,198,074, 8–3–65, Cl. 89—12.

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Au Claire, Theodore F., Sr., and Becker. 3,197,820.

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Persson, Sven E. Apparatus for machining elongated sections of material. 3,198,052, 8–3–65, Cl. 83—516.

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Peruzzotti, George P.: *See*—
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Peterli, Hans J., to J. R. Geigy A.-G. Polyamine stabilizers for oxidizable organic materials. 3,198,763, 8–3–65, Cl. 260—45.8.

Peters, Alexander, Jr. Apparatus for separating immiscible fluid phases. 3,198,337, 8–3–65, Cl. 210—533.

Peters, Johannes, to Boikow-Entwicklungen Kommanditgesellschaft. Automatically positioned sun mask for sighting devices. 3,198,953, 8–3–65, Cl. 250—237.

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Pfaff, Henry G., Jr., and F. G. Schlosser, to Pfaff and Kendall. Bade for poles. 3,198,296, 8–3–65, Cl. 52—298.

Pfefferle, William C., to Engelhard Industries, Inc. Hydrogen generating system. 3,198,604, 8–3–65, Cl. 23—212.

Pfeil, William C. Dispenser. 3,198,405, 8–3–65, Cl. 222—400.8.

Phaneuf, Roland A., and W. P. Bazinet, Jr., to American Optical Co. Fiber energy conducting device having a heat shrunken tubular fitting. 3,198,059, 8–3–65, Cl. 88—1.

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Pierce, Duane T. Educational word game means. 3,197,891, 8–3–65, Cl. 35—35.

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Pike, Rufus F., and W. W. Thompson, to Luminous Processes, Inc. Potting device. 3,198,169, 8–3–65, Cl. 118—263.

Pines, Arthur N., and E. A. Zientek, to Union Carbide Corp. Silicone-silicate polymers. 3,198,820, 8–3–65, Cl. 260—448.2.

Pistey, John M., to General Electric Co. Panel type illumination device and connector therefor. 3,198,943, 8–3–65, Cl. 240—51.11.

Piteo, Benjamin A., Jr., to General Electric Co. Multiple circuit breaker assembly. 3,198,898, 8–3–65, Cl. 200—50.

Pitney, Robert C. Aerodynamic document handling apparatus. 3,198,515, 8–3–65, Cl. 271—26.

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Plasser, Franz, and J. Theurer. Movable apparatus useful in track grading. 3,198,135, 8–3–65, Cl. 104—7.

Platzer, George E., Jr., and L. P. Gau, to Chrysler Corp. Rear view mirror containing a fluid light controlling medium. 3,198,070, 8–3–65, Cl. 88—77.

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Plessey Co. Ltd., The: *See*—
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Politano, Frank D. Lantern container. 3,198,321, 8–3–65, Cl. 206—1.

Polak, Walter, to General Motors Corp. Handle. 3,198,032, 8–3–65, Cl. 74—545.

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Porter, David B., and R. A. Paine, to Millipore Filter Corp. Method of applying a microporous plastic membrane filter on a support. 3,198,865, 8–3–65, Cl. 264—271.

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Porter, Than R. Stair climbing wheel chair. 3,198,534, 8–3–65, Cl. 280—5.22.

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Powell, Robert P. Piling construction. 3,198,614, 8–3–65, Cl. 61—49.

Powers, Robert A., and D. V. Louzos, to Union Carbide Corp. Electrochemical detector and electrolyte therefor. 3,198,998, 8–3–65, Cl. 317—231.

Powers, Walter H., to Walker Mfg. Co. Muffler. 3,198,284, 8–3–65, Cl. 181—54.

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Price, Edwin A. Tool for sealing an aperture in a wall. 3,198,039, 8–3–65, Cl. 81—15.6.

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Puech, Fernand A. H. P., to Honeywell Inc. Flame detecting devices. 3,198,236, 8–3–65, Cl. 158—28.

Puechberty, Lucien P., to Saunier-Duval. Parcel sorting machine. 3,198,352, 8–3–65, Cl. 214—11.

Purdy, Rolland M., and C. R. Joslyn, to The Bendix Corp. Electrically triggered squib with semi-conductive dissipater for stray currents. 3,198,117, 8–3–65, Cl. 102—28.

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Quick, August W., and H. Lindemann, to Th. Calow & Co. Pump controlled drive system. 3,197,961, 8–3–65, Cl. 60—53.

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Helbig, Walter A., and Woldrich. 3,198,939.
Limberg, Allen L. 3,198,885.
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Rager, Edgar A., W. T. Davis, and F. F. Day, to Neway Equipment Co. Emergency air brake actuating mechanism for truck trailers. 3,198,086, 8–3–65, Cl. 91—170.

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Kallmann, Hartmut P., Rennert, and Chernow. 3,199,086.

Rainey, Horace S. Live bait holding and fish catching means. 3,197,913, 8–3–65, Cl. 43—44.8.

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Ramsel, Charles A., and G. D. Rohweder, to Caterpillar Tractor Co. Hydraulic transmission control. 3,198,027, 8–3–65, Cl. 74—364.

Ramsing, Robert E. V., to Sierra Electric Corp. Electrical device cover plate seal. 3,198,373, 8–3–65, Cl. 220—24.3.

Randall, Kenneth W., to Insley Mfg. Corp. Clutch and brake with resilient operator. 3,198,301, 8–3–65, Cl. 192—17.

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Rannenberg, George C., and R. R. Bawabe, to United Aircraft Corp. Refrigeration system with sublimator. 3,197,973, 8–3–65, Cl. 62—268.

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Gardner, Norman S., and Raul. 3,198,466.

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Rea, Wilton T., and A. W. Roberts, to Bell Telephone Laboratories, Inc. Code permutation error correction and detection. 3,199,076, 8–3–65, Cl. 340—146.1.

Redner, Salomon, to The Budd Co. Direct reading uniaxial photoelastic transducer. 3,198,063, 8–3–65, Cl. 88—14.

Reeber, Rudolf, to G. M. Paff, AG. Stitch control mechanism for sewing machines with combined lower and upper feed. 3,198,154, 8–3–65, Cl. 112—210.

Reerink, Enghert H., P. Westerhof, and H. F. L. Schöler, to North American Philips Co., Inc. 10α methyl, 9β hormonal steroids. 3,198,792, 8–3–65, Cl. 260—239.55.

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Reeves, Wilson A.: *See*—
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Rhodes, William H., J. G. Brenza, and W. D. Winger, to International Business Machines Corp. Computer with table lookup arithmetic unit feature. 3,199,085, 8–3–65, Cl. 340—172.5.

Riano, Moises: *See*—
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Rice, Daniel J., P. G. Bartlett, and B. T. Mayberry, to Motorola, Inc. Solid state compass. 3,197,880, 8–3–65, Cl. 33—204.

Rice, John C. Needle racking apparatus. 3,197,976, 8–3–65, Cl. 66—26.

Rich, Stanley R., to A. H. Rosen. High fidelity sound reproducer. 3,198,890, 8–3–65, Cl. 179—115.5.

Rich, Theodore A., to General Electric Co. Process and apparatus for detecting gas. 3,198,721, 8–3–65, Cl. 204—157.

Richards, Harry F., S. A. Herbert, Jr., and R. J. Moore, to Shell Oil Co. Lubricants and polymeric additives therefor. 3,198,739, 8–3–65, Cl. 252—56.

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Roberts, James S., to Milwaukee Chaplet & Mfg. Co., Inc. Drive mechanism for a stepping switch. 3,198,965, 8–3–65, Cl. 307—141.

Roberts, James S., to Milwaukee Chaplet & Mfg. Co., Inc. Stepping switch system for spacing the steps by non-discrete time intervals. 3,198,966, 8–3–65, Cl. 307—141.

Roberts, James S., to Milwaukee Chaplet & Mfg. Co., Inc. Variable interval stepping switch. 3,198,967, 8–3–65, Cl. 307—141.4.

Roberts, Victor I., and M. H. Riddell, to The Borden Co. Can testing valve. 3,198,004, 8–3–65, Cl. 73—45.1.

Roberts, William L., to United States Steel Corp. Apparatus for hot rolling. 3,197,988, 8–3–65, Cl. 72—12.

Robertson, Anthony E., to Ingersoll-Rand Co. Inertia type pump or compressor. 3,198,425, 8–3–65, Cl. 230—174.

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Robinson, Horace M., and G. W. Middy, to Space Ship, Inc. Variable speed digital converter motor. 3,199,010, 8–3–65, Cl. 318—165.

Robinson, Mayes R. Cultivator tool holder. 3,198,262, 8–3–65, Cl. 172—556.

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Rolfsness, Selmer O. and G. A. Spinning fish bait lure and lure harness. 3,197,911, 8–3–65, Cl. 43—44.2.

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Ropp, Richard C., to Sylvania Electric Products Inc. Tin activated barium-magnesium pyrophosphate phosphors. 3,198,742, 8–3–65, Cl. 252—301.4.

Rose, Edgar, to Kiekhaefer Corp. Fuel supply system for internal-combustion engines. 3,198,180, 8–3–65, Cl. 123—59.

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Royer, Jean, to L'Air Liquide Societe Anonyme pour l'Etudes et l'Exploitation des Procedes Georges Claude. Highly effective thermol insulation. 3,198,687, 8–3–65, Cl. 161—43.

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Sasaki, Isao, to Jet Plastics. Dispenser tray. 3,198,341, 8–3–65, Cl. 211—5.

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Schlegel, Kurt. Machine for making stretchable quilted fabric. 3,198,149, 8–3–65, Cl. 112—118.

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Short, Brooks H., and R. L. Konopa, to General Motors Corp. Distributor having magnetic pick-up coil. 3,198,978, 8–3–65, Cl. 310—70.

Shumaker, Lucky J., to H. H. Robertson Co. Hanger means for sheet metal sectional roofing and flooring. 3,197,926, 8–3–65, Cl. 52—39.

Sidenberg, Stanley S., and F. J. Bandelin, to Blessings, Inc. Sedative tablet and method for producing the same. 3,198,700, 8–3–65, Cl. 167—52.

Sidoti, Joseph E., to S-F-D Laboratories, Inc. Slow wave circuit with flexible support. 3,198,979, 8–3–65, Cl. 315—39.3.

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Sigel, David, to United States of America, Navy. Coincidence gate generator. 3,198,993, 8–3–65, Cl. 317—149.

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Sixel, Gustav-Adolf, to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung. Current feeding to the electrodes of an electric arc furnace. 3,198,869, 8–3–65, Cl. 13—14.

Skillin, Walter F., to Cushman Industries, Inc. Two jaw wedge chuck. 3,198,532, 8–3–65, Cl. 279—110.

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Smith, Harold W., and C. H. Weighted practice golf ball including stabilizer fins. 3,198,526, 8–3–65, Cl. 273—199.

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Smith, Thomas R., to The Maytag Co. Control device for driers. 3,197,885, 8–3–65, Cl. 34—45.

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Beregi, Laszlo G., Hugon, Le Douarec, and Schmitt. 3,198,834.
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Rhodes, William H., Brenza, and Winger. 3,199,085

Winnen, Franklyn E., to Erickson Tool Co. Axially adjustable tool holder. 3,198,079, 8–3–65, Cl. 90—11.

Winter, Duncan K. Ship maneuvering system and control. 3,198,158, 8–3–65, Cl. 114—151.

Winthrop-Atkins Co., Inc.: *See*—
Stolars, Edward M. 3,198,339.

Wirz, Christian J., and R. E. Carlson. Combined stitching and crisscrosser attachment unit for collators. 3,198,511, 8–3–65, Cl. 270—53.

Wise, Edward H., and A. W. Kammerer, Jr., to Baker Oil Tools, Inc. Method and apparatus for completing wells. 3,198,254, 8–3–65, Cl. 166—48.

Wiseman, Arthur W., to The Sheffield Corp. Gaging apparatus. 3,198,003, 8–3–65, Cl. 73—37.9.

Withorn, Benjamin and A. B. Cullins: said Cullins assor. to said Wi'horn Laundry flatwork feeder. 3,198,516, 8–3–65, Cl. 271—45.

Witman, Jack H.: *See*—
Hassel, Lloyd V., and Witman. 3,198,682.

Witrant, Roger L. Metal packing case for transport of fruit. 3,198,372, 8–3–65, Cl. 220—6.

Witt, Albert L., to W. M. Anderson Co. High pressure duct connection. 3,198,561, 8–3–65, Cl. 285—364.

Witte, Ernst, and R. Weihe, to Branse & Co. Perforated film card. 3,197,905, 8–3–65, Cl. 40—158.

Wittmann, Georg, to Badischeanilin- & Soda-Fabrik Aktiengesellschaft. Production of gases containing sulfur dioxide. 3,198,602, 8–3–65, Cl. 23—179.

Woldrich, Ronald J.: *See*—
Helbig, Walter A., and Woldrich. 3,198,939.

Wolfson, Leonard L., to Nalco Chemical Co. Multi-panel slime accumulator. 3,198,005, 8–3–65, Cl. 73—53.

Wood, Barrie: *See*—
Bethell, James R., Hadley, and Wood. 3,198,751.

Wood, Morris E., to Bronson Specialties, Inc. Spinning reel. 3,198,456, 8–3–65, Cl. 242—84.2.

Wood Newspaper Machinery Corp.: *See*—
Buettel, Paul M. 3,198,452.

Wood Shovel and Tool Co., The: *See*—
Ellis, Bill D. 3,198,565.

Wood, William H.: *See*—
Driesch, Theodore W., and Wood. 3,198,308.

Woodbury, Eric J.: *See*—
Morse, James H., and Woodbury. 3,199,049.

Woods, John W., to Sierra Spun Metals, Inc. Loud speaker construction. 3,198,283, 8–3–65, Cl. 181—32.

Woofter, Robert C.: *See*—
Scofield, Robert O., Sr., Seagreaves, and Woofter. 3,198,897.

Workman, Woodrow I., to International Packing Crop. Apparatus for the manufacturing of composite articles. 3,197,811, 8–3–65, Cl. 18—4.

Worst, Joseph C., to General Electric Co. Washing machine. 3,197,982, 8–3–65, Cl. 68—23.

Wortmann, Ernest, to I-T-E Circuit Breaker Co. Interlocking construction for arc chute housing. 3,198,915, 8–3–65, Cl. 200—144.

Wooster, Antony M. Digital position-indicating units adapted for use in apparatus for detecting and setting the position of a movable object, such as a rotatable shaft. 3,198,937, 8–3–65, Cl. 235—154.

Wright, Robert J.: *See*—
Metcalfe, Kenneth A., and Wright. 3,198,649.

Wygant, James C., and E. J. Prill, to Monsanto Co. Bicyclic ester-lactones. 3,198,810, 8–3–65, Cl. 260—343.3.

Wyszomirski, Stanley W., to Kinetic Heating Corp. Heat generator. 3,198,191, 8–3–65, Cl. 126—247.

Yasumatsu, Katsuharu, and Y. Nakao, to Takeda Chemical Industries, Ltd. Method for seasoning foodstuffs and resulting products. 3,198,638, 8–3–65, Cl. 99—140.

Yoder, Jack P., to The Budd Co. Embossed laminate and method of making same. 3,198,688, 8–3–65, Cl. 161—97.

Yogus, William, to The Valeron Corp. Turret nose boring bar. 3,198,037, 8–3–65, Cl. 77—58.

Yosemite Chemical Co.: *See*—
De Lew, Earl R. 3,198,731.

Young, Cornelius J.: *See*—
Di Lello, Dominick J., and Young. 3,198,942.

Youngstown Sheet and Tube Co.: *See*—
Hall, Thomas A. 3,198,148.

Yusa, Joseph J., and R. A. Vyusa. Centrifugal pumps. 3,198,125, 8–3–65, Cl. 103—87.

Zajcew, Mykola, to Engelhard Industries, Inc. Selective hydrogenation of fatty oils. 3,198,816, 8–3–65, Cl. 260—409.

Zalis, Albert A., to Warren Pumps, Inc. Pump. 3,198,182, 8–3–65, Cl. 103—204.

Zalis, Albert A., to Warren Pumps, Inc. Screw pump. 3,198,582, 8–3–65, Cl. 302—14.

Zaphiropoulos, Renn, to Varian Associates. Sorption pump apparatus. 3,197,945, 8–3–65, Cl. 55—269.

Zaslowsky, Joel A.: *See*—
Weilmuenster, Earl A., and Zaslowsky. 3,198,838.

Zeder, John H., Jr., to The Budd Co. Redrawing dies for deep drawing to varying depths. 3,197,996, 8–3–65, Cl. 72—354.

Zeenitz, Bernard L., and L. P. Albro, to Sterling Drug, Inc. Phthalimido- and isoindolinyl-alkylpiperazines and their preparation. 3,198,798, 8–3–65, Cl. 260—268.

Zelle, Karl: *See*—
Reuter, Wolfgang, Sehring, and Zelle. 3,198,698.

Zelle, Karl, F. Adickes, and H. Wick, to Boehringer Ingelheim G.m.b.H. Quaternary ammonium salts of organic carboxylic acid esters of 1-dialkylamino-ethanols-2. 3,198,825, 8–3–65, Cl. 260—473.

Zelle, Karl, and O. Thoma, to Boehringer Ingelheim G.m.b.H. Method of curbing appetite with 1-phenoxy-2-amino-propane. 3,198,701, 8–3–65, Cl. 167—55.

Zeiss Ikon Aktiengesellschaft: *See*—
Köppen, Heinz. 3,198,096.

Zeman, Samuel, and M. F. Scoggin, Jr., to Thiokol Chemical Corp. Pyrotechnic compositions. 3,198,678, 8–3–65, Cl. 149—44.

Zenith Radio Corp.: *See*—
Herkck, Daniel J., and Van Berkum. 3,199,045.

Zettler, William D.: *See*—
Schurger, Garner H., and Zettler. 3,198,078.

Zick, Erwin W. Grass-erecting attachment for a lawn mower. 3,197,951, 8–3–65, Cl. 56—255.

Zientek, Eugene A.: *See*—
Pines, Arthur N., and Zientek. 3,198,820.

Zilgalvis, Ansis: *See*—
Benson, Robert, and Zilgalvis. 3,198,982.

Ziolkowski, Robert L.: *See*—
Atkins, Carl E., and Ziolkowski. 3,199,033.

Zippel, Georg A. Apparatus for effecting the shifting of shelf or cabinet units for filing systems. 3,198,592, 8–3–65, Cl. 312—198.

Zumbiel, C. W., Co.: *See*—
Creelman, Edmund W. 3,198,379.

CLASSIFICATION OF PATENTS

ISSUED AUGUST 3, 1965

NOTE.—First number, class; second number, subclass; third number, patent number

2— 3	3,197,784	29—470.1	3,197,855	55— 48	3,197,941	74— 60	3,198,022	95— 63	3,198,101	117—100	3,198,656
	3,197,785		3,197,856	71	3,197,942	91	3,198,023	64	3,198,102	101	3,198,657
167	3,197,786	480	3,197,857	154	3,197,943	125	3,198,024	76	3,198,103	105.2	Re.25,829
171	3,197,787	494	3,197,858	162	3,197,944	242.11	3,198,025	77.5	3,198,104	119.2	3,198,658
3— 1	3,197,788	501	3,197,859	269	3,197,945	337.5	3,198,026	96— 1	3,198,632	130	3,198,659
5—110	3,197,789	509	3,197,860	527	3,197,946	364	3,198,027	28	3,198,633	139.4	3,198,660
8— 18	3,198,595	528	3,197,861	56— 1	3,197,947	409	3,198,028	35	3,198,634	142	3,198,661
39	3,198,596		3,197,862	25.4	3,197,948	459	3,198,029	99— 2	3,198,635	213	3,198,662
111	3,198,597	30— 43.6	3,197,864	202	3,197,949	493	3,198,030	35	3,198,636	118— 11	3,198,166
116	3,197,790	91	3,197,865	255	3,197,950	504	3,198,031	86	3,198,637	48	3,198,167
159	3,197,791	32— 5	3,197,866		3,197,951	545	3,198,032	140	3,198,638	202	3,198,168
10—139	3,197,792	10	3,197,867	328	3,197,952	625	3,198,033	186	3,198,639	263	3,198,169
12— 1	3,197,793	22	3,197,868	57—147	3,197,953		3,198,034	100— 3	3,198,105	627	3,198,170
13— 14	3,198,869	26	3,197,869	59— 78.1	3,197,954	650	3,198,035	188	3,198,106	119— 1	3,198,171
16	3,198,870	64	3,197,870	60— 30	3,197,955	710	3,198,036		3,198,107	23	3,198,172
21	3,198,871	33— 18	3,197,871		3,197,956	75— 1	3,198,622	257	3,198,108	29	3,198,173
15—142	3,197,794	75	3,197,872	35.4	3,197,957	41	3,198,623	101— 93	Re.25,830	61	3,198,174
160	3,197,795	147	3,197,873	35.54	3,197,959	46	3,198,624	129	3,198,109	109	3,198,175
250.17	3,197,796	158	3,197,874	35.6	3,197,958	68	3,198,625	149.2	3,198,110	122— 26	3,198,176
268	3,197,797	169	3,197,875	52	3,197,960	122.5	3,198,626	170	3,198,111	236	3,198,177
320	3,197,798		3,197,876	53	3,197,961		3,198,627	174	3,198,112	498	3,198,178
529	3,197,799		3,197,877	97	3,197,962		3,198,628	208	3,198,113	123— 51	3,198,179
547	3,197,800	174	3,197,878	61— 5	3,197,963		3,198,629	228	3,198,114	59	3,198,180
552	3,197,801		3,197,879	35	3,197,964	124	3,198,630	316	3,198,115		3,198,181
16— 43	3,197,802	204	3,197,880	45	3,197,965	128	3,198,631	377	3,198,116	90	3,198,182
111	3,197,803		3,197,881		3,197,966	77— 58	3,198,037	102— 28	3,198,117		3,198,183
128	3,197,804	222	3,197,882	49	3,198,614	81— 9.5	3,198,038	70.2	3,198,118	98	3,198,184
	3,197,805	34— 10	3,197,883	53.68	3,197,967	15.6	3,198,039	103— 1	3,198,119	119	3,198,185
159	3,197,806	45	3,197,884	63	3,197,968	55	3,198,040	5	3,198,120		3,198,186
172	3,197,807		3,197,885	62— 5	3,197,969	129	3,198,041	11	3,198,121	127	3,198,187
17— 1	3,197,808	90	3,197,886	17	3,197,970	82— 31	3,198,042	25	3,198,122	188	3,198,188
11.1	3,197,809	164	3,197,887	48	3,197,971	53.1	3,198,043	49	3,198,123	126— 24	3,198,189
18— 1	3,197,810	35— 29	3,197,888	55	3,197,972	83— 10	3,198,044	71	3,198,124	101	3,198,190
4	3,197,811	35	3,197,889	268	3,197,973	13	3,198,045	87	3,198,125	247	3,198,191
8	3,197,812		3,197,890	320	3,197,974	24	3,198,046	118	3,198,126	128— 83.5	3,198,192
	3,197,813		3,197,891	498	3,197,975	33	3,198,047	126	3,198,127	198	3,198,193
12	3,197,814	37	3,197,892	65— 2	3,198,615	36	3,198,048	150	3,198,128	272	3,198,194
	3,197,815	45	3,197,893	169	3,198,616	98	3,198,049	162	3,198,129	419	3,198,195
19	3,197,816	37—142	3,197,894	207	3,198,617	201.12	3,198,050		3,198,130	132— 9	3,198,196
20— 19	3,197,817	143	3,197,895	346	3,198,618	446	3,198,051		3,198,131	73	3,198,197
42	3,197,818	38— 14	3,197,896		3,198,619	516	3,198,052	204	3,198,132	76.4	3,198,198
52.2	3,197,819	41	3,197,897	66— 26	3,197,976	84— 1.04	3,198,872	223	3,198,133	134— 21	3,198,663
63	3,197,820	40— 2	3,197,898	140	3,197,977	243	3,198,053	231	3,198,134	122	3,198,199
69	3,197,821	21	3,197,899	169	3,197,978	380	3,198,054	104— 7	3,198,135	135— 1	3,198,200
92	3,197,822	78	3,197,900	68— 12	3,197,979	443	3,198,055	148	3,198,136	136— 78	3,198,665
	3,197,823		3,197,901		3,197,980	85— 8.8	3,198,056	105— 26	3,198,137	86	3,198,664
22— 84	3,197,824	130	3,197,902	18	3,197,981	17	3,198,057	49	3,198,138		3,198,666
93	3,197,825		3,197,903	23	3,197,982	84	3,198,058	145	3,198,139	122	3,198,667
95	3,197,826		3,197,904	24	3,197,983	86— 1	3,198,059	150	3,198,140	130	3,198,668
113.5	3,197,827	158	3,197,905	70—271	3,197,984		3,198,060	106— 38.3	3,198,640	137— 1	3,198,201
216.5	3,197,828	42— 69	3,197,906	419	3,197,985	14	3,198,061	47	3,198,641	85	3,198,202
23— 14.5	3,198,598	89	3,197,907	71— 1	3,198,620		3,198,062	54	3,198,642	118	3,198,203
	3,198,599	43— 22	3,197,908	2.5	3,198,621		3,198,063	59	3,198,643	219	3,198,204
88	3,198,600	42.37	3,197,909	72— 9	3,197,986		3,198,064	93	3,198,644	270	3,198,205
121	3,198,601	42.51	3,197,910	11	3,197,863	24	3,198,065	170	3,198,645	315	3,198,206
179	3,198,602	44.2	3,197,911	12	3,197,988		3,198,066	292	3,198,646	458	3,198,207
200	3,198,603	44.4	3,197,912	104	3,197,989		3,198,067	308	3,198,647	480	3,198,208
212	3,198,604	44.8	3,197,913	114	3,197,987		3,198,068	107— 14	3,198,141	565	3,198,209
252	3,198,605	44.91	3,197,914	131	3,197,990		3,198,069	30	3,198,142	616.5	3,198,210
273	3,198,606	57.5	3,197,915	198	3,197,991	77	3,198,070	108— 28	3,198,143	625.37	3,198,212
	3,198,607	66	3,197,916	203	3,197,992	98	3,198,071	48	3,198,144	625.4	3,198,211
300	3,198,608	135	3,197,917	230	3,197,993	89— 1.7	3,198,072	59	3,198,145	138— 31	3,198,213
24— 16	3,197,829	44— 69	3,198,611	263	3,197,994		3,198,073	110— 40	3,198,146	37	3,198,214
	3,197,830		3,198,612	347	3,197,995	12	3,198,074	99	3,198,147	139—122	3,198,215
	3,197,831	71	3,198,613	354	3,197,996	33	3,198,075		3,198,148	302	3,198,216
78	3,197,832	46—103	3,197,918	377	3,197,997	128	3,198,076	112—118	3,198,149	140— 3	3,198,217
146	3,197,833	47— 46	3,197,919	385	3,197,998	174	3,198,077	134	3,198,150	93.4	3,198,218
194	3,197,834	51— 9	3,197,920	401	3,197,999	90— 11	3,198,078	152	3,198,151	112	3,198,219
263	3,197,835	103	3,197,921	73— 19	3,198,000		3,198,079	153	3,198,152	119	3,198,220
	3,197,836	163	3,197,922	23.1	3,198,001	13.5	3,198,080	209	3,198,153	141—263	3,198,221
28— 1	3,197,837	170	3,197,923	35	3,198,002	24	3,198,081	210	3,198,154	143— 32	3,198,222
43	3,197,838	219	3,197,924	37.9	3,198,003	91— 1	3,198,082	113—121	3,198,155		3,198,223
29— 25.3	3,197,839	236	3,197,925	45.1	3,198,004		3,198,083	114— 29	3,198,156	144— 2	3,198,224
34	3,197,840	52— 39	3,197,926	53	3,198,005	37	3,198,084	123	3,198,157	3	3,198,225
96	3,197,841	81	3,197,927	63	3,198,006	142	3,198,085	151	3,198,158	209	3,198,226
149.5	3,197,842	122	Re.25,827	69	3,198,007	170	3,198,086	202	3,198,159	239	3,198,227
155.5	3,197,843	157	3,197,928	182	3,198,008	189	3,198,087	218	3,198,160	148— 1	3,198,669
	3,197,844	241	3,197,929	211	3,198,009	420	3,198,088	115— 14	3,198,161	1.5	3,198,670
	3,197,845	298	3,198,296	313	3,198,010	92— 94	3,198,089	17	3,198,162	1.6	3,198,671
177	3,197,846	378	3,197,930	337.5	3,198,011	121	3,198,090	116—114	3,198,163	6.14	3,198,672
182.3	3,197,847	455	3,197,931	362	3,198,012	93— 37	3,198,091	115	3,198,164	6.15	3,198,673
196	3,198,609	474	3,197,932	398	3,198,013	58	3,198,092	115.5	3,198,165		3,198,674
197	3,198,610	538	3,197,933	419	3,198,014	58.2	3,198,093	117— 17.5	3,198,648	13	3,198,675
203	3,197,848	595	3,197,934	420	3,198,015	94— 34	3,198,094	37	3,198,649	159	3,198,676
	3,197,849	718	3,197,935	421	3,198,016	95— 4.5	3,198,095	43	3,198,650	149— 19	3,198,677
243.5	3,197,850	53— 29	3,197,936		3,198,017	10	3,198,096	47	3,198,651	44	3,198,678
421	3,197,851	48	3,197,937	422	3,198,018	11	3,198,097	62.1	3,198,652	150— 3	3,198,228
446	3,197,852	135	3,197,938	505	3,198,019	44	3,198,098	70	3,198,653	151— 21	3,198,229
450	3,197,853	180	3,197,939	74— 2	3,198,020	53.3	3,198,099	75	3,198,654		3,198,230
455	3,197,854	329	3,197,940	5	3,198,021	63	3,198,100	100	3,198,655	41.73	3,198,231

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

August 3, 1965 Volume 817 Number 1

TRADEMARKS

NOTICES

Annual Index of Patents

The 1964 edition of the Annual Index of Patents has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $6.75.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 252,350 ("SEVEN UP"), The Howdy Company, Carbonated, nonalcoholic, noncereal, maltless beverages sold as soft drinks and syrups, extracts, and flavors used in making the same; **Reg. No. 331,345** (7 UP AND DESIGN), same; **Reg. No. 399,995** (7 UP), The Seven-Up Company, Carbonated, nonalcoholic, noncereal, maltless beverages, sold as soft drinks; **Reg. No. 406,990** (7 UP AND DESIGN), same; **Reg. No. 406,182**, same; **Reg. No. 418,191**, same; **Reg. No. 595,639**, same; **Reg. No. 632,795** ("FRESH UP" WITH 7 UP AND DESIGN), same, Carbonated soft drinks; **Reg. No. 639,760** (7 UP GUSTA A SU GUSTO AND DESIGN), same; **Reg. No. 754,300** (SEVEN UP), same, Candy, filed Feb. 15, 1965, D.C., E.D. Mich. (Detroit), Doc. 26533, *The Seven Up Company* v. *White Bear Ice Cream Co.* Final consent judgment; trademarks held valid and infringed; defendant enjoined June 14, 1965.

Reg. No. 331,345. (See Reg. No. 252,350.)

Reg. No. 372,500 (LIFE AND DESIGN), Time, Incorporated, Weekly magazine and for pamphlets, containing material taken from such magazine; **Reg. No. 565,900** (LIFE), same, Weekly magazine, filed Oct. 27, 1964, D.C., S.D.N.Y., Doc. 64/3256, *Time, Incorporated* v. *Bell Records, Inc.* Stipulation and order of discontinuance without prejudice Mar. 2, 1965.

Reg. No. 378,389 (WHO'S WHO IN AMERICA), The A. N. Marquis Company, Publications in the nature of a directory published approximately once every two years; **Reg. No. 506,802** (WHO'S WHO IN COMMERCE AND INDUSTRY), same, Publication in the nature of a directory published from time to time; **Reg. No. 696,096** (WHO'S WHO IN THE SOUTH AND SOUTHWEST), Marquis-Who's Who, Inc., Publications in the nature of a directory published from time to time; **Reg. No. 696,099** (WHO'S WHO IN THE MIDWEST), same; **Reg. No. 696,100** (WHO'S WHO IN THE WEST), same; **Reg. No. 696,101** (WHO'S WHO IN THE EAST), same; **Reg. No. 729,754** (WHO'S WHO OF AMERI-

CONDITION OF TRADEMARK APPLICATIONS AS OF JUNE 30, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] ---------- 16,698
Date of oldest new application ---------- Jan. 2, 1965
Date of oldest amended application ---------- Jan. 4, 1965

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION

	Oldest Application	
	New	Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	1-2-65	1-4-65
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-4-65	1-4-65
Renewals (All Classes)	6-8-65	6-28-65
Sec. 12 (c) Publications (All Classes)	6-16-65	-------

Applications filed during the month of June 1965—2,486

Registrations Issued ---------- 358—No. 793,496 to No. 793,853
Renewals Issued ---------- 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

CAN WOMEN), **same, filed** Dec. 17, 1963, D.C., S.D.N.Y., Doc. 63/3654, *Marquis-Who's Who, Inc.* v. *Who's Who in Advertising, Inc.* Order of dismissal Mar. 4, 1965.

Reg. No. 399,995. (See Reg. No. 252,350.)

Reg. No. 403,990. (See Reg. No. 252,350.)

Reg. No. 406,182. (See Reg. No. 252,350.)

Reg. No. 418,191. (See Reg. No. 252,350.)

Reg. No. 508,802. (See Reg. No. 378,389.)

Reg. No. 519,950 (FRITOS), The Frito Company, Candy, shelled salted peanuts and corn chips; **Reg. No. 683,396** (TATOS), same, Potato chips, **filed** May 24, 1961, D.C., W.D. Okla. (Oklahoma City), Doc. 9292, *The Frito Company* v. *Morton Foods, Inc. et al.* Stipulation and order of dismissal Mar. 24, 1965.

Reg. No. 538,834 (WADE RAIN AND DESIGN), R. M. Wade & Co., Equipment for irrigation systems—namely, sprinklers, metal pipe, metal pipe couplers, check valves, and lift valves, **filed** June 17, 1960, D.C., S.D.N.Y., Doc. 60/2382, *R. M. Wade & Co.* v. *Solcoor, Inc.* Order of dismissal Mar. 3, 1965. Order, dated Mar. 3, 1965, vacated—consent decree; defendant enjoined Apr. 2, 1965.

Reg. No. 565,060. (See Reg. No. 372,500.)

Reg. No. 577,125(a) (SINGER), The Singer Manufacturing Company, Renting of sewing machines, and for engineering and consulting services to the needle-trade industries, etc.; management engineering, etc.; service maintenance and repair of home appliances, etc.; fashion services, etc; and teaching of hand and machine sewing in classrooms maintained and with equipment owned and through the use of text material especially prepared by Singer Sewing Machine Company; **Reg. No. 583,337,** same, Thermoplastic material in the form of sheets and strips, dust bags for vacuum cleaners and receptacles for lubricants, traveling cases, etc., **filed** Mar. 3, 1965, D.C., N.D.N.Y. (Utica), Doc. 65–CV–95, *The Singer Company* v. *Modern Sewing Center.*

Reg. No. 577,125(b); **Reg. No. 786,974** (SINGER), The Singer Co., Dust bags for vacuum cleaners and oil dispensing cans, steel wool pads, floor and furniture wax and polish, etc., **filed** June 11, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c955, *The Singer Company* v. *Griffin Sewing Machine Co.*

Reg. No. 583,337. (See Reg. No. 577,125(a).)

Reg. No. 595,639. (See Reg. No. 252,350.)

Reg. No. 600,018 (PLAYBOY), HMH Publishing Co., Inc., Monthly magazine; **Reg. No. 610,968** ("PLA-BOY"), Guy Barnette & Company, Inc., Boats and boat transporting trailers; **Reg. No. 645,386** (PLAYBOY), HMH Publishing Co., Inc., Cuff links; **Reg. No. 652,412,** same, Mechanically grooved phonograph records; **Reg. No. 676,726,** same, Compilations of stories issued anually, and calendars; **Reg. No. 737,313** (PLAYBOY TOURS), same, Arranging and conducting travel tours and arranging hotel accommodations and entertainment for tourists; **Reg. No. 744,930** (PLAYBOY), Leaf Brands, Inc., Candy; **Reg. No. 746,367** (THE PLAYBOY CLUB), HMH Publishing Co., Inc., Operating private social clubs which feature food, drinks, and entertainment; **Reg. No. 755,301** (PLAYBOY), same, Cigarette lighters; **Reg. No. 764,820,** same, Perfume; **Reg. No. 769,702,** same, Operation of establishments which feature food, drinks and entertainment; **Reg. No. 772,131,** same, Cigarettes; **Reg. No. 773,132,** same, Puppets, **filed** Mar. 4, 1965, D.C., S.D.N.Y., Doc. 65/661, *HMH Publishing Co., Inc.* v. *Inter-Ocean Merchandising Corp. et ano.*

Reg. No. 610,968. (See Reg. No. 600,018.)

Reg. No. 632,795. (See Reg. No. 252,350.)

Reg. No. 639,769. (See Reg. No. 252,350.)

Reg. No. 645,386. (See Reg. No. 600,018.)

Reg. No. 652,412. (See Reg. No. 600,018.)

Reg. No. 676,726. (See Reg. No. 600,018.)

Reg. No. 683,396. (See Reg. No. 519,950.)

Reg. No. 696,098. (See Reg. No. 378,389.)

Reg. No. 696,099. (See Reg. No. 378,389.)

Reg. No. 696,100. (See Reg. No. 378,389.)

Reg. No. 696,101. (See Reg. No. 378,389.)

Reg. No. 716,535 (INVISINET), Delightform Foundation, Inc., Brassieres and girdles, **filed** Mar. 3, 1965, D.C., S.D.N.Y., Doc. 65/646, *Delightform Foundations, Inc.* v. *Benjamin & Johnes, Inc.*

Reg. No. 729,754. (See Reg. No. 378,389.)

Reg. No. 737,313. (See Reg. No. 600,018.)

Reg. No. 744,930. (See Reg. No. 600,018.)

Reg. No. 746,367. (See Reg. No. 600,018.)

Reg. No. 747,088 (RESTOR), Buty-Wave Products Co., doing business as Rainbow Beauty Supply Co., Permanent hair-waving lotions, liquid cream hair pack, nail treatment preparation, etc., **filed** Nov. 12, 1964, D.C. Colo. (Denver), Doc. 8861, *Buty-Wave Products Co.* v. *Hy-Grade Laboratories, Inc.* Dismissed on stipulation Feb. 24, 1965.

Reg. No. 752,299 (TAPPER), Reynolds Metals Company, Hollow pressurizable aluminum keg-like containers for transporting and dispensing beverages, **filed** Nov. 16, 1964, D.C. Md. (Baltimore), Doc. 15976, *Reynolds Metals Company* v. *National Can Corporation.* Stipulation and order of dismissal without prejudice Mar. 4, 1965.

Reg. No. 754,309. (See Reg. No. 252,350.)

Reg. No. 755,301. (See Reg. No. 600,018.)

Reg. No. 764,820. (See Reg. No. 600,018.)

Reg. No. 769,702. (See Reg. No. 600,018.)

Reg. No. 772,131. (See Reg. No. 600,018.)

Reg. No. 773,132. (See Reg. No. 600,018.)

Reg. No. 786,974. (See Reg. No. 577,125(b).)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 193,678. Kamweld Products Co., Inc., Norwood, Mass., assignee of Stanley J. Kaminsky, d.b.a. Kamweld Products, Co., Norwood, Mass. Filed May 18, 1964.



Class 21—Electrical Apparatus, Machines, and Supplies

For Electrically Operated Control Units With Safety Switch for Regulating the Flow of Inert Gas and/or Compressed Air to One or Two Thermoplastic Welders.

First use Dec. 12, 1963.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Hot Air Guns and Welding Equipment for Plastics.

First use Apr. 25, 1963, on welding equipment for plastics.

SN 198,096. Control Data Corporation, South Minneapolis, Minn., assignee of TRG Incorporated, Melville, N.Y. Filed July 17, 1964.

TRG

Class 21—Electrical Apparatus, Machines, and Supplies

For Lasers, Parts Thereof; Q-Switches; Photo-Diodes; Laser Welders and Micro-Welders; Low Noise Radio Receivers; Parametric Frequency Amplifiers; Klystron Power Supplies; VLF, LF, HF Antennas; Ferrite Devices—Namely, Isolators, Modulators, Reciprocal Switches, Circulators, Drivers, etc.; Waveguide Components—Namely, Standing Wave Detectors, Mode Transitions, Directional Couplers, Filters, Rotary Joints, Bends and Terminations, etc.

Class 26—Measuring and Scientific Appliances

For Ballistic Themopiles; Training Simulators; Sonar Components and Systems; Radio Direction Finding Equipment; Airborne Radio Navigation Equipment; and Radio Frequency Test and System Components—Namely, Precision Attenuators, Phase Shifters, Three and Four Port Manual Switches, Frequency Measuring and Generating Devices and Components Thereof, Directional Couplers, Hybrid Rings, E/H Tuners, Slotted Lines, Crystal Holders and Sliding Shorts.

Class 44—Dental, Medical, and Surgical Appliances

For Biological Laser Cauterizers.

First use Jan. 26, 1960.

SN 199,452. Chicago Printed String Co., Chicago, Ill. Filed Aug. 7, 1964.

TIE-TIE

Owner of Reg. Nos. 305,447, 597,473, and others.

Class 7—Cordage

For Cordage Constructed From Cotton Yarn Threads, Rayon Threads, and Silk Threads.

First use on or about July 1, 1931.

Class 37—Paper and Stationery

For Decorative Wrapping Paper, and Enclosure Cards Having Blank Spaces Thereon To Be Filled In.

First use in about February 1933.

Class 38—Prints and Publications

For Printed Gift Seals and Printed Enclosure Cards Adapted To Be Used in Connection With Gifts or the Like.

First use in about February 1933.

SN 203,367. Alexandre-Louis Raimon, Paris, France. Filed Oct. 6, 1964.

ALEXANDRE



Class 29—Brooms, Brushes, and Dusters

For Hair Brushes.

Class 51—Cosmetics and Toilet Preparations

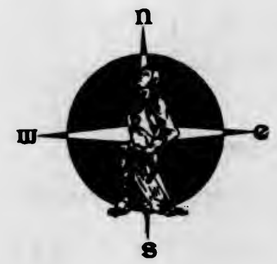
For Cologne.

Class 52—Detergents and Soaps

For Shampoo.

First use May 6, 1960; in commerce July 30, 1964.

SN 206,805. Rolen Diversified Investors, Inc., Stockton, Calif. Filed Nov. 24, 1964.



Class 21—Electrical Apparatus, Machines, and Supplies

For Electronic Equipment, Particularly Loudspeakers.

First use Apr. 6, 1964.

Class 22—Games, Toys, and Sporting Goods

For Board-Type Parlor Games.
First use Apr. 15, 1964.

SN 207,169. Trina, Inc., Fall River, Mass. Filed Nov. 30, 1964.

TRINA

Owner of Reg. No. 610,842.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 196,922. UCB (Union Chimique-Chemische Bedrijven), Societe Anonyme, Saint-Gilles, near Brussels, Belgium. Filed July 1, 1964.



Priority claimed under Sec. 44(d) on Belgian Reg. No. 100,825, dated Jan. 6, 1964. No claim is made to the expression "Elastomere."

For Synthetic Fibers.

SN 205,786. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Nov. 9, 1964.

DELCRON

For Man-Made Fibers and Filaments for Generalized Use in the Industrial Arts.
First use Sept. 29, 1964.

SN 209,817. Taylor Corporation, Valley Forge, Pa. Filed Jan. 12, 1965.

TAYLORWOUND

Owner of Reg. Nos. 719,812 and 735,101.
For Reinforced Plastic Casings, Tubes, and Sheets for General Use in the Industrial Arts.
First use Dec. 24, 1964.

Class 2—Receptacles

SN 181,652. Lincoln Metal Products Corporation, Brooklyn, N.Y. Filed Nov. 21, 1963.

BEAUTY GUARD

For Transparent Plastic Protective Sheet Applied to Bread Boxes, Paper, and Aluminum Foil Dispensers, and Step-On Garbage Cans.
First use Sept. 30, 1963.

Class 4—Abrasives and Polishing Materials

SN 209,527. Metal Blast, Inc., Cleveland, Ohio. Filed Jan. 7, 1965.

SOLID STATE

For Ferrous Abrasive Shot and Grit.
First use during or about June 1964.

Class 5—Adhesives

SN 205,456. Precision Technical Products, Incorporated, New York, N.Y. Filed Nov. 3, 1964.

QUIK-HOLD

For Carpet Seaming Adhesive.
First use on or about June 15, 1964.

SN 209,964. Tape, Inc., Green Bay, Wis. Filed Jan. 14, 1965.

CARTON MASTER

For Carton Sealing Gummed Tape.
First use on or about Sept. 14, 1964.

SN 210,055. Sanford Ink Company, Bellwood, Ill. Filed Jan. 15, 1965.

POGO

Owner of Reg. No. 702,760.
For Paste.
First use February 1962.

SN 210,354. Practical Products Laboratories, Inc., Sherman Oaks, Calif. Filed Jan. 21, 1965.

STAYE

For Adhesive Material for Holding Wearing Apparel.
First use on or before May 21, 1964.

Class 6—Chemicals and Chemical Compositions

SN 177,973. Dexter Chemical Corporation, New York, N.Y. Filed Sept. 30, 1963.

KOPANEX

For Chemical Compositions Which Provide Detergent, Dispersing, and Wetting Actions and Which Are Used in the Manufacture of Pulp and Paper Including the Coating of Paper.
First use June 15, 1959.

SN 190,873. Claire Manufacturing Company, Chicago, Ill. Filed Apr. 13, 1964.

DUST UP

For Household Oil-Base Aerosol Spray Preparation Used as a Dressing for Dust Cloths and Mops.
First use November 1956.

SN 196,032. W. R. Grace & Co., Cambridge, Mass. Filed June 19, 1964.

HORNOLITH

Owner of Reg. Nos. 721,763 and 757,139.
For Liquid Chemical Hardener for Concrete Floors.
First use 1949.

SN 196,033. W. R. Grace & Co., Cambridge, Mass. Filed June 19, 1964.

HORNCURE

Owner of Reg. Nos. 721,763 and 757,139.
For Chemical Compound for Curing Concrete.
First use 1949.

SN 196,036. W. R. Grace & Co., Cambridge, Mass. Filed June 19, 1964.

HORNSTONE

Owner of Reg. Nos. 721,763 and 757,139.
For Crystalline Chemical Hardener for Concrete Floors.
First use 1945.

SN 199,511. Tempil Corporation, New York, N.Y. Filed Aug. 7, 1964.

Tempilstiks®

For Temperature Indicating Pencils and Crayons.
First use June 12, 1941.

SN 200,893. Apollo Chemical Corp., Clifton, N.J. Filed Aug. 31, 1964.

COALTROL

For Additive for Use as a Slag Inhibitor and Corrosion Preventative.
First use June 10, 1964.

SN 202,846. Puma Corporation, East Farmingdale, N.Y. Filed Sept. 28, 1964.

C-15 AQUA-SHED

For Additive in Electro-Plating Process To Inhibit Rust and Prevent Water Stains.
First use Aug. 8, 1961.

SN 208,084. Cambridge Chemical Products, Inc., Detroit, Mich. Filed Dec. 14, 1964.

CAMCCULT TABS

Without waiving its common law rights and for the purposes of this registration, applicant disclaims the word "Tabs" apart from the mark as shown. Owner of Reg. No. 618,454.
For Test for Occult Blood, for Laboratory Use Only.
First use Nov. 16, 1964.

SN 208,128. Semco Sales & Service, Inc., Los Angeles, Calif. Filed Dec. 14, 1964.

SEMCO

Owner of Reg. Nos. 664,046 and 702,866.
For Liquid Chemical Compound for Detecting Leaks.
First use Feb. 9, 1959.

SN 208,245. Emulsion Engineering, Inc., Melrose Park, Ill. Filed Dec. 16, 1964.

GLYCEROL MONOSERENDIPITY

The term "Glycerol" is disclaimed apart from the mark as shown.
For Glycerol Monostearate.
First use on or about Nov. 16, 1964.

SN 208,845. Penguin Associates, Inc., Malvern, Pa. Filed Dec. 24, 1964.

SENTRY

For Chemical Spray for Contact With the Eyes of an Assailant To Induce Temporary Blindness and Staining of the Skin for Identification of the Assailant.
First use Dec. 9, 1964.

Class 7—Cordage

SN 207,568. Chicago Printed String Co., Chicago, Ill. Filed Dec. 7, 1964.

Danette

For Rayon Acetate Nonwoven Ribbon.
First use on or about Oct. 24, 1964.

Class 11—Inks and Inking Materials

SN 209,481. Bowers Printing Ink Company, Chicago, Ill. Filed Jan. 7, 1965.

LETTERSET

For Printing Ink.
First use May 7, 1963.

SN 210,364. Royal McBee Corporation, New York, N.Y. Filed Jan. 21, 1965.

REDDI-PAK

For Carbon Ribbons.
First use Dec. 14, 1964.

Class 12 — Construction Materials

SN 191,224. Thermalouver Corporation, Dearborn, Mich. Filed Apr. 15, 1964.

THERMALOUVER

For Sun Control Insulated Glass Members Consisting of Sealed Glass Glazing Units Containing Fixed or Adjustable Coated Louvers Between Two Panes of Clear Glass.
First use Mar. 25, 1964.

SN 193,241. Weyerhaeuser Company, Tacoma, Wash. Filed May 11, 1964.

4-SQUARE

Owner of Reg. Nos. 427,517 and 427,519.
For Rough and Dressed Lumber, Millwork, Shakes and Shingles, Wooden Stepping, Siding, Plywood, and Laminated Wooden Rafters.
First use on or about Dec. 3, 1926.

SN 193,640. Dominion Tar & Chemical Company, Limited, Montreal, Quebec Canada. Filed May 18, 1964.

DOMTAR

Owner of Canadian Reg. No. 131,955, dated July 19, 1963.
For Lumber, Timber, Plywood, Veneers, Poles, Ties, Piling, Composition Assemblies Made in Whole or Part Thereof, Laminated Structural Members, All the Foregoing Goods Being Either Untreated or Impregnated To Protect the Same Against Mildew, Decay, Fungus, Insects or Other Animal Attack and the Ignition and Spread of Fire; Aggregates, Sand, and Road Binding Solutions; Ducts and Conduits for Cables, Drainage and Irrigation; Insulating and Sound-Proofing Tiles, Wallboards and Mouldings, Acoustic Plaster and Sound Deadeners, Mineral Wool and Other Thermal Insulating Materials; Preparations for Finishing Walls and Plasters; Asphalt Shingles, Siding, Roll Roofing, Felts and Sheathings, Laminated Paper Materials, Waterproof Papers, Building and Insulating Papers, Cement for Building and Decoration, Lightweight Concrete in Block and Slab Form, Concrete Joists and Poured Precast Concrete Walls, Ceilings and Roofs; Fill for Roofs, Floors and the Like; Roof, Wall and Floor Coatings Used in the Construction Industry, Damp and Waterproofing Compounds and Emulsions, Tree Dressings, Building Brick, Blocks and Tiles, Stuccos and Mortars, Gypsum and Structural Gypsum Materials; Vapor Barriers, Chipboard, Hardboard, Wooden Flooring Blocks, Panel Boards for Vehicles; Laminated Sheets or Panels for Use in General Construction, for Counter Tops, for Furniture, for Electrical Insulation and for Use in Electrical Appliances, for the Fabrication of Rods and Tubes and of Machinery and Equipment Parts.

SN 196,129. Evans Products Company, Portland, Oreg. Filed June 22, 1964.

CEDAR-SAWN

For Plywood Siding.
First use June 5, 1964.

SN 197,880. Essex Chemical Corporation, Clifton, N.J. Filed July 15, 1964.

BETASEAL

The term "Seal" in the mark is disclaimed apart from the mark as shown. The lining shown in the drawing is intended as shading only and does not represent any particular color.
For Sealing Compound.
First use May 25, 1964.

SN 202,797. Hodgson Houses, Inc., Dover, Mass. Filed Sept. 28, 1964.

HODGSON

Owner of Reg. No. 353,499.
For Portable and Prefabricated Buildings—Namely, Houses, Camps, Garages, Commercial Buildings, Motels, Schools, Apartment Buildings and Accessory Buildings.
First use 1892.

SN 205,251. Canadian Refractories Limited, Montreal, Quebec, Canada. Filed Nov. 2, 1964.

Owner of Canadian Reg. No. 137,700, dated Oct. 9, 1964; and U.S. Reg. No. 700,972.
For Acid, Neutral and Basic Refractory Materials—Namely, Brick and Shapes, Cements, Mortars, Castables, Plastics, Ramming Mixes, Gunning Mixes, and Fettling Materials.

SN 211,028. Bond-A-Cove, Inc., Petosky, Mich. Filed Feb. 1, 1965.

BOND-A-COVE

For Plastic Laminate Cove Strips.
First use Dec. 3, 1962.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 195,558. Space Mizer Corporation of America, Miami, Fla. Filed June 12, 1964.

"SPACE MIZER"

For Lazy Susans.
First use Nov. 1, 1963.

SN 202,516. Standard Screw Company, Bellwood, Ill. Filed Sept. 23, 1964.

No claim is made to the outline diagrammatic showing of a faucet. No common law rights, however, are waived.
For Fluid Valves—Namely, Faucets.
First use Apr. 15, 1950.

SN 204,260. Industrial Engineering Corporation, Houston, Tex. Filed Oct. 19, 1964.

POLLY PIG

For Pipe Cleaning Plugs or Swipes.
First use Dec. 26, 1962.

SN 209,222. Akron Brass Company, Wooster, Ohio. Filed Jan. 4, 1965.

TURBOJET

For Fire Nozzles.
First use during the first week of October 1964.

SN 210,401. Aeroquip Corporation, Jackson, Mich. Filed Jan. 22, 1965.

FLEXMASTER

For Couplings and Joints.
First use in or about September 1957.

SN 210,428. Federal Screw Works, Detroit, Mich. Filed Jan. 22, 1965.

AIRFAST

For Fastener Assemblies of the Type Including a Male Threaded Member, a Washer, and a Nut.
First use Nov. 30, 1964.

SN 210,749. Dalton Manufacturing Company, St. Louis, Mo. Filed Jan. 27, 1965.

THRIF-T

For Sawhorse Brackets.
First use June 1961.

SN 210,757. The Eastern Company, Cleveland, Ohio. Filed Jan. 27, 1965.

Owner of Reg. No. 380,769.
For Pipe Couplings.
First use Mar. 17, 1961.

SN 211,198. Shur-Lok Corporation, Santa Ana, Calif. Filed Feb. 2, 1965.

The trademark consists of the initial letters of the applicant corporation "S," "L," and "C" in an intertwined assembly. The drawing is lined for shading only.
For Structural Fasteners—Namely, Anchor Nuts, Bearing Nuts, Barrel Nuts, Clinch Nuts, Clip Nuts, Nuts With Welding Flanges, Insulation-Coated Nuts, Dome Nuts, Lock Nuts, Lock Washers, Anchor Studs, Grommets, Insert Fasteners for Sandwich Structures, Molded Inserts, Hinged Screw Clamps, Spring-Loaded Latch Pins, Hooks and Alignment Pins.
First use on or about Jan. 1, 1953.

SN 214,094. Eclipse Fuel Engineering Co., Rockford, Ill. Filed Mar. 15, 1965.

VARI-SET

Owner of Reg. Nos. 681,683 and 682,746.
For Proportional Mixers for Supplying Gas-Air Mixtures to Burners.
First use on or about Nov. 18, 1952.

SN 214,095. Eclipse Fuel Engineering Co., Rockford, Ill. Filed Mar. 15, 1965.

FLEXOMIXER

For Proportional Mixers for Supplying Air-Gas Mixtures to Burners.
First use on or about Aug. 20, 1964.

SN 214,096. Eclipse Fuel Engineering Co., Rockford, Ill. Filed Mar. 15, 1965.

MINIMIXER

For Mechanical Mixers for Mixing Gaseous Fuel and Air.
First use on or about Nov. 21, 1961.

SN 214,577. Steel Forgings, Inc., Shreveport, La. Filed Mar. 19, 1965.

FLEET-LINE

Owner of Reg. No. 515,646.
For Welding Fittings—Namely, Pipe Saddles, Full-Encirclement Saddles, Reducing T's, and Reducers.
First use Nov. 26, 1947, on pipe saddles.

SN 214,631. Extron Corporation, Knoxville, Tenn. Filed Mar. 22, 1965.

INSTUBE

For Synthetic Plastic Tubing, Particularly Flexible Polyvinyl Chloride Instrument Tubing and Flexible Polyethylene Instrument Tubing.
First use on or about Jan. 1, 1962.

SN 214,632. Extron Corporation, Knoxville, Tenn. Filed Mar. 22, 1965.

TRANSTUBE

For Clear Plastic Tubing, Particularly Clear Flexible Polyvinyl Chloride Tubing.
First use on or about Jan. 1, 1961.

SN 215,561. The Youngstown Sheet and Tube Company, Boardman, Ohio. Filed Apr. 1, 1965.

SOCKETWELD

For Pipe.
First use Mar. 3, 1965.

SN 215,756. MSL Industries, Inc., Chicago, Ill. Filed Apr. 5, 1965.

HEADS AND THREADS

Owner of Reg. Nos. 669,770 and 662,116.
For Nuts, Bolts, Screws, and Washers.
First use on or before Nov. 21, 1957.

Class 14—Metals and Metal Castings and Forgings

SN 216,007. Joseph T. Ryerson & Son, Inc., Chicago, Ill. Filed Apr. 7, 1965.

RY-ALLOY

For Alloy Steel.
First use July 1, 1939.

SN 216,015. Sandvikens Jernverks Aktiebolag, Sandviken, Gavleborg, Sweden. Filed Apr. 7, 1965.

SANICRO

Owner of Swedish Reg. No. 108,564, dated Jan. 24, 1964.
For Steel and Metal Alloys in the Form of Billets, Tubes, Strips, Bands, Plates, Rods, and Wires.

Class 15—Oils and Greases

SN 201,579. Farmers Union Central Exchange, Incorporated, South St. Paul, Minn. Filed Sept. 10, 1964.

ML 365

For Lubrication Grease.
First use July 1, 1964.

SN 212,903. G. Whitfield Richards Co., Philadelphia, Pa. Filed Feb. 26, 1965.

LUBROFILM

For Metal Drawing Lubricants.
First use Sept. 10, 1956.

Class 16—Protective and Decorative Coatings

SN 195,940. Charlotte F. Hecht, d.b.a. Transene Company, Danvers, Mass. Filed June 18, 1964.

SES

For Plasticized Protective Coating of a Siloxane Derivative for Semiconductor Junctions and Surfaces in Diodes, Rectifiers, Transistors, and Integrated Circuits.
First use Mar. 25, 1964.

Class 18—Medicines and Pharmaceutical Preparations

SN 197,653. Aziende Chimiche Riunite Angelini Francesco, Rome, Italy. Filed July 13, 1964.

TANTUM

Owner of Italian Reg. No. 160,650, dated Sept. 8, 1962.
For Analgesic.

Class 19—Vehicles

SN 175,019. Diesel Engineering & Manufacturing Corporation, d.b.a. Demco, Peoria, Ill. Filed Aug. 14, 1963.

TELETROL

For Mechanical Pilot House Control for Regulation of Engine Speed and Direction on Vessels Equipped With Marine Gears Particularly for Shipboard Use.
First use Dec. 1, 1962.

SN 180,190. Hiller Aircraft Company, Inc., Menlo Park, Calif., assignee of Eltra Corporation, Brooklyn, N.Y. Filed Oct. 31, 1963.



Owner of Reg. No. 544,008.
For Helicopters.
First use January 1960.

SN 194,889. Harry C. Karcher, Indianapolis, Ind. Filed June 4, 1964.

WIND/BRAKE

For Air Deflectors for Automobiles.
First use Aug. 30, 1963.

SN 205,981. N.V. Rijwiel- en Motorrijwielfabriek Cyrus v/h Jac. Franssen & Zonen, Venlo, Netherlands. Filed Nov. 5, 1964.

CYRUS

Owner of Dutch Reg. No. 93,390, dated July 3, 1948.
For Motorised Cycles, Motorcycles, and Spare Parts for Same, and Bicycles.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 161,431. Wakefield Corporation, Detroit, Mich. Filed Jan. 25, 1963.

ART FORMS

For Electric Lighting Fixtures.
First use Jan. 11, 1963.

SN 175,778. Monolith Inc., Mountain View, Calif. Filed Aug. 26, 1963.

MONOLITH

Owner of Reg. No. 790,487.
For Metallized Ceramics and Ceramic-To-Metal Seals in the Nature of Feedthrough Conductors, Cable Connectors, Vacuum Tube Envelopes, and Headers.
First use Jan. 26, 1962.

SN 180,623. Voltronics Corporation, Hanover, N.J. Filed Nov. 6, 1963.

VOLTRONICS

For Capacitors.
First use July 1961.

SN 180,632. American Desk Manufacturing Company, Temple, Tex. Filed Nov. 7, 1963.

AMDESK 1203 AMPLISET

For Self-Contained Amplified Headsets.
First use Oct. 7, 1963.

SN 181,791. Nuclear Corporation of America, Phoenix, Ariz. Filed Nov. 22, 1963.

REF PAC

For Zener Diode Assemblies.
First use Nov. 15, 1963.

SN 188,645. Master Specialties Company, Gardena, Calif. Filed Mar. 13, 1964.

TWIST-LITE

For Illuminated Indicator and Push-Button Switch.
First use Jan. 18, 1961.

SN 190,257. Golden Shield Corporation, Batavia, N.Y. Filed Apr. 3, 1964.

GEMTONE

For Radio Receiving Sets and Television Receiving Sets.
First use Mar. 23, 1964, on radios.

SN 190,531. Mitsubishi Electric Corporation, Chiyoda-ku, Tokyo, Japan. Filed Apr. 7, 1964.

DIATONE

Owner of Japanese Reg. No. 367,064, dated Nov. 26, 1946.
For Radio and Television Sets and Parts Thereof.
First use Apr. 26, 1946; in commerce Apr. 26, 1946.

SN 192,339. Vitalic Battery Co., Inc. (New York corporation), Dallas, Tex., by change of name and assignment from Vitalic Battery Co., Inc. (Delaware corporation), Dallas, Tex. Filed Apr. 29, 1964.

PLASTI-CLAD

Owner of Reg. Nos. 658,818 and 729,982.
For Storage Battery Cables.
First use July 16, 1959.

SN 192,867. Clear Beam Antenna Corporation, Canoga Park, Calif. Filed May 1, 1964.



For Indoor and Outdoor Television, Radio, and Communication System Antennas and Parts, Such as Dipoles, Directors, Reflectors, Booms, Insulators, Lightning Arrestors, Masts, Bases, Mounting Hardware, Screw Eyes, Stand-Off Hardware, and Couplers Therefor.
First use in or about October 1953.

SN 192,868. Clear Beam Antenna Corporation, Canoga Park, Calif. Filed May 1, 1964.

CLEAR BEAM

For Indoor and Outdoor Television, Radio, and Communication System Antennas and Parts, Such as Dipoles, Directors, Reflectors, Booms, Insulators, Lightning Arrestors, Masts, Bases, Mounting Hardware, Screw Eyes, Stand-Off Hardware, and Couplers Therefor.
First use in or about October 1949.

SN 194,596. General Cable Corporation, New York, N.Y. Filed June 1, 1964.

WW

For Electrical Wires and Cables and Plastic Coated Glass Fabrics for Electrical Uses.
First use 1951.

SN 194,901. Mettler Electronics Corp., Pasadena, Calif. Filed June 4, 1964.



For Ultrasonic Cleaning Apparatus and Ultrasonic Diathermy Apparatus for Industrial Chemical Mixing Use.
First use Apr. 9, 1964; Sept. 26, 1961, in another form.

SN 199,300. Mithras, Inc., Cambridge, Mass. Filed Aug. 5, 1964.

MITHRAS

For Microwave, Thermal, Optical, Infrared, Ultraviolet, and Radio Frequency Receptor and Sensing Elements: Components for Tracking Radiometers and Control Apparatus—Namely, Power Supplies, Modulators, Phase-Sensitive Rectifiers, Operational Amplifiers and Servo Amplifiers; and Semiconductor Materials.
First use Dec. 20, 1960.

SN 199,302. Mithras, Inc., Cambridge, Mass. Filed Aug. 5, 1964.

RFD

For Components of Tracking Radiometers—Namely, Power Supplies, Modulators, and Amplifiers; Microwave, Thermal, Optical, Infrared, Ultraviolet, and Radio Frequency Receptor and Sensor Elements; and Semiconductor Materials.
First use Apr. 19, 1962.

SN 199,435. American Battery, Inc., Kansas City, Kans. Filed Aug. 7, 1964.



Owner of Reg. No. 572,141.
For Electric Storage Batteries, Battery Chargers, and Battery Cables.
First use Aug. 1, 1935, on electric storage batteries.

SN 199,846. Mobil Associates, Inc., San Carlos, Calif. Filed Aug. 13, 1964.

SPECTRA

For AM and FM Radios.
First use June 13, 1963.

SN 199,916. Rheno Aktien Gesellschaft, Villars-sur-Glane, Fribourg, Switzerland. Filed Aug. 14, 1964.



Owner of Swiss Reg. No. 202,328, dated Feb. 7, 1964.
For Apparatus for Sterilising Water by Means of Ozone.

SN 200,322. Hugo N. Cahnman Associates, Inc., Kew Gardens, N.Y. Filed Aug. 21, 1964.



For Flat, Fused-Quartz Infra-Red Electric Heating Units Utilizing External Heat in Curing, Laminating, and Coating Operations, and for Thermoforming of Plastic Sheets, and Other Commercial Applications, and Equipment Incorporating Such Units.
First use on or about May 1, 1961.

SN 200,325. Channel Master Corporation, Ellenville, N.Y. Filed Aug. 21, 1964.

CENTRO-FOAM

For Transmission Lines for Television and Radio Reception.
First use July 31, 1964.

SN 201,044. J. J. Newberry Co., New York, N.Y. Filed Sept. 1, 1964.



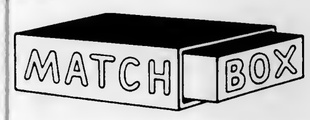
For Radios.
First use July 17, 1963.

SN 201,693. International Telephone and Telegraph Corporation, New York, N.Y. Filed Sept. 11, 1964.

INTELIN

For Electrical Insulating Materials Comprising Plastic Tubing of the Heat Shrinkable Type.
First use Nov. 22, 1941.

SN 202,156. E. F. Johnson Company, Waseca, Minn. Filed Sept. 18, 1964.



For Antenna Matching and Switching Apparatus.
First use May 1953.

SN 202,170. Radiation Incorporated, Melbourne, Fla. Filed Sept. 18, 1964.

MICROBOARD

For Metal Clad Glass Laminated Boards Used in Printed Circuitry.
First use Apr. 8, 1964.

SN 202,491. Madison Equipment Company, Cleveland, Ohio. Filed Sept. 23, 1964.

HOLD-IT

For Switch Box Supports, Outlet Box Supporting Ears, and Spring Lock Supports for Switch or Outlet Boxes.
First use at least as early as 1951; at least as early as February 1929 as to "Hold-It."

SN 202,803. Inland Motor Corporation of Virginia, Radford, Va. Filed Sept. 28, 1964.

POLYTROL

For AC Power Control Amplifiers.
First use Jan. 17, 1964.

SN 203,167. Fanon Electronic Industries, Inc., Newark, N.J. Filed Oct. 2, 1964.

FANON

Owner of Reg. No. 675,185.
For Electronic Amplifiers, Intercommunication Sets, Public Address Systems and Accessories.
First use November 1954.

SN 204,686. Marathon Electric Manufacturing Corporation, Wausau, Wis. Filed Oct. 23, 1964.



Owner of Reg. Nos. 412,830 and 744,332.
For Electrical Rotating Apparatus, Terminal Blocks, Fuse Blocks, and Electrical Control Apparatus—Namely, Voltage Regulators.
First use Jan. 2, 1963.

SN 205,088. North American Aviation, Inc., El Segundo, Calif. Filed Oct. 29, 1964.



For Synthetic Material of Selected Electrical Characteristics Primarily for Selective Transmission Reflection and Attenuation of Electro-Magnetic Energy Such as Radar Energy.
First use Oct. 22, 1963.

SN 205,089. North American Aviation, Inc., El Segundo, Calif. Filed Oct. 29, 1964.

HIDE

For Synthetic Material of Selected Electrical Characteristics Primarily for Selective Transmission Reflection and Attenuation of Electro-Magnetic Energy Such as Radar Energy.
First use Oct. 22, 1963.

SN 205,498. Eugene F. Gaines, Joplin, Mo. Filed Nov. 4, 1964.

ACOUSTI-LUM

For Fluorescent Lighting Fixtures.
First use Oct. 9, 1964.

SN 206,039. Hercules Powder Company, Wilmington, Del. Filed Nov. 12, 1964.

BX

For Electropneumatic Machine for Shrink Wrapping Packages With Plastic Film.
First use Oct. 2, 1964.

SN 206,259. Leon Hirsh, d.b.a. Mervap Cold Light Products, Los Angeles, Calif. Filed Nov. 16, 1964.

MERVAP

For Mercury Vapor (Cold Cathode) Lights and Parts Thereof.
First use 1954.

SN 206,970. Rengo Traders, Inc., New York, N.Y. Filed Nov. 25, 1964.

EMPRESS

For Radios.
First use April 1964.

SN 207,128. Imperial Coffee Machine Corp., Los Angeles, Calif. Filed Nov. 30, 1964.

COFFEEMAID

For Electric Coffee Brewing Machines.
First use on or about Nov. 10, 1964.

SN 207,375. Farmers Tool and Supply Corporation, Denver, Colo. Filed Dec. 3, 1964.

FLAGMAN

For Road Safety Signal Device of the Pedestal Type Having a Flashing Light Signal.
First use Oct. 29, 1964.

SN 207,411. Motorola, Inc., Franklin Park, Ill. Filed Dec. 3, 1964.

RESPONDAC

For Data Processing Equipment.
First use Sept. 15, 1964.

Class 22 — Games, Toys, and Sporting Goods

SN 163,535. Doban Labs, Inc., Sunnyvale, Calif. Filed Feb. 27, 1963.

SCORITE

For Automatic Bowling Scorekeeping Apparatus.
First use Oct. 25, 1962.

SN 190,931. Items Incorporated, St. Louis, Mo. Filed Apr. 13, 1964.

CRAZY BONE

The word "Bone" is disclaimed apart from the mark as shown.
For Animal Toy, Particularly a Toy in the Fanciful Shape of a Bone.
First use Mar. 17, 1964.

SN 190,932. Items Incorporated, St. Louis, Mo. Filed Apr. 13, 1964.

FUNNY BONE

The word "Bone" is disclaimed apart from the mark as shown.
For Animal Toy, Particularly a Toy in the Fanciful Shape of a Bone.
First use Mar. 17, 1964.

SN 190,934. Items Incorporated, St. Louis, Mo. Filed Apr. 13, 1964.

SILLY BONE

The word "Bone" is disclaimed apart from the mark as shown.
For Animal Toy, Particularly a Toy in the Fanciful Shape of a Bone.
First use Mar. 17, 1964.

SN 192,647. Western-Hoegee Co., Los Angeles, Calif. Filed May 4, 1964.

TUNA KING

No claim is made to the word "Tuna" except as shown. The drawing is lined for red and yellow, but no claim to the colors red and yellow is made except as shown.
For Fishing Tackle, Comprising Rods, Fishing Line, and Related Accessories.
First use August 1963.

SN 194,927. Luverne G. Steffel, Minneapolis, Minn. Filed June 4, 1964.

Ski-O-Lizer

For Water Skis.
First use Mar. 13, 1964.

SN 208,721. Brunswick Corporation, Chicago, Ill. Filed Dec. 23, 1964.

WILLIE MOSCONI

The mark "Willie Mosconi" is the name of a living individual whose consent is of record.
For Billiard Cues.
First use July 1, 1964.

SN 208,776. A. G. Spalding & Bros. Inc., Chicopee, Mass. Filed Dec. 23, 1964.

GO-FLITE

Owner of Reg. Nos. 375,087, 511,876, and 691,610.
For Golf Balls.
First use Nov. 25, 1964.

SN 210,324. Louis Marx & Co. Inc., New York, N.Y. Filed Jan. 21, 1965.

TV-TINYKINS

For Toy Miniature Figures.
First use Jan. 19, 1962.

SN 210,658. De Luxe Reading Corporation, Elizabeth, N.J. Filed Jan. 26, 1965.

SECRET SAM

For Toy Gun Sets.
First use Dec. 18, 1964.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 174,860. GEA Luftkühlergesellschaft Happel G.m.b.H. & Co. K.G., Bochum, Germany. Filed Aug. 12, 1963.

GEA

Owner of German Reg. No. 756,403, dated July 4, 1961.
For Apparatus and Implements for Separating Solid and Liquid Substances Out of Gaseous or Liquid Media, Water Separators, Adhesion Separators and Cyclone Separators; Processing Apparatus and Separators for the Chemical Industry, and Machine Tools.

SN 176,622. Cameron Machine Company, Dover, N.J. Filed Sept. 10, 1963.

CAMERON

Owner of Reg. No. 527,804.
For Machines and Parts Thereof for Slitting, Rewinding, Cutting, and Perforating Flexible Materials.
First use November 1961; June 1908, as to "Cameron" in another display.

SN 193,444. The W. E. Bassett Company, Derby, Conn. Filed May 14, 1964.

TRIM

Owner of Reg. Nos. 614,895, 632,793, and 695,409.
For Wire Snips.
First use Aug. 11, 1955.

SN 197,155. Mission Manufacturing Company, Houston, Tex. Filed July 6, 1964.

SERVICE MASTER

For Valve and Seat Assembly for Pumps for Drilling Mud Service.
First use January 1964.

SN 197,583. Hunt Manufacturing Co., Camden, N.J. Filed July 10, 1964.

"BOSTON ELECTRICS GIVE MORE PEOPLE MORE TIME FOR MORE IMPORTANT JOBS"

Owner of Reg. Nos. 202,094 and 513,112.
For Electric Pencil Sharpeners and Electric Letter Openers.
First use Jan. 3, 1964.

SN 199,290. L M Gear Company, Inc., East Detroit, Mich. Filed Aug. 5 1964.

LM

Owner of Reg. No. 192,272.
For Gears.
First use in or about 1914.

SN 200,465. NRM Corporation, Akron, Ohio. Filed Aug. 24, 1964.

PLASTISCREW

For Feed Screws for Extruders and Like Machinery.
First use Jan. 24, 1964.

SN 201,040. Massey-Ferguson Limited, Toronto, Ontario, Canada. Filed Sept. 1, 1964.

MF

Applicant makes no claim to the representation of the goods as shown in the drawing. Owner of Reg. Nos. 693,470, 770,733, and 783,897.
For Tractors, Plows, Tillers, Harrows, Drills, Planters, Cultivators, Manure Spreaders, Balers, Hay Conditioners, Hay Wafering Machinery, Rakes, Mowers, Rotary Cutters, Swathers, Windrowers, Forage Harvesters, Corn Harvesters, Combined Harvesters and Threshers, Loaders, Subsoilers, Post-Hole Diggers, Backhoes, Fork Lifts, Scrapers, Scarifiers, Dozers, and Parts and Accessories Therefor.
First use Oct. 21, 1957; in commerce Oct. 30, 1957.

SN 201,297. Al H. Miller, d.b.a. Miller Specialties, Sun Valley, Calif. Filed Sept. 4, 1964.

PNEU-GRIN-D-BURR

For Pneumatic Tools for Grinding, Deburring, Routing, Polishing, Carving and/or Sanding.
First use Aug. 20, 1964.

SN 203,262. Diematic Manufacturing Corporation, New York, N.Y. Filed Oct. 5, 1964.

DIE MATIC

For Custom Made Molds for Vacuum Forming Machines and Custom Made Heat Sealing Dies and Jigs and Fixtures Used in Connection Therewith.
First use Oct. 26, 1959.

SN 203,866. Equipment Importers, Inc., Tacoma, Wash. Filed Oct. 13, 1964.

JET

Owner of Reg. No. 713,132.
For Electrically Powered Chain Hoists.
First use June 8, 1964.

SN 205,013. Marion Lee Thompson, d.b.a. Mickey Thompson Enterprises, Long Beach, Calif. Filed Oct. 28, 1964.

M/T

Owner of Reg. No. 755,964.
For Cams, Pistons, Rods, Rocker Arms, Tappets, and Similar Automotive Parts, Equipment, and Accessories.
First use Dec. 1, 1961.

SN 208,126. Semco Sales & Service, Inc., Los Angeles, Calif. Filed Dec. 14, 1964.

SEMCO

Owner of Reg. Nos. 664,046 and 702,866.
For Sealant Compound Mixing, Handling, and Dispensing Apparatus, Air Compressors, and Compressed Air Storage and Dispensing.
First use Apr. 11, 1955.

SN 208,130. Semco Sales & Service, Inc., Los Angeles, Calif. Filed Dec. 14, 1964.

SEMCO

Owner of Reg. Nos. 664,046 and 702,866.
For Sealant Compound Mixing, Handling, and Dispensing Apparatus and Guns and Plastic Cartridges and Nozzles for Such Guns; Air Compressors, and Compressed Air Storage and Dispensing Apparatus.
First use January 1960.

SN 209,304. Reda Pump Company, Bartlesville, Okla. Filed Jan. 4, 1965.

SIGN OF QUALITY
SUBMERGIBLE
REDA
PUMPS

The words "Submergible Pumps" are disclaimed apart from the mark as shown. Owner of Reg. No. 662,335.
For Electrical Motor Driven Pump Units.
First use Oct. 23, 1961; Dec. 27, 1954, as to mark exclusive of the slogan "Sign of Quality."

SN 210,852. Cleveland Equipment Corporation, Garden City, Mich. Filed Jan. 28, 1965.

FORMGRADER

For Earth-Cutting and Planing Machines.
First use 1920.

SN 210,932. Blaw-Knox Company, Pittsburgh, Pa. Filed Jan. 29, 1965.

R.F.C.

For Vertical Tube Evaporators.
First use on or about Apr. 30, 1962.

SN 210,934. Coley Bros. (Tools) Limited, Birmingham, England. Filed Jan. 29, 1965.

EXACTA

For Die Sets for Machine Press Tools and Parts and Fittings for Such Die Sets, Bearings, Bearing Assemblies and Component Parts Thereof, Oil Seals, and Lubricators.
First use in or about July 1945; in commerce Jan. 1, 1950.

SN 211,116. Trelleborgs Gummifabriks Aktiebolag, Trelleborg, Sweden. Filed Feb. 1, 1965.

DUENERO

Owner of Swedish Reg. No. 102,603, dated Apr. 27, 1962.
For Rubber Sieve Plates.

SN 213,519. Basic Products, Inc., Butztown, Pa. Filed Mar. 8, 1965.

DISC
DOCTOR

For Punch for Notching the Edges of Sanding Discs.
First use Sept. 11, 1964.

SN 213,602. Precision Universal Joint Corporation, Chicago, Ill. Filed Mar. 8, 1965.



For Universal Joints and Parts Thereof.
First use 1939.

SN 213,654. Collins Machinery Corporation, Monterey Park, Calif. Filed Mar. 9, 1965.

AMAZ-O-THRED

For Pipe Threading Machinery.
First use Feb. 24, 1965; May 5, 1960, as to "Amaz-O-Thread."

SN 214,496. Airmatic Valve, Inc., Cleveland, Ohio. Filed Mar. 19, 1965.

Q-T

For Air and Hydraulic Cylinders.
First use Feb. 12, 1965.

SN 214,526. Lincoln Manufacturing Co., Inc., Fort Wayne, Ind. Filed Mar. 19, 1965.

VEND-A-TERIA

For Food Dispensing Equipment.
First use Feb. 11, 1965.

SN 214,719. Technicolor, Inc., Hollywood, Calif. Filed Mar. 22, 1965.

EBONY ELEGANCE

For Stainless Tableware, Kitchen Tools, and Cutlery.
First use Apr. 28, 1964.

SN 215,342. Magnuson Engineers, Inc., San Jose, Calif. Filed Mar. 30, 1965.

SHUFFLO

For Food Cutting, Feeding, and Processing Equipment, Cutlery, Machinery, Tools, and Parts Thereof.
First use June 15, 1955.

SN 215,343. Magnuson Engineers, Inc., San Jose, Calif. Filed Mar. 30, 1965.

AUTOCORE

For Food Feeding, Coring, and Trimming Equipment.
First use Aug. 9, 1960.

SN 215,344. Magnuson Engineers, Inc., San Jose, Calif. Filed Mar. 30, 1965.

HYTAB

For Food Feeding and Counting Equipment.
First use June 28, 1956.

Class 26—Measuring and Scientific Appliances

SN 133,750. AMF Beaird, Inc., Shreveport, La., by change of name from The J. B. Beaird Company, Inc., Shreveport, La. Filed Dec. 11, 1961.

BEAIRD

Owner of Reg. Nos. 413,066 and 421,620.
For Filling Stations Equipped With Dispensing Pumps and Separate Meters Which Measure the Amount of Fluid Delivered From Storage Vehicles and Are an Integral System.
First use at least as early as Dec. 1, 1943.

SN 141,799. Biological Research, Inc., St. Louis, Mo., assignee of Biological Research, Inc., St. Louis, Mo. Filed Apr. 9, 1962.

TAPER-KLIP

For Spring Clips for Bottle, Tube, or the Like Stoppers, Jointed Tubing, and Similarly Disconnectibly Assembled Parts.
First use Feb. 8, 1962.

SN 144,243. The Electrada Corporation, Culver City, Calif. Filed May 10, 1962.

DATACOM

For Equipment for Storing and Displaying Typewritten Information in Visual Form on the Face of a Display Tube and for Providing for the Transmission and Reception of Such Information.
First use Mar. 16, 1962.

SN 182,162. The Decca Navigator Company Limited, London, England. Filed Dec. 2, 1963.

HARCO

Owner of British Reg. No. 826,790, dated Oct. 26, 1961.
For Electronic Navigational Equipment Including Radio Transmitters, Radio Receivers, Signaling Instruments, Navigational Instruments and Other Electronic Subassemblies Useful in Connection With Said Electronic Navigational Equipment.

SN 199,301. Mithras, Inc., Cambridge, Mass. Filed Aug. 5, 1964.

MITHRAS

For Tracking Radiometers; Microwave, Thermal, Optical, Infrared, Ultraviolet and Radio Frequency Energy Sensing, Detecting, Measuring, Tracking, and Control Devices; Semiconductor Materials and Devices; Radiation, Temperature, Humidity, and Pressure Measurement Devices.
First use Dec. 20, 1960.

SN 199,303. Mithras, Inc., Cambridge, Mass. Filed Aug. 5, 1964.

RFD

For Tracking Radiometers; Microwave, Thermal, Optical, Infrared, Ultraviolet, and Radio Frequency Energy Sensing, Detecting, Measuring, Tracking, and Control Devices; Semiconductor Materials and Devices; Radiation, Temperature, Humidity, and Pressure Measurement Devices.
First use Apr. 19, 1962.

SN 206,512. Buchler Instruments, Inc., Fort Lee, N.J. Filed Nov. 19, 1964.

POLYSTALTIC

For Peristaltic Pump for Laboratory, Medical, and Other Applications for Precision Metering of Fluids.
First use on or about Apr. 13, 1964.

SN 208,127. Semco Sales & Service, Inc., Los Angeles, Calif. Filed Dec. 14, 1964.

SEMCO

Owner of Reg. Nos. 664,046 and 702,866.
For Sealant Compound Metering and Proportionate Mixing Devices.
First use March 1959.

SN 211,030. Bowmar Instrument Corporation, Fort Wayne, Ind. Filed Feb. 1, 1965.

XYZ Joystick

For Two- and Three-Dimensional Control System for Servo Control of Positioning and Tracking Systems.
First use May 14, 1964.

SN 211,047. Electro Magnetic Instrument Company, Inc., Houston, Tex. Filed Feb. 1, 1965.

MagnaGraph

For Electromagnetic Induction Testing Equipment.
First use Dec. 18, 1964.

SN 211,257. Contamination Control Corporation, Los Angeles, Calif. Filed Feb. 3, 1965.

MALEDCO

For Sampling Valves.
First use Nov. 20, 1962.

SN 211,325. Visual Graphics Corp., New York, N.Y. Filed Feb. 3, 1965.

POSTERITER

For Photographic Typesetting Machines.
First use Dec. 3, 1964.

SN 212,586. Howe Richardson Scale Company, Clifton, N.J. Filed Feb. 23, 1965.

MAGNA-PRINT

For Printing Devices for Weighing Apparatus.
First use about Apr. 1, 1964.

Class 27 — Horological Instruments

SN 212,297. Enicar SA (Enicar AG) (Enicar Ltd.), Lengnau, Switzerland. Filed Feb. 18, 1965.

STAR JEWELS

The word "Jewels" is disclaimed, apart from the trademark as shown. Owner of Swiss Reg. No. 204,749, dated May 29, 1964.

For All Horological Products—Namely, Watches, Watch Movements, Watch Dials, Watch Cases, and Other Parts of Watches.

SN 214,174. Rodania Watch Company, Inc., New York, N.Y. Filed Mar. 15, 1965.

ZONEX

For Watches and Parts of Watches.
First use Jan. 24, 1958.

Class 28 — Jewelry and Precious-Metal Ware

SN 174,385. Jacques Kreisler Manufacturing Corporation, North Bergen, N.J. Filed Aug. 5, 1963.

DURA*FLEX*

For Expansible Watchbands.
First use Oct. 8, 1962.

SN 212,953. Mitchell Banks, d.b.a. Mitchell Banks Company, New York, N.Y. Filed Mar. 1, 1965.

MIB

For Jewelry.
First use June 4, 1964.

SN 213,617. Sobel Brothers, Inc., Perth Amboy, N.J. Filed Mar. 8, 1965.

LUSTRE
Maja

Applicant disclaims the word "Lustre" separate and apart from the mark as shown.
For Jewelry.
First use on or about Feb. 26, 1965.

Class 29 — Brooms, Brushes, and Dusters

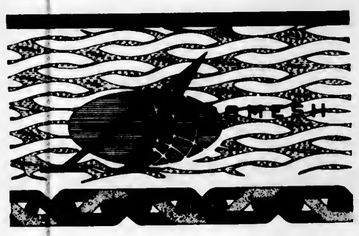
SN 201,613. Samuel M. Peck, New York, N.Y. Filed Sept. 10, 1964.

TOOTH-SPONGE

For Tooth Brush.
First use Aug. 20, 1964.

Class 31 — Filters and Refrigerators

SN 170,705. G. H. Tennant Company, Minneapolis, Minn. Filed June 10, 1963.



The drawing is lined for the colors blue and gray.
For High Pressure Fluid Filters.
First use Jan. 18, 1963.

SN 174,861. GEA Luftkuhlergesellschaft Happel G.m.b.H. & Co. K.G., Bochum, Germany. Filed Aug. 12, 1963.

GEA

Owner of German Reg. No. 756,403, dated July 4, 1961.
For Industrial Cooling Apparatus and Plants, and Parts Thereof.

SN 198,584. Paddock of Texas, Inc., Dallas, Tex. Filed July 27, 1964.

POOL
BLUE

For Supplemental Filter Media for Swimming Pool Filters.
First use July 6, 1964.

SN 211,260. Charles E. Croghan, d.b.a. Custom Maid Products Company, Dayton, Ohio. Filed Feb. 3, 1965.

SPOTLESS WATER

For Fluid Treating Apparatus Such as Conditioning Units, Softeners, Filters, and the Like.
First use Dec. 30, 1964.

Class 32 — Furniture and Upholstery

SN 185,774. Harter Corporation, Sturgis, Mich. Filed Jan. 31, 1964.



Owner of Reg. No. 426,191.
For Office, Lobby, Reception Room, Lounge, and Institutional Furniture.
First use March 1960.

SN 187,571. Educators Manufacturing Company, Tacoma, Wash., assignee of Educators Manufacturing Co., Tacoma, Wash. Filed Feb. 27, 1964.

HAVEN

For Furniture—Namely, Chests, Desks, Beds, Wardrobes, and Tables for Use in Residences.
First use Feb. 20, 1964.

SN 188,521. Eaton Paper Corporation, Pittsfield, Mass. Filed Mar. 12, 1964.

CAROUSEL

For Table Top Type Display Stand for Pictures and Photographs Having a Plurality of Picture Holders Extending Radially From an Upright Post.
First use Aug. 16, 1963.

SN 206,230. Carolina Wood Turning Company, d.b.a. Cherokee Furniture Company, Bryson City, N.C. Filed Nov. 16, 1964.

MAYFLOWER

For Bedroom, Dining Room, and Living Room Furniture.
First use July 15, 1954.

SN 209,306. Royal Furniture Company, Memphis, Tenn. Filed Jan. 4, 1965.

EL CID

For Bedroom Furniture, Comprising Beds, Chests of Drawers, Dressers, Mirrors, Bunk Beds, Corner Desks, Bookcases, Desks, Chairs and Night Stands Made of Wood, Metal, and Plastic; Living Room Furniture, Comprising Upholstered and Wood Couches, Lounges, Day-Beds, Dual Sleep Couches, Chairs, Tables, and Screens, Said Chairs Including Reclining Chairs, Rockers, Straight Chairs and Swivel Chairs; Dining Room Furniture, Comprising Wood and Metal Tables, Storage Buffets, Storage Chinas, Chairs, Buffet–Servers, Hutches and Tea Carts; and Bedding Products, Comprising Innerspring, Foam and/or Cotton Mattresses, Boxsprings, Foundations and Steel Flat and Coil Springs.
First use Sept. 2, 1964.

SN 209,307. Royal Furniture Company, Memphis, Tenn. Filed Jan. 4, 1965.

EL CID

For Bedroom Furniture, Comprising Beds, Chests of Drawers, Dressers, Mirrors, Bunk Beds, Corner Desks, Bookcases, Desks, Chairs and Night Stands Made of Wood, Metal, and Plastic; Living Room Furniture, Comprising Upholstered and Wood Couches, Lounges, Day-Beds, Dual Sleep Couches, Chairs, Tables, and Screens, Said Chairs Including Reclining Chairs, Rockers, Straight Chairs, and Swivel Chairs; Dining Room Furniture, Comprising Wood and Metal Tables, Storage Buffets, Storage Chinas, Chairs, Buffet–Servers, Hutches, and Tea Carts; and Bedding Products, Comprising Innerspring, Foam, and/or Cotton Mattresses, Box Springs, Foundations, and Steel Flat and Coil Springs.
First use Sept. 2, 1964.

SN 209,521. The E. B. Malone Corporation, Hialeah, Fla. Filed Jan. 7, 1965.

MALONE

For Mattresses, Box Springs, Innerspring Mattresses, Rubber Mattress Cores, and Frames for Holding Springs and Mattresses.
First use July 1, 1942.

SN 210,256. B-C Sales Corporation, Tacoma, Wash. Filed Jan. 21, 1965.



For Decorative Divider Screens.
First use Mar. 15, 1963.

SN 211,191. Purofied Down Products Corp., New York, N.Y. Filed Feb. 2, 1965.

TANAFEATHER

For Pillows.
First use Nov. 16, 1964.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 45,493. Rheem Manufacturing Company, Richmond, Calif. Filed Feb. 7, 1958.

IMPERIAL

For Gas-Fired Water Heaters.
First use in or about February 1957.

SN 164,623. Hydrotherm, Inc., Northvale, N.J. Filed Mar. 14, 1963.

SOLO HEATING

The term "Heating" is disclaimed apart from the mark as shown.
For Gas Fired Cast Iron Hot Water Boilers and Parts Thereof.
First use November 1960.

SN 174,862. GEA Luftkuhlergesellschaft Happel G.m.b.H. & Co. K.G., Bochum, Germany. Filed Aug. 12, 1963.

GEA

Owner of German Reg. No. 756,403, dated July 4, 1961.
For Boilers, Distillation Apparatus, Condensation Apparatus and Plants, and Parts Thereof, Central Heating Systems, Room Heaters, Heat Exchangers, Air Moisteners, Air Moistening Plants, Dust Collectors, Combined Air and Gas Coolers and Cleaners, Central Air Humidifying Systems, Ventilators, Central Ventilating Systems, Gas Heaters, Air Heaters, and Liquid Heaters, Air Humidifiers, Air Conditioning Plants.

SN 192,838. Mechanical Equipment Company, Inc., New Orleans, La. Filed May 6, 1964.

WEL-GAS

For Inert Gas Generators for Generating a Substantially Oxygen Free Gas Consisting Essentially of Nitrogen and Carbon Dioxide for Use in Various Applications Requiring Such an Inert Gas.
First use at least as early as June 23, 1963.

SN 211,957. Buffalo Forge Company, Buffalo, N.Y. Filed Feb. 12, 1965.

ADJUSTAX

For Fans.
First use Jan. 28, 1965.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 200,394. U-Need-Um, Inc., Tulsa, Okla. Filed Aug. 21, 1964.



Applicant disclaims the word "Tires."
For Nonmetallic Tires.
First use July 1, 1955.

Class 36 — Musical Instrumentsand Supplies

SN 180,223. Music Products, Inc., Chicago, Ill. Filed Oct. 31, 1963.

SCHILKE

For Mouthpieces, Trumpets, and Cornets, and Slide Grease, Pouches, and Cases Therefor.
First use Oct. 30, 1947.

SN 193,420. Sveriges Radio Aktiebolag, New York, N.Y. Filed May 13, 1964.



For Pre-Recorded (Taped) Radio and Television Programs.
First use on or about Sept. 1, 1958.

SN 201,835. Grand Piano Company, Inc., Morganton, N.C. Filed Sept. 14, 1964.

Claire De Lune

The name "Claire De Lune" is fictitious.
For Pianos.
First use Jan. 10, 1964.

Class 37 — Paper and Stationery

SN 155,320. Micropoint, Inc., Sunnyvale, Calif. Filed Oct. 17, 1962.

CULTURED MARBLE

The term "Marble" is disclaimed apart from the mark as shown.
For Simulated Marble Bases for Desk Pen Sets.
First use Aug. 22, 1962.

SN 177,681. The Cheapeake Corporation of Virginia, West Point, Va. Filed Sept. 25, 1963.

SWF

For Kraft Paper.
First use Apr. 25, 1949.

SN 183,166. Esleeck Manufacturing Company, Turners Falls, Mass. Filed Dec. 17, 1963.

ClearErase

For Typewriting Paper.
First use Oct. 1, 1963.

SN 196,982. Park Sherman, Inc., Roseland, N.J. Filed July 2, 1964.

PARK SHERMAN

For Stationery Items, Including Desk Pad, Pad of Paper, Pencil, Pen; Telephone Index; Memorandum Case; Desk Calendar; Paper Weight; Letter Opener; Place Marker for Publications; Clipboard; Pencil Well; Pen Base; Paper Holder; Appointment Pad; Ruler.
First use as early as 1930.

SN 198,855. Link-O-Matic Pen Corp., Washington, D.C. Filed July 30, 1964.

LINK-O-MATIC

For Ball Point Pens.
First use on or about July 11, 1964.

SN 201,341. Advance Paper Co., Inc., New Orleans, La. Filed Sept. 8, 1964.



For Paper Napkins, Paper Towels, Kraft Paper, Corrugated Paper, Waterproof Paper for Wrapping, Envelopes, Shelf Papers, Freezer Papers, and Waxed Papers.
First use June 1, 1961.

SN 201,399. Eberhard Faber Inc., Wilkes-Barre, Pa. Filed Sept. 8, 1964.

DIAMOND

For Pencils, Ball Pens, Erasers, Rubber Bands, and Felt Type Markers.
First use Sept. 3, 1964.

SN 201,464. Pippel-Patterson Company, Grand Haven, Mich. Filed Sept. 8, 1964.

HARDY

For Partially Printed Marking Labels and Tags.
First use on or about Aug. 1, 1964.

SN 201,866. Printpack Incorporated, Atlanta, Ga. Filed Sept. 14, 1964.

DUOFILM

For Continuous Lengths of Laminated Cellophane-Like Sheet Material Used for Packaging.
First use Aug. 20, 1964.

SN 204,310. M. Stone & Sons, Inc., Chicago, Ill. Filed Oct. 19, 1964.



For Self-Sealing Paper Bands.
First use on or about Sept. 28, 1964.

SN 206,077. Riegel Paper Corporation, New York, N.Y. Filed Nov. 12, 1964.

SAT-N-SHEEN

For Paperboard Cartons and Paperboard Utilized Therein.
First use Oct. 7, 1964.

SN 206,536. Gulf States Paper Corporation, Tuscaloosa, Ala. Filed Nov. 19, 1964.

E-Z MATS

The word "Mats" is disclaimed apart from the mark as a whole. Owner of Reg. Nos. 227,085, 725,467, and others.
For Table Place Mats of Paper and Plastic.
First use Oct. 30, 1964.

SN 206,703. Data Management, Incorporated, Farmington, Conn. Filed Nov. 23, 1964.



For Accounting Record, Including Ledger Sheets, Index Sheets for Ledgers, and Title Tapes for Application to the Index Sheets.
First use on or before Sept. 9, 1964.

SN 208,244. East Texas Pulp and Paper Company, Silsbee, Tex. Filed Dec. 16, 1964.

TEXFOIL

Owner of Reg. Nos. 637,744, 770,834, and others.
For Paperboard.
First use Nov. 25, 1964.

SN 208,291. Venus Pen & Pencil Corporation, New York, N.Y. Filed Dec. 16, 1964.

ULTIMA

For Ball Point Pens.
First use Nov. 11, 1964.

SN 208,353. Fisher Specialty Pen Co. Inc., New York, N.Y. Filed Dec. 18, 1964.

YES

For Ball Point Pens, Fountain Pens, Stylo Pens, Marking Pens and Pencils.
First use Oct. 24, 1964.

Class 38 — Prints and Publications

SN 179,073. Raymond A. Sholl & Co., Inc., Upper Darby, Pa., assignee of Raymond A. Sholl, Jr., d.b.a. Raymond A. Sholl and Company, Upper Darby, Pa. Filed Oct. 15, 1963.

LIVE BETTER ELECTRICALLY MAGAZINE

The word "Magazine" is disclaimed apart from the mark as a whole.
For Periodical Magazine.
First use February 1956.

SN 182,007. Douglas G. Tibbitts, Jr., d.b.a. Tibbitts Publications, Woodland, Calif. Filed Nov. 27, 1963.

THE WORRY WART

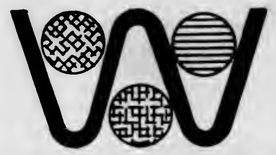
For Newspaper Column.
First use Oct. 24, 1963.

SN 195,330. The Research Institute of America, Inc., New York, N.Y. Filed June 10, 1964.

TECHNICATOR

For Combination of Charts and Printed Matter Containing Stock Market Analyses and Comments Thereon.
First use Oct. 2, 1963.

SN 196,750. Westbury Press Inc., New York, N.Y. Filed June 29, 1964.



The drawing is lined for the colors orange, yellow, and blue, but no claim is made with respect to color.
For Books, Booklets, and Catalogue Sheets.
First use July 1, 1962.

SN 201,987. Wesleyan University, Middletown, Conn. Filed Sept. 15, 1964.

SENIOR WEEKLY READER

Owner of Reg. Nos. 254,284 and 699,849.
For Printed Newspaper-Type Periodical for Children of School Age Published Weekly During the Regular School Year, Except for Thanksgiving and Christmas Vacation Periods.
First use Aug. 31, 1964; Sept. 1, 1928, as to the words "Weekly Reader."

SN 205,722. O. O. Bessel, d.b.a. Woodrow Wilson Co., Corona Del Mar, Calif. Filed Nov. 6, 1964.

GOLD DOLLAR CARD

Applicant makes no claim to the word "Card" alone.
For Cards To Be Used by Others in Promoting the Sale of Their Goods Through a Customer Participation Game.
First use Jan. 10, 1964.

SN 207,259. Appeal Printing Company, Inc., New York, N.Y. Filed Dec. 2, 1964.

APPEAL

For Legal Handbooks and Supplements Therefor.
First use 1951.

Class 39 — Clothing

SN 180,704. Benedikt Mäser, Dornbirn, Vorarlberg, Austria. Filed Nov. 8, 1963.

Elastisana

Owner of Austrian Reg. No. 46,653, dated Nov. 8, 1961.
For Knitted and Netted (Woven) Underwear, Pullovers, Cardigans, Blouses, Dresses, and Bathing Trunks and Suits for Men, Women, and Children.

SN 180,705. Benedikt Mäser, Dornbirn, Vorarlberg, Austria. Filed Nov. 8, 1963.



The drawing is lined for red. Applicant disclaims any right to the word "Dornbirn" apart from the mark as shown.
Owner of Austrian Reg. No. 47,260, dated Feb. 2, 1962.
For Knitted and Netted (Woven) Underwear, Pullovers, Cardigans, Blouses, Dresses, and Bathing Trunks and Suits for Men, Women, and Children.

SN 189,035. Atlas Underwear Corporation, Piqua, Ohio. Filed Mar. 19, 1964.

AL-PIMA

For Underwear, T-Shirts, Briefs, and Athletic Shirts.
First use Mar. 13, 1964.

SN 192,285. Hickey-Freeman Co., Inc., Rochester, N.Y., assignee of Hickey-Freeman Company, Rochester, N.Y. Filed Apr. 29, 1964.

TRINITEX

For Fabric Made Into Finished Apparel—Namely, Men's Coats.
First use on or about Feb. 5, 1964.

SN 192,286. Hickey-Freeman Co., Inc., Rochester, N.Y., assignee of Hickey-Freeman Company, Rochester, N.Y. Filed Apr. 29, 1964.

DIAMOND HEAD

For Fabric Made Into Finished Apparel—Namely, Men's Coats.
First use on or about Feb. 5, 1964.

SN 192,287. Hickey-Freeman Co., Inc., Rochester, N.Y., assignee of Hickey-Freeman Company, Rochester, N.Y. Filed Apr. 29, 1964.

ST. ELMO

For Fabric Made Into Finished Apparel—Namely, Men's Suits.
First use on or about Feb. 5, 1964.

SN 192,288. Hickey-Freeman Co., Inc., Rochester, N.Y., assignee of Hickey-Freeman Company, Rochester, N.Y. Filed Apr. 29, 1964.

REIGNBEAU

For Fabric Made Into Finished Apparel—Namely, Men's Suits.
First use on or about Feb. 5, 1964.

SN 193,657. Genesco Inc., Nashville, Tenn. Filed May 18, 1964.

Flirts

For Women's Shoes.
First use May 28, 1959.

SN 194,754. George Kenneth Scott, Milan, Italy. Filed June 2, 1964.

Ken Scott

Ken Scott is a derivation of applicant's name.
For Ladies' Dresses, Hats, Kerchiefs, and Scarves, Ties, Slacks, and Blouses.
First use March 1938; in commerce May 5, 1960.

SN 195,009. St. Louis Shoe Corporation, St. Louis, Mo., by change of name from Nusrala Shoe Company, Inc., St. Louis, Mo. Filed June 5, 1964.

LIFE & LEISURE

For Ladies' Shoes Made of Leather and Synthetic Materials.
First use May 1, 1964.

SN 195,070. Mr. California, Inc., Los Angeles, Calif. Filed June 8, 1964.



For Men's Shirts.
First use July 26, 1962.

SN 195,845. Chadbourn Gotham, Inc., Charlotte, N.C. Filed June 17, 1964.

CLING-*fit*

Owner of Reg. No. 620,916.
For Ladies' Hosiery.
First use Dec. 17, 1954.

SN 196,923. UCB (Union Chimique-Chemische Bedrijven), Societe Anonyme, Saint-Gilles, near Brussels, Belgium. Filed July 1, 1964.



Priority claimed under Sec. 44(d) on Belgian Reg. No. 100,825, dated Jan. 6, 1964. No claim is made to the expression "Elastomere."
For Clothing for Men, Women, and Children—Namely, Trousers, Jackets, Waistcoats, Shirts, Mantles, Raincoats, Dresses, Blouses, Skirts, Aprons, Knickers, Slips, Short Night Gowns, Pull-Overs, Collars, Cuffs, Corsets, Brassieres, Sashes, Neckties, Shorts, Gloves, Hose, and Socks.

SN 201,884. Slazengers Limited, Croydon, Surrey, England. Filed Sept. 14, 1964.



For Men's and Ladies' Tennis Shirts, Tennis Shorts, Tennis Cardigans, and Tennis Hose, Ladies' Tennis Shoes, Skirts, Tennis Skirts, and Men's Golf Shirts, Golf Cardigans, Golf Pullovers, and Golf Hose.
First use Aug. 1, 1964; in commerce Aug. 1, 1964.

SN 202,552. Geo. Brockman, d.b.a. Geo. Brockman & Co., New York, N.Y. Filed Sept. 24, 1964.

STAR DUDS

The right to the exclusive use of the words "Duds" is disclaimed apart from the mark as shown.
For Children's Garments—Namely, Shorts, Pedal Pushers, Slacks, Sun Suits, Snow Suits, Jackets, Shirts, and Two-Piece Sets.
First use Aug. 1, 1961.

SN 204,090. The Pyke Manufacturing Company, Salt Lake City, Utah. Filed Oct. 15, 1964.

SHARP/SHAPE

For Men's, Women's, and Children's Slacks, Trousers, Shorts, and Dresses, All Having a Permanent-Type Crease.
First use Oct. 9, 1964.

SN 205,843. Puma-Schuhfabrik Rudolf Dassler KG, Herzogenaurach, near Nurnberg, Germany. Filed Nov. 2, 1964.

PUMA

Owner of German Reg. No. 608,870, dated Oct. 1, 1948.
For Sport Shoes.

SN 206,764. H. Rosenstock & Sons, Inc., Ellenville, N.Y. Filed Nov. 23, 1964.

Fid-Estix

For Children's Clothing—Namely, Infants' Creepers, Bobby Suits for Children, Wash Suits, Dresses for Children, Children's Shirts and Underwear, Slacks, Slack Sets Comprising Shirt and Slacks; Shorts; Short Sets Comprising a Shirt and Shorts; Jackets, Suits, Leisure Suits Comprising a Coat and Slacks; Sport Jacket Sets Comprising Sport Jacket and Slacks; Vests; Cabana Sets Comprising a Shirt-Like Coat and Shorts; Diaper Sets, Sun Suits, Cardigan Sets, Coats, Overalls, Snow Suits, and Snow Pants.
First use Nov. 1, 1964.

SN 208,286. Strozzi Incorporated, Chicago, Ill. Filed Dec. 16, 1964.

strozzi

For Sportswear—Namely, Shirts and Jackets.
First use in or about April 1963.

SN 208,858. Sportswear Corporation of America, St. Louis, Mo. Filed Dec. 24, 1964.

sir knight

For Slacks.
First use Nov. 12, 1964.

SN 209,881. Abbot Fabrics, Inc., New York, N.Y. Filed Jan. 13, 1965.

MOCK FROCKS

The generic word "Frocks" is disclaimed.
For Dresses.
First use Jan. 6, 1965.

SN 210,172. Timely Clothes, Inc., Rochester, N.Y. Filed Jan. 18, 1965.

SELECT CIRCLE

For Men's Outer Clothing—Namely, Men's Suits.
First use on or about Sept. 15, 1964.

SN 210,208. M.K.M. Knitting Mills, Inc., Manchester, N.H. Filed Jan. 19, 1965.

darlenette

Owner of Reg. Nos. 515,362, 675,033, and others.
For Children's Wear—Namely, Sweaters, Skirts, Swim Suits, and Pre-Teenage Slacks.
First use Oct. 15, 1960.

SN 210,233. Rooster Craft, Inc., Philadelphia, Pa. Filed Jan. 19, 1965.

ALPACANIT

For Necktles.
First use July 8, 1964.

SN 210,261. Better Made Headwear Co., Inc., New York, N.Y. Filed Jan. 21, 1965.

POUCH

For Men's Hats.
First use Oct. 5, 1964.

SN 210,343. J. C. Penney Company, New York, N.Y. Filed Jan. 21, 1965.

TOWNCRAFT

Owner of Reg. Nos. 231,906 and 328,893.
For Men's Underwear, Pajamas, and Robes.
First use Oct. 20, 1952, on underwear.

SN 210,646. Champion Pants Manufacturing Co., Inc., New York, N.Y. Filed Jan. 26, 1965.

CHAMPEZE

Owner of Reg. No. 765,536.
For Men's Slacks.
First use on or about Aug. 1, 1964.

SN 210,782. Haug Engineering, Incorporated, Nashua, N.H. Filed Jan. 27, 1965.

POGOHEEL

For Shoe Heels.
First use not later than Sept. 15, 1964.

SN 210,792. Kinney Shoe Corporation, New York, N.Y. Filed Jan. 27, 1965.

San Dales

Owner of Reg. No. 724,855.
For Women's Shoes.
First use Jan. 9, 1965.

SN 210,815. Robert Hosiery Mills, Inc., d.b.a. Rondo Mills Corporation, Collegeville, Pa.
Filed Jan. 27, 1965.

SLIPPENS

Owner of Reg. No. 674,229.
For Foot Socks.
First use Jan. 15, 1965.

SN 210,924. Atlas Shirt Company, Inc., New York, N.Y. Filed Jan. 29, 1965.

STING-RAY

For Shirts.
First use April 1964.

SN 213,372. Hollins Thomson Limited, Manchester, England. Filed Mar. 4, 1965.

SELVYT

For Gloves.
First use Aug. 6, 1895; in commerce Jan. 1, 1965.

SN 213,525. Capesio Inc., New York, N.Y. Filed Mar. 8, 1965.

GLISSADE

For Shoes.
First use Jan. 29, 1965.

SN 214,231. Amish County, Ephrata, Pa. Filed Mar. 16, 1965.

AMISH COUNTY

For Men's Shirts and Women's Dresses.
First use on or about July 1, 1964.

SN 214,505. Budget Uniform Center, Inc., d.b.a. Budget Uniform Bazaar, Philadelphia, Pa. Filed Mar. 19, 1965.

BUDGIES

Owner of Reg. No. 652,770.
For Women's Shoes and Hosiery.
First use as early as the summer of 1955.

Class 40—Fancy Goods, Furnishings, and Notions

SN 206,099. Waldes Kohinoor, Inc., Long Island City, N.Y. Filed Nov. 12, 1964.

TREATSET

For Tape for Garment Fasteners Such as Slide Fasteners, Snap Fasteners, and Hook and Eye Fasteners.
First use Sept. 28, 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 196,924. UCB (Union Chimique-Chemische Bedrijven), Societe Anonyme, Saint-Gilles, near Brussels, Belgium.
Filed July 1, 1964.

Sidrlame

ELASTOMERE

Priority claimed under Sec. 44(d) on Belgian Reg. No. 100,825, dated Jan. 6, 1964. No claim is made to the expression "Elastomere."
For Piece Goods of Synthetic Fibers.

SN 209,994. Cone Mills Inc., New York, N.Y. Filed Jan. 15, 1965.

CONEPREST

Owner of Reg. Nos. 334,013 and 699,479.
For Piece Goods Made From Cotton, Synthetic Fibers, and Blends of Cotton and Synthetic Fibers.
First use Nov. 17, 1964.

SN 210,241. H. Warshow & Sons, Inc., New York, N.Y. Filed Jan. 19, 1965.

EFP

For Coated Textile Fabrics Adapted To Be Bonded to Other Textile Fabrics, and Laminated Textile Fabrics for Use in Making Wearing Apparel Such as Girdles and the Like.
First use on or about Sept. 2, 1964.

SN 212,125. Klopman Mills, Inc., Rockleigh, N.J. Filed Feb. 16, 1965.

CROSSFIRE

For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, and in the Industrial Field.
First use Dec. 4, 1964.

Class 43 — Thread and Yarn

SN 196,925. UCB (Union Chimique-Chemische Bedrijven), Societe Anonyme, Saint-Gilles, near Brussels, Belgium. Filed July 1, 1964.



Priority claimed under Sec. 44(d) on Belgian Reg. No. 100,825, dated Jan. 6, 1964. No claim is made to the expression "Elastomere."
For Threads and Yarns of Synthetic Fibers.

SN 205,458. The Robinson Thread Company, Inc., Worcester, Mass. Filed Nov. 3, 1964.

TRANSYLON

For Thread.
First use on or about May 1, 1964.

SN 205,787. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Nov. 9, 1964.

DELCRON

For Yarns and Threads of Man-Made Fibers.
First use Sept. 29, 1964.

Class 46 — Foods and Ingredients of Foods

SN 148,067. Norbest Turkey Growers Association, Salt Lake City, Utah. Filed June 29, 1962.

ROAST-RITE

For Dressed Fresh and Frozen Turkeys.
First use Jan. 1, 1948.

SN 177,085. Pegus Company, Inc., Clovis, Calif. Filed Sept. 16, 1963.

PEGUS



For Horse Feed Additive.
First use Aug. 26, 1963.

SN 181,980. Hanscom Bros., Incorporated, Philadelphia, Pa. Filed Nov. 27, 1963.



For Bakery Products—Namely, Breads, Rolls, Doughnuts, Fresh and Frozen Cakes, Pies, and Cookies, Candies; Cooked Foods—Namely, Fresh and Frozen Macaroni and Cheese, Fresh Potato, Fresh Cole Slaw, Fresh Vegetable, and Fruit Salads, and Frozen Fish Cakes, Frozen Crab Cakes, and Frozen Salmon Cutlets.
First use Sept. 27, 1950, on candies and bakery products.

SN 191,704. Philip Morris Incorporated, d.b.a. Clark Gum Co., New York, N.Y. Filed Apr. 21, 1964.

FRUIT PUNCH

For Chewing Gum.
First use Apr. 8, 1964.

SN 195,110. Kabushiki Kaisha Edoichi Honpo, Daito-ku, Tokyo, Japan. Filed June 8, 1964.

PEASEN

For Rice Crackers.
First use Feb. 30, 1956; in commerce May 30, 1960.

SN 196,188. Pecora Baby Top Products Company, d.b.a. Pecora's, West Hazleton, Pa. Filed June 22, 1964.

BABY TOP

For Fluid Milk.
First use July 1936.

SN 199,881. Cheese Products Co., Inc., d.b.a. Ye Olde Tavern Cheese Products, Chicago, Ill. Filed Aug. 14, 1964.

YE OLDE TAVERN

Owner of Reg. Nos. 220,214, 351,558, and 640,431.
For Cheese, Salted and Unsalted Nut Meats, Mayonnaise, Salad Dressing, Food Lemon Beverage Mix, Maraschino Cherries, Olives, Pickles and Pickle Relish, Pickled and Marinated Herring, Shrimp Cocktail, Tomato Juice, Anchovies, Sardines, Sausage, and Pretzels.
First use Apr. 1, 1936, on cheese.

SN 203,893. Salerno-Megowen Biscuit Company, Chicago, Ill. Filed Oct. 13, 1964.

MILKY MALLOWS

Applicant disclaims any rights in the word "Milky" apart from the mark as shown.
For Cookies.
First use Sept. 11, 1964.

SN 205,060. Eugen Hersog, d.b.a. Kedem Fruit Products Co., Long Island City, N.Y. Filed Oct. 29, 1964.

KEDEM

The word "Kedem" is the Hebrew word for "east." Owner of Reg. No. 756,166.
For Canned Fish.
First use Jan. 22, 1964.

SN 206,291. Ramo Inc., d.b.a. Peanut Products Company, Omaha, Nebr. Filed Nov. 16, 1964.



Owner of Reg. Nos. 363,278 and 760,089.
For Cake and Ice Cream Topping of a Nut Meat Nature; Shelled and Unshelled Nuts; and Edible Processed Seeds for Human Use.
First use on or about Aug. 3, 1964; on or about Jan. 2, 1938, as to "Buster"; in or about July 1963 as to a crown design and the word "Buster."

SN 206,938. General Foods Corporation, White Plains, N.Y. Filed Nov. 25, 1964.

GREAT SHAKES

For Instant Milk Shake Mix.
First use Nov. 16, 1964.

SN 208,948. Mead Johnson & Company, Evansville, Ind. Filed Dec. 28, 1964.

FLING

Owner of Reg. No. 766,472.
For Nutritionally Complete Dietary With Minerals and Vitamins, Designed for Optimal Nourishment and for Use in Weight Control.
First use on or prior to Aug. 21, 1964.

SN 209,276. Kountry Kitchen, Custer, Mont. Filed Jan. 4, 1965.

KOUNTRY KITCHEN

For Wild Fruit Jelly and Syrup.
First use Nov. 10, 1955.

SN 209,300. Pierce Packing Company, Billings, Mont. Filed Jan. 4, 1965.

PENNY WISE

Owner of Reg. No. 645,197.
For Bacon, Frankfurters, Bologna, Summer Sausage, Thuringer, Salami, and Port Sausage.
First use Dec. 30, 1955, on bacon, frankfurters, and bologna.

SN 210,758. Educator Biscuit Company, Incorporated, Lowell, Mass. Filed Jan. 27, 1965.

SCOTCH CHASERS

For Crackers.
First use June 16, 1964.
Subj. to Intf. with SN 199,778.

SN 210,870. General Mills, Inc., Minneapolis, Minn. Filed Jan. 28, 1965.

SKOOBA

For Flavored Dairy Beverage.
First use Jan. 5, 1965.

SN 215,208. General Foods Corporation, White Plains, N.Y. Filed Mar. 29, 1965.

UNIPUFF

For Degermed Yellow Corn Meal.
First use Jan. 7, 1965.

SN 215,266. Purity Cheese Company, Mayville, Wis. Filed Mar. 29, 1965.

COUNTRY KETTLE

For Cheese.
First use Mar. 18, 1965.

Class 48 — Malt Beverages and Liquors

SN 178,384. The Walter Brewing Company, Pueblo, Colo. Filed Oct. 4, 1963.

GOLD LABEL

No exclusive right to a gold colored label is claimed. Applicant claims use for the area comprising the States of: Colorado, Arizona, Kansas, and Nebraska.
For Beer.
First use 1906.
Subj. to Concurrent Use Proceeding with Reg. Nos. 371,249, 589,062, and 618,752.

Class 49 — Distilled Alcoholic Liquors

SN 202,794. The Alfred Hart Company, d.b.a. Nadeau & Company, Los Angeles, Calif. Filed Sept. 28, 1964.



For Rum.
First use 1952.

Class 50 — Merchandise Not Otherwise Classified

SN 172,425. Bruce L. Sikking and Violet A. Sikking (joint owners), d.b.a. The Grey Squirrel, Idyllwild, Calif. Filed July 3, 1963.



For Ceramic Figurines Excluding the Representation of a Squirrel.
First use May 27, 1958.

SN 206,760. Radiant Manufacturing Corporation, Morton Grove, Ill. Filed Nov. 23, 1964.

PORTA-CHALK

For Portable Chalkboard Having a Collapsible Chalk-Markable Surface.
First use July 19, 1964.

SN 214,098. Aubrey H. Elkington and Aileen Elkington (joint owners), d.b.a. AA Co., Montevideo, Minn. Filed Mar. 15, 1965.

HIDE-A-BABE

For Portable Private Dressing Room.
First use Mar. 9, 1965.

Class 51 — Cosmetics and Toilet Preparations

SN 191,757. "42" Products, Ltd., Inc., Santa Monica, Calif. Filed Apr. 22, 1964.

BREATH OF MINT

For Mouth and Breath Freshener.
First use Nov. 5, 1963.

SN 194,358. Carrtone Laboratories, Inc., Metaire, La. Filed May 27, 1964.

Carré

The English meaning of the French word "Carré" is square.
For Cosmetics—Namely, Lipstick, Face Powder, Liquid Make-Up, Astringent, Cleansing Cream, Hand Cream, Facial Cream, Liquid Rouge, Mascara, Eyeliner, and After Shave Lotion.
First use Dec. 21, 1962.

SN 204,068. Handi Spray Products Inc., Newark, N.J. Filed Oct. 15, 1964.

NICE 'N' FRESH

For Spray-On Body Freshener.
First use Sept. 14, 1964.

SN 204,447. John H. Breck, Inc., Springfield, Mass. Filed Oct. 21, 1964.

MISS BRECK

Owner of Reg. Nos. 521,473 and 529,328.
For Hair Spray.
First use Sept. 17, 1964.

SN 212,849. Avon Products, Inc., New York, N.Y. Filed Feb. 26, 1965.

TOT 'N' TYKE

For Baby Powder, Oil, Lotion, and Cream.
First use June 18, 1958.

Class 52 — Detergents and Soaps

SN 194,356. C-Tex Carter Co., Denver, Colo. Filed May 27, 1964.

Adams KLER-LENS

The surname "Adams" is disclaimed apart from the mark as shown.
For Eyeglass Cleaning Solution.
First use Feb. 7, 1961.

SN 201,012. Colgate-Palmolive Company, New York, N.Y. Filed Sept. 1, 1964.

HEXAMMONIA

For Combination of Cleaning Agents and Ammonia Incorporated as an Ingredient in All-Purpose Cleaners.
First use Aug. 14, 1964.

SN 211,045. Economics Laboratory, Inc., St. Paul, Minn. Filed Feb. 1, 1965.

SURGI-BAC

For Pre-Surgical Scrub Soap.
First use Dec. 4, 1964.

SN 213,324. Cal-National Chemicals, Inc., Glendale, Calif. Filed Mar. 8, 1965.

X-cleen

For Metal Cleaning Compound.
First use Jan. 2, 1964.

SERVICE MARKS

Class 100 — Miscellaneous

SN 157,540. Optimist Club of Jackson, Michigan, Jackson, Mich. Filed Nov. 19, 1962.

HAVE A HEART HELP A BOY

For Eleemosynary Services—Namely, Raising and Distributing Funds To Aid Youths.
First use February 1957.
Subj. to Intf. with SN 149,138.

SN 179,487. United Memorial Service Corp., Denver, Colo. Filed Oct. 21, 1963.

UMS

For Handling of Funeral, Financial, and Interment Arrangements for the Family or Personal Representative of the Deceased With a Funeral Home, Mortuary, Cemetery, or Mausoleum.
First use July 10, 1963.

SN 190,922. Harper Method, Inc., Rochester, N.Y. Filed Apr. 13, 1964.

MARTHA HARPER

"Martha Harper" was one of the founders of applicant corporation. Owner of Reg. Nos. 550,950, 726,590, and others.
For Beauty Salon Services, i.e., Application of Makeup, Styling of Hair, Hair Cutting, Manicuring, Corrective Exercises, etc.
First use Aug. 1, 1963.

SN 197,555. Franksville, Inc., Chicago, Ill. Filed July 10, 1964.



For Restaurant Services.
First use on or about Aug. 1, 1963.

SN 201,356. The American Society of Radiologic Technologists, Fond du Lac, Wis. Filed Sept. 8, 1964.



Owner of Reg. No. 615,007.
For Association Services—Namely, Encouraging the Study of and Promoting the Science and Art of Radiologic Technology; Planning and Promoting Refresher Courses for Technicians To Improve Their Learning; Furnishing Lists to Physicians of X-Ray Technicians Who Have Been Certified by Applicant's National Examining Board; and Disseminating Information to Its Members Relating to the Latest Developments in the Field of Radiology.
First use Mar. 15, 1964.

SN 201,800. Bike's Burger Bar of Hays, Inc., Beloit, Kans. Filed Sept. 14, 1964.



No claim of exclusive right is made to the words "Burger Bar" apart from the mark as shown.
For Drive-In Restaurant Services.
First use Feb. 7, 1964.

Class 101 — Advertising and Business

SN 174,942. Carson Pirie Scott & Co., Chicago, Ill. Filed Aug. 13, 1963.



For General Department Store Services, Including a Wholesale Floor Coverings Supply Service Division and a Contracting Service Division Primarily Directed to the Supply of Interior Furnishings for Offices, Hotels, and Motels.
First use on or about Aug. 18, 1946.

SN 184,796. Dial N Dine Service, Washington, D.C. Filed Jan. 17, 1964.



For Telephone Answering Service for Furnishing Information to Callers Regarding Restaurants Listed With the Service.
First use on or about June 1, 1963.

SN 187,776. Meredith Publishing Company, Des Moines, Iowa. Filed Mar. 2, 1964.

BETTER HOMES FOR ALL AMERICA

Owner of Reg. No. 608,350.
For Approving and Promoting the Sale of New Homes by Others by Preparing and Providing Comprehensive Kits of Advertising Material.
First use December 1962.

SN 194,577. R. Pierce Clayberger, Jr., d.b.a. Richard P. Rita Personnel Services of Springfield, Springfield, Mass. Filed June 1, 1964.

QUEST

For Employment Agency Services for Professional Men and Women.
First use Apr. 12, 1964.

SN 208,616. The Stanward Corporation, Marion, Ohio. Filed Oct. 8, 1964.

FCA

For Direct Mail Services, Data Processing Services and Clerical Services.
First use Jan. 31, 1953.

SN 208,783. Super Valu Stores, Inc., Hopkins, Minn. Filed Dec. 23, 1964.

SUPER VALU

Owner of Reg. Nos. 625,537, 760,164, and others.
For Grocery Store Services.
First use Dec. 1, 1964.

SN 208,968. Charlie See, d.b.a. Charlie See & Associates, Hollywood, Calif. Filed Dec. 28, 1964.

MISS ALL NATIONS

For Promoting the Sale of Goods and Services of Others Through the Medium of Periodic Beauty Contests.
First use Oct. 16, 1964.

Class 102 — Insurance and Financial

SN 168,921. Gains Guaranty Corporation, Des Moines, Iowa. Filed May 15, 1963.

GAINS GUARANTY CORPORATION

For Rental of Real Estate.
First use Aug. 14, 1961.

Class 103 — Construction and Repair

SN 161,974. Dresser Industries, Inc., d.b.a. Lane-Wells Co., Dallas, Tex. Filed Feb. 4, 1963.

FLEXIJET

For Well Casing and Formation Perforating in Well Boreholes.
First use on or about Aug. 14, 1961.

Class 105 — Transportation and Storage

SN 150,812. Parma Motors, Inc., Parma, Ohio. Filed Aug. 8, 1962.

POINTER

For Distributing and Maintenance Services With Regard to Motorcycles and Autoscooters and Parts Therefor.
First use Feb. 2, 1961.

SN 206,721. Hennis Freight Lines, Inc., Winston-Salem, N.C. Filed Nov. 23, 1964.

SERVANT OF INDUSTRY

For Trucking Services Comprising the Hauling of Freight.
First use on or about July 1, 1946.

SN 208,033. Brady Motorfrate, Inc., Des Moines, Iowa. Filed Dec. 14, 1964.

STRATELINE

For Transportation of Freight by Motor Vehicles.
First use on or about Dec. 1, 1953.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 206,567. National Association of Home Builders of the United States, Washington, D.C. Filed Nov. 19, 1964.

NATIONAL ASSOCIATION of HOME BUILDERS of the UNITED STATES

The lining shown on the drawing is a design feature of the mark and is not intended to indicate color.
For Indicating Membership Within the Applicant Association.
First use Nov. 4, 1944.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

793,496. A–11. Ed. F. Mangelsdorf & Bro., Inc. SN 185,912. Pub. 5–18–65. Filed 2–3–64.

793,497. SURLYN. E. I. du Pont de Nemours and Company. SN 187,013. Pub. 5–18–65. Filed 2–19–64.

793,498. PLIOPAVE. The Goodyear Tire & Rubber Company. SN 188,100. Pub. 5–18–65. Filed 3–6–64.

793,499. BETAPRENE. Reichhold Chemicals, Inc. SN 188,143. Pub. 5–18–65. Filed 3–6–64.

793,500. DELTAPRENE. Reichhold Chemicals, Inc. SN 188,144. Pub. 5–18–65. Filed 3–6–64.

793,501. TENITE. Eastman Kodak Company. SN 190,351. Pub. 5–18–65. Filed 4–6–64.

793,502. EMB. Engelhard Hanovia, Inc. SN 190,602. Pub. 5–18–65. Filed 4–8–64.

793,503. BORG-WARNER. Borg-Warner Corporation. CONSOLIDATED CERTIFICATE. SN 195,621, pub. 5–11–65, filed 6–15–64, Cl. 1; SN 195,622, pub. 5–11–65, filed 6–15–64, Cl. 12; SN 195,623, pub. 5–11–65, filed 6–15–64, Cl. 13; SN 195,624, pub. 5–11–65, filed 6–15–64, Cl. 14; SN 195,625, pub. 5–11–65, filed 6–15–64, Cl. 16; SN 195,626, pub. 5–11–65, filed 6–15–64, Cl. 19; SN 195,627, pub. 5–11–65, filed 6–15–64, Cl. 21; SN 195,628, pub. 5–11–65, filed 6–15–64, Cl. 23; SN 195,629, pub. 5–11–65, filed 6–15–64, Cl. 24; SN 195,630, pub. 5–11–65, filed 6–15–64, Cl. 31; SN 195,631, pub. 5–11–65, filed 6–15–64, Cl. 32; SN 195,632, pub. 5–11–65, filed 6–15–64, Cl. 34; SN 195,633, pub. 5–11–65, filed 6–15–64, Cl. 44.

793,504. FLORAFLEUR AND DESIGN. Veenproducten Maatschappij Tuinturf N.V. SN 198,599. Pub. 5–18–65. Filed 7–27–64.

793,505. URALITE. Rezolin, Inc. SN 205,346. Pub. 5–18–65. Filed 11–2–64.

793,506. POROFIELD. Fields Plastics & Chemicals, Inc. SN 206,023. Pub. 5–18–65. Filed 11–12–64.

Class 2—Receptades

793,507. GARBAX. International Paper Company. SN 171,547. Pub. 1–21–64. Filed 6–21–63.

793,508. MAC-SAC. Joseph Mack Associates, Inc. SN 174,516. Pub. 5–12–64. Filed 8–6–63.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

793,509. SOMETHING NEW—NOT "ME TOO" ETC. AND DESIGN. Peerless Plastics, Inc. SN 184,308. Pub. 5–18–65. Filed 1–9–64.

Class 6—Chemicals and Chemical Compositions

793,510. WORKEASE. Manufacturers' Marketing Co., U.S.A. Inc. SN 171,999. Pub. 5–18–65. Filed 6–27–63.

793,511. KRITTER KOTE. W. H. Barber Oil Company. SN 175,243. Pub. 5–18–65. Filed 8–19–63.

793,512. PUMA AND DESIGN. Puma Corporation. SN 177,287. Pub. 5–18–65. Filed 9–18–63.

793,513. DICHLORANDIMER. Sohio Chemical Company. SN 181,691. Pub. 5–18–65. Filed 11–21–63.

793,514. ANDIAMINE. Sohio Chemical Company. SN 181,692. Pub. 5–18–65. Filed 11–21–63.

793,515. ANDIMER. Sohio Chemical Company. SN 181,697. Pub. 5–18–65. Filed 11–21–63.

793,516. ANDIGUANAMINE. Sohio Chemical Company. SN 181,699. Pub. 5–18–65. Filed 11–21–63.

793,517. ANDIISOCYANATE. Sohio Chemical Company. SN 181,700. Pub. 5–18–65. Filed 11–21–63.

793,518. STAN-GUARD AND DESIGN. Chas. Pfizer & Co., Inc. SN 186,641. Pub. 5–18–65. Filed 2–13–64.

793,519. MIL-SQUEEZ. Milchem Incorporated. SN 187,778. Pub. 5–18–65. Filed 3–2–64.

793,520. STOCKMASTER. Klingman Manufacturing Co., Inc. SN 188,640. Pub. 5–18–65. Filed 3–13–64.

793,521. GAFLOC. General Aniline & Film Corporation. SN 189,576. Pub. 5–18–65. Filed 3–25–64.

793,522. PENESTRIP. Navan Products, Inc. SN 189,797. Pub. 5–18–65. Filed 3–27–64.

793,523. NO RUST FOR THE WARY. Chas. J. Webb Sons Co., Inc., assignee of Corrosion Reaction Consultants, Inc. SN 190,065. Pub. 5–18–65. Filed 4–1–64.

793,524. NEVRGREEN. Ranco Industrial Products Corporation. SN 190,433. Pub. 5–18–65. Filed 4–6–64.

793,525. WICAPEL. Wica Chemicals, Incorporated. SN 190,451. Pub. 5–18–65. Filed 4–6–64.

793,526. WICAPAD. Wica Chemicals, Incorporated. SN 190,452. Pub. 5–18–65. Filed 4–6–64.

793,527. WICANOL. Wica Chemicals, Incorporated. SN 190,453. Pub. 5–18–65. Filed 4–6–64.

793,528. WICALOID. Wica Chemicals, Incorporated. SN 190,454. Pub. 5–18–65. Filed 4–6–64.

793,529. WICAKRAF. Wica Chemicals, Incorporated. SN 190,455. Pub. 5–18–65. Filed 4–6–64.

793,530. WICAFIX. Wica Chemicals, Incorporated. SN 190,456. Pub. 5–18–65. Filed 4–6–64.

793,531. WICATEX. Wica Chemicals, Incorporated. SN 190,464. Pub. 5–18–65. Filed 4–6–64.

793,532. WICASAN. Wica Chemicals, Incorporated. SN 190,470. Pub. 5–18–65. Filed 4–6–64.

793,533. WICARENE. Wica Chemicals, Incorporated. SN 190,471. Pub. 5–18–65. Filed 4–6–64.

793,534. MBC. Hooker Chemical Corporation. SN 190,804. Pub. 5–18–65. Filed 4–10–64.

793,535. DESEKELEX. Guardian Chemical Corporation. SN 191,170. Pub. 5–18–65. Filed 4–15–64.

793,536. BI·CHEM·CO. The Biochemical Corporation of America. SN 191,495. Pub. 5–18–65. Filed 4–20–64.

793,537. BI·CHEM·CO. AND DESIGN. The Biochemical Corporation of America. SN 191,496. Pub. 5–18–65. Filed 4–20–64.

793,538. EMA. Monsanto Company. SN 192,309. Pub. 5–18–65. Filed 4–29–64.

793,539. TRICARBAMIX. Pennsalt Chemicals Corporation. SN 193,207. Pub. 5–18–65. Filed 5–11–64.

793,540. PETROFRAC. The Dow Chemical Company. SN 195,074. Pub. 5–18–65. Filed 6–8–64.

793,541. CEALMENT. The Dow Chemical Company. SN 195,077. Pub. 5–18–65. Filed 6–8–64.

793,542. ANTHOMINE. Arkansas Co., Inc. SN 199,441. Pub. 5–18–65. Filed 8–7–64.

793,543. CORD-COOMBS. Spectra Biologicals, Incorporated. SN 200,040. Pub. 5–18–65. Filed 8–17–64.

793,544. CAPASIN. Ciba Limited. SN 201,101. Pub. 5–18–65. Filed 9–2–64.

793,545. VIRANITE. Ciba Limited. SN 201,104. Pub. 5–18–65. Filed 9–2–64.

793,546. DOWICIL. The Dow Chemical Company. SN 202,783. Pub. 5–18–65. Filed 9–28–64.

793,547. KRASDALE. Krasdale Foods, Inc. SN 203,299. Pub. 5–18–65. Filed 10–5–64.

793,548. ACIDEX. Paul L. Miller. SN 203,318. Pub. 5–18–65. Filed 10–5–64.

793,549. FLASK AND TEST TUBE (DESIGN). The Stamford Chemical Company. SN 203,344. Pub. 5–18–65. Filed 10–5–64.

793,550. CAB-O-SPERSE. Cabot Corporation. SN 203,934. Pub. 5–18–65. Filed 10–14–64.

793,551. AFFIRMAGEN. Ortho Pharmaceutical Corporation. SN 205,195. Pub. 5–18–65. Filed 10–30–64.

793,552. SEARCH-CYTE. Dade Reagents, Inc. SN 206,526. Pub. 5–18–65. Filed 11–19–64.

793,553. BANOL. The Upjohn Company. SN 213,825. Pub. 5–18–65. Filed 3–8–65.

Class 10—Fertilizers

793,554. GRANAID. Des Plaines Chemical Company. SN 182,602. Pub. 5–18–65. Filed 12–9–63.

793,555. COFUNA. Compagnie Francaise des Fumures Naturelles. SN 197,087. Pub. 5–18–65. Filed 7–6–64.

Class 11—Inks and Inking Materials

793,556. PLASTOFOIL. Kores Manufacturing Company Limited. SN 168,985. Pub. 5–18–65. Filed 5–14–63.

Class 12—Construction Materials

793,503. CONSOLIDATED CERTIFICATE. See Class 1.

793,557. CRAFTWOOD. Simpson Timber Company. SN 158,658. Pub. 6–2–64. Filed 12–6–62.

793,558. CORINTHIAN. National Gypsum Company. SN 201,609. Pub. 5–18–65. Filed 9–10–64.

793,559. FLURO-THRED. Sterling Packing & Gasket Company, Inc. SN 203,347. Pub. 5–18–65. Filed 10–5–64.

793,560. DRI-PFI COATED AND DESIGN. Potlatch Forests, Inc. SN 203,811. Pub. 5–18–65. Filed 10–12–64.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

793,503. CONSOLIDATED CERTIFICATE. See Class 1.

793,561. INFINITY BRAND. The H. M. Harper Company. SN 187,418. Pub. 5–18–65. Filed 2–25–64.

793,562. MAGNA-COOK AND DESIGN. Magna-Cook Corp. of America. SN 198,485. Pub. 2–2–65. Filed 7–24–64.

793,563. PERPEDOS. Gustav Eric Valdemar Benson. SN 206,036. Pub. 5–11–65. Filed 11–12–64.

793,564. AMERTWIST. United States Steel Corporation. SN 206,319. Pub. 5–18–65. Filed 11–16–64.

Class 14—Metals and Metal Castings and Forgings

793,503. CONSOLIDATED CERTIFICATE. See Class 1.

793,565. SNUG STOWING. The Boston Metals Company. SN 203,150. Pub. 5–18–65. Filed 10–2–64.

Class 15—Oils and Greases

793,566. WICAWAX. Wica Chemicals, Incorporated. SN 190,465. Pub. 5–18–65. Filed 4–6–64.

793,567. PM AND DESIGN. The Pure Oil Company. SN 194,653. Pub. 5–18–65. Filed 6–1–64.

793,568. PSL. The Barcolene Company. SN 196,602. Pub. 5–18–65. Filed 6–29–64.

793,569. GIBBLE GAS AND DESIGN. Gibble Oil Company. SN 203,280. Pub. 5–18–65. Filed 10–5–64.

793,570. TONE. Virginia Aerosol Inc. SN 209,561. Pub. 5–18–65. Filed 1–7–65.

Class 16—Protective and Decorative Coatings

793,503. CONSOLIDATED CERTIFICATE. See Class 1.

793,571. SILVER SKATE AND DESIGN. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co. SN 185,403. Pub. 5–18–65. Filed 1–27–64.

793,572. FINESSE. Rockcote Paint Co. SN 191,955. Pub. 5–18–65. Filed 4–24–64.

Class 18—Medicines and Pharmaceutical Preparations

793,573. M-A. M-A Pharmaceutical Corporation, assignee of Charles A. Susslin. SN 118,013. Pub. 2–6–62. Filed 4–17–61.

793,574. FERANCEE. Atlas Chemical Industries, Inc. SN 146,701. Pub. 5–18–65. Filed 6–12–62.

793,575. BARNES-HIND KOMEX. Barnes-Hind Laboratories. SN 179,515. Pub. 5–18–65. Filed 10–22–63.

793,576. FRUTI-FLOR. California Institutional Supply Co. Inc. SN 181,316. Pub. 5–18–65. Filed 11–18–63.

793,577. SP. American Hospital Supply Corporation. SN 184,126. Pub. 5–18–65. Filed 1–7–64.

793,578. PYRIDAMIDE. Western Research Laboratories, Inc., assignee of Western Research Laboratories. SN 184,541. Pub. 5–18–65. Filed 1–13–64.

793,579. MIOCHOL. Smith, Miller & Patch, Inc. SN 195,727. Pub. 5–18–65. Filed 6–15–64.

793,580. AMFODYNE. Kapson Laboratories, Inc. SN 200,574. Pub. 5–18–65. Filed 8–25–64.

793,581. KAOPARIN. McKesson & Robbins, Incorporated. SN 201,296. Pub. 5–18–65. Filed 9–4–64.

793,582. TRIALKA. Commerce Drug Co., Inc. SN 203,577. Pub. 5–18–65. Filed 10–8–64.

793,583. CYSTOKON. Mallinckrodt Chemical Works. SN 203,672. Pub. 5–18–65. Filed 10–9–64.

793,584. PALMA-SPERSE. Hoffmann-La Roche Inc. SN 204,905. Pub. 5–18–65. Filed 10–27–64.

793,585. KX. Kasar Company. SN 206,268. Pub. 5–18–65. Filed 11–16–64.

793,586. NELOSAN. The Upjohn Company. SN 206,583. Pub. 5–18–65. Filed 11–19–64.

793,587. MUROCOLL. Muro Pharmacal Laboratories, Inc. SN 207,729. Pub. 5–18–65. Filed 12–8–64.

793,588. AUREO. American Cyanamid Company. SN 207,777. Pub. 5–18–65. Filed 12–9–64.

793,589. CANTILYTE. Colgate-Palmolive Company. SN 208,041. Pub. 5–18–65. Filed 12–14–64.

793,590. SKEDULE. Syntex Laboratories, Inc. SN 208,142. Pub. 5–18–65. Filed 12–14–64.

793,591. KYLE'S. The Sheffield Company. SN 208,774. Pub. 5–18–65. Filed 12–23–64.

Class 19—Vehicles

793,503. CONSOLIDATED CERTIFICATE. See Class 1.

793,592. NADELLA AND DESIGN. Nadella S.A. MULTIPLE CLASS (Classes 19 and 23). SN 185,230. Pub. 5–18–65. Filed 1–23–64.

793,593. UNION CARBIDE AND DESIGN. Union Carbide Corporation. SN 206,314. Pub. 5–18–65. Filed 11–16–64.

Class 21—Electrical Apparatus, Machines, and Supplies

793,503. CONSOLIDATED CERTIFICATE. See Class 1.

793,594. GROUP COMMUNICATIONS AND DESIGN. Teleprompter Corporation. SN 178,147. Pub. 5–18–65. Filed 10–1–63.

793,595. JENNINGS. Jennings Radio Manufacturing Corporation. SN 185,899. Pub. 5–18–65. Filed 2–3–64.

793,596. VALENTINE. Comptoir des Machines, S.A. SN 189,660. Pub. 5–18–65. Filed 3–26–64.

793,597. TETON AND DESIGN. Montgomery Brothers, Inc. SN 205,190. Pub. 5–18–65. Filed 10–30–64.

793,598. RUSTOLITE. Russell & Stoll Company, Inc. SN 205,850. Pub. 5–18–65. Filed 11–9–64.

Class 22—Games, Toys, and Sporting Goods

793,599. HEDLUND. Hedlund Manufacturing Company. SN 163,047. Pub. 5–18–65. Filed 2–19–63.

793,600. GRIP GROOVER. Eldorado Products, Inc. SN 176,359. Pub. 5–18–65. Filed 9–5–63.

793,601. HOLE IN. Nicholas Egnatz. SN 177,780. Pub. 5–18–65. Filed 9–26–63.

793,602. ALPRIMA. St. Lawrence Sales Incorporated. SN 184,513. Pub. 5–18–65. Filed 1–13–64.

793,603. MAGIC-NOCK. Pro Sports All, Inc. SN 187,145. Pub. 5–18–65. Filed 2–20–64.

793,604. LITTLE LOVE. American Doll & Toy Corporation. SN 187,994. Pub. 10–27–64. Filed 3–5–64.

793,605. SKI SKIM AND DESIGN. Henry L. Hunter III, d.b.a. Ski Skim. SN 188,055. Pub. 5–18–65. Filed 3–2–64.

793,606. SEASAVE, ETC. AND DESIGN. Seamac Corporation. SN 189,507. Pub. 5–18–65. Filed 3–24–64.

793,607. PARTYLINE AND DESIGN. Geraldine W. Rodin, d.b.a. G. W. Rodin Company. SN 189,812. Pub. 5–18–65. Filed 3–27–64.

793,608. ALLEY THE CAT. Uneeda Doll Co., Inc. SN 190,995. Pub. 5–18–65. Filed 4–13–64.

793,609. NATIONAL CANVAS PRODUCTS CORP. AND DESIGN. National Canvas Products Corp. SN 192,067. Pub. 5–18–65. Filed 4–27–64.

793,610. DORADO 360° AND DESIGN. Anglers Manufacturing Co. SN 193,528. Pub. 5–18–65. Filed 5–15–64.

793,611. WILD N' WOOLIES. R. Dakin & Company, by change of name from R. Dakin & Company, Importers. SN 194,366. Pub. 5–18–65. Filed 5–27–64.

793,612. REEL-A-RIG. Ridley Mfg. Co., Inc. SN 194,749. Pub. 5–18–65. Filed 6–2–64.

793,613. TEE QUEEN. Wittek Golf Range Supply Co., Inc. SN 196,083. Pub. 5–18–65. Filed 6–19–64.

793,614. AB-STRACTO? John Freiburg. SN 197,280. Pub. 5–18–65. Filed 7–7–64.

793,615. SKIP-BO. Hasel Bowman. SN 197,662. Pub. 5–18–65. Filed 7–13–64.

793,616. JARCO. John A. Roberts & Company, Inc. SN 198,898. Pub. 5–18–65. Filed 7–30–64.

793,617. PROVOCATIVE EYES AND DESIGN. Columbia Toy Products, Inc. SN 199,969. Pub. 5–18–65. Filed 8–17–64.

793,618. BICKY BOY. Bicky Boy Football Games Inc. SN 200,404. Pub. 5–18–65. Filed 8–24–64.

793,619. BOWL-4-CASH. Rae Levine. SN 200,451. Pub. 5–18–65. Filed 8–24–64.

793,620. HUNT-4-CASH. Rae Levine. SN 200,453. Pub. 5–18–65. Filed 8–24–64.

793,621. FLOWERCASH. Rae Levine. SN 200,455. Pub. 5–18–65. Filed 8–24–64.

793,622. FISH-4-CASH. Rae Levine. SN 200,456. Pub. 5–18–65. Filed 8–24–64.

793,623. SONGCASH. Rae Levine. SN 200,457. Pub. 5–18–65. Filed 8–24–64.

793,624. BUG-EYE. Arndt & Sons, Inc. SN 200,812. Pub. 5–18–65. Filed 8–28–64.

793,625. 'JENNIREST.' The Jennirest Company. SN 200,846. Pub. 5–18–65. Filed 8–28–64.

793,626. "WEEPERS." Anna Edwarda Mosscynski, d.b.a. Anna Edwarda. SN 202,833. Pub. 5–18–65. Filed 9–28–64.

793,627. SHAPE-UP GYM. Puritan Cordage Mills. SN 203,029. Pub. 5–18–65. Filed 9–30–64.

793,628. TRIM-TABLE. Battle Creek Equipment Co. SN 203,925. Pub. 5–18–65. Filed 10–14–64.

793,629. SCOOBA-DOO. Mattel, Inc. SN 204,178. Pub. 5–18–65. Filed 10–16–64.

793,630. "RAGSY." Cameo Doll Products Co., Inc. SN 204,351. Pub. 5–18–65. Filed 10–20–64.

793,631. HAPPY HOUR AND DESIGN. Humane Barn Equipment Co., Inc., d.b.a. Happy Hour Playground Equipment Co. SN 204,381. Pub. 5–18–65. Filed 10–20–64.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

793,503. CONSOLIDATED CERTIFICATE. See Class 1.

793,592. (See Class 19 for this trademark.)

793,632. AQUA FLO. Minnesota Mining and Manufacturing Company. SN 200,852. Pub. 5–18–65. Filed 8–28–64.

793,633. SC. Southern California Hydraulic Engineering Corp., d.b.a. SC Hydraulic Engineering Corp. SN 203,884. Pub. 5–18–65. Filed 10–12–64.

793,634. AQUA-VERTER. Moorhead Machinery & Boiler Co. SN 204,184. Pub. 5–18–65. Filed 10–16–64.

793,635. SYNCHRO-COG. Dayco Corporation. MULTIPLE CLASS (Classes 28 and 35). SN 204,216. Pub. 5–18–65. Filed 10–19–64.

793,636. REACH-ALL. Norvey, Inc. SN 205,446. Pub. 5–18–65. Filed 11–3–64.

793,637. STER-LUSTRE. Forest China, Inc. SN 206,712. Pub. 5–18–65. Filed 11–23–64.

Class 24—Laundry Appliances and Machines

793,503. CONSOLIDATED CERTIFICATE. See Class 1.

Class 26—Measuring and Scientific Appliances

793,638. AUTOGRAM. Ohaus Scale Corporation. SN 193,490. Pub. 5–18–65. Filed 5–14–64.

793,639. VE DET. Radio Corporation of America. SN 196,061. Pub. 5–18–65. Filed 6–19–64.

793,640. TRUE CUT AND DESIGN. True-Cut Products, Inc. SN 196,570. Pub. 5–18–65. Filed 6–26–64.

793,641. MAG-AIR. Crompton & Knowles Corporation. SN 201,525. Pub. 5–18–65. Filed 9–9–64.

Class 30—Crockery, Earthenware, and Porcelain

793,642. ESQUIRE. Shenango Ceramics, Inc., assignee of Shenango China, Inc. SN 166,134. Pub. 5–18–65. Filed 4–4–63.

Class 31—Filters and Refrigerators

793,503. CONSOLIDATED CERTIFICATE. See Class 1.

793,643. SPHERICONE. Union Tank Car Company. SN 184,766. Pub. 5–18–65. Filed 1–16–64.

793,644. TALL 'N SMALL. Sunroc Corporation. SN 195,981. Pub. 5–18–65. Filed 6–18–64.

Class 32—Furniture and Upholstery

793,503. CONSOLIDATED CERTIFICATE. See Class 1.

793,645. WASH 'N DREAM AND DESIGN. New York Feather Co., Inc. SN 204,993. Pub. 5–18–65. Filed 10–28–64.

Class 34—Heating, Lighting, and Ventilating Apparatus

793,503. CONSOLIDATED CERTIFICATE. See Class 1.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

793,635. (See Class 23 for this trademark.)

793,646. WINDSOR. United States Rubber Company. SN 194,335. Pub. 5–18–65. Filed 5–26–64.

793,647. PLICORD. The Goodyear Tire & Rubber Company. SN 203,498. Pub. 5–18–65. Filed 10–7–64.

793,648. DOLON. Greene, Tweed & Co., Inc., assignee of Greene, Tweed & Co. SN 203,501. Pub. 5–18–65. Filed 10–7–64.

793,649. DES-O-RING. Lapine Scientific Company. SN 204,581. Pub. 5–18–65. Filed 10–22–64.

793,650. TRANSPORT 100. The Firestone Tire & Rubber Company. SN 204,648. Pub. 5–18–65. Filed 10–23–64.

Class 36—Musical Instruments and Supplies

793,651. EMERITUS 21. W. T. Armstrong Co., Inc. SN 198,698. Pub. 5–18–65. Filed 7–29–64.

Class 37—Paper and Stationery

793,652. MISCELLANEOUS DESIGN. Kimberly-Clark Corporation. SN 175,117. Pub. 5–18–65. Filed 8–15–63.

793,653. ADVANCE-COTE. Continental Can Company, Inc. SN 185,871. Pub. 5–18–65. Filed 2–3–64.

793,654. PERMA-SHIELD. W. H. Brady Co. SN 186,231. Pub. 8–11–64. Filed 2–7–64.

793,655. PATAPAR AND DESIGN. The Paterson Parchment Paper Company. SN 186,472. Pub. 5–18–65. Filed 2–11–64.

793,656. NEEDA-PADS. Doolittle Stationery Specialties Co. SN 204,772. Pub. 5–18–65. Filed 10–26–64.

793,657. PINK KLEEN. Eberhard Faber Inc. SN 205,263. Pub. 5–18–65. Filed 11–2–64.

Class 38—Prints and Publications

793,658. HOT BOAT. United Western Enterprises, Inc., d.b.a. United Western Enterprises. SN 172,261. Pub. 5–18–65. Filed 7–1–63.

793,659. GLENN ALBRITTON AND DESIGN. Glenn L. Albritton. SN 174,150. Pub. 5–18–65. Filed 8–1–63.

793,660. THE JOURNAL OF GRAPHOANALYSIS. International Grapho Analysis Society, Inc. SN 175,114. Pub. 5–18–65. Filed 8–15–63.

793,661. DATEBOOK. Young World Press, Inc. SN 176,469. Pub. 5–18–65. Filed 9–6–63.

793,662. MILE-MARK. Eureka Specialty Printing Company. SN 185,880. Pub. 5–18–65. Filed 2–3–64.

793,663. MALLET & FROE. Red Cedar Shingle & Handsplit Shake Bureau. SN 189,369. Pub. 5–18–65. Filed 3–23–64.

793,664. ART NEWS. Newsweek, Inc. SN 190,309. Pub. 5–18–65. Filed 4–3–64.

793,665. ART NEWS ANNUAL. Newsweek, Inc. SN 190,310. Pub. 5–18–65. Filed 4–3–64.

793,666. DATADEX. David G. Kilpatrick and William A. Dittrich (partnership). SN 190,623. Pub. 5–18–65. Filed 4–8–64.

793,667. VULCAN COLUMNS. Vulcan Manufacturing Co. SN 192,961. Pub. 5–18–65. Filed 5–7–64.

793,668. WEBSTER'S SEVENTH NEW COLLEGIATE DICTIONARY AND DESIGN. G. & C. Merriam Company (Delaware corporation), assignee of G. & C. Merriam Company (Massachusetts corporation). SN 200,107. Pub. 5–18–65. Filed 8–18–64.

793,669. WEBSTER'S SEVENTH NEW COLLEGIATE DICTIONARY NW AND DESIGN. G. & C. Merriam Company (Delaware corporation), assignee of G. & C. Merriam Company (Massachusetts corporation). SN 200,108. Pub. 5–18–65. Filed 8–18–64.

793,670. EXECUTIVES' DIGEST. Cambridge Associates, Inc. SN 201,573. Pub. 5–18–65. Filed 9–10–64.

793,671. THE NATIONAL CLOSE-UP. Herman Publishing Co., Inc. SN 201,588. Pub. 5–18–65. Filed 9–10–64.

793,672. PAPER AGE. Walden-Mott Corp. SN 202,398. Pub. 5–18–65. Filed 9–22–64.

793,673. TISHU FLOWER. Norcross, Inc. SN 203,989. Pub. 5–18–65. Filed 10–14–64.

793,674. I/T. Inter/Trade Incorporated. SN 204,072. Pub. 5–18–65. Filed 10–15–64.

793,675. MACO. Maco Magazine Corporation. SN 204,076. Pub. 5–18–65. Filed 10–15–64.

793,676. HYDROGRAM. Queensmith Associates, Inc. SN 204,093. Pub. 5–18–65. Filed 10–15–64.

Class 39—Clothing

793,677. TREDMORE. Shoe Affiliates Inc., by change of name from Kenmore Depts., Inc. SN 122,622. Pub. 1-1-63. Filed 6-22-61.

793,678. MISCELLANEOUS DESIGN. Sportswear Corporation of America. SN 170,701. Pub. 5-18-65. Filed 6-10-63.

793,679. OX-FLEX. Oxford Boyswear, Inc. SN 175,203. Pub. 3-10-64. Filed 8-16-63.

793,680. SUNSTERS. Consolidated International Trading Corp. SN 187,178. Pub. 9-22-64. Filed 2-21-64.

793,681. CLOVERDALE. Rubin-Meltzer Corp. SN 190,545. Pub. 10-13-64. Filed 4-7-64.

793,682. JUNIOR HOUSE. Junior House, Inc. SN 193,878. Pub. 5-18-65. Filed 5-20-64.

793,683. HOBNOBBERS. Stetson Shoe Company, Incorporated. SN 194,253. Pub. 12-29-64. Filed 5-25-64.

793,684. HOB-NOB. Wells Lamont Corporation. SN 197,351. Pub. 12-29-64. Filed 7-7-64.

793,685. DAVENTREE AND DESIGN. Davidow Suits, Inc. SN 198,140. Pub. 5-18-65. Filed 7-20-64.

793,686. PLASTIC DOT. Boss Manufacturing Company. SN 198,825. Pub. 5-18-65. Filed 7-22-64.

793,687. HEEL-SET. James F. Lamont and Terrence P. Gormley (joint venture), d.b.a. Heel-Set Golf Shoe Cushions Co. SN 200,008. Pub. 5-18-65. Filed 8-17-64.

793,688. BOB BAKER. J. W. Carter Company. SN 202,553. Pub. 5-18-65. Filed 9-24-64.

793,689. ANSWERETTE. The H. W. Gossard Co. SN 205,938. Pub. 5-18-65. Filed 11-10-64.

Class 40—Fancy Goods, Furnishings, and Notions

793,690. POLYBRUSH. Continental Hair Products Inc. SN 162,825. Pub. 11-19-63. Filed 2-15-63.

793,691. PLASTI-BAK. The Stahl Felt Stamping Co. SN 189,786. Pub. 5-18-65. Filed 3-26-64.

793,692. PERMAFUZED. Supply Manufacturing Co., Inc. SN 197,519. Pub. 5-18-65. Filed 7-9-64.

793,693. SILVALITE. C. J. Bates & Son, Incorporated. SN 202,539. Pub. 5-18-65. Filed 9-24-64.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

793,694. RAINBOW. Rainbow Purchasing Corporation. SN 200,660. Pub. 5-18-65. Filed 8-26-64.

793,695. MARTISTE. Emile Marghab, Incorporated. SN 206,330. Pub. 5-18-65. Filed 10-26-64.

793,696. CROWN JEWEL. Cannon Mills Company. SN 206,346. Pub. 5-18-65. Filed 11-17-64.

793,697. INSULBATTE. J. P. Stevens & Co., Inc. SN 206,383. Pub. 5-18-65. Filed 11-17-64.

793,698. GAZELLE (DESIGN). Erwin Mills, Inc. SN 206,930. Pub. 5-18-65. Filed 11-25-64.

Class 44—Dental, Medical, and Surgical Appliances

793,503. CONSOLIDATED CERTIFICATE. See Class 1.

793,699. S/P. American Hospital Supply Corporation. SN 184,124. Pub. 5-18-65. Filed 1-7-64.

793,700. APC AND DESIGN. Advanced Products Corp. SN 203,244. Pub. 5-18-65. Filed 10-5-64.

Class 45—Soft Drinks and Carbonated Waters

793,701. QUINTONIC. American Beverage Corporation, d.b.a. Calso Water Co. SN 168,135. Pub. 5-18-65. Filed 5-6-63.

793,702. BUNKER HILL AND DESIGN. Contact International, Inc. SN 174,834. Pub. 5-18-65. Filed 8-12-63.

793,703. GROTESQUE LOUD-MOUTH LIME (DESIGN). The Pillsbury Company. SN 196,296. Pub. 5-18-65. Filed 6-23-64.

793,704. GROTESQUE CHINESE CHERRY (DESIGN). The Pillsbury Company. SN 196,297. Pub. 5-18-65. Filed 6-23-64.

793,705. GROTESQUE GOOFY GRAPE (DESIGN). The Pillsbury Company. SN 196,298. Pub. 5-18-65. Filed 6-23-64.

793,706. PAPEETE PETE. Mutual Citrus Products Company. SN 200,375. Pub. 5-18-65. Filed 8-21-64.

Class 46—Foods and Ingredients of Foods

793,707. ROSA. Leonard Foti, d.b.a. Rosa Food Products Co. SN 134,448. Pub. 9-22-64. Filed 12-21-61.

793,708. CHILL 'N BAKE AND DESIGN. Dixie Portland Flour Mills, Inc. SN 155,303. Pub. 5-18-65. Filed 10-17-62.

793,709. MRS. FILBERT'S PRESTIGE. J. H. Filbert, Inc. SN 168,597. Pub. 5-18-65. Filed 5-10-63.

793,710. MADONNA. Carnation Company, assignee of Contadina Foods, Inc. SN 169,023. Pub. 5-18-65. Filed 5-16-63.

793,711. ENERGEN. Holderness Food Products Limited. SN 175,995. Pub. 5-18-65. Filed 8-29-63.

793,712. UFC AND DESIGN. United Fruit Company. SN 181,813. Pub. 5-18-65. Filed 11-22-63.

793,713. SPICE CHEST. New England Canners, Inc. SN 184,103. Pub. 5-18-65. Filed 1-6-64.

793,714. ELEPHANT (DESIGN). S. M. Flickinger Co., Inc. SN 185,121. Pub. 5-18-65. Filed 1-22-64.

793,715. A TREASURE OF GOOD EATING. New England Canners, Inc. SN 185,615. Pub. 5-18-65. Filed 1-29-64.

793,716. LADY ANGEL. Bennett Lea, d.b.a. Lady Luck Vineyards. SN 185,791. Pub. 5-18-65. Filed 1-31-64.

793,717. HARRY AND DAVID. Harry and David. SN 186,355. Pub. 5-18-65. Filed 2-10-64.

793,718. INDESCRIBABLY DELICIOUS. Peter Paul, Inc. SN 187,143. Pub. 5-18-65. Filed 2-20-64.

793,719. SAW-READY. The Sugardale Provision Company. SN 187,443. Pub. 5-18-65. Filed 2-25-64.

793,720. HENNY PEN. Fabro, Inc. SN 187,739. Pub. 5-18-65. Filed 3-2-64.

793,721. HOLLY FARMS. Holly Farms Poultry Industries, Inc. SN 189,472. Pub. 5-18-65. Filed 3-24-64.

793,722. BREATH-GARDS. A. E. Stannard Limited. SN 189,956. Pub. 5-18-65. Filed 3-30-64.

793,723. JOY SEE. A. Goodman & Sons, Inc. SN 190,512. Pub. 5-18-65. Filed 4-7-64.

793,724. FARMER IN THE DELL. Phoenix Candy Co., Inc. SN 191,713. Pub. 5-18-65. Filed 4-21-64.

793,725. CUPREM AND DESIGN. G & M Feed Co., Inc. SN 194,382. Pub. 5-18-65. Filed 5-27-64.

793,726. MOZZATANG. National Dairy Products Corporation. SN 194,909. Pub. 5-18-65. Filed 6-4-64.

793,727. SAN JUAN CAPISTRANO. Apex Distributing Co. SN 196,093. Pub. 5-18-65. Filed 6-22-64.

793,728. COLOLO. Charles A. Sayous, Inc. SN 196,310. Pub. 5-18-65. Filed 6-23-64.

793,729. KEL-PRIME. Kellogg Company. SN 197,135. Pub. 5-18-65. Filed 7-6-64.

793,730. MERRI-MINTS. Delson Candy Co., Inc. SN 199,036. Pub. 5-18-65. Filed 8-3-64.

793,731. ROCOCO. Fairfield Distributors Inc. SN 199,188. Pub. 5-18-65. Filed 8-4-64.

793,732. LIBERTY BELL ETC. AND DESIGN. John Engelhorn & Sons. SN 200,171. Pub. 5-18-65. Filed 8-19-64.

793,733. EG AND DESIGN. East Greenwich Dairy Company. SN 200,919. Pub. 5-18-65. Filed 8-31-64.

793,734. SHRIMPERS. National Biscuit Company. SN 200,954. Pub. 5-18-65. Filed 8-31-64.

793,735. RIVER VALLEY. River Valley Co., Inc. SN 201,307. Pub. 5-18-65. Filed 9-4-64.

793,736. HENRIS AND DESIGN. Henri's Food Products Company, Inc. SN 201,687. Pub. 5-18-65. Filed 9-11-64.

793,737. MOTHER PARKER'S. My Bread Baking Company. SN 201,727. Pub. 5-18-65. Filed 9-11-64.

793,738. QUICK FROST. National Dairy Products Corporation. SN 203,791. Pub. 5-18-65. Filed 10-12-64.

793,739. TIGER TAILS. Philadelphia Chewing Gum Corporation. SN 204,006. Pub. 5-18-65. Filed 10-14-64.

793,740. 30 "THIRTY." General Mills, Inc. SN 204,063. Pub. 5-18-65. Filed 10-15-64.

793,741. ARISE. General Mills, Inc. SN 204,064. Pub. 5-18-65. Filed 10-15-64.

793,742. HOOLA EGGS. Leaf Brands, Inc. SN 204,482. Pub. 5-18-65. Filed 10-21-64.

793,743. THE WORKS. John Sexton & Co. SN 204,517. Pub. 5-18-65. Filed 10-21-64.

793,744. STAUFFER'S AND DESIGN. D. F. Stauffer Biscuit Co., Inc. SN 204,613. Pub. 5-18-65. Filed 10-22-64.

793,745. FIGURE OF BAKER (DESIGN). D. F. Stauffer Biscuit Co., Inc. SN 204,614. Pub. 5-18-65. Filed 10-22-64.

793,746. CHAR-BONE. Edward J. Baker. SN 204,632. Pub. 5-18-65. Filed 10-23-64.

793,747. MISCELLANEOUS DESIGN. Central Soya Company, Inc. SN 204,965. Pub. 5-18-65. Filed 10-28-64.

793,748. HEATH AND DESIGN. L. S. Heath & Sons, Inc. SN 204,977. Pub. 5-18-65. Filed 10-28-64.

793,749. BIG LEAGUE. Hygrade Food Products Corporation. SN 204,980. Pub. 5-18-65. Filed 10-28-64.

793,750. FLAPSTAX. Martha White Mills, Inc. SN 208,866. Pub. 5-18-65. Filed 12-24-64.

793,751. DUTCH VALLEY. Weis Markets, Inc. SN 209,129. Pub. 5-18-65. Filed 12-30-64.

793,752. SOUTHERN CHARM AND DESIGN. China Doll, Incorporated. SN 209,764. Pub. 5-18-65. Filed 1-12-65.

793,753. HEATH AND DESIGN. L. S. Heath & Sons, Inc. SN 209,856. Pub. 5-18-65. Filed 1-13-65.

793,754. MASQUERADE. The Quaker Oats Company. SN 209,948. Pub. 5-18-65. Filed 1-14-65.

793,755. CANDY COW AND DESIGN. The Borden Company. SN 210,075. Pub. 5-18-65. Filed 1-18-65.

793,756. THREE SONS. Jim Sano. SN 210,155. Pub. 5-18-65. Filed 1-18-65.

793,757. BIG FINK. Big Fink Gum. SN 210,187. Pub. 5-18-65. Filed 1-19-65.

793,758. KING'S PLATE AND DESIGN. Martin & Robertson Limited. SN 210,454. Pub. 5-18-65. Filed 1-22-65.

Class 47—Wines

793,759. SAY BON. Guild Wine Co., d.b.a. Say Bon Wine Co. SN 191,547. Pub. 5-18-65. Filed 4-20-64.

Class 48—Malt Beverages and Liquors

793,760. RED ERIC AND DESIGN. Ceres Bryggerierne A/S (Østjydske Bryggerier A/S). SN 188,513. Pub. 5-18-65. Filed 3-12-64.

Class 49—Distilled Alcoholic Liquors

793,761. CRUSADER. Flagstaff Liquor Co. SN 180,869. Pub. 5-18-65. Filed 11-12-63.

793,762. SENIOR. Senior & Co. Incorporated. SN 199,501. Pub. 5-18-65. Filed 8-7-64.

793,763. DIAMOND HEAD. T. W. Samuels Distillery, Inc. SN 200,597. Pub. 5-18-65. Filed 8-25-64.

Class 50—Merchandise Not Otherwise Classified

793,764. COPY-ZIP. Para-Tone Incorporated. SN 156,156. Pub. 5-18-65. Filed 10-29-62.

793,765. HOLIDAY HANDICRAFTS AND DESIGN. Holiday Handicrafts, Inc. SN 190,517. Pub. 5-18-65. Filed 4-7-64.

793,766. TRIO-MUSSELMAN. Trio Manufacturing Co. SN 200,297. Pub. 5-18-65. Filed 8-20-64.

793,767. SAF-T-PATCH. Testworth Laboratories, Incorporated. SN 204,856. Pub. 5-18-65. Filed 10-26-64.

793,768. TRIO. Trio Manufacturing Co. SN 206,091. Pub. 5-18-65. Filed 11-12-64.

793,769. FINESSE ORIGINALS. Finesse Displays, Inc. SN 209,922. Pub. 5-18-65. Filed 1-14-65.

793,770. SNAK-BAR. Allen Electronics, Inc. SN 210,402. Pub. 5-18-65. Filed 1-22-65.

Class 51—Cosmetics and Toilet Preparations

793,771. "CAPRICCI." Nina Ricci S.A.R.L. SN 113,762. Pub. 5-18-65. Filed 2-15-61.

793,772. COVER-MATIC. The Noxzema Chemical Company. SN 152,430. Pub. 8-20-63. Filed 9-4-62.

793,773. COVER-MAGIC. The Noxzema Chemical Company. SN 152,431. Pub. 8-20-63. Filed 9-4-62.

793,774. COVER-MEDIC. The Noxzema Chemical Company. SN 152,432. Pub. 8-20-63. Filed 9-4-62.

793,775. SQUEEZE ME. Studio Girl-Hollywood, Inc., d.b.a. Studio Girl. SN 152,642. Pub. 5-18-65. Filed 9-6-62.

793,776. HOUSE OF CHARM. Gerald G. Boyce. SN 188,715. Pub. 5-18-65. Filed 3-16-64.

793,777. SET 'N FORGET. Tecnique, Inc. SN 194,758. Pub. 5-18-65. Filed 6-2-64.

793,778. IRMA SHORELL'S. Shorell Products, Inc. SN 200,665. Pub. 5-18-65. Filed 8-26-64.

793,779. MORNING DEW. Helena Rubinstein, Inc. SN 204,011. Pub. 5-18-65. Filed 10-14-64.

793,780. PRINCE CHARMING. Colgate-Palmolive Company. SN 204,052. Pub. 5-18-65. Filed 10-15-64.

793,781. TOP MODEL. Helene Curtis Industries, Inc. SN 204,143. Pub. 5-18-65. Filed 10-16-64.

793,782. SPUN SATIN. Hazel Bishop Inc. SN 204,285. Pub. 5-18-65. Filed 10-19-64.

793,783. OLD EUROPE. Harry H. Masle, d.b.a. H. H. Masle Toiletries. SN 210,062. Pub. 5–18–65. Filed 1–15–65.

Class 52 — Detergents and Soaps

793,784. VOBAN. Frank Miller & Sons, Inc. SN 176,109. Pub. 5–18–65. Filed 8–30–63.

793,785. MAQUIS. Julian V. Pace. SN 188,790. Pub. 5–18–65. Filed 3–16–64.

793,786. SALATT. Sunstar Dentifrice Co., Ltd. SN 189,512. Pub. 5–18–65. Filed 3–24–64.

793,787. NO-OX ETC. AND DESIGN. Henry J. Bohlman, d.b.a. No-Ox Laboratories. SN 189,863. Pub. 5–18–65. Filed 3–30–64.

793,788. WICASOLVE. Wica Chemicals, Incorporated. SN 190,467. Pub. 5–18–65. Filed 4–6–64.

793,789. 'S NO SPOT. 'S No Spot Corp. SN 192,082. Pub. 5–18–65. Filed 4–27–64.

793,790. PARCO. Hooker Chemical Corporation. SN 192,822. Pub. 5–18–65. Filed 5–6–64.

793,791. B-KFC. Pennsalt Chemicals Corporation. SN 193,039. Pub. 5–18–65. Filed 5–8–64.

793,792. BAB-O. B. T. Babbitt, Inc. SN 201,647. Pub. 5–18–65. Filed 9–11–64.

793,793. SMOOTHOFOAM. Creco Company, Inc. SN 202,775. Pub. 5–18–65. Filed 9–28–64.

793,794. RAMEX. Abco, Inc. SN 203,234. Pub. 5–18–65. Filed 10–5–64.

793,795. SUDS TIME. Dartmouth Marketing Co., Inc. SN 203,261. Pub. 5–18–65. Filed 10–5–64.

793,796. NO-EXCUSE. Lab Automated Chemicals Corporation. SN 203,407. Pub. 5–18–65. Filed 10–6–64.

793,797. DJA. D. J. Alexander Corporation. SN 205,383. Pub. 5–18–65. Filed 11–3–64.

793,798. VBQ. Double Stamp Brands, Inc. SN 206,010. Pub. 5–18–65. Filed 11–12–64.

Service Marks

Class 100 — Miscellaneous

793,799. AMERICAN BOATING ASSOCIATION AND DESIGN. American Boating Association, assignee, by mesne assignment, of American Boating Association, Inc. SN 94,127. COLLECTIVE MARK. Pub. 5–18–65. Filed 4–1–60.

793,800. CUSTOMUSIC. Automatic Canteen Company of America, d.b.a. Rowe AC Services. MULTIPLE CLASS (Classes 100 and 103). SN 145,656. Pub. 5–18–65. Filed 5–29–62.

793,801. SIDL. Washington Engineering Services Company, Inc. SN 151,547. Pub. 2–23–65. Filed 8–20–62.

793,802. M AND DESIGN. Marriott Motor Hotels, Inc. SN 168,206. Pub. 5–18–65. Filed 5–6–63.

793,803. SEVEN CONTINENTS. International Airports Restaurants Carson Pirie Scott & Company. SN 175,922. Pub. 5–18–65. Filed 8–28–63.

793,804. INTERNATIONAL CAR CLUB ASSOCIATION AND DESIGN. International Car Club Association. SN 176,100. Pub. 5–18–65. Filed 8–30–63.

793,805. SSC AND DESIGN. Stirling Sintering Corporation. SN 187,356. Pub. 5–18–65. Filed 2–24–64.

793,806. A & W ROOT BEER GARDEN. The A & W Root Beer Company. SN 195,489. Pub. 5–18–65. Filed 6–12–64.

Class 101 — Advertising and Business

793,807. LUCKY DOLLAR. Red and White Foundation Charitable Trust, assignee of Red & White Corporation. SN 104,551. Pub. 11–21–61. Filed 9–15–60.

793,808. ELECTRO-OFFSET AND DESIGN. Multiprint, Inc. SN 169,646. Pub. 5–18–65. Filed 5–24–63.

793,809. MEDICOM-INC. AND DESIGN. Medicom, Inc. SN 188,122. Pub. 5–18–65. Filed 3–6–64.

793,810. OBROS AND DESIGN. Dolph Obergfel, d.b.a. Obergfel Brothers. SN 193,202. Pub. 5–18–65. Filed 5–11–64.

793,811. HANGAR ONE AND DESIGN. Southern Airways Company, Inc. SN 197,913. Pub. 5–18–65. Filed 7–15–64.

793,812. DRUG-VIEWS. Parkview Drugs, Inc. SN 200,474. Pub. 5–18–65. Filed 8–24–64.

Class 102 — Insurance and Financial

793,813. INSTITUTE FOR PHILANTHROPIC PLANNING, INC. AND DESIGN. Institute for Philanthropic Planning, Inc. SN 164,626. Pub. 5–18–65. Filed 3–14–63.

793,814. DESIGN OF KANGAROOS. Continental Illinois National Bank and Trust Company of Chicago. SN 183,739. Pub. 5–18–65. Filed 12–30–63.

793,815. MEX-I-PLAN. Harold H. Starr, d.b.a. Mex-I-Plan. SN 194,839. Pub. 5–18–65. Filed 6–3–64.

793,816. DD ESTABLISHED 1899 AND DESIGN. Davis, Dorland & Company. SN 196,122. Pub. 5–18–65. Filed 6–22–64.

793,817. 10 PLUS. Occidental Life Insurance Company of California. SN 201,730. Pub. 5–18–65. Filed 9–11–64.

Class 103 — Construction and Repair

793,818. ADJUST-A-DRAPE. Morey Seldin Machinery Corp. SN 164,987. Pub. 5–18–65. Filed 3–19–63.

793,819. MW AND DESIGN. Meili & Worthington, Inc. SN 166,648. Pub. 5–18–65. Filed 4–12–63.

793,820. DILCOPLAN ETC. AND DESIGN. Dillingham Corporation. SN 169,436. Pub. 5–18–65. Filed 5–22–63.

793,821. DILCOPLAN. Dillingham Corporation. SN 169,437. Pub. 5–18–65. Filed 5–22–63.

793,822. MISCELLANEOUS DESIGN. George B. Vlier, d.b.a. Vlier Contracting Company. SN 172,956. Pub. 5–18–65. Filed 7–12–63.

793,823. STOP AT SUNOCO . . . GO WITH CONFIDENCE. Sun Oil Company. SN 174,058. Pub. 5–18–65. Filed 7–30–63.

793,824. AMERICAN BEAUTY HOMES. The Reasor Corporation. SN 183,796. Pub. 5–18–65. Filed 12–30–63.

793,825. NFS AND DESIGN. Nuclear Fuel Services, Inc. SN 187,425. Pub. 5–18–65. Filed 2–25–64.

Class 105 — Transportation and Storage

793,826. GOLDEN TOURS. Gold Bond Stamp Company. SN 146,621. Pub. 5–18–65. Filed 6–11–62.

Class 106 — Material Treatment

793,827. "LEAN ON OUR SHOULDERS." Blue Bird Food Products Co. SN 187,719. Pub. 5–18–65. Filed 3–2–64.

Class 107 — Education and Entertainment

793,828. GREY-ROCK'S ETC. AND DESIGN. Raybestos-Manhattan, Inc. SN 138,650. Pub. 5–18–65. Filed 2–26–62.

793,829. ROLLER DERBY. Roller Derby Associates. SN 184,109. Pub. 5–18–65. Filed 1–6–64.

793,830. CO-ED'S YOUNG DECORATOR COURSE. Scholastic Magazines, Inc. SN 195,552. Pub. 5–18–65. Filed 6–12–64.

Collective Membership Marks

Class 200

793,831. AMERICAN INSTITUTE OF ARCHITECTS. The American Institute of Architects. SN 193,609. Pub. 5–18–65. Filed 5–18–64.

793,832. AIA. The American Institute of Architects. SN 193,614. Pub. 5–18–65. Filed 5–18–64.

Certification Marks

Class A — Goods

793,833. HINGE-FOLD AND DESIGN. The International Paper Box Machine Company. SN 182,880. Pub. 5–18–65. Filed 12–12–63.

793,834. EGA AND DESIGN. Elbertson Granite Association, Inc. SN 205,048. Pub. 5–18–65. Filed 10–29–64.

Class B — Services

793,835. UNION HOUSE AND DESIGN. Hotel and Restaurant Employees and Bartenders International Union. SN 207,048. Pub. 5–18–65. Filed 11–27–64.

793,836. UNION BAR ETC. AND DESIGN. Hotel and Restaurant Employees and Bartenders International Union. SN 207,049. Pub. 5–18–65. Filed 11–27–64.

793,837. UNION MOTEL ETC. AND DESIGN. Hotel and Restaurant Employees and Bartenders International Union. SN 207,050. Pub. 5–18–65. Filed 11–27–64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 12 — Construction Materials

793,838. Dolomite Brick Corporation of America, York, Pa. SN 196,770. Filed P.R. 6–30–64; Am. S.R. 5–6–65.

YORK-FIRED

For Refractory Materials—Namely, Firebrick.
First use Apr. 17, 1964.

Class 14 — Metals and Metal Castings and Forgings

793,839. Handy & Harman, New York, N.Y. SN 203,006. Filed P.R. 9–30–64; Am. S.R. 6–16–65.

SATIN

For Gold Casting Alloys.
First use Mar. 17, 1964.

Class 21 — Electrical Apparatus, Machines, and Supplies

793,840. The Youngstown Sheet and Tube Company, Boardman, Ohio. SN 169,675. Filed P.R. 5–24–63; Am. S.R. 2–10–65.

HEAT-GUARD

For Electric Motors and Controls Therefor.
First use at least as early as Nov. 10, 1962.

793,841. Vapor Corporation, Chicago, Ill. SN 183,817. Filed P.R. 12–30–63; Am. S.R. 5–7–65.

ALERTOR

For Dead Man Controls for Vehicles and Machinery Operating on Radio Frequency Which Effectuate a Braking System on Inactivity of the Operator.
First use Apr. 6, 1963.

793,842. Master Specialties Company, Gardena, Calif. SN 188,646. Filed P.R. 3–13–64; Am. S.R. 5–12–65.

FUSE-LITE

For Indicating Fuse Holders.
First use Aug. 2, 1962.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

793,843. Paul Forkardt Kommanditgesellschaft, Dusseldorf, Germany. SN 201,300. Filed P.R. 9–4–64; Am. S.R. 4–2–65.

FORKARDT

Owner of German Reg. No. 509,140, dated Aug. 30, 1938.
For Tools, Machine Tools and Parts Thereof—Namely, Devices for Chucking and Conveying Work Pieces Manually, Pneumatically, Hydraulically or Electrically; Drive Chucks of Any Type; Vises; Box Clamps; Clamping Devices; Air Pressure Cylinders and Hydraulic Cylinders; Controls; Fixtures and Presses.

Class 26 — Measuring and Scientific Appliances

793,844. Komline-Sanderson Engineering Corporation, Peapack, N.J. SN 119,778. Filed P.R. 5-11-61; Am. S.R. 12-15-64.

SLUDGE READER

For Apparatus Comprising Radioactive Material To Determine Sludge Consistency for Use in Sewage Plants and Sewage Plant Pumps.
First use November 1960.

Class 27 — Horological Instruments

793,845. Federation Suisse des Associations de Fabricants d'Horlogerie, Bienne, Switzerland. SN 193,144. Filed P.R. 5-11-64; Am. S.R. 6-8-65. COLLECTIVE MARK.



The drawing is lined for gold and red. The representation of watch-hands and the words "Jeweled-Lever" and "Watches" are disclaimed apart from the mark as shown. Owner of U.S. Reg. Nos. 543,167 and 543,168.
For Watches.
First use on or about Feb. 15, 1964.

Class 32 — Furniture and Upholstery

793,846. Orbay & Cerrato Furniture Inc., West New York, N.J. SN 199,097. Filed P.R. 8-3-64; Am. S.R. 6-17-65.

ORBAY & CERRATO

For Living Room, Dining Room, and Bedroom Furniture and Appliances Pertaining Thereto for Home Use.
First use May 10, 1964.

793,847. Theodore Efron Mfg. Co., Chicago, Ill. SN 192,380. Filed P.R. 4-30-64; Am. S.R. 5-14-65.

MARBLSHEEN

For Table Tops Made From Synthetic Material Simulating Marble.
First use Apr. 20, 1964.

Class 37 — Paper and Stationery

793,848. Sealed Air Corporation, Hawthorne, N.J. SN 179,366. Filed P.R. 10-18-63; Am. S.R. 5-24-65.

SEALED AIR

For Saran-Coated Polyethylene Used To Provide Air-Bubble Cushioning in Packaging Operations.
First use Sept. 5, 1963.

Class 39 — Clothing

793,849. Greensboro Manufacturing Company, Inc., New York, N.Y. SN 186,529. Filed P.R. 2-12-64; Am. S.R. 5-19-65.

YOUNG KNITS

For Sleepwear.
First use Jan. 13, 1964.

793,850. Trimount Clothing Co., Inc., Boston, Mass. SN 191,723. Filed P.R. 4-21-64; Am. S.R. 6-15-65.

MR. YOUNG

For Young Men's and Students' Suits and Coats.
First use Feb. 28, 1964.

793,851. Berkshire International Corporation, Wyomissing, Pa. SN 194,946. Filed P.R. 6-5-64; Am. S.R. 6-15-65.

Faultless

For Hosiery.
First use May 8, 1922.

793,852. K.N.M. Sportswear, Inc., New York, N.Y. SN 208,937. Filed P.R. 12-28-64; Am. S.R. 6-7-65.

FIT TO WEAR ANYWHERE

For Ladies' and Men's Ski Jackets and Ski Pants.
First use June 1, 1964.

Class 51 — Cosmetics and Toilet Preparations

793,853. Revlon, Inc., New York, N.Y. SN 169,478. Filed P.R. 5-22-63; Am. S.R. 6-3-64.

TROPICORAL

For Lipstick.
First use Mar. 22, 1963.

TRADEMARK REGISTRATIONS RENEWED

27,326. GL AND DESIGN. Cls. 6 and 46. 11-26-1895.
27,388. STYPTICIN. Cl. 18. 12-3-1895.
45,252. MAJESTIC. Cl. 34. 8-8-05.
45,344. BLUE CROSS AND DESIGN. Cl. 46. 8-15-05.
45,537. LION AND DESIGN. Cl. 43. 8-22-05.
45,941. SHIPMATE. Cl. 34. 8-29-05.
46,488. PERFECTION. Cl. 26. 9-19-05.
46,851. H-T. Cl. 6. 10-10-05.
47,486. PEYCHAUD'S AMERICAN AND DESIGN. Cl. 49. 11-7-05.
47,551. T AND DESIGN. Cl. 28. 11-7-05.
47,605. PEPPER JAS. E. PEPPER & CO. Cl. 49. 11-14-05.
47,655. B.F.M. Cl. 42. 11-14-05.
195,032. NB. Cl. 23. 2-17-25.
195,979. NONE BETTER. Cl. 23. 3-10-25.
196,636. HACO. Cl. 48. 3-24-25.
198,781. DUO-ARCH AND DESIGN. Cl. 39. 5-26-25.
199,303. SLIMFIT. Cl. 39. 6-9-25.
199,499. AMAZON. Cl. 46. 6-9-25.
199,516. DU PONT AND DESIGN. Cl. 16. 6-9-25.
199,733. AMOLITE. Cl. 15. 6-16-25.
199,737. HECOLAN. Cl. 42. 6-16-25.
199,738. HECOLAN. Cl. 43. 6-16-25.
199,813. PERMADYE. Cl. 42. 6-16-25.
199,851. PURE GOLD. Cl. 29. 6-16-25.
200,631. SORBETTO. Cl. 46. 7-7-25.
201,677. PLANET. Cl. 12. 8-4-25.
201,832. ASSA AND DESIGN. Cl. 27. 8-11-25.
201,833. A.S. AND DESIGN. Cl. 27. 8-11-25.
202,930. EPINUTS. Cl. 46. 9-8-25.
204,862. ST. MORITZ AND DESIGN. Cl. 39. 10-27-25.
204,933. NORDA. Cl. 51. 10-27-25.
204,949. HYDROSAL. Cl. 18. 10-27-25.
205,001. FOOT FREN. Cl. 18. 10-27-25.
205,119. USG. Cl. 15. 11-3-25.
205,173. SAVOGRAN. Cl. 52. 11-3-25.
205,256. CROSS ROADS. Cl. 46. 11-3-25.
205,356. WHITE ROCK AND DESIGN. Cl. 45. 11-3-25.
205,507. METAPHEN. Cl. 18. 11-10-25.
206,183. DESIGN OF BEADED CIRCULAR FIGURE. Cl. 33. 11-24-25.
206,202. BONDEX. Cl. 16. 11-24-25.
206,454. RUBON. Cl. 29. 12-1-25.
412,837. RS AND DESIGN. Cl. 14. 3-27-45.
414,130. SHER-O-TEX. Cl. 46. 5-29-45.
414,344. CHESSMASTER. Cl. 22. 6-5-45.
414,347. GUNG HO. Cl. 22. 6-5-45.
414,351. WORLD SERIES. Cl. 22. 6-5-45.
414,445. COSMOPOLITAN FURNITURE FOR TOWN & COUNTRY. Cl. 32. 6-12-45.
414,465. BONNEY TOOLS AND DESIGN. Cl. 23. 6-12-45.
415,565. FLOW. Cl. 38. 8-7-45.
415,909. PED AGREE AND DESIGN. Cl. 39. 8-21-45.
416,088. MAX-FLO. Cl. 13. 8-28-45.
416,677. HADACOL. Cl. 18. 9-25-45.
416,694. TEEPOL. Cl. 52. 9-25-65.
416,921. KOMUL. Cl. 12. 10-2-45.
417,108. LEGION UTENSILS AND LETTER L AND DESIGN. Cl. 13. 10-16-45.
417,505. TOM CAT. Cl. 46. 10-30-45.
417,602. TEXCEL. Cl. 5. 11-6-45.
417,616. ROMAR. Cl. 46. 11-6-45.
417,844. ANDREA. Cl. 39. 11-20-45.
417,845. CATALINA. Cl. 39. 11-20-45.
417,848. BRONCO AND DESIGN. Cl. 46. 11-20-45.
417,889. CONVOY. Cl. 5. 11-20-45.
417,905. SYN-GARD. Cl. 16. 11-20-45.
417,906. PARK-EASE. Cl. 39. 11-20-45.
417,907. PARKTOWN. Cl. 39. 11-20-45.
417,910. GRAKO. Cl. 6. 11-20-45.
417,925. OAKITE. Cl. 52. 11-20-45.
417,998. HUNTER ROCKY LODEN. Cl. 42. 11-27-45.
418,009. HR AND DESIGN. Cl. 23. 11-27-45.
418,060. OAKITE. Cl. 15. 11-27-45.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued June 16, 1959

680,211. CHEMLOY. Cl. 1.
680,213. PUNCHED CAMBI-DAISY. Cl. 1.
680,215. UNISPIN. Cl. 1.
680,216. UNICOL. Cl. 1.
680,217. UNIFIBER. Cl. 1.
680,218. UNILINT. Cl. 1.
680,219. UNIMIC. Cl. 1.
680,220. SPINEASE. Cl. 1.
680,221. FLUFF. Cl. 1.
680,223. REPRESENTATION OF CONESTOGA WAGON AND DESIGN. Cl. 2.
680,229. HARDI-PAK. Cl. 2.
680,232. LAS TRES Z.Z.Z. Cl. 2.
680,234. PRESSETTE. Cl. 2.
680,238. CREST OF GOLD. Cl. 3.
680,240. A CHASE CREATION. Cl. 3.
680,247. BANCO-BOND. Cl. 5.
680,249. INSULGRIP. Cl. 5.
680,256. COLORAMA. Cl. 9.
680,257. STAUFFER CHEMICALS SINCE 1885 AND DESIGN. Cl. 10.
680,258. DOLOBLOC. Cl. 12.
680,259. AROMAC LONG LIFE ROADS. Cl. 12.
680,261. CALCOR AND DESIGN. Cl. 12.
680,262. HYDRO-PLUG. Cl. 12.
680,278. HONEST JOHN. Cl. 13.
680,279. CAG ETC. AND DESIGN. Cl. 13.
680,280. HONEST JOHN AND REPRESENTATION OF CAP. Cl. 13.
680,285. LOCTRAC. Cl. 13.
680,287. MEDALLION. Cl. 13.
680,288. HIGHLIGHT. Cl. 13.
680,291. SINGL-ESE. Cl. 13.
680,292. DOVONNE. Cl. 13.
680,295. FORMATIC AND DESIGN. Cl. 14.
680,301. ELOMAX. Cl. 14.
680,307. TREND COLORS ETC. AND DESIGN. Cl. 16.
680,308. MAX MEYER. Cl. 16.
680,314. HARTGLAS. Cl. 16.
680,317. FOREVERLAST. Cl. 16.
680,324. HEALEY AND DESIGN. Cl. 19.
680,338. REGENT. Cl. 21.
680,344. DYNA FIRE. Cl. 21.
680,345. PREDICTA. Cl. 21.
680,349. STAR GLOW. Cl. 21.
680,357. RADIPLEX. Cl. 21.
680,358. NITE-RITE. Cl. 21.
680,360. FLASH-PAK. Cl. 21.
680,367. SLED-HEAD. Cl. 22.
680,375. COMET. Cl. 23.
680,379. PARCO. Cl. 23.
680,383. GOLD STAR. Cl. 23.
680,387. MILLERAPPER. Cl. 23.
680,397. ADJUSTEX. Cl. 23.
680,399. CRED-I-TROL. Cl. 23.
680,404. PANTEX PERK-SAVER. Cl. 24.
680,413. CIRCLE-VENT. Cl. 26.
680,415. AUTOLOAD. Cl. 26.
680,416. PS. Cl. 26.
680,420. CALORIE MASTER. Cl. 26.
680,421. MEYROCALI. Cl. 26.
680,422. BASKON. Cl. 26.
680,425. DRY MAGIC. Cl. 29.
680,428. DIP N FLOW AND DESIGN. Cl. 29.
680,430. TROPIGAS AND DESIGN. Cl. 31.
680,436. A ANSUL LINE FLO. Cl. 31.
680,437. REMOFLEX. Cl. 32.
680,438. CLASSICUS. Cl. 32.
680,439. GROWING. Cl. 32.

680,449. SNAP-A-SIGN. Cl. 34.
680,453. PROTECTONGUE. Cl. 36.
680,454. GONG. Cl. 36.
680,458. FI-RACK. Cl. 36.
680,460. KLEER-KRAFT. Cl. 37.
680,463. IMPACT. Cl. 37.
680,464. PORTA-SINK. Cl. 37.
680,465. CLEAN STICK AND DESIGN. Cl. 37.
680,466. CAL-MARK. Cl. 37.
680,468. INSUL AIR. Cl. 39.
680,508. MESA. Cl. 42.
680,510. JACK POT AND DESIGN. Cl. 42.
680,517. ACRILAN MARK III. Cl. 43.
680,518. MAGINETTE. Cl. 43.
680,523. SOLAR-EAR. Cl. 44.
680,524. SOLARIS. Cl. 44.
680,527. NEUROSOUND. Cl. 44.
680,541. MOKALUA. Cl. 47.
680,543. SCHLAGA. Cl. 48.
680,549. ELLYN DELEITH. Cl. 51.
680,551. COSMEDIC. Cl. 52.
680,558. FUN OF THE MONTH CLUB. Cl. 101.
680,560. CIRCULAR DESIGN. Cl. 101.
680,563. THE MORRIS PLAN AND DESIGN. Cl. 102.
680,565. DESIGN OF GIRL. Cl. 103.
680,566. PINK AND BLUE. Cl. 103.
680,569. FAB-RESTOR. Cl. 106.
680,571. SALES MASTERS NATIONAL AND DESIGN. Cl. 107.
680,572. MEMBER NATIONAL MOTOR KART DERBY ASSN. AND DESIGN. Cl. 200.
680,575. CASTOR-LUBE. Cl. 15.
680,577. TACKLE CARRY-ALL. Cl. 22.
680,579. ENGINEERS SPLICE. Cl. 35.
680,581. CULTURA-LAC. Cl. 46.
680,582. CHED-R-NUT. Cl. 46.
680,588. PRINA'S SP-EGG-ETTI ON REPRESENTATION OF CARTON AND DESIGN. Cl. 46.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

45,172. SSS. Cl. 18. 8–8–05. The Swift Specific Co. S. S. S. Co., Atlanta, Ga. Amended: In the heading and in the statement, column 2, lines 5 through 7, the description of goods is deleted and *a tonic for the blood* is inserted.

204,138. PILGRIM. Cl. 46. 10–6–25. Ontario Biscuit Company. United Biscuit Company of America, Melrose Park, Ill. Amended to appear:

PILGRIM

659,706. CHILDERS. Cl. 12. 3–25–58. Childers Manufacturing Company, Houston, Tex. Amended: In the statement, column 2, lines 2 and 3, "aluminum weatherproof jacketing," is deleted.

679,222. S–K. Cl. 23. 5–26–59. The Sherman-Klove Company. Symington Wayne Corporation, Salisbury, Md. Corrected: In the statement, column 1, line 1, "Illinois" should be deleted and *Delaware* should be inserted.

720,566. RMI AND DESIGN. Cl. 14. 8–29–61. Reactive Metals, Inc., Niles, Ohio. Amended to appear:

RMI

745,240. SHIELD DESIGN. Cl. 200. 2–12–63. Sovereign Grand Lodge of the I.O.O.F., Baltimore, Md. Amended to appear:



790,608. MOHAWK. Cl. 17. 6–8–65. Larus & Brother Company, Richmond, Va. Corrected: In the statement, column 1, line 1, "Brothers" should be deleted and *Brother* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 1—Raw or Partly Prepared Materials

405,792. Feb. 22, 1944. Geo. J. Ball, Inc., West Chicago, Ill. Pub. by registrant.

Geo. J. Ball

For Flower and Vegetable Plant Seeds, Plants, and Bulbs.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

413,802. May 15, 1945. Cartier, Inc., New York, N.Y. Pub. by registrant.

Cartier

For Combination Pocketbooks and Shopping Bags, etc.

414,435. June 12, 1945. Cartier, Inc., New York, N.Y. Pub. by registrant.

CARTIER

For Combination Pocketbooks and Shopping Bags, Wallets, Billfolds, etc.

Class 8—Smokers' Articles, Not Including Tobacco Products

261,178. Sept. 10, 1929. Art Metal Works, Inc., Newark, N.J., Pub. by Ronson Corporation, Woodbridge, N.J.

RONSON

For Friction Lighters and Parts Thereof, Including Pieces of Sparking Metal.

Class 12—Construction Materials

143,272. May 31, 1921. The Agasote Millboard Co., Trenton, N.J. Pub. by Homasote Company, Trenton, N.J.

HOMASOTE

For Fiber Board Sold in Sheets.

203,180. Sept. 15, 1925. The Master Builders Company, Cleveland, Ohio. Pub. by Martin-Marietta Corporation, New York, N.Y.

Master Builders

For Colored Cement; Materials Used for Water-Proofing, Hardening, Frostproofing, etc.

Class 16—Protective and Decorative Coatings

203,394. Sept. 15, 1925. The Master Builders Company, Cleveland, Ohio. Pub. by Martin-Marietta Corporation, New York, N.Y.

MASTER BUILDERS

For Ready-Mixed Paints and Paint Enamels, Coloring Pigments, and Paint Oils and Varnishes.

Class 17—Tobacco Products

200,129. June 23, 1925. Cope Bros. & Co., Limited, Liverpool and London, England. Pub. by Cope & Lloyd (Overseas) Limited, London, England.

BONDMAN

For Smoking Tobacco.

200,130. June 23, 1925. Cope Bros. & Co., Limited, Liverpool and London, England. Pub. by Cope & Lloyd (Overseas) Limited, London, England.

SKIPPER

For Smoking Tobacco.

Class 21—Electrical Apparatus, Machines, and Supplies

378,463. June 11, 1940. Byron Jackson Co., Huntington Park, Calif. Pub. by Borg-Warner Corporation, Chicago, Ill.

BYRON JACKSON

For Electric Motors and Parts Therefor.

412,701. Mar. 20, 1945. Duro-Test Corporation, North Bergen, N.J. Pub. by registrant.

DURO TEST

For Fluorescent Lamps, Incandescent and Fluorescent Lamp Fixtures and Accessories—Namely, Starters, Ballasts, Transformers, Fuses, etc.

415,189. July 31, 1945. Philco Corporation, Philadelphia, Pa. Pub. by registrant.

PHILCO

For Rubber Unit Supports, etc.

Class 22—Games, Toys, and Sporting Goods

198,200. May 5, 1925. The Enterprise Manufacturing Company, Akron, Ohio. Pub. by Pflueger Corporation, Akron, Ohio.

SAL-TROUT

For Fishing Reels.

198,205. May 5, 1925. The Enterprise Manufacturing Company, Akron, Ohio. Pub. by Pflueger Corporation, Akron, Ohio.

LASTWORD

For Artificial Minnows.

198,763. May 26, 1925. The Enterprise Manufacturing Company, Akron, Ohio. Pub. by Pflueger Corporation, Akron, Ohio.

CLINCHER

For Sinkers Used for Fishing Lines.

198,764. May 26, 1925. The Enterprise Manufacturing Company, Akron, Ohio. Pub. by Pflueger Corporation, Akron, Ohio.

BULL DOG

For Fishhooks.

199,096. June 2, 1925. The Enterprise Manufacturing Company, Akron, Ohio. Pub. by Pflueger Corporation, Akron, Ohio.

PAL-O-MINE

For Wood Minnows.

203,900. Sept. 29, 1925. The Enterprise Manufacturing Company, Akron, Ohio. Pub. by Pflueger Corporation, Akron, Ohio.

E-Z-OFF

For Fish Stringers.

413,167. Apr. 10, 1945. Yates J. Van Patter, d.b.a. Tilo Game Co., Monrovia, Calif. Pub. by registrant.

TILO

For Games Consisting of Colored Blocks.

414,295. June 5, 1945. Cartier, Inc., New York, N.Y. Pub. by registrant.

CARTIER

For Playing Cards, etc.

Class 26—Measuring and Scientific Appliances

415,184. July 31, 1945. Cartier, Inc., New York, N.Y. Pub. by registrant.

Cartier

For Opera Glasses, Lorgnettes, Magnifying Glasses, etc.

Class 33—Glassware

414,433. June 12, 1945. Cartier, Inc., New York, N.Y. Pub. by registrant.

CARTIER

For Glass Table and Bar Ware, Flower Bowls, etc.

414,434. June 12, 1945. Cartier, Inc., New York, N.Y. Pub. by registrant.

Cartier

For Glass Table and Bar Ware, Flower Bowls, etc.

Class 34—Heating, Lighting, and Ventilating Apparatus

415,320. Aug. 7, 1945. Philco Corporation, Philadelphia, Pa. Pub. by registrant.

PHILCO

For Air Conditioners, Being Machines for Circulating and/or Cooling, etc.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

415,190. July 31, 1945. Philco Corporation, Philadelphia, Pa. Pub. by registrant.

PHILCO

For Rubber Washers, Rubber Gaskets, and Fibre Washers.

Class 37—Paper and Stationery

293,701. May 3, 1932. Fort Howard Paper Company, Green Bay, Wis. Pub. by registrant.

Dolly Madison

For Toilet Paper.

414,604. June 19, 1945. Cartier, Inc., New York, N.Y. Pub. by registrant.

CARTIER

For Writing and Letter Paper—Namely, Letterheads, Correspondence Cards, etc.

Class 38—Prints and Publications

414,605. June 19, 1945. Cartier, Inc., New York, N.Y. Pub. by registrant.

Cartier

For Invitations, Announcements, Place Cards, etc.

Class 39—Clothing

199,156. June 2, 1925. I. B. Kleinert Rubber Company, New York, N.Y. Pub. by registrant.

JIFFYKNIT

For Baby Pants and Sanitary Bloomers.

Class 43—Thread and Yarn

416,735. Sept. 25, 1945. Bernhard Ulmann Co. Inc., New York, N.Y. Pub. by Indian Head Mills, Inc., New York, N.Y.

BLUE LABEL

For Art Needlework Yarns.

Class 44—Dental, Medical, and Surgical Appliances

200,955. July 14, 1925. Northam Warren Corporation, New York, N.Y. Pub. by Chesebrough-Pond's, Inc., New York, N.Y.

MIDGET

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Class 46—Foods and Ingredients of Foods

187,201. July 29, 1924. Duffy-Mott Company, Inc., New York, N.Y. Pub. by registrant.

DUFFY'S GOLD SEAL

For Vinegars.

Class 51—Cosmetics and Toilet Preparations

415,703. Aug. 14, 1945. Marian Bialac, New York, N.Y. Pub. by Marian Bialac, Inc., New York, N.Y.

YATROLIN

For Cosmetic Preparation Used as a Night Cream and Makeup Base.

Class 52—Detergents and Soaps

413,517. May 1, 1945. Grace Shann, d.b.a. Gail Chemical Co., New York, N.Y. Pub. by C. P. Baker & Company, Philadelphia, Pa.

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Humane Barn Equipment Co., Inc.
Hardigg Industries: *See*—
Hardigg, James S.
Hardigg, James S., d.b.a. Hardigg Industries, South Hadley Falls, Mass. 680,229, canc. Cl. 2.
Hardware Designers, Inc., Linden, N.J. 680,285, canc. Cl. 13.
Hardy Brush Corp., Watertown, from Eagle Oil and Supply Co., Inc., Quincy, Mass. 680,575, canc. Cl. 15.
Harper, H. M., Co., The, Morton Grove, Ill. 793,561, pub. 5–18–65. Cl. 13.
Harry and David, Medford, Oreg. 793,717, pub. 5–18–65. Cl. 46.
Hartglas Co.: *See*—
Hartglas Co., The.
Hartglas Co., The, from C. H. Van Hartesveldt, d.b.a. Hartglas Co., Toledo, Ohio. 680,314, canc. Cl. 16.
Healey, Donald, Motor Co., Warwick, England. 680,324, canc. Cl. 19.
Heath, L. S., & Sons, Inc., Robinson, Ill. 793,748, pub. 5–18–65. Cl. 46.
Heath, L. S., & Sons, Inc., Robinson, Ill. 793,753, pub. 5–18–65. Cl. 46.
Heberlein & Co., A. G., Bietwiss, Wattwil, Switzerland. 199,737–8, ren. 8–3–65. Cl. 42.
Hedlund Mfg. Co., Nokomis, Ill. 793,599, pub. 5–18–65. Cl. 22.
Heel-Set Golf Shoe Cushions Co.: *See*—
LaMont, James F.
Henri's Food Products Co., Inc., Milwaukee, Wis. 793,736, pub. 5–18–65. Cl. 46.
Herman Publishing Co., Inc., North Hollywood, Calif. 793,671, pub. 5–18–65. Cl. 38.
Hoffmann-La Roche Inc., Nutley, N.J. 793,584, pub. 5–18–65. Cl. 18.
Holderness Food Products Ltd., Hull, England. 793,711, pub. 5–18–65. Cl. 46.
Holiday Handicrafts, Inc., Winsted, Conn. 793,765, pub. 5–18–65. Cl. 50.
Holly Farms Poultry Industries, Inc., Wilkesboro, N.C. 793,721, pub. 5–18–65. Cl. 46.
Homasote Co.: *See*—
Agasote Millboard Co., The.
Hooker Chemical Corp., Niagara Falls, N.Y. 793,534, pub. 5–18–65. Cl. 6.
Hooker Chemical Corp., Niagara Falls, N.Y. 793,790, pub. 5–18–65. Cl. 52.
Hotel and Restaurant Employees and Bartenders International Union, Cincinnati, Ohio. 793,835–7, pub. 5–18–65. Cl. B.
Hudnut, Richard, Morris Plains, N.J. 680,551, canc. Cl. 52.
Humane Barn Equipment Co., Inc., d.b.a. Happy Hour Playground Equipment Co., Baraboo, Wis. 793,631, pub. 5–18–65. Cl. 22.
Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. 793,751, pub. 5–18–65. Cl. 16.
Hunter, Henry L., III, d.b.a. Ski Skim, Pleasantville, N.Y. 793,605, pub. 5–18–65. Cl. 22.
Hydrosal Co.: *See*—
Hydrosal Laboratories Co., The.
Hydrosal Laboratories Co., The, to Elmer M. Thinnes, d.b.a. Hydrosal Co., Cincinnati, Ohio. 204,949, ren. 8–3–65. Cl. 18.
Hygrade Food Products Corp., Detroit, Mich. 793,749, pub. 5–18–65. Cl. 46.
India Alkali Works, Boston, Mass., to The Savogran Co., Norwood, Mass. 205,173, ren. 8–3–65. Cl. 52.
Indian Head Mills, Inc.: *See*—
Ulmann, Bernhard Co., Inc.
Induction Heating Corp., to The Taylor-Winfield Corp., Warren, Ohio. 423,481, new cert. Cl. 21.
Industrial Publishing Co., The, Cleveland, Ohio, to Pittsburgh Railways Co., Pittsburgh, Pa. 415,565, ren. 8–3–65. Cl. 38.
Industrial Tape Corp., to Johnson & Johnson, New Brunswick, N.J. 417,602, ren. 8–3–65. Cl. 5.
Ing. Filippo e Carlo Tassara S.p.A., and Dolomite Franchi S.p.A., Genoa, Italy & Via S. Groce 13, Italy. 680,258, canc. Cl. 12.
Institute for Philanthropic Planning, Inc., New York, N.Y. 793,813, pub. 5–18–65. Cl. 102.
International Airports Restaurants, Carson Pirie Scott & Co., Chicago, Ill. 793,803, pub. 5–18–65. Cl. 100.
International Car Club Association, Los Angeles, Calif. 793,804, pub. 5–18–65. Cl. 100.
International Distributors Inc.: *See*—
Happy Day Co., Inc.
International Grapho Analysis Society, Inc., Chicago, Ill. 793,660, 5–18–65. Cl. 38.
International Paper Bos Machine Co., The, Nashua, N.H. 793,833, pub. 5–18–65. Cl. A.
International Paper Co., New York, N.Y. 793,507, pub. 1–21–64. Cl. 2.
International Projectors, Inc., Los Angeles, Calif. 680,422, canc. Cl. 26.
International Swimming Pool Corp., White Plains, N.Y. 680,317, canc. Cl. 16.
Interstahl Etablissement, Vaduz, Liechtenstein. 680,301, canc. Cl. 14.
Inter/Trade, Inc., Philadelphia, Pa. 793,674, pub. 5–18–65. Cl. 38.
Jackson, Byron, Co., Huntington Park, Calif., by Borg-Warner Corp., Chicago, Ill. 378,463, 12(c) pub. 8–3–65. Cl. 21.
Jennings Radio Mfg. Corp., San Jose, Calif. 793,595, pub. 5–18–65. Cl. 21.
Jennirest Co., The, Pasadena, Calif. 793,625, pub. 5–18–65. Cl. 22.
Jessup, Homer E., Atlanta, Ga., to Mark B. McGarry, St. Petersbury, Fla. 205,001, ren. 8–3–65. Cl. 18.
Johns-Manville Corp.: *See*—
Johns-Manville, Inc.
Johns-Manville, Inc., to Johns-Manville Corp., New York, N.Y. 201,677, ren. 8–3–65. Cl. 12.
Johnson & Johnson: *See*—
Industrial Tape Corp.
Jung, L. E., & Wulff Co., Inc.: *See*—
Jung, Louis E.
Jung, Louis E., New Orleans, La., to L. E. Jung & Wulff Co., Inc., New York, N.Y. 47,486, ren. 8–3–65. Cl. 49.
Junior House, Inc., Milwaukee, Wis. 793,682, pub. 5–18–65. Cl. 39.
K.N.M. Sportswear, Inc., New York, N.Y. 793,852. Cl. 39.
Kapson Laboratories, Inc., Newport, Oreg. 793,580, pub. 5–18–65. Cl. 18.
Kasar Co., Niles, Ill. 793,585, pub. 5–18–65. Cl. 18.
Kellogg Co., Battle Creek, Mich. 793,729, pub. 5–18–65. Cl. 46.
Kelsey-Hayes Co.: *See*—
Bonney Forge and Tool Works.
Kendall Co., The: *See*—
American Bleach Goods Co., Inc.
Kenmore Depts., Inc.: *See*—
Shoe Affiliates, Inc.
Kilpatrick, David G., and William A. Dittrich, Bala-Cynwyd, Pa. 793,666, pub. 5–18–65. Cl. 38.
Kimberly-Clark Corp., Neenah, Wis. 793,652, pub. 5–18–65. Cl. 37.
King, Harold L., Mt. Vernon, N.Y. 680,420, canc. Cl. 26.
Kingman Mfg. Co., Inc., Cunningham, Kans. 793,520, pub. 5–18–65. Cl. 6.
Klauber Bros., Inc., New York, N.Y. 680,510, canc. Cl. 42.
Kleinert, I. B., Rubber Co., New York, N.Y. 199,156, 12(c) pub. 8–3–65. Cl. 39.
Komline-Sanderson Engineering Corp., Peapack, N.J. 793,844. Cl. 26.
Kono Mfg. Co. Inc., Woodside, N.Y. 680,416, canc. Cl. 26.
Kores Mfg. Co. Ltd., London, England. 793,556, pub. 5–18–65. Cl. 11.
Krasdale Foods, Inc., Bronx, N.Y. 793,547, pub. 5–18–65. Cl. 6.
Lab Automated Chemicals Corp., Baltimore, Md. 793,796, pub. 5–18–65. Cl. 52.
Lady Luck Vineyards: *See*—
Lea, Bennett.
Lakeside Central Co., Chicago, Ill. 680,465, canc. Cl. 37.
Lamont, James F., and Terrence P. Gormley, d.b.a. Heel-Set Golf Shoe Cushions Co., East Hartford, Conn. 793,687, pub. 5–18–65. Cl. 39.
Lanco Products Corp., to Lanco Products Corp., New York, N.Y. 414,130, ren. 8–3–65. Cl. 46.
Lapine Scientific Co., Chicago, Ill. 793,649, pub. 5–18–65. Cl. 35.
Larus & Brother Co., Richmond, Va. 790,608, cor. Cl. 17.
Latta, Clarence J., Jr., d.b.a. Pink and Blue Diaper Service, Sparks, Nev. 680,566, canc. Cl. 103.
Lea, Bennett, d.b.a. Lady Luck Vineyards, Delano, Calif. 793,716, pub. 5–18–65. Cl. 46.
Leaf Brands, Inc., Chicago, Ill. 793,742, pub. 5–18–65. Cl. 46.
Legion Utensils Co., Inc.: *See*—
Legion Utensils Corp.
Legion Utensils Corp., to Legion Utensils Co., Inc., Long Island City, N.Y. 417,108, ren. 8–3–65. Cl. 13.
Levine, Rae, New York, N.Y. 793,619, pub. 5–18–65. Cl. 22.
Levine, Rae, New York, N.Y. 793,621–3, pub. 5–18–65. Cl. 22.
Lewison, Dr. Lawrence, New York, N.Y. 680,413, canc. Cl. 26.
Lion Brand Yard Co.: *See*—
Calhoun, Robbins & Co.
Livermore, H. F., Corp., Boston, Mass. 680,247, canc. Cl. 5.
Lowe, E. S., Co., Inc., New York, N.Y. 414,344, ren. 8–3–65. Cl. 22.
Lowe, E. S., Co., Inc., New York, N.Y. 414,347, ren. 8–3–65. Cl. 22.
Lowe, E. S., Co., Inc., New York, N.Y. 414,351, ren. 8–3–65. Cl. 22.
Ludlow Corp.: *See*—
Ludlow Manfg. Associates.
Ludlow Manfg. Associates, Boston, to Ludlow Corp., Needham, Mass. 47,655, ren. 8–3–65. Cl. 42.
Luedera, George, to George Luedera & Co., New York, N.Y. 27,326, ren. 8–3–65. Multiple Class (Classes 6 and 46).
Luedera, George, & Co.: *See*—
Luedera, George.
Lufkin Rule Co., The, Saginaw, Mich. 46,488, ren. 8–3–65. Cl. 26.

M-A Pharmaceutical Corp., from C. A. Susalin, Mount Vernon, N.Y. 793,573, pub. 2–6–62. Cl. 18.
Mack, Joseph, Associates, Inc., New York, N.Y. 793,508, pub. 5–12–64. Cl. 2.
Maco Magazine Corp., New York, N.Y. 793,675, pub. 5–18–65. Cl. 38.
Madan Mfg. Corp., Cheltenham, Pa. 680,449, canc. Cl. 34.
Madison Throwing Co., Inc., Madison, N.C. 680,518, canc. Cl. 48.
Magna-Cook Corp. of America, Belleville, N.J. 793,562, pub. 2–2–65. Cl. 18.
Majestic Mfg. Co., St. Louis, Mo., to Majestic Range Works, Inc., Chicago, Ill. 45,252, ren. 8–3–65. Cl. 34.
Majestic Range Works, Inc.: *See*—
Majestic Mfg. Co.
Mallinckrodt Chemical Works, St. Louis, Mo. 793,583, pub. 5–18–65. Cl. 18.
Mangelsdorf, Ed. F., & Bro., Inc., St. Louis, Mo. 793,496, pub. 5–18–65. Cl. 1.
Mannion, Lynn, Wilmette, Ill. 680,558, canc. Cl. 101.
Manufacturers' Marketing Co., U.S.A., Inc., New York, N.Y. 793,510, pub. 5–18–65. Cl. 6.
Marghab, Emile, Inc., New York, N.Y. 793,695, pub. 5–18–65. Cl. 42.
Marriott Motor Hotels, Inc., Washington, D.C. 793,802, pub. 5–18–65. Cl. 100.
Martin & Robertson Ltd., Vancouver, British Columbia, Canada. 793,758, pub. 5–18–65. Cl. 46.
Martin-Marietta Corp.: *See*—
Master Builders Co., The.
Martin-Senour Co., The, Chicago, Ill. 680,307, canc. Cl. 16.
Masie, Harry H., d.b.a. H. H. Masie Toiletries, New York, N.Y. 793,783, pub. 5–18–65. Cl. 51.
Masie Toiletries: *See*—
Masie, Harry H.
Master Builders Co., The, Cleveland, Ohio, by Martin-Marietta Corp., New York, N.Y. 203,180, 12(c) pub. 8–3–65. Cl. 12.
Master Builders Co., The, Cleveland, Ohio, by Martin-Marietta Corp., New York, N.Y. 203,394, 12(c) pub. 8–3–65. Cl. 16.
Master Specialties Co., Gardena, Calif. 793,842. Cl. 21.
Mattel, Inc., Hawthorne, Calif. 793,629, pub. 5–18–65. Cl. 22.
McAdam, Paul A., d.b.a. Salesmasters National, Phoenix, Ariz. 60,571, canc. Cl. 107.
McCabe, Patrick, d.b.a. A Alpha Pattern & Mfg., Los Angeles, Calif. 680,292, canc. Cl. 13.
McGarry, Mark R.: *See*—
Jessup, Homer E.
McKesson & Robbins, Inc., New York, N.Y. 793,581, pub. 5–18–65. Cl. 18.
Medicom, Inc., Chicago Heights, Ill. 793,809, pub. 5–18–65. Cl. 101.
Melli & Worthington, Inc., Hatboro, Pa. 793,819, pub. 5–18–65. Cl. 103.
Merck & Co., Inc.: *See*—
Firm of E. Merck.
Merriam, G. & C., Co., from G. & C. Merriam Co., Springfield, Mass. 793,668–9, pub. 5–18–65. Cl. 38.
Mex-I-Plan: *See*—
Starr, Harold H.
Meyrowitz, E. B., Inc., New York, N.Y. 680,421, canc. Cl. 26.
Milchem, Inc., Houston, Tex. 793,519, pub. 5–18–65. Cl. 6.
Miller & Miller, Inc., Atlanta, Ga. 680,387, canc. Cl. 23.
Miller Co., The, Meriden, Conn. 680,338, canc. Cl. 21.
Miller, Frank, & Sons, Inc., Chicago, Ill. 793,784, pub. 5–18–65. Cl. 52.
Miller, Paul L., Paterson, N.J. 793,548, pub. 5–18–65. Cl. 6.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 793,632, pub. 5–18–65. Cl. 23.
Miraplas Tile Co., Columbus, Ohio. 680,287, canc. Cl. 13.
Mitchell Bros., Inc., d.b.a. Leisure Industries, Bridgeport, Conn. 680,577, canc. Cl. 22.
Mohasco Industries, Inc., Amsterdam, N.Y. 680,508, canc. Cl. 42.
Monsanto Co.: *See*—
Provident Chemical Works.
Monsanto Co., St. Louis, Mo. 793,588, pub. 5–18–65. Cl. 6.
Montgomery Brothers, Inc., Burlingame, Calif. 793,597, pub. 5–18–65. Cl. 21.
Moorhead Machinery & Boiler Co., Minneapolis, Minn. 793,634, pub. 5–18–65. Cl. 23.
Morey Seldin Machinery Corp., Indianapolis, Ind. 793,818, pub. 5–18–65. Cl. 103.
Moszczynski, Anna E., d.b.a. Anna Edwards, New York, N.Y. 793,626, pub. 5–18–65. Cl. 22.
Multiprint, Inc., New York, N.Y. 793,808, pub. 5–18–65. Cl. 101.
Muro Pharmacal Laboratories, Inc., Quincy, Mass. 793,587, pub. 5–18–65. Cl. 18.
Mutual Citrus Products Co., Anaheim, Calif. 793,706, pub. 5–18–65. Cl. 46.
Mutual Woodworking Co., San Francisco, Calif. 680,488, canc. Cl. 32.
My Bread Baking Co., New Bedford, Mass. 793,737, pub. 5–18–65. Cl. 46.
Nadella S.A., Rueil-Malmaison, Seine et Oise, France. 793,592, pub. 5–18–65. Multiple Class (Classes 19 and 23).
National Advertising Co., Chicago, Ill. 680,560, canc. Cl. 101.
National Biscuit Co., New York, N.Y. 200,631, ren. 8–3–65. Cl. 46.
National Biscuit Co., New York, N.Y. 202,930, ren. 8–3–65. Cl. 46.
National Biscuit Co., New York, N.Y. 793,734, pub. 5–18–65. Cl. 46.
National Broom Mfg. Co. of New Mexico: *See*—
National Broom Mfg. Co.
National Broom Mfg. Co., Pueblo, Colo., to National Broom Mfg. Co. of New Mexico, Tucumcari, N. Mex. 199,851, ren. 8–3–65. Cl. 29.
National Canvas Products Corp., Toledo, Ohio. 793,609, pub. 5–18–65. Cl. 22.
National Dairy Products Corp., Chicago, Ill. 793,726, pub. 5–18–65. Cl. 46.
National Dairy Products Corp., Chicago, Ill. 793,735, pub. 5–18–65. Cl. 46.
National Gypsum Co., Buffalo, N.Y. 793,558, pub. 5–18–65. Cl. 12.
National Motor Kart Derby Association, Alexandria, Va. 680,572, canc. Cl. 200.
Navan Products, Inc., El Segundo, Calif. 793,522, pub. 5–18–65. Cl. 6.
New Britain Machine Co., The, New Britain, Conn. 195,032, ren. 8–3–65. Cl. 23.
New Britain Machine Co., The, New Britain, Conn. 195,979, ren. 8–3–65. Cl. 23.
New England Canners, Inc., Cedar Groove, N.J. 793,713, pub. 5–18–65. Cl. 46.
New England Canners, Inc., Cedar Grove, N.J. 793,715, pub. 5–18–65. Cl. 46.
Newsweek, Inc., New York, N.Y. 793,664–5, pub. 5–18–65. Cl. 38.
New York Feather Co., Inc., Brooklyn, N.Y. 793,645, pub. 5–18–65. Cl. 32.
Nina Ricci S.A.R.L., Paris, France. 793,771, pub. 5–18–65. Cl. 51.
No-Ox Laboratories: *See*—
Bohlman, Henry J.
Norcross, Inc., New York, N.Y. 793,673, pub. 5–18–65. Cl. 38.
Norda Essential Oil & Chemical Co., Inc., New York, N.Y. 204,933, ren. 8–3–65. Cl. 51.
Northam Warren Corp., by Chesebrough-Pond's, Inc., New York, N.Y. 200,955, 12(c) pub. 8–3–65. Cl. 44.
Norvey, Inc., Los Angeles, Calif. 793,636, pub. 5–18–65. Cl. 23.
Noxzema Chemical Co., The, Baltimore, Md. 793,772–4, pub. 8–20–63. Cl. 51.
Nuclear Fuel Services, Inc., Washington, D.C. 793,825, pub. 5–18–65. Cl. 103.
Oakite Products, Inc., New York, N.Y. 417,925, ren. 8–3–65. Cl. 52.
Oakite Products, Inc., New York, N.Y. 418,060, ren. 8–3–65. Cl. 15.
Obergfel Brothers: *See*—
Obergfel, Dolph.
Obergfel, Dolph, d.b.a. Obergfel Brothers, Los Angeles, Calif. 793,810, pub. 5–18–65. Cl. 101.
Occidental Life Insurance Co. of California, Los Angeles, Calif. 793,817, pub. 5–18–65. Cl. 102.
Ohaus Scale Corp., Union, N.J. 793,638, pub. 5–18–65. Cl. 26.
Ontario Biscuit Co., United Biscuit Co. of America, Melrose Park, Ill. 204,138. Am. 7(d). Cl. 46.
Orbsy Cerrato Furniture, Inc., West New York, N.Y. 793,846, canc. Cl. 32.
Orosi Foothill Citrus Association, Orosi, Calif. 417,505, ren. 8–3–65. Cl. 46.
Ortho Pharmaceutical Corp., Raritan, N.J. 793,551, pub. 5–18–65. Cl. 6.
Oxford Boyswear, Inc., New York, N.Y. 793,679, pub. 3–10–64. Cl. 39.
Pace, Julian V., New York, N.Y. 793,785, pub. 5–18–65. Cl. 52.
Pantex Mfg. Corp., Central Falls, R.I. 680,404, canc. Cl. 24.
Paramount Line, Inc., to Belmont Greeting Card Co., Inc., Bronx, N.Y., and Greeting Cards, Inc. of New Jersey, Newark, N.J. 749,440, new cert. Sec. 7(c) 8–3–65. Cl. 38.
Paramount Line, Inc., The, to Belmont Greeting Card Co., Inc., Bronx, N.Y., and Greeting Cards, Inc. of New Jersey, Newark, N.J. 749,441, new cert. Sec. 7(c) 8–3–65. Cl. 38.
Para-Tone, Inc., La Grange, Ill. 793,764, pub. 5–18–65. Cl. 50.
Parkview Drugs, Inc., Kansas City, Mo. 793,812, pub. 5–18–65. Cl. 101.
Parts Mfg. Corp., New York, N.Y. 680,379, canc. Cl. 23.
Paterson Parchment Paper Co., Bristol, Pa. 793,655, pub. 5–18–65. Cl. 37.
Paul, Peter, Inc., Naugatuck, Conn. 793,718, pub. 5–18–65. Cl. 46.
Ped-Agree Shoe Co., Paterson, N.J. 415,909, ren. 8–3–65. Cl. 39.
Peerless Plastics, Inc., New York, N.Y. 793,509, pub. 5–18–65. Cl. 3.
Pennsalt Chemicals Corp., Philadelphia, Pa. 793,539, pub. 5–18–65. Cl. 6.
Pennsalt Chemicals Corp., Philadelphia, Pa. 793,791, pub. 5–18–65. Cl. 52.
Pepper, Jas. E., & Co., Lexington, Ky., to Schenley Distillers, Inc., New York, N.Y. 47,605, ren. 8–3–65. Cl. 49.
Pfizer, Chas., & Co., Inc., New York, N.Y. 793,518, pub. 5–18–65. Cl. 6.
Pflueger Corp.: *See*—
Enterprise Mfg. Co., The.
Phila. Dry Cleaners, Inc., Pottstown, Pa. 680,569, canc. Cl. 106.
Philadelphia Chewing Gum Corp., Havertown, Pa. 793,739, pub. 5–18–65. Cl. 46.
Philco Corp., Philadelphia, Pa. 680,345, canc. Cl. 21.
Philco Corp., by Philco Corp., Philadelphia, Pa. 415,189. 12(c) pub. 8–3–65. Cl. 21.
Philco Corp., by Philco Corp., Philadelphia, Pa. 415,190. 12(c) pub. 8–3–65. Cl. 35.
Philco Corp., by Philco Corp., Philadelphia, Pa. 415,320. 12(c) pub. 8–3–65. Cl. 34.

Phoenix Candy Co., Inc., Brooklyn, N.Y. 793,724, pub. 5–18–65. Cl. 46.
Pillsbury Co., The: *See*—
Pillsbury Flour Mills Co.
Pillsbury Co., The, Minneapolis, Minn. 793,703–5, pub. 5–18–65. Cl. 45.
Pillsbury Flour Mills Co., to The Pillsbury Co., Minneapolis, Minn. 199,499, ren. 8–3–65. Cl. 46.
Pirrone, F., & Sons, Inc., Saliba, Calif. 680,541, canc. Cl. 47.
Pittsburgh Railways Co.: *See*—
Industrial Publishing Co., The.
Potlatch Forests, Inc., Lewiston, Idaho. 793,560, pub. 5–18–65. Cl. 12.
Prina, Frank R., Corp., The, New York, N.Y. 680,588, canc. Cl. 46.
Pro Sports All, Inc., Henderson, Ky. 793,603, pub. 5–18–65. Cl. 22.
Provident Chemical Works, to Monsanto Co., St. Louis, Mo. 46,851, ren. 8–3–65. Cl. 6.
Puma Corp., East Farmingdale, N.Y. 793,512, pub. 5–18–65. Cl. 6.
Pure Oil Co., The, Palatine, Ill. 793,567, pub. 5–18–65. Cl. 15.
Puritan Cordage Mills, Louisville, Ky. 793,627, pub. 5–18–65. Cl. 22.
Quaker Oats Co., The: *See*—
Topeka Milling Co., The.
Quaker Oats Co., The, Chicago, Ill. 793,754, pub. 5–18–65. Cl. 46.
Queensmith Associates, Inc., Washington, D.C. 793,676, pub. 5–18–65. Cl. 38.
Radiation, Inc., Melbourne, Fla. 680,357, canc. Cl. 21.
Radio Corp. of America, New York, N.Y. 793,639, pub. 5–18–65. Cl. 26.
Rainbow Purchasing Corp., New York, N.Y. 793,694, pub. 5–18–65. Cl. 42.
Ranco Industrial Products Corp., Cleveland, Ohio. 793,524, pub. 5–18–65. Cl. 6.
Randall, Wilbur W., to Match-It, Inc., Hartford, Conn. 789,133, new cert. Sec. 7(c) 8–3–65. Cl. 25.
Raybestos-Manhattan, Inc., Manheim, Pa. 793,828, pub. 5–18–65. Cl. 107.
Reactive Metals, Inc., Niles, Ohio. 720,566. Am. 7(d). Cl. 14.
Reardon Co., The, St. Louis, Mo. 206,202, ren. 8–3–65. Cl. 16.
Reasor Corp., The, Charleston, Ill. 793,824, pub. 5–18–65. Cl. 103.
Red Cedar Shingle & Handsplit Shake Bureau, Seattle, Wash. 793,663, pub. 5–18–65. Cl. 38.
Red & White Corp.: *See*—
Red and White Foundation Charitable Trust.
Red and White Foundation Charitable Trust, from Red & White Corp., Chicago, Ill. 793,807, pub. 11–21–61. Cl. 101.
Redlands Foothill Groves, Redlands, Calif. 417,848, ren. 8–3–65. Cl. 46.
Reeves, W. E., Corp., Ambler, Pa. 680,527, canc. Cl. 44.
Reichhold Chemicals, Inc., White Plains, N.Y. 793,500, pub. 5–18–65. Cl. 1.
Rexolin, Inc., Santa Monica, Calif. 793,505, pub. 5–18–65. Cl. 1.
Richmond Ring Co., Inc.: *See*—
Stamford Foundry Co., The.
Ridley Mfg. Co., Inc., Ridley Park, Pa. 793,612, pub. 5–18–65. Cl. 22.
River Smelting & Refining Co., The, Cleveland, Ohio. 412,837, ren. 8–3–65. Cl. 14.
River Valley Co., Inc., Albany, N.Y. 793,735, pub. 5–18–65. Cl. 46.
Roberts, John A., & Co., Inc., Newark, N.J. 793,616, pub. 5–18–65. Cl. 22.
Rockcote Paint Co., Rockford, Ill. 793,572, pub. 5–18–65. Cl. 16.
Roddenbery, W. B., Co., Inc.: *See*—
Roddenbery, Walter B.
Roddenbery, Walter B., to W. B. Roddenbery Co., Inc., Cairo, Ga. 205,256, ren. 8–3–65. Cl. 46.
Rodin, G. W., Co.: *See*—
Rodin, Geraldine W.
Rodin, Geraldine W., d.b.a. G. W. Rodin Co., Clarks Summit, Pa. 793,607, pub. 5–18–65. Cl. 22.
Roller Derby Associates, Chicago, Ill. 793,829, pub. 5–18–65. Cl. 107.
Rolley, Charles A., d.b.a. Rolley Perfumes, to Colgate Palmolive Co., New York, N.Y. 442,125, new cert. Cl. 6.
Romanoff Caviar Co., New York, N.Y. 417,616, ren. 8–3–65. Cl. 46.
Ronson Corp.: *See*—
Art Metal Works, Inc.
Rosa Food Products Co.: *See*—
Foti, Leonard.
Rowe AC Services: *See*—
Automatic Canteen Co. of America.
Rubin-Meltzer Corp., New York, N.Y. 793,681, pub. 10–18–64. Cl. 39.
Rubinstein, Helena, Inc., New York, N.Y. 793,779, pub. 5–18–65. Cl. 51.
Rubon Inc.: *See*—
Rubon Woodfinishing & Products Co.
Rubon Woodfinishing & Products Co., Kansas City, Mo., to Rubon Inc., Independence, Mo. 206,454, ren. 8–3–65. Cl. 29.
Rueping, Fred, Leather Co., Fond du Lac, Wis. 680,221, canc. Cl. 1.
Russell & Stoll Co., Inc., New York, N.Y. 793,598, pub. 5–18–65. Cl. 21.
SC Hydraulic Engineering Corp.: *See*—
Southern California Hydraulic Engineering Corp.
St. Lawrence Sales Inc., Royal Oak, Mich. 793,602, pub. 5–18–65. Cl. 32.
Samuels, T. W., Distillery, Inc., Deatsville, Ky. 793,768, pub. 5–18–65. Cl. 49.
Sannard, A. E., Ltd., London, England. 793,722, pub. 5–18–65. Cl. 46.
Sano, Jim, Denver, Colo. 793,756, pub. 5–18–65. Cl. 46.
Savogran Co., The: *See*—
India Alkali Works.
Sayous, Charles A., Inc., New York, N.Y. 793,728, pub. 5–18–65. Cl. 46.
Schenley Distillers, Inc.: *See*—
Pepper, Jas. E., & Co.
Schild, A., A.G. (S.A. Ltd.), Granges, Soleure, Switzerland. 201,832–3, ren. 8–3–65. Cl. 27.
Schlager Beer Co., Ltd., The, London, England. 680,543, canc. Cl. 48.
Scholastic Magazines, Inc., New York, N.Y. 793,830, pub. 5–18–65. Cl. 107.
Sealed Air Corp., Hawthorne, N.J. 793,843. Cl. 37.
Seamac Corp., New Orleans, La. 793,606, pub. 5–18–65. Cl. 22.
Selby, Battersby & Co., Philadelphia, Pa. 416,921, ren. 8–3–65. Cl. 12.
Senior & Co., Inc., Curacao, Netherlands Antilles. 793,763, pub. 5–18–65. Cl. 49.
Sexton, John, & Co., Chicago, Ill. 793,743, pub. 5–18–65. Cl. 46.
Shann, Grace, d.b.a. Gail Chemical Co., New York, N.Y., by C. P. Baker & Co., Philadelphia, Pa. 413,517, 12(c) pub. 8–3–65. Cl. 52.
Sheffield Co., The, New London, Conn. 793,591, pub. 5–18–65. Cl. 18.
Shell Oil Co.: *See*—
Shell Union Oil Corp.
Shell Union Oil Corp., San Francisco, Calif., to Shell Oil Co., New York, N.Y. 416,694, ren. 8–3–65. Cl. 52.
Shenango Ceramics, Inc., from Shenango China, Inc., New Castle, Pa. 793,642, pub. 5–18–65. Cl. 50.
Shenango China, Inc.: *See*—
Shenango Ceramics, Inc.
Sherman-Klove Co., The, to Symington Wayne Corp., Salisbury, Md. 679,222, cor. Cl. 23.
Shingle, L. H., Co.: *See*—
Graton & Knight Co.
Shoe affiliates, Inc., from Kenmore Depts., Inc., Albany, N.Y. 793,677, pub. 1–1–63. Cl. 39.
Shorell Products, Inc., New York, N.Y. 793,778, pub. 5–18–65. Cl. 51.
Simpson Timber Co., Seattle, Wash. 793,557, pub. 6–2–64. Cl. 12.
Smith, Miller & Patch, Inc., New York, N.Y. 793,579, pub. 5–18–65. Cl. 18.
'S No Spot Corp., San Francisco, Calif. 793,789, pub. 5–18–65. Cl. 52.
Snyder, Howard J., Mamaroneck, N.Y. 680,358, canc. Cl. 21.
Sohio Chemical Co., Cleveland, Ohio. 793,514–17, pub. 5–18–65. Cl. 6.
South Bend Tackle Co., Inc., South Bend, Ind. 680,367, canc. Cl. 22.
Southern Airways Co., Inc., Atlanta, Ga. 793,811, pub. 5–18–65. Cl. 101.
Southern California Hydraulic Engineering Corp., d.b.a. SC Hydraulic Engineering Corp., Los Angeles, Calif. 793,636, pub. 5–18–65. Cl. 23.
Sovereign Grand Lodge of the I.O.O.F., Baltimore, Md. 745,240. Am. 7(d). Cl. 200.
Spectra Biologicals, Inc., East Brunswick, N.J. 793,548, pub. 5–18–65. Cl. 6.
Sportswear Corp. of America, St. Louis, Mo. 793,678, pub. 5–18–65. Cl. 39.
Stahl Felt Stamping Co., The, Warren, Mich. 793,691, pub. 5–18–65. Cl. 40.
Stamford Chemical Co., The, Stamford, Conn. 793,549, pub. 5–18–65. Cl. 6.
Stamford Foundry Co., The, Stamford, Conn., to Richmond Ring Co., Inc., Souderton, Pa. 45,941, ren. 8–3–65. Cl. 34.
Starr, Harold H., d.b.a. Mex-I-Plan, Los Angeles, Calif. 793,815, 5–18–65. Cl. 102.
Stauffer Chemical Co., San Francisco, Calif. 680,297, canc. Cl. 10.
Stauffer, D. F., Biscuit Co., Inc., York, Pa. 793,744–5, pub. 5–18–65. Cl. 46.
Sterling Packing & Gasket Co., Inc., Houston, Tex. 793,559, pub. 5–18–65. Cl. 12.
Stetson Shoe Co., Inc., South Weymouth, Mass. 793,686, pub. 12–29–64. Cl. 39.
Stevens, J. P., & Co., Inc., New York, N.Y. 793,697, pub. 5–18–65. Cl. 42.
Stirling Sintering Corp., Pittsburgh, Pa. 793,805, pub. 5–18–65. Cl. 100.
Strauss Stores Corp., Maspeth, N.Y. 680,344, canc. Cl. 21.
Studio Girl: *See*—
Studio Girl-Hollywood, Inc.
Studio Girl-Hollywood, Inc., d.b.a. Studio Girl, Glendale, Calif. 793,775, pub. 5–18–65. Cl. 51.
Sugardale Provision Co., The, Canton, Ohio. 793,719, pub. 5–18–65. Cl. 46.
Sun Oil Co., Philadelphia, Pa. 793,823, pub. 5–18–65. Cl. 103.
Sunroc Corp., Glen Riddle, Pa. 793,644, pub. 5–18–65. Cl. 31.
Sunstar Dentifrice Co., Ltd., Tatatsuki-Shi, Osaka, Japan. 793,786, pub. 5–18–65. Cl. 52.
Supply Mfg. Co., Inc., New York, N.Y. 793,692, pub. 5–18–65. Cl. 40.

Susslin, Charles A.: *See*—
M-A Pharmaceutical Corp.
Swift Specific Co. S.S.S. Co., Atlanta, Ga. 45,172. Am. 7(d). Cl. 18.
Sylvania Electric Products, Inc., Wilmington, Del., from Sylvania Electric Products, Inc., New York, N.Y. 680,295, canc. Cl. 14.
Syntex Laboratories, Inc., Palo Alto, Calif. 793,590, pub. 5–18–65. Cl. 18.
Tape, Inc., Green Bay, Wis. 417,889, ren. 8–3–65. Cl. 5.
Tecnique, Inc., Clifton, N.J. 793,777, pub. 5–18–65. Cl. 51.
Teleprompter Corp., New York, N.Y. 793,594, pub. 5–18–65. Cl. 21.
Testworth Laboratories, Inc., Addison, Ill. 793,767, pub. 5–18–65. Cl. 50.
Thinnes, Elmer M.: *See*—
Hydrosal Laboratories Co., The.
Tilo Game Co.: *See*—
Van Patter, Yates J.
Topeka Milling Co., The, Topeka, Kans., to The Quaker Oats Co., Chicago, Ill. 45,344, ren. 8–3–65. Cl. 46.
Tovatt, V. J., Co., Lynwood, Calif. 680,256, canc. Cl. 9.
Towle Mfg. Co., Newburyport, Mass. 47,551, ren. 8–3–65. Cl. 28.
Trimount Clothing Co., Inc., Boston, Mass. 793,850. Cl. 39.
Trio Mfg. Co., Griggsville, Ill. 793,766, pub. 5–18–65. Cl. 50.
Trio Mfg. Co., Griggsville, Ill. 793,768, pub. 5–18–65. Cl. 50.
Tropical Gas Co., Inc., Panama, Republic of Panama. 680,430, canc. Cl. 31.
True-Cut Products, Inc., Goleta, Calif. 793,640, pub. 5–18–65. Cl. 26.
Ulmann, Bernhard, Co., Inc., by Indian Head Mills, Inc., New York, N.Y. 416,735, 12(c) pub. 8–3–65. Cl. 43.
Uneeda Doll Co., Inc., Brooklyn, N.Y. 793,608, pub. 5–18–65. Cl. 22.
Union Carbide Corp., New York, N.Y. 793,593, pub. 5–18–65. Cl. 19.
Union Tank Car Co., Chicago, Ill. 793,643, pub. 5–18–65. Cl. 31.
United Fruit Co., Boston, Mass. 793,712, pub. 5–18–65. Cl. 46.
United States Graphite Co., The, to The Wickes Corp., Saginaw, Mich. 205,119, ren. 8–3–65. Cl. 15.
U.S. Plastisol, Inc., to The Servus Rubber Co., Rock Island, Ill. 655,882, new cert. Sec. 7(c) 8–3–65. Cl. 39.
United States Rubber Co., New York, N.Y. 680,483, canc. Cl. 39.
United States Rubber Co., New York, N.Y. 793,646, pub. 5–18–65. Cl. 35.
United States Steel Corp., Pittsburgh, Pa. 793,564, pub. 5–18–65. Cl. 13.
United Western Enterprises: *See*—
United Western Enterprises, Inc.
United Western Enterprises, Inc., d.b.a. United Western Enterprises, Santa Monica, Calif. 793,658, pub. 5–18–65. Cl. 38.
Upjohn Co., The, Kalamazoo, Mich. 793,553, pub. 5–18–65. Cl. 6.
Upjohn Co., The, Kalamazoo, Mich. 793,586, pub. 5–18–65. Cl. 18.
Valspar Corp., The: *See*—
Detroit Graphite Co.
Van Patter, Yates J., d.b.a. Tilo Game Co., Monrovia, Calif. 413,167. 12(c) pub. 8–3–65. Cl. 22.
Vapor Corp., Chicago, Ill. 793,841. Cl. 21.
Veenproducten Maatschappij Tuinturf N.V., Zwolle, Netherlands. 793,504, pub. 5–18–65. Cl. 1.
Virginia Aerosol Inc., Winchester, Va. 793,570, pub. 5–18–65. Cl. 15.
Vitreous China Accessories Guild, Princeton, N.J. 680,279, canc. Cl. 13.
Vlier Contracting Co.: *See*—
Vlier, George B.
Vlier, George B., d.b.a. Vlier Contracting Co., Studio City, Calif. 793,822, pub. 5–18–65. Cl. 103.
Vulcan Mfg. Co., Cincinnati, Ohio. 793,667, pub. 5–18–65. Cl. 38.
Walden-Mott Corp., Oradell, N.J. 793,672, pub. 5–18–65. Cl. 38.
Wallace Silversmiths, Inc., Wallingford, Conn. 680,383, canc. Cl. 23.
Washington Engineering Services Co., Inc., Kensington, Md. 793,801, pub. 2–23–65. Cl. 100.
Webb, Chas. J., Sons Co., Inc., Philadelphia, from Corrosion Reaction Consultants, Inc., Dresher, Pa. 793,523, pub. 5–18–65. Cl. 6.
Wells Lamont Corp., Chicago, Ill. 793,684, pub. 12–29–64. Cl. 39.
Western Research Laboratories, Inc.: *See*—
Western Research Laboratories.
Western Research Laboratories, Inc., from Western Research Laboratories, Denver, Colo. 793,578, pub. 5–18–65. Cl. 18.
White, Martha, Mills, Inc., Nashville, Tenn. 793,750, pub. 5–18–65. Cl. 46.
Whiteford Paper Co., Inc., New York, N.Y. 680,463, canc. Cl. 37.
White Rock Corp.: *See*—
White Rock Mineral Springs Co.
White Rock Mineral Springs Co., Waukesha, Wis., to White Rock Corp., Brooklyn, N.Y. 205,356, ren. 8–3–65. Cl. 45.
Wica Chemicals, Inc., Charlotte, N.C. 793,525–33, pub. 5–18–65. Cl. 6.
Wica Chemicals, Inc., Charlotte, N.C. 793,566, pub. 5–18–65. Cl. 15.
Wica Chemicals, Inc., Charlotte, N.C. 793,788, pub. 5–18–65. Cl. 52.
Wickes Corp., The: *See*—
United States Graphite Co., The.
Wittek Golf Range Supply Co., Inc., Chicago, Ill. 793,613, pub. 5–18–65. Cl. 22.
Wycombe, Meyer, Inc., to B. Altman & Co., New York, N.Y. 414,445, ren. 8–3–65. Cl. 32.
Youngstown Sheet and Tube Co., The, Boardman, Ohio. 793,840. Cl. 21.
Young World Press, Inc., New York, N.Y. 793,661, pub. 5–18–65. Cl. 38.
Zenith Radio Corp., Chicago, Ill. 680,524, canc. Cl. 44.

U.S. GOVERNMENT PRINTING OFFICE:O—1965

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

August 10, 1965 Volume 817 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of June 1965

Examiner affirmed	280
Examiner affirmed in part	47
Examiner reversed	91
Total	418

Annual Index of Patents

The 1964 edition of the Annual Index of Patents has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $6.75.

Revision of "Discontinuance of Deposit Account Service for Sale of Patent Copies"

In view of the difficulties experienced by many of its customers, the Patent Office is revising the Notice appearing in the December 1, 1964, issue of the *Official Gazette of the U.S. Patent Office*. This Notice—Discontinuance of Deposit Account Service for Sale of Patent Copies—is revised to except certain types of patent copy orders.

The Patent Office will now accept lists of fifty (50) or more numbers arranged in numerical sequence to be charged to Deposit Accounts. Service charges, such as Special Handling and Air Mail postage for these orders, may also be charged to Deposit Accounts.

C. A. KALK,
Director of Administration.

July 15, 1965.

Disclaimer

2,784,521.—*Cecil A. Britten and Adrian St. J. Bowie*, San Jose, Calif. METHOD AND APPARATUS FOR DISTRIBUTING PESTICIDE. Patent dated Mar. 12, 1957. Disclaimer filed May 19, 1965, by the assignee, *FMC Corporation.*

Hereby enters this disclaimer to all claims of said patent.

Adjudicated Patents

(Ct. Cl.) Reggio Patent No. 2,435,905 (123—119), for FUEL METERING DEVICE. Claims 1 to 5, 8, 9, 12, 21, 24, 25, 36, 38, 41, 43, 45 to 49, 51, 54 to 56, 61 to 65, 67, and 71, *Held* invalid and not infringed. *Pratt Whitney Co.* v. *United States*, 345 F.2d 838; 145 USPQ 429.

(Ct. Cl.) Reggio Patent No. 2,673,556 (123—140), for ENGINE FUEL CONTROL. Claims 1, 22, 33 and 34 *Held* invalid and not infringed. *Id.*

(D.C. Calif.) Mosher-Goldhammer Patent No. 2,898,143 (40—21), for IDENTIFICATION BRACELET, *Held* valid and not infringed. *Precision Dynamic Corp.* v. *American Hospital Supply Corp.*, 241 F. Supp. 436; — USPQ —.

Extension of Trial of "Special" Examining Procedure for Certain "New" Applications

The program announced in 812 O.G. 953 under the title "Trial of 'Special' Examining Procedure for Certain 'New' Applications" will continue until further notice.

The restriction in the announcement which requires that an application be "awaiting action for more than six months," in order to qualify for "Special" status under the program, is hereby waived. Requests for "Special" status will be entertained any time after an application has been assigned a serial number and filing date.

The provision in the announcement which limits to 100 the number of applications that may be processed under the program by each Examining Group is lifted. Until further notice there will be no ceiling.

This notice becomes effective immediately.

EDWARD J. BRENNER,
Commissioner.

July 26, 1965.

Examination

Pursuant to the provisions of Rule 341(c), an examination for persons seeking registration before the United States Patent Office as patent attorneys or agents will be held on Tuesday, November 9, 1965.

This examination will be given under the supervision of the Civil Service Commission, and may be taken in any of the cities of the country in which the Civil Service Commission regularly conducts examinations. Applications to take the examination must be filed in the Patent Office together with a $15 fee not later than October 5, 1965.

Application blanks may be obtained from the Clerk of the Patent Office Committee on Enrollment, Room 3718, Department of Commerce Building, Washington, D.C., 20231.

EDWIN L. REYNOLDS,
Chairman, Committee on Enrollment.

July 14, 1965.

New Applications Received June 1965

Patents	8657
Designs	456
Plant Patents	7
Reissues	28
Total	9148

Issue—August 10, 1965

Patents	1295	No. 3,199,118 to No.	3,200,412, incl.
Designs	86	No. 201,860 to No.	201,946, incl.
Plant Patents	1	No. 2,547	
Reissues	7	No. 25,833 to No.	25,839, incl.
Total	1389		

Dedications

2,663,908.—*Curtis E. Maier*, Riverside, *Halford E. Brockett*, Lombard, and *Ralph A. Larson*, Chicago, Ill. PRODUCTION OF CLOSURE SEALS BY PARTIALLY CURING, SHAPING, AND COMPLETING THE CURE. Patent dated Dec. 29, 1953. Dedication filed June 8, 1965, by the assignee, *Continental Can Company, Inc.*

Hereby dedicates to the public the term of said patent subsequent to October 13, 1970.

2,663,909.—*Curtis E. Maier*, Riverside, *Halford E. Brockett*, Lombard, and *Ralph A. Larson*, Chicago, Ill. PRODUCTION OF CLOSURE SEALS BY PARTIALLY CURING A CUSHION MATERIAL AND THEREAFTER SHAPING AND COMPLETING THE CURE. Patent dated Dec. 29, 1953. Dedication filed June 8, 1965, by the assignee, *Continental Can Company, Inc.*

Hereby dedicates to the public the term of said patent subsequent to October 13, 1970.

2,835,926.—*Curtis E. Maier*, Riverside, *Halford E. Brockett*, Lombard, and *Ralph A. Larson*, Chicago, Ill. ART OF MAKING CLOSURE MEMBERS BY DEPOSITING AND CURING A COMPOUND IN THE CLOSURE SHELL AND THEREAFTER MOLDING. Patent dated May 27, 1958. Dedication filed June 8, 1965, by the assignee, *Continental Can Company, Inc.*

Hereby dedicates to the public the term of said patent subsequent to October 13, 1970.

United States Adopted Names

List No. 11

March 1, 1965–June 30, 1965

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeia) in cooperation with the intereated manufacturers. The designation "United States Adopted Names" (U.S.A.N.) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the USP, or the National Formulary.

Any comments or suggestions should be addressed to Dr. Joseph B. Jerome, Assistant Secretary, Council on Drugs, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

bamethan sulfate : vasodilator
bolmantalate : anabolic
buformin : oral hypoglycemic
butoxamine hydrochloride : inhibitor of fatty acid mobilization
candicidin : antifungal antibiotic
clorophene : disinfectant
cyprasepam : tranquilizer
cyproterone acetate : antiandrogen
dextran 40 : blood suspension stabilizer (flow improver)
dextran 45 : blood plasma volume extender in extracorporeal circulation ; antithrombogenic agent
dextran 75 : blood plasma volume extender
dihydroergotamine mesylate : sympatholytic
dimethisterone : progestin
dimethyl sulfoxide : anti-inflammatory agent
ethiodized oil I 131 : diagnostic agent
ethynerone : progestin
floxuridine : antiviral agent
fluocortolone : glucocorticoid
fluocortolone caproate : glucocorticoid
gestonorone caproate : progestin
indoxole : anti-inflammatory and antipyretic agent
mecloqualone : sedative, hypnotic
medrysone : topical anti-inflammatory agent
merisoprol Hg 197 : diagnostic agent
mesoridazine : tranquilizer
metabromsalan : germicide
mithramycin : antineoplastic agent
nafoxidine hydrochloride : antifertility agent and cholesterol lowering agent
nandrolone decanoate : long-acting anabolic
nitralamine hydrochloride : fungicide
oxafuradene : antibacterial
pipobroman : antineoplastic
propranolol hydrochloride : antiarrythmic agent
puromycin : antibiotic
pyrroliphene hydrochloride : analgesic
rolitetracycline nitrate : antibiotic
sulfalene : antibacterial
sulfametin : antibacterial
testosterone phenylacetate : repository androgen
triclocarban : germicide
trioxsalen : pigmenting and phototherapeutic agent
vinglycinate sulfate : antineoplastic

United States Adopted Names (USAN) and United States Adopted Names (Proposed) (USAN)

QUARTERLY CUMULATIVE LIST

January 1, 1965–June 30, 1965

This is a revised alphabetical listing of the nonproprietary names *proposed for adoption* by the USAN Council which were published in the Trademark Bureau Bulletin during the period indicated. The listing also incorporates the revised lists of *adopted* nonproprietary names issued by the USAN Council, but not published in the Bulletin.

The Quarterly Cumulative List is intended to supplement USAN Cumulative List 3, 1961–1964, published annually for the Council by the United States Pharmacopeia ; it is distributed with an issue of the Trademark Bureau Bulletin.

An asterisk (*) before a name indicates an *adopted name* ; all other names on the list are *proposed for adoption*.

Since Q.C.L. is cumulative, only the lastest issue need be consulted. All preceding lists may be discarded.

Any comments or protests regarding *proposed* names should be brought promptly to the attention of the USAN Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

*algeldrate : antacid
*bamethan sulfate : vasodilator
*benzydamine hydrochloride : analgesic, anti-inflammatory, antipyretic
biphasic insulin : hypoglycemic
*bolmantalate : anabolic agent
*buformin : oral hypoglycemic
bunamidine hydrochloride : veterinary anthelmintic
*buquinolate : poultry coccidiostat
*butoxamine hydrochloride : inhibitor of fatty acid mobilization
*calcium polycarbophil : antidiarrheal
*candicidin : antifungal antibiotic
clobenzepam : anti-allergic agent
*clopenthixol : tranquilizer
clorcortolone : glucocorticoid
*clorophene : disinfectant
*coumermycin : antibiotic
cyclofynol : tranquilizer
cyclophenazine hydrochloride : tranquilizer
*cyprasepam : tranquilizer
*cyproterone acetate : antiandrogen
*debrisoquin sulfate : hypotensive agent
*dextran 40 : blood suspension stabilizer (flow improver)
*dextran 45 : blood plasma volume extender in extracorporeal circulation ; antithrombogenic agent
*dextran 75 : blood plasma volume extender
*dicloxacillin : antibiotic
*dihydroergotamine mesylate : sympatholytic
*dimethisterone : progestin
*dimethyl sulfoxide : anti-inflammatory agent
*encyprate : antidepressant
*estradiol undecylate : estrogen
etafurasone : poultry histomonastat
*ethiodized oil I 131 : anti-oncotic agent
*ethynerone : progestin
etomide hydrochloride : analgesic
*fenfluramine hydrochloride : sympathomimetic (anorexic)
fenimide : tranquilizer
fentrasole : anti-inflammatory agent
*floxuridine : antiviral agent

*flubanilate hydrochloride : antidepressant
*fluocortolone : glucocorticoid
*fluocortolone caproate : glucocorticoid
*flurogestone acetate : progestin
*gestonorone caproate : progestin
*glyhexamide : hypoglycemic
guaithylline : antiasthmatic
*hamycin : antifungal agent
*betacillin : antibiotic
*hexedine : antibacterial
*hydroxyurea : antineoplastic
*indoxole : anti-inflammatory and antipyretic
*levofuraltadone : antibacterial
*lypressin : antidiuretic
*mecloqualone : sedative and hypnotic
*medrysone : topical anti-inflammatory
*meprednisone : glucocorticoid
*merisoprol Hg 197 : diagnostic agent
*mesoridazine : tranquilizer
*metabromsalan : disinfectant
*metasamide : analgesic
metofurone : antimycotic agent
*mithramycin : antineoplastic
*nafoxidine hydrochloride : antifertility agent and cholesterol lowering agent
*namoxyrate : analgesic
*nandrolone decanoate : long-acting anabolic
*neutral insulin : hypoglycemic
*nitralamine hydrochloride : fungicide
*nogalamycin : antineoplastic
*oxafuradene : antibacterial
*pipobroman : antineoplastic
*piposulfan : antineoplastic
*poloxalene : surfactant
*propanolol hydrochloride : antiarrythmic agent
*puromycin : antibiotic
*pyrroliphene hydrochloride : analgesic
*quindecamine acetate : topical anti-infective
quinetalate : antiasthmatic
*rolitetracycline nitrate : antibiotic
*sodium actinoquinol : treatment of flash burns (ophthalmic)
*sodium glymidine : oral hypoglycemic
*sodium metrizoate : contrast medium
sodium polymixate : antibiotic
*sulfalene : antibacterial agent
*sulfametin : antibacterial
terodiline hydrochloride : coronary dilator
*testosterone ketolaurate : androgen
*testosterone phenylacetate : androgen
*thioguanine : antineoplastic
*triclocarban : disinfectant
*trimolide : sedative
*trioxsalen : pigmenting agent
urokinase : plasminogen activator
*vinglycinate sulfate : antineoplastic
viridomycin : antifungal antibiotic

Patents Available for Licensing or Sale

Des. 201,372. TOY SPRING SHOE. Kenneth Dobson, 3135 W. 1st Ave., Denver, Colo., 80219.

3,181,521. IGNITION DISTRIBUTOR FOR AUTOMOBILES. Robert Lee, 1508 Price St., Savannah, Ga.

3,183,662. HEAT ENGINE. Theodore Y. Kosgren, Sr., 350 Willow Road, Barrington, Ill.

3,194,561. MAGNETIC CARD TABLE TOP. Norman C. Schumann, Rte. 1, Waupaca, Wis.

J. B. Knight Co., Inc., is prepared to grant nonexclusive licenses under the following five patents upon reasonable terms to domestic manufacturers. Applications for license should be addressed to : Charles W. Coffee, 1507 13th St., Lubbock, Tex., 79401.

3,009,646. IRRIGATION SYSTEM.
3,072,268. IRRIGATION SYSTEM.
3,087,680. IRRIGATION SYSTEM.
3,094,282. IRRIGATION SYSTEM.
3,157,193. IRRIGATION SYSTEM.

General Electric Company is prepared to grant nonexclusive licenses under the following 35 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 2 patents may be addressed to : Patent Counsel, Metallurgical Products Department, General Electric Company, Box 237 GPO, Detroit, Mich., 48232.

3,116,795. METHOD OF FORMING FERROUS ALLOYS.
3,187,825. CUTTER BIT FOR ROOF DRILL.

Applications for license under the following 4 patents may be addressed to : General Electric Company, Patent Counsel, Insulating Materials Department, 1 River Road, Schenectady, N.Y., 12305.

2,897,092. POLYETHYLENE.
2,900,277. PROCESS OF APPLYING PROTECTIVE COATINGS BY MEANS OF HIGH ENERGY ELECTRONS.
3,133,217. COMPOSITE LAMINATED MICA MAT-MICA FLAKE COMMUTATOR CONES.
3,140,299. DERIVATIVES OF TRIMELLITIC ACID ANHYDRIDES.

Applications for license under the following 4 patents may be addressed to : Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,153,713. ELECTRIC FUSE WITH A PLURALITY OF FUSIBLE ELEMENTS ARRANGED IN RADIALLY SPACED GROUP.
3,183,330. CURRENT-LIMITING ELECTRIC CIRCUIT BREAKER OF THE FLUID BLAST TYPE.
3,183,331. AUTOMATIC RECLOSING CIRCUIT BREAKER.
3,188,415. SWITCHGEAR DISCONNECT MECHANISM.

Applications for license under the following 3 patents may be addressed to : Patent Counsel, Construction Industries Division, General Electric Company, 1285 Boston Ave., Bldg. 1–B, Bridgeport, Conn.

3,180,924. BUSWAY CONNECTOR.
3,181,111. ELECTRICAL CONNECTOR.
3,182,381. METHOD OF FORMING APERTURED HOLLOW INSULATED BUSBARS.

Applications for license under the following 6 patents may be addressed to : General Electric Company, Component Products Division, 1635 Broadway, Fort Wayne, Ind., Attn : Patent Counsel.

D200,856. PUSHBUTTON SWITCH OR SIMILAR ARTICLE.
2,959,696. BEARING ASSEMBLY.
3,075,136. VARIABLE PULSE WIDTH PARALLEL INVERTERS.
3,080,503. BALLAST APPARATUS FOR STARTING AND OPERATING GASEOUS DISCHARGE LAMPS.
3,176,174. DYNAMOELECTRIC MACHINE BRAKING AND MAGNETIC HOLDING ARRANGEMENT.
3,176,380. METHOD OF ASSEMBLING A DYNAMO-ELECTRIC MACHINE.

Applications for license under the following 9 patents may be addressed to : General Electric Company, Power Distribution Division, 100 Woodlawn Ave., Pittsfield, Mass., Attn : Division Patent Counsel.

D198,812. LUMINAIRE.
D200,859. POLE TOP ELECTRICAL TRANSFORMER.
D200,860. POLE TOP ELECTRICAL TRANSFORMER.
3,169,236. MAGNETIC CORE FOR ELECTRICAL INDUCTION APPARATUS WITH REDUCED MAGNETIC LOSSES.
3,170,225. METHOD OF MAKING FOIL WOUND ELECTRICAL COILS.
3,170,986. ELECTRICAL APPARATUS AND STABILIZED DIELECTRIC MATERIAL THEREFOR.
3,186,067. METHOD OF MAKING SINGLE TURN CORE FOR TRANSFORMER OR THE LIKE.
3,186,867. PROCESS FOR COATING FERROUS MATERIAL AND MATERIAL COATED BY SUCH PROCESS.
3,187,085. HUB FOR METER SOCKETS AND THE LIKE, SAID HUB SIZED TO INTERNALLY ACCEPT ONE SIZE OF CONDUIT AND EXTERNALLY ACCEPT ANOTHER SIZE CONDUIT AND HAVING AN ECCENTRIC WALL THICKNESS.

Applications for license under the following 7 patents may be addressed to : General Electric Company, Flight Propulsion Division, 1000 Western Ave., West Lynn, Mass., 01905, Att : Patent Counsel.

3,112,916. FLUID FLOW MACHINE ASSEMBLY.

3,117,826. INTERMEDIATE ROTOR SUPPORT STRUCTURE.

3,132,565. CONTROL SYSTEM.

3,132,840. FLUID SEAL FOR TURBOMACHINERY.

3,139,263. METHOD AND MEANS FOR BLADE FASTENING IN LIGHTWEIGHT TURBOMACHINE ROTOR.

3,156,094. CATALYTIC IGNITION MEANS FOR A JET ENGINE THRUST AUGMENTATION SYSTEM.

3,159,379. ROTOR CONSTRUCTION.

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF JUNE 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	3- 3-58
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	12- 7-62	9-15 58
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	6-20-60
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	9- 4-62	5-18-59
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Manager. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	1- 6-60
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures	7-20-62	8-21-59
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	8-10-59
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12-18-62	1- 5-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	6-20-60
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-27-62	5-12-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	1-19-60
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	10-30-58
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager. Semi-Conducter and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 2-62	2- 2-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager. Optics; Radiant Energy; Measuring.	9-10-62	2-11-59
ELEMENTS, GROUP 270—E. J. SAX, Manager. Conductors; Switches; Miscellaneous.	1-25-63	7- 6-60

Total number of pending applications (excluding Designs)	198,522
Total number of Design applications pending	5,223
Total number of applications awaiting action (excluding Designs)	146,049
Total number of Design applications awaiting action	1,905
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	March 3, 1958

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during July 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents ..... Numbers 2,444,412 to 2,446,164, inclusive

Plant Patents ..... Numbers 799 to 804, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6-18-63	6-30-61
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Founding; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	10-26-62	10-14-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	3- 5-63	9-29-59
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	5- 3-61
FLUID HANDLING, GROUP 360—E. PAUL, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	2- 4-63	8-29-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Manager Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	4- 1-63	6- 7-60
HEAT GENERATION, TRANSFER AND UTILIZATION, GROUP 380—P. L. PATRICK, Manager Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation; Refrigeration; Drying; Ventilation; and Illumination.	4- 8-63	8-25-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	4- 1-63	7-18-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 5-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-28-63	6-27-60
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-21-63	9-21-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	5-14-63	5-22-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager Printing; Typewriters; Stationery; Material Treatment.	7-20-62	12-31-58
DESIGNS, GROUP 490—J. A. MANIAN, Manager Industrial Arts; Household, Personal and Fine Arts.	8-12-64	5-11-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE WALTER LUTTRELL GRAF

No. 7343. Decided April 15, 1965

[52 CCPA —; 343 F.2d 744; 145 USPQ 197]

1. PATENTABILITY—PROCESS—OBVIOUSNESS—OBVIOUSNESS NOT TO BE DETERMINED ON BASIS OF PURPOSE ALONE.

"We think there is adequate reason to conclude that the claimed process would be obvious to one of ordinary skill in this art in view of the teachings of the references. While merely for the purpose of obtaining uniformity of dyeing, the process may appear to be non-obvious, such a view does not accord weight to *all* the facts. Obviousness is not to be determined on the basis of purpose alone."

2. SAME—SAME—SAME.

"The process as claimed does not admit of a purpose which would make it unobvious per se, and the degree of improved uniformity in dyeing in subsequent processing, 'apparently due to the fact that the cross-sections of filament are more uniform,' is not sufficient to tip the balance in appellant's favor. Nor on such facts are we in doubt such that it should be resolved in favor of appellant."

3. SAME—PARTICULAR SUBJECT MATTER—PROCESS OF SPINNING HOLLOW FILAMENT VISCOSE YARNS.

The refusal of the claims to a process of spinning hollow filament viscose yarns, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 112,160.

AFFIRMED.

Rudolph S. Bley (*James H. Ewing* of counsel) for appellant.

Clarence W. Moore (*J. E. Armore* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court.

Appellant filed an application, Serial No. 112,160, on May 15, 1961 for an improvement in the process of spinning hollow filament viscose yarns, which application was a continuation-in-part of an application, Serial No. 834,673, filed August 19, 1959. The Board sustained the Examiner's final rejection of all the claims in the case, process claims 1–7, as obvious variations of a combination of two references. That adverse decision is the subject of this appeal.

As appellant discloses, it is well known in the art to produce hollow rayon filaments by extruding a viscose[1] solution containing an alkali metal carbonate into an acid bath, wherein the carbonate decomposes to form carbon dioxide. The carbon dioxide inflates the spun viscose stream to make a hollow filament.[2] As shown by appellant's Example 1, when carbonate-type viscose is extruded through a spinneret having *round* orifices into a particular spinning bath, a fabric woven and dyed from the yarn thus produced was judged to exhibit "commercially unacceptable" uniformity of dyeing, numerous dark flashes occurring throughout the fabric.

In appellant's process such uneven dyeing is reduced by extrusion of the carbonate-type viscose through *slot-shaped* spinneret orifices,

[1] Ordinary viscose is a cellulosic product, being an alkaline solution of the aged reaction product of alkali cellulose with carbon disulfide.

[2] Normally the filament subsequently collapses; appellant is concerned with the collapsed hollow filament yarns.

in which the ratio of length to width is greater than about 5. Appellant states that the more even dyeing obtained:

> * * * is apparently due to the fact that the cross-sections of filament are more uniform, i.e. filaments with abnormal cross-sections are substantially eliminated. * * *

A representative claim reads as follows:

> 1. In a process for the formation of a hollow filament of viscose rayon by extruding viscose containing an alkali metal carbonate through a spinneret into a sulfuric acid coagulating and regenerating bath, the improvement which comprises extruding the viscose through the spinneret to form a viscose stream having a slot-shaped cross section at the exit of the spinneret orifice, the said cross section having a width of from about 0.0025 to about 0.005 inch with the ratio of the length to width being above about 5.

The remaining claims more specifically define the length to width ratio of the rectangular orifices and the composition of the viscose. Appellant does not predicate patentability on such additional limitations.

The references relied on are:

Picard, 1,831,030, November 10, 1931.
Brumberger, 1,964,659, June 26, 1934.

Picard was cited by appellant in his specification as an example of the carbonate-type viscose used to make hollow filaments. Picard states his hollow filaments are "endowed with a higher covering power,"[3] but does not disclose the shape of the orifice used in his spinneret. Brumberger shows a spinneret with rectangular or slot-shaped orifices having length to width ratios greater than 5. Brumberger states his spinneret is useful in:

> * * * all processes for the manufacture of artificial multi-filament yarns, such such as the cupra-ammonium, viscose, cellulose-acetate, cellulose-nitrate, and any other processes where cellulose and its derivatives are used to produce multi-filament yarns.

The examples specifically described in Brumberger use ordinary viscose which does not contain a carbonate, and accordingly would produce a flattened solid viscose rayon filament. Brumberger teaches that by the use of rectangular orifices, cellulosic yarns having greater covering power will be produced, and that the harshness or softness of the yarns can be controlled by variations in the size or shape of the orifices.

The Examiner rejected the claims as unpatentable over Picard in view of Brumberger, seeing no "invention" in carrying out the Picard process using the rectangular orifices of Brumberger. The Board considered the rejection as one of obviousness, stating:

> It is obvious to one skilled in the art who wanted the greater covering power of the filaments obtained by Picard and either the additional covering power of Brumberger's ribbon-like filaments or their greater harshness or softness, depending on the denier, that such results could be obtained by using the spinnerets of Brumberger in the spinning process of Picard.
>
> * * * * * * *
>
> We think it is obvious that Picard's filaments could be made in ribbon-like form as taught by Brumberger and the desirability of doing this is also obvious.

Appellant argues that it was to be expected that the use of the Brumberger spinneret in the Picard process would give yarn having very poor dyeing properties since *each* process was known to produce yarn which dyes non-uniformly. Appellant's only support for the argument lies in the following statements in his specification:

> * * * This result [more uniform dyeing] is surprising since, as is well known to those skilled in the art, the substitution of slot-shaped orifices for round orifices in conventional viscose spinning leads to difficulty in controlling uniformity of dyeing due to the fact that the shape of the filament cross-section tends to vary more with slot-shaped orifices than with round orifices.

In effect, the improvement in uniformity of dyeing is to be looked on by us as an unexpected result. In response to the Board, appellant argues that the art does not disclose what effect the use of the Brumberger spinneret in the Picard process would have on the covering power and harshness or softness of hollow filament yarns. In our view, that response carries little weight since the rejection is not for lack of novelty under section 102, but for obviousness under section 103. "Obviousness does not require absolute predictability." *In re Moreton*, 48 CCPA 928, 933, 288 F.2d 940, 129 USPQ 288.

While appellant states that the prior art knew the filament cross-section of *ordinary* viscose spun through a *rectangular* orifice would tend to vary, appellant's specification does not aid us by showing an example of such filaments, nor has any affidavit been submitted to clarify that property of the Brumberger-type flattened filament. As to the various types of cellulosic filaments produced by the use of *rectangular* spinneret orifices, Brumberger states that they have "a cross-section of very long and thin shape," "generally a rectangle bent somewhat or folded over on itself," and "of the same general shape and relative proportions as the orifices producing the filaments." Brumberger contrasts such shape to the irregularities in ordinary viscose spun through round orifices:

> * * * circular orifices * * * [form] filaments having a cross section usually round, but sometimes a cross section may have been of horse-shoe shape or kidney shape, or the like.

The Solicitor contends that the reasonable inference of that disclosure of Brumberger is that the flattened solid viscose filaments have a uniform cross-section, and thus more uniform dyeing would be expected; consequently one wishing to produce better dyeing in hollow filaments would use the rectangular orifices of Brumberger.

Except for that inference, the Patent Office has not challenged appellant's statement of what the prior art knew of the irregularities in a flattened solid viscose filament. Indeed, the Board assumed arguendo the correctness of appellant's statement of irregularity in such filaments, but did not find it conclusive of non-obviousness. Thus that assertion in appellant's specification that flattened solid ordinary viscose filaments "tend to vary" in cross-section must be considered in our determination of obviousness or non-obviousness under section 103.

While a selection of certain facts in this case tend to a conclusion of non-obviousness and others taken alone may show obviousness, the conclusion required under section 103 must be grounded on a weighing of all the facts.

Upon review of the weight accorded *all* the evidence below, we do not think the Board erred. [1] We think there is adequate reason to conclude that the claimed process would be obvious to one of ordinary skill in this art in view of the teachings of the references. While merely for the purpose of obtaining uniformity of dyeing, the process may appear to be non-obvious, such a view does not accord weight to *all* the facts. Obviousness is not to be determined on the basis of

[3] Covering power appears to refer to the increase in surface of such filaments. This view seems consistent with the following comment by Avram in his book The Rayon Industry, 2nd edition, 1929, D. Van Nostrand Co., New York, at p. 225: "* * * The increase in surface of such filaments [hollow rayon filament] gives an increased covering power with greater softness and less luster than solid rayon filaments."

purpose alone. As against appellant's "showing" that slot-shaped orifices result in flattened solid ordinary viscose filaments the cross-sections of which "tend to vary," we must consider Brumberger's teaching that his slot-shaped orifices are useful for "all processes for the manufacture of artificial multi-filament yarns," and that the shape of his filaments conforms to that of the rectangular orifices used, in contrast to the shape produced by round orifices. Further, one in this art could equally choose to obtain the property of greater covering power for the Picard carbonate-type viscose filaments by using rectangular-shaped orifices as taught by Brumberger. This is particularly the case since Picard, like Brumberger, is interested in the production of filaments "endowed with a higher covering power, * * *." As the Board stated:

> * * * undyed filaments are still a useful product or the filaments could be colored, as they often are, by putting a dye or pigment in the spinning solution. As described by appellant, the dyeing problem is one of after-dyeing spun filaments.

[2] The process as claimed does not admit of a purpose which would make it unobvious per se, and the degree of improved uniformity in dyeing in subsequent processing, "apparently due to the fact that the cross-sections of filament are more uniform," is not sufficient to tip the balance in appellant's favor. Nor on such facts are we in doubt such that it should be resolved in favor of appellant.

[3] For the foregoing reasons we affirm the decision of the Board.

AFFIRMED.

RICH, *J.*, concurs in the result.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,435,902, F. C. Reggio, FUEL METERING DEVICES; **2,673,556**, same, ENGINE FUEL CONTROL, **filed** Feb. 20, 1957, Ct. Cls., Doc. 81/57, *Pratt and Whitney Company, Inc. et al.* v. *The United States*. Claims 1–22, 33 and 34 of Patent No. 2,673,556 and claims 1, 2, 3, 4, 5, 8, 9, 12, 21, 24, 25, 36, 38, 41, 43, 45, 46, 47, 48, 49, 51, 54, 55, 56, 61, 62, 63, 64, 65, 67, and 71 of Patent No. 2,435,902, all of the claims here in suit, held invalid and not infringed May 14, 1965. **Same**, Doc. 82/57, *Pratt and Whitney Co., Inc. et al.* v. *the United States*. Decree as above. **Same, filed** Oct. 2, 1957, Ct. Cls., Doc. 458/57, *Ferdinando Carlo Reggio* v. *The United States*. Decree as above. **Same**, Doc. 459/57, *Ferdinando Carlo Reggio* v. *The United States*. Decree as above. **Same, filed** Jan. 5, 1959, Ct. Cls., Doc. 5/59, *Ferdinando Carlo Reggio* v. *The United States*. Decree as above. **Same**, Doc. 6/59, *Pratt and Whitney Co., Inc. et al.* v. *The United States*. Decree as above. **Same, filed** Mar. 24, 1961, Ct. Cls., Doc. 113/61, *Niles-Bement Pond Co., Inc. et al.* v. *The United States*. Decree as above. All of the above cases were consolidated for trial. Petitions 81/57 and 458/57 only involved Patent No. 2,435,902. A petition, Doc. 7/61, was filed by Reggio on Jan. 10, 1961, to cover the period Jan. 10, 1955, to Sept. 30, 1955, but it is plaintiffs' position that infringement in the said period should be covered by 82/57. Said Doc. 7/61, is also included in the group of cases which were consolidated for trial.

2,673,556. (See 2,435,902.)

2,725,803, C. L. Tansel, PHOTOGRAPHIC COMPOSING APPARATUS; **2,896,523**, same, PHOTOTYPOGRAPH, **filed** Mar. 15, 1960, D.C., S.D.N.Y., Doc. 60/1059, *Harris-Intertype Corp.* v. *Photon, Inc. et al.* Action transferred to District of Mass., Doc. 60–412–C, June 8, 1960. **Same, filed** Mar. 30, 1960, D.C. Mass., Doc. 60–219–C, *Photon, Inc.* v. *Harris-Intertype, Inc.* Doc. Nos. 60–219–C and 60–412–C, consolidated for trial—action by Photon, Inc. against Harris-Intertype Corp. for declaratory judgment of patent invalidity and non-infringement (Doc. 60–219–C), and action by Harris-Intertype Corporation against Photon, Inc. for patent infringement (Doc. 60–412–C). Complaint dismissed as to Doc. 60–412–C Nov. 30, 1964. Judgment for plaintiff Photon, patents held invalid and not infringed Nov. 30, 1964. **Appealed** Feb. 8, 1965, C.C.A., 1st Cir., Doc. 6482, *Harris-Intertype Corporation* v. *Photon, Inc.*

2,807,330, R. D. Rivers, METHOD AND APPARATUS FOR FILTERING AIR, **filed** Jan. 24, 1958, D.C., W.D. Ky. (Louisville), Doc. 3534, *American Air Filter Co., Inc.* v. *Continental Air Filters, Inc.* Patent held invalid; complaint dismissed with prejudice Oct. 3, 1963. **Appealed** C.C.A., 6th Cir., Doc. 15725, *American Air Filter Co.* v. *Continental Air Filters, Inc.* Judgment of District Court affirmed June 25, 1965.

2,896,523. (See 2,725,803.)

2,928,363, Saltz and Campbell, PORTABLE HAND OPERATED SEWING DEVICE, **filed** June 13, 1963, D.C., N.D. Ill (Chicago), Doc. 63c1048, *Bernard Saltz* v. *The Grant Co. et al.* Stipulation and order dismissing complaint Apr. 30, 1965.

2,929,485, B. J. Wallis, TRANSFER DEVICE, **filed** Apr. 14, 1965, D.C., S.D. Ohio (Dayton), Doc. 3170, *Bernard J. Wallis* v. *Laughter Corp.*

2,967,957, F. Massa, ELECTROACOUSTIC TRANSDUCER, **filed** July 11, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1230, *Cohu Electronics, Inc.* v. *Admiral Corporation*. Stipulation and order dismissing complaint without projudice Apr. 28, 1965.

2,973,614, H. F. Horner et al., ROTARY POWER MOWER AND CATCHER, **filed** Apr. 11, 1961, D.C., E.D. Wis. (Milwaukee), Doc. 61–C–97, *Toro Manufacturing Corporation* v. *Jacobsen Manufacturing Company*. Patent held valid and infringed Apr. 30, 1965.

3,031,072, H. G. Kraut, PACKAGE AND METHOD OF FORMING SAME, **filed** Dec. 9, 1963, D.C., N.D. Ill. (western division, Freeport), Doc. 63c68, *The Stanley Works* v. *Package Production, Inc.* Transferred from Western Division of Northern District to Eastern Division (Chicago), and given Doc. No. 64c891. Said Doc. 64c891 consolidated with Doc. 64c124 (*The Stanley Works* v. *Haeger Potteries, Inc.*) on May 28, 1964. Consolidated case to proceed under Doc. 64c124. The Dow Chemical Company and Continental Can Company added as defendants in action June 13, 1964. On stipulation, order plaintiff dismisses without prejudice its complaint against the defendants, Haeger Potteries, Inc., Package Production, Inc., The Dow Chemical Co., and Continental Can Company; and the said defendants dismiss without prejudice their respective counterclaims against plaintiff June 15, 1965.

3,074,393, R. T. Keating, HIGH VELOCITY OVEN, **filed** Mar. 12, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c459, *Richard T. Keating* v. *Stearns Imperial Co.* Order granting motion of defendant for summary judgment; cause dismissed Oct. 29, 1964. Plaintiff's motion to vacate judgment of District Court denied Dec. 16, 1964. **Appealed**, C.C.A., 7th Cir., Doc. 15038, Judgment and order of District Court affirmed June 22, 1965.

3,171,458, B. Strong, PLASTIC CONTAINER, **filed** Mar. 12, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 65–398–TC, *Strong Plastics, Inc.* v. *Vita-Pakt Citrus Products Co.*

REISSUES

AUGUST 10, 1965

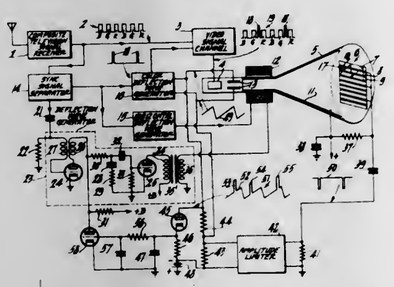
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,833
COLOR TELEVISION IMAGE REPRODUCTION

Hunter C. Goodrich, Haddon Township, Camden County, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Original No. 2,634,326, dated Apr. 7, 1953, Ser. No. 216,766, Mar. 21, 1951. Application for reissue Jan. 28, 1955, Ser. No. 484,862

17 Claims. (Cl. 178—5.4)



6. In a color television receiver, the combination including: a multi-color kinescope having a luminescent screen including a multiplicity of groups of phosphor strips capable respectively of producing light of a plurality of component image colors in response to excitation by an electron beam, said screen also having beam position-indicating strips aligned respectively with said groups of phosphor strips and capable of developing beam position-indicating signals in response to excitation by an electron beam; means for developing an electron beam and deflecting it to scan a raster at said screen; means for effecting an auxiliary deflection of said beam in a predetermined cyclically recurring pattern in a direction transverse to the direction of said phosphor strips, whereby successively and repeatedly to impinge upon said phosphor strips, thereby producing differently colored image-representative light, and also to impinge upon said beam position-indicating strips, thereby developing beam position-indicating signals; and means responsive to said beam position-indicating signals to control the rate of said raster-scanning beam deflection in a direction transverse to said screen strips.

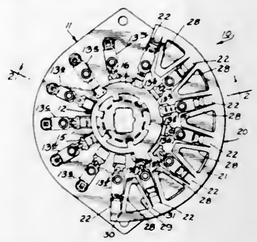
25,834
ADJUSTABLE INDUCTANCE UNIT

John R. Geizer, Barrington, Ill., and Richard F. Reed, Bloomington, Ind., assignors to Sarkes Tarzian, Incorporated, Bloomington, Ind., a corporation of Indiana

Original No. 2,989,710, dated June 20, 1961, Ser. No. 771,418, Nov. 3, 1958. Application for reissue June 18, 1963, Ser. No. 289,464

9 Claims. (Cl. 336—20)

6. In a multiple contact rotary switch for use in a high frequency tuner which includes an insulating stator wafer and a wiper rotatably mounted on said wafer, a stator contact and incremental inductance assembly comprising, a plurality of stator contact members arcuately disposed on said wafer for selective engagement by said wiper, and an adjustable incremental inductance member, said inductance member having a generally arcuate peripheral portion spanning a plurality of said stator contact members and connected to said spanned contact members by inwardly directed connecting portions, said inductance member also having a plurality of inwardly directed adjustable protrusions interposed between said connecting



portions and consitituting incremental inductance portions which are relatively soft and bendable so as to permit adjustment of the inductance values between adjacent ones of said spanned stator contact members.

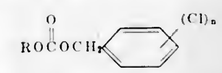
25,835
ALKYL AND HALOALKYL 3,4-DICHLOROBENZYL CARBONATE ESTERS

Robert M. Schisla, Kirkwood, and Van R. Gaertner, Ballwin, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original No. 3,124,608, dated Mar. 10, 1964, Ser. No. 70,923, Nov. 22, 1960. Application for reissue July 9, 1964, Ser. No. 395,971

7 Claims. (Cl. 260—463)

1. A compound of the formula



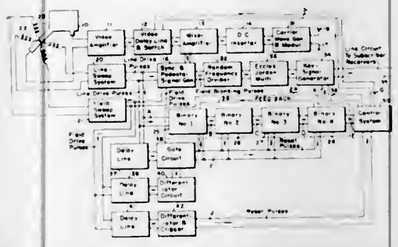
wherein R is selected from the group consisting of alkyl, chloroalkyl, and bromoalkyl radicals having from one to eight carbon atoms, and n is a whole number of from one to five.

25,836
SUBSCRIPTION TELEVISION SYSTEM

Carl G. Eilers, Fairbury, and Erwin M. Roschke, Des Plaines, Ill., assignors to Zenith Radio Corporation, a corporation of Delaware

Original No. 2,883,449, dated Apr. 21, 1959, Ser. No. 291,714, June 4, 1952. Application for reissue Feb. 1, 1960, Ser. No. 6,086

32 Claims. (Cl. 178—5.1)



30. In transmitting means for a scrambled picture transmission system, means for generating picture signals, means coupled thereto for generating a plurality of different modes of said picture signals, and means coupled to and responsive to the aforesaid means for transmitting a different mode of the picture signals during different time periods which occur at a rate sufficient to render an unauthorized receiver display unintelligible, means including commutation means having a plurality of states for selecting from time to time which of said modes is transmitted, means coupled to said commutation means for driving the commutation means with shifting signals, means for generating randomly occurring signals for interrupting cycles of the commutation means at random times, and means for transmitting at least one signal from time to time based on said randomly occurring signals for causing synchronous interruption of cycles of commutation means at receivers.

31. In receiving means for receiving a scrambled picture transmission wherein picture signals are transmitted in one of a plurality of different modes during different time periods which occur at a rate sufficient to render an unauthorized receiver display unintelligible and wherein randomly occurring signals are transmitted representing random interruptions of cycles of commutation means at the transmitting means; means for resolving the different modes of said picture signals, means coupled to said resolving means and including commutation means having a plurality of states for selecting from time to time which of said modes is resolved in the resolution means, means for driving the commutation means with shifting signals, means for detecting said transmitted random signals, and means responsive thereto for generating signals for interrupting cycles of the receiver commutation means at random times.

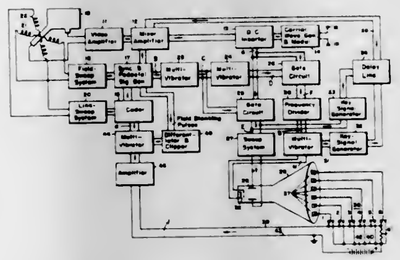
32. In a scrambled information signal system, means for producing information carrying signals in any one of a plurality of modes including means for changing the mode of the information carrying signals from time to time in a coded manner, and means for temporarily disabling the mode changing means and causing the information carrying signals to invariably be in a given one of said modes while the mode changing means is disabled.

25,837
SUBSCRIPTION TELEVISION SYSTEM

George V. Morris, Chicago, Erwin M. Roschke, Des Plaines, Walter S. Druz, Bensenville, and Bertrand J. Miller, Mount Prospect, Ill., assignors to Zenith Radio Corporation, a corporation of Delaware

Original No. 2,843,656, dated July 15, 1958, Ser. No. 281,418, Apr. 9, 1952. Application for reissue Feb. 1, 1960, Ser. No. 6,087

36 Claims. (Cl. 178—5.1)



35. In transmitting means for a scrambled picture transmission system, means for generating picture signals, means coupled thereto for generating a plurality of different modes of said picture signals, and means coupled to and responsive to the aforesaid means for transmitting a different mode of the picture signals during different time periods which occur at a rate sufficient to render an unauthorized receiver display unintelligible, means including commutation means having a plurality of different states for selecting from time to time which of said modes is transmitted, means for generating and transmitting coded complex signal combinations for maintaining synchronization of commutation means at receivers, and changeable matrix means connected between the means for generating said coded complex signal combinations and the transmitter commutation means for determining which mode is transmitted for a given state of the transmitter commutation means.

36. In receiving means for receiving a scrambled picture transmission wherein picture signals are transmitted in one of a plurality of different modes during different time periods which occur at a rate sufficient to render an unauthorized receiver display unintelligible and wherein coded complex signal combinations are transmitted representing the operation of commutation means at the transmitting means; means for resolving the different modes of said picture signals, means coupled to said resolving means and including commutation means for determining from time to time the mode resolved in the resolution means, means for detecting the transmitted coded complex signal combinations for maintaining synchronization of the receiver commutation means with corresponding commutation means at the transmitting means, and changeable matrix means connected between the detecting means and the receiver commutation means for determining the mode to be resolved for given states of the commutation means.

25,838
CONCRETE BUMP CUTTER

Cecil W. Hatcher, West Covina, Calif., assignor, by mesne assignments, to Concut, Inc., a corporation of California

Original No. 3,007,687, dated Nov. 7, 1961, Ser. No. 615,937, Oct. 15, 1956. Application for reissue Nov. 4, 1963, Ser. No. 321,699

13 Claims. (Cl. 299—39)



13. A self-propelled, vehicle-type, pavement-cutting apparatus, including:

(a) frame means having longitudinally spaced front and rear ends;

(b) rear wheel means connected to and supporting said frame means adjacent said rear end thereof and including traction wheel means comprising two laterally spaced traction wheels on opposite sides of and equidistant from the longitudinal centerline of said frame means;

(c) front means connected to and supporting said frame means adjacent said front end thereof located substantially on said longitudinal centerline of said frame means;

(d) rotary cutter means mounted on said frame means intermediate said front and rear wheel means, and rotatable about a generally horizontal axis extending transversely of said frame means, for cutting a relatively wide and level path in pavement over which pavement said front and rear wheel means run;

(e) means on said frame means for driving said traction wheel means and said rotary cutter means;

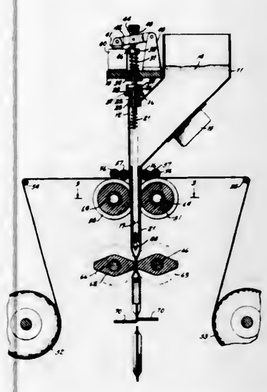
(f) said rear wheel means being behind and in line with said rotary cutter means and the transverse width of said rotary cutter means exceeding that of said rear wheel means so that said rear wheel means runs on the relatively wide and level path cut by said rotary cutter means to minimize any tendency of said rear wheel means to move said rotary cutter means vertically;

(g) said rotary cutter means being spaced forwardly from said rear wheel means a first longitudinal distance and said front wheel means being spaced forwardly from said rotary cutter means a second longitudinal distance; and

(h) said second longitudinal distance being large as compared to said first longitudinal distance so that any tendency of a bump encountered by said front wheel means to move said rotary cutter means vertically is reduced in proportion to the ratio of said first longitudinal distance to said second longitudinal distance.

25,839
FEED MECHANISM FOR STRIP PACKAGE MACHINE
John H. Stroop, New York, N.Y., assignor, by mesne assignments, to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Original No. 3,077,063, dated Feb. 12, 1963, Ser. No. 69,911, Nov. 17, 1960. Application for reissue July 16, 1964, Ser. No. 393,805
28 Claims. (Cl. 53—180)

1. A feed mechanism for powdered or granular material which comprises a container in which quantities of such material are maintained in bulk, a feed tube extending outwardly from the container and connected therewith, a relatively inflexible helical feed auger within the feed tube, a valve attached to the outer end of the feed



auger, means for periodically rotating the feed auger and moving the feed auger to open the valve, a relatively flexible helical spring mounted within the bulk container around the feed auger, and means for ratating the spring to keep the material agitating within the bulk container.

PLANT PATENTS

GRANTED AUGUST 10, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,547
CHRYSANTHEMUM PLANT
Eugene S. Boerner, Newark, N.Y., assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York
Filed Apr. 29, 1964, Ser. No. 363,688
1 Claim. (Cl. Plt.—77)

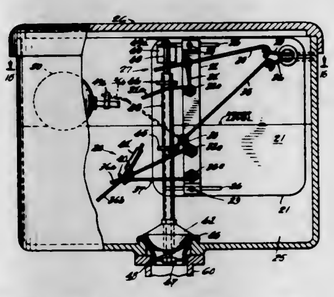
A new and distinct variety of chrysanthemum plant of the decorative class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of vigorous, strong, upright and free habits of growth, an early blooming habit ranging from about the end of September and continuing until freezing weather in northern New York State, good floriferousness, large flower size and good flower thickness, and a distinctive and attractive White general color tonality, with the center of the flower being Picric Yellow.

PATENTS

GRANTED AUGUST 10, 1965

GENERAL AND MECHANICAL

3,199,118
WATER CONSERVATION MEANS IN FLUSH-TYPE TOILET TANKS
Joseph Moschetta and Benjamin Moschetta, both of 535 Dixie Drive, Pittsburgh 35, Pa.
Filed Jan. 8, 1963, Ser. No. 250,110
1 Claim. (Cl. 4—67)



A toilet flush tank comprising, in combination, a water reservoir, a mounting base mounted on the inner side of a wall of said reservoir, an inlet opening to deliver water into said reservoir, an outlet opening to flush said reservoir, a valve seat in said outlet opening, a flush ball over said valve seat normally closing said outlet opening, an upright stationary shaft in said reservoir, one end of said shaft held in said valve seat with the other end held in said valve seat with the other end held to a stationary bracket, a tubing slidably mounted over said shaft, said flush ball secured to the bottom of said tubing, a pair of washers, one washer secured to an upper portion of said tubing with the other washer secured to a substantially lower portion, operating means connecting the upper and lower washers, said operating means pivotally mounted to said base, said operating means being selectively operated to raise said slidably mounted tubing and said flush ball respectively above said valve seat to open said valve to empty said reservoir, said means for selectively operating said tubing comprising a pair of hinging arms, one arm in said pair connecting the undersurface of said upper washer, and the other arm contacting the undersurface of said lower washer, means for flushing said toilet including a pair of handles and connecting linkage, each handle in said pair by its respective linkage being operatively connected to one of said hinging arms, the selective operation upon one or the other of the handles in said pair operating the upper or the lower washer in said tubing to move said tubing in a vertical plane and a stop on the hinging arm would contacts the lower washer, said stop when the arm is operatingly effective to empty part of the contents of the tank being positioned over and above said lower washer to restrain the movement of said tubing to which said washer is mounted as an integral part thereto.

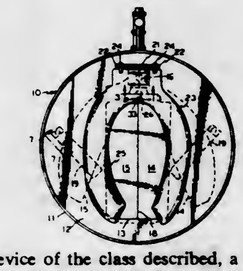
3,199,119
SANITARY AND DISPOSABLE RECEPTACLE FOR BEDPANS
Jack Tesser, Gordon's Corner, Englishtown, N.J.
Filed Feb. 19, 1963, Ser. No. 259,608
3 Claims. (Cl. 4—113)

1. A bed pan comprising a generally rectangular shaped receptacle, a main substantially U-shaped seat extending about the top portion of the sides and back of the receptacle, said receptacle including side and back walls embedded in the underside of the seat, an auxiliary substantially U-shaped seat extending about and seated upon the main seat, said auxiliary seat formed with slits along its side legs for substantially the length thereof and intersecting the ends thereof, thereby defining elongated fingers,



an insert carried by said auxiliary seat, said insert constituted by a blank of flexible cardboard shaped to conform to the shape of the rectangular-shape receptacle and disposed in said receptacle, opposed peripheral flaps on the blank threaded through the slits in the auxiliary seat and the fingers thereof, and an end flap on the blank extending over the bight portion of the auxiliary seat.

3,199,120
PORTABLE TOILET UNIT
Seymour N. Meltzer, 1701 East West Highway, Silver Spring, Md.
Filed Oct. 26, 1962, Ser. No. 233,308
3 Claims. (Cl. 4—144)

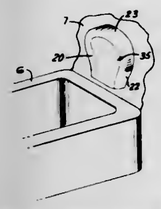


1. In a device of the class described, a receptacle having a fixed apertured top, a hinged seat for said receptacle, said seat having an opening overlying the top aperture, a pair of closure members hingedly mounted for movement in a horizontal plane to a position underlying said top, said closure members having cooperating inclined wall portions at the inner edges thereof, a rod supported on said top having an enlarged head for bearing against said inclined wall portions to cause separation of said closure members upon downward pressure on said seat, and means for closing said closure members upon release of pressure on said seat.

3,199,121
REMOVABLE PROTECTIVE COVER FOR WATER FIXTURES
Joseph Greto, 31 Holland St., Harrison, N.Y.
Filed Dec. 18, 1962, Ser. No. 245,467
2 Claims. (Cl. 4—191)

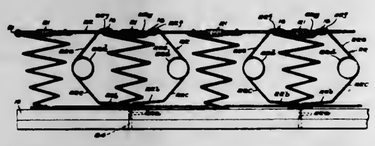
1. A removable protective cover for enclosing a plurality of water fixtures projecting from a wall over an adjacent bathtub, comprising a closure having connected front, side and top portions and a cushioned exterior, a transverse support adjustably mounted upon and within said

closure, said transverse support having a plurality of slotted openings spaced apart to engage the control stems of said fixtures thereby supporting said cover in spaced



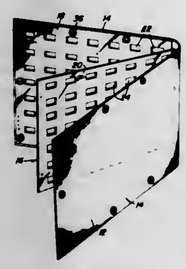
relation over and about the handle portions of said fixtures and further supporting said closure abutting against said wall.

3,199,122
BORDER CONSTRUCTION FOR BOX SPRINGS
Joseph F. Ciampa, Medford, and Angelo Serafini, East Boston, Mass., assignors to Standard Box Spring Co., East Boston, Mass., a corporation of Massachusetts
Filed June 17, 1964, Ser. No. 375,874
9 Claims. (Cl. 5—261)



1. A box spring having a border construction comprising: a rigid bottom frame; a border wire disposed above and parallel to said frame; a row of border coils mounted on said frame, and having top turns adjacent said top wire; and a resilient stabilizer mounted on said frame, said stabilizer having a pair of crimp portions projecting upward behind said border wire and a connecting portion engaged under the top turn of one of said coils.

3,199,123
COMPOSITION BLANKET
Ted Komiske, 615 Willsie Ave., Rapid City, S. Dak.
Filed Mar. 20, 1963, Ser. No. 266,720
5 Claims. (Cl. 5—335)



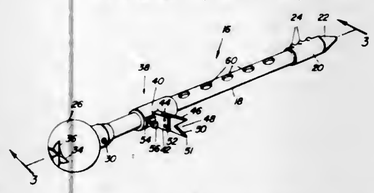
1. A composition blanket-type article with adjustable heat insulating and ventilating properties comprising a pair of imperforate pliable outer covering panels with good capability for air and heat passage therethrough and a liner removably interposed therebetween, said liner including a pair of sheets of pliable material with relatively good heat insulating and air impervious properties as compared to said panels, each sheet having a set of ventilating openings therethrough, said sheets being superposed upon each other in slidable face-to-face engagement with the two sets of openings being disposed in pairs in which each opening of one set is registrable with only one opening of the other set, said sheets being substantially coextensive with said panels, fasteners including spaced cooperating elements selectively engageable and releasably securing said sheets together and effecting selective variation of the degree of registration of said sets of openings between zero and full registration.

3,199,124
AIR MATTRESS
Richard D. Grant, Shaker Heights, Ohio, assignor to The R. D. Grant Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 29, 1963, Ser. No. 268,994
7 Claims. (Cl. 5—349)



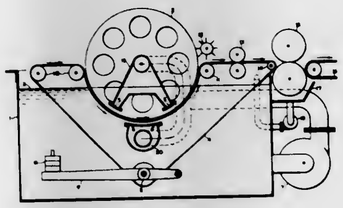
1. A hollow mattress for supporting the body of a patient upon a bed and comprising flexible, fluid-tight sheet material divided into two sets of elongated generally parallel fluid cells extending lengthwise of the body to be supported thereon, one set of cells being adapted to be connected with a source of pressure-fluid for inflation to a body-supporting position while the other set of cells is connected to exhaust, in use the inflation and deflation of said two sets of cells alternating in a regular cycle, said cells at one end only of said mattress being formed with a lesser width cross-wise than the cell width at other parts of said mattress, and said narrower cell width at said one end being less than the width of an adult human heel.

3,199,125
CORN PICKER ROLLS CLEANER
Harry E. McCullough, Rte. 1, Bridgeport, Ill.
Filed July 11, 1961, Ser. No. 123,286
4 Claims. (Cl. 7—14.1)



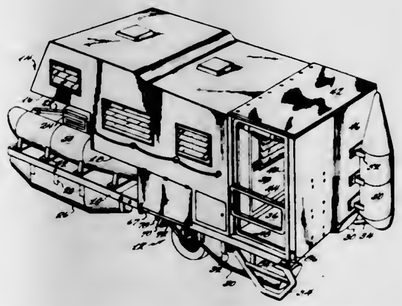
1. A hand tool for freeing the clogged rolls of a corn picker comprising an elongated equal diameter handle, an enlarged head at one end of the handle having a smooth outer surface adapted to ride on the rolls so that they will not grip the head and pull it through the rolls, a hand gripping portion adjacent the other extremity of the handle, and an extractor connected to the handle for cutting and pulling material lodged between the rolls, said extractor comprising a sharpened blade projecting from said handle between the enlarged head and the gripping portion and spaced rearwardly of the enlarged head, said blade being adjustably affixed to the handle and transversely orientated relative to the longitudinal axis of the handle.

3,199,126
TREATMENT OF FIBRE ASSEMBLIES WITH FLUIDS
Malcolm Chaikin, Maroubra, New South Wales, and Alexander Samson, Greenwich, New South Wales, Australia, assignors of one-half to Unisearch Limited, University of New South Wales, Kensington, New South Wales, Australia, a limited company of New South Wales, Australia
Filed Sept. 28, 1962, Ser. No. 226,932
Claims priority, application Australia, Oct. 18, 1961, 10,381/61
7 Claims. (Cl. 8—156)



1. A method of treating a mass of loose fibres with a fluid employing means for compressing the fibres which means permit the passage of fluid therethrough, comprising, prior to the fluid treatment, forming the fibres into a layer and compressing the layer with the compressing means to an extent such that they are freely exposed to the treatment fluid and relative movement between individual fibres is substantially prevented during treatment, after the layer of fibres is so compressed, submerging the compressed layer of fibres beneath the surface of a bath of liquid, while the layer of fibres is so submerged, maintaining the fibres in compression while applying the treatment by directing the fluid in the form of a high velocity jet through such layer of compressed fibres, said jet acting freely on all of the fibres, after termination of the jet action, removing the compressed layer of fibres from the bath of liquid, and only after such removal releasing pressure from the fibres.

3,199,127
AMPHIBIOUS VEHICLE
Milford J. Hunter, 164 Hicks St., Brooklyn 1, N.Y.
Filed Jan. 31, 1963, Ser. No. 255,273
3 Claims. (Cl. 9—1)



1. An amphibious vehicle comprising a main support platform, an enclosed living unit supported on said platform, a foldable member hinged to one end of said platform along the edge thereof, the hinged edge of the platform being spaced from said living unit to define a deck area on said main support platform, means for retracting said foldable member from a position co-extensive with said deck area to a substantially vertical position whereby said deck area is enclosed along one side thereof, fixed pontoon devices mounted beneath said main support platform, removable pontoon sections selectively attachable to one surface of said foldable member, retractable wheel assembly means mounted on said main support platform, a drawbar assembly at the opposite end of said main support platform from said foldable member, means for mounting an outboard motor on said support platform adjacent said drawbar assembly, portable catwalks for selective mounting along the sides of said platform, bumper means mounted beneath said platform and extending to a level below that of the pontoon devices, and a helm for steering said vehicle mounted on said deck area.

3,199,128
FLOAT JACKET AND ASSOCIATED ELEMENTS
Knut Axel Leonard Nöjd, Ekbacka, Nitta, Sweden
Filed Sept. 4, 1963, Ser. No. 306,531
Claims priority, application Sweden, Sept. 11, 1962, 9,814/62
46 Claims. (Cl. 9—316)

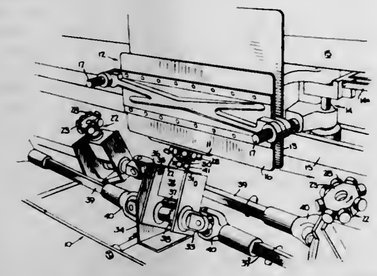


1. A float jacket comprising a body portion having a normal vertical disposition in which said portion has a front and a back, said body portion including inner and outer members connected together to form two front chambers and a back chamber, said jacket further comprising floatation elements in said front and back chambers, said elements being cooperatively associated with each other in the front chambers to define a hinge axis in the lower half of the front of the body portion whereby to permit a flapping action of that part of the front of the body portion below the hinge axis with the jacket immersed in water, the elements being cooperatively associated in the back chamber to limit the said flapping action to the front of the body portion.

3,199,129
MACHINE AND METHOD FOR BACKING BOOKS
Richard B. Hawkes, Easton, Pa., and Thomas B. Hawkes, Manhasset, N.Y., assignors to T. W. & C. B. Sheridan Company, New York, N.Y., a corporation of New York
Filed May 11, 1964, Ser. No. 366,540
6 Claims. (Cl. 11—5)

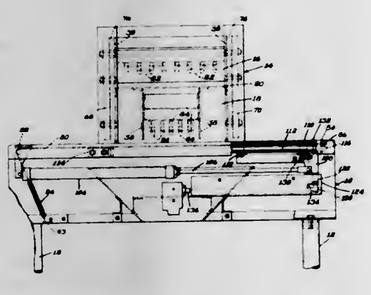
1. A machine for backing books having pre-rounded backs as the books are advanced through the machine in a clamped condition with their backs exposed comprising a plurality of hub members disposed adjacent to the path of travel of the backs of the books at the opposite sides thereof, each of said hub members having a plurality of rolling members pivotally mounted thereon, and means for rotatively mounting each of said hub members with the path of travel of at least a portion of each of the rolling members of each of said hub members being substantially tangential to a portion of the backs of the books adjacent to the surface of the backs to engage at least a portion of the plurality of rolling members

with the backs of the books, the path of travel of said rolling members of hub members disposed at opposite sides of the path of travel of the books being tilted toward one another at substantially an obtuse angle, and means



for rotating each of said hub members about the central axis thereof in a direction by which the portion of the rolling members engaging the backs of the books moves outwardly from the path of travel of the books.

3,199,130
SHOE HEATING MACHINES
Gordon V. Sprague, Jr., Danvers, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., and Flemington, N.J., a corporation of New Jersey
Filed May 6, 1963, Ser. No. 278,058
7 Claims. (Cl. 12—4.1)



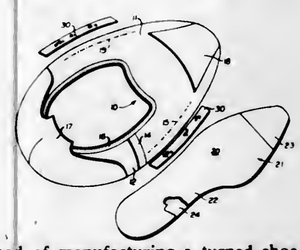
1. A heating apparatus for heating a shoe bottom and an outsole and for activating adhesive on said outsole comprising heating means, means for mounting a lasted shoe with its bottom in position to be heated, means for supporting an outsole for exposure to said heating means comprising a plurality of spatially arranged parallel wires, ingress means for introducing an outsole to said heating means comprising a plurality of fingers extending between and above said wires and means for moving said fingers between an inoperative and an operative position, and egress means for extracting an outsole from exposure to said heating means comprising a second plurality of fingers pivotal between an upper position between and above said wires and a lower position below a surface defined by said wires, means for pivoting said second fingers into said upper position when said second fingers are in position to extract an outsole and for pivoting said second fingers into said lower position when said second fingers are located in an inoperative position, and means for moving said second fingers between said inoperative position and an operative position.

3,199,131
SKI BOOT OR SHOE STRETCHER
Horst Kohler, Immenstadt, Allgau, Germany, assignor to Josef Ess O.H.G., Allgauer Skibeschlage-Fabrik, Sonthofen, Allgau, Germany, a corporation of Germany
Filed Mar. 20, 1963, Ser. No. 266,635
Claims priority, application Germany, Mar. 23, 1962, E 22,592
4 Claims. (Cl. 12—120.5)



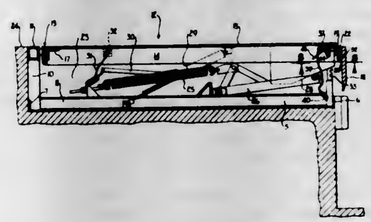
4. A shoe stretcher, especially for ski boots, comprising: two elongated rails which are relatively longitudinally slidable with respect to each other, said rails having opposing base walls; means defining an elongated lengthwise extending slot in the base wall of one rail; clamping means extending through said slot and connected to the other rail for clamping said rails against relative longitudinal movement; a pressure member mounted on the base wall of the other rail spaced longitudinally from said clamping means and means for moving said pressure member in a direction substantially perpendicular to said rails; and two sole-gripping members mounted at the opposite ends of said rails, one member being mounted on one rail and the other member being mounted on the other rail, said members being hook shaped and means pivotally mounted on said members on their associated rails for pivotal movement toward and away from each other about axes substantially perpendicular to the direction in which said pressure member moves and substantially perpendicular to the lengthwise extent of said rails.

3,199,132
METHOD OF MAKING TURNED SHOE ASSEMBLY
Otto Newman, Hampton Bays, N.Y., assignor to Marx & Newman Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 10, 1964, Ser. No. 343,708
1 Claim. (Cl. 12—142)



A method of manufacturing a turned shoe inner and outer sole and upper assembly, said method comprising the steps of cutting and sewing an upper, cutting an inner sole, arranging said upper and said inner sole for inside out assembly with the lower edge of said upper in juxtaposition with the outer edge of said inner sole, positioning a pair of elongated strips of flexible material each along a respective pair of mating side lower edge and outer edge portions of said upper and said inner sole, stitching each strip along one side edge thereof to said upper and along the opposite side edge thereof to said inner sole, turning the thus joined upper and inner sole assembly right side out, and cementing an outer sole to the exposed undersurface of said inner sole and to at least the portion of the outer surface of said upper between the stitch line and the lowermost edge thereof, whereby an assembly is formed having greater flexibility at the edge of said inner sole.

3,199,133
ADJUSTABLE DOCKBOARD WITH IMPROVED LIP-LIFTING AND HOLDING MEANS
Robert C. Ramer, Milwaukee, Wis., assignor to Kelley Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 9, 1962, Ser. No. 229,422
1 Claim. (Cl. 14—71)



In an adjustable dockboard of the type wherein a ramp having front and rear edges has its rear edge hingedly connected with stationary mounting structure to swing up and down, and has an extension lip hingedly connected to its front edge to swing between a pendent position and an elevated position forming substantially an extension of the ramp, the combination of:

(A) an apron fixed to and depending from the front edge of the ramp, said apron having a hole therethrough;

(B) means located in front of said apron near the top thereof, forming a hinge connection between the ramp and the extension lip, said hinge connection including a hinge pin;

(C) a bell crank lever pivoted on said hinge pin in line with the hole in the apron to rock about the axis of the hinge connection between an operative position and an inoperative position, said bell crank lever having

(1) a short lip lifting finger which is engageable with the adjacent portion of the extension lip to elevate the lip as the bell crank lever is rocked from its inoperative position to its operative position, and

(2) an actuating arm projecting rearwardly through the hole in the apron to occupy a position extending rearwardly along the underside of the ramp when the bell crank lever is in its inoperative position, and to occupy a downwardly directed position behind the apron when the bell crank lever is in its operative position;

(D) biasing means acting upon the bell crank lever yieldingly maintaining the same in its inoperative position;

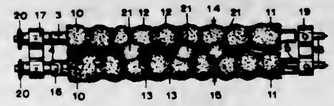
(E) a snap line connected to the actuating arm of the bell crank lever and the stationary structure to exert a downward pull on the arm as the ramp rises, to thereby rock the bell crank lever to its operative position and elevate the lip;

(F) a rearwardly facing abutment fixed with respect to the extension lip near its hinged connection with the ramp and in line with the hole in the apron;

(G) a lip supporting member pivotally mounted behind the apron at the underside of the ramp in line with said abutment, said lip supporting member normally occupying a pendent position from which it may be swung to a raised forwardly projecting operative position engageable with said abutment through the hole in the apron, to support the extension lip in a partially elevated position; and

(H) cooperating means on the bell crank lever and the lip supporting member to swing the latter to its operative position as the bell crank lever is rocked to its operative position, said cooperating means including a spring through which motion of the bell crank lever is imparted to the lip supporting member.

3,199,134
BRUSHES
John A. Jones, Parkhurst, Johannesburg, Transvaal, Republic of South Africa, assignor of one-half to Gerald Barit, Johannesburg, Transvaal, Republic of South Africa
Filed Oct. 22, 1962, Ser. No. 232,043
Claims priority, application Republic of South Africa, Oct. 30, 1961, R 61/2,179
7 Claims. (Cl. 15—3.16)



1. An assembly of a plurality of laterally adjacent rotatable brushes with the brushes arranged in a substantially horizontal plane, each brush comprising a cylindrical support structure, bristles projecting radially from said support structure and shaped to have a circular transverse cross-section of varying diameter along the length of the brush to give smoothly formed alternate waisted and bulbous portions at regular intervals, each brush positioned to have its bulbous portions fitting into the recesses provided by the waisted portions of the adjacent brush and means for rotating the brushes in the same direction.

3,199,135
COMBINED COKE OVEN DOOR JAMB CLEANING APPARATUS AND PUSHER
Linwood G. Tucker, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Jan. 29, 1964, Ser. No. 340,898
7 Claims. (Cl. 15—93)

1. A coke oven pusher machine and oven door jamb cleaning apparatus comprising:

a body portion;

a pusher ram supported by a ram beam and reciprocally movable relative to said body portion through the doorway of a coke oven to abut the coke within said oven and move said coke when required;

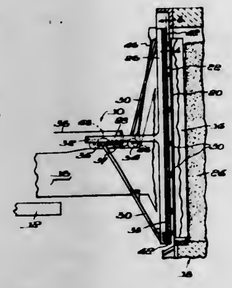
a frame member movably positioned on said ram beam and constructed and arranged to be movable over said ram beam into close proximity to the door seating jamb of said coke oven doorway when said pusher ram is within said doorway;

an endless scraper chain mounted on said frame member for movement in a vertical plane relative to said frame member along a predetermined path;

a plurality of scraper blades fixed to said chain and protruding forwardly therefrom to abut said coke oven door seating jamb when said frame member is in close proximity to said jamb;

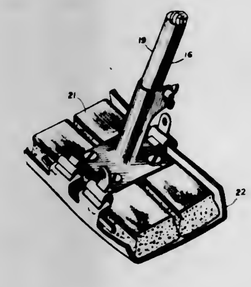
sprocket means driven by a scraper drive mechanism and mounted on said frame member to drive said chain along said predetermined path; and

guide means constructed and arranged to maintain said scraper chain against said door seating jamb as said chain travels along said predetermined path;



said scraper chain predetermined path being defined to cause each of said scraper blades to travel over the entire door seating surface of said jamb when said frame member is in close proximity to said jamb and when said chain is driven by said scraper drive mechanism and said sprocket means to thereby scrape clean said jamb seating surface.

3,199,136
MOP HAVING DISPOSABLE SHEETS
Philip F. George, 2 Dartmouth St., Worcester, Mass.
Continuation of application Ser. No. 198,059, May 28, 1962. This application Sept. 8, 1964, Ser. No. 396,467
2 Claims. (Cl. 15—231)



1. Cleaning apparatus, comprising

(a) a mop having an elongated handle and a head,

(b) a substantial body of material capable of absorbing and holding large quantities of fluid secured to the head,

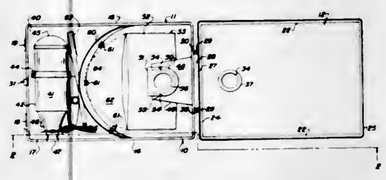
(c) clamping means associated with the head,

(d) a cover substantially surrounding the said body and held in place by the said clamping means, the cover consisting of a plurality of layers of paper having high wet strength and capable of passing fluid but not passing dirt contained therein,

(e) localized means for retaining the sheets together until such time as it is desired to remove a layer, each layer being formed with at least one finger by which it is grasped by the said clamping means, and

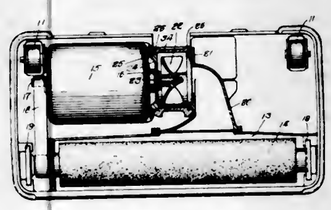
(f) a tab extending from the intermediate portion of each finger to aid in removal of a layer.

3,199,137
SUCTION CLEANERS
Louis E. Segesman, Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed Sept. 25, 1962, Ser. No. 226,033
6 Claims. (Cl. 15—323)



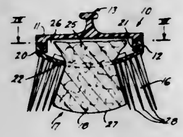
1. A suction cleaner comprising a body including an elongated base and a cover therefor, a suction creating motor-fan unit, means mounting said motor-fan unit in said base at one end thereof, partition means on said base and intermediate the ends of said base cooperating with said base and cover to define a filter chamber at the opposite end of said base, a dirt filter, means mounting said dirt filter in said filter chamber, and said partition means being spaced from said motor-fan unit and cooperating with said motor-fan unit, base and cover to define a tool storage compartment between said motor-fan unit and said partition, said partition means being arranged to permit flow of air between said filter chamber and said motor-fan unit and said cover providing access to said motor-fan unit, tool storage compartment and filter chamber.

3,199,138
CLEANER
Erwin E. Nordeen, St. Paul, Minn., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,557
1 Claim. (Cl. 15—350)



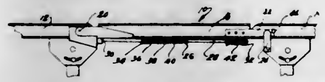
In a cleaner including a nozzle and a dust separating member spaced therefrom, apparatus comprising: a blower rotatable about a substantially horizontal axis for moving a stream of dust laden air; air passage means for said stream from said nozzle to said blower; bearing means on said air passage means at one side of said blower; a blower housing element at the opposite side of said blower; a motor adjacent to but spaced from said blower housing element for rotating the blower; second bearing means on said blower housing element; a conduit for said air having an exhaust portion exhausting into said separating member and a blower housing portion around said blower engaging and movable on said bearing means, said air passage means, said blower housing element and said blower housing portion cooperating as substantially the sole housing for said blower; a motor shaft having an end extending through said blower housing element and on which said blower is mounted within said blower housing portion; and a sealing means on said blower housing element sealing around said shaft.

3,199,139
CLEANING IMPLEMENT
Joseph Vallis, Toronto, Ontario, Canada, assignor to Valden Company, Toronto, Ontario, Canada
Filed Sept. 23, 1963, Ser. No. 310,543
4 Claims. (Cl. 15—532)



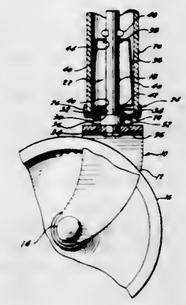
1. A cleaning implement comprising, in combination, a disc-shaped support member having an annular rim; a handle secured to said disc-shaped support member; an annular brush member having a central opening and including an annular portion having a peripheral edge of substantially the same configuration as said annular rim of said disc-shaped support member and a plurality of bristles carried by the outer face of said annular portion integral therewith and extending therearound; means for detachably securing said annular brush member along said peripheral edge of said annular portion to said annular rim of said disc-shaped support member so that said disc-shaped support member together with said annular brush member form a compartment; and a pad of elastically deformable liquid-absorbing porous material having a first portion located within said compartment and projecting through said central opening of said annular portion of said annular brush member outwardly and having a second portion located outwardly of said opening and within the space surrounded by said bristles of said annular brush member, said first portion and said second portion of said pad having each a cross-sectional area greater than the cross-sectional area of said opening so as to be detachably held therein, said annular brush member together with said pad being thus adapted to be attached to and detached from said disc-shaped support member as a single unit.

3,199,140
GATE FOR CONVEYORS
Robert J. McKnight, Springfield, and Robert W. Gotham, Summit, N.J., and Carl J. Falcon, Grand Rapids, Mich., assignors to The Rapids-Standard Company, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Mar. 20, 1963, Ser. No. 266,610
10 Claims. (Cl. 16—1)



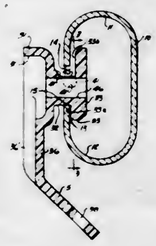
1. Counterbalancing mechanism for a pivoted conveyor gate, comprising: pivot means having an axis parallel to but offset from the axis of the gate pivot; guide means pivotally mounted on said pivot means and slidably received in an abutment member fixed with respect to said gate; first spring means extending on said guide means between said abutment member and first stop means on said guide means between said pivot means and said abutment means; and second spring means extending on said guide means between said abutment member and second stop means on said guide means on the opposite side of said abutment means from said pivot means; the spatial relationship between said pivot axes being such that said gate is substantially free of spring forces when it is vertical but that said first spring means operate to impede its movement toward the horizontal in one direction and said second spring means operate to impede it in the other direction.

3,199,141
CASTER MOUNTING ARRANGEMENT
Frank J. Fontana, Bridgeport, Conn., assignor to Stewart-Warner Corporation, a corporation of Virginia
Filed May 4, 1962, Ser. No. 192,386
2 Claims. (Cl. 16—18)



1. A caster comprising means for rotatably carrying a caster wheel, a pintle extending from said means, means for engaging said pintle with the leg of an article to be supported on said caster wheel while enabling a predetermined degree of axial movement between said pintle and said leg, said engaging means comprising an annular cup-shaped member carried by said pintle for engaging the bottom edge and outer periphery of said leg, and a U-shaped spring retaining device carried by said pintle and adapted to engage the inner periphery of said leg to clamp said pintle to said leg with the back leg of said U-shaped device serving as a stop to limit said axial movement of said pintle to said predetermined degree, a single integrally formed spring having planar walls engaging respective planar walls on the carrying means and article leg, and means for biasing said pintle and carrying means from said leg while simultaneously restraining relative rotational movement between said carrying means and said leg.

3,199,142
DRAPERY SLIDE
Ferdinand F. Salzmann and John J. Hoare, Madison, Wis., assignors to Graber Manufacturing Company, Inc., Middleton, Wis., a corporation of Wisconsin
Filed Sept. 19, 1963, Ser. No. 309,952
8 Claims. (Cl. 16—87.2)



1. In a drapery rod having an elongated trackway at the rear thereof defined by spaced edges on the rod; a drapery slide comprising a drapery support pendant and a unitary slide member at the upper end of the pendant,

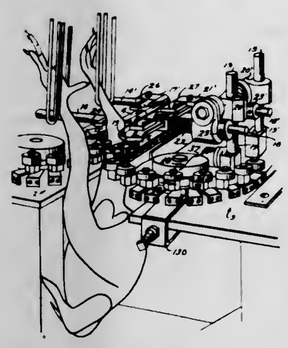
said slide member being formed of a resilient plastic material and including a body adapted to lie outside the rod, a reduced neck extending from the body and dimensioned to slidably extend through the trackway between the edges on the rod, and an enlarged unitary head on the other end of the neck dimensioned larger than the width of the trackway; characterized in that the neck has a notch in the upper side, the base of which notch is spaced from the lower edge of the head a distance no greater than the spacing between the edges of the rod to allow the slide to be inserted or removed from the rod when the slide is shifted crosswise of the rod to position one edge of the rod in the notch, and a deformable portion is formed integral with the slide to overlie the base of the notch and yieldably oppose entrance of an edge of the rod into the base of the notch.

3,199,143

APPARATUS FOR AUTOMATICALLY SEVERING THE INEDIBLE PORTION OF POULTRY LEGS

James P. Ousley, 201 S. Green St., Salisbury, N.C., and Harry P. Grier, 114 S. Center St., Statesville, N.C.

Filed Oct. 22, 1962, Ser. No. 231,991
6 Claims. (Cl. 17—11)



1. Apparatus for severing the inedible portion of a poultry leg from the edible portion thereof which comprises

conveyor means for grasping the poultry leg above and below the hock joint and for advancing the poultry in a predetermined path,

opposed wedges mounted along said predetermined path for engaging said poultry leg at said hock joint,

means for pressing said wedges continuously into said hock joint to separate the bones connected at said joint,

and cutting means mounted along said predetermined path and extending into said path and between said bones,

whereby said cutting means will sever tissue at said joint.

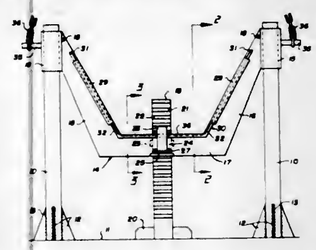
3,199,144

CATTLE HOLD DOWN DEVICE

Edward Arvid Johnson, Transcona, Manitoba, Canada, assignor to Lejohn Sales Ltd., Winnipeg, Manitoba, Canada

Filed Dec. 3, 1964, Ser. No. 415,638
12 Claims. (Cl. 17—44)

1. A device for holding down the hind legs of cattle suspended from an overhead rail substantially vertically for processing purposes; comprising in combination a pair of spaced and parallel vertically situated main support members, a cross head extending between said members and being reciprocal vertically thereon, means on each side of said cross head for anchoring the hind legs of cattle thereto, a ratchet post situated between said support members and extending vertically, ratchet means



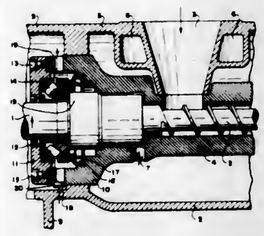
on said cross head cooperating with said ratchet post for detachably holding said cross head against upward vertical movement, and means on said cross head for selectively releasing said ratchet means.

3,199,145

SHAFT SEALING SYSTEM

Heine G. N. Tiemersma, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware

Filed Feb. 8, 1962, Ser. No. 171,869
Claims priority, application Netherlands, Mar. 27, 1961, 262,870
1 Claim. (Cl. 18—12)



An extruder comprising means defining a melting zone for converting solid into molten material, a screw shaft for feeding material through said melting zone to extrude the same, means for sealing at least one end of said screw shaft from harmful gases outside said melting zone, a housing surrounding and enclosing said sealing means, means defining both inlet and outlet ports in said housing adjacent said sealing means, and means for supplying inert gas under pressure, to and through said ports for flushing the area enclosed by said housing and counteracting diffusion of said harmful gases through said sealing means into said melting zone.

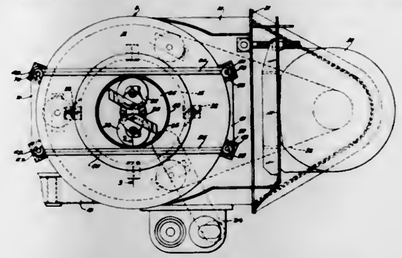
3,199,146

CLAMPING MEANS FOR PELLET MILL DIE

Chester Donald Fisher, Muncy, Pa., assignor to Sprout, Waldron & Company, Inc., Muncy, Pa., a corporation of Pennsylvania

Filed Apr. 16, 1962, Ser. No. 187,761
5 Claims. (Cl. 18—12)

1. In a pellet mill of the character described having a pelleting die through which material to be pelleted is extruded and pressure means for extruding said material through said die upon relative rotary movement of said pressure means and said die and cut-off means around the outside of said die for cutting said material extruded therethrough into said pellets, the combination which comprises stationary support means for mounting said die for cooperation with said pressure means and engaging and supporting one edge of said die, a cover ring for engaging the opposite edge of said die, and releasable clamping means extending between said support means and said cover ring for urging said cover ring toward said support means



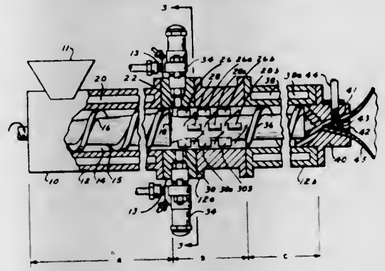
effecting clamping engagement and compression of said die therebetween, said releasable clamping means being spaced outwardly from said die and said edges thereof permitting free relative rotary movement of said die and said cut-off means therearound.

3,199,147

EXTRUSION APPARATUS WITH MEANS FOR INCORPORATING LIQUID SUBSTANCES INTO THERMOPLASTIC RESINS

Ardashus A. Aykanian, Wilbraham, Edgar E. Hardy, Longmeadow, and George A. Latinen, Wilbraham, Mass., assignors to Monsanto Company, a corporation of Delaware

Original application June 2, 1961, Ser. No. 114,401, now Patent No. 3,160,688, dated Dec. 8, 1964. Divided and this application Feb. 5, 1964, Ser. No. 342,764
4 Claims. (Cl. 18—12)



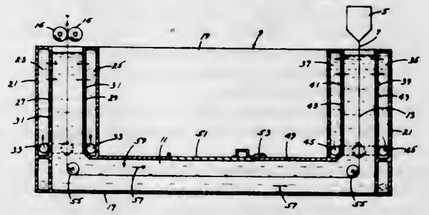
1. In combination in a single screw extruder, (1) an elongated, cylindrical chamber having associated therewith a die affixed to the discharged end thereof and means for feeding resin into the rearward zone of the chamber, (2) an elongated screw mounted within said chamber, (3) means for rotating said screw, (4) a first helical land mounted on a first and rearward section of said screw and pitched to compress and advance resin through the chamber, (5) a plurality of series of axially aligned scraper plates symmetrically disposed about a second and intermediate section of the screw, each of said series containing a plurality of scraper plates having narrow passage ways therebetween, each of said series being displaced in an axial direction from the adjacent series of scraper plates so that at least one scraper plate of each series is transversely aligned with the passage ways provided between scraper plates of the adjacent series, (6) a second helical land mounted on a third and forward section of the screw and pitched to compress and advance resin through the chamber, and (7) means for injecting liquid through the chamber wall surrounding the second and intermediate zone of the chamber.

3,199,148

FILM QUENCHING APPARATUS

Hugo Paul Koppehele, Glen Riddle, Pa., assignor to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Apr. 20, 1962, Ser. No. 189,175
7 Claims. (Cl. 18—15)



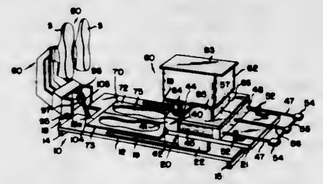
1. Apparatus for use in the manufacture of films including a tank having a bottom wall and upright side and end walls, a pair of spaced upright, perforated partitions disposed adjacent to each of said end walls and extending between the side walls thereof, the lower ends of adjacent partitions of said pairs of partitions terminating above the bottom wall of said tank, a divider plate extending between the lower ends of said adjacent partitions and the side walls of said tank, means for delivering a cooling liquid through the perforations of one pair of said partitions, means for withdrawing cooling liquid through the perforations of the other of said pair of partitions, means for extruding a sheet of molten film-forming material into the cooling liquid in-between the partitions of said other pair of partitions, means for withdrawing the cooled sheet of film-forming material from the cooling liquid between the partition of said one pair of partitions, and means for directing the cooled sheet of film-forming material between the bottom wall of said tank and said divider as the sheet is advanced in a direction counter to the flow of cooling liquid.

3,199,149

MOLDING APPARATUS

Eugene I. Croyle, San Angelo, Tex., assignor to American Research and Development Company, San Angelo, Tex., a corporation of Texas

Filed Jan. 18, 1963, Ser. No. 252,474
7 Claims. (Cl. 18—17)



1. A molding apparatus for footwear comprising:

(a) a support table;

(b) an open cavity shoe sole mold fixedly supported in a substantially horizontal plane by said table;

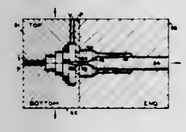
(c) a dispenser mounted on said table for reciprocable horizontal movement for dispensing a liquid plastisol at room temperature;

(d) said dispenser being movable from a position adjacent and clear of said shoe mold along a line of travel over said mold extending substantially the length of said mold so that plastisol is deposited inside said mold as the dispenser moves thereover;

(e) last support means pivotally mounted on said table on a horizontal axis which is disposed transverse to the length of said shoe mold;

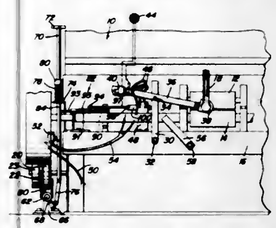
(f) a last mounted on said last support means and movable therewith so that it closes the mold in one position and is moved clear thereof in another position;
(g) heating means in said last having a heat level control unit to maintain temperature at approximately the gel temperature of the plastisol;
(h) heating means in said mold having a heat level control unit which maintains the initial temperature of the mold at slightly above the melting temperature of the expanding agent in the plastisol;
(i) control means for operating said dispenser and said last support assemblies;
(j) an overall heat control means connected to both of said heating means for governing operation thereof; and
(k) programming means connected to said dispenser, said last support, and said overall heat control means for providing cyclic operation of said unit, whereby said dispenser and said last are successively moved into operative position over said mold, and application of heat to said mold and last assemblies is directly controlled.

3,199,150
MOLD FOR DISPENSING SPOUT
Richard C. Hug, St. Louis, Mo., assignor, by mesne assignments, to The Clayton Corporation of Delaware, St. Louis, Mo., a corporation of Delaware
Filed Oct. 5, 1962, Ser. No. 228,623
4 Claims. (Cl. 18—42)



1. A mold for a hollow dispensing spout member of the type having a central metering orifice in communication with a lateral flow passage having diametrically opposite ports, comprising at least
two mold members meeting along a parting plane and symmetrically hollowed therefrom to define such a spout member and, in the region of such flow passage, meeting along a longitudinal parting plane at 90° to such opposed ports,
each said mold member having a projection whose end meets the end of the projection of the other along said parting plane whereby to form the lateral flow passage,
further comprising a core pin having a body extending longitudinally along the parting plane whereby to form the hollow of the dispensing spout,
the core pin having a needle-like tip extension including a portion adjacent to the core pin body portion,
said extension portion being of such length as to extend to the mold member projections and being of such diameter as to provide a metering orifice communicating between the lateral flow passage and the hollow of the spout,
characterized in that
the meeting ends of the mold projections each has at its center a semi-cylindrical cutout whose radius equals the radius of the needle-like tip, and
the needle-like tip has a further extended portion fitting within and penetrating the circle formed by the semi-cylindrical cutouts of the mold projection,
whereby the needle-like tip is firmly supported by the mold projections and the formation of flash across the metering orifice is avoided.

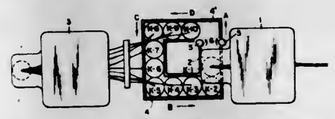
3,199,151
STOP MOTION FOR COTTON CARD
Robert Homer Bird, Trenton, Tenn., assignor of fifty percent to W. W. Herron, Trenton, Tenn.
Filed June 14, 1962, Ser. No. 202,617
4 Claims. (Cl. 19—.25)



1. A stop motion for cotton carding machines of the type having means for delivering a cotton sliver from a carding machine, driving means including a driving pulley operatively connected by a driving belt to and operating said delivering means; said stop motion comprising an idler pulley, a control means including a belt shifter operatively engaging said driving belt and selectively shifting the latter to and from said driving pulley to said idler pulley, a movable control rod connected to said belt shifter and effecting movement of the latter, resilient means operatively connected to said control rod for yieldingly urging said control rod and said belt shifter into position to disengage said driving belt from said driving pulley, a latch mechanism releasably engaging said control rod and retaining it in a position in which said driving belt is drivingly engaged with said driving pulley, an electric actuator connected to said latch mechanism and operable to disengage the latter from said control rod whereby said resilient means will cause said belt shifter to disengage said driving belt from said driving pulley, a detector having a switch controlling an energizing electric circuit for said electric actuator and also having a sensing element engaging cotton sliver of a carding machine after the sliver emerges from said delivering means, said sensing element being operable in response to breakage of said sliver for closing said switch and energizing said electric actuator, said belt shifter including a rocker shaft journalled for rocking movement and a shifter element secured to said rocker shaft and projecting therefrom and embracing a portion of said driving belt, said control rod being mounted for reciprocation and having a pivotal connection to said rocker shaft, said control rod having a latch recess therein, said latch mechanism including a barrel, a latch plunger being slidably received in said barrel and being connected to said electric actuator and having a nose projectable therefrom, said nose being releasably and slidably engageable in said recess, and a spring in said barrel yieldingly urging said nose therefrom and yieldingly retaining said nose in said latch recess.

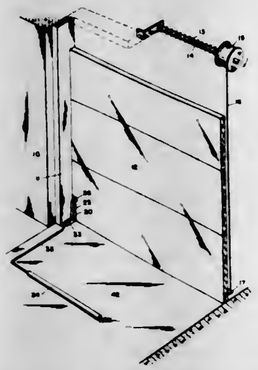
3,199,152
CIRCULATORY SYSTEM FOR MOVING THE SLIVER CANS IN A SPINNING PLANT
Takuzo Tooka and Kaneo Takada, Kariya, Japan, assignors to Toyoda Automatic Loom Works, Ltd., Kariya, Japan, a corporation of Japan
Filed Oct. 9, 1962, Ser. No. 229,433
Claims priority, application Japan, Dec. 29, 1961, 36/47,991
4 Claims. (Cl. 19—159)

1. A method of moving sliver cans in a spinning plant having two machines wherein the sliver from one machine having a can filling device is to be transferred to another machine, consisting in arranging a plurality of sliver cans in a closed polygonal path between the machines, said polygonal path having inside corner angles of at least 90° and having one side thereof located beneath the can filling device of the one machine, dividing the plurality of cans into at least two groups, one group comprising a can located beneath the can filling device of the one machine and at least one empty can located on the said one side of the polygonal path, leaving a vacant space adjacent the can beneath the filling device of the one machine sufficient to accommodate at least one can and extending to a corner of the polygonal path at one end of said one side with the space at said corner which is common to said one side and to the side next in sequence following said one side being vacant, and the other group of cans comprising cans at least partly filled with silver for feeding slivers to the second machine and arranged in series, one series for each of the remaining sides of the polygonal path, the series on the side of the polygonal path next in sequence following said one side of the



polygonal path having a number of sliver cans one less than the number of cans which can be accommodated along said next side, and each remaining series of cans filling the corresponding side of the polygonal path, and when the can beneath the filling device is full, moving the first group of cans on the first side of the polygonal path toward the vacant space at a high speed so that the newly filled can occupies a part of the vacant space and the empty can is moved beneath the filling device, then moving the said filled can away from the empty can which has been moved beneath the filling device and into the empty common corner space as the last can in the series of cans along said next side of the polygonal path, and then moving the respective series of cans in the other group of cans on the remaining sides of the polygonal path around the path so that the leading can in each series occupies the spot left vacant by the trailing can in the preceding series, said cans in the other group being moved at a low speed.

3,199,153
GARAGE DOOR OPERATORS
Albert Weinstein, 43 Custis St., Wellington, Va.
Filed Nov. 29, 1963, Ser. No. 326,667
1 Claim. (Cl. 20—16)



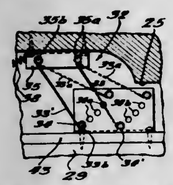
The combination of a door movable between a closed position and an open position, means biasing said door toward its open position, and fully self-contained remotely actuated means for releasably retaining the door in its closed position, said last mentioned means comprising a catch carried by said door, a latch movably mounted adjacent the door and engageable with said catch when the door is closed, resilient means biasing said latch into engagement with said catch, a fluid pressure actuator for said latch, said actuator including a resiliently compressible fluid reservoir positioned in the path of travel of a vehicle approaching said door, a fluid operator connected to said reservoir, a unitary holder for mounting said latch and said fluid operator adjacent said door, said fluid operator having a movable member in operative engagement with said latch for disengaging the latch from said catch when fluid under pressure is delivered to said operator upon compression of said reservoir, a flexible hose connecting said fluid operator to said reservoir, said reservoir comprising a length of resiliently compressible tubing closed at one end and having said hose connected to its other end, said tubing being of a substantially larger diameter than said hose, said latch and said catch being disposed exteriorly of said door, and means manually operable from the interior of the door for disengaging said latch from said catch independently of actuation of said remotely actuated means.

3,199,154
TILT WINDOW ASSEMBLY
Waldo O. Johnson, Wooster, Ohio, assignor to Weather-Seal, Inc., North Barberton, Ohio, a corporation of Ohio
Filed Aug. 8, 1962, Ser. No. 215,652
3 Claims. (Cl. 20—42)



1. In a window assembly, an upper and a lower sash each having a pair of vertically extending side rails, said lower sash being wider than said upper sash, a pair of vertically extending side stiles having laterally inwardly open channel portions and an axially outer stop portion therein, a plastic track having a pair of parallel laterally outwardly extending ribs thereon to provide a pair of recesses on the laterally inner surfaces of said plastic track received in each of said side stiles in the channel portion thereof, the axially inner of said recesses in each of said tracks being laterally outwardly offset from the other of said recesses in the same track and connecting thereto by a laterally inwardly extending section, compressible means positioned in said channel portions and urging said plastic tracks laterally inwardly to engage said side stiles, said plastic tracks receiving said sashes thereon for controlled sliding movement, said plastic tracks having laterally narrow axially outwardly facing shoulders about 1/16" long at the axially inner margin of each of said recesses to engage a corner of said sash rails and aid in forming a sealed slidable connection therewith, said plastic track having flat surfaces thereon immediately adjacent both edges of said recesses, said side rails of said sashes having flat laterally outer surfaces engaging said flat surfaces of said plastic track to aid in positioning said sashes, said sections of said tracks forming a stop for said lower sash to retain it against axial outward movement, said stops of said side stiles forming stops for said upper sash to prevent axial outward movement thereof, said plastic tracks being movable laterally outwardly to compress said compressible means and permit removal of said sashes from the axially inner portion of the window assembly.

3,199,155
FLOOR SEAL
Kenneth F. Coleman, Kalamazoo, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 322,940
2 Claims. (Cl. 20—68)



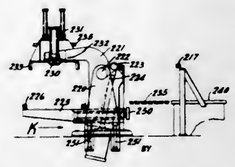
1. A floor seal for closing the gap between a floor and the bottom edge of a folding or sliding door, partition, or similar closure panel, comprising: a sealing strip mounted on said panel adjacent the bottom edge thereof for movement back and forth longitudinally of the bottom edge and up and down relative thereto in the plane of the panel from a raised retracted position and a lower sealing position in which the lower edge of the strip is urged outwardly from the bottom edge of the closure panel; means connected to the closure panel and the sealing strip for urging the strip longitudinally and upwardly to said retracted position; means for resiliently urging the strip to said sealing position when moved longitudinally, including a pair of generally parallel flat leaf spring members spaced longitudinally of the strip and inclined downwardly and back when the strip is retracted, each spring having an upper end pivotally mounted on the panel and a lower end pivotally mounted on the sealing strip, said lower ends, when the strip is moved longitudinally, being movable closer to the upper ends and longitudinally of the bottom edge to positions where the springs are bowed to urge the strip downwardly and exert a sealing force; and means for adjustably mounting the lower end of each spring on the sealing strip to vary the vertical travel of the sealing strip required to place the spring under predetermined stress, said last named means including a pivot pin for mounting the lower end of the spring on the sealing strip and a series of apertures in the sealing strip angularly spaced about the upper pivotal mounting of the spring.

3,199,156
WEEP HOLE CONSTRUCTION FOR WINDOWS AND THE LIKE
Harry M. Riegelman, Rolling Hills, Calif., assignor, by mesne assignments, to Ador Corporation, Fullerton, Calif., a corporation of California
Filed May 6, 1963, Ser. No. 278,089
8 Claims. (Cl. 20—70)



1. In a window frame including a sill having an upper surface and an upright flange disposed longitudinally on the upper surface of said sill, a weep hole construction comprising:
at least one aperture provided in said flange, said aperture meeting with the upper surface of said sill;
a longitudinal cover flap having an upper end affixed to said flange above said aperture and normally extending substantially downward over said aperture to cover the same, said cover flap having a portion of reduced thickness adjacent said upper end to provide a pivot axis;
and longitudinal rib means below and parallel to said pivot axis for spacing the portion of said cover flap below said pivot axis away from said flange, said rib means being integral with said cover flap.

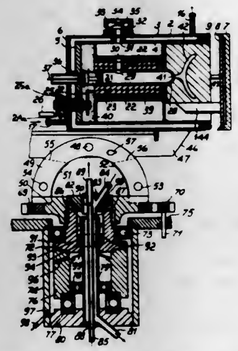
3,199,157
FOUNDRY SYSTEM FLASK UNLOADING APPARATUS
Harrison E. Fellows, Clearwater Lake, Wis.
Original application Sept. 9, 1957, Ser. No. 682,854, now Patent No. 3,068,537, dated Dec. 18, 1962. Divided and this application Aug. 9, 1962, Ser. No. 215,926
3 Claims. (Cl. 22—33)



1. The combination with first and second conveyors, of a C-clamp having upper and lower jaws and provided with a fulcrum upon which the clamp is bodily invertible, the lower jaw of the C-clamp comprising a section of the first conveyor, the upper jaw of the C-clamp comprising means for engaging a flask at spaced points, a supplemental upper jaw on the C-clamp independently retractable between said points and comprising a casting support upon which a casting may be lowered from a flask engaged at said points following C-clamp inversion, the second conveyor comprising supports adapted to receive the inverted flask following C-clamp inversion and between which the supplemental jaw may be lowered to withdraw the casting from a flask so supported on the second conveyor.

3,199,158
CENTRIFUGAL FURNACE FOR FUSION AND CASTING UNDER VACUUM
Luchino Rigatti-Luchini, via degli Speronari 7, Milan, Italy
Filed July 30, 1962, Ser. No. 213,427
Claims priority, application Italy, Aug. 5, 1961, 657,778
4 Claims. (Cl. 22—65.1)

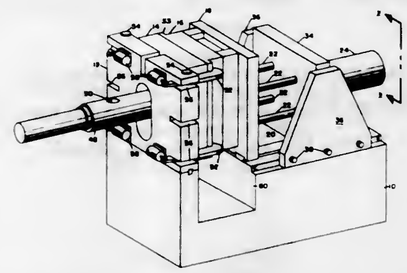
1. A centrifugal casting apparatus, comprising,
a stationary frame, a rotatable air tight electric furnace, bearing means for rotatably supporting said furnace on said frame and defining an axis of rotation of said furnace,
said bearing means including, a rotating sleeve member beneath said surface and in rigid rotatory relation therewith and coaxial with said axis of rotation, said sleeve member having an upper end and a lower end and defines an inner chamber,
a stationary tubular member coaxial with and projecting within said inner chamber through said lower end, the inner diameter of said rotating sleeve member being greater than the diameter of said stationary tubular member,
a stationary pipe within said stationary tubular member,
at said upper end of said sleeve member a tubular piece within and rigid with said rotating sleeve member, said tubular piece having a diameter greater than the diameter of said stationary pipe and being coaxial with and offset in the axial direction with respect to said stationary tubular member to provide a first gap between said stationary tubular member and said tubular piece,
within said tubular piece and peripherally spaced therefrom a pipe piece coaxial to and rigidly connected with said tubular piece, said pipe piece being coaxial with and offset in the axial direction with respect to said stationary pipe thereby providing a second gap therebetween offset with respect to said first gap,
slidable packing means between said lower end of said rotating sleeve member and the outer periphery of said stationary tubular member,
a cover member closing the upper end of said rotating sleeve member, said cover member having a bore receiving said tubular piece and said pipe piece providing independent passages through said cover member,



said electric furnace having a heating chamber offset with respect to said axis of rotation, a resistor surrounding said heating chamber, a removable crucible within said heating chamber, a removable mold within said furnace near said crucible, duct means connecting the interior of said crucible with the interior of said mold, said mold being more distant from said axis of rotation than said heating chamber, a cooling jacket near the periphery of said furnace, an inlet opening for said cooling jacket and an outlet opening therefor,
first pipe means connecting said tubular piece with said inlet opening and second pipe means connecting said pipe piece with said outlet opening,
transmission means to transmit rotary motion to said furnace,
conductor means for detachably connecting said resistor with a current supply,
further duct and valve means to connect said heating chamber with a vacuum source,
and a cover to open and hermetically close said furnace.

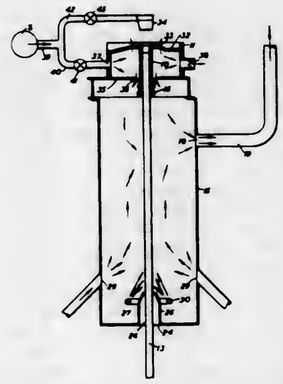
3,199,159
DIE CASTING MACHINE
Heinz C. Wernecke, 946 13th Ave., Grafton, Wis.
Continuation of application Ser. No. 706,851, Jan. 2, 1958. This application Feb. 26, 1962, Ser. No. 177,135
2 Claims. (Cl. 22—68)

1. In a casting machine having
a first fixed die half and a second movable die half, and means for moving said first die into and out of cooperating relationship with said second die, means for locking said first and second die halves in a cooperating position, said means comprising:
a plurality of latch members pivotably supported with respect to said first die half and each having a surface which cooperates with a corresponding surface on the second die half so as to latch said die in a closed relationship;



a plurality of wedges, one associated with each of said latching members, each being operable to maintain said latching members in a locked position when extended;
and a plurality of ram members, one associated with each of said wedge members and connected to its associated latch member and being operable to position said wedge members in an extended or retracted position.

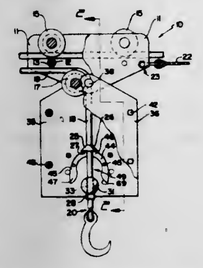
3,199,160
CONTINUOUS CASTING OF METAL
James S. Morton, Weybridge, England, assignor, by mesne assignments, to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 25, 1962, Ser. No. 212,416
Claims priority, application Great Britain, July 26, 1961, 27,147/61
5 Claims. (Cl. 22—57.2)



3. Apparatus for the continuous casting of metal, which comprises an open-ended mould, an elongated shroud mounted beneath the mould positioned to surround a length of the newly formed casting depending from the mould in which the casting extends out through the bottom of the shroud, said shroud comprising side

walls spaced from the surfaces of the casting to define a secondary cooling zone, spray means for spraying the length of the casting in the secondary cooling zone within the shroud with cooling liquid, means for forcing a continuous current of air to flow through the interior of the shroud, an exhaust aperture situated adjacent to one end of the shroud to receive the air, a mould chamber surrounding the sides of the mould and communicating with the interior of the shroud, and means for maintaining the interior of the mould chamber at an air pressure greater than the pressure in the interior of the shroud.

3,199,161
RELEASABLE CATCH APPARATUS FOR A CABLEWAY LOAD CARRIER
Alexander Hamilton, 4871 Union St., North Burnaby, British Columbia, Canada
Filed Dec. 18, 1963, Ser. No. 331,459
4 Claims. (Cl. 24—132)



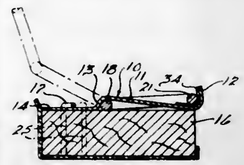
1. A releasable latch apparatus for a cableway load carrier having a carriage movable on a cableway and a load line movably depending therefrom comprising, a pair of elongated latch members, having upper and lower ends, pivotally connected to the carriage on axes intermediate their ends for pivotal movement in a vertical plane and spaced apart to permit the passage of a load line therebetween, said members having concave opposing faces forming a recess therebetween and having their lower ends formed as downwardly diverging cam surfaces, stops on the carriage arranged in the path of the latch members to limit pivotal movement of the latter between a latch position in which the upper ends are spaced apart in relatively close proximity to the load line and an open position in which said upper ends are moved apart to move the lower ends towards each other to a position in close proximity to the load line on each side thereof, restraining means to releasably engage the latch members when they are moved to each position to secure the latter against accidental movement for said positions, a catch block presenting a cam-like shoulder as its upper surface connected to the cable for vertical movement therewith, said catch block being adapted to pass freely downwardly between the latch members when the latter are in their open position, the upper ends of said members lying in the path of the catch block when said members are in their latch position, a stop fixedly secured to the load line for movement therewith and spaced downwardly thereon from the catch block, an operator, having cam-like upper and lower surfaces, slidably connected to that portion of the load line between the catch block and stop for vertical movement between the latter, whereby upon upward movement of the line to pass the catch block above the upper ends of the latch members, the stop will move the operator against the cam surfaces at the lower ends of said latch members to pivotally move the members into a latch position below the catch block, said operator being adapted, upon further upward movement of the line to pass through said lower ends and bear upwardly against the upper ends of the latch members to pivotally move same into their open position, said restraining means being adapted to retain the latch members in the latter position against the weight of the operator when the load line is lowered, to permit the catch block to pass downwardly through the open upper ends of the latch members into the recess and bear against the upper surface of the operator to thereby pivotally move the latch members against the action of the restraining means into their open position to permit the operator and catch block to pass downwardly therethrough.

3,199,162
CONTINUOUS SLIDE FASTENER
Hans-Ulrich Sohr, Scheubachweg, Nassau (Lahn), Germany, and Wilhelm Haussmann, 42 Gundhofstr., Walldorf, Hesse, Germany
Filed Sept. 7, 1962, Ser. No. 222,240
4 Claims. (Cl. 24—205.13)



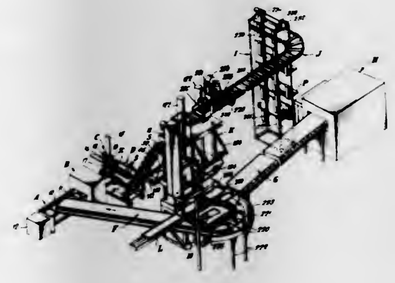
1. A slide fastener element row comprising an elongated element bent to form a flattened non-circular helix including identical successive complete turns each lying in a plane substantially perpendicular to the axis of the helix; each turn including first and second bights which face each other and a pair of substantially rectilinear and relatively elongated limbs extending, in substantially contiguous relation in the plane of the turn, from opposite ends of said first bight; one of said limbs extending to one end of said second bight and the other limb being bent laterally out of the plane of the turn, just in advance of the other end of said second bight, to extend to the corresponding other end of the second bight of the adjacent turn; each first bight comprising a head piece widened laterally of the associated turn to provide oppositely projecting locking projections, and being expanded in the plane of the associated turn, the head pieces of successive first bights being aligned in a longitudinal zone extending parallel to the axis of the helix.

3,199,163
SPRING CLIP
Zygmunt M. Surletta, Detroit, Mich., assignor, by mesne assignments, to American Metal Products Company, Detroit, Mich., a corporation of Michigan
Filed Aug. 26, 1963, Ser. No. 304,413
1 Claim. (Cl. 24—265)



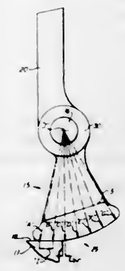
In a clip for supporting the end of sinuous spring strips on a frame having a top and bottom rail, said spring strips having oppositely disposed loops joined by straight portions, said clip having a supporting portion and a flat Z-shaped extension embodying an angularly disposed section with oppositely extending webs at the ends, the straight portion between the endmost loops of the spring strip being disposed on the bottom side of the clip adjacent to the downwardly extending web and the end straight portion of the strip being disposed on the top side of the clip adjacent to the upwardly extending web, said supporting portion having slots therethrough by which the clip is secured to the top face of the bottom rail, the spring strip when secured in the clip extending forwardly and arching upwardly with the top end portion secured to a clip attached to the top rail.

3,199,164
AUTOMATIC PRODUCTION OF PRESSED WARE FROM PLASTIC MATERIAL
Donald R. Emmel, Springfield, Andrew R. Blackburn, Westerville, and Richard E. Steele and Harold H. Dawson, Columbus, Ohio, assignors to The Murray Corporation of America, Pittsburgh, Pa., a corporation of Delaware
Filed June 9, 1961, Ser. No. 116,135
16 Claims. (Cl. 25—2)



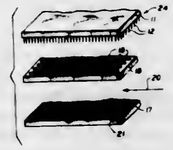
1. Apparatus for producing pressed ware from plastic material comprising a press having a vertically reciprocable press platen carrying an upper downwardly facing ware forming die and a press bed having a stationary bolster and disposed beneath said platen, a shuttle mounted on said press bed to be movable in a generally horizontal path beneath said platen, a lower upwardly facing ware forming die mounted on said shuttle adjacent one end of said shuttle, means for shifting said shuttle between a first position whereat said lower die is positioned above said bolster and beneath said upper die and a second position whereat the opposite end of said shuttle is positioned beneath said upper die, said lower die being disposed for loading a slug of plastic material onto such die when such shuttle is in said second position, power means for moving said dies together when said shuttle is in said first position to form the pressed ware from a slug of plastic material disposed between said dies, fluid pressure release means connected to apply release pressure through the surface of said lower die to free the ware therefrom so that it will be retained on said upper die as the dies separate, and fluid pressure release means connected to apply release pressure through the surface of said upper die to free the ware therefrom when said shuttle is in said second position to deposit the ware on said opposite end of said shuttle whereupon it may be removed from beneath said platen by shifting said shuttle to said first position and at the same time move the slug loaded lower die beneath said upper die for a subsequent ware pressing operation.

3,199,165
TENTER CLIP JAW
Frederick Hyatt, Providence, R.I., assignor, by mesne assignments, to Bevis Industries, Inc., Providence, R.I., a corporation of Florida
Filed May 28, 1962, Ser. No. 198,221
11 Claims. (Cl. 26—62)



1. A tenter clip for gripping material of varying thicknesses comprising a horizontally disposed base having a clamping surface, a vertically upstanding bracket and a pair of arms which project sidewise from said bracket to overlie said clamping surface, a counterweighted tenter clip jaw, a pintle mounted in said pair of arms, said tenter clip jaw loosely hinged to said pintle to be normally free to move automatically into vertical relation with said clamping surface under the action of gravity, that improvement in tenter clip jaws comprising a face having a non-circular curve generated upon equally spaced radial distances lying progressively shorter distances from the center of said pintle, the radial distances varying in substantial equal increments from a maximum to a minimum, to provide spaced gripping zones shortening toward the forward edge of said clamping surface, the center of the pintle being so disposed to said clamping surface that when the face lies in material contact position a vertical line through the center of the pintle will fall forward of the material contact position and toward the forward edge of the clamping surface.

3,199,166
NEEDLING APPARATUS
Peter Petersik, Mannheim, Germany, assignor to Carl Freudenberg, Weinheim an der Bergstrasse, Germany
Filed Nov. 5, 1963, Ser. No. 321,502
Claims priority, application Germany, Nov. 1, 1961, F 35,322
6 Claims. (Cl. 28—4)



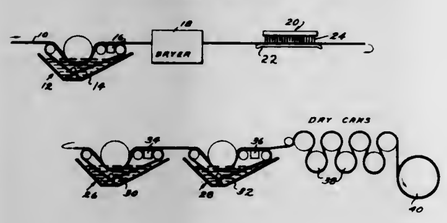
1. In apparatus for needling a fiber fleece comprising:
(a) a needle carrier and a plurality of needles mounted thereon with the needle points disposed for needling of the fleece;
(b) fleece guide means for guiding the fleece past the carrier for needling of the fleece;

(c) means for reciprocating the needle carrier to repeatedly pass the needle points through the fleece from the side of the fleece adjacent the needle carrier and beyond the side of the fleece remote from the carrier, and then withdrawing the needles from the fleece, thereby needling the fleece;

the improvement which comprises:

(d) said fleece guide means including a bed of small particles disposed for supporting the fleece for needling and for receiving the needle points as the points pass beyond the side of the fleece remote from the carrier during the needling, the particles being of a size and shape and hardness so that upon the bed receiving the needles as aforesaid, particles are displaced permitting lowering of the needles into the bed without substantial injury to the needles and without substantial injury to the particles.

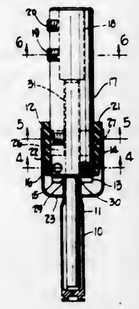
3,199,167
PROCESS OF MANUFACTURING NON-WOVEN FABRICS
Richard E. Charlton, Jr., Fairfax, Ala., and Richard E. Hudson, Jr., West Point, Ga., assignors to West Point-Pepperell, Inc., a corporation of Georgia
Filed Feb. 9, 1961, Ser. No. 88,024
4 Claims. (Cl. 28—72.2)



1. A process of manufacturing nonwoven fabrics comprising the steps of applying a minor quantity of binder material to a nonwoven fiber web to partially stabilize the web uniformly throughout its thickness, drying the web, needle punching the initially stabilized web to orient some of the fibers in direction normal to the web surfaces, and then applying a major quantity of binder material to the needle punched web.

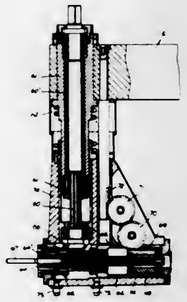
3,199,168
CARTRIDGE CASE TRIMMING TOOL
Jules W. Rhine, 25 Ennis Ave., Bedford, Ohio
Filed Nov. 29, 1961, Ser. No. 155,586
2 Claims. (Cl. 29—1.32)

1. A trimmer for a tubular cartridge case having an open end and a closed end, said trimmer being for trimming the open end a predetermined distance from the closed end, and comprising in combination, a rotatable tool holder having means at one end for drivingly engaging a driven shaft, a substantially rigid cartridge case support member adjustably projecting from the other end of said tool holder coincident with the axis of rotation and adapted to be inserted in the open end of the cartridge case, said support member being cylindrical, of uniform diameter, a work holder means for axially positioning the cartridge case, a cutting tool carried by the tool holder adjacent the support member for rotary trimming engagement with the open end of the cartridge case, and means coacting between the tool holder and the support member to adjustably secure the support member in predetermined axial position relative to the cutting tool corresponding to the predetermined distance of trimming from the closed end of the cartridge case whereby the free end of the support member coacts as a limiting



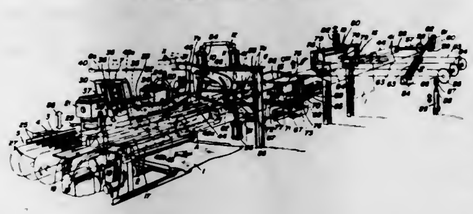
abutment against the closed end of the cartridge case to determine the extent of axial trim at the open end of the cartridge case.

3,199,169
MULTIPLE SPINDLE MACHINE TOOL
Ludwig Weber, Beethovenstrasse 41, Reutlingen, Baden-Wurttemberg, Germany
Filed Aug. 11, 1961, Ser. No. 130,932
Claims priority, application Germany, Aug. 25, 1960, W 28,437
11 Claims. (Cl. 29—26)



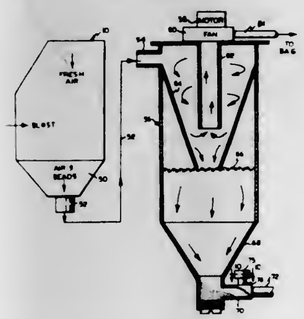
1. A machine tool comprising, in combination, a multiple-spindle unit, said unit comprising a supporting element, a plurality of universal-joint shafts rotatably mounted on said supporting element, common means mounted on said supporting element for driving all of said shafts, a plurality of spindle supports mounted on said supporting element, means for adjusting said spindle supports to vary the distances from each other, each of said spindle supports being equipped with a spindle bearing. a plurality of parallel tool spindles, each of said tool spindles being rotatably mounted in the corresponding of said spindle bearings, and adapted to be connected to said shafts, a work support, means for moving said spindle unit and said work support relative to each other at least in a direction parallel to said tool spindles, at least one additional tool support adapted to be mounted on one of said spindle supports, means in said tool support for exchangeably mounting at least one tool and extending in a direction differing from the direction of said tool spindles, and means for connecting said tool mounting means to one of said tool spindles for driving said tool mounting means.

3,199,170
PROCESS FOR THE PRODUCTION OF START SHEETS AND AN APPARATUS FOR CARRYING OUT THE PROCESS
Fritz Agne Johansson, Skelleftea, and Bengt Gustav Helmerson, Nils Vilhelm Mokvist, and Allan Ferdinand Norrö, Skelleftehamn, Sweden, assignors to Boliden Gruvaktiebolag, Stockholm, Sweden, a limited joint-stock company of Sweden
Filed May 22, 1962, Ser. No. 196,752
Claims priority, application Sweden, June 15, 1961, 6,287/61; Oct. 23, 1961, 10,504/61
17 Claims. (Cl. 29—33)



1. Apparatus for the production of start sheets for electrolytic refinement, which includes means for advancing straightened start sheets in a generally horizontal plane, means for placing cathode rods in the path of movement of the sheets and feeding them against lug blanks placed vertically in the path of movement so that the blanks are bent by the cathode rods to embrace each sheet loosely, means for securing the lugs to the sheet and means for transferring the sheets to a vertical position and transporting it away in this position.

3,199,171
GLASS BALL PEENING MACHINE FOR TREATING SMALL ARTICLES
Leon Hellmann and Donald Lee Temple, Washington, Mo., assignors to Zero Manufacturing Co., Washington, Mo., a corporation of Missouri
Filed Aug. 14, 1962, Ser. No. 216,849
9 Claims. (Cl. 29—90)



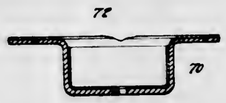
1. In a glass ball peening machine for treating small articles in combination, a cabinet, an air inlet for said cabinet, a blast gun within said cabinet, and means extending through the cabinet for holding the gun in position for peening metal objects, said cabinet having an opening for expended blasting materials at the base thereof, a conduit leading from said opening, a separator attached to said conduit, means in said separator for separating whole glass beads from chipped beads and extraneous matter, and means for returning whole glass beads to said cabinet.

3,199,172
BROACH
Joseph A. Psenka, Bloomfield Hills, Mich., assignor to National Broach & Machine Company, Wayne, Mich., a corporation of Michigan
Original application Apr. 10, 1961, Ser. No. 101,887. Divided and this application Oct. 21, 1964, Ser. No. 405,412
4 Claims. (Cl. 29—95.1)



1. A broach having a series of longitudinally aligned finish cutting teeth for finishing a groove in a workpiece, each of said teeth having a front cutting face having an acute side and an obtuse side, each of said sides being inclined inwardly away from the side walls of the groove from the front face to the rear of the tooth, with the angle of inclination on the acute side being greater than the angle of inclination on the obtuse side.

3,199,173
METHOD OF MAKING A FLANGED BEARING
George R. Lefevre, Birmingham, Mich., assignor, by mesne assignments, to Universal American Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 29, 1962, Ser. No. 233,546
21 Claims. (Cl. 29—149.5)



1. The method of making a flanged bearing comprising the steps of providing a bonded layer of soft bearing metal on flat stock of a ferrous metal, drawing a cup having a cylindrical side wall from an intermediate area of the flat stock, leaving a flat radial flange surrounding said cup, and removing the bottom of the cup.

3,199,174
METHOD OF ELIMINATING BUCKLING DEFORMATION OF BEAMS
Bengt Erik Nilsson, Saltsjobaden, and Erik David Arvidsson, Goteborg, Sweden, assignors to AB Bröderna Hedlund, Stockholm, Sweden, a corporation of Sweden
Filed Oct. 26, 1962, Ser. No. 233,342
Claims priority, application Sweden, Oct. 10, 1962, 10,871/62
7 Claims. (Cl. 29—155)

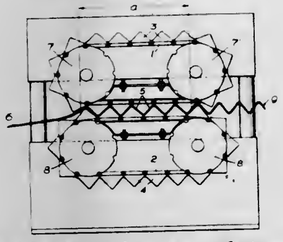


1. A method of manufacturing beams, comprising the steps of feeding a relatively thin and broad web material of sheet metal such as steel and metallic flange strips through a welding machine past stationary welding devices therein while guiding the flange strips in engagement with the longitudinal edges of said web material and welding said flange strips to said longitudinal edges by said welding devices, and supplying heat to portions of the web material located between said welding devices and spaced from the points of the said edges in which welding is taking place, said heat being supplied in a quantity sufficient to prevent buckling of said web material.

3,199,175
METHOD AND APPARATUS FOR THE CONTINUOUS MANUFACTURE OF ZIGZAG-SHAPED STRUTTING FOR LATTICE STRUCTURES AND OF LIGHTWEIGHT STRUCTURES COMPRISING SUCH STRUTTING

Alfred Wögerbauer, Linz (Danube), Austria, assignor to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria

Filed July 1, 1963, Ser. No. 291,984
Claims priority, application Austria, July 6, 1962, 5,472/62
13 Claims. (Cl. 29—155)

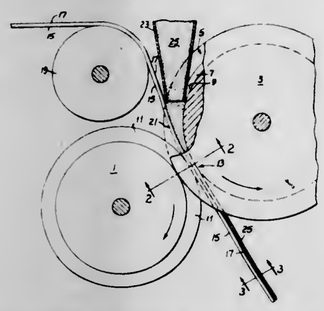


1. A method for the continuous manufacture of zigzag-shaped strutting for lattice structures from elongated metallic material selected from strip and bar stock, comprising passing said elongated material through between two series of meshing triangular bending tools of a forming station to form zigzag-shaped strutting, each series of said triangular bending tools being mounted on a revolving endless carrying chain continuously moved along the forming station, one series of bending tools being staggered by half the pitch of the chains relative to the other series so that the tools mesh while leaving a forming gap and additionally shaping said metallic material in planes extending at right angles to the direction of movement of the strip material.

3,199,176
METHOD OF MANUFACTURING ELECTRICAL CONTACTS

Edgar Freudiger, Norton, and Paul A. Dion, North Attleboro, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Nov. 8, 1961, Ser. No. 151,419
13 Claims. (Cl. 29—155.55)

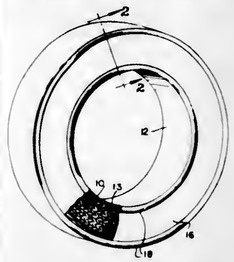


1. The process of manufacturing electrical contacts comprising squeezing a layer of a clean mixture of respectively highly conductive and highly refractory metal powder materials against a clean metal backing strip to form solid-phase green bonds between the particles of the powders and also between some of them and the strip to form a composite strip, sintering the green bonded composite strip to improve the bonds, coining the composite strip to form pellet-like shapes therein in the form of bonded conductive and refractory material on one side of the backing strip and welding projections on the other side of the backing strip, and blanking out from the composite strip said pellet-like shapes to form individual contacts.

3,199,177
METHOD FOR ENCASING MAGNETIC CORES

James Campbell Brandon, Jr., and Theodore Henry Frank, Jr., Butler, and Robert Howard Rahiser, Evans City, Pa., assignors to Magnetics, Inc., Butler, Pa., a corporation of Pennsylvania

Original application May 24, 1955, Ser. No. 510,635, now Patent No. 3,018,455, dated Jan. 23, 1962. Divided and this application Jan. 19, 1962, Ser. No. 173,604
9 Claims. (Cl. 29—155.56)



1. Method for assembling a magnetic core device having a magnetic core supported within an encasement which includes a trough-like metallic non-magnetic container having an open end and a non-magnetic closure means for the open end of the container comprising the steps of

inserting a magnetic core within the trough-like non-magnetic metallic container,

distributing a cushioning material within the container,

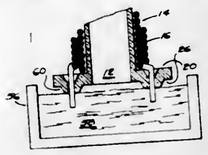
disposing an electrically insulating closure in the open end of the container, and

deforming the container to secure the closure means to the container.

3,199,178
METHOD OF SECURING ELECTRICAL COMPONENT LEADS TO A SUPPORT

John O. Renskers, Crystal Lake, Ill., assignor to Collcraft, Inc., Cary, Ill., a corporation of Illinois

Original application Aug. 17, 1959, Ser. No. 834,307. Divided and this application Apr. 22, 1963, Ser. No. 274,675
9 Claims. (Cl. 29—155.56)

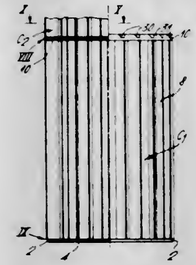


5. In a circuit component including a molded synthetic thermoplastic support member having a central post portion and a radially extending flange portion at one end of the post portion, wherein the face of the flange portion opposite from the post portion has a plurality of circumferentially spaced substantially conical projections extending axially therefrom and wherein said flange portion and said conical projections have holes extending therethrough, and a helically wound coil having terminal leads extending axially from one end thereof, the method of assembling said circuit component comprising, inserting said helically wound coil over said post portion with the axially extending terminal leads axially extending through the holes in said flange portion and said substantially conical projections and axially projecting beyond said substantially conical projections, and dipping the projecting ends of said axially extending terminal leads in a molten tinning bath for heating and tinning the same and for heating the substantially conical projections to cause the same to heat flow and fill the holes therein about the axially extending terminal leads in said flange portion and substantially conical projections.

3,199,179
METHOD OF MAKING BLADED ROTORS FOR FLOW MACHINES

Nikolaus Laing, Stuttgart, Germany, assignor, by mesne assignments, to Laing Vortex, Inc., New York, N.Y.

Filed Feb. 15, 1961, Ser. No. 89,547
Claims priority, application Germany, Feb. 15, 1960, L 35,371
7 Claims. (Cl. 29—156.8)



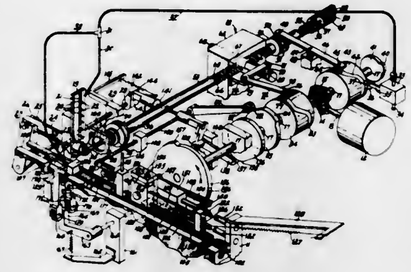
1. A method of making a composite bladed rotor comprising the steps of forming a plurality of cylindrical pots from sheet material each pot having an open top and a bottom having one cylindrical end portion radially displaced from the other by substantially the thickness of the wall of the pot, placing a support element at the bottom of each pot with one surface against the bottom and another against the inside of the side wall over substantially the whole bottom portion peripheral extent thereof, shearing the cylindrical wall of each pot along lines running longitudinally thereof while the bottom portion of said side wall is supported by said support element against pressure set up in shearing, said shearing leaving continuous cylindrical portions at the top and bottom of the pot, while simultaneously twisting the portions of the cylindrical wall of each pot between adjacent shear lines to form rotor blades and thereby locking the support element between the bottom of the pot and the adjacent ends of the blades, forming tabs extending axially from the open top cylindrical portion of each pot, telescoping the bottom cylindrical portion of one pot with the top cylindrical portion of the next to bring the bottom oft he first pot against the blades at the top of said next pot, and turning in the tabs of said next pot to locate between the blades of the first pot and hold said two pots together.

3,199,180
WEATHERSTRIP FASTENER INSTALLATION

Edward P. Driscoll and Howard T. Walther, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 9, 1963, Ser. No. 315,002
20 Claims. (Cl. 29—208)

1. An assembling machine capable of finding predetermined aperturing in elongated weatherstrip means and fitting headed fastener devices therein regardless of irregular spacing between aperturing locations, comprising, frame means for supporting in cooperative relationship components including a weatherstrip guide and fastener feeding means mounted substantially laterally adjacent to each other, a spindle means having a fastener transfer end movable between differing axial positioning coinciding with locations of said fastener feeding means and weatherstrip guide means, cam-operated means to shift fastener devices from said feeding means to said spindle means end, power means to impart rotative movement to said spindle means end having a fastener device

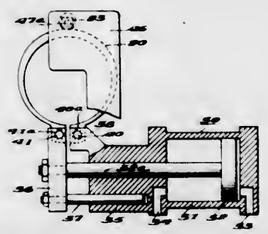


therewith being fitted where headed into weatherstrip means aperturing and programed for the rotative movement when said spindle means end is aligned with said weatherstrip guide means, and an indexing mechanism supported to have a pivotal finger portion engageable with individual aperturing of the weatherstrip means progressively shifted thereby to move as programed for successive fastener installation.

3,199,181
RETAINING RING APPLICATION AND A RETAINING RING AND AN ASSEMBLING AND DISASSEMBLING FIXTURE FOR USE THEREWITH

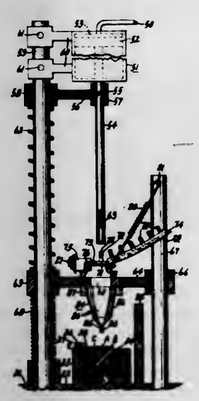
Hans Erdmann, Maplewood, N.J., and Hugo Wurzel, Bronx, N.Y., assignors to Waldes Kohinoor, Inc., Long Island City, N.Y., a corporation of New York

Original application Feb. 9, 1961, Ser. No. 88,126, now Patent No. 3,104,905, dated Sept. 24, 1963. Divided and this application Jan. 17, 1963, Ser. No. 258,094
3 Claims. (Cl. 29—229)



1. Means for spreading a split spring retaining ring within a bore groove comprising a generally circular band-form member of spring material and being of split construction whereby it is spreadable and contractible within limits, said member having progressively decreasing radial thickness from its middle section to its free ends whereby it deforms circularly and being provided along one edge with ring engaging means, and power means operatively connected to the free ends of said member for effecting limited contraction of said member as may be necessary to initially engage said ring engaging means with the ring to be spread and thereupon for spreading said member to in turn spread said ring.

3,199,182
APPARATUS AND ARTICLE OF MANUFACTURE
Edward P. Harris, Dayton, and Cletus L. Moorman, Trotwood, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application June 22, 1961, Ser. No. 126,419. Divided and this application Nov. 20, 1963, Ser. No. 324,969
1 Claim. (Cl. 29—235)



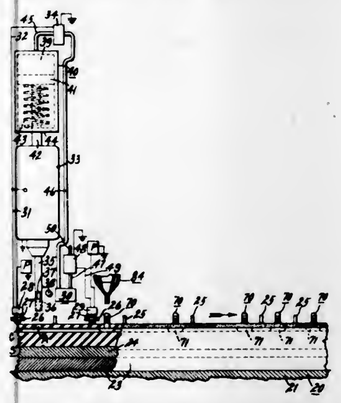
For apparatus to assemble plastic nail-like fastening devices each with an oblong head portion and integral stem portion to fit in predetermined locations along an elastomeric sealing strip having a laterally apertured and longitudinally extending cavity adjacent to an underside thereof, an inserting mechanism comprising, a rod-like driver means reciprocable and movable against spring bias, a post-like guide member provided adjacent and substantially parallel to said driver means, a rocker arm pivotally journalled adjacent to a lower end of said guide member and having a stem-portion recess located angularly to an axis of said driver means and said guide member, and tension spring means secured between said rocker arm and said guide member, said rocker arm being pivotable under urging of said driver means against bias of said spring means such that one end of an oblong head portion of a fastening device having a stem portion thereof in the recess of said rocker arm the movement of which dilates the elastomeric sealing strip where apertured to force fit said oblong head portion in a rocking action into the cavity of the sealing strip.

3,199,183
METHOD OF APPLYING WELDING STUDS TO WORKPIECE
Francis S. Napoli, Troy, Mich., assignor to Lattner Bros. Machining Co., Ferndale, Mich., a partnership
Filed Oct. 14, 1963, Ser. No. 315,828
5 Claims. (Cl. 29—423)



1. The method of applying weld studs to a workpiece which comprises the steps of inserting a plurality of weld studs into holes in a flexible stud carrier means in predetermined positions, attaching said carrier means to a jig, placing said jib adjacent said workpiece, securing said jig and carrier adjacent said workpiece, welding said studs on said workpiece and removing the jig from said workpiece.

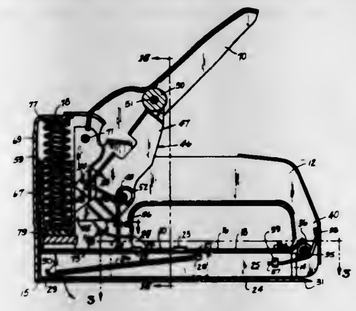
3,199,184
ELASTOMERIC SEALING STRIP AND MOUNTING MEANS ASSEMBLY PROCEDURE
Edward P. Harris, Dayton, and Cletus L. Moorman, Trotwood, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 22, 1961, Ser. No. 126,419
7 Claims. (Cl. 29—429)



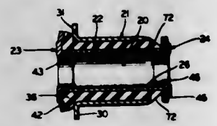
1. An elastomeric sealing strip and mounting means assembly procedure comprising, the steps of feeding the elastomeric sealing strip along a predetermined path, aperturing the sealing strip in predetermined locations so as to provide access to an internal longitudinally extending cavity from only one side of the elastomeric sealing strip externally thereof, dilating the elastomeric sealing strip for increasing size of the aperture in a location where said aperturing occurred, inserting individually in each location of said aperturing only one of a plurality of successively installable plastic nail-like fastening means each with a stem integrally joined to a head portion having at least one lateral dimension larger than diameter of said aperturing yet to fit into the cavity during said dilating that at least temporarily increases size of said aperturing, and releasing the plastic fastening means individually to remain with the head portion thereof in the cavity simultaneously upon said release there being a resilient return of the elastomeric sealing strip to a condition of size and shape substantially like that prior to said dilating though now snugly retaining the head portion of each fastening means with the stem thereof projecting through the locations of said aperturing along only the side of said dilating and said inserting.

3,199,185
TACKER AND METHOD OF SECURING A FOLLOWER WITHIN A MAGAZINE
Elliott J. Lash, Seaford, and Menachem Futter, Jamaica, N.Y., assignors to Swingline Inc., Long Island City, N.Y., a corporation of New York
Filed May 24, 1963, Ser. No. 283,029
3 Claims. (Cl. 29—434)

3. A method of securing a follower within a magazine of a fastening device comprising the steps of forming said magazine with a roof portion provided with a longitudinal slot therealong having a transversely enlarged portion at the rear thereof, forming a follower with a top portion having outwardly extending support normally slidably and partially disposed within said slot but being able to pass through said transversely enlarged portion, passing the outwardly extending support of said follower through said transversely enlarged portion of said slot, sliding said follower forwardly along said slot, and thence disposing a stop member rearwardly intervening said follower so that said outwardly extending support cannot clear said transversely enlarged portion of said slot.

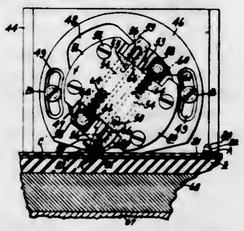


3,199,186
METHOD OF MAKING RUBBER BUSHINGS
Robert F. Simpson, Sarasota, Fla., assignor to The Monarch Rubber Company, Hartville, Ohio, a corporation of Ohio
Original application July 19, 1962, Ser. No. 211,020. Divided and this application Nov. 1, 1963, Ser. No. 320,789
7 Claims. (Cl. 29—450)



1. The method of forming a resilient bushing assembled from an inner member with an outer cylindrical surface of fixed diameter, an outer member with an inner cylindrical surface of fixed diameter and of less axial length than the inner member outer surface and terminating at one end in a radially outwardly extending flange, and an annular rubber-like bushing having a generally cylindrical body and a radially outwardly flanged end, the rubber-like bushing body having a major portion with a smaller inner radial dimension than the fixed diameter of the inner member outer surface and with a larger outer radial dimension than the fixed diameter of the outer member inner surface, and said body having a smaller axial length than the axial length of the outer member inner surface; including the steps of assembling the inner member telescoped within the outer member with the bushing extending axially therebetween expanded radially outwardly by the fixed inner member outer surface and compressed radially inwardly by the fixed outer member inner surface and axially elongated so as to be under substantial stresses including tensile stresses, during said assembling positioning the bushing flanged end axially compressively abutting the outer member flange radially outward of the inner member outer surface, during said assembling positioning a part of the bushing body through said axial elongation of said bushing axially overhanging the outer member end opposite from said flnaged end and radially outward of the inner member outer surface, and after said assembling removing a portion of said bushing body overhanging part to form an inward angled surface on said bushing body extending from the outer member end angling inwardly toward the inner member outer surface, to thereby relieve certain of the bushing stresses.

3,199,187
FASTENER ASSEMBLY PROCEDURE
Richard W. Lyday, Brookville, and Cletus L. Moorman, Trotwood, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application June 22, 1961, Ser. No. 118,836, now Patent No. 3,139,674, dated July 7, 1964. Divided and this application Oct. 28, 1963, Ser. No. 319,327
4 Claims. (Cl. 29—453)

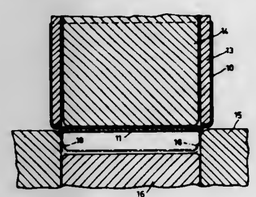


1. In procedure for progressively assembling integrally headed nail-like fastening devices each with a stem portion and an elastomeric sealing strip having a longitudinally extending cavity adjacent to an underside thereof with access openings thereto in predetermined locations, steps comprising, feeding the fastening devices individually to a location remote from the sealing strip, temporarily retaining the stem portion of each fastening device radially outwardly on a reciprocable rocker means positioned for a time interval adjacent to the remote location such that where integrally headed each fastening device projects laterally beyond the rocker means and ultimately each can engage the predetermined access opening that is smaller than the fastening device where integrally headed in order to attain snap fit assembling, moving the sealing strip longitudinally thereof through a location at least momentarily tangential to a path of substantially arcuate configuration coinciding in a predetermined manner for fastening device transfer, rocking the integrally headed nail-like fastening device in the arcuate path while still retaining the stem portion, simultaneously and instantaneously dilating the corresponding smaller opening of the sealing strip temporarily deformed sufficiently for entry of the larger integrally headed nail-like fastening device therethrough into the cavity with snap fit assembling during said rocking, and releasing the stem portion left to project through the sealing strip opening for mounting purposes.

3,199,188
METHOD OF MANUFACTURING COOKING VESSELS WITH A HEAT DISTRIBUTION PLATE THEREON
Gustav Börje Ottinge, Ronneby, Sweden, assignor to Kockums Jernverks Aktiebolag, Malmo, Sweden, a corporation of Sweden
Filed Apr. 1, 1963, Ser. No. 269,419
Claims priority, application Sweden, Nov. 3, 1959, 10,256/59
6 Claims. (Cl. 29—475)

1. In a method for manufacturing stainless steel cooking vessels having a heat distribution plate secured to the outside of the bottom of the vessel, the steps of providing an initial vessel having a width greater than that of the finished cooking vessel, placing a heat distribution plate over the outer surface of the bottom of said initial vessel with a brazing material disposed between the bottom and

plate to form of said plate, bottom and brazing material a sandwich structure, pressing said heat distribution plate against said bottom between plane press surfaces, induction heating said sandwich structure when this is pressed together, to fuse said brazing material and thereby form a fused metal bond between the bottom and plate, the central area of said sandwich structure being heated with greater intensity than the marginal area thereof, and transferring the material in a marginal area of the bottom to the wall of said initial vessel by plastic working operations to reduce the width of said initial vessel to the intended width of the finished cooking vessel.



3,199,189
GOLD ALLOY CLADDING

Jerry C. La Plante, Bayside, N.Y., assignor to Alloys Unlimited Inc., Long Island City, N.Y.

No Drawing. Filed Mar. 29, 1962, Ser. No. 183,384
4 Claims. (Cl. 29—488)

1. The process of cladding gold alloys of the group including gold germanium, and gold silicon on a metal substrate comprising the steps of;

cladding the substrate on one side with gold foil,

leaching the gold alloy for a period of six hours in hydrofluoric acid to provide a porous gold rich surface layer thereon,

placing the leached gold alloy in contact with said gold clad on said substrate, and

hot rolling said gold alloy and said substrate together at a temperature below the melting temperature of the alloy.

3,199,190
SOLDER FLUXES

Harry B. Laudenslager, Jr., Jamestown, N.Y., assignor to Blackstone Corporation, a corporation of New York

No Drawing. Original application June 25, 1959, Ser. No. 822,754, now Patent No. 3,099,590, dated July 30, 1963. Divided and this application Oct. 22, 1962, Ser. No. 232,255
3 Claims. (Cl. 29—495)

1. The method of soldering which comprises applying to the surfaces to be soldered a solder flux consisting essentially of the reaction product of an organic amine with hydroxyacetic acid, heating said surfaces to soldering temperature and applying a solder composition to the heated surfaces.

3,199,191
METHOD OF MACHINING LIP-TYPE SEALS

Robert L. Dega, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

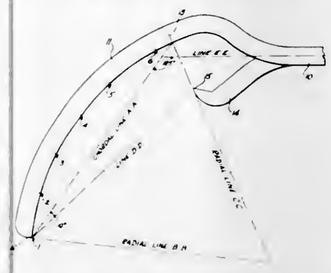
No Drawing. Filed Aug. 1, 1960, Ser. No. 46,338
1 Claim. (Cl. 29—529)

A method of forming elastic lip seals comprising, molding a blank of deformable elastic material, mounting the blank on a rotatable holding fixture, rotating the holding fixture at a machining speed, conveying coolant at a predetermined temperature to the rotating blank in sufficient amounts to extract latent heat from the blank, engaging said blank with a chip-forming tool while said blank is being rotated by said fixture after said blank has been rendered inelastic to remove discrete particles from said blank and form a plurality of surfaces of revolution thereon whereby the blank takes the form of a lip-type seal, and controlling the temperature of the coolant conveyed to the blank while the chip-forming tool is engaging the blank so that the tool will cut discrete particles from the blank while continuously engaging the blank without intermittently disengaging and chattering.

3,199,192
CAN PIERCING AND CUTTING TOOL

Ernest Thomas, Roselle, and Mark J. Rodman, Mundelein, Ill., assignors to Ekco Products Company, Chicago, Ill., a corporation of Delaware

Filed Feb. 28, 1963, Ser. No. 261,666
5 Claims. (Cl. 30—16)



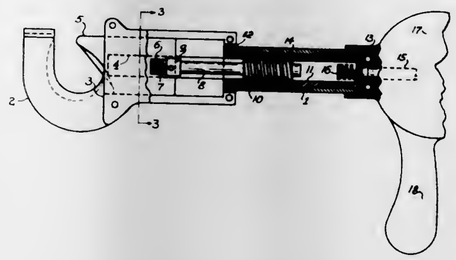
1. A metal can end wall piercing and cutting tool, said tool having an elongated flat handle portion and a blade from which said handle portion extends rearwardly, said blade having a sharpened point from which longitudinal edge portions of the blade diverge uniformly rearwardly to define the forward end portion of the tool, said forward end portion being curved rearwardly from said point along the arc of a circle having a radial dimension approximately equal to the chordal dimension of said arc with the concave side facing downwardly, and an integral tank extending forwardly and downwardly of said handle into the area below said forward end portion of the tool, said tang having a forwardly and upwardly extending sharpened edge which occupies a position along a straight line from substantially the rear terminal of said arc and drawn radially of said circle at a distance below said forward end portion approximately one-fifth the total length of said radially extending line, said tang edge when positioned in upward and forward engagement with the peripheral bead of a can end wall providing a fulcrum on which said tool is rockable incident to upward pressure on the handle portion from an initial position wherein the point of the blade is in downward engagement with the upper surface of the can end wall surrounded by said bead to an advanced position wherein the point of the blade is below said can end wall and said blade and the can end wall surface underlying said tool define an angle of not less than 60 degrees, said blade thereby performing a cutting action on the material of the can end wall without application of sharply fluctuating rates of upward pressure on the handle during such movement of the tool from initial to advanced position.

3,199,193
POWER OPERATED CUTTER

Vladimir S. Norty, 160 Dewitt St., New Haven, Conn.

Filed Aug. 12, 1963, Ser. No. 301,421
3 Claims. (Cl. 30—228)

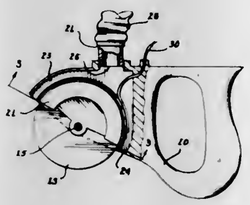
3. A power operated cutter comprising a body; a fixed cutting edge and a movable cutting blade on said body; a plunger screw secured to said cutting blade and having a threaded portion; a sleeve reversibly rotatable on said body, retained against axial movement, and having a threaded portion for cooperation with the threaded portion of said screw, so adapted that, at one direction of rotation of said sleeve said cutting blade and screw are advanced toward said fixed cutting edge into their extreme front position where the threaded portion of the screw moves out of engagement with the threaded portion of said sleeve and at the opposite direction of rotation of said sleeve said cutting blade and screw are withdrawn from said fixed cutting edge into their extreme rear position where the threaded portion of the screw moves out of engagement with the threaded portion of said sleeve; a pair of buffer springs, so adapted that one is compressed in the extreme front position, the other in the extreme rear position of said plunger screw, providing pressures to facilitate the reengagement of said cooperating threaded portions at the reversal of the rotation of said sleeve; reversible driving means with power supply for the rotation of said sleeve.



3,199,194
CAST CUTTER

George Shaheen, Phoenix, Ariz., assignor to W. A. Bishop, Jr.

Filed Jan. 6, 1964, Ser. No. 335,863
13 Claims. (Cl. 30—276)



1. A cast cutter comprising:

(a) a cutting blade mounted for rotation about an axis;

(b) a stator for generating an alternating magnetic field in response to an impressed alternating current;

(c) rotor means responsive to said alternating magnetic field for alternately accelerating said rotor in one direction and in the opposite direction;

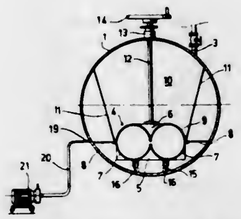
(d) means securing said rotor to said cutting blade for accelerating said blade and forcing it to oscillate about said axis; and

(e) means including a vacum port adjacent said cutting blade for conducting particles dislodged by said blade away from said cutter.

3,199,195
CHEESE MOLD APPARATUS

Geert de Boer, Lippenhuizen, Netherlands, assignor to N.V. Volma, Gorredijk, Netherlands, a Netherlands limited-liability company

Filed Dec. 4, 1963, Ser. No. 328,078
Claims priority, application Netherlands, Dec. 10, 1962, 286,481
3 Claims. (Cl. 31—44)

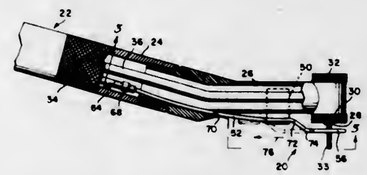


1. Apparatus for the manufacture of pre-formed pieces of curd from curd out of which the whey has been substantially eliminated, said apparatus comprising a stationary vessel providing an enclosed chamber having an inlet for the introduction of a mass of curd, means in said vessel for receiving the mass of curd and for compressing the mass into a desired compressed shape, the later means including at least two elements between which the mass is introduced, said elements being supported for relative movement for compressing the mass therebetween, means including an outlet conduit coupled to the vessel for establishing suction therewithin to enable the mass to be compressed while simultaneously being subjected to suction for the removal of gas from said mass, said vessel having an outlet through which one of said elements is displaceable with the compressed mass supported thereon, and means for displacing the said one element in a direction normal to the direction of relative movement between said elements for discharging said one element with the compressed mass therewith from the vessel and for returning the said one element into the vessel when the latter has been emptied of the compressed mass, said vessel having an outlet for moisture which is extracted from the mass of curd during compression thereof.

3,199,196
DENTAL HANDPIECE

Nathaniel H. Lieb, Philadelphia, and Anthony John Turchi, Bala-Cynwyd, Pa., assignors to Star Dental Manufacturing Co., Inc., also known as Star Dental Manufacturing Company, Inc., and Star Dental Mfg. Co., Inc., Philadelphia, Pa., a corporation of Pennsylvania

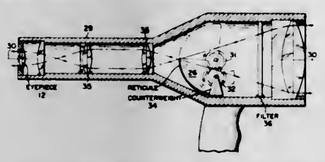
Filed Nov. 19, 1962, Ser. No. 238,470
8 Claims. (Cl. 32—27)



1. In a dental handpiece including a hollow body member, a rotary chuck in one end of said body member, a conduit within said body member for delivering a liquid and a conduit within said body member for delivering a gas, spray means associated with said body member, said spray means including a collar slidably

mounted on said body member and tube means secured to said collar, said tube means having at least one opening therein for delivering fluid to a tooth in the area adjacent a dental bur secured in said rotary chuck, said tube means being connected to said liquid and air conduits by flexible tubing whereby said tube means may be slid into and out of the area adjacent said dental bur by sliding said collar.

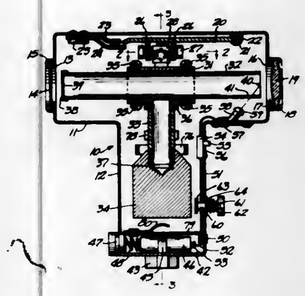
3,199,197
OPTICAL DEVICE FOR DETERMINING THE SIZE OF A SURFACE OBJECT FROM AN AIRCRAFT
Thomas L. MacLeod, Pacific Palisades, and James J. Tolan, Jr., Long Beach, Calif.
Filed Nov. 28, 1961, Ser. No. 155,509
4 Claims. (Cl. 33—64)
(Granted under Title 35, U.S. Code (1952), sec. 266)



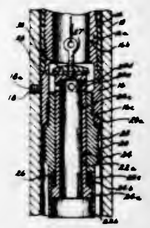
1. A device for facilitating the determination by an observer in an aircraft having a known altitude of the size of an object on the surface, said device being capable of manipulation by said observer and comprising a viewing unit of generally tubular configuration and having an optical axis coinciding with its longitudinal axis, said unit including an eyepiece at one extremity thereof through which the surface object may be viewed by said observer and a fixed alignment marker in the optical path of light passing therethrough, a transparent reticule, and means for mounting said transparent reticule for relative movement with respect to the remainder of said viewing unit and in the optical path of light passing therethrough, and a gravity-controlled member connected to said reticule and acting to maintain the latter in a fixed position with respect to the vertical as the device is manipulated by said observer, said transparent reticule having inscribed thereon a set of spaced-apart indicia each of which optically intersects said fixed alignment marker in the field presented to an observer holding said device and viewing said surface object through said eyepiece, the spacing between the apparent points of intersection of adjacent indicia and said fixed alignment marker varying as a function of changes in the relative position of said movable reticule with respect to the remainder of said viewing unit when the angle made by the optical axis of said unit with the vertical varies upon manipulation of said device by said observer, so that, when said fixed marker is optically aligned by said observer with the particular dimension of the surface object to be determined, then the image of the object as viewed by the observer through said eyepiece will subtend a number of the apparent points of intersection between said marker and said indicia, the number of points of intersection so subtended being a measure of that particular dimension of the object to be determined regardless of the angle made by the optical axis of the manually-held viewing unit with the vertical at the time that the observation is made.

3,199,198
LEVEL SIGHTING DEVICE
Olen Arnold, N. Fulton St., Cassopolis, Mich.
Filed June 21, 1961, Ser. No. 118,612
4 Claims. (Cl. 33—73)

1. A level sighting device comprising a casing having opposed sight openings, an elongated sighting tube between and aligned with said sight openings having an end wall with a small central opening and a cross wire centered therein at the end thereof opposite said wall, a weight fixed to and suspended centrally from said tube, and means suspending said tube and weight from the upper part of said casing, said suspension means comprising a pair of longitudinally spaced transverse members carried by said casing, a pair of axially aligned pivot members carried by said transverse members and having adjacent reduced ends, a member having a set of opposed recesses receiving said reduced pivot ends and having a second set of opposed recesses arranged perpendicularly to said first set of recesses, a tube carrier having a pair of upwardly projecting ears spaced transversely of said tube, and a second pair of axially aligned pivot members carried by said ears and having reduced ends fitting in the recesses of the second set.

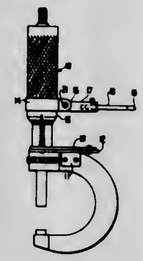


3,199,199
LIQUID LEVEL INDICATOR
Edward B. Harrell, 6509 S. Broadway, Whittier, Calif., and Irving A. Guthrie, La Mirada, Calif.; said Guthrie assignor to said Harrell
Filed Dec. 20, 1961, Ser. No. 160,847
1 Claim. (Cl. 33—126.4)



A liquid level indicator comprising:
(a) a substantially U-shaped elongated frame forming a channel along the length thereof, said frame being formed with a pair of substantially parallel side portions, a bight portion and inwardly directed flanges on said side portions;
(b) an elongated, transparent plastic tubular member having upper and lower ends mounted in said frame, said frame encompassing a substantial portion of the circumference of said tubular member throughout its length;
(c) indicia on one of said flanges adjacent and substantially coextensive with said tubular member;
(d) an adapter having a fluid passage therethrough and having annular ridges thereon, said adapter fixedly inserted in said lower end of said tubular member for insuring a fluid-tight engagement between said adapter and said tubular member;
(e) a valve body fixedly mounted in said adapter, said valve body including a fluid passage open at its lower extremity and in communication at its upper extremity with the interior of said fluid passage in said adapter, said valve body further having an annular valve seat at said upper extremity;
(f) a valve having radially extending valve openings mounted in said valve body;
(g) a resilient annular seal on said valve and cooperating with said valve seat, said valve being longitudinally slidable in said valve body from an open position, whereby said valve openings extend above said valve seat and fluid is permitted to pass into the lower extremity of said fluid passage in said valve body through said openings past said valve seat, and into said tubular member, to a closed position, wherein said openings are in said valve body and said seal is resiliently engaged between said valve and said valve seat to prevent fluid flow therepast;
(h) bias means interposed between said valve body and said valve and normally biasing said valve to said closed position;
(i) and means mounted at the upper end of said frame and connected to said valve through the interior of said tubular member to move said valve to said open position.

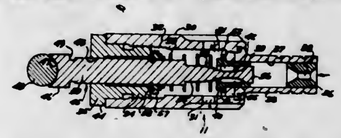
3,199,200
MICROMETER AMPLIFIER
James R. Monroe, 3216 W. Page St., Philadelphia, Pa.
Filed May 28, 1963, Ser. No. 283,820
2 Claims. (Cl. 33—166)



1. A micrometer amplifier of the character described comprising; a flat plate, a graduated dial on one side of the flat plate, a saddle which is substantially the shape of an inverted capital letter U when viewed from either end to fit over the frame of a micrometer caliper, means to clamp the saddle to said frame, the flat plate extending along the central portion of said saddle, on the outer side thereof and secured to said central portion, a thimble clamp to engirth the thimble of a micrometer caliper, a pointer holder, a pointer in telescopic engagement with the pointer holder and a swinging connection between the pointer holder and the thimble clamp to permit adjustment of the pointer towards or away from the graduated dial.

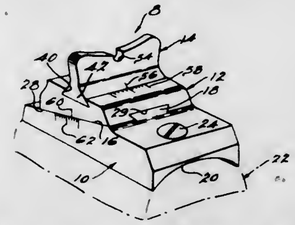
3,199,201
AIR GAUGE HEAD
William A. Minix, Detroit, Mich., assignor to Freeland Gauge Company, Detroit, Mich.
Filed Oct. 30, 1963, Ser. No. 320,043
2 Claims. (Cl. 33—172)

1. In an air gauge for controlling air bleeding in a pneumatic measuring circuit and including
an elongated body having a bore, radial air outlets communicating with the bore and an elongated air inlet;
a cylindrical air inlet bearing in said inlet communicating with said bore;
a hollow open ended bearing nut projected into said bore at and engaging one end of the body;
a work piece engaging stem axially mounted within the body and adjacent its opposite ends guidably, slidably and axially journalled respectively in said intake bearing and said bearing nut; the improvement comprising:
an axially movable spring biased normally closed automatic air shut-off valve of cylindrical shape snugly



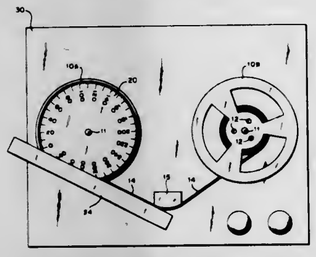
and slidably positioned within said air inlet bearing and joined to said stem, surface portions of said valve having a series of elongated flutes communicating with the inlet bearing bore, said valve adapted for unseating movement outwardly of said inlet bearing upon inward movement of said stem relative to said body, permitting flow of air from said inlet, through said flutes and into said bore;
and an annular outwardly and forwardly tapered flow control valve element on said stem inwardly of said air shut-off valve movable into said inlet bearing for variably regulating the rate of air flow therethrough.

3,199,202
GUN SIGHT MOUNTING
Paul D. Williams, Davison, Mich., assignor to Williams Gun Sight Company, Davison, Mich., a corporation of Michigan
Filed Oct. 19, 1962, Ser. No. 231,744
3 Claims. (Cl. 33—56)



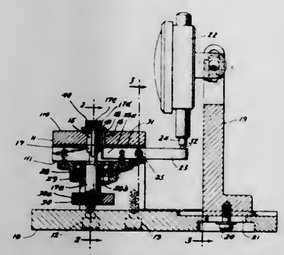
1. In a gun sight mounting arrangement, the combination of, a support base having an inclined upper surface, a slide member, means defining interconnected dovetail-shaped tenons and slots directed longitudinally on said upper surface and said slide member for restraining said slide member against all but longitudinal movement along said upper surface into selected elevational positions, a sighting member, means defining interconnected dovetail-shaped tenons and slots on said slide member and said sighting member for restraining said sighting member against all but movement at right angles to the movement of said slide member, on said support base, means on said slide member for adjustably fixing each of said members relative to said support base including a pair of adjusting screws and wedge blocks, one of said screws threadably engaging said slide member for moving one of said wedge blocks into locking engagement with said sighting member, the other of said screws threadably engaging the other of said wedge blocks for moving it into locking engagement with said support base for locking said members against movement relative to said support base.

3,199,203
TAPE POSITION MARKER
Walter Jacoby, Philadelphia, Pa., assignor of fifty percent to Hubert D. Yollin, Abington, Pa.
Filed Feb. 11, 1964, Ser. No. 344,101
9 Claims. (Cl. 33—172)



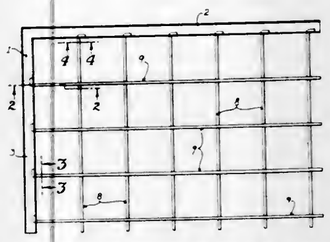
1. A tape position marker comprising a disc, said disc having gripping means on the underside thereof and having circumferential graduations on the upper side thereof, said gripping means being adapted to removably affix said disc to a tape reel to prevent relative rotation of said disc and said reel, tape contained on said reel, part of said tape extending therefrom to form an extension of said tape, and a straight edge having a straight longitudinal edge, said longitudinal edge of said straight edge being placed over said circumferential graduations and aligned with and superpositioned over said extension of said tape.

3,199,204
SQUARENESS GAUGE
David S. Green, Levittown, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed July 16, 1962, Ser. No. 210,008
8 Claims. (Cl. 33—174)



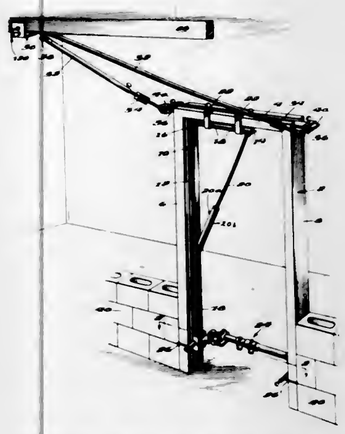
1. A gage comprising, in combination
(1) a support,
(2) a rotatable element carried by said support,
(3) said element including an externally threaded plug member adapted to receive a nut, and concentrically rotate the nut about its axis of tap,
(4) the pitch diameter of the plug threads being slightly greater than the maximum pitch diameter of the nut threads,
(5) the threaded end of the plug being generally diametrically slotted so as to yieldably resist reduction of the pitch diameter when the nut is threaded thereon and thereby insure that good contact is established between mating threads,
(6) a dial indicator carried by said support,
(7) a gaging pin adapted to bear against the nut and to follow movements of points on the surface of the nut relative to the axis tap,
(8) and means for constantly transmitting movements of the gaging pin to the dial indicator.

3,199,205
ALIGNING APPARATUS FOR TILE
Carl N. Halde, 19 American Ave., Santa Barbara, Calif., and Arndt Pedersen, 1007 Delaware St., Huntington Beach, Calif.
Filed Jan. 17, 1963, Ser. No. 252,216
3 Claims. (Cl. 33—180)



1. (a) An aligning apparatus for tile, comprising:
(b) an L-shaped square including right angularly related walls, said walls having a plurality of equally spaced openings;
(c) and a plurality of aligning and spacing rods having offset ends for insertion through said openings for retention by said square, said rods adapted to be disposed in right angularly arranged sets to define a plurality of the receiving squares.

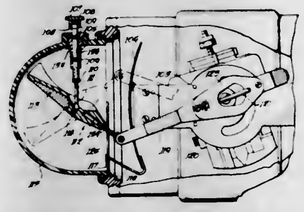
3,199,206
DOOR FRAME PROFILE GAUGE
Rex J. Snapp, 1914 University Blvd., Lima, Ohio
Filed Feb. 19, 1963, Ser. No. 259,692
3 Claims. (Cl. 33—194)



1. Profile gauge means for setting door frames having a horizontal header and a pair of parallel spaced vertical jambs, comprising
a horizontal gauge arm adapted for removable connection in contiguous parallel engagement with the lower surface of the door frame header;
a vertical gauge arm pivotally connected at its upper end with one end of said horizontal gauge arm for contiguous parallel engagement with the inner surface of one jamb of the door frame, at least one of said gauge arms including spirit level means;
indicator means connected between said gauge arms for indicating when said arms are arranged to define an angle of 90 degrees;

horizontal adjustable-length spacer bar means adapted for insertion between said door jambs, one end of said spacer bar means being slidably connected with said vertical gauge arm for vertical sliding movement relative thereto, and said spacer bar means including at least two coaxially-arranged longitudinally-adjustable sections;
releasable means carried by said one end of said spacer bar means for preventing vertical movement of said one spacer bar end relative to said vertical gauge arm;
means for releasably connecting the ends of said spacer bar means with the associated door jambs, respectively, whereby said vertical gauge arm is rigidly maintained in engagement with said one door jamb;
and screw thread means for effecting accurate longitudinal displacement of said spacer bar sections in either direction relative to each other, whereby the spacing between the lower ends of said door jambs may be accurately varied and the desired right-angled arrangement of said vertical and horizontal gauge arms may be achieved.

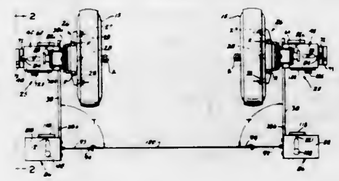
3,199,207
ATTITUDE INDICATOR
James R. Coffing, R.R. 2, Covington, Ind.
Filed Feb. 20, 1961, Ser. No. 91,298
5 Claims. (Cl. 33—204)



2. A three-dimensional attitude indicator comprising, in combination, a casing, a gyroscope within the casing, a gimbal ring, means laterally pivoting the gyroscope within the gimbal ring, means pivoting the gimbal ring fore and aft within the casing, lever means attached to the gyroscope and extending forwardly, a transparent bubble at the front of the casing, a miniature aircraft pivoted within the casing to assume an attitude of climb and dive, said lever attached to said gyroscope being pivoted to the gimbal ring at a mid-portion, a first end of the lever being pivotally connected to the nose of the miniature aircraft, means extending laterally from the gyroscope and aft of the gyroscope lateral pivot axis, said extending means being engaged with a second end of the lever, said miniature aircraft being pitched responsive to the relative pitch between the gyroscope and the gimbal ring, a terrain simulating reference secured to the gimbal ring and located in the lower portion of the bubble, said terrain reference including converging vertical and horizontal parallel lines to simulate a fixed grid in perspective, the whole in such combination that the miniature aircraft assumes an attitude of climb, dive, and bank with respect to the terrain reference in the same relationship as the aircraft using the attitude indicator climbs, dives, and banks with respect to the earth.

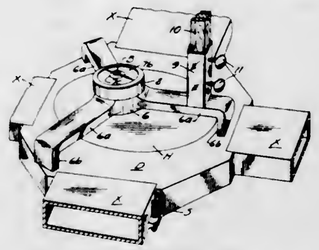
3,199,208
VEHICLE WHEEL ALIGNMENT APPARATUS
Lee Hunter, Rte. 1, Box 136, Creve Coeur, Mo.
Filed July 5, 1962, Ser. No. 207,486
7 Claims. (Cl. 33—203.18)

1. In alignment apparatus for vehicle wheels: a first device mounted adjacent the face of each of a pair of wheels, each of said first devices including a spindle centerable to the adjacent wheel axis, a bracket operably mounted on said spindle, an arm projecting from said first device, and means to level said arm; a second device mounted on an arm of each of said first devices, each second device including a movable measuring lever extending to intersect said arm on a first device, calibrated finder means carried by said second device to find the



moved position of said measuring lever, signal means operably responsive to said finder means to create a signal upon finding the moved position of said measuring lever; and a line interconnecting said measuring levers of said second devices to cause said levers to assume aligned positions relative to the pair of wheels, said finder calibrations indicating the angular intersecting relationship of said measuring levers with the arms on said first devices.

3,199,209
DEVICE FOR LEVELING AND SETTING TO GRADE ELEVATIONS, FLOOR DUCT BOXES AND THE LIKE
Ralph J. W. Bergquist, 6009 Newton Ave. S., Minneapolis, Minn.
Filed Mar. 19, 1962, Ser. No. 180,711
1 Claim. (Cl. 33—207)



A combination, simplified bubble level and stick socket for levelling and setting to grade, floor duct boxes and the like having in combination precisely the following components:
a central mounting of hub form having an upwardly extending boss externally threaded,
a substantially circular bubble chamber with liquid contained therein having a transparent top to provide for sight location of said bubble, said bubble chamber having a base supported upon and substantially fitting the top of said boss,
an internally threaded cap ring engaging the periphery of said boss and rigidly securing said bubble chamber thereto,
said mounting having integrally formed therewith precisely three outwardly and radially extending legs in equiangular relationship secured thereto, all of said legs terminating in downturned narrow supporting feet having supporting extremities disposed in a common plane,
the medial portions of said legs extending substantially horizontally,

a rigid, upstanding stick socket affixed to the medial portions of one of said legs and having a vertical center line disposed perpendicularly to the plane defined by the extremities of said supporting feet and said socket having an indexing upper lip at one edge thereof disposed a predetermined distance above said plane,

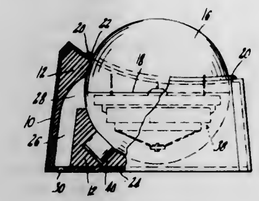
and the center or axis of said bubble chamber being disposed truly perpendicular to said plane.

3,199,210

SPHERICAL COMPASS

Kenneth B. Ledgerwood, Dorchester, Mass., assignor to All Hands, Incorporated, Hingham, Mass., a corporation of Massachusetts

Filed Jan. 23, 1962, Ser. No. 168,151
4 Claims. (Cl. 33—223)



1. A compass comprising a spherical enclosure at least part of which is transparent, transparent liquid disposed in said enclosure, a pivotally mounted support member inside said enclosure, a magnet-carrying compass card pivotally carried by said support member thereabove, and a sealed gas-filled compression chamber carried by said support member below said compass card, said compass including a soft, yieldable foam member cupping and carrying said enclosure and a rigid skin member around said foam member, said skin member including a hole-defining edge seated in a groove of said foam member, said foam member including a hole with therearound a reversely directed lip defining with the main body of said foam member said groove, and less than half of said enclosure protruding upwardly through said foam member hole, the latter being of diameter less than the outer diameter of said enclosure, whereby said enclosure is insulated against shocks and compass card stability is improved.

3,199,211

METHOD OF PRESEASONING GREEN OR PARTIALLY SEASONED WOOD

Ralph H. Bescher, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Feb. 16, 1962, Ser. No. 173,774
6 Claims. (Cl. 34—9.5)

1. A method of rapidly preseasoning green and partially seasoned wood which comprises the steps of:

subjecting said wood to a predetermined pressure with inert non-condensable gas so as to impregnate the wood with said gas, and thereafter without changing the pressure,

subjecting said wood to an aliphatic hydrocarbon which boils below the boiling point of water but which can be liquefied at ambient temperature conditions at pressure above atmospheric pressure and which is a liquefied petroleum gas selected from the group consisting of butane, isobutane, propane and isopropane,

subjecting said wood and hydrocarbon to increased pressure whereby the hydrocarbon penetrates said wood as a liquid, and

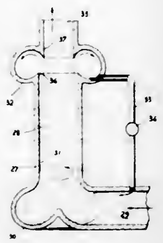
thereafter releasing the pressure, thereby expanding the non-condensable gas and evaporating the hydrocarbon and thus expelling the free water and removing the hydrocarbon from the wood.

3,199,212

FLUIDIZED PARTICLE HEAT EXCHANGE

Claude Desire Foure, Courbevoie, France, assignor to Société Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France

Filed Mar. 18, 1960, Ser. No. 16,049
Claims priority, application France, Mar. 21, 1959, 790,057
3 Claims. (Cl. 34—10)



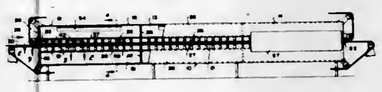
1. In a process for heat exchange between a fluid flow in a given direction and a stationary heat exchange surface, the steps of introducing solid particles into the fluid flow, inducing in the fluid flow a plurality of elementary flows substantially parallel to the same direction, each of said elementary flows having a steady helical movement about an axis parallel to said direction, each of said rotating elementary flows sweeping a part of the heat exchange surface and being bordered by at least one adjacent elementary flow, adjacent elementary flows rotating in opposite directions.

3,199,213

METHOD OF CHANGING THE MOISTURE CONTENT OF WOOD

Frederick H. Milligan, Port Coquitlam, British Columbia, Canada, and Charles W. Hoyt, Cambridge, Mass., assignors, by direct and mesne assignments, to Crown Zellerbach Canada Limited, Vancouver, British Columbia, Canada, a corporation of the Province of British Columbia, Canada

Filed July 12, 1961, Ser. No. 123,535
8 Claims. (Cl. 34—13.8)



4. The method of changing the moisture content of wood of generally planar configuration which comprises raising the moisture content of the wood by impinging a gas at a dry bulb temperature of from 140 to 212° F. against a major planar surface of the wood to be treated substantially normal thereto at a velocity ranging from about 1000 f.p.m. to at least 11000 f.p.m. for a time sufficient and with the relative, humidity of the gas adjusted to establish a desired equilibrium moisture content.

3,199,214

METHOD OF TREATING WET MOVING TOW BANDS OF FILAMENTARY MATERIAL

William R. Osbun, Gulf Breeze, and John W. Lane, Pensacola Beach, Fla., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

Filed Oct. 13, 1961, Ser. No. 144,987
3 Claims. (Cl. 34—23)



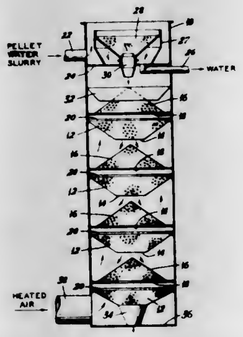
1. A method for preparing a wet moving tow band for subsequent treatment by removing a portion of the excess liquid entrained therein and slightly opening up the tow to provide gas passageways therein, comprising passing one side of the wet tow band under tension across a wall of a first conduit means provided with orifice means; directing gas moving at high velocity from said orifice means against said one side of the tow band as it passes across and is deflected by said conduit wall; passing the other side of the wet tow band under tension across a wall of a second conduit means provided with orifice means; and directing gas moving at high velocity from said orifice means against said other side of said tow band as it passes across and is deflected by said second conduit wall.

3,199,215

CASCADE DRIER FOR DEWATERING AND DRYING PELLET-WATER SLURRIES

Dale R. Jesse, Monterey Park, Calif., and William G. Crocker, Odessa, Tex., assignors to Union Carbide Corporation, a corporation of New York

Filed Oct. 4, 1961, Ser. No. 142,942
4 Claims. (Cl. 34—69)



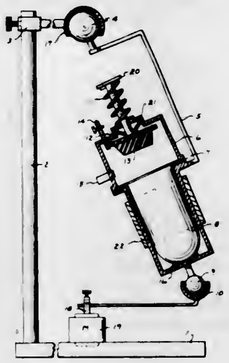
1. Cascade drier for pellets comprising a shell having a dewatering section in the upper portion thereof, means for supplying pellet water slurry to said dewatering section, means for supplying heated air to the lower portion of said shell, and a series of sets of inclined screens interposed between said dewatering section and the lower portion of said shell, said dewatering section having an annular cup of smaller diameter than said shell, said cup comprising a rim at least a portion of which is spaced inwardly of said shell, an inverted frusto-conical dewatering screen having a discharge outlet for pellets in its lower portion, said screen being mounted in said cup and secured along its upper periphery to said cup about the inner wall thereof, and a water outlet connected to said cup, whereby much of the water is drained from the pellets and the accumulated pellets in said slurry overflow the rim of said cup onto said dewatering screen and are discharged onto said series of sets of inclined screens for cascade drying treatment.

3,199,216

APPARATUS FOR SHELL FREEZING OF HEAT SENSITIVE LIQUIDS

Samuel M. Broadwin, 301 E. 62nd St., New York 21, N.Y.

Filed Aug. 9, 1961, Ser. No. 130,280
6 Claims. (Cl. 34—92)



1. A device for shell freezing of heat sensitive liquids which includes a centrifugal device for supporting a single container, said single container having upper and lower ends supported in said device in an angular position, a motor having a vertical drive axis and driving arm extending perpendicular from said drive axis and rotated by said motor, the upper end of said container supporting device pivotally mounted at a point on the driving axis of said motor, the lower end of said container supporting device pivotally mounted on an outer extremity of said driving arm to be rotated about the motor axis to produce the necessary centrifugal force for shell freezing of the liquid in said container, said container being closed at the lower end and having an open mouth at the upper end, a vacuum sealing cover for the mouth of said container and an axially movable stopper mounted for reciprocation in the sealing cover and sealing the mouth of said container, a vacuum producing source connected to said vacuum sealing cover, and a vacuum release valve in said vacuum sealing cover.

3,199,217

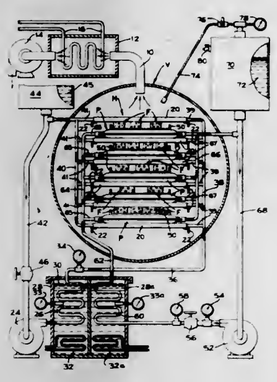
FREEZE DRYING APPARATUS WITH INFLATABLE PLATEN CONTACT HEATING

Henry A. Oldenkamp, Saratoga, and Robert F. Small, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Mar. 28, 1962, Ser. No. 183,213
5 Claims. (Cl. 34—92)

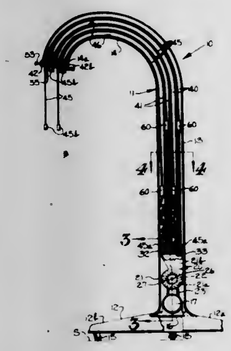
1. Apparatus for subliming the ice in frozen products comprising a vacuum chamber, means for maintaining the vapor pressure in said chamber below the triple point pressure of water, product heating means in said chamber for conducting heat to the lower and upper surfaces of the product, said product heating means comprising lower and upper spaced hollow inflatable platens, cor-

rugated members on opposed faces of said platens for engaging the product and conducting heat thereto while providing for vapor escape, one of said platens having a flexible wall, means for supporting the platens in said chamber, liquid supply means for directing heated liquid to said platens at a pressure sufficient to flex the flexible



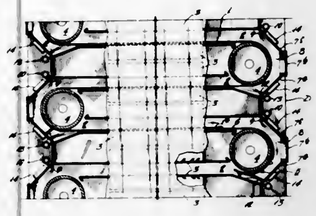
wall of said one platen and increase the volume of the platen to bring said product heating means into heat conducting engagement with the product, and pressure regulating means connected in said liquid supply means for limiting the pressure applied to the ice in the product by said corrugated members to a unit value below that of the triple point of water.

3,199,218
HAIR DRIER
Jean T. Bean, Box 302, Pinehurst, N.C.
Filed Aug. 21, 1961, Ser. No. 132,927
5 Claims. (Cl. 34—98)



5. Apparatus for drying hair by warm air currents comprising a housing, means within said housing for dividing said housing into a plurality of separate chambers, a flexible tubular member disposed in each of said chambers in said housing and having an inner end portion fixed in said housing and an outer end portion mounted for movement between a retracted position wherein the same is disposed substantially within said housing and an extended position wherein the same is disposed at least partially outside of said housing, said outer end portions of said flexible tubular members when in extended position being adapted to receive curler means thereon which in turn are adapted to be placed in intimate relation with the hair of a person using the apparatus, means communicatively connected to the inner end portions of said tubular members for supplying heated air through said tubular members to the hair of the user, releasable latch means mounted on said housing and engageable with the outer end portion of each of said tubular members for releasably maintaining the same in the extended position, and means disposed within said housing and operatively connected to each of said tubular members for moving the outer end portions thereof from the extended position to the retracted position upon release of said latch means.

3,199,219
ARRANGEMENT IN A DEVICE FOR THREADING A WEB OF MATERIAL BY MEANS OF A SO-CALLED PILOT
Anders Brauer, Stockholm, and Rolf Pehrson, Mullsjo, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Mar. 19, 1962, Ser. No. 181,230
2 Claims. (Cl. 34—120)



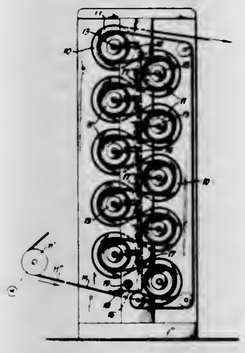
1. An arrangement for threading the leading end of a web of material through a treatment plant having a plurality of web passages and turning rolls at the ends of said passageways, comprising in combination therewith: baffles forming a return enclosure around said rolls; a relatively stiff, bendable, air floatable pilot means adapted for connection to a web to feed it through said passageways and around said rolls, said pilot having air-catching pockets on the sides thereof, which pockets are opened by bending around said rolls; and means in said return enclosures for directing air blasts tangentially of said rolls intermediate said pilot and said baffles and against said pilot to bend it around a roll and advance it back into a passageway.

3,199,220
CYLINDER-DRYING MACHINE
Josef Küppers, Monchen-Gladbach, Rhineland, Germany, assignor to Firma Franz Muller Maschinenfabrik, Monchen-Gladbach, Germany, a corporation of Germany
Filed Nov. 13, 1961, Ser. No. 151,669
Claims priority, application Germany, Feb. 21, 1961, M 48,105
1 Claim. (Cl. 34—121)

A cylinder-drying machine for tension-free drying, comprising

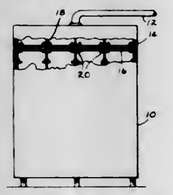
a plurality of rotating drying cylinders forming at least one group of said drying cylinders,
a drive shaft coordinated to each of said drying cylinders,
said drying cylinders including a first drying cylinder and a plurality of additional drying cylinders,
a driving disc freely rotatable on each of said drying shafts,
a friction coupling means between each of said driving discs and the corresponding of said driving shafts, each of said driving discs being driven by means of a common continuous belt,

a common pressure fluid means for including a common pressure fluid line applying pressure simultaneously to each of said friction coupling means,
valve means for adjusting the pressure of said pressure fluid means associated with and acting on each of said friction coupling means,
said friction coupling means comprising a friction coupling disc non-rotatably but axially movably secured to said drive shaft of each of said drying cylinders,
a pressure cylinder coordinated to each of said friction coupling means,
a piston having a piston rod reciprocating in said pressure cylinder,
a double-armed control lever pivotally mounted intermediate its ends,



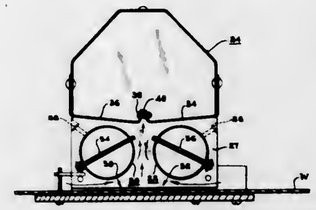
one end of said double-armed control lever being pivotally connected to said piston rod,
the other end of said double-armed control lever engaging said friction coupling drive,
said friction coupling disc being mounted on said shaft for fixed rotation therewith, but for fixed axial movement and having a friction face perpendicular to the longitudinal axis of said drive shaft for engagement with a complementary face of said driving disc, and
said friction coupling disc being engaged by said other end of said double control lever and imparting motion by axial movement of said friction coupling disc to said other end of said lever to vary the pressure in said common pressure fluid line.

3,199,221
APPARATUS FOR USE IN FREEZE DEHYDRATION
Ferdinand P. Mehrlich, Wilmette, and Raymond R. Haugh, Chicago, Ill., assignors to the United States of America as represented by the Secretary of the Army
Original application Apr. 5, 1961, Ser. No. 101,032, now Patent No. 3,169,070, dated Feb. 9, 1965. Divided and this application Apr. 20, 1962, Ser. No. 196,021
1 Claim. (Cl. 34—145)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A combined heater and rack for use in the freeze dehydration of meat or similar permeable materials containing moisture, comprising a vacuum chamber having upright frame members therein, slide members arranged in opposed pairs on said frame members, said slides spaced vertically apart the distance required for efficient escape of the frozen moisture from the material to be dehydrated, opposed removable tiers interposed on said slides, electric heating elements in each of said tiers in opposed and interfitting relation, means operative against each of said tiers to compress the sandwiched material into an undulating shape with substantially uniform force, said electric heating elements sufficiently energized only for the more efficient removal of the frozen moisture from the sandwiched material in a materially shorter period.

3,199,222
APPARATUS FOR DRYING MOVING WEBS
Odd Hultgreen, Greenwich, Conn.
(239 Mill St., Byram, Conn.)
Filed Sept. 12, 1960, Ser. No. 55,318
2 Claims. (Cl. 34—155)



1. Apparatus for drying a moving web comprising in combination, an exhaust housing compartment extending across the width of the moving web and having an elongated exhaust opening positioned to receive fluids from the surface of the web and extending across the width of the moving web, end members extending from said housing on either side of said moving web and terminating in mounting means over which the web moves to space the exhaust housing away from the web to define an open treating zone on the surface of the web as it moves through open sides disposed between said end members, two inlet tubes for receiving drying fluid flow therethrough and mounted between the end members in a position between the housing and moving web on opposite sides of the elongated exhaust opening and each having a single slit extending across the width of the moving web to direct the fluid with the two slits being disposed to converge two thin streams of fluid across the width of the web intermediate the two inlet tubes, one said slit directing fluid in the direction of web travel and the other said slit directing fluid opposite the direction of web travel to scavenge the surface of the web, and suction means for exhausting from said housing through the elongated exhaust opening intermediate said tubes the scavenging air flow from said tubes mixed with surplus air entering from the sides of said open treating zone.

3,199,223
XEROGRAPHIC FUSING AND DRYING APPARATUS
Chester F. Carlson, Pittsford, N.Y., assignor, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York
Original application Dec. 3, 1956, Ser. No. 625,929, now Patent No. 3,078,589, dated Feb. 26, 1963. Divided and this application July 2, 1962, Ser. No. 206,781
1 Claim. (Cl. 34—155)

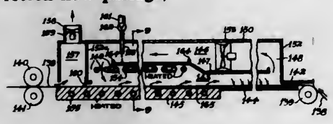
Apparatus for fixing and drying a xerographic powder image to the surface of a web of sheet material by means of solvent vapor for a soluble component of the powder comprising said powder image, said apparatus including

a substantially closed chamber having end walls containing substantially aligned inlet and outlet openings to permit passage of web material,

said chamber having a heating zone adjacent the outlet opening and a condensing zone adjacent the inlet opening whereby the web material is conveyed first through the condensing zone after the web material has passed said inlet opening and then through the heating zone,

a partition in said chamber for defining a return flow passage within said chamber, said return flow passage being in communication with said heating zone and said condensing zone,

means for supplying a quantity of solvent vapor within the return flow passage,



vapor circulating means positioned in said return flow passage and being adapted to continuously move vaporous air from said passage first through said heating zone and then through said condensing zone and back into said passage,

and heating means associated with said heating zone for heating the web material as the same passes through said heating zone and evaporating solvent from the web material,

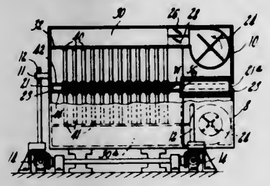
said vapor circulating means being adapted to move air laden with solvent vapor evaporated within said heating zone into said condensing zone where some of the solvent vapor is condensed upon the web material.

3,199,224

APPARATUS FOR TREATING CONTINUOUS LENGTH WEBS COMPRISING HIGH VELOCITY GAS JETS

Ernest C. Brown, Danvers, Mass., assignor to Wolverine Equipment Co., Cambridge, Mass., a corporation of Massachusetts

Filed Apr. 3, 1962, Ser. No. 184,709
3 Claims. (Cl. 34—156)



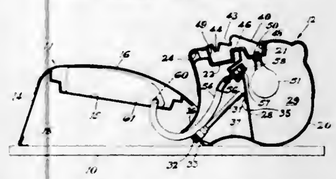
1. Apparatus for treating a flexible continuous web comprising a casing forming a treating chamber and defining an inlet leading into and a discharge opening leading out of said chamber, two opposed parallel spaced plates extending longitudinally within said casing and forming therebetween a passageway for advance of a web fed into said inlet through said passageway and out of said discharge opening, said plates having opposed aligned apertures dished out of the planes of said plates spaced both longitudinally and transversely of said plates and having portions between said aligned apertures forming opposed flat continuous matrices, opposed aligned nozzles extending into each opposed pair of apertures leaving annular openings between the nozzles and the aperture edges, through which said annular openings gas emanating from said nozzles may be exhausted, and the nozzles extending into the apertures of each plate having orifices lying in a single plane, the distance between said orifice planes being at least as great as the minimum distance between said opposed plates whereby upon discharge of gas at high velocity through said nozzles, a web advancing through said apparatus will be contacted along selected equal and opposite areas on both its sides between said matrices with substantially equal volumes of gas having little or no velocity but elevated pressure and will be contacted along intervening equal and opposite discrete areas segregated both longitudinally and transversely of the path of movement of said web with substantially equal volumes of lower pressure gas moving at high velocity normally into contact with, along, and substantially normally out of contact with intervening surfaces of said web lying between said selected areas to float said advancing web in said passageway free from contact with said opposed plates and nozzles.

3,199,225

RESUSCITATION TEACHING APPARATUS

Edwin Robertson, 425 Lamarck Drive, and John N. Robertson, 456 Darwin Drive, both of Cheektowaga 25, N.Y.

Filed Oct. 8, 1963, Ser. No. 314,761
8 Claims. (Cl. 35—17)



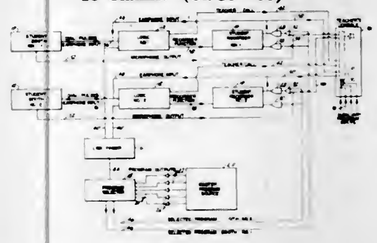
2. Apparatus for demonstrating and teaching mouth-to-mouth or mouth-to-nose breathing comprising a torso member and a head member, said torso member including means expansible upon application of fluid pressure thereto, said head member comprising a hollow member generally simulating a human head, a face portion adapted to be detachably secured to said head member, and resilient diaphragm means dividing the interior of said hollow head member into a pair of fluid chambers, said face portion having mouth and nose openings into one of said fluid chambers, and conduit means from the other of said chambers to said expansible means, whereby air blown into said mouth or nose openings of said face portion distends said diaphragm and thus displaces air in said other fluid chamber to cause fluid flow therefrom to said torso member expansible means.

3,199,226

TEACHING MACHINE

David L. Joslow, Chester, Conn., assignor to Chester Electronic Laboratories Incorporated, Chester, Conn., a corporation of Connecticut

Filed Sept. 29, 1961, Ser. No. 141,856
18 Claims. (Cl. 35—35)



1. In a teaching machine for supplying a plurality of students at individual study areas with audible instruc-

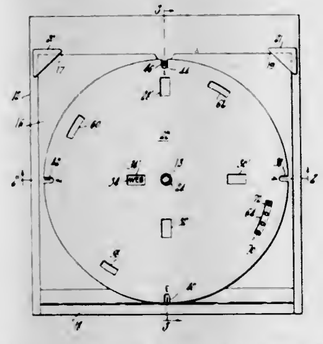
tional material and including a sound reproducer at each of said study areas, the combination comprising means remote from said study areas having a plurality of master program output lines on which respectively appear a corresponding plurality of master program signals and which master program output lines are divided into a number of groups, a dial means associated with each study area and including a manually operable dial at said study area for producing trains of dial pulses in response to manipulation of said dial by a student, a line-finder, line means connecting each of said dial means to said line-finder, first selecting means responsive to the receipt of a train of dial pulses for selecting one of said groups of program output lines, second selecting means responsive to the receipt of a train of dial pulses for selecting one of the program output lines from the group selected by said first selecting means, means operable in response to a signal produced by a calling dial means to start said line finder in operation and to cause the same to lock on the calling dial means so that trains of dial pulses from said calling dial means may pass therethrough, means for routing the first train of dial pulses passing through said line-finder to said first selecting means to cause the selection of a group of program output lines and for routing the next train of dial pulses to said second selector means to cause the selection of one program output line from said selected group, and a plurality of circuits each exclusively associated with a respective one of said study areas and by-passing said line-finder for connecting the one program output line selected by operation of one of said dial means to the sound reproducer associated with said one dial means.

3,199,227

PHONICS TEACHING DEVICE

George J. King, Battle Ave., Castine, Maine

Filed Nov. 29, 1961, Ser. No. 155,745
6 Claims. (Cl. 35—35)



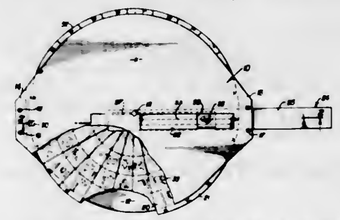
1. A device comprising a mounting means, an indicia-carrying member mounted by said mounting means on a center for rotation by successive increments, said indicia-carrying member having a plurality of circular arrays of indicia concentric about said center, adjustable masking means adapted to selectively mask said arrays of indicia so that a single indicium from a selected array can be seen, and a drive means that enables the engagement and rotary driving of said indicia-carrying member relative to said masking means to enable successive indicia in said selected array to be seen, said masking means comprising two superposable masking members, said device being specially constructed for use by a young child for learning phonics, a large number of successive indicia in each circular array comprising a phonic set, each indicium in a given set comprising a group of adjacent letters including a vowel, said drive means enabling said engagement and rotary driving of said indicia-carrying member including a multiplicity of stylus-engageable means arranged on said indicia-carrying member in a circle about said center, and relatively stationary limit slot means overlying at least two of said stylus-engageable means adapted to limit the movement of a stylus engaged with one of said stylus-engageable means to a predetermined arc equal to the arcuate spacing of successive indicia, the angular spacing between adjacent indicia in each array being equal, the angular spacing between indicia on the outer of said circular arrays being less than that of an inner one, said first masking member having an aperture extending across all of said circular arrays, and the second masking member having a plurality of smaller apertures selectively positionable one at a time over said aperture in said first masking member each at a radial distance corresponding to that of a different one of said arrays, and said second masking member being adapted to change the arc of said limit slot means when said second masking member is adjusted to change between said inner and outer arrays, said limit slot means including means defining a plurality of limit slots, one corresponding to each of said smaller apertures and having an angular extent corresponding with the angular spacing between indicia in the array corresponding to its aperture, each limit slot being adapted to be brought into stylus receiving position by the movement of said second member which aligns the corresponding smaller aperture with the aperture of the first masking member.

3,199,228

WORD TRAINING AID

Irvin C. Rubin, 1822 Oak Tree Drive, Eagle Rock, Calif.

Filed Apr. 30, 1962, Ser. No. 190,872
5 Claims. (Cl. 35—35)



1. An educational device comprising: a two-part circular element, means fixedly securing the two parts together axially spaced relation, each of said parts having a radial slot, a coaxial rotatable disc between said parts having a greater diameter than said circular element, a two-leg slider radially slidable between said circular element parts with one leg on each side of said rotatable disc and having apertures respectively simultaneously registrable with said circular element slots, said disc having correlated indicia on opposite sides thereof simultaneously visible through said slots and apertures.

3,199,229

ORRERY-SATELLITE ORBIT DEMONSTRATION DEVICE

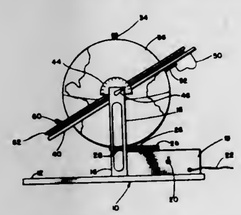
Roger L. Easton, Oxon Hill, Md.
(6566 Oxon Hill Road, Washington 21, D.C.)

Filed Feb. 26, 1963, Ser. No. 261,239
4 Claims. (Cl. 35—46)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A device for demonstrating the relative movement between the earth and a satellite in orbit around said earth comprising:

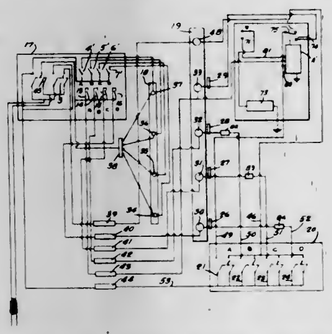
(a) a support including a base member and a pair of spaced, parallel, upwardly extending arms mounted on said base member at their lower ends,

(b) a globe having a map of the earth superimposed thereon,
(c) first driving means mounted on said base member between said arms including at least one gear, said globe being mounted on said gear for rotation therewith,
(d) an annular plate encircling and spaced from said globe, mounted for pivotal movement on the upper ends of said arms about a pivotal axis lying in the plane of the equator of said earth globe,
(e) a plurality of centering gears on said annular plate,



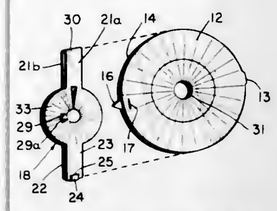
(f) a ring gear floatingly mounted and centered by said centering gears,
(g) second driving means including a driving gear mounted on said annular plate and positioned to drive said ring gear,
(h) a simulated earth satellite secured to the inner face of said ring gear for movement in circular path about said globe, and
(i) indicator means for indicating the angle of said annular plate with respect to a plane through the earth's equator whereby the relationship of the rotating earth and a moving earth satellite may be accurately displayed.

3,199,230
STUDENT TEACHING DEVICE
Robert W. Sylvester, 1504 Cavalier Corridor, Falls Church, Va., and George W. Stinger, Korea (1st Base P.O., APO 971, San Francisco, Calif.)
Filed May 17, 1963, Ser. No. 281,370
4 Claims. (Cl. 35—48)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A device for teaching students comprising:
(a) a panel board,
(b) a lattice arrangement of indicator lights on one side of said panel board, said lattice arrangement including a horizontal row of lights for each possible answer, and a vertical row for each student,
(c) a single horizontal row of response lights mounted on said panel board on the side having said lattice arrangement of indicator lights, said row of response lights having a light for each student,
(d) a series of correct answer lights mounted on said panel board on the side opposite from said response and indicator lights,
(e) an instructor control panel electrically connected to said panel board including switching means for making and breaking the circuit of each of said response lights, indicator lights, correct answer lights, and
(f) a student control panel comprising a series of switches each of which represents a possible answer, each of said switches electrically connected to said panel board to simultaneously control a pair of said response and indicator lights on said panel board, and
(g) control means electrically interconnected between said indicator lights and said student control panel for selectively completing a circuit between said indicator lights and said student control panel.

3,199,231
EDUCATIONAL TOY DEVICE
Max J. Ruderian, 631 Wilshire Blvd., Santa Monica, Calif.
Continuation of application Ser. No. 228,133, Oct. 3, 1962. This application Apr. 19, 1965, Ser. No. 450,258
1 Claim. (Cl. 35—74)

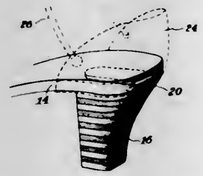


An educational toy device comprising, in combination: first and second congruent flat discs having first and second central openings and being flexibly joined together at an edge portion, said discs being folded together about said edge portion with said central openings in registration; markings on the exterior exposed surfaces of each of said discs; frame means comprising an elongated strip of the same material as said discs folded back on itself, said discs being received between the folded portions of said strip so that said folded portions extend diametrically across the exposed surfaces of said discs; means for securing the ends of said elongated strip together to thereby cradle said discs within said strip; and at least two locking tabs, one of said tabs being on the inner surface portion of said elongated strip extending across the exposed surface of said first disc adjacent to said first central opening in aid first disc, and the other being disposed on the inner surface portion of said elongated strip exetnding across the exposed surface of said second disc adjacent to said second central opening in said second disc, said tabs extending between the peripheral edges of said central openings of said discs to lie between said discs and thereby journal said discs for rotation within said elongated strip member, said elongated strip defining indicating means whereby one of said markings will be juxtaposed said indicating means on said elongated strip when said discs are at rest.

3,199,232
CONVERTIBLE SHOE
Lorren R. Pike, 5624 El Arado Way, Sacramento, Calif.
Filed Oct. 20, 1964, Ser. No. 405,028
4 Claims. (Cl. 36—2.5)

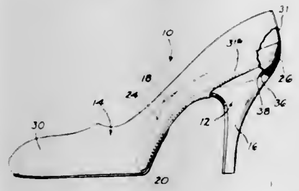
1. A convertible shoe comprising, in combination, a sole having a rear surface portion for receiving the heel of a foot and having a depending structural heel, a shoe upper having lower marginal portions corresponding to

the outline of an upper extremity of said structural heel, a mounting plate carried by said shoe upper above said lower marginal portions thereof, and said rear portions of said sole having a terminal section defining socket



means detachably receiving said mounting plate of said upper with said lower marginal portions of said shoe upper enveloping said upper extremity of said structural heel to mask said mounting plate and socket means from view externally of said shoe.

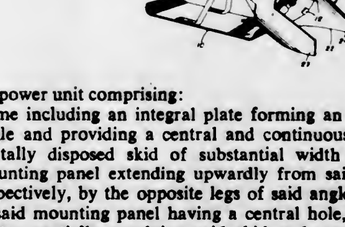
3,199,233
SHOE CONSTRUCTION
Nathan Steinbock, 1625 Sumner St. SW., Salem, Oreg.
Filed Feb. 11, 1963, Ser. No. 257,437
2 Claims. (Cl. 36—24.5)



1. In a shoe; a heel and shank unit comprising a shank and a heel joined to the rear end of said shank; an upper secured to said heel and shank unit including a forepart vamp adapted when wearing the shoe to extend over the top of the foot, opposed flaps integral with said forepart vamp extending inwardly from opposite sides of the shoe terminating in portions in covering relation over the underside of said shank and being secured to said shank, and back portions disposed outwardly and extending over opposite sides of the shank and about the outer back side of the heel in the heel and shank unit; and a sole for the shoe under the forward part of the shoe disposed in covering relation over the undersides of said flaps of said upper.

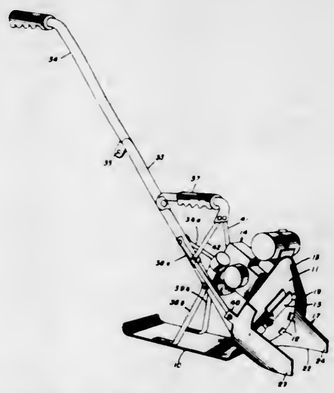
3,199,234
SNOW PLOW HAVING OBSTACLE COMPENSATING MEANS ON THE FORWARD EDGE OF THE BLADE
Gottfried Reissinger, Seeshaupt, Bavaria, Germany
Filed Mar. 7, 1963, Ser. No. 263,456
Claims priority, application Germany, Mar. 10, 1962, R 32,255
8 Claims. (Cl. 37—42)

1. In a clearing device for attachment to a street snow plow, the combination which comprises:
a main share having a front edge and a forwardly directed front surface;
an intermediate ledge having front and rear edges;
a leading scraper having front and rear edges;
means pivotally connecting said scraper at said rear edge thereof to said ledge at said front edge thereof;
means pivotally connecting said ledge at said rear edge thereof to said share at said front edge thereof;
said ledge and scraper, in operative position of the clearing device, forming a unit which, as a whole, is forwardly inclined with respect to the ground in the direction of travel of the snow plow, said ledge having, in said operative position of the clearing device, an upper surface which forms a continuation of said front surface of said share and an undersurface which is generally directed toward the ground along which said front edge of said scraper moves during plowing operation;



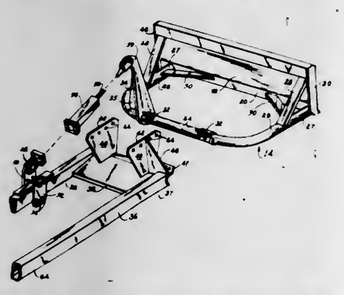
means for limiting pivotal movement of said scraper with respect to said ledge, while the clearing device is in its operative position, to pivoting in a direction toward said undersurface of said ledge;
means for limiting pivotal movement of said ledge with respect to said share, while the clearing device is in its operative position, to pivoting toward said front surface thereof; and
spring means coacting with said ledge for resiliently holding said unit in said operative position.

3,199,235
PORTABLE POWER UNIT HAVING AN ANGLED FRAME WITH MOTOR MEANS ON ONE LEG THEREOF
Cecil E. Stacey, 9554 Myers Lake Road, Rockford, Mich.
Filed Sept. 17, 1962, Ser. No. 223,889
7 Claims. (Cl. 37—43)



5. A power unit comprising:
a frame including an integral plate forming an obtuse angle and providing a central and continuous, horizontally disposed skid of substantial width and a mounting panel extending upwardly from said skid, respectively, by the opposite legs of said angle,
said mounting panel having a central hole, and
a motor partially overlying said skid and secured to said mounting panel, said motor having a shaft traversing said hole; and
handle means secured to said frame.

3,199,236
FARM TRACTOR BULLDOZER
Walter A. Bartel and Donald L. Martens, Fairview, Okla., assignors to Waldon Inc., a corporation of Oklahoma
Filed Dec. 7, 1962, Ser. No. 243,059
4 Claims. (Cl. 37—144)



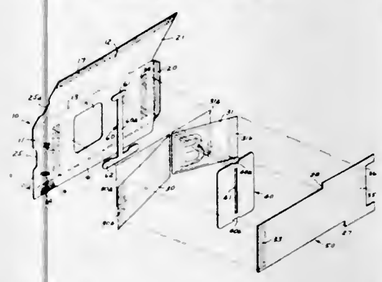
1. Apparatus for converting a farm tractor chassis into a bulldozer, said apparatus consisting of:
a pushing frame consisting of two longitudinal arms having a forward end and a rearward end, said arms to extend substantially parallel to the forward-rearward axis of said chassis; a forwardly and upwardly inclined transverse plate extending between the forward ends of said arms and rigidly connected thereto; at least two relatively flat plates attached one each to said transverse plate and spaced slightly inwardly from said arms, said plates extending upwardly for attachment to said chassis;
means for attaching the rearward ends of said arms to said tractor chassis;
a bulldozer blade frame consisting of a substantially U-shaped member having a bight portion and two leg portions, said bight portion being pivotally connected to said forward ends of said arms of said pushing frame, said leg portions to extend outwardly and forwardly of the front wheels of said tractor;
an upwardly extending elevator arm rigidly attached to said bight portion of said bulldozer frame;
a bulldozer blade rigidly attached to said leg portions of said blade frame, at the forwardmost ends thereof;
hydraulic means between said pushing frame and said elevator arm to pivot said bulldozer blade frame vertically about the point of connection of said bulldozer blade frame to said arms of said pushing frame.

3,199,237
AUTOMATIC GRAVITY RETURN BUMP GATES
William H. Koch, Minneapolis, Minn., assignor to Crowley Fence Co. Inc., Minneapolis, Minn., a corporation of Minnesota
Filed June 13, 1962, Ser. No. 202,175
2 Claims. (Cl. 39—31)



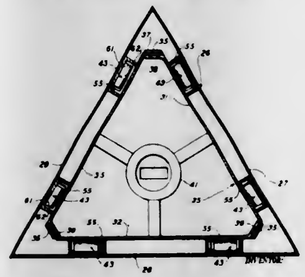
1. An automatic gravity return bump gate comprising in combination, a gate frame mounted between a pair of spaced gate posts defining an opening in a fence line, one of said gate posts affording a station for pivotally mounting the gate frame for swinging movements, selectively, to either side of the fence line and also for limited movement relative to the hinge post, the other of said gate posts affording a mounting station for a latch mechanism, a latch bar slidably mounted on the gate frame for endwise sliding engagement with the latch mechanism mounted on the latch post whereby said gate frame is normally held in closed locked position, a substantially U-shaped bump bar pivotally mounted at its base on the gate frame for lateral rocking movements, said bump bar having a pair of substantially parallel upwardly projecting arms, one on each side of the gate frame for engagement with the bumper of a vehicle, an upper and lower pair of collar hinges rigidly secured to the gate frame and constructed and arranged to encircle the hinge post with a free working fit for limited vertical movements, and a flexible link mounted on the upper end portion of the hinge post substantially above the top of the gate frame and the other end portion of said flexible link being adjustably secured to the gate frame whereby said gate frame is supported for free swinging movement, a substantially V-shaped yoke, the end portions of which are rigidly secured to the upwardly projecting arms of the bump bar in transversely opposed relation, a clevis having a clevis pin, a relatively wide roller journalled on said clevis pin for movement about the vertical axis of said clevis pin, said clevis being secured to the inner end portion of the latch bar, said clevis having interlocking engagement with the V-shaped yoke on the upwardly projecting arms of the bump bar, said yoke imparting a camming action by its engagement with the roller on the clevis pin to draw the latch bar inwardly when pressure is exerted on either of said upwardly projecting arms of the bump bar thereby withdrawing the outer end portion of the latch bar from engagement with the latch mechanism, a semi-circular rod-like cattle guard bow mounted on an intermediate vertically disposed portion of the gate frame surrounding the upwardly projecting arms of the bump bar to prevent the inadvertent opening of the latch mechanism by the movement of cattle against respective bump bars.

3,199,238
DISPLAY DEVICE
Meyer M. Brown, 261 Broadway, New York, N.Y.
Filed June 26, 1963, Ser. No. 290,844
5 Claims. (Cl. 40—62)



1. A display device comprising, in combination, a base sheet including a window, an actuating sheet rectilinearly slidable in either direction along the base sheet parallel thereto between a limit position in substantial superimposition with the base sheet and a limit position laterally spaced from one end thereof, a first transversely folded pliable strip bearing thereon a first message, a second transversely folded pliable strip bearing thereon a second message, both said strips being interposed between said sheets and secured at one end to the base sheet on opposite sides of the window in the direction of movement of the actuating sheet and at the other ends to opposite ends of the actuating sheet, the folded edges of said strips facing each other, a slide interposed between said sheets and having a slot extending transverse of the direction of movement of said actuating sheet and parallel to the fold lines of said strips, each of said opposite strips extending through said slot and straddling the lengthwise edges of the slot, said slide tensioning and guiding both the strips and being floatingly supported by the same, and a cover strip extending transversely across the slide and covering the slot thereof on the side adjacent to the base sheet, the portions of the two pliable strips facing the base sheet passing into the slot underneath said cover strip, displacement of the actuating sheet in either direction in reference to the base sheet causing said slide to be drawn past said window thereby exposing varying portions of the two strips bearing alternate messages in the window, said cover strip concealing the folded edges of the strips juxtaposed in the slot, said cover strip having end portions folded over the respective edges of the slide for securing the cover strip to the slide, said folded-over strip portions reinforcing the slotted portions of the slide.

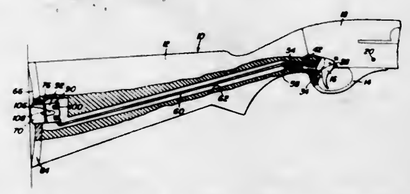
3,199,239
ROTATABLE INDICIA-BEARING VANES FOR SIGNBOARDS
Theodore M. Reed, Burbank, Calif., assignor to Pacific Outdoor Advertising Company, Los Angeles, Calif., a corporation of California
Filed June 11, 1963, Ser. No. 287,050
6 Claims. (Cl. 40—76)



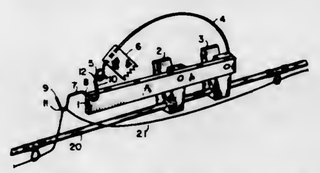
1. A rotatable plural-faceted vane for use in a multi-vaned, plural message signboard, the vane comprising an elongate hollow prismatic core having a plurality of planar exterior core faces, each of said core faces having a bifurcated long edge and an angular tongue edge parallel to the long edge, each of the two edges of a core face being adapted to engage the unlike edge of an adjacent core face, fastening means on each exterior face of the prismatic core; an elongate facet panel adapted to bear indicia for each core face, longitudinal stiffeners on each facet panel, and engagements on each facet panel adapted for slip fit relationship with the fastening means on a core face so as to releasably support a facet panel adjacent a core face.

3,199,240
SAFETY FOR GUNS
William M. Largen, 1938 Avon Road, Roanoke, Va.
Filed June 17, 1963, Ser. No. 288,326
6 Claims. (Cl. 42—70)

1. In combination with a shoulder fired gun having a butt plate, an elongated stock and a pivotal trigger, a safety member movably disposed in relation to the gun for movement into and out of a position behind the trigger for abutting the rear of the trigger to prevent rearward movement thereof, operating mechanism connected with said safety member and extending rearwardly through the stock, said operating mechanism terminating in an actuating member projecting from the shoulder-engaging surface of the butt plate for engaging the surface of the shoulder when the gun is placed in firing position whereby the operating mechanism will move the safety member out of the position for engagement by the trigger thereby enabling the trigger to be operated in the usual manner when the gun is in shoulder firing position, said operating mechanism including means for returning the actuating member, operating mechanism and safety member into operative position with the safety member in position for engagement with the trigger when the butt plate is removed from the shoulder, said safety member being in the form of a rotatable cylindrical member disposed transversely behind the trigger, said operating mechanism including a longitudinally movable member, gear teeth means interconnecting the rotatable cylindrical member and the longitudinally movable member for rotating the cylindrical member in response to longitudinal movement of the longitudinal member, said cylindrical member having a pocket therein for receiving a projection on the trigger when the safety member is in an operative position thereby enabling the trigger to be operated in the usual manner, the rotation of said safety member bringing a portion of the periphery thereof into registry with the projection on the trigger thereby forming an abutment for preventing rearward movement of the trigger when the safety member is rotated to an operative position.

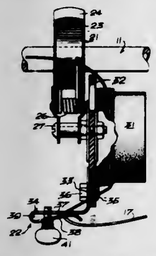


3,199,241
BITE INDICATOR
Michael Mauritz, 509 James St., Turtle Creek, Pa.
Filed Apr. 2, 1963, Ser. No. 269,951
6 Claims. (Cl. 43—17)



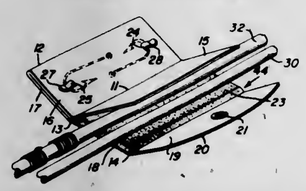
1. A self-contained bit indicator for a fishing rod including a longitudinal body portion having a pair of clamps attached thereto for holding the indicator above the rod; a spring member affixed at one end of said body portion and a trip member rotatably mounted at the opposite end of said body portion; said spring member having a loop formed in its unattached end; said trip member consisting of a center section supported in said body portion and two end sections arranged perpendicular to said center section and lying on opposite sides of said body portion, each of said end sections having a hook adjacent its end, one of said hooks receiving the loop on said spring member when the indicator is in the set position and the other of said hooks adapted to receive a line on the rod when the indicator is in the set position, whereby a tensioning of the line rotates said trip member releasing said loop and permitting said spring member to snap into an upright position indicating that a fish has struck the bait.

3,199,242
LINE SUPPLY DEVICE FOR FISHING POLE
Le Roy E. Holmstrom, 8251 NW. 172nd St., Miami, Fla.
Filed Mar. 12, 1964, Ser. No. 351,499
2 Claims. (Cl. 43—25)



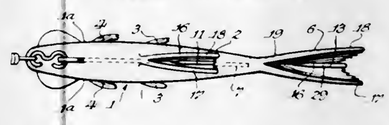
1. A line supply device for attachment intermediate the length of the fishing pole to releasably hold a slack length of fishing line intermediate a reel mounted adjacent the rearward end of the pole and the other end of said pole comprising; a cylindrical line supply housing having a smooth exterior surface to receive a slack length of line in peripheral windings over the axial length thereof; clamp means on the housing to releasably attach the line supply to a fishing pole and to hold the axis of the housing substantially parallel to the center line of the pole adjacent the reel; a foot portion of greater diameter than the main body of the housing on the rearward end of said housing; clip means mounted on the foot to releasably trap the slack length of a line on the housing, said clip means having a mounting leg secured to said foot portion in a region remote from said clamp means, the said clip means opening forwardly, responsive to a sudden tension force on the line greater than the normal drag forces caused by a hook dragged in the water and connected to the line, and effective to release the line from the clip means so that a slack length of line on the housing is free to drop readily into the water, said clip means including a normally closed, reversely-bent leaf spring extending generally perpendicular to said foot portion and defining a bite through which the hook end of the slack length is passed; and adjusting means to adjust the tension of the clip means.

3,199,243
HOOK ROD AND LINE HOLDER COMBINED
Thomas C. J. Caston, 3515 Lexington Ave., Dallas 5, Tex.
Filed July 19, 1963, Ser. No. 296,233
4 Claims. (Cl. 43—26)



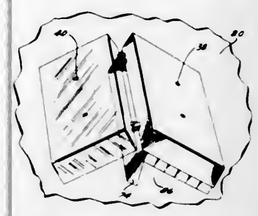
1. A combined fishing rod, line and hook holder comprising a flexible case having a flap panel member having a snap fastening element on an inner face thereof, said flap panel member being hingedly attached along one edge thereof to a second panel member, said second panel member having an inner face having a resilient pad thereon, a third panel member hingedly attached to said second panel member along a second edge spaced from and parallel to said one edge, a fourth panel member hingedly attached to and overlying said third panel member in face-to-face relation therewith, the third panel member having an exposed face having a second snap fastening element thereon adapted to be engaged by the first fastening element to maintain the case in a closed condition, the fourth panel member having an exposed face having a fishhook attaching clip mounted thereon, and a fifth panel member hingedly attached to the fourth panel member along an edge of said fourth panel member opposite the edge to which the third member is hingedly attached thereto, the fifth member being adapted to be placed in overlying relation with the exposed face of the fourth panel member to protect a fishhook mounted in said clip whereby separated sections of a fishing rod may be mounted between the resilient pad of the second panel and the exposed face of the fifth panel while said fifth panel shields a fishhook having a line attached thereto and to said rod sections when said case is placed in closed position about the rod sections.

3,199,244
FISHING LURE
Jordan W. Frederiksen, Sr., 6133 W. Henderson St., Chicago 34, Ill.
Filed Oct. 18, 1962, Ser. No. 231,482
3 Claims. (Cl. 43—42.1)



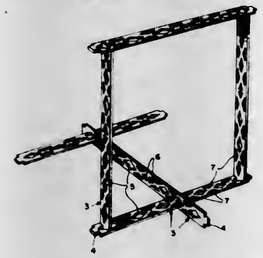
1. A fishing lure comprising; a body having a flexible fin portion, said fin portion comprising a pair of hook enclosing walls defining an open hook storing slot, a fish hook disposed in the slot between said walls, the hook lying generally in a plane passing through the longitudinal line of travel of the body and walls, each wall comprising a first inner wall section lying generally in a plane parallel to the hook, and a second outwardly extending lateral wall section connecting with the first wall section and flaring outwardly away from the hook and above the hook and lying in planes passing through the line of travel of the body and laterally transversely away from the plane of the hook to define with the other outer wall section a pair of outwardly diverging wall sections extending above the hook for conjunctively enshrouding the hook with the first wall sections and permitting rapid separation of the outer lateral wall sections away from one another and the hook in order to bare the hook quickly when struck by the fish.

3,199,245
FISH BAIT PROCESS AND PRODUCT
Adrian C. Wenting II, and Clifford Ritter, Muskegon, Mich., assignors to Wenting Building & Manufacturing Company, Muskegon, Mich., a corporation of Michigan
Filed Feb. 4, 1964, Ser. No. 342,438
2 Claims. (Cl. 43—55)



1. A wax worm bait storage assembly comprising: a container having a bottom and peripheral walls; a plurality of elongated elements slidingly inserted in said container on said bottom between said walls; said elements having adjacent side walls therebetween; said side walls having elongated grooves therein; said grooves being peripherally closed by the interfit of said elements to form elongated wax worm cells having open tops; said elements being normally slidingly removable from said container; and a wedge inserted temporarily into said container against one of said elements, and extending out of said container beyond said elements and side walls, to prop said container, when inverted, off a wax worm supporting surface while simultaneously locking said elements in said inverted position to allow entry of wax worms into said cells.

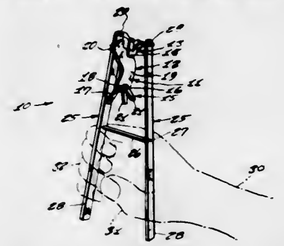
3,199,246
TOY CONSTRUCTION ELEMENT HAVING RETAINING APERTURES
William H. Fischer, McHenry, Ill., assignor to Continuous Molding Corporation, Niles, Ill., a corporation of Illinois
Filed May 9, 1963, Ser. No. 279,198
2 Claims. (Cl. 46—28)



1. A toy construction element comprising a flat, narrow, elongate strip of uniform thickness terminating at each end in a single co-planar axially extending tongue of less width than the width of the strip, the width of the strip being otherwise uniform, said tongues being of equal width, and said strip having a plurality of longitudinally spaced opening means therethrough, each of said opening means being of a quadrilateral shape having at least two oblique opposing angles and a length in the longitudinal direction of the strip substantially equal to the width of the strip for snugly receiving and frictionally holding a like strip inserted endwise therethrough, and each of said opening means having a width transversely of the strip substantially equal to the width of the said tongues for receiving and frictionally holding the tongue of a like strip disposed in a plane normal to the longitudinal centerline of the first mentioned strip.

3,199,247
ACROBATIC ANIMAL
Augustus S. Gordon, 1177 Boston Road, Bronx 56, N.Y.
Filed May 7, 1963, Ser. No. 278,596
1 Claim. (Cl. 46—133)

In an animated toy, the combination of an animal configuration, said animal configuration being supported on an element having adjustable tension means and means for adjusting said tension, said adjustable tension means comprising a string and said means for adjusting said tension comprising a frame having transversely movable portions, said frame comprising a pair of longitudinal sticks in spaced apart relationship, a cross stick maintaining said longitudinal sticks in said spaced apart relationship, said cross stick being affixed relatively loosely to each of said sticks at approximately the midportion between the opposite longitudinal ends of each of said longitudinal sticks, one end of each of said longitudinal sticks comprising a handle portion and the opposite end of each of said longitudinal sticks having an opening therethrough to receive said string, said animal configuration comprising a main body element, a front leg element, a rear leg element and a tail element, said leg elements and said tail elements being affixed pivotably free to said main body element, said front leg element having means for attachment to said string, said front leg element also comprising a flat member of V-shaped configuration, a pivot opening at the apex of said V-shaped configuration and a pair of openings near the extreme outer end of each of said V-shaped configuration legs, said pairs of



openings and said pivot opening extending transversely through said flat member, said front leg members' pairs of openings astride an imaginary axis between the end openings of said frame sticks, said string being looped through said openings of said longitudinal sticks and said front leg element, said string comprising a loop having two sides, each side of said loop entering and leaving the openings of each of said legs on the same side of said legs and the plane of said main body element and said front leg element being in a position transverse to the said axis between said end openings of said frame sticks and said looped string extended therebetween.

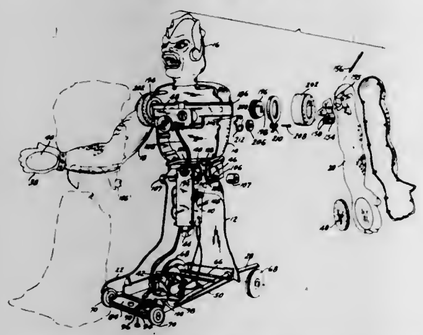
3,199,248
ANIMATED TALKING TOY WITH BUILT-IN RECORDER
Hisashi Suzuki, Tokyo, Japan, assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed May 18, 1962, Ser. No. 195,935
5 Claims. (Cl. 46—232)



1. A talking figure comprising, in combination, a hollow body; appendages movably connected to said body; motor driven animating mechanism in said body and connected to said appendages, said animating mechanism, when activated, moving said appendages relative to said body; a motor driven tape recorder having an erase head and a record-reproduce head; and endless record tape on said recorder; a microphone and a speaker within said body and connected to said recorder; and selector

means operable to switch said recorder from a "reproduce" condition to an "erase-record" condition whereby erasure of previously recorded sounds takes place concurrently with the recording of new sounds; said selector means, in the "reproduce" position, connecting said speaker to said record-reproduce head and activating the motor of said animating mechanism and, in the "erase-record" position, connecting said microphone to said record-reproduce head and deactivating the motor of said animating mechanism.

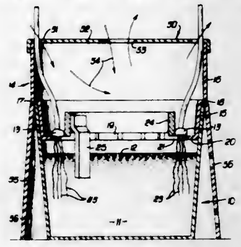
3,199,249
ROBOT TOY AND MECHANISM FOR ACTUATING THE SAME
Richard N. Carver, Raymond J. Lohr, and James Smith, Erie, Pa., assignors to Louis Marx & Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 12, 1962, Ser. No. 179,175
14 Claims. (Cl. 46—247)



2. A figure toy having an upright leg portion on which the figure toy is adapted to stand, a torso, a head, and arms, said torso being pivoted on the upper end of the leg portion by a horizontal waist pivot for forward bending action, and motor means to cause such bending action, said motor means comprising a small battery-operated reversible electric motor in the leg portion, a reversing switch for said motor, a train of high ratio speed reduction gearing driven by said motor and terminating in a crank, an angle lever on the waist pivot connected to the torso and also being longitudinally slotted to receive the pin of the aforesaid crank, the relation of the parts being such that successive one-half revolutions of the crank in opposite directions cause successive one-quarter revolutions of the angle lever and with it bending of the torso between upright and bent over positions and return, and a torsion spring exerting its torque in that direction which resists downward movement and aids upward movement and thereby tends to align the torso with the upright leg portion, thereby tending to counteract the force of gravity and the difference in the motor load when lowering and raising the torso.

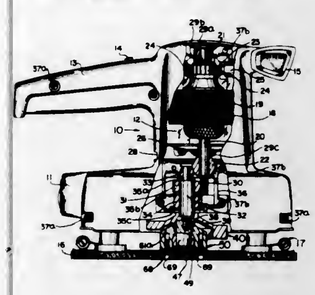
3,199,250
SEED GROWTH APPARATUS
George M. Sawyer, 725 N. Market St., Apt. 5, Inglewood, Calif.
Filed Apr. 2, 1962, Ser. No. 184,333
5 Claims. (Cl. 47—1.2)

1. Seed growth display apparatus, comprising a container having a lower interior zone for liquid and a transparent side wall through which said zone is visible, means to support a seed spaced inwardly of said wall and above said zone, means including downwardly tapering cup shaped tray structure having a shoulder supported by an upper rim of the container and having at least one seed support shelf overlying said lower zone, said tray structure having at least one vertical opening through which seed roots may grow downwardly, means adjacent the tray structure and spaced from said container upper rim to support a seed stem growing above the level of said shoulder and said shelf, and means including a liquid absorbent material carried by the tray structure in a position to contact the seed and liquid in said lower zone, said tray



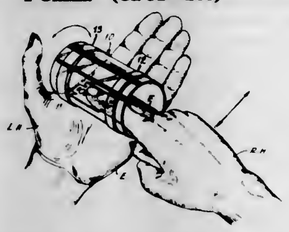
structure, absorbent material and said stem support means being upwardly removable from supported relation to the container to remove the roots from the container interior without disturbing the supported relationship of the seed, stem and said absorbent material relative to the tray structure.

3,199,251
DRIVING MECHANISM FOR ABRADING TOOL
Sherwood G. Enders, Bowley's Quarters, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Dec. 20, 1963, Ser. No. 332,148
14 Claims. (Cl. 51—170)



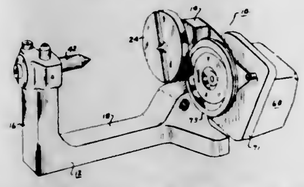
1. In an abrading tool having a housing, an oscillating platen, and means to resiliently mount the platen to the housing, a driving mechanism for the platen, comprising, in combination:
(a) a drive spindle journalled in the housing;
(b) a cylindrical drive pin having its axis eccentric to the axis of said spindle;
(c) a counterbalance between said pin and said spindle;
(d) means to secure said pin to said spindle; said means including means to retain said counterbalance between said pin and said spindle and to position said counterbalance circumferentially with respect to the axis of said drive pin;
(e) a bearing retainer on top of the platen and means to secure said retainer against rotation;
(f) said retainer having a spherical seat formed therein; and
(g) a spherical sleeve bearing in said seat to journal said drive pin;
(h) whereby said spherical bearing, said bearing retainer, and the platen are free to move vertically with respect to the cylindrical drive pin, being retained only by the means to resiliently mount the platen to the housing.

3,199,252
SHAVING BLADE CONDITIONER
John K. Hanchey, P.O. Box 409, Brooksville, Fla.
Filed June 12, 1963, Ser. No. 287,391
1 Claim. (Cl. 51—206)



A double edged safety razor conditioner comprising, in combination, a hollow cylindrical glass tube of uniform internal and external circular crosssection and open at each end, said tube being adapted to lie freely across the palm of the hand of the user for free rolling movement therealong, and a pair of frictional circular bands of equal radial thickness circumjacently embracing one each of the opposed end portions of said tube, said bands being of rectangular transverse cross-sectional shape to form tracks in the palm of the hand inhibiting slippage of said tube in the hand during said rolling movement.

3,199,253
WORK PIECE HOLDER FOR A GRINDING MACHINE
Paul M. Bultinck, 2726 S. 3rd St., Niles, Mich.
Filed Nov. 15, 1962, Ser. No. 237,860
4 Claims. (Cl. 51—237)



3. A work piece holder for a surface grinding machine, comprising a bed, a head stock member at one end of said base with a hole therein parallel with said base and a tail stock member at the other end of said base with a hole therein in axial alignment with the hole in said head stock member, stems disposed in each of said holes and having facing conically-shaped points forming dead centers for work pieces mounted therebetween, a means for retaining the stem in said tail stock member in an adjusted position, a means for retaining the stem in said head stock member rigidly in fixed position in said member, a face plate rotatably mounted on the stem of the head stock member, a hub-like portion on said plate disposed between said plate and head stock member, a motor with an output shaft, a drive wheel connected to said shaft, drive means interconnecting said wheel and face plate, and a bracket pivotally mounted on said head stock member and supporting said motor.

3,199,254
DIAMOND COATED ENDLESS BAND AND WIRE SAW BLADES OF BERYLLIUM-COBALT-COPPER ALLOY
Lee H. Barron, 612 W. Elk Ave., Glendale 4, Calif.
No Drawing. Filed June 26, 1961, Ser. No. 119,304
3 Claims. (Cl. 51—309)

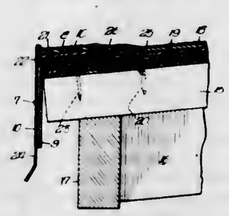
1. A non-embrittling diamond band saw comprising a beryllium-cobalt-copper alloy strip, said strip consisting of 1.80 to 2.05% berryllium, 0.18 to 0.30% cobalt, and the balance being substantially copper, having on its working surface a coating of diamond grit held in place by an eletcrodeposited coating of nickel.

3,199,255
PROCESS FOR SANDING THE EDGE SURFACES OF LUMBER
Julius Everett Marsh, Box 870, High Point, N.C.
Original application Sept. 28, 1960, Ser. No. 59,020, now Patent No. 3,092,936, dated June 11, 1963. Divided and this application May 21, 1963, Ser. No. 282,021
4 Claims. (Cl. 51—326)



1. A process for sanding the edge surfaces of lumber, comprising feeding a lumber board in a lineal path to bring a marginal edge thereof into contact with a moving sanding surface, spiraling the moving sanding surface, and constantly changing the locus of contact of the spiraling sanding surface with the board edge, to effect gradual sanding to produce a curved surface of said board edge from one side of the lumber board to the other.

3,199,256
ROOFING STRUCTURE
James L. Considder, Winter Park, Fla. (Rte. 1, Box 95C, Maitland, Fla.)
Filed Feb. 12, 1962, Ser. No. 172,688
1 Claim. (Cl. 52—95)



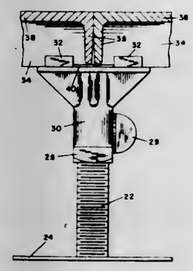
A built up roofing comprising:
(a) a plurality of layers of roofing felt secured together by a mastic with a layer of gravel secured to the uppermost layer of felt by a coat of mastic;
(b) a plurality of gravel stops disposed along the edges of the roof with said gravel stops composed of sections in an end to end relationship, each stop comprising:
(1) a roof engaging portion disposed between adjacent layers of felt and secured to the sheathing of the roof by nails;
(2) a portion upstanding from the roof edge side of the roof engaging portion to a line disposed slightly above the gravel layer;
(3) and a portion depending from the upper edge of the upstanding portion and extending below the edge of the sheathing on the roof;
(c) a protector at each junction between adjacent ends of adjacent sections of said gravel stops, each protector consisting of:
(1) a roof engaging portion disposed beneath adjacent ends of the stop sections and between adjacent layers of felt and secured to said felt by mastic, said portion extending from the edge of the roof a distance greater than the distance the roof engaging portion of the stop extends;

(2) double thickness side sections and a double thickness end section on the roof engaging portion of the protector, the side sections of which are engaged by the roof engaging portion of the stop to space the latter said portion from the roof engaging portion of the protector;

(3) a portion depending from the edge of the roof engaging portion of the protector and disposed between the depending portions of the stop sections and the edge of the roof and extending downwardly from the sheathing to a line disposed above the bottom end of the depending portions of the stop sections;

(4) and double thickness edge sections on the depending portion of the protector engaging the depending portions of the stop sections to define a passage between the protector of stop sections through which moisture may pass.

3,199,257
CONDUCTIVE WASHER
Joseph W. Spiselman, Brooklyn, N.Y., and David S. Bernstein, Teaneck, N.J., assignors, by mesne assignments, to Floating Foors Inc., New York, N.Y., a corporation of New York
Filed June 26, 1961, Ser. No. 119,429
5 Claims. (Cl. 52—241)



1. In an elevated metal floor system, the combination of a plurality of panels having downwardly depending flanges along peripheral edges thereof, said panels disposed in edge abutting relationship with the depending flanges resting on spaced supporting pedestals, each of said pedestals having a substantially planar support surface on the top portion thereof, said pedestals being located beneath the panels at the abutting edges of a plurality of said panels, a washer resting on the support surface of the pedestal and disposed between the support surface and the depending flanges, said washer comprising a sheet of electrically insulative resilient material, an open frame of electrically conducting material disposed on the top peripheral edge surface of the resilient sheet, and in contact with the depending flanges, a plurality of tabs of electrically conductive material integral with and disposed around the peripheral edge of said frame, said tabs extending downwardly around the edges of said resilient sheet and into contact with the pedestal support surface.

3,199,258
BUILDING OUTER WALL STRUCTURE
Arthur P. Jentoft, Wexford, and Richard A. Evanko, Coraopolis, Pa., assignors to H. H. Robertson Company
Filed Feb. 23, 1962, Ser. No. 175,123
4 Claims. (Cl. 52—282)

1. In a building outer wall structure having a plurality of spaced vertical mullions maintained in outboard relation to the structural framework of a building and including sheet edge clamping means, a plurality of normally flat, unbent facing sheets having parallel opposed edges, said facing sheets being clamped along the said parallel opposed edges thereof in said edge clamping means of adjacent vertical mullions, the central portion of each said facing sheet being inwardly bowed and thereby retained, the improvement of said vertical mullion comprising:

a cap member including

an outer strip, and

spaced legs depending therefrom each terminating in an outturned shoulder,

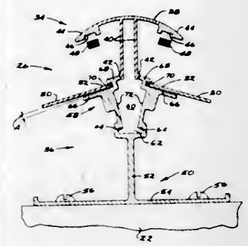
a capped member maintained in outboard relation with the said structural framework of said building said capped member having

a central longitudinal opening therein, and

a receiving slot at the inboard end of said longitudinal opening;

said sheet edge clamping means comprising

a pair of opposed inwardly sloped flanges extended from said capped member intermediate of its ends,



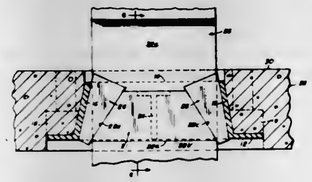
an outwardly extended curb on each of said flanges adjacent to said central longitudinal opening, one of said opposed edges abutting each said curb, whereby the said facing sheet, in its inwardly bowed configuration, is retained between the said curbs of adjacent ones of the said capped members in the absence of the said cap members, and

lateral side portions of said outer strip which engage the outer surface of said facing sheets adjacent to said opposed edges and displace the same into surface engagement with and along the entire length of said sloped flanges;

said spaced legs extending through the said longitudinal opening with the said outturned shoulders engaged in the said receiving slot, the said edges of adjacent ones of said facing sheets being clamped within said sheet edge clamping means along their entire length whereby each of said edges is prevented from deforming in a direction normal to the clamped surface of the sheet.

3,199,259
ANCHORING STRUCTURE FOR BUILDING SLABS
Marshall Long, 10901 Mission Road, Overland Park, Kans.
Filed Dec. 15, 1961, Ser. No. 159,624
6 Claims. (Cl. 52—283)

1. In a building structure, the combination comprising a vertical support column having at least one trapezoidal shear block mounted thereon in a vertical plane in a manner whereby the longer parallel side of said shear block is the lowermost horizontal edge; a slab; a collar within said slab, said collar comprising a horizontal plate with an aperture therein, said aperture surrounded by at least two flanges with portions inclining inwardly and upwardly and facing the non-parallel sides of said shear block, said inclined portions of said flanges having a lesser inclination to a vertical axis than do the non-parallel sides



of said shear block; and a wedge engaged between each non-parallel side of said shear block and the adjacent said inclined collar flange.

3,199,260
STRUCTURAL ELEMENT
Dirk Evert Blok, Zwijndrecht, Netherlands, assignor to Hunter Douglas International (Quebec) Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Apr. 12, 1962, Ser. No. 187,034
Claims priority, application, Netherlands Apr. 14, 1961, 263,614
1 Claim. (Cl. 52—476)



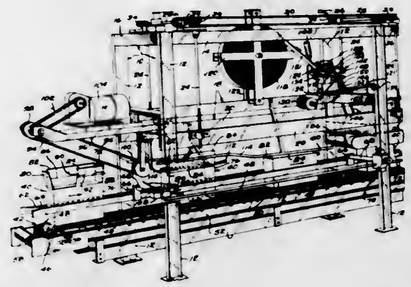
A structural element such as a wall, comprising border elements forming a substantially rectangular frame, said border elements being channel shaped in cross section with the flanges of the channel directed inwardly toward the center of said frame, a plurality of resilient, channel shaped panel elements within said frame, said panel elements having a planar base surface and arcuately inturned side walls, said panel elements being in overlapped, side-by-side arrangement within the frame with adjacent panel elements opening in alternate directions with the inturned side walls being in interengaging relationship, at least one end of each said panel element having a portion of the base surface extending beyond the termination of said inturned side walls, said portion tapering towards its free end, the two opposite sides of said frame which engage the ends of said panel elements being spaced apart a distance less than the total length of said panel elements in an unstressed condition, said extending portion being resiliently bent in compression into engagement with said two opposite sides of said frame, said inturned side walls of said panel elements being of such a height that said panel elements are fixedly clamped between the flanges of said border element.

3,199,261
WALL-LIKE STRUCTURE
Thomas C. Soddy, Downers Grove, Ill., assignor to American Seal-Kap Corporation of Delaware, New York, N.Y., a corporation of Delaware
Filed June 14, 1961, Ser. No. 117,081
9 Claims. (Cl. 52—615)



1. A structural panel comprising a rigid stratum of heat-insulating foamed plastic material and a buffer layer of substantial thickness of cushiony heat-insulating foamed plastic material having one face integrated with a face of the rigid stratum, and a relatively thin and stiff, hard surface sheet of plastic matrial forming a sheathing for the other face of said layer and integrated therewith, said layer and sheathing yielding transversely of their thickness to cushion the rigid stratum against forces applied to the sheathing.

3,199,262
CARTON TAPING MACHINE
Joseph A. Miller, Englewood, and Frank A. Kruglinski, North Bergen, N.J., assignors to General Corrugated Machinery Company, Inc., Palisades Park, N.J., a corporation of New Jersey
Filed Nov. 24, 1961, Ser. No. 154,629
4 Claims. (Cl. 53—66)

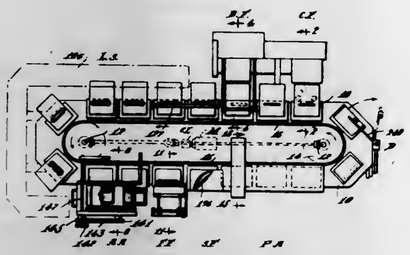


2. A carton taping machine for forming a tape joint between a side and the adjacent outer free margin of a flap which forms a substantially complete closure of an erected carton comprising, in combination, a carton conveyor, a taping head disposed above the conveyor and including means automatically responsive to the carton for feeding out, moistening and cutting a strip of tape substantially equal in length to the carton length and applying it in substantially coterminous relation to the carton, means guiding the carton and tape relative to one another before and during application of the tape so that the tape is caused throughout its length to be applied to the closure flap along a predetermined substantial portion of the tape width and to protrude beyond the adjacent side of the carton throughout another predetermined substantial portion of the tape width, means for temporarily arresting the carton at a folding and pressing station, and automatic roll-down means at such station reciprocable in a direction parallel to the direction of the conveyor travel but at right angles to the plane of the conveyor and responsive to the carton, and including a roller not substantially shorter than the carton for rolling in and then out over the protruding tape portion and pressing the same against the carton side as it moves inward and again as it moves outward.

3,199,263
PACKAGING APPARATUS
Donald R. Lee, Newton Lower Falls, Mass., assignor, by mesne assignments, to S. Curtis & Son Incorporated, Sandy Hook, Conn., a corporation of Connecticut
Filed Apr. 9, 1962, Ser. No. 186,022
18 Claims. (Cl. 53—183)

1. In a machine for packaging articles, a conveyor, a plurality of carriers connected to the conveyor at uniformly spaced intervals for movement thereby, means for effecting movement of the conveyor intermittently to present the carriers successively to a plurality of operat-

ing stations situated lengthwise of the path of movement of the conveyor, comprising means operating to place on each carried a flat card, said card being creased lengthwise and containing an opening for receiving a blister cup in the part at one side of the crease, means operating to insert a blister cup into the opening in the card



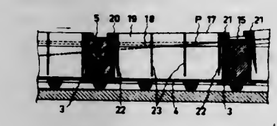
open side up, means operating to apply adhesive to the marginal edges of the card at one side of the crease, means operating to fold the parts of the card at opposite sides of the crease into engagement, means operating to apply pressure to the folded parts of the card and to hold them engaged until the adhesive sets, and means operating to discharge the finished package.

3,199,264

MACHINE FOR FILLING MATCHES IN BOXES

Albert W. Dietmann, Kalmar, Sweden, assignor to Arenco Aktiebolag, Vallingby, Sweden, a joint-stock company of Sweden

Filed July 10, 1962, Ser. No. 208,729
Claims priority, application Sweden, May 11, 1962, 5,287/62
3 Claims. (Cl. 53—260)



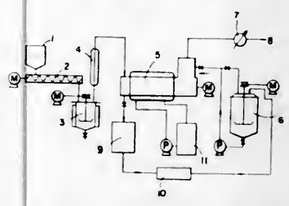
1. A machine for feeding matches or similar rod-shaped objects into boxes having rectangular bottoms transversely to the longitudinal direction of said boxes, comprising a first conveyor for feeding empty boxes to a box filling device, a second conveyor for feeding filled boxes from said filling device, a third conveyor arranged between said first and second conveyors, said third conveyor being locked in synchronism and in proper relationship with said first and second conveyors to discharge in all said empty boxes, a guide member which when placed in a box comprises a number of walls orientated transversely to the longitudinal direction of the box and having their upper portions secured to a rectangular frame provided with flanges projecting out of the walls of the box, means upon said third conveyor for lifting a guide member by said flanges from a filled box, conveying it to said first conveyor and discharging it into an empty box, said third conveyor comprising an endless belt having impeller fingers to be inserted between said guide members and to engage said flanges on one side of said guide members and a fixedly mounted slide bar cooperating with said flanges on the other side of said guide members.

3,199,265

METHOD OF PURIFYING ALDEHYDES AND THE APPARATUS THEREFOR

Akira Takahashi, Kanagawa-ken, Yukimitsu Mita, Tokyo, and Shigeo Hayashi, Kanagawa-ken, Japan, assignors to Showa Denko Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Dec. 20, 1961, Ser. No. 160,879
Claims priority, application Japan, Mar. 2, 1961, 36/6,811
13 Claims. (Cl. 55—22)



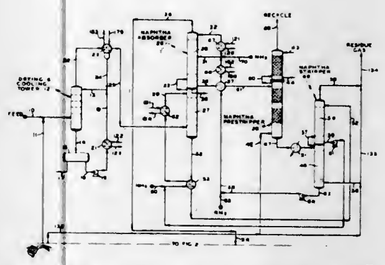
1. A method of purifying aldehydes which comprises passing in a gaseous form an aldehyde containing water through an inert liquid hydrocarbon containing a solid desiccating agent.

3,199,266

ACETYLENE PURIFICATION

Frederick J. Quester, New York, N.Y., and George Craig Grubb, Eatontown, N.J., assignors to Pullman Incorporated, a corporation of Delaware

Filed Mar. 17, 1961, Ser. No. 96,603
14 Claims. (Cl. 55—48)



1. A process for desorbing acetylene absorbed in liquid ammonia in a stripping zone from which a bottoms fraction containing ammonia and water is withdrawn and treated in a distillation zone to recover an overhead liquid ammonia stream which comprises vaporizing at least a portion of said overhead liquid ammonia stream in indirect heat exchange with a warmer fluid and introducing ammonia thus vaporized into said stripping zone as stripping vapors.

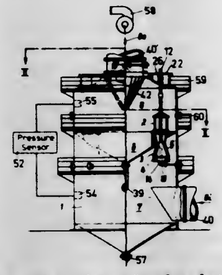
3,199,267

GAS SCRUBBER

Gerhard Hausberg, Essen-Bredeney, Germany, assignor to Gottfried Bischoff, Essen, Germany, a company of Germany

Filed Jan. 16, 1962, Ser. No. 166,511
Claims priority, application Germany, Jan. 19, 1961, B 60,894
5 Claims. (Cl. 55—210)

5. An installation for cleaning gases, comprising a generally cylindrical tower, a generally horizontal partition of substantially conical configuration with a downwardly pointing apex in said tower, said partition subdividing the interior of said tower into a lower and an upper compartment, an inlet for said gases extending substantially radially into said lower compartment below said partition, a drain opening at said upper compartment at said apex, a set of at least three nozzles traversing said partition and forming a set of constricted passages between said compartments, said nozzles being disposed near the periphery of said partition in a circular array centered on the cone axis, each of said nozzles including a shell with an upwardly converging lower porton and an upwardly diverging upper portion and further including a generally drop-shaped throttling insert with an upwardly tapering top



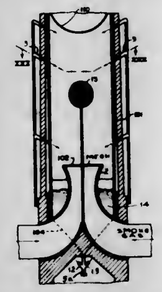
forming an annular channel of substantially uniform width with said upwardly converging lower portion, deflecting means above said channels and said upwardly diverging upper portions within said upper compartment for directing ascending gases from said lower compartment laterally outwardly from said nozzles above said generally horizontal partition, and an individual spray means at the bottom of each of said nozzles for injecting a washing liquid into said annnular channels along with said gases.

3,199,268

PARTICLE-FROM-GAS SEPARATORS

Karl-Heinz Oehlrich, Karl-Rudolf Schmidt, Hans Zenneck, Erwin Schaufler, and Hans-Gunter Heltmann, all of Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Aug. 25, 1959, Ser. No. 835,886
Claims priority, application, Germany, Nov. 3, 1958, S 60,472
10 Claims. (Cl. 55—261)



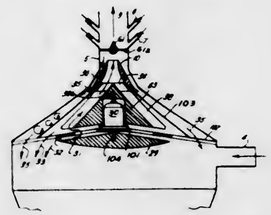
7. Apparatus for separating particulate matter from fluid media, comprising a processing container having side walls and forming a processing space and having an inlet duct near its bottom and an outlet duct above and parallel to said inlet duct for passing a flow of medium through said space, said inlet and outlet ducts defining together a primary flow axis, agitating means for imparting to the primary flow of the medium in said space a circulatory secondary flow, said agitating means comprising a plurality of fluid-injection nozzle means circumferentially spaced from each other about said axis, said nozzle means also being spaced from each other axially along said processing container, each of said nozzle means being directed substantially tangential to and terminating at the inside of said walls and inclined relative to said axis toward said inlet duct so that said agitating means superimposes on said primary flow a secondary flow having a potential flow component and a rotary-flow component to form in said space a vortex sink near said inlet duct and a vortex source remote from said inlet duct, said container having a receiving portion at its bottom for collecting substance separated out from the combined primary and secondary flow of said medium.

3,199,269

PARTICLE-FROM-GAS SEPARATORS

Karl-Heinz Oehlrich and Karl Rudolf Schmidt, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Apr. 25, 1960, Ser. No. 24,391
Claims priority, application Germany, Apr. 28, 1959, S 62,797
5 Claims. (Cl. 55—261)



1. A particle-from-gas separator, comprising a vessel structure defining vessel walls and a generally vertical axis and forming a centrifugal-action separator chamber of circular horizontal cross section, said chamber having a bottom portion, means forming a main inlet duct having an opening communicating with said chamber for supplying a primary flow of particle-laden gas to said chamber, said main inlet duct means including means for providing rotating motion to the gas entering said separator chamber, means forming a gas outlet portion communicating above said main inlet duct with said chamber and extending upwardly away from said chamber, secondary gas supply means for supplying an additional quantity of gas to said vessel structure and mounted tangentially on said gas outlet portion and angularly inclined downwardly relative to said axis so as to discharge secondary gas into said gas outlet portion and against the direction of said primary gas flow so as to produce a vortex sink and a vortex source in the primary gas flow and so as to superimpose a circulatory flow on said primary gas flow, and upwardly tapering means coaxially located within said vessel structure above said inlet opening and including an annular insert structure forming with said vessel walls an annular collecting space for receiving dust particles.

3,199,270

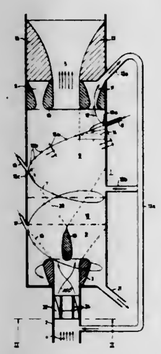
APPARATUS FOR MIXING AND SEPARATING SUBSTANCES OF DIFFERENT MASS-INERTIA

Karl-Heinz Oehlrich, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

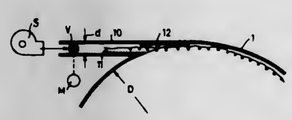
Filed Mar. 27, 1961, Ser. No. 98,604
Claims priority, application Germany, Mar. 25, 1960, S 67,735
16 Claims. (Cl. 55—261)

1. A dust-from-gas separator apparatus for separating dust entrained in a raw gas, said apparatus comprising a conduit vessel defining a cylindrical vessel space having

an inlet at one end and an outlet at the other end, said inlet and outlet defining therebetween a primary flow axis for fluid flow through said vessel space; duct means for introducing said raw gas containing said dust into said inlet along said primary flow axis, a plurality of nozzles disposed around said vessel and terminating at the inner wall surface thereof, said nozzles each having a direction generally tangential to the vessel wall and inclined relative to said primary flow axis for injecting gaseous fluid into said vessel along a main helical flow path in directions around said primary flow axis, said nozzle directions each having a component along said axis toward said inlet so that said main helical flow path superimposes upon the primary flow a rotational secondary flow coaxial with said primary flow axis and forms in said vessel space a vortex sink and a vortex source spaced from each other along said primary flow axis with fluid-entrained solid particles of said dust being caused to concentrate on helical travel paths having components along said primary flow axis due to fluid-internal relative forces, said vessel having means forming a collector space at the lower portion thereof for accumulation of the dust, discharge duct means extending outwardly from said collector space for discharge of the dust therefrom, means disposed near said outlet and forming an annular recess coaxial with said primary flow axis, said annular recess having curved surfaces widening in the flow direction of said primary flow axis.

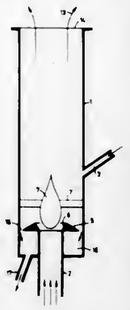


3,199,271
APPARATUS FOR SEPARATING FLOWING MEDIA OF RESPECTIVELY DIFFERENT MASS INERTIA
Karl Rudolf Schmidt and Karl-Heinz Oehlrich, both of Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Aug. 18, 1961, Ser. No. 132,386
Claims priority, application Germany, Aug. 25, 1960, S 70,072
9 Claims. (Cl. 55—261)



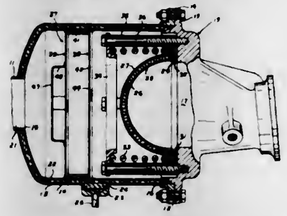
1. Apparatus for handling materials entrainable in a carrier fluid for the purpose of separating out said materials from said fluid, comprising a vessel having a wall, means defining an inlet and an outlet for the passage of fluid through the vessel and defining a primary-flow axis for the carrier fluid in which said materials are entrained, agitating means for imparting to the primary flow in said vessel a circulatory motion, said agitating means comprising nozzle means for injecting fluid along respective helical flow paths into said vessel in a direction substantially tangential to the primary flow and inclined toward the primary flow axis and having a component in opposition to said primary flow so that said agitating means superimpose upon said primary flow in said vessel a circulatory secondary flow coaxial with said primary flow and forming in said vessel a vortex sink and a vortex source spaced from each other along said primary flow axis; said nozzle means terminating flush with the wall of the vessel and being provided with means defining protuberances for producing turbulence in the fluid injected into said vessel from said nozzle means, and means for collecting the separated materials in the lower part of the vessel.

3,199,272
PARTICLE-FROM-GAS SEPARATORS
Karl-Heinz Oehlrich, Erwin Schaufler, and Karl-Rudolf Schmidt, Erlangen, Germany, and Hans Zenneck, deceased, late of Erlangen, Germany, by Sofie Zenneck, sole heir, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Oct. 31, 1961, Ser. No. 149,127
11 Claims. (Cl. 55—261)



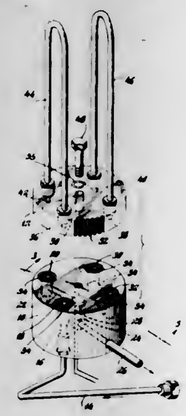
1. A particle-from-gas separator comprising a cylindrical enclosure having an inlet for a particle-laden main flow of gas at its bottom, an annular space around said inlet for receiving separated particle material, and a clean gas outlet opening at the top; nozzle means for supplying an auxiliary gas flow, said nozzle means communicating with the interior of said enclosure and terminating at the inner wall surface of said enclosure and directed so as to have a flow direction approximately tangential to said wall and downwardly inclined at an acute angle to the cross-sectional plane of said enclosure for causing the auxiliary gas flow to excite particle-separating circulatory motion in the main flow of gas, said gas inlet comprising a tubular duct protruding from below into the interior of said container and terminating below said nozzle means in an upwardly widening funnel-shaped end portion whose largest diameter is smaller than the inner diameter of said container to form at the top of said particle-receiving annular space an annular gap narrower than said space, and particle discharge means extending downwardly away from said annular space, a streamlined and drop-shaped body axially mounted in said enclosure and having a bulging lower end located adjacent the top of said funnel portion and a pointed upper end adjacent said gas duct means for supplying the auxiliary gas flow.

3,199,273
SEPARATOR FOR LIQUID AND GASEOUS FLUIDS
Mohamed B. Kudsi, Dayton, Ohio, assignor to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio
Filed Dec. 4, 1962, Ser. No. 242,228
2 Claims. (Cl. 55—318)



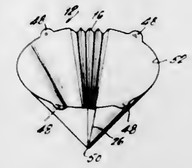
1. A separator for removing liquid particles in a flowing gaseous fluid, including a housing having a fluid inlet, coalescing means disposed in said housing across said inlet for flow of the fluid therethrough, liquid particles condensing therein and being blown therefrom as liquid droplets, collector means in said housing beyond said coalescing means presenting a surface for impingement of said droplets thereon and open passages for flow of gaseous fluid therethrough, said collector means including longitudinally spaced apart baffle plates having by-pass openings therein, said plates being relatively rotatably positioned to misalign corresponding by-pass openings of adjacent plates, wick means lining said housing and absorbing liquid draining from said surface said collector means being disposed transversely of the path of fluid flow in substantially peripheral contact with said wick means, the liquid running or dripping therealong to said wick means, and a fluid outlet from said housing beyond said collector means, and a liquid outlet from said housing in advance of said collector means.

3,199,274
CHROMATOGRAPHY APPARATUS
Stanley D. Norem, Bayside, N.Y., and Harold I. Hill, Fairfield, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed July 26, 1961, Ser. No. 126,959
3 Claims. (Cl. 55—386)



1. Chromatography apparatus comprising
first and second members in abutting, sliding relationship with one another, said first member having at least four openings in its abutting surface and said second member having at least four openings in its abutting surface,
said openings in said first and second member being so positioned relative to each other that upon relative movement of said first and second members to prescribed relative positions various selectible registrations are established between said openings in said first and second members and that at all of said prescribed relative positions all of said openings in said first member are in registration, respectively, with all of said openings in said second member,
an inlet passage connecting with one of said openings in said first member,
an outlet passage connecting with a second of said openings in said first member,
a loop passage interconnecting a third and fourth of said openings in said first member,
at least two chromatographic separating columns mounted on said second member, one of said columns connecting with two openings in said second member and another of said columns connecting with two other openings in said second member,
and means for causing relative movement between said first and second members to said prescribed relative positions to select various registrations between said openings in said first and second members, thereby selecting various flow path relationships between said inlet and outlet passages and said columns.

3,199,275
CONICAL FILTER
John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., a corporation of New York
Filed Feb. 27, 1962, Ser. No. 176,053
2 Claims. (Cl. 55—521)

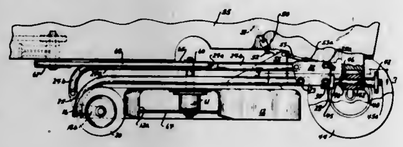


1. A conical filter element comprising a member having a pair of opposing substantially right triangular side walls and an end wall extending between said side walls, each of said side walls having a first marginal edge common with said end wall and a second marginal edge extending substantially normal to said first marginal edge thereof, said second marginal edges being folded over and secured to the outer surface of one of said side walls with both marginal edges having portions in contact with the said side wall, each of said side walls having a third arcuate marginal edge extending between the first and second marginal edges thereof, and said end wall having a plurality of pleats which extend in the direction of and between said first marginal edges.

3,199,276
RIDING MOWER
Lloyd C. Hahn, Vanderburgh County, Ind., assignor to Hahn, Inc., Evansville, Ind., a corporation of Indiana
Filed Mar. 27, 1963, Ser. No. 268,397
7 Claims. (Cl. 56—25.4)

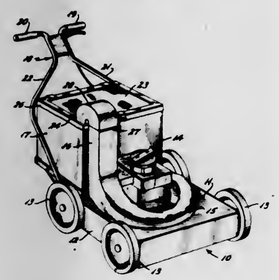
1. In a lawn tractor having a framework, in combination, support members depending from said framework and having aligned openings extending therethrough, a mower unit having a pivotal forwardly extending portion, and a wheel axle having an opening extending through a

portion thereof and alignable with said openings in said support members, said pivotal forwardly extending portion of said mower unit passing through said openings in



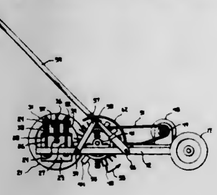
said support members and said opening in said portion of said wheel axle whereby said mower unit and said wheel axle are independently rotatably mounted.

3,199,277
ROTARY POWER LAWN MOWER WITH GRASS CATCHER
Warren E. Moody, 95 Fiesta Way, Fort Lauderdale, Fla.
Filed Jan. 8, 1964, Ser. No. 336,421
7 Claims. (Cl. 56—25.4)



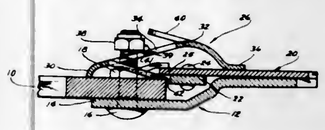
7. A lawn mower comprising a deck, ground wheels supporting the deck for movement over the ground, a cutting blade rotatably mounted below the deck, power means supported on the deck for rotating the blade, a permanent container also mounted on the deck, a porous cover secured to the container, a vertical conduit opening to the underside of the deck and into the container through the cover, and a disposable container in the permanent container and supported thereby adjacent said cover for receiving cuttings from the conduit.

3,199,278
LAWN CARE MACHINE
Ovid Dye, 1722 Pasadena St., Indianapolis 19, Ind.
Filed June 24, 1963, Ser. No. 290,100
10 Claims. (Cl. 56—27)



1. A lawn care machine comprising: a set of support wheels; a frame supported by said support wheels and including a cross member supported directly by a pair of said support wheels, said frame having elongated side members extending rearwardly from said cross member; an axle supported by two additional ones of said support wheels and having a pair of yokes secured thereto, said yokes having depending side members perpendicular to the axis of said axle, one yoke being disposed adjacent each of said additional wheels; a pair of hangers, each hanger of said pair extending through one of said yokes and attached to one of said frame side members adjacent the rear end thereof, said hangers being supported by springs to resiliently suspend the rear portions of said frame side members; a motor mounted to said frame; a rotor pivotally mounted to said frame and having means thereon coupled to said motor for driving said rotor thereby; a plurality of U-shaped cutter members mounted to said rotor; and a plurality of prongs mounted to said rotor.

3,199,279
AGRICULTURAL IMPLEMENT
Laurel R. Yeske, Rockford, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Mar. 31, 1964, Ser. No. 356,217
12 Claims. (Cl. 56—305)



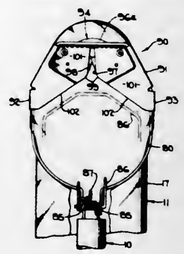
10. In a hold-down clip for a cutter mechanism of the type including a bar arranged to travel transversely of its length, a series of guards fixed on the bar projecting in a forward direction, and a series of forwardly directed reciprocatory sickle sections, said clip comprising a

plate of resilient material positioned over said bar and sickle sections, said plate extending rearwardly into contact with said bar at a point spaced rearwardly of said sickle sections and forwardly into contact with the upper surfaces of said sickle sections, a

bolt anchored in said bar and extending upwardly through said plate at less than a right angle thereto in all positions of said plate, spaced forwardly of the rear edge of said plate, and means on said bolt providing a downwardly directed substantially

straight knife edge in contact with the upper surface of said plate and pressing down thereon to urge said plate into resilient contact with said sickle sections.

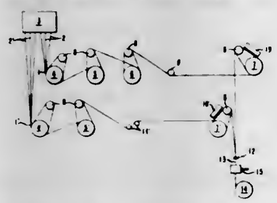
3,199,280
FRUIT PICKER
Chester N. Wilczek, 230 W. Walnut Ave., Arcadia, Calif.
Filed Jan. 30, 1963, Ser. No. 258,100
13 Claims. (Cl. 56—334)



9. A fruit picker adapted to utilize the weight of the fruit being picked to actuate its stem cutting means, comprising:

(a) a staff having a wire loop mounted at its upper end constituting a fixed jaw member;
(b) a fruit-actuated stem cutting means including:
(I) a mounting plate removably clamped on to said wire loop over the upper portion of said jaw member, said mounting plate having:
(A) a central notch with its open end adjoining said jaw member, and
(B) its lower edges adjoining said jaw member adapted to slide the fruit stems contacting them into said notch when said fruit picker is pulled downward, and
(II) a pair of severing means each independently pivotally attached to the lower side of said mounting plate and separated by said notch, the portion of each of said severing means adjoining said notch being spaced from said pivotal attachment substantially by the length of said severing means.

3,199,281
COMPOSITE POLYESTER YARN OF DIFFERENTIALLY SHRINKABLE CONTINUOUS FILAMENTS
Sidney B. Maerov and Eugene B. McCord, Kinston, N.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 27, 1961, Ser. No. 141,945
8 Claims. (Cl. 57—140)



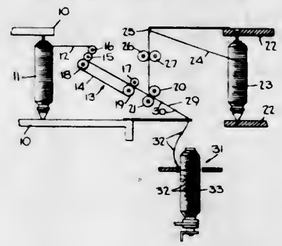
1. A composite linear condensation polyester yarn comprising continuous filaments of at least two species, one of which is characterized by a zero load residual shrinkage in the range of from 0.0% to about 20%, and a residual shrinkage at 0.05 gram per denier load of at least about 1.2% less than the zero load residual shrinkage, and the other said species being characterized by a zero load residual shrinkage at least 2% higher than the zero load residual shrinkage of the first said species.

3,199,282
TEXTURIZED CONTINUOUS FILAMENT YARN
Robert J. Clarkson, Winnsboro, S.C., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Original application Apr. 21, 1960, Ser. No. 23,689, now Patent No. 3,108,355, dated Oct. 29, 1963. Divided and this application Mar. 12, 1963, Ser. No. 264,538
3 Claims. (Cl. 57—140)



1. A yarn capable of becoming bulky which comprises a multi-filament continuous filament yarn composed of at least 50 filaments each at least 15 denier in size, said yarn at substantially each point along its length that is capable of becoming bulky having at least 75% of the filaments thereof substantially flattened on at least one side, said flattened filaments exhibiting strain lines when a cross-section thereof is viewed under polarized light, said yarn at each said point also having a plurality of filaments which have at least two sides substantially flattened.

3,199,283
STRONG SLUB YARN
Malcolm R. Livingston, Charlotte, N.C., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Original application Apr. 18, 1958, Ser. No. 729,452, now Patent No. 3,053,040, dated Sept. 11, 1962. Divided and this application May 28, 1962, Ser. No. 205,814
5 Claims. (Cl. 57—144)



1. A yarn comprising a continuous core having discrete staple length fibers wrapped about the same, said staple length fibers being non-uniformly distributed along the length of said core to form piles of fibers spaced apart along the length of said core, said piles of fibers being securely anchored to said core by twisting.

3,199,284
PROCESS FOR MAKING YARN FROM A THERMOPLASTIC STRIP
Frederick Scragg, Mobberley, England, assignor to Ernest Scragg & Sons Limited, Macclesfield, England
Filed July 25, 1963, Ser. No. 297,510
Claims priority, application Great Britain, July 26, 1962, 28,710/62
14 Claims. (Cl. 57—157)

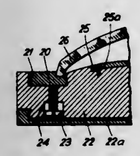


2. A process for manufacturing a textile yarn, comprising the steps of forming in an elongated thermoplastic strip of filament-forming material a plurality of elongated parallel slits; drawing the slitted strip; extending the thus-drawn strip transversely; breaking some of the portions of the strip which extend between pairs of adjoining slits thereof; and then twisting the elongated strip.

3,199,285
WATCHCASE
Giuseppe Montese-Caruso, Viale Bianca Maria 22, Milan, Italy, and Ennio Bussi, Via Monte de Creta 25, Rome, Italy
Filed Aug. 6, 1962, Ser. No. 216,198
Claims priority, application Switzerland, Aug. 9, 1961, 9,346/61
12 Claims. (Cl. 58—88)

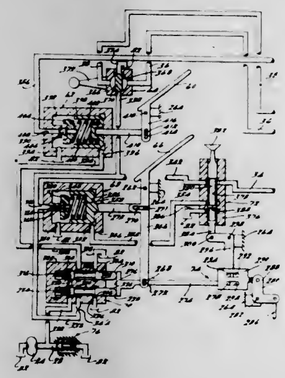
1. A watchcase comprising a case band arranged for removably receiving a watch movement, and a removable glass carrying bezel snap fitted to said case band, said

case band being provided in its upper portion with an annular groove in which the bezel is wholly located, and



said bezel having a glass lodging provided in its upper portion, the bottom surface of said glass lodging extending lower than both upper edges of said groove.

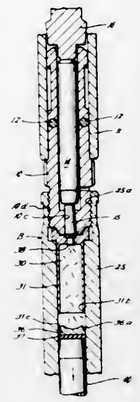
3,199,286
HYDROSTATIC DRIVE
Arthur F. Anderson, Livonia, Mich., assignor to Gar Wood Industries, Inc., Wayne, Mich., a corporation of Michigan
Filed May 16, 1962, Ser. No. 195,177
28 Claims. (Cl. 60—19)



22. A hydrostatic drive system comprising: a variable displacement fluid pump; a prime mover for driving said pump; a fluid motor in fluid communication with said pump and adapted to be powered by the fluid therefrom; variable relief valve means for controlling the output pressure of said pump; throttle means for controlling the speed of said prime mover and for varying the output displacement of said pump; and braking means including a manually actuatable brake lever for progressively hydraulically braking said motor, said relief valve means being responsive to said throttle means to assume a maximum pressure setting when said pump is in a positive output position, and responsive to said braking means to assume a pressure setting proportional to the position of said brake lever when said pump is in a zero displacement position to thereby provide a braking load against which said motor must pump.

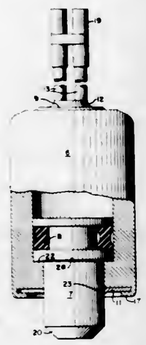
3,199,287
EXPLOSIVE MEANS FOR TUBING PERFORATOR AND THE LIKE
John C. Kinley, 5815 Royalton St., Houston 36, Tex.
Filed May 9, 1962, Ser. No. 193,444
7 Claims. (Cl. 60—26.1)

1. A tool having an explosive means therewith, the improvement residing in said explosive means, including:
(a) an explosive chamber housing having an upper flange and a chamber therebelow for receiving explosive powder,
(b) said flange also having a dish-shaped depression in its upper lateral surface, and



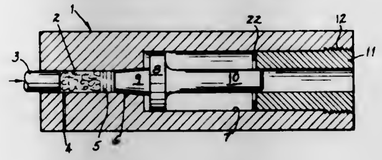
(c) a dish-shaped sealing disk generally conforming in shape to said depression for forming a seal for the upper end of said chamber housing.

3,199,288
EXPLOSIVELY ACTUATED PISTON DRIVER
Joseph A. Nahas, Laurel, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 20, 1963, Ser. No. 266,763
6 Claims. (Cl. 60—26.1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



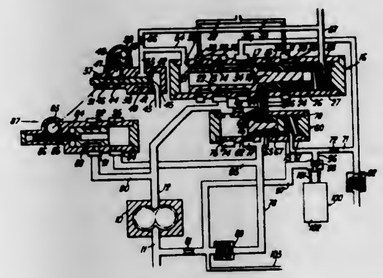
1. In a piston driver and actuator assembly which includes a piston slidably engaging a housing and having explosive charge means adjacent one end of said piston for driving said piston relative to said housing upon energization thereof the improvement comprising
spring means mounted within said housing and abutting a tapered portion of the other end of said piston before firing, said spring means being flexible outward from said housing and compressible normal to the axis of said piston due to the relative movement between said tapered portion and said spring means upon firing of said piston for gripping said piston whereby said piston will not return to its unfired condition.

3,199,289
SEAL AND SHOT START DEVICE
Marcus Ramsay, New Haven, and Glenn R. Dixon, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 29, 1963, Ser. No. 276,411
10 Claims. (Cl. 60—26.1)



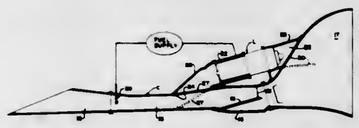
1. A tool powered by a liquid propellant mixture including a barrel, a working piston slidably mounted in said barrel, a combustion chamber in said barrel having a tapered opening at one end, a tapered head joined to said piston, said tapered head and said tapered opening operative when seated to form a locking taper effective to pneumatically seal said combustion chamber, said locking taper sealing said combustion chamber to a predetermined pressure level and releasing when said predetermined pressure level is exceeded so that the pressure in said chamber can act on said piston to drive said piston forward in said barrel, a compression piston slidably mounted in said combustion chamber and operative to compress said propellant to ignition, said predetermined pressure necessary to release said locking taper being well above the level necessary to accomplish compression ignition of said propellant mixture.

3,199,290
GAS TURBINE ENGINE AFTERBURNER FUEL SYSTEM
Albert Jubb and Christopher Linley Johnson, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Oct. 9, 1961, Ser. No. 143,840
Claims priority, application Great Britain, Oct. 12, 1960, 35,000/60
3 Claims. (Cl. 60—35.6)



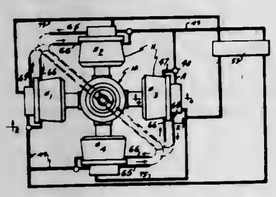
1. A fuel system for controlling the supply of reheat fuel from a source thereof to the reheat combustion equipment of a gas turbine engine comprising a throttle for controlling engine speed, a main conduit for conveying fuel from the said source thereof to said reheat combustion equipment, a pump for pumping fuel through said main conduit, means for metering the flow of fuel through said main conduit, a by-pass passage communicating with the main conduit on the high pressure side of the pump, a pressure regulating throttle valve which ensures that the pressure drop across the metering means is maintained to within a desired range, said throttle valve controlling flow to the inlet of said pump, a shut-off valve responsive to the throttle setting, said shut-off valve cutting off the fuel supply to the inlet of said pump and permitting flow of fuel through said by-pass passage from the high pressure side of the pump to drain, thus preventing flow of fuel through said main conduit whenever the throttle setting is in a position corresponding to engine speed below a predetermined speed, said predetermined speed being substantially below the maximum engine speed, a by-pass conduit through which fuel may flow from the high pressure side of said pump to drain and a flow control valve which controls flow through said by-pass conduit and controls said throttle valve, said flow control valve being settable in a closed position, in which reheat fuel is supplied through said main conduit to the reheat combustion equipment when said shut-off valve permits such flow, and an open position in which the supply of reheat fuel to the reheat combustion equipment is cut-off.

3,199,291
INTEGRATED AIRCRAFT ENGINES
Archibald P. Kelley and Carl A. Tamarin, Scottsdale, Ariz., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 96,796, Mar. 20, 1961. This application Feb. 10, 1964, Ser. No. 344,524
3 Claims. (Cl. 60—35.6)



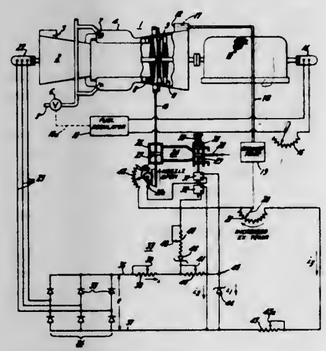
1. A cruising-landing engine system for a hypersonic aircraft, comprising:
(a) a detonation combustion cruising engine including an aerothermodynamic duct having an air inlet at one end, an exhaust nozzle at the other end, a combustion zone intermediate said inlet and nozzle, a fuel injection nozzle in the duct upstream of said combustion zone, and a combustion control ramp in said combustion zone, said ramp being movable between open and closed positions;
(b) landing engine means arranged in parallel with said combustion zone of said cruising engine including an air inlet duct branching off from said aerothermodynamic duct immediately upstream of said combustion zone between the zone and said fuel injection nozzle and having an air inlet passage communicating with said aerothermodynamic duct through a first wall opening therein, an exhaust duct branching off from said exhaust nozzle immediately downstream of said combustion zone between the zone and the rear open end of the exhaust nozzle and having an exhaust passage communicating to the interior of said exhaust nozzle through a second wall opening in said aerothermodynamic duct, and a jet thrust landing engine mounted between said inlet and exhaust ducts with its inlet in communication with the inlet passage in said inlet duct and its exhaust in communication with the exhaust passage in said exhaust duct;
(c) means for selectively admitting the air flowing through said aerothermodynamic duct toward said combustion zone thereof into said inlet duct; and
(d) means for selectively opening and closing said exhaust duct.

3,199,292
COMBINATION OF A FREE TURBINE WITH A PLURALITY OF GAS GENERATORS
Alexandre Berger, Pottstown, and Rene A. M. Tosca, Boyertown, Pa. (both % Energy Transformation Corp., 230 S. Reading Ave., Boyertown, Pa.)
Filed June 5, 1962, Ser. No. 200,185
1 Claim. (Cl. 60—39.16)



A free gas turbine driven by a plurality of gas generators in which said gas turbine is centrally positiond and said plurality of gas generators are disposed symmetrically about the axis of said gas turbine and in which each gas generator is comprised of a supporting frame with a burner, a radial flow compressor, a centripetal turbine and a shaft, said shaft retaining said compressor and said turbine mounted thereon, each of said gas generators provided with an inlet that is centripetal to the axis of the gas generator, said gas generators extending radially and at right angles to the axis of said free gas turbine and said gas generators being equally spaced about the axis of said free gas turbine and the axis of said gas generators being in the same horizontal plane so that the axis of each gas generator intersects the axis of said free gas turbine.

3,199,293
TWO SHAFT GAS TURBINE CONTROL SYSTEM
Neal E. Starkey, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 15, 1963, Ser. No. 302,355
5 Claims. (Cl. 60—39.25)



1. In a two-shaft gas turbine of the type having a turbine-compressor discharging motive fluid through a variable nozzle to a mechanically independent load turbine, to combination of:

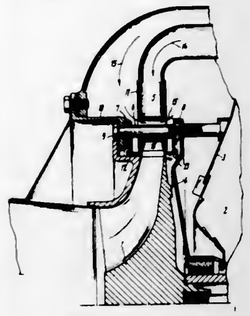
(a) first means responsive to turbine-compressor speed,

(b) second means responsive to gas turbine exhaust temperature,

(c) servo means controlled by said first and second means to position the variable nozzle in response to changes in turbine-compressor speed and exhaust temperature, and

(d) electrical circuit means having elements therein which are activated at selected turbine-compressor speeds by said first means to change the characteristics of said circuit means for selectively modifying the effects of incremental changes of turbine-compressor speed and exhaust temperature on said third means over different selectable ranges of turbine-compressor speed.

3,199,294
AIR-COOLED SUPPORT AND GUIDE VANE ASSEMBLY FOR A GAS TURBINE ENGINE
Hermann Hagen, Munich, Germany, assignor to BMW Triebwerkbau Gesellschaft m.b.H., Munich-Allach, Germany
Filed Apr. 23, 1962, Ser. No. 189,604
Claims priority, application Germany, Apr. 25, 1961, B 62,264
8 Claims. (Cl. 60—39.31)



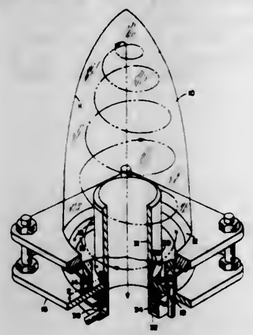
1. A gas turbine, particularly a small gas turbine, comprising centripetal turbine means including a rotor having a shaft, combustion chamber means disposed laterally of said turbine rotor, seal means disposed between said combustion chamber means and said turbine rotor, hollow turbine guide vane means for directing hot combustion gases from said combustion chamber means to said rotor, passage means extending transversely of said hollow turbine guide vane means and adapted to be traversed by a flow of cooling air, relatively cool turbine housing means, supporting means for said seal means, connecting means rigidly connecting said supporting means to said housing means and extending freely through said passage means in said hollow turbine guide vane means, spacing means provided on said connecting means, said spacing means having a length greater than the width of said guide vane means, said spacing means determining the relative positions of said supporting means and said housing, and further connecting means capable of yielding under thermal expansion connecting and positioning said turbine guide vane means relative to one of the two parts consisting of said first-mentioned connecting means and another structural part of the gas turbine in such a manner as to be capable of expanding under heat.

3,199,295
CONICAL VORTEX INJECTION AND COMBUSTION DEVICE FOR REACTION MOTORS
Joseph W. Connaughton, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 26, 1963, Ser. No. 304,700
2 Claims. (Cl. 60—39.74)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A conical vortex injection and combustion device for reaction motors comprising, in combination:

(a) an elongated housing having a closed end and an open end and a conical chamber disposed in said housing, said chamber being defined at one end by an apex disposed within the closed end of the housing and at the other end by a circular opening disposed concentrically within the open end of the housing;

(b) a ring rigid with said open end of the housing and forming an extension thereof, said ring having an axial bore extending therethrough in registry with said circular opening of the chamber and thereby defining a continuation of said chamber in a direction away from the apex, said ring having an annular passage formed therein and a plurality of angular injection ports providing communication between said annular passage and the region of said chamber adjacent said other end, the direction of said ports being tangential to the central axis of said chamber, said

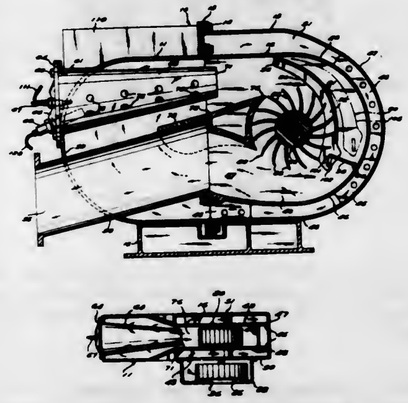


ring further having a fluid supply port formed therein whereby fluids can be admitted to said angular passage; and,

(c) an elongated, cylindrical sleeve rigidly positioned concentrically within said circular opening of the chamber with one end thereof extending inwardly into said chamber toward the apex thereof, said sleeve having a central opening extending from end to end therethrough and in communication with said chamber, said sleeve having a second annular passage formed in the sleeve and having a plurality of injection ports formed therein so as to provide communication between said second annular passage and said chamber in the area between said sleeve and said housing, said sleeve further having a fluid supply port formed therein whereby fluids can be admitted to said second annular passage.

3,199,296
GAS TURBINE ENGINE
Anthony L. Rebak, 81 Kenneth Ave., Toronto, Ontario, Canada, and Stephen J. Federko, 10214 Sophia Ave., Cleveland, Ohio
Filed May 16, 1963, Ser. No. 280,921
4 Claims. (Cl. 60—39.75)

1. A regenerative gas turbine engine comprising a generally cylindrical turbine housing having a circular outer peripheral wall and a pair of axially spaced end walls, a rotatable shaft extending axially through the end walls of said turbine housing, a turbine secured on said shaft within said turbine housing, bearing means rotatably journaling said shaft in said turbine housing, an outer housing around said turbine housing and having an axially extending circular peripheral wall spaced radially away from the outer wall of said turbine housing to define with a portion of said spaced end walls an annular space extending at least 180° around the periphery of said turbine housing, said outer housing having end walls spaced axially from the end walls of said turbine housing, a compressor housing on the outer side of one end wall of said outer housing around said shaft, an inlet opening in said compressor housing, a centrifugal compressor mounted on the end of said shaft within said compressor housing, passage means connecting said compressor housing with the interior of said outer housing to direct compressed air from said compressor into the annular space between said outer housing and said turbine housing to cause said air to flow circumferentially in a regenerative zone around the axis of said shaft in said annular space to provide regenerative zone around the axis of said shaft in said annular space to

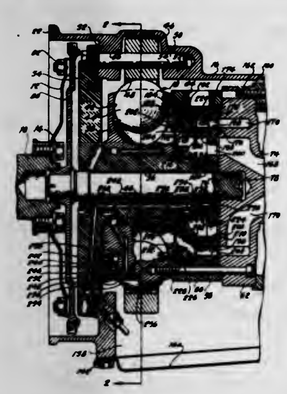


provide regenerative heat absorbing contact between said air and said turbine housing, said turbine housing having an inlet and an outlet, a combustion chamber mounted in said outer housing to receive heated air from said regenerative zone and extending toward said inlet of said turbine housing to define a combustion zone, said combustion chamber including fuel supply and ignition means for igniting said fuel in said air to produce heated gases, means to direct said heated gases into said turbine housing inlet to impinge upon the vanes of said turbine, and exhaust duct means to conduct exhaust gases from said turbine outlet to the exterior of said outer housing.

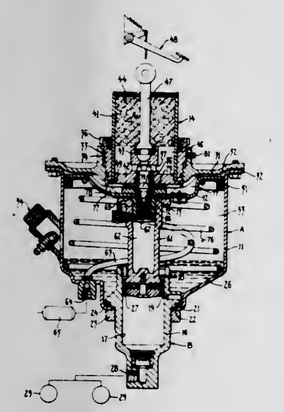
3,199,297
INFINITELY VARIABLE HYDROSTATIC TRANSMISSION SYSTEM
Howard L. Croswhite, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,575
9 Claims. (Cl. 60—53)

1. A hydrostatic power transmission mechanism comprising a pair of hydrostatic fluid displacement units, each of them comprising a driving portion and a driven portion, one of the portions of one unit and one of the portions of the other unit being connected together for rotation in unison, a closed hydrostatic fluid flow path between said units for accommodating cross flow therebetween, the common portions of each unit cooperating to define a cavity, a commutator element in said cavity, a commutator piston element in said cavity, means for connecting said elements to a relatively stationary portion of said mechanism, a sealing surface formed on said commutator element, a cooperating sealing surface formed on said one portion of said one hydrostatic unit, rotary portions of said other hydrostatic unit being in sliding and sealing engagement with said commutator piston element, said hydrostatic fluid flow path being defined in part by said commutator element and said commutator piston

element, and means for providing a flexible sealed connection between said commutator element and said commutator piston element whereby a continuous high pressure flow path therethrough is provided notwithstanding shifting and articulated movement of one element with respect to the other.

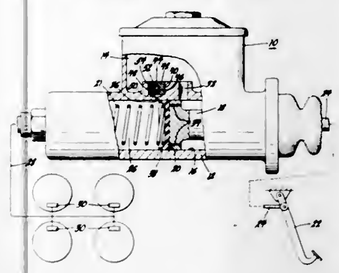


3,199,298
POWER BRAKE MECHANISM
Curtis L. Brown, Owosso, Mich., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 9, 1962, Ser. No. 229,419
5 Claims. (Cl. 60—54.6)



1. In a power brake mechanism, a housing, piston means movably supported in said housing and forming a liquid chamber at one side and a power chamber at the other side, said piston means being movable from a retracted position in response to an increase in pressure in said power chamber to displace liquid from said liquid chamber, valve means movable to vary the pressure in said power chamber and being supported by said piston means for movement relative thereto, a support member mounted in a wall of said housing for movement to selected positions axially of said piston means and being engageable with said piston means to determine said retracted position, a control member for moving said valve means slidably mounted in said support member for movement relative thereto axially of said piston means and normally being positioned in predetermined spaced relation to said valve means when said piston means is in said retracted position, stop means formed by said supported member and enagageable with said control member to limit movement relative to said support member away from said piston means, said support member being movable to a selected position of adjustment with said stop means in engagement with said control member and during enagagement with said piston means to determine said retracted position without changing the relative positions of said control member and said valve means.

3,199,299
MASTER CYLINDER PRIMARY CUP ANTI-EXTRUSION MECHANISM
Elton S. Moyer, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 27, 1963, Ser. No. 291,092
9 Claims. (Cl. 60—54.6)



1. In a master cylinder assembly having a fluid reservoir, a cylinder bore with a pressurizing piston movable therein to form therewith a pressurizing chamber, a rubber-like primary cup on one end of said piston for sealing and compensating said pressurizing chamber, a compensating port connecting said reservoir and said bore, a bypass port passage connecting said reservoir and said bore at said pressurizing chamber adjacent said primary cup when said piston is retracted and terminating in a bypass port at said bore adapted to be closed by said primary cup upon pressurizing movement of said piston, and means in said passage sensitive to the rate of generation of fluid pressure generated in said pressurizing chamber at the beginning of pressurizing movement of said piston to establish a pressure at said bypass port generated at a corresponding rate of generation to limit the pressure differential at said bypass port to prevent extrusion of said primary cup into said bypass port by said generated pressure.

3,199,300
PILE CONSTRUCTION
Vincent J. Flore, New York, N.Y., assignor to Foundation Specialties, Inc., New York, N.Y.
Filed May 22, 1961, Ser. No. 111,596
10 Claims. (Cl. 61—53)

1. A hammer driven, compression type pile adapted to carry a load comprising a plurality of separate and distinct sections stacked end to end one on the other to form a continuous pile of any given extended length, each of said sections including a tubular shell, an end cap closing the upper end of each of said shells, and an end plug closing the bottom end of each of said shells, said cap defining a socket having a bottom extending inwardly of its respective shell and having at its upper end an integrally connected laterally extending flange formed with a groove into which the upper end of its respective shell is fitted whereby said cap reinforces the upper end of said shell, and said end plug defining a male projection snugly received in the socket formed by the end cap of the next preceding pile section, said male projection having a bottom and said plug of one section and end cap of the next preceding section being connected so that the bottom of said male projection is spaced slightly above the bottom of the socket of the end cap of said next preceding section, an aperture formed in the bottom walls of the cooperating end plug and end cap, and a compressible material filling the volume of said shell between the end plug and end cap of each section.

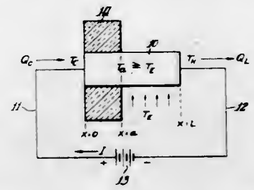


3,199,301
FOUNDATION PILE
Wolf Chitis, Via Verdi 35, Naples, Italy
Filed Sept. 16, 1960, Ser. No. 56,409
Claims priority, application Italy, Sept. 23, 1959, Patent 616,364
2 Claims. (Cl. 61—53.6)



1. A foundation pile for construction works comprising an upper stalk extending downwardly into the ground to a relatively shallow depth, a first group of branch members which are integral with said stalk at their upper ends and extend downwardly therefrom to a greater depth, said members being arranged so as to approach one another and thereby approximately converge at their upper ends and to extend downwardly and outwardly at an angle of inclination to the axis of said stalk so as to define an approximately conical surface substantially concentric with respect to said stalk, and a second group of branch members which are integral with said stalk at their upper ends and extend downwardly therefrom to a greater depth, said second branch members being arranged so as to approach one another and thereby approximately converge at their upper ends and to extend downwardly and outwardly at a greater angle of inclination to the axis of said upper stalk than said first group of branch members so as to define a second approximately conical surface surrounding said first group of branch members and substantially concentric with respect thereto.

3,199,302
THERMOELECTRIC DEVICES
Charles N. Rollinger, Colorado Springs, Colo., and James E. Sunderland, Evanston, Ill.; said Rollinger assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois, and said Sunderland assignor to Northwestern University, Evanston, Ill., a corporation of Illinois
Filed May 29, 1962, Ser. No. 198,541
8 Claims. (Cl. 62—3)

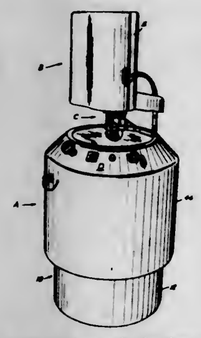


1. In a thermoelectric device comprising means defining at least a single thermoelectric element; means to produce a cold junction and a hot junction; means defining thermal insulation about said thermoelement, said last means characterized by being extended from substantially adjacent one of said junctions toward the other of said junctions a predetermined distance less than the total length of said element to a point where the temperature of said element at least equals the temperature of the environment, the ratio of said predetermined distance of insulation extent to said total length of the element being in the range of 0.03 to 0.97, and said last means being effective to define an insulated zone along said element a distance which is a function of the temperature along said element, the remaining uninsulated portion of said element being exposed to the ambient environment, the temperature of ambient environment being lower than the temperature of the hot junction, whereby the temperature difference between said junctions is maximized.

3,199,303
OXYGEN THERAPY SYSTEM
Wilfried Haumann and Charles P. Mulcahey, Indianapolis, Ind., assignors to Union Carbide Corporation, a corporation of New York
Filed May 9, 1963, Ser. No. 279,110
16 Claims. (Cl. 62—50)

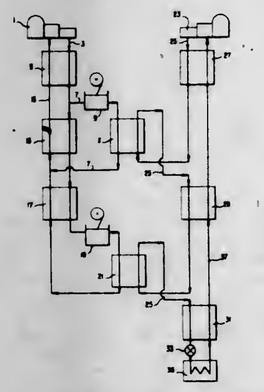
1. Apparatus comprising in combination a thermally insulated storage container having an access passage in the top thereof to a storage space within the container, means sealing said access passage and storage space from the ambient atmosphere, a fluid transfer tube connecting to the sealing means and extending through said access passage into said storage space and terminating adjacent the bottom thereof; vaporizing means connecting to said sealing means in fluid communication with said fluid transfer tube, and connecting means connected to said sealing means in fluid communication with said fluid transfer tube for joining said container to a second container to control fluid transfer between the two containers, said connecting means comprising a valve assembly having first and second valve housings, each containing

a normally closed valve, and a guide framework, the first valve housing valve being constructed and arranged to permit liquid transfer through said fluid transfer tube and the interior of said first valve housing into said second container when said connecting means is joined to said second container, the second valve housing valve being constructed and arranged to permit vapor venting from



said second container through the interior of said second valve housing when said connecting means is joined to said second container, and said guide framework being constructed and arranged to leak-tightly join said connecting means with corresponding means of said second container to permit the aforesaid liquid transfer and vapor venting through said valve assembly.

3,199,304
METHODS FOR PRODUCING LOW TEMPERATURE REFRIGERATION
Kenneth Zeitz, Jacob M. Geist, and Peter K. Lashmet, Allentown, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware
Filed Jan. 18, 1963, Ser. No. 252,359
5 Claims. (Cl. 62—79)



1. A low temperature process for refrigerating a device to be cooled comprising the steps of

compressing and expanding a first gas in a closed cycle in which the compressed first gas is expanded in a plurality of work expansion steps at progressively decreasing temperature levels and in which effluent from the work expansion steps is passed in heat interchange with compressed first gas to cool compressed first gas prior to the work expansion step,

compressing a second gas,

passing compressed second gas successively in heat interchange with effluent of the work expansion steps at the progressively decreasing temperature levels to cool compressed second gas to a low temperature,

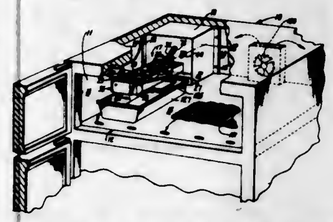
expanding in a valve, cool compressed second gas to effect at least partial liquefaction of the second gas,

passing expanded second gas in heat interchange with the device to be cooled,

and passing second gas following the last-named heat interchange in countercurrent heat interchange with compressed second gas following the aforementioned heat interchange between compressed second gas and effluent of the work expansion steps,

the compressed second gas being passed in heat interchange with effluent of the work expansion steps prior to the heat interchange between the effluent of the work expansion steps and the compressed first gas.

3,199,305
ICE MAKER POWERED BY SUPPLY WATER PRESSURE
Edwin H. Frohbieter, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware
Filed May 2, 1962, Ser. No. 191,817
12 Claims. (Cl. 62—135)



1. An apparatus for making ice bodies comprising: a mold for holding a body of water, said mold selectively disposed in a first substantially horizontal position and a second ice releasing position; means for delivering a preselected volume of water to the mold; means for freezing the water within said mold; drive means operated by water pressure from a source of water for the mold for rotating said mold from said first position to said second position; spring biased cam means resiliently connected to said drive means for selective rotation with said drive means; lever means cooperating with said cam means and said water delivery means, said cam means actuating said water delivery means upon contact of said cam means with said lever means; and thermally responsive control means for selectively releasing said cam means to thereby initiate said drive means for rotation of said mold toward said second position and the subsequent release of said ice bodies from said mold.

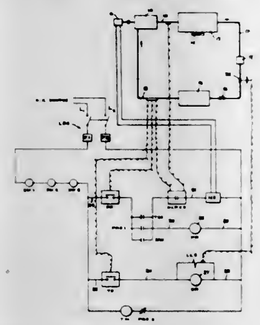
3,199,306
TIME DELAY FOR COMPRESSOR MOTOR CIRCUIT
Bruce M. Paul, Belleville, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed June 5, 1964, Ser. No. 372,929
3 Claims. (Cl. 62—158)

1. A control circuit for refrigerant compressor motor forming a portion of closed system circulating a refrigerant, which system includes the compressor, a condenser, and an evaporator, said control circuit comprising:

(a) compressor motor switching means for connecting and disconnecting said compressor motor to and from a source of electrical power,

(b) temperature sensing means operative to measure the temperature of refrigerant and to energize said compressor motor switching means when the refrigerant temperature rises above a predetermined value to cause said compressor motor to be connected to the source of electrical power, said temperature sensing means being further operative to cause said compressor motor switching means to disconnect said compressor motor from the source of electrical power when the temperature of the refrigerant drops below a predetermined value,

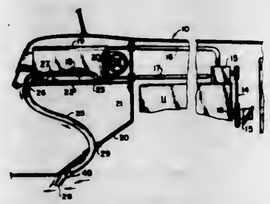
(c) pressure sensing means operative to cause said compressor motor switching means to disconnect the compressor motor from the source of electrical power when the refrigerant pressure falls outside of a predetermined pressure range,



(d) time delay means operative through said compressor motor switching means when said compressor motor is disconnected from the source of electrical power to initiate a time delay switching operation during which time delay period the compressor motor is maintained disconnected from the source of electrical power except for

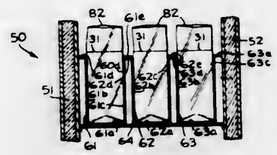
(e) said temperature sensing means being operative to connect the compressor motor to the source of electrical power whenever the temperature of the refrigerant in the system rises above the predetermined value.

3,199,307
WATER EVAPORATOR FOR AUTOMOBILE AIR CONDITIONER
Lester C. Willis, 1581 Waterwitch Drive, Orlando, Fla.
Filed Aug. 24, 1964, Ser. No. 391,386
3 Claims. (Cl. 62—241)



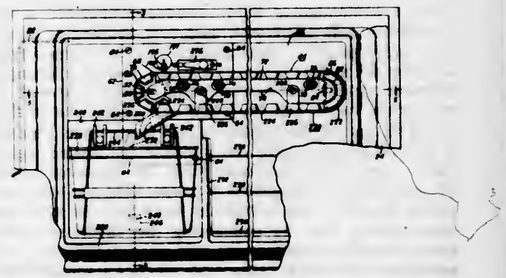
1. A device for the removal of liquid released from the cooling portion of an air conditioning system of a mobile vehicle, which cooling portion is located within the vehicle, said device comprising a collection receptacle connected to said cooling portion in a manner to receive liquid therefrom after the operation of the air conditioning system is interrupted, said collection receptacle having a capacity sufficient to receive all of the liquid released to avoid overflow and the rupturing of said collection receptacle by freezing, said collection receptacle having an elongation in the direction of movement of the vehicle sufficient that liquid in said collection receptacle will be caused to surge toward one end of the same when the vehicle moves, and a siphon system including outlet means positioned for exposure to the flow of air past the vehicle, said siphon system being in communication with said one end of the collection receptacle and responsive to the surge of the liquid and to the partial vacuum induced in said outlet means to cause the siphon action to be initiated to discharge liquid from the collection receptacle upon the movement of the vehicle.

3,199,308
REFRIGERATED ENCLOSURE FOR MAKING AND STORING ICE PRODUCTS
Martin Kenney, Donald S. Scott, and Lewis A. Wood, San Jose, Calif., assignors to S & S Vending Machine Co., San Jose, Calif., a corporation of California
Filed Oct. 11, 1963, Ser. No. 315,489
2 Claims. (Cl. 62—341)



2. A freezing compartment comprising a horizontal plate mounted in said compartment intermediate the upper and lower extremities thereof, a plurality of removable shelves seated on said plate, said shelves being formed with yieldable upstanding partitions, a plurality of bags filled wtih water disposed on said shelves, and cooling means for circulating cold air through said compartment over a path located above and below said plate for converting the water in said bags into block ice, said yieldable partitions being adapted to be urged away from one another to facilitate the removal of a bag containing block ice from the shelf supporting it.

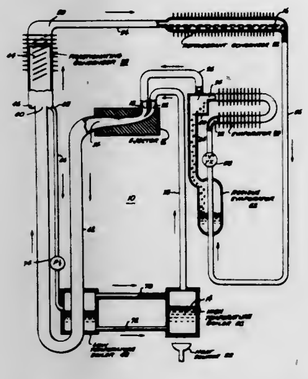
3,199,309
ICE MAKER OF THE ENDLESS FLEXIBLE BELT TYPE
James F. Brubaker, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 29, 1962, Ser. No. 233,558
7 Claims. (Cl. 62—345)



5. A pellet freezing machine including means enclosing a compartment containing a gas, an endless belt located in said compartment, said belt containing a plurality of

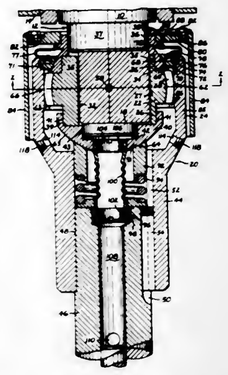
receptacles, driving means at one end of the belt for moving the belt and support means at the opposite end of the belt providing upper and lower passes with the receptacles upright in the upper pass and inverted in the lower pass, means for supplying a liquid to be frozen to said receptacles, means for cooling the gas in said compartment substantially below the freezing point of said liquid, and a guard extending beneath a major portion of the lower pass and around a substantial portion of one end of the belt directly adjacent the outer face of the belt for holding the frozen surface of the liquid in the receptacles for prolonging the holding of the frozen surface in the receptacles until the liquid is substantially completely frozen.

3,199,310
EJECTOR TYPE REFRIGERATION SYSTEM
Ralph C. Schlichtig, 11212 3rd S., Seattle, Wash.
Filed Jan. 24, 1963, Ser. No. 253,571
6 Claims. (Cl. 62—500)



1. In a heat transfer system for using as working mediums a power fluid comprising a fluid of a given molecular weight and a refrigerant comprising a fluid of relatively lower molecular weight in which the refrigerant fluid is at least partially miscible with the power fluid, the combination comprising, ejector pump means having a power inlet, refrigerant inlet means and discharge means; means for vaporizing the power fluid and for directing the vaporized power fluid to the power inlet of said ejector pump means; first evaporator means for evaporating the refrigerant to a vapor and for discharging therefrom a contaminator fluid– residue evaporator means operatively associated with said first evaporator means for evaporating the contaminator fluid discharged from said first evaporator means to a vapor and for effecting in cooperation with said ejector pump means a flow of the refrigerant vapor and the vaporized contaminator fluid to the refigerant inlet means of said ejector pump means; a first condensing region and a second condensing region; means operatively associated with the discharge means of said ejector pump means for separating the vaporized power fluid from the refrigerant vapor and the vaporized contaminator fluid by condensing the vaporized power fluid at said first condensing region and for directing the separated refrigerant vapor and vaporized contaminator fluid to said second condensing region for condensing; and means for returning the condensed refrigerant and contaminator fluid to said first evaporating means and for returning the condensed power fluid to said vaporizing means.

3,199,311
SPHERICAL GEAR TYPE COUPLING
William J. Hill, Holden, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed July 5, 1963, Ser. No. 292,859
8 Claims. (Cl. 64—7)



1. A spherical gear type roll end drive coupling of the type used in transmitting torque from a drive spindle to the roll wobbler of a roll in a rolling mill comprising the combination of: a male member provided with a circumferentially disposed spherical gear, said male member further provided with a drive socket suitably dimensioned to permit slidable insertion therein of said wobbler, the end of said wobbler extending into said socket to a point beyond the center-line of said spherical gear, the outer surfaces of said inserted wobbler being mechanically engaged by the inner surfaces of said socket during subsequent rotation thereof; a female member internally provided at one end with an inwardly disposed ring gear, the other end of said female member mounted on said drive spindle with the axis of rotation of said spindle in alignment with the axis of rotation of said female member and said ring gear, said male member axially inserted in positive pivotal engagement within said female member with the teeth of said spherical gear meshing with the teeth of said ring gear to form a gear set, the axis of rotation of said spindle intersecting the axis of rotation of said roll at a point along the roll axis well within the end of said wobbler, pilot means for maintaining the operating center of said gear set at the point of intersection of the axes of rotation of said roll and spindle, whereby rotation of said drive spindle will result in rotation of said male and female members and said roll; means for retaining said male member in positive pivotal engagement within said female member and for providing a watertight seal therebetween; and drainage means axially positioned within said female member for continuously removing water and foreign matter deposited therein during operation of the mill.

3,199,312
TORQUE COUPLING AND SAFETY CLUTCH DEVICE
Clarence O. Glasgow, P.O. Box 2181, Tulsa, Okla.
Filed Feb. 25, 1963, Ser. No. 260,370
7 Claims. (Cl. 64—11)

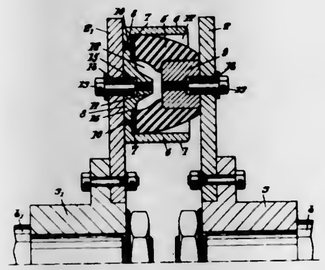
1. A flexible torque coupling and safety clutch device for interconnecting two generally aligned rotating shafts, the device comprising:

first and second disc-shaped members each having an axis of rotation and a peripheral surface of revolution about the axis of rotation;

an annular resilient sleeve member disposed around and frictionally engaging the surface of revolution of each of the disc members, said resilient sleeve member being an integrally molded, unitary structure having a smaller diameter in its relaxed, unstressed state than its diameter when disposed around said disc members, said sleeve member having a pair of axially spaced, circumferential grooves in the interior surface of the sleeve member for receiving the surfaces of revolution of the disc members for preventing axial slippage of the sleeve member relative to either of the disc members while permitting rotational slippage when a certain torque is exceeded; and means at the axis of rotation of each of the disc members for connecting each of the disc members to one of the shafts.

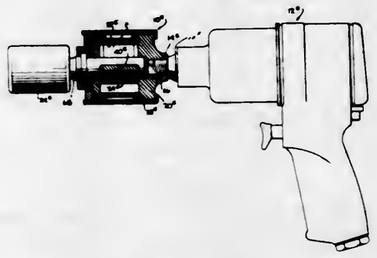


3,199,313
RESILIENT COUPLINGS
Jean-Félix Paulsen, Paris, France, assignor to Société Luxembourgeoise de Brevets et de Participations (Lubrepa), Luxembourg, Luxembourg, a society of Luxembourg
Filed Aug. 15, 1963, Ser. No. 302,375
Claims priority, application France, Sept. 10, 1962, 909,069
2 Claims. (Cl. 64—11)



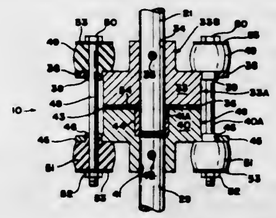
1. For use between two coaxial shafts, a resilient coupling device which comprises, in combination, two plates, a first one and a second one, coaxially rigid with said shafts respectively and facing each other, an annular row of bell-shaped elements carried by said first plate, with their open ends turned toward said second plate, means for securing said bell-shaped elements to said first plate, an annular row of blocks of a resilient material interposed between said plates for coupling them together, said blocks being all of at least substantially frusto-conical shape with their respective axes parallel to the common axis of said shafts, said blocks being hollowed out starting from the respective larger bases thereof and at a sufficient depth toward the smaller bases so as to confer to said blocks an axial resiliency sufficient to compensate axial relative displacements of the shafts, said blocks being secured by the part of said larger bases surrounding the hollow to the inner walls of the closed ends of said bell-shaped elements, respectively, and means for fixing the smaller bases of said blocks with respect to said second plate.

3,199,314
TORQUE CONTROL DEVICE
Charles L. Schrader, Sayre, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 8, 1963, Ser. No. 271,218
9 Claims. (Cl. 64—26)



1. The combination comprising:
(1) An impact device having an output member rotatably driven by impacting; and
(2) an impulse device connected to the impact device and driven thereby for providing torque to an object, comprising:
(a) housing means having a cavity containing fluid therein;
(b) spindle means in said housing means and the fluid;
(c) one of said means being provided with coupling means to said output member for rotation thereby, and the other of said means having means for engaging the object and applying torque thereto; and
(d) said housing and spindle means being operatively associated with each other to act on the fluid when said one of said means is rotated by said output member for creating impulses to rotatably drive said other of said means.

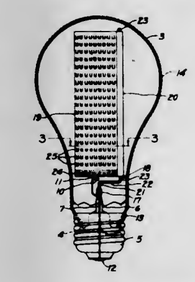
3,199,315
RESILIENT TORSIONAL COUPLING
John F. Morse, 21 Clinton St., Hudson, Ohio
Filed Aug. 20, 1963, Ser. No. 303,292
4 Claims. (Cl. 64—27)



1. A resilient torsional coupling for joining the end of a driving shaft to the end of an axially aligned driven shaft comprising, a first hub, a bore axially through said first hub, the end of said driving shaft nonrotatably received in the bore of said first hub, a second hub, a bore axially through said second hub, the end of said driven

shaft nonrotatably received in the bore of said second hub, the end of one of said shafts extending through the bore of the hub nonrotatably mounted thereon and rotatably received in the bore of the other said hub, said hubs movable toward and away from each other, a friction face on the axially opposed surfaces of said hubs, said friction faces being spaced apart with a friction pad engaged between said opposed, spaced apart faces, a radially extending peripheral flange on each said hub spaced axially of the face thereon a distance equivalent to approximately the diameter of the shafts joined by said coupling, a plurality of circumferentially spaced bores in the flange on each said hub, the bores in the flange on said first hub registerable with the bores in the flange on said second hub, bolt means extending between the bores in the flanges on said first and second hubs, resilient means interconnecting said bolt means to said flanges to permit said bolt means to cant and draw said opposed faces against said friction pad when a rotational rate of differential exists between said first and second hubs.

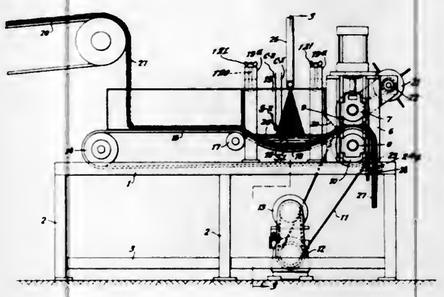
3,199,316
FLASH LAMP
George W. Cressman, Chagrin Falls, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 5, 1962, Ser. No. 228,606
1 Claim. (Cl. 67—31)



A flash lamp comprising a sealed light-transmitting envelope containing combustible means for emitting at least 10,000 lumens for at least 7 seconds including a relatively planar rectangular combustible sheet consisting essentially of magnesium; said sheet having primer-coated serrations at one edge and combustion-regulating tabs thereon spaced in a regular pattern throughout the surface area of the sheet; means for supporting said sheet in a longitudinal position within the envelope including a stem fused to the envelope, a stainless steel wire mounted in the stem and heat sink means fastened to said sheet and said wire thereby securing them together; said heat sink comprising an aluminum clip, a combustion-supporting gaseous mixture within said envelope consisting essentially of 67% oxygen and 33% of one of the class consisting of argon and krypton and means for igniting said combustible means.

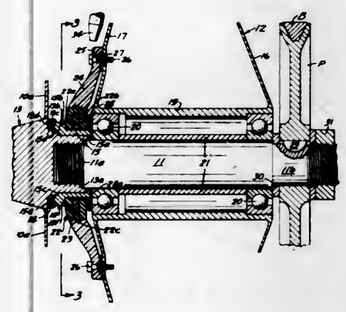
3,199,317
DYEING AND SIMILAR LIQUID TREATMENT OF TEXTILE FIBRES
John Walsh, Rochdale, England, assignor to F. Smith & Co. (Whitworth) Limited, a company of the United Kingdom
Filed Sept. 13, 1962, Ser. No. 223,356
Claims priority, application Great Britain, Sept. 22, 1961, 33,949/61
9 Claims. (Cl. 68—22)

9. Apparatus for dyeing flexible textile material with a liquid dye, said apparatus having a continuous imperforate belt, means supporting a portion of the belt, means for suspending said portion of the belt in a concave arc so that it forms with parts of the apparatus a means for retaining the entire liquid dye bath within the concave arc portion of the belt, drive means connected to said



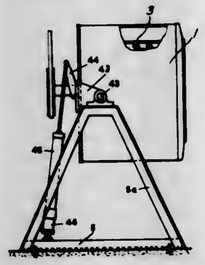
belt for moving it in one direction with respect to the concave arc portion, and nip means adjacent to the said concave arc portion adapted to receive the material from the concave arc portion and force excess dye therefrom.

3,199,318
CLEANING MACHINE AND SEAL MEANS THEREFOR
Eugene B. Sullivan, Minneapolis, and Glenn E. Routhe, West St. Paul, Minn., assignors to Eugene B. Sullivan, Minneapolis, Minn.
Filed Feb. 20, 1963, Ser. No. 259,873
16 Claims. (Cl. 68—140)



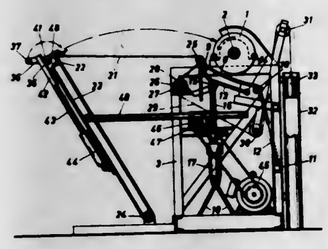
1. In apparatus which includes a first member having an opening therein and a second member seated in said opening and having a pair of different diametered annular shoulders disposed outwardly of and facing said first member, the smaller of said shoulders being disposed between the larger of said shoulders and said first member, annular first sealing means mountable on said second member and capable of sealingly engaging the larger of said shoulders, an annular collar mountable on said second member adapted to abut with said smaller shoulder and engage said first sealing means and hold same against said larger shoulder, and annular second sealing means adapted to sealingly engage said collar and said first member whereby said opening is completely enclosed by said second sealing means and sealed from fluid disposed outwardly thereof.

3,199,319
WASHING MACHINES
Edward John Lowes, Albourne, Sussex, England, assignor to James Armstrong & Co. Limited
Filed June 4, 1962, Ser. No. 199,921
2 Claims. (Cl. 68—210)



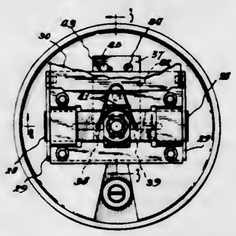
1. A washing or like machine comprising an assembly tiltably supported on a fixed base, said assembly including a rigid frame, a fluid tight outer casing rigidly supported in said frame and a perforated cylindrical container rotatably mounted within said casing, said container normally having its geometrical axis horizontal and having at its forward end an opening lying in a vertical plane at right angles to the said axis, said casing having an opening alined with said opening in said container, the container being rotatable about said axis relative to the outer casing, and tilting means for selectively raising or lowering the forward end of the container relative to the rear end to facilitate the entry and withdrawal, respectively, of articles to and from the container through said openings, said tilting means acting between said base and said frame to tilt the assembly in both directions relative to the base about a second axis extending horizontally and at right angles to the first said axis, said tilting means comprising a pair of double acting independently operable fluid jacks whose cylinders are secured together end to end and which act between said base and said assembly so that when one of the jacks is retracted and the other extended the axis of the container is held horizontal, and when both jacks are operated in a like sense the said assembly is tilted in one direction or the other about said second axis.

3,199,320
MACHINES FOR TREATING SKINS
Richard Carl Robert Thell, Svenljunga, Sweden
Filed Oct. 31, 1963, Ser. No. 320,336
Claims priority, application Sweden, Nov. 10, 1962, 12,088/62
5 Claims. (Cl. 69—27)



1. In a machine for treating the hair side of skins, which machine has a rotatable cylinder having an uneven circumferential work-contacting surface and a cooperating presser element adjacent said cylinder to support the work piece against said cylinder, the improvement comprising a transverse member mounted in the machine for movement toward and away from said cylinder and said presser element, means reciprocating said transverse member toward said cylinder and said presser element at a velocity considerably lower than the peripheral velocity of said cylinder, a blanket for supporting a work piece and feeding it onto said presser element, said blanket having one end secured to said transverse member and the opposite end located adjacent said presser element so that the leading end of a work piece will transfer from said blanket to said presser element, clamping means at the transverse member end of said blanket for clamping one end of a work piece to the blanket, and means secured to said opposite end of said blanket to maintain said blanket under tension.

3,199,321
PARKING METER MECHANISM
Lester D. Sollenberger, Oak Park, Ill., assignor, by mesne assignments, to Duncan Parking Meter Corporation, Chicago, Ill., a corporation of New York
Filed May 29, 1962, Ser. No. 198,567
4 Claims. (Cl. 70—1.5)



1. In a safety storage device having a housing defining an access opening, a door selectively closing the opening, said door having a bore therethrough aligned with said opening, a lock in said bore, and a latch movable by the lock to engage the edge portion of said access opening to lock the door in a closed position: means for retaining the lock in the bore against rearward movement thereof including means on the door defining a channel extended perpendicularly to the axis of said bore adjacent the rear of the door; and a locking member slidably retained in said channel and having a locking portion selectively engaging a rearward portion of the lock and deflectible by a rearward movement of the lock to intersect the path of movement of the latch and prevent movement of the latch from the closed position.

3,199,322
LOCKING LATCH DEVICE FOR AUTOMOBILE
Adolph Braun and Andrew Skrapits, Bronx, N.Y., assignors to Bronx Locksmiths, Inc., New York, N.Y., a corporation of New York
Filed Mar. 5, 1964, Ser. No. 349,588
7 Claims. (Cl. 70—240)

1. A locking latch device for the free front end of the rear end hinged hood of an automobile engine compartment having a front grille and a horizontal bed plate behind said grille and having a hood latching lever mounted in said compartment for swinging movement through a vertical plane and manually operable for movement from an operative rear position latching the hood in closed position to a retracted forward position releasing the hood for movement to open position,

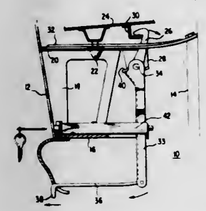
said device comprising a plate member secured on said bed plate having a slot opening from its rear edge straddling the hood latching lever in its movement,

a blocking lever pivoted on said plate member at one side of said slot and extending across the inner end of the slot in front of the hood latching lever,

spring means biasing the blocking lever rearwardly to a position blocking movement of the hood latching lever forwardly from hood latching position to hood releasing position,

a bar extending longitudinally along the plate member on the opposite side of the slot and mounted on the plate member for sliding forward and rearward movement and having a cam surface,

a stop lever pivoted on the plate member beneath the bar for swinging movement between an operative position blocking the free end of the blocking lever



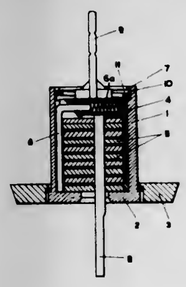
to prevent forward swinging movement thereof from said hood latching lever blocking position and an inoperative position clearing the blocking lever for forward swinging movement when engaged by said hood latching lever,

spring means biasing the bar to its forward position,

a cam follower element provided on the stop lever and engaged with the cam surface of the bar and operative to swing the stop lever from its blocking lever freeing position to its blocking lever blocking position when the bar moves to its rear position,

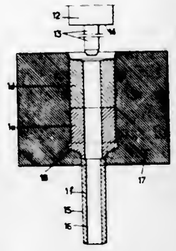
and a lock provided on the forward end of the bar and operable through the grille for locking the bar in its rearward position and thus locking the hood latching lever in latching position.

3,199,323
CYLINDRICAL DOOR-LOCK
Armas Kalervo Nillola, Sornaisten Rantatie 9–11, Helsinki, Finland
Filed Jan. 22, 1963, Ser. No. 253,096
1 Claim. (Cl. 70—367)



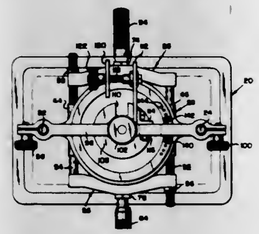
A cylindrical door lock comprising a stationary hollow cylindrical casing including a partially closed first end portion, an open second end portion and an internal wall portion, said casing having a circumferential groove in said internal wall portion adjacent said open end portion of said hollow cylindrical casing, a lock cylinder rotatably positioned within said hollow cylindrical casing and abutting said first end portion, and a helical spring retaining ring in said circumferential groove and pressing against said lock cylinder for axially urging the latter against said first end portion of said hollow cylindrical casing, said ring including opposite ends and being helical in shape and extending along substantially one turn such that the ends are substantially adjacent one another but spaced axially and circumferentially whereby said ring has both axial and radial resiliency, said ends being constituted by lugs which can be engaged to compress the ring radially for installation and removal, said ring being in peripheral contact in said groove while engaging the lock cylinder and the casing at said respective ends, said circumferential groove having a width in an axial direction greater than the thickness of said retaining ring, said ring having an axial dimension of a magnitude relative to the width of the groove such that the ring fills the width of the groove subject to displacement by said cylinder, the axial position of said ring relative to said casing being in all conditions restricted to the confines of the axial extent of said groove, said lock cylinder including first and second end portions and having such an axial length that when said first end portion thereof abuts the first end portion of said hollow cylindrical casing, the second end portion of said lock cylinder overlaps said circumferential groove.

3,199,324
METHODS OF COLD EXTRUDING METALS
Frederic Marti, Vieux-Charmont, Doubs, France, assignor to S.A. "Industrielle de Precision Marti-I.P.M."
Filed Nov. 2, 1962, Ser. No. 235,603
Claims priority, application France, Dec. 29, 1961, 883,537, Patent 1,322,166
19 Claims. (Cl. 72—42)



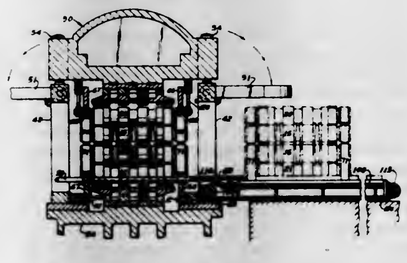
1. The process of cold extruding a hollow cylinder from a steel workpiece which has been conventionally lubricated for cold extrusion, said process comprising the steps of confining the sides of said workpiece to prevent radial expansion thereof, fixedly supporting one end of said workpiece to prevent longitudinal movement thereof, creating in the unsupported end of said workpiece a central cavity having sides adjacent its mouth which are parallel to the direction of extrusion, depositing in said cavity a supply of a solid lubricant having the lubricating qualities common to tungsten bisulfide and molybdenum bisulfide, inserting in said cavity the working end of a punch having a cross-section mating exactly with that of the mouth of said cavity so as to tightly seal said solid lubricant between said punch and workpiece, forcing said punch into said workpiece to form it by backward extrusion into a cup having sides and a bottom, ceasing to fixedly support the entire workpiece end, and driving a central portion from said bottom by exerting sufficient pressure against the inner surface of said central portion to drive it out of said workpiece while firmly supporting a peripheral area of the outer surface of said bottom radially spaced from said central portion against movement in response to said pressure and yieldingly supporting the area of said outer bottom surface within said peripheral area with a resistance to said pressure sufficient to cause compression of said central bottom portion as it is driven out, the temperature of said workpiece being kept below its annealing range throughout the process.

3,199,325
KNURLING APPARATUS
John L. Lyell, Shelbyville, Mo.
Filed Aug. 15, 1962, Ser. No. 217,172
6 Claims. (Cl. 72—74)



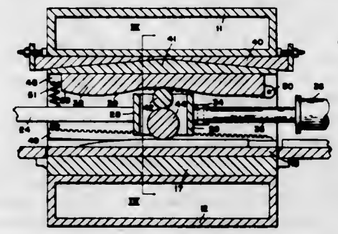
1. Apparatus for simultaneously knurling opposed portions of a piston comprising a base, means for holding said piston in predetermined fixed position on said base, a bracket mounted on said base for movement toward and away from said base, a support member carried by said bracket for rotation about the axis of said piston, said support member having a pair of parallel through bores at opposite sides of the axis of rotation of said support member, a frame assembly having parallel shafts extending freely through said bores whereby said frame assembly rotates with said support member but may float laterally with respect thereto in the direction of said shafts, and a pair of diametrically opposed knurls carried by opposite end portions of said frame assembly for engagement with diametrically opposed surfaces of said piston, the diameter connecting said surfaces of said piston being parallel to said shafts.

3,199,326
ROLL CHANGING DEVICE FOR ROLLING MILLS
Joseph P. Wadleck, Ellwood City, Robert A. Remner, Glenshaw, and Charles MacGregor, Pittsburgh, Pa., assignors to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed July 20, 1962, Ser. No. 211,233
8 Claims. (Cl. 72—198)



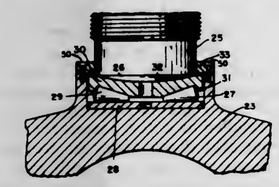
1. In a rolling machine having a mill housing, a saddle mounted for reciprocation in said mill housing, a pair of working rolls, a pair of back-up rolls carried by said saddle and means tending to separate said working rolls, said mill housing having thrust plates for engaging said back-up rolls and transmitting the rolling forces exerted on said rolls to said mill housing, said back-up rolls being in rolling engagement with said thrust plates; means providing for the simultaneous removal of all said rolls from the machine comprising bearing blocks mounted in said saddle for supporting said rolls, said bearing blocks and rolls carried thereby being removable from said saddle from one side thereof, said mill housing having an aperture on one side thereof permitting removal of said bearing blocks and rolls therethrough, means for temporarily securing said bearing blocks together whereby the assembly of working rolls, back-up rolls and bearing blocks can be handled as a unit, means for increasing the distance between said thrust plates to provide clearance between said thrust plates and said mill rolls and means for conveying said assembly of rolls and bearing blocks transversely of the saddle through said aperture to a position alongside said machine.

3,199,327
MACHINE FOR MAKING SINGLE LEAF SPRINGS AND THE LIKE
Frank R. Krause, New Castle, Pa., assignor to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed May 17, 1961, Ser. No. 110,768
5 Claims. (Cl. 72—215)



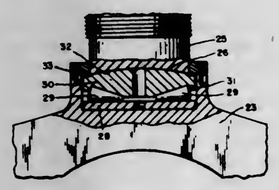
1. Apparatus for tapering the end portions of a metal bar comprising a rigid housing having an elongated opening therethrough, an elongated anvil adapted to receive a metal bar blank extending longitudinally in said opening and supported on a side wall thereof, a carriage slidably received in said opening and guided for longitudinal movement therein, an elongated cam extending longitudinally in said opening and supported on a side wall thereof opposite said anvil, a cam-following roll for engaging said cam and floatingly journaled in said carriage for movement toward and away from said anvil upon longitudinal movement of said carriage as may be required by the undulations of said cam, a working roll positioned between said cam-following roll and said anvil and floatingly mounted in said carriage whereby the forces transmitted by said cam-following roll upon longitudinal movement of said carriage may be transmitted to the blank on said anvil to reduce the thickness of said blank, power means to move said carriage longitudinally, a gear on each of said cam-following and working rolls having pitch diameters corresponding to the diameters of said rolls, and gear racks meshing with said first mentioned gears and extending longitudinally in said opening but held therein against longitudinal movement, said gear racks being floatingly mounted in said opening and urged into continuous contact with said first mentioned gears whereby both said rolls will be forced to rotate upon longitudinal movement of said carriage throughout the whole extent of said cam.

3,199,328
MILL SCREW THRUST BEARING ASSEMBLY
Leo A. Toth, South Bend, Ind., assignor to The Torrington Company, Bantam Bearings Division, South Bend, Ind., a corporation of Maine
Filed Apr. 6, 1962, Ser. No. 185,578
8 Claims. (Cl. 72—248)



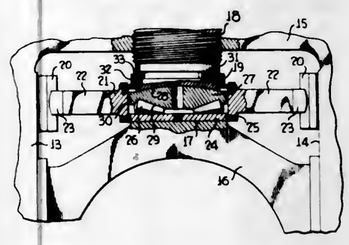
1. A screw-down thrust bearing comprising in combination with a mill screw having a threaded portion and an unthreaded end portion, a flat first race member having a race surface in a plane normal to the mill screw axis, a second race member, means at least partially defining a chamber for housing said first and second race members, said second race member having a generally frusto-conical race surface directed radially inward and inclined relative to the mill screw axis, a plurality of tapered rollers between the race surfaces of said first and second race members, one of said race members having means for confining said rollers against radial outward movement under the influence of axial loads imposed thereon by said mill screw, said rollers each having an axis in parallel relationship to said frusto-conical race surface, means surrounding the unthreaded end portion of said mill screw, means for removably securing said last mentioned means to said first mentioned means, said surrounding means defining an opening smaller than the largest dimension of said upper race member normal to said mill screw axis whereby said surrounding means both confines said race members in said chamber and prevents removal therefrom without first manipulating said securing means, one of said first and second race member and mill screw end portions having surfaces in bearing engagement in said chamber, and said surfaces in bearing engagement with each other being concavo-convex in configuration.

3,199,329
SCREWDOWN-THRUST BEARING COMBINATION
Leo A. Toth, South Bend, Ind., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed May 14, 1962, Ser. No. 194,542
2 Claims. (Cl. 72—248)



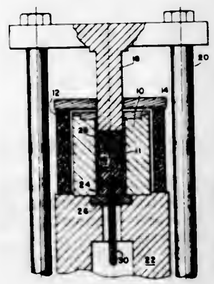
1. A screw-down antifriction thrust bearing comprising in combination with a mill screw having a concave end surface, a lower race member having flat top and bottom surfaces, an upper race member having a convex upper surface, a series of tapered rollers between said members, said screw and said upper race member together forming a concavo-convex bearing and means for coupling together the lower race member and the mill screw.

3,199,330
ANTIFRICTION THRUST BEARINGS OF ROLLING MILLS
Leo A. Toth, South Bend, Ind., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Original application May 14, 1962, Ser. No. 194,542. Divided and this application Aug. 6, 1964, Ser. No. 387,829
6 Claims. (Cl. 72—248)



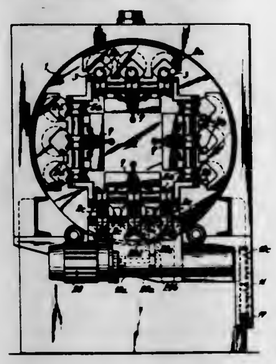
1. The combination in a rolling mill having parallel vertical pedestals, a connecting bridge and a chock, of a mill screw carried by the bridge, vertical guide rails on the pedestals, a collar slidable on the guide rails, an antifriction bearing in the collar and means for coupling the collar to the mill screw.

3,199,331
PROCESS FOR THE EXTRUSION OF ULTRA-FINE WIRES
Lloyd R. Allen, Belmont, Mass., assignor, by mesne assignments, to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Mar. 22, 1963, Ser. No. 267,208
9 Claims. (Cl. 72—253)



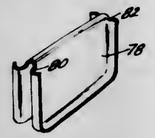
1. The process of producing dispersion hardened ultra-fine metal wire having a diameter of less than about 0.01 inch comprising forming a powder of matrix metal having hard particle sizes of less than 20 percent of said wire diameter, intimately mixing a dispersion hardening material having a particle size of less than 20 percent of said wire diameter with said matrix metal, introducing said mixture into a billet container, heating said mixture to an initial temperature at which the compressive flow stress of said matrix metal is about 10–25 percent of the room temperature value, expressing said mixture through a shearing-edged opening in a substantially flat die surface at a sufficient extrusion rate to further heat said mixture to a temperature which is in excess of said initial temperature and below the solidus temperature of said matrix metal to thereby form a dispersion hardened extruded wire.

3,199,332
TUBE DRAWING PROCESS
Hans Brauer, Solingen, Germany, assignor to Th. Kieserling & Albrecht, Solingen, Germany
Original application Sept. 4, 1962, Ser. No. 221,058. Divided and this application Oct. 23, 1964, Ser. No. 406,107
Claims priority, application Germany, Sept. 2, 1961, K 44,628
4 Claims. (Cl. 72—277)



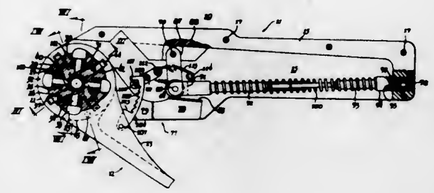
1. In a tube drawing process, the steps of drawing a tube in a pass along the axis of the tube through a first die while a first mandrel appropriate to said first die is in said tube; reversing the direction of movement of said tube after completion of said first pass while the position of the tube axis remains unchanged and passing said tube during said reverse movement thereof onto a second mandrel appropriate to a second die in preparation for a second pass; and then drawing the tube, still without changing the position of its axis, along said second pass through said second die, whereby the axis of the tube remains stationary during movement of the tube along successive drawing passes.

3,199,333
METHOD FOR FORMING SINK PARTITIONS
Arthur Liebin, Upper Saddle River, N.J., assignor to New Jersey Bank and Trust Company, Paterson, N.J., a New Jersey banking corporation
Filed Oct. 16, 1961, Ser. No. 145,252
1 Claim. (Cl. 72—373)



A method for forming a partition for a stainless steel sink of sheet metal comprising the sequential steps of:
(a) blanking each corner of a rectangular sheet of stainless steel,
(b) stamping the blanked corners in a fadeaway die,
(c) re-striking the stamped sheet to form an isometric corner at each corner thereof, whereby to form a rectangular pan having a bottom and side walls,
(d) forming a like slot centrally in each of two opposed side walls of the pan, and
(e) bending the two portions of the bottom of said pan on each side of said slots into back to back parallel relation such that the other two sides of the pan will lie in a common plane and be directed outwardly.

3,199,334
CRIMPING TOOL
Marion B. Holmes, 3785 Lakewood Drive, Drayton Plains, Mich., and Arthur G. Bossert, Jr., deceased, late of Clarkston, Mich., by Margaret Anna Bossert, executrix, 6150 Clintonville Road, Clarkston, Mich.
Filed Dec. 11, 1961, Ser. No. 158,956
7 Claims. (Cl. 72—410)



5. A crimping tool adapted for attaching connectors having different diameters to the ends of conductors comprising in combination:
a pair of handle members pivotally connected at one of their ends,
punch means actuated by closure of said handle members moving radially toward a point of convergence for forming indentations in the barrel of said connectors,
and means for automatically centering said different diameter connectors radially between said punch means at said point of convergence upon closure of said handles.

3,199,335
CRIMPING TOOL
Marion B. Holmes, 3785 Lakewood Drive, Drayton Plains, Mich., and Arthur G. Bossert, Jr., deceased, late of Clarkston, Mich., by Margaret Anna Bossert, administratrix, 6150 Clintonville Road, Clarkston, Mich.
Filed Feb. 9, 1962, Ser. No. 172,354
11 Claims. (Cl. 72—410)

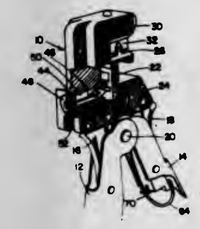


1. A crimping tool adapted for attaching a connector to the end of a conductor and comprising in combination:
a pair of handle members pivotally connected at one of their ends;
punch means carried by one of said handle members for forming identifications in the barrel of said connector,
said punch means being adapted for radial movement in response to movement of said handle members;
locator means for positioning said connector in desired relation to said punch means,
said locator means including a plurality of connector locating elements for positioning connectors of different size diameters.

3,199,336
HAND TOOL FOR CRIMPING ELECTRICAL CONNECTORS

Kent J. Batcheller, Newton Highlands, Newton, Mass., assignor to The Thomas & Betts Co., Inc., Elizabeth, N.J., a corporation of New Jersey

Filed Feb. 15, 1962, Ser. No. 173,432
1 Claim. (Cl. 72—413)



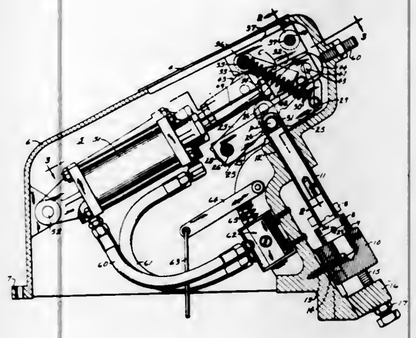
A hand tool for pressing small objects, said tool comprising a head having a base and a portion overhanging the base, a plunger extending slidably through said base and reciprocable toward and from said overhanging portion, a pair of handles pivotally attached to the lower end of said plunger, toggle links attached at one end to said head and at the other end to the respective handles, means operating when said plunger is moving toward said overhanging portion of the head for preventing reverse movement of the plunger until it has come within a predetermined distance of said overhanging portion, said reverse movement preventing means including two spaced recesses with a series of teeth between them on a side of said plunger and a pawl pivotally mounted in said head in position to engage said teeth, and means accessible from outside of said head for adjusting said pawl toward and from said plunger, said adjusting means including a retainer in said head in which said pawl is pivotally mounted, a spring in said head pressing said retainer and pawl away from said plunger, and a screw within said head and bearing against an end of said retainer, said screw being adjustable to determine the position of the retainer relative to the plunger.

3,199,337
CRIMPING TOOL

Delwin C. Ginn, Fiskdale, Mass., assignor to The Linemaster Switch Corporation, Woodstock, Conn., a corporation of Connecticut

Filed June 21, 1961, Ser. No. 118,583
4 Claims. (Cl. 72—416)

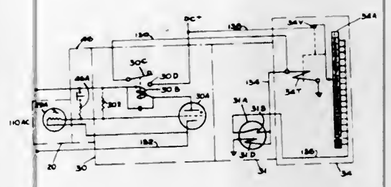
1. A crimping press comprising; a housing, an operating die reciprocable on the housing for movement between a retracted position and an extended crimping position, an elongated lever having a rearward end thereof pivotally mounted on the housing for oscillation thereon, means operably connecting the operating die to the lever intermediate the ends thereof and reciprocating the operating die between the retracted and extended positions upon pivotal oscillation of the lever, an elongated cam supported in a fixed position on the housing and spaced from said lever adjacent to and forwardly of said connecting means, a spring pivotally urging said lever toward said elongated cam, roller means interposed between the lever and the elongated cam having rolling engagement therealong, and a motor operably connected to said roller means and selectively moving said roller means along the lever and elongated cam between a first position adjacent said connecting means and a second position adjacent the free end of said lever, said roller means upon movement from its first position toward its second position adapted to pivotally move the lever away from the cam means, said elongated cam having a first cam portion having a relatively large slope with the lever and a second portion extending from the first portion having a relatively small slope with the lever whereby the lever is pivotally actuated at a relatively high rate and a relatively low rate as the roller means moves along the said first and second cam portions, respectively.



3,199,338
FLUID ANALYSIS CONTROL

Herbert Heller and Henry J. Then, Pittsburgh, Clayton J. Bossart, Monroeville, Alexander C. McInnes, Export, and Earl M. Becker, Pittsburgh, Pa., assignors to Mine Safety Appliance Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 24, 1961, Ser. No. 112,446
2 Claims. (Cl. 73—23.1)

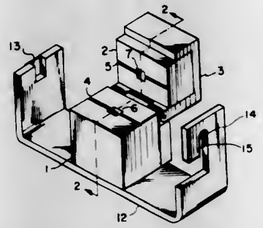


1. A device for fluid analysis comprising at least one chromatographic column adapted to contain sample and carrier fluids, valve means connected to said column and selectively processing the sample and carrier fluids relative to each other for the separation thereof, a reversible motor and driving means connected to said valve means, circuit means connected to said driving means and motor for rotating said motor bidirectional, relay means connected to and sequentially operating said circuit means, a programmer having marked means producing output signals, receiving means electrically connected between said programmer and relay means, said receiving means conducting said signals from said programmer to said relay means to operate said relay means in a sequence predetermined by said marked means, said circuit means including switch means operatively associated with said driving means and responding to the direction of rotation of said motor, and said switch means maintaining the direction of rotation of said motor in accordance with the sequence predetermined by said marked means.

3,199,339
GAGING OF MOVING ELONGATED BODIES

Anthony Matthew Lipski, Easthampton, Mass., assignor to United Elastic Corporation, Easthampton, Mass., a corporation of Massachusetts

Filed Aug. 1, 1963, Ser. No. 299,273
7 Claims. (Cl. 73—37.7)



1. A device for gaging continuously the dimensions of a moving elongated body which comprises in combination,

(a) two blocks with mating faces, each face being provided with an abrasion resistant groove which, mating with the groove on the face of the other block, define a channel the dimensions of which are larger than the largest cross-sectional dimensions of the maximum oversized material to be gaged, an abrasion resistant length of which channel is very large compared to its cross-section,

(b) a hinged framework in which the two blocks are mounted which permits swinging one block away from the other or bringing them together in mating alignment,

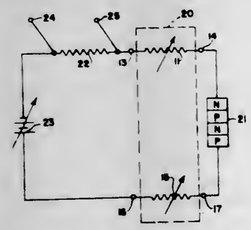
(c) magnetic means for holding the two blocks in mated position, and

(d) means for applying fluid under pressure to the channel whereby the fluid flows out the ends of the channel between the material and the channel walls and precision gaging means for determining the rate of flow of the fluid as the material to be gaged moves through the channel.

3,199,340
ACCELEROMETER WITH FM OUTPUT

Raymond G. Hartenstein, Seabrook, and Edward J. Kirchman, Baltimore, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed May 29, 1963, Ser. No. 284,265
5 Claims. (Cl. 73—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

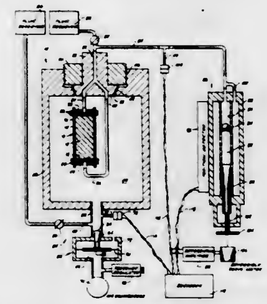


5. A transducer for producing an electrical output which is frequency modulated in accordance with the magnitude of a strain comprising: an impedance, a voltage source and a transistor with a negative impedance characteristic connected in series whereby constant frequency oscillations are produced across said impedance; and strain sensitive means which produces an impedance change related to the magnitude of the strain to which it is subjected connected in series with said impedance, voltage source and transistor whereby when said strain sensitive means is subjected to said strain the frequency of said oscillations produced across said impedance will change.

3,199,341
METHOD AND APPARATUS FOR MEASURING COMPRESSIBILITY OF POROUS MATERIAL

George J. Heuer, Jr., Carroll F. Knutson, Robert J. Cavanaugh, and Charles W. Bright, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed May 28, 1962, Ser. No. 198,314
10 Claims. (Cl. 73—94)



1. A method for measuring the compressibility of a porous material comprising the steps of:

applying an internal fluid pressure to a sample of the porous material;

applying an initial confining fluid pressure over at least a portion of the surface area of the sample of the material while maintaining the confining fluid pressure isolated from the internal fluid pressure, the initial confining fluid pressure being at least as great as the internal fluid pressure;

increasing the confining fluid pressure;

maintaining the internal fluid pressure essentially constant; and,

measuring the volume of fluid displaced from the sample of material.

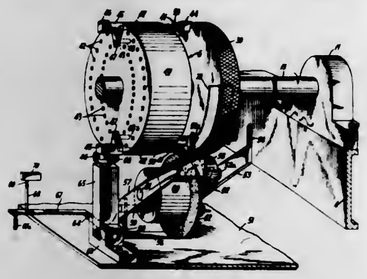
3,199,342
ZIPPER TESTER

S Edwin Snair, Paramus, and Melvin I. Lipshutz, Washington Township, N.J., assignors, by mesne assignments, of thirty-seven and five-tenths percent each to said Snair and said Lipshutz, and twenty-five percent to Eugene J. Kalil, Bristol, Conn.

Filed Mar. 13, 1962, Ser. No. 179,318
5 Claims. (Cl. 73—95)

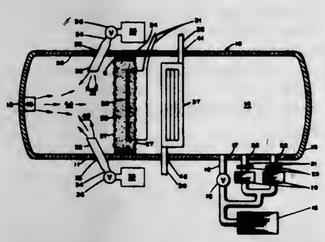
1. A device for detecting flaws in tape material and the like which comprises, a frame supporting a rotatably mounted shaft, means for rotating said shaft, a cylinder mounted on said shaft, a circular disc mounted on said shaft and spaced axially from said cylinder, said cylinder having radially disposed about an edge face thereof adjacent said circular disc a gripping finger assembly comprising a plurality of gripping fingers each mounted on a slidable pin extending through the cylinder and parallel to its axis, each of said pins having gripping means on one end and cam follower means on its opposite end outside the cylinder, means operably associated with each

pin for biasing each gripping finger in home position towards the circular disc, means for feeding tape material in a path below the cylinder but between the gripping means and the circular disc, rotatable idler means for maintaining a portion of the tape material in contact against the surface of the disc and against a gripping finger, cam actuating means adapted to contact the cam



follower means of each of the movable gripping fingers and apply a force along each of the fingers when in the gripping position so as to apply a pull to an edge of the tape material, and means operably associated with said cam actuating means for sensing the movement thereof upon detection of a flaw, said means being adapted through associated means to stop the movement of said tape material.

3,199,343
ELECTRIC PROPULSION ENGINE TEST CHAMBER
James Howard Childs, Olmsted Falls, Warren D. Rayle, Berea, and Jack Grobman, Lakewood, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 12, 1961, Ser. No. 144,803
5 Claims. (Cl. 73—116)
(Granted under Title 35, U.S. Code (1952), sec. 266)



3. A testing facility for an engine which discharges a gaseous hydrogen exhaust jet comprising

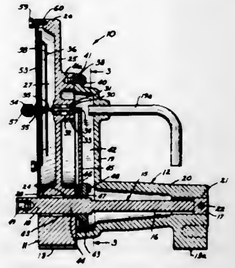
a vacuum tight shell, thereby forming a vacuum test chamber within which the engine is mounted,

means in communication with said chamber for obtaining a desired subatmospheric test pressure in said chamber,

means for selectively injecting gaseous oxygen into the path of the hydrogen exhaust at a rate to provide a hydrogen-oxygen mixture having an equivalence ratio of not more than plus or minus 30 percent from a stoichiometric ratio,

a catalyst bed transversely disposed within said chamber for converting the hydrogen-oxygen mixture into water vapor, said catalyst bed being comprised of palladium-coated alumina pellets, and condensing means transversely disposed within said chamber, said condensing means being cooled to a temperature between freezing point of the water vapor and the condensation point of hydrogen gas at the test pressure to effect transformation of the water vapor to ice.

3,199,344
TORQUE TESTER
Edward T. Able, Denver, Colo., assignor, by mesne assignments, to B. K. Sweeney Co., Denver, Colo., a corporation of Colorado
Filed Aug. 21, 1962, Ser. No. 218,294
2 Claims. (Cl. 73—134)

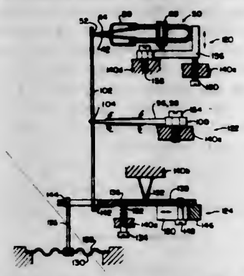


1. A torque measuring apparatus adapted to measure a minute rotative deflection of a torsion bar, magnify the deflection, and indicate the magnified deflection on a calibrated dial gauge comprising: a movement indicating means including a gear sector mounted upon the torsion bar and extending substantially to the axis of the dial gauge; a dial shaft at the axis of the gauge having a pinion at one end engaging with the gear sector and with the other end at the face of the gauge; a dial arm affixed to this other end adapted to swing about the gauge; a rotatable transparent face over the gauge having a deflection scale marked thereon; an indicating hand rotatably mounted on said transparent face at the axis of the gauge; friction means resisting rotation of said indicating hand, said indicating hand being positioned in the advancing path of said dial arm to be rotated by the latter and to remain at the maximum rotated position after the dial arm returns to its initial position upon release of a torque load; a turning knob extending through the dial face and carrying the said indicating hand with the turning knob being mounted in the dial face with a light frictional drag, and with the said indicating hand mounted on the knob with a light frictional drag; and releasable means holding the dial face on the dial gauge whereby, when the releasable means are released, rotation of the knob permits rotation of both the face and the said indicating hand to permit zeroing-in adjustments of the apparatus to take up slack and lost motion in the apparatus.

3,199,345
TEMPERATURE COMPENSATED TRANSDUCER
Shih-Ying Lee and Yao Tzu Li, both of Huckleberry Hill, Lincoln, Mass.
Filed Dec. 26, 1962, Ser. No. 247,191
12 Claims. (Cl. 73—141)

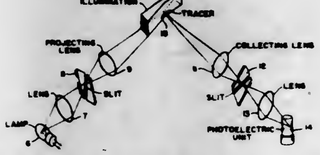
1. In a force sensing transducer of a type having a sensitivity which varies with temperature, having a deflectable member to which the input to the transducer is coupled so that the transducer output varies as a function of the deflection of said deflectable member, temperature compensating means, means to couple said temperature compensating means to said deflectable member, said temperature compensating means comprising

a plurality of elements arranged in a predetermined geometric configuration, at least one of said elements having elastic properties, the stiffness of said geometric configuration varying with changes in the spacing of elements of said configuration, whereby the rate of change of the force as a function of deflection varies with changes



in said spacing, and means to change the spacing of said elements with changes in temperature, whereby said temperature compensating means has a stiffness which varies with temperature, thereby providing the transducer with a stiffness with respect to deflection of said deflectable member which varies as a function of temperature.

3,199,346
METHOD AND APPARATUS FOR MEASURING FLOW
William A. Stewart, 107 Mahoning Drive, Pittsburgh 35, Pa.
Filed Jan. 29, 1960, Ser. No. 5,559
15 Claims. (Cl. 73—194)



1. The method of determining a component of fluid flow velocity of a fluid that contains tracers which radiate light and are optically distinguishable from and responsive to variations in fluid flow comprising:

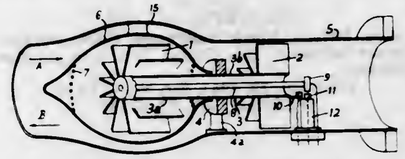
(a) positioning a sensing device adjacent said flow that is disposed to continuously detect the radiated light of said tracers along said flow;

(b) shielding a predetermined portion of the radiated light emitted by tracers along said flow that is detectable by said sensing device so as to define a predetermined path within said flow wherein said device may continuously detect the radiated light of individual tracers within said flow; and

(c) determining the time period for individual tracers to traverse said predetermined path by measuring the time period which said sensing device detects said individual tracer.

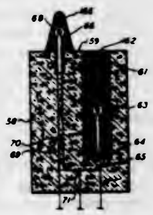
3,199,347
FLUID-FLOW METERING DEVICES
Norman Moss, Ilford, England, assignor to The Plessey Company Limited, Essex, England, a British company
Filed Mar. 27, 1963, Ser. No. 268,494
Claims priority, application Great Britain, Apr. 6, 1962, 8,497/62
5 Claims. (Cl. 73—194)

1. Apparatus for measuring the mass flow in a duct, comprising a duct element, a vibratory motor having an armature mounted for oscillatory rotation in the duct element with its axis of rotation extending longitudinally of the duct, a torsionally resilient flow-sensitive shaft supported in the duct element to extend longitudinally thereof and at least operatively connected to the armature at one point of its length, one impeller element extending radially from the said shaft at a point spaced longitudinally of the shaft from said one point, and connected to said point of the shaft for common oscillatory rotation about the axis of the shaft, a reference shaft extending coaxially with the flow-sensitive shaft and also connected to said armature, said reference shaft having torsional resilience characteristics similar to those of the said flow-sensitive



shaft, inertia means secured to the reference shaft at an attachment point longitudinally spaced from the point of connection of the reference shaft to the motor armature equally, as regards torsional resilience, to the longitudinal spacing of the point of connection of said impeller element to the said flow-sensitive shaft from the point of connection of the armature to said flow-sensitive shaft, means determining the excess of the amplitude of the torque transmitted by the motor to the flow-sensitive shaft over the amplitude of the torque transmitted to the reference shaft and means determining the amplitude of the torque transmitted to one of said shafts.

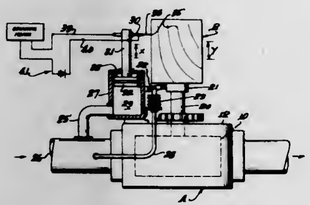
3,199,348
FLUID FLOW DETECTION APPARATUS
Edmond A. Salera, 714 Surf View Drive, Santa Barbara, Calif.
Filed May 1, 1961, Ser. No. 106,685
7 Claims. (Cl. 73—204)



1. A fluid flow meter assembly, comprising a pair of electrically energizable devices having impedance that vary with temperature, and body means including first and second masses of thermally semi-conductive and electrically non-conductive material in solid state and in which said devices are respectively embedded, said body means having first and second free surface extents exposeable to the fluid medium in such relation to said means and devices that heat transfer between said fluid medium and first device occurs preferentially through said first free surface extent and first mass and heat transfer between said fluid medium and second device occurs preferentially through said second free surface extent and second mass, said body means also including heat insulative material in which the first mass is embedded with said first free surface extent exposed to the exterior proximate said second free surface extent, said first device being sufficiently spaced from said first free surface extent and interiorly of said heat insulative material and said first free surface extent being of such reduced

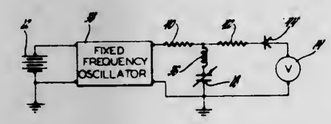
area in relation to the size of the first mass that changes in movement of constant temperature fluid relative to said body means are substantially ineffective to produce changes in the impedance of said first device, the second free surface extent being of such large area in relation to the size of the second mass that changes in the movement of constant temperature fluid relative to said body means are effective to produce changes in the impedance of said second device, changes in the ambient temperature of the fluid medium being effective to produce changes in the impedances of both said devices.

3,199,349
MEASURING METER
David H. Silvern, North Hollywood, Calif., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,410
5 Claims. (Cl. 73—233)



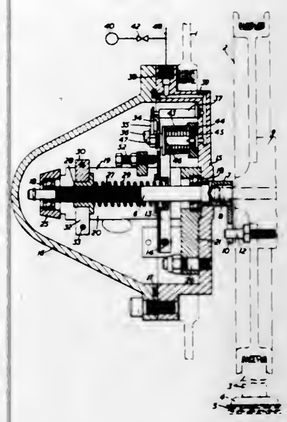
1. A device for measuring and indicating a first quantity which is the function of two variables times a second quantity comprising: a rotatable cylinder; means for rotating the cylinder at a rate determined by the second quantity; a series of stripes on the surface of said cylinder so arranged that the number of said stripes at a predetermined axial position is a direct measurement of the first quantity as a function of the rate of rotation, a readout station; means for reading the number of stripes passing said readout station, means for moving the readout station axially along the cylinder in response to the first variable; and, means for moving the cylinder axially in response to the second variable.

3,199,350
CAPACITANCE TYPE FUEL GAGE
Norman W. Schubring, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 27, 1961, Ser. No. 154,964
1 Claim. (Cl. 73—304)



A fuel gage system for monitoring the level of fuel in a container comprising a coaxial capacitor element located in said container and being electrically connected in series with an inductor element to form a series resonant circuit; a constant frequency oscillator having an input connected to a D.C. power source and an output connected to a high impedance resistance means, said constant frequency oscillator and said high impedance resistance means being serially connected to said series resonant circuit for applying a current of substantially constant magnitude and frequency through said series resonant circuit, the frequency of said oscillator being selected to resonate the resonant circuit to provide a minimum impedance when the fuel is at a predetermined low level so that with an increase in the quantity of fuel surrounding said coaxial capacitor an increase of impedance is provided; and a direct current voltmeter and series rectifier being connected across said series resonant circuit for directly measuring the change of impedance as a function of the D.C. voltage produced across the resonant circuit elements resulting from the applied current having substantially a constant magnitude and frequency, whereby a minimum voltmeter indication corresponds to said predetermined low fuel level and voltmeter indications correspondingly increase with increases of fuel level.

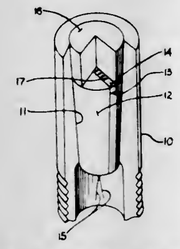
3,199,351
PNEUMATIC TRANSMITTERS
Henry Albert Hallett, Cheltenham, England, assignor to Cheltenham Auto Controls Limited, Cheltenham, England
Filed Oct. 2, 1961, Ser. No. 142,412
Claims priority, application Great Britain, Oct. 6, 1960, 34,256/60
7 Claims. (Cl. 73—316)



1. A pneumatic transmitter comprising a rotary primary input member, a balancing element, spring means connected between said member and said element, means responsive to rotation of said member to act on said spring means to load said element resiliently to a degree dependent upon the rotary position of said member, a nozzle, means for supplying fluid under pressure to the nozzle, means responsive to the position of said element for throttling said nozzle thereby to alter the pressure of said fluid, and means responsive to said fluid pressure to act on said element against the action of said spring means.

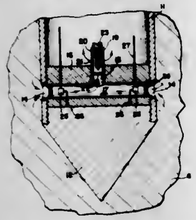
3,199,352
HEAT TRANSFER GAUGE
John Macatician, Ridge Road, Mountain Shore, P.O. Box 136, Lake Hopatcong, N.J.
Filed June 25, 1962, Ser. No. 204,710
6 Claims. (Cl. 73—341)

1. In a heat detecting element including a thermopile, the improvement comprising a body having a tapered cavity, a tapered plug forced into said body, a thermopile atop said plug, and a tapered cover plug forced into the



remainder of said cavity atop said thermopile, and means to allow electrical connection to the thermopile.

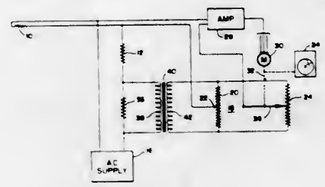
3,199,353
GRAIN TEMPERATURE SENSING DEVICE
Thomas Robert Burnight, Minneapolis, Minn. (28 Hiawatha Drive, Battle Creek, Mich.)
Filed Feb. 19, 1962, Ser. No. 173,887
5 Claims. (Cl. 73—352)



1. Apparatus for sensing the temperature of grain and the like stored in bins, comprising a rigid tubular probe having a lower end to be moved into the grain and having an upper end, the lower end having an upright peripheral wall with an opening therein to permit inflow of air, a heat-insulating block in the tubular probe and having an air flow passage therein and communicating with the opening in said probe, a pointed tip affixed on the lower end of the tubular probe below said opening and below said block, said tip closing the lower end of the tubular probe, a temperature-sensing element mounted in the block in the passage thereof, a screen preventing grain from traveling through the passage in the block toward the temperature-sensing element, electric circuit means connected with said temperature-sensing element and including means of producing an indication in response to a sensed temperature by said element, and means connected with the upper end of the tubular probe for moving air upwardly out of the probe and to thereby draw air from the grain over said temperature-sensing element.

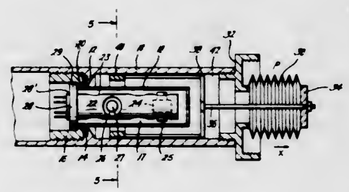
3,199,354
COMPENSATED MEASURING CIRCUIT
Anthony J. Hornfeck, South Euclid, Ohio, assignor to Bailey Meter Company, a corporation of Delaware
Filed July 24, 1961, Ser. No. 126,346
15 Claims. (Cl. 73—362)

8. In a condition responsive circuit having an alternating voltage source, the combination comprising, a temperature responsive resistance having a resistance value proportional to the magnitude of a variable temperature condition, a current limiting resistance, a measuring circuit connecting said temperature responsive resistance and said current limiting resistance in series across the alternating voltage source to establish a potential drop across said temperature responsive resistance related to the current flow in said series circuit and the resistance value of said temperature responsive resistance element, a third resistance connected in said measuring circuit and having a potential drop proportional to the current flow through said temperature responsive resistance, a transformer having a primary winding connected across said third resistance and a secondary winding, a reference circuit coupled to said secondary winding and including a fourth resistance having a reference potential drop across



the same proportional to the potential drop across said third resistance, said third resistance also correcting the phase displacement between the potential drop across said temperature responsive resistance and said reference potential, a comparison circuit for comparing the potential drop across said temperature responsive resistance with the potential drop across at least a portion of said reference resistance, and means responsive to a potential difference sensed by said comparison circuit for manifesting the magnitude of the temperature condition.

3,199,355
PRESSURE TRANSDUCERS
Jean Charles Simon-Suisse, Marly-le-Roi (Seine et Oise), France, assignor to Societe de Prospection Electrique Schlumberger, S.A., Paris, France, a corporation of France
Filed July 19, 1962, Ser. No. 210,952
Claims priority, application France, Jan. 6, 1962, 884,094
3 Claims. (Cl. 73—393)



1. A pressure transducer providing frequency modulated signals in dependence upon the pressures of a fluid medium and substantially independent of the temperature variations of said medium, said transducer comprising:

a vibratory hollow member of magnetic material, said hollow member defining a chamber;

a casing enclosing said hollow member;

a liquid filling the space between the outer walls of said hollow member and said casing, said liquid having a predetermined density-versus-temperature characteristic;

a fluid in said chamber, said fluid being under a predetermined pressure;

pressure exchanging means terminating said casing for communicating the pressures of said fluid medium to said liquid, said pressure exchanging means including a rigid movable wall;

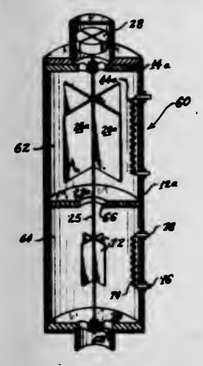
a compensating member mounted between the outer wall of said hollow member and the inner wall of said casing;

linking means coupling said wall with said compensating member, said compensating member being displaceable relative to one end of said hollow member in response to displacements by said movable wall;

first means housed in said chamber for imparting vibrations to said hollow member; and

second means inside said chamber responsive to the vibrations of said hollow member for providing an oscillatory electric signal, the frequency of said signal varying as a function of variations in the pressures of said fluid medium.

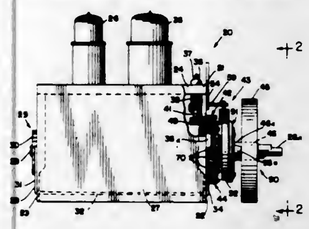
3,199,356
PRESSURE GAUGE
Vytautas Andrialis, 5309 S. Tripp Ave., Chicago, Ill.
Filed Nov. 6, 1961, Ser. No. 150,323
6 Claims. (Cl. 73—399)



1. In a device for measuring pressure within a gaseous body, the combination comprising; a housing defining a measuring chamber and having walls of high thermal conductivity; means for effecting fluid communication between the interior of said body and the measuring chamber; a temperature-variable sensing resistor having a predetermined temperature coefficient of resistance disposed within said chamber; a spaced, temperature-variable, balancing resistor having a temperature coefficient of resistance similar to said sensing resistor also disposed in said chamber; means for producing relative movement between said resistors and the gas in the measuring chamber, the gas and said sensing resistors having a relative velocity different from the relative velocity of said gas and the balancing resistor; and circuit means including said resistors and a power source for measuring the relative changes in the resistances of said sensing resistor and said balancing resistor due to the thermal conductivity of the gas in said measuring chamber which in turn relates to the pressure encountered in said gaseous body.

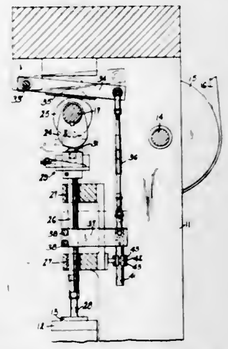
3,199,357
FINE TUNING MECHANISM FOR TELEVISION TUNERS
Ernest Carl Richie and Ralph D. Ridge, Bloomington, Ind., assignors to Sarkes Tarzian, Inc., Bloomington, Ind., a corporation of Indiana
Filed Jan. 20, 1964, Ser. No. 339,000
25 Claims. (Cl. 74—10)

1. In a fine tuning arrangement for use in a television tuner of the type comprising a channel selector shaft mounted upon a chassis and rotatable to different channel selecting positions, the combination of a single variable fine tuning impedance for all of said channels and having a movable element, a lever mounted for pivotal movement with respect to said chassis and having a portion acting against said element, said lever having an integral portion forming an elongated bearing channel extending transversely of said lever and substantially parallel to said shaft, a fixed pivot pin fitting within said channel to support said lever for pivotal movement, and



lever actuating means mounted on said shaft and engaging said lever at a point intermediate said channel and said element for moving said lever to different positions as said shaft is turned to its different channel selecting positions.

3,199,358
LIFTER MECHANISM
Charles Robert Bradlee, Cheshire, Conn., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed July 11, 1962, Ser. No. 209,198
14 Claims. (Cl. 74—53)

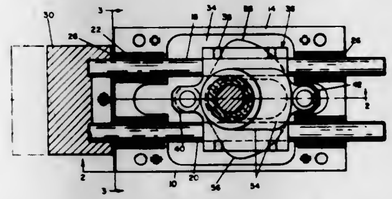


1. In combination, a machine frame, a shaft rotatably mounted in said frame, at least one advancing cam mounted on said shaft, at least one lifter cam mounted on said shaft, a plunger slidably mounted in said frame, said plunger carrying a cam follower adapted to engage said advancing cam, a lifter arm pivoted at one end thereof to said frame and adapted to contact said lifter cam, a lifter bar adjustably secured to said plunger, and a link pivoted at one end thereof to the other end of said lifter arm and at the other end thereof to said lifter bar.

3,199,359
MOTION TRANSMITTING DEVICE
Earl F. Beezer, 77 Hemlock Drive, Paramus, N.J.
Filed May 1, 1962, Ser. No. 191,575
4 Claims. (Cl. 74—55)

3. A mechanism for moving a member backwardly and forwardly by employing a rotary element such as a rotatable shaft, comprising first and second cam members adapted to be affixed to said shaft for rotation therewith, a movable follower member having first and second roller elements in engagement with said respective ones of said first and second cams, said roller elements

being located on substantially opposite sides on the center of rotation of said cams, a first rod connected to said movable member and extending outwardly therefrom for connection to a device for moving the latter, a second rod connected to said movable member and being substantially parallel to said first rod and located on the opposite side of said movable member from the center of rotation of said cams, said second rod extending outwardly from said movable member for connection to an article to be moved, said cam members being conjugate and of a configuration to permit positive driving of said first roller element with a first characteristic motion by said first cam in one direction while the other roller element is maintained in engagement with its associated cam, and positive driving of said second roller element by said second cam with a second characteristic motion distinct from said first characteristic motion in an opposite direction with the other roller element maintained in engagement with its associated cam, and roller bearing means arranged on at least one side of the center of rotation of said cams for guiding said rods for linear axial movement, said roller bearing means including split ball bushings having ball bearings aligned in respect to the rod for linear movement of said rod, and means for adjusting the loading of said ball bearings in respect to said rods including split housing members having a bore for accommodating the bearings.

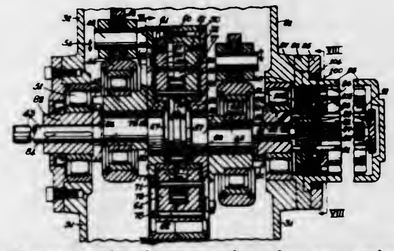


3,199,360
VIBRATORS PARTICULARLY INTENDED FOR DENTAL USE
Karl Axel Sam Karlstrom, Nygatan 37, Gavle, Sweden, and Karl Gustaf Östberg, deceased, late of Rotebro, Sweden, by Ingrid Johanna Cecilia Allard, Rotebro, Sweden and Elsie Anna Marianne Östberg, Stockholm, Sweden, heirs; said heirs of said Östberg, assignors to said Karlstrom
Filed Mar. 23, 1962, Ser. No. 182,142
4 Claims. (Cl. 74—87)



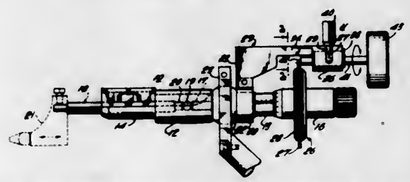
1. A vibrator for dental use, comprising a vibrator tube closed at one end and open at the other end, a rotary axle coaxially arranged within said tube, a rotary pendulum arranged within the tube and pivotally connected with said axle so as to rotate together with the axle, a surface of revolution inside the tube forming a rolling surface for the outer end of the pendulum, a cylindrical pedestal body (13) forming a bearing for said axle and slidable axially in the tube so that said pedestal body together with said axle and pendulum is insertable and removable axially through the open end of said tube, a recess in the inner surface of said tube, a locking member on said pedestal body and movable radially into engagement with said recess to lock the pedestal body axially in its operative position, and means for releasably holding said locking member in engagement with said recess comprising a detachable coupling member for connecting said axle to a driving shaft, said coupling member being detachably inserted in the open end of said tube and, when inserted, holding said locking member in engagement with said recess and thereby locking said pedestal body axially in its operative position.

3,199,361
MOTION CHANGING MECHANISMS
Christian F. Prins, Olifantsvlei 16 Dist. JHB., P.O. Elkenhof, via Johannesburg, Transvaal, Republic of South Africa
Filed Mar. 12, 1962, Ser. No. 178,863
Claims priority, application Republic of South Africa, Mar. 14, 1961, 1,026/61
7 Claims. (Cl. 74—124)



1. Apparatus for the conversion of rotary motion into reciprocating motion, said apparatus comprising a drive shaft, a first cylindrical eccentric mounted on and fixed to the shaft, a second cylindrical eccentric mounted snugly on the first eccentric, the first and second eccentrics being rotatable relative to one another to vary the eccentricity of the second eccentric relative to the axis of rotation of the shaft, follower means adapted for undergoing oscillation upon eccentric rotation of the second eccentric, a flyweight system adapted to orbit the shaft under the influence of centrifugal force, said flyweight system including a linkage system coupled to at least one of said eccentrics, the linkage system including elements respectively secured for rotation to at least said one eccentric, which elements are relatively movable upon radially outward movement of the flyweight system to increase the eccentricity of the second eccentric with respect to the shaft, the reaction of said follower means on said second eccentric tending to move said second eccentric into concentric relation with said shaft.

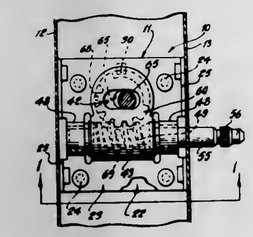
3,199,362
MAGNETIC VARIABLE SPEED DRIVE
Andrew Pfeiffer, P.O. Box 450, R.F.D. 1, Old Lyme, Conn.
Filed Nov. 14, 1963, Ser. No. 323,684
13 Claims. (Cl. 74—210)



1. A motion-transmission device comprising a drive member formed of a magnetic material and rotatable about a first axis and having a circular section, a driven member formed of a magnetic material having a circular

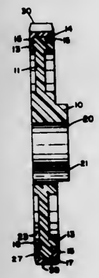
section and rotatable about a second axis offset relative to said first axis, at least one of said members being a permanent magnet whereby to urge said members into tangential contact along said circular sections at a point offset relative to said first and second axes, and means for adjusting the relative positions of said first and second members and the eccentricity of said point of tangential contact of said circular sections relative to at least one of said axes.

3,199,363
MANUAL VENT WING ACTUATOR
Joseph Pickles, Dearborn, Mich., assignor to Ferro Manufacturing Corporation, a corporation of Michigan
Filed May 6, 1963, Ser. No. 278,136
11 Claims. (Cl. 74—425)



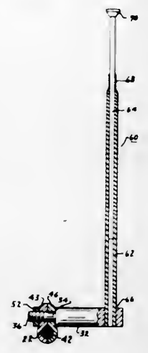
1. A manual actuator of the type described for providing a drive connection between rotatable driving and driven elements in an adjustably acute angled relationship of the axes of said elements to one another, comprising a worm member having means to drivingly connect the same to one of said elements, a worm gear member meshing with said worm member and having means to drivingly connect the same to the other element, and a housing structure providing a space to receive and journal one of said members for a tilting adjustment of its axis in a plane in parallel, non-intersecting relation to the axis of the other, thus to enable the acute angled relationship of said axes of said elements.

3,199,364
COMPOSITE PLASTIC GEAR
Bruce J. Dew, Fayetteville, N.Y., assignor to Morse Chain Company, Ithaca, N.Y., a corporation
Filed Sept. 10, 1963, Ser. No. 307,900
3 Claims. (Cl. 74—460)



1. A composite gear comprising a circular web of molded thermosetting plastic material, said web having a centrally located aperture, a toothed gear rim of thermoplastic material molded on the peripheral portion of said web, a bushing of thermoplastic material molded in said aperture, the bore of said bushing being concentric with said toothed rim, said toothed rim and bushing having parts interlocking with said web.

3,199,365
THROTTLE CONTROL DEVICE
Allan E. Cameron and Colin E. Cameron, both of 201 6th St., Winona Lake, Ind.
Filed Mar. 1, 1963, Ser. No. 262,073
2 Claims. (Cl. 74—482)



1. A hand operated throttle control device for use with a vehicle having an accelerating pedal with a rod-like linkage member in the driver compartment, comprising a cylindrical base with an axial stud and shoulder on one end thereof for mounting on said linkage in a horizontal laterally extending position with respect to said linkage member, a pair of clamp members having grooves facing one another for receiving the rod-like linkage member and lugs on one side of said grooves having holes receiving said stud, a nut on said stud for clamping said clamp members together and one against said shoulder to thereby secure said clamp members to said linkage member, a stem extending laterally from the end of said base opposite said stem and consisting of a tubular base portion secured at one end to said base and having a free end, a rod-like member telescopically received in said base portion and extending from the free end thereof, means frictionally engaging said rod-like member to retain it in various adjusted positions in said base portion, and a button secured to the free end of said rod-like member.

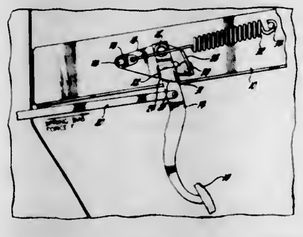
3,199,366
CONTROL LINKAGE
Fox John Herrington, Jr., Pontiac, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 22, 1960, Ser. No. 77,543
16 Claims. (Cl. 74—512)

10. In a control linkage mechanism; a support having a pivot; an operating lever pivotally mounted on said pivot and having apply means for receiving an operating force to move said operating lever in one direction from an initial position, delivery means for delivering an actuating force and control means for receiving an auxiliary force; stop means engaged by said operating lever and mounted on said support to limit movement of said operating lever in the opposite direction at an initial point, assist means connected to said operating lever and said support to provide an auxiliary force resisting and assisting movement of said operating lever with a predetermined force proportional to the degree of movement of said operating lever from said initial position and means mounting said stop means and said assist means on said support and being selectively moveable to simultaneously adjust said stop means and said assist means to change



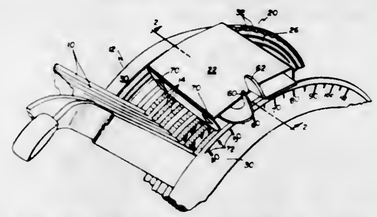
said initial position of said operating lever to any one of a plurality of initial points and to control said assist means to provide during operation from each of said initial points, when used as the initial position of said operating lever, the same predetermined force in the same proportion to the degree of movement from each initial point.

3,199,367
ACTUATING MECHANISM
Walter C. Zetye, Southfield, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 15, 1963, Ser. No. 273,223
4 Claims. (Cl. 74—512)



1. In a motor vehicle of the type having a clutch pedal pivoted on the body for manual operation between clutch engaged and disengaged positions against clutch spring means that biases the pedal to engaged position with a force that increases with movement of the pedal to disengaged position, the improvement comprising means for augmenting the spring bias on the pedal in engaged position and for partially counteracting the spring bias in disengaged position including a control member pivoted on the body and having a lost motion connection with the pedal through stop and drive portions and a spring having its ends pivoted to the body and control member for overcenter movement, the spring urging the stop portion of the control member against the pedal with the pedal in fully engaged position and urging the drive portion against the pedal with increasing leverage with pedal movement to fully disengaged position.

3,199,368
AIRCRAFT THROTTLE HAVING ADJUSTABLE, OVERPOWERABLE GATE
Jack N. Funk and James R. Hornsell, Wichita, Kans., assignors to The Boeing Company, Wichita, Kans., a corporation of Delaware
Filed May 7, 1962, Ser. No. 192,647
14 Claims. (Cl. 74—526)



1. In a multi-throttle control for aircraft power plants having a series of separate throttle levers disposed side by side and pivotal about a generally common axis in juxtaposed arcuate paths from minimum to maximum throttle and a graduated guide frame for said levers spaced above said axis having juxtaposed parallel arcuate guide members interfingered with said levers for guidance thereof, an overpowerable gate, comprising:

said guide frame having a pair of side bars having guide and retaining grooves in their opposed faces,

a gate member disposed in front of said levers having a pair of roller members mounted on opposite sides thereof disposed in said grooves in such a manner that said gate member is movable fore and aft of said guide frame from positions blocking movement of said levers to maximum throttle position, to a forward position permitting movement of said levers to maximum throttle position,

one of said bars having a series of indentations formed in its face extending in a fore and aft direction, said gate member having slidably transversely mounted therein a latch member movable between a position out of said indentations and a position engaged in one of said indentations, spring means in said gate member normally urging said latch member into engagement with said indentations,

finger piece means exposed from said gate member and linkage means connecting said finger piece means to said latch member and operable when said finger piece means is operated to withdraw said latch member from the location of said indentations for adjustable location of said gate member blocking advancement of said throttle levers to maximum throttle position, and

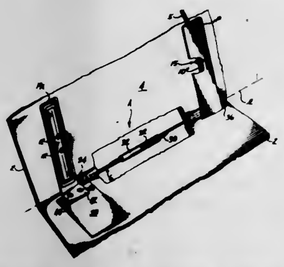
graduated indicia located on said gate member and said guide frame for locating each position of said gate member engaged in the indentations for setting various maximum thrust limitations, and

said spring means and the shape of said indentations and latch member being such that said latch member can be immediately cammed out of the indentations by sufficient force applied on said gate member by said levers within pilot manual force limitations, to overpower said gate for movement of said throttle levers to positions of maximum throttle past the limit set by said gate member.

3,199,369
LEFT-FOOT ACCELERATOR PEDAL
Arthur A. Kaul, 961 Chehalis Ave., Chehalis, Wash.
Filed June 14, 1963, Ser. No. 287,951
5 Claims. (Cl. 74—562.5)

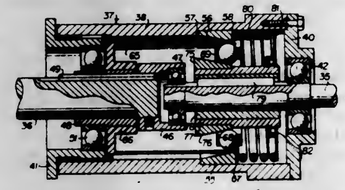
1. An auxiliary pedal attachment for use with an automobile accelerator pedal, comprising a pair of right

angle bars each having a pair of legs meeting and terminating in a right angular bight, said bars being arranged together in a U-shaped configuration forming an adjustable outrigger arm assembly for the attachment, the end portions of the transversely extending legs of the bars in the assembly being complementally part cylindrical in cross section and arranged face to face with one another in overlapping relationship so that they form an elongated cylindrical joint, a thin elongated C-clamp tightly clasped about the joint so as to restrain the bars against lateral



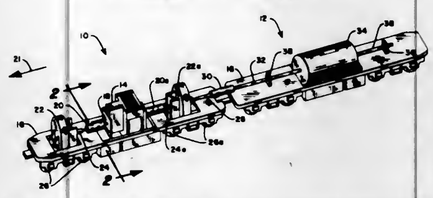
separation while allowing for limited relative lengthwise movement between the bars under the application of force longitudinally of the joint, for purposes of adjusting the spacing between the upwardly extending legs of the same, releasable clamp means connected with the upwardly extending leg of one bar, for releasably securing the latter leg to the back of the accelerator pedal so that the attachment is cantilevered therefrom, and a foot pedal attached to the upwardly extending leg of the other bar to enable actuation of the accelerator pedal from the outlying position of said other bar.

3,199,370
VARIABLE SPEED DRIVE MECHANISMS
William C. Prior, Chagrin Falls, Ohio, assignor to Speed Selector, Inc.
Filed Sept. 18, 1962, Ser. No. 224,421
22 Claims. (Cl. 74—640)



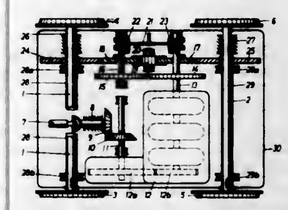
1. A variable speed drive mechanism designed to transmit rotary-to-rotary motion from a drive shaft to a driven shaft, the speed of said driven shaft being infinitely variable within a predetermined speed range, said drive mechanism comprising in combination:
(a) a driven shaft;
(b) a backing member;
(c) said backing member having a continuous surface which in cross-section of said backing member describes a circle;
(d) a resiliently flexible tube member coaxially positioned with respect to said continuous surface;
(e) means connecting one of said members to said driven shaft;
(f) said tube member and said backing member being rotatable and axially movable relative to one another;
(g) said tube member having a circumferential length which varies relatively to the circumferential length of said continuous surface between two positions of relative axial movement;
(h) means for producing relative axial movement of said members;
(i) spaced input roller means adjacent said continuous surface;
(j) said tube member having circumferentially spaced portions frictionally engaged between said roller means and said continuous surface;
(k) a drive shaft structure; and,
(l) said drive shaft structure engaging said roller means for producing orbital movement in the direction of rotation of said drive shaft structure and rotative movement opposite to said orbital movement, whereby rotation of said drive shaft structure and orbital movement of said roller means will produce rotation of said driven shaft.

3,199,371
VISCOUS COUPLER DEVICE FOR MODEL VEHICLES
Raymond G. Lins, 2035 Opal Place, St. Paul, Minn., and Stanley J. Lins, 3736 Cedar Ave., Minneapolis, Minn.
Filed May 31, 1962, Ser. No. 199,010
5 Claims. (Cl. 74—664)



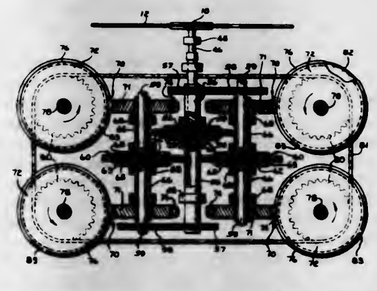
1. For a wheel-propelled miniature model vehicle having a rotating-shaft power source and a transmission for applying motive power to the wheels, in combination: means for coupling the power shaft to the transmission, comprising a cylindrical driving member axially attached to the power shaft, a cylindrical driven member axially attached to the transmission and in substantial axial alignment with said driving member, one of said members having an open end axial bore, the other of said members being disposed in spaced relationship to said one member through said open end and within said bore, with viscous fluid filling the space between said members; and inertia supplying flywheel coupled to said power shaft by identical coupling means.

3,199,372
DRIVE MEANS FOR PLURAL AXLES OF A VEHICLE
Fritz Kugel, Heidenheim (Brenz), Germany, assignor to J. M. Voith G.m.b.H., Heidenheim (Brenz), Germany
Filed June 7, 1961, Ser. No. 115,436
Claims priority, application Germany, June 10, 1960, V 18,786
7 Claims. (Cl. 74—665)



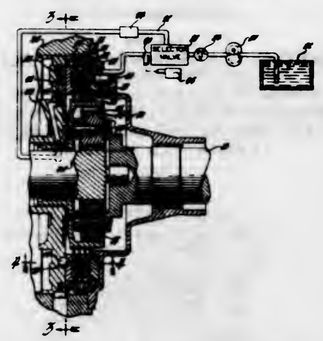
1. In an arrangement for commonly driving at least two adjacent parallel driving axles of a vehicle, especially of the truck of a rail vehicle: a gear train continuously drivingly interconnecting said driving axles and rotatable on axes parallel to said driving axles, reversing transmission means including first, second and third shafts parallel to said driving axles, a first group of spur gears comprising first, second and third spur gears, said first and third spur gears being rotatably mounted on said first and third shafts respectively and both meshing with said second spur gear, said second spur gear being mounted on said second shaft, a second group of spur gears comprising intermeshing fourth and fifth spur gears drivingly connected to said first and third shafts respectively, shiftable clutch means operable for selectively drivingly connecting either one of said first and third spur gears to its respective shaft, one of said two groups of spur gears forming part of said gear train, an input shaft, an output shaft, and a fluid flow transmission located in the space between said two driving axles and comprising a plurality of fluid circuits interposed between and drivingly connected to said input and output shafts, said output shaft being integral with one of said first and third shafts.

3,199,373
INTERMITTENT DRIVE
Charles C. Veale, West Chicago, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 5, 1962, Ser. No. 221,490
2 Claims. (Cl. 74—679)



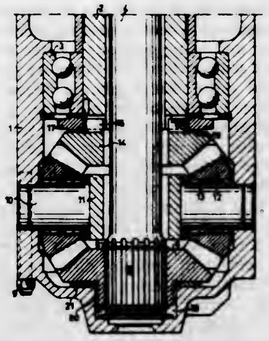
1. An intermittent rotary drive mechanism comprising:
a first shaft;
a second shaft;
a third shaft;
means for mounting said shafts for rotation about axes in parallel relation to each other;
a differential gearing for each of said shafts including a member secured to the shaft for rotation therewith and having a plurality of bevel planetary gears mounted thereon for revolving movement therewith and for rotation about radial axes intersecting the axis of the shaft, and a pair of bevel sun gears rotatable on the shaft in meshing engagement with said planetary gears;
intermittent drive devices individual to said sun gears on said second and third shafts including a rotary driven wheel operatively connected to the sun gear for rotation therewith and a rotary drive wheel having a cam for rotating the driven wheel through a portion of a revolution for each revolution of the drive wheel and during a relatively small portion of the rotation of said drive wheel;
gearing connecting one of said sun gears on said first shaft with said second shaft for rotation together;
gearing connecting the other sun gear on said first shaft with said third shaft for rotation together; and
means for rotating said drive wheels simultaneously in a predetermined angular relation to each other to effect the sequential rotation of said sun gears and the intermittent rotation of said first shaft through predetermined increments of movement separated by intervals of dwell.

3,199,374
DRIVE SUSTAINING DEVICE
John J. O'Malley, Livonia, Robert L. Black, Allen Park, and Thomas R. Zimmer, Livonia, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 12, 1961, Ser. No. 102,453
31 Claims. (Cl. 74—688)



1. A friction device comprising a series of friction elements, reaction means acting on the friction elements in one direction, and energizing means urging the friction elements in the opposite direction and towards the reaction means operative in response to the torque of a friction element to engage the friction device sufficiently to self-sustain the torque and thereby rendering the friction device capable of sustaining all said torque.

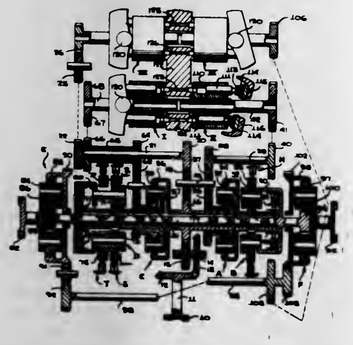
3,199,375
ARRANGEMENT IN VEHICLE AXLES ASSOCIATED WITH A PLANETARY TYPE BEVEL GEARING
Ingo Harald Rune Rosen, Goteborg, and Stig Herbert Albert Weiertz, Kungalv, Sweden, assignors to Aktiebolaget Volvo, Goteborg, Sweden, a corporation of Sweden
Filed May 27, 1964, Ser. No. 370,568
1 Claim. (Cl. 74—713)



In a driving axle for vehicles, a normally stationary axle housing, an axle extending within and rotatable relative to said axle housing, a hub case surrounding and ro-

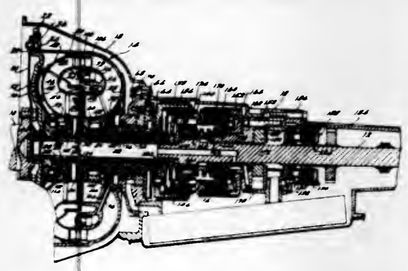
tatable relative to said axle housing, and a reduction gearing connecting said axle with said hub case, said gearing comprising a first bevel sun gear in splined connection with said axle, a spider having radially extending journals surrounding said axle and secured to said hub case, bevel pinions carried by said journals and meshed with said first bevel sun gear, and a second bevel sun gear concentric with said axle, meshed with said bevel pinions and non-rotatably connected to said axle housing, the connection between said second sun gear and said axle housing consisting of a dog clutch having clearances between the dogs permitting radial movement of said second sun gear relative to said axle.

3,199,376
STEERING TRANSMISSION FOR TRACK LAYING VEHICLES
George M. De Lalio, Smithtown, N.Y. (Capel Drive, R.D. 6, Huntington, N.Y.)
Filed May 31, 1962, Ser. No. 198,873
4 Claims. (Cl. 74—720.5)



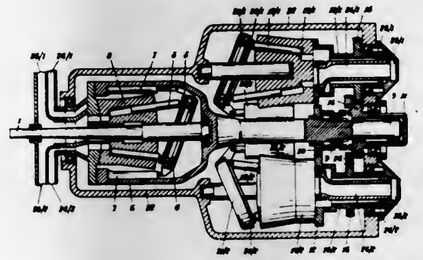
1. Steering transmission for track laying vehicles and the like comprising input means, a driven shaft, a pair of spaced output means, each of said output means being connected with said driven shaft by a steering planetary gearing thereby defining a pair of planetary gearings, first ratio control gearing drivingly connected between said input means and said driven shaft, second ratio control gearing drivingly connected between said input means and said driven shaft, a first hydraulic transmission means including an input and an output, the input of said first hydraulic transmission means being connected to a portion of said first ratio control gearing, the output of said first hydraulic transmission means being connected to a portion of said second ratio control gearing, said driven shaft being elongated and being connected at the opposite end portions thereof with each of said planetary gearings, said first and second ratio control gearing including gearing portions positioned between said planetary gearings and carried by said driven shaft and disposed in surrounding concentric relationship with said driven shaft, said first and second ratio control gearings each having a separate drive connection to said common driven shaft, a common steering shaft, said common steering shaft being connected with a portion of each of said steering planetary gearings such that rotation of said steering shaft in one direction will cause movement in opposite directions of the portions of the respective steering planetary gearings connected with the steering shaft, a second hydraulic transmission means including an input and an output, the output of said second hydraulic transmission means being drivingly connected with said common steering shaft, the input of said second hydraulic transmission means being drivingly connected with the input means of the steering transmission, and means for selectively coupling a portion of said first ratio control gearing directly to said driven shaft, and means for selectively locking a portion of said first ratio control gearing against movement.

3,199,377
POWER TRANSMISSION MECHANISM
James Knowles, Bloomfield Hills, Thomas R. Stockton, Northville, and Norman T. General, Orchard Lake, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Original application July 21, 1958, Ser. No. 749,726, now Patent No. 3,083,589, dated Apr. 2, 1963. Divided and this application Feb. 20, 1963, Ser. No. 260,010
10 Claims. (Cl. 74—732)



7. In a power transmission mechanism adapted to deliver power from a driving member to a driven member, a hydrokinetic torque converter unit comprising a bladed impeller member and a bladed turbine member disposed in a toroidal fluid circuit in fluid flow relationship, said bladed impeller member having an outer torus shroud and an inner torus shroud, primary impeller blade elements disposed between said shroud and cooperating therewith to define flow passages, the flow exit section of said primary blade elements being disposed at a radially outward region of said circuit, secondary impeller blade elements located adjacent said flow exit section and forming continuations of said flow passages, a multiple speed ratio gear unit having gear elements that define in part a power flow path between said driving and driven members, a power input gear element connected to said turbine member and a power output gear element being connected to said driven member, fluid pressure responsive friction torque establishing means for controlling the relative motion of said gear elements, a control pressure source, conduit structure connecting said control pressure source and said friction torque establishing means, a shift valve means disposed in and partly defining said conduit structure for controlling distribution of pressure to said friction torque establishing means, a torque demand responsive signal pressure source, a driven member speed responsive signal pressure source, branch passages establishing communication between said shift valve means and said signal pressure sources, pressure responsive servo means disposed within said toroidal circuit for adjustably positioning said secondary blade elements relative to said primary blade elements including a first member carried by said primary blade elements and a second pressure movable member connected to said secondary blade elements, a servo feed passage extending between said control pressure source and said servo means, a pressure distributor valve means disposed in and partly defining said feed passage for establishing and interrupting a fluid connection between said servo means and said control pressure source, said distributor valve means being in communication with said torque demand responsive pressure and actuated thereby to control the operation of said servo means.

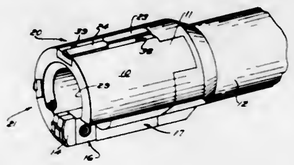
3,199,378
CONTINUOUS HYDRAULIC SPEED CHANGE GEAR WITH TWO SPEED RANGES HAVING DIFFERENT AMPLITUDES FOR VEHICLES
Giovanni Badalini, Rome, Italy, assignor to S.p.A. Cambi Idraulici Badalini, Rome, Italy
Filed May 7, 1962, Ser. No. 192,928
Claims priority, application Italy, June 9, 1961, 10,395/61
3 Claims. (Cl. 74—732)



1. A continuous hydraulic speed change gear with a gear casing, an input shaft and a hollow output shaft arranged coaxially to one another, an oil pressure duct and an oil exhaust duct, comprising in combination a multicylinder hydraulic pump having a rotary casing, a pump shaft rotatably supported at one end within said hollow output shaft and at the other end on said input shaft, said casing and said shaft being rigidly connected with one another, a pump cylinder body rigidly secured to said input shaft, a plurality of pump pistons arranged within said cylinder body, a pump swash plate pivotally connected with said rotary pump casing and contacting the outer ends of said pump pistons around said input shaft, hydraulic control means for controlling the tilting of said pump swash plate, at least two hydraulic motors arranged in said gear casing around said pump shaft and hydraulically connected in closed circuit with said pump, mechanical gearing means coupling said hydraulic motors with said output shaft, said hydraulic motors each comprising a pivot shaft rotatably supported in said gear casing, a motor cylinder block rigidly supported on said pivot shaft, a plurality of pistons arranged within said motor cylinder block, a motor swash plate contacting the outer ends of said motor pistons and pivoted to said gear casing, differential piston means controlling the tilting of said motor swash plate and a gearing sleeve slidably keyed on said pump shaft and couplable with said output shaft and with said mechanical gearing means, whereby two speed ranges may be obtained, the first one comprising the hydraulic drive with said gearing sleeve coupling said pump shaft to said output shaft and the second one comprising the hydraulical drive and mechanical drive through said mechanical gearing means.

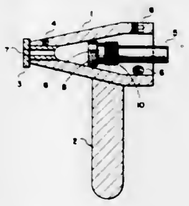
3,199,379
METHOD OF MANUFACTURING TREPANNING HEAD
Leonard J. Korson, Manville, R.I., assignor, by mesne assignments, to Madison Industries Inc., Pawtucket, R.I., a corporation of Rhode Island
Filed Feb. 15, 1963, Ser. No. 258,685
3 Claims. (Cl. 76—101)

1. The method of making a trepanning head comprising the steps of providing an annular body having connection means at one end and a cutting bit shoulder at the other end, cutting a pair of axial recesses in the exterior wall of said body with the floor of each of said recesses at a predetermined geometric tangent of a common circle and the walls thereof at right angles to said floor and emerging in the outer annular surface of said body, constructing a wear pad by providing a mounting base, affixing a contact surface to the base, grinding a radius on the contact surface to a dimension where thickness measured between said contact surface and said



mounting surface will be the same for each wear pad, mounting said pads on the floor of said recess and providing means for securing said wear pad in said axial recesses whereby each of said wear pads is interchangeable.

3,199,380
VALVE STEM DRILL JIG
William H. Threlkeld, 1028 Azalea Court, La Marque, Tex.
Filed Mar. 21, 1963, Ser. No. 267,036
3 Claims. (Cl. 77—62)



1. An apparatus for use in holding a valve stem and guiding a drill bit into said valve stem to drill out a screw located axially in said valve stem, comprising a part cylindrical and part conical housing, a handle attached to the outside wall and perpendicular to said housing, a drill guide bushing inserted into the smaller diameter end of said housing and having a drill guide hole axially, in said bushing, a means for holding said bushing in a firm position in said housing, and holding means at the larger diameter end of said housing attached and perpendicular to said housing to hold said valve stem in a firm and centered position in said housing.

3,199,381
TWIST DRILL
Bruce A. Mackey, P.O. Box 368, Libertyville, Ill.
Filed Mar. 4, 1963, Ser. No. 262,561
10 Claims. (Cl. 77—70)

1. A drill comprising: an elongate shank having a longitudinal axis; a cutting tip affixed to the forward end of said shank; said cutting tip htving generally parallel front and rear faces with side faces disposed transversely with respect to said front and rear faces, said side faces tapering generally uniformly rearwardly at an acute angle with respect to the axis of said shank to define a cutting tip base of reduced width at the rearward end of said cutting tip; and cutting tip including cutting faces at the forward end thereof, each of said cutting faces tapering forwardly from the forwardmost end of one of said side faces, and converging toward one another to define a leading cutting tip point; one of said cutting faces being

disposed at an acute angle with respect to said cutting tip front face to define a cutting edge at the forwardmost portion of the cutting tip front face, and the other cutting



face being disposed at an acute angle with respect to said cutting tip rear face to define a cutting edge at the forwardmost portion of the cutting tip rear face.

3,199,382
REAMER WITH REINFORCED COOLED SHANK
Rudolf W. Andreasson, P.O. Box 174, Birmingham, Mich.
Filed Dec. 26, 1962, Ser. No. 247,170
1 Claim. (Cl. 77—72)



A rotary drill assembly utilizing a shank and a separable cutting tool affixed thereto comprising:

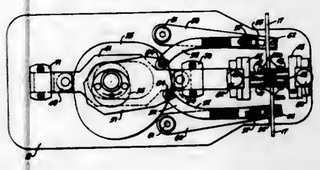
(a) a shank in the form of a tube with an internal axial coolant passage, said shank having a plurality of circumferentially spaced axially extending recesses on the outer surface thereof,

(b) a plurality of long, narrow wear strips formed of material harder than that of the shank affixed on the outer surface of said shank in said recesses,

(c) a cutting tip affixed to one end of said tube in alignment therewith having a plurality of straight axial lands having contact surfaces of slightly greater diameter than said tube and substantially equal to the diameter of the wear strips on said shank and aligned with said wear strips, said tip having flutes formed between said lands extending to the internal coolant passage in said shank, and

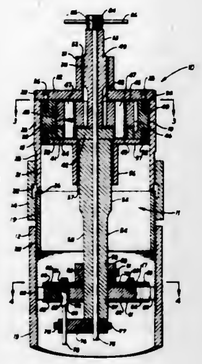
(d) said shank having radial passages leading outward and downward to the surface of said shank between said wear strips spaced upwardly from the end of the shank to a point near the upper end of said strips, said radial passages being dimensioned to an effective area less than the passages in said tip flutes whereby a small quantity of coolant passing through said shank may divert to the walls of a hole in which said shank is operating, the bulk of the coolant passing to said flutes.

3,199,383
WIRE CUTTING AND STRIPPING DEVICE WITH BLADE HEATING MEANS AND CAM AND ECCENTRIC ACTUATION MEANS
Ragnar Gudmestad, West Allis, Wis., assignor to Artos Engineering Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 7, 1963, Ser. No. 314,302
8 Claims. (Cl. 81—9.51)



1. In a wire cutting and stripping device having a main support, power means for said device, the combination of: wire cutting and stripping blades carried by said support, heating means carried by said support for heating said stripping blades, stripping lever means carried by said support for gripping and stripping said wire stock, cam means driven by said power means for positioning said wire cutting and stripping blades, an eccentric coaxial with said cam means driven by said power means, said stripping lever means positionable by said eccentric in timed relation to cam means rotation for stripping said wire stock.

3,199,384
PIPE NIPPLE WRENCH WITH TORQUE BOOSTER
George Brase, San Francisco, Calif.
(334 Cardinel Court, Mill Valley, Calif.)
Filed June 1, 1962, Ser. No. 199,533
9 Claims. (Cl. 81—57)



1. A wrench for engaging and turning a pipe nipple to facilitate its installation in or removal from a pipe, comprising in combination:

means for gripping the exposed end of the pipe nipple including a tubular barrel member adapted to be threaded to an open-ended nipple, and a bolt member threadedly connected to said barrel and axially movable therein for engaging the end of said nipple; and

planetary gear drive means removably connected to said bolt including

a drive shaft having a drive gear at one end with spaced apart gear teeth along its periphery,

a rotatable disc fixed to an axially extending shaft,

a plurality of pinion gears meshed with said drive gear and rotatably mounted on said central disc,

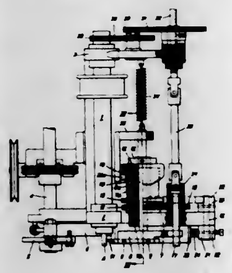
clutch means attached to said axially extending shaft for engaging the inner wall of the pipe threaded to said nipple to prevent rotation of said central disc,

an annular drive member having internal gear teeth in mesh with each of said pinion gears,

said annular drive member having means for drivingly engaging said bolt,

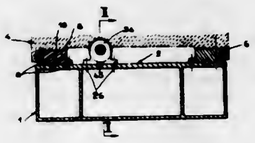
whereby when said clutch is actuated to rigidly connect said axially extending shaft, and said drive shaft is rotated in one direction, said central disc is prevented from rotating and said pinion gears operate to drive said annular drive member and said bolt.

3,199,385
MECHANISM FOR CONTROLLING THE MOVEMENTS OF A CUTTING TOOL IN AN AUTOMATIC MACHINE TOOL
André Bechler, 4 Rue Centrale, Moutier, Bern, Switzerland
Filed Feb. 20, 1963, Ser. No. 259,926
Claims priority, application Switzerland, Feb. 28, 1962, 2,461/62
3 Claims. (Cl. 82—5)



1. A mechanism for controlling the movements of a cutting tool on a workpiece rotating about a longitudinal axis in an automatic machine tool so that the cutting tool during one phase of each working cycle performs a plurality of similar elementary cycles of movement each of which comprises a feeding, a forward, a restoring and a return movement and simultaneously undergoes a continuous feeding movement toward said workpiece, comprising a feed cam operable through one revolution per working cycle to provide said continuous feeding movement, a movable supporting member adapted to be controlled by said feed cam, a slide guided on the supporting member to be reciprocable in the direction of the tool's feeding and restoring movements, guide bushing means on said slide, a tool holder on the one side of said slide adjacent said workpiece and having a bar-like portion extending from one side of said tool holder and mounted for longitudinal sliding movement in said guide bushing means to guide said tool holder in the direction of the tool's forward and return movement, guide means on said slide and said tool holder to prevent rotation of said tool holder about the axis of said bar-like portion, a lever pivotally mounted on said slide intermediate its ends and having one end operatively connected to said supporting member, a rotary member mounted on said slide on the side away from said tool holder to be rotatable about an axis perpendicular to the direction of movement of the slide and including a radial cam and a bell-cam, said lever having the other end engageable with said radial cam whereby said radial cam is operable to shift said slide through said feeding and restoring movements, first resilient means for biasing said other end of said lever into engagement with said radial cam and biasing said slide toward said workpiece, cam follower means operable by said bell-cam and operatively carried on said bar-like portion whereby said bell-cam is operable to move said tool holder in the direction of the tool's forward and return movements, second resilient means for holding said follower means into engagement with the profile of said bell-cam and means for continuously rotating the rotary member through more than one revolution during one cycle of movement of said feed cam and said supporting member.

3,199,386
STRUCTURE OF MACHINE TOOLS AND THE LIKE
René Deflandre, Paris, France, assignor to Societe dite: Derefa Etablissement pour le Developpement, Recherches et Fabrications Industrielles, Vaduz, Liechtenstein
Filed Aug. 21, 1962, Ser. No. 218,373
Claims priority, application France, Aug. 29, 1961, 871,797
4 Claims. (Cl. 82—32)

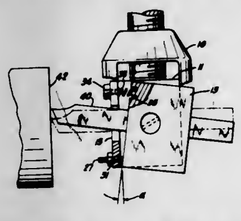


1. In a machine tool, a frame member having tool feeding element supporting surface portions that are planar and machined true over their entire surface areas, said frame member being a box girder of parallelepipedic shape having one exterior side surface machined true and containing the entire area defined by the total of said frame supporting surface portions in a single plane, and tool feeding elements comprising a carriage, means for guiding said carriage in its reciprocating movements and constituted of a plurality of separate elements having planar surfaces seated on the planar supporting surface portions of said frame member, and fastening means for selectively and detachably securing each of said separate guide elements upon said supporting surface portions at one of a number of given locations, said fastening means comprising a first given number of fastening elements provided on each guide element, a second given larger number of fastening elements provided on said frame member within the area defined by the total of said frame supporting surface portions, and fastening elements selectively engaging said first and second fastening elements to secure each guide element in a given location on said frame member.

3,199,387
TOOL HOLDER FOR CAM FEED AUTOMATIC MACHINES
Joseph M. Garrett, Arnold, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Filed July 10, 1963, Ser. No. 294,131
1 Claim. (Cl. 82—36)

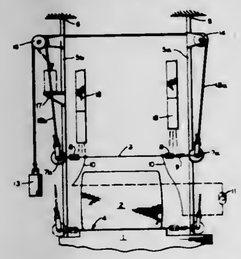
A tool holder comprising, a body having a shank portion at one end, a head portion at the other end of said body pivotally mounted to said shank portion, said head having a first aperture extending therethrough with more than half its length being an enlarged counterbore, said head having a second aperture extending therethrough and transversely across said first aperture, a shoulder screw in said first aperture threadably engaging said shank to provide said pivotal mounting, a stop on said shank for limiting rotation of said head in one direction, a cutting

tool secured in said second aperature overlying said shoulder screw so that a separating force between said tool and the workpiece does not cause rotation of said head, and spring biasing means between said stop and



said head for urging said head to rotate in the opposite direction whereby said head is forced against said stop during a cutting operation but automatically is rotated away from said stop upon completion of the cutting operation.

3,199,388
CUTTING METHOD
John M. Redfield, Beverly Hills, Calif., assignor, by mesne assignments, to Calfoam Corporation of America, Los Angeles, Calif., a corporation of California
Filed June 6, 1962, Ser. No. 200,567
2 Claims. (Cl. 83—16)



2. A method of cutting a body of fusible material which comprises, supporting the body of fusible material in a fixed position, arranging a wire along one face of said body with opposite end portions of the wire projecting beyond opposite edges of said body, heating the wire throughout its length to a temperature greater than the melting point of said fusible material, moving said wire in a direction transversely of its length through said body to melt a narrow band of said material adjacent the wire in advance of the direction of movement of the wire to cut said material, directing streams of ambient air over opposite sides of said body in directions transversely of the length of said wire and over the portions of the wire which project beyond opposite sides of said body to carry heat from the exposed portions of said wire.

3,199,389
CARD NOTCHER
Richard E. Cone, Athens, Ohio, assignor to Royal McBee Corporation, New York, N.Y., a corporation of New York
Filed Nov. 20, 1963, Ser. No. 325,068
2 Claims. (Cl. 83—145)

1. In a machine for cutting notches in a stack of record cards, the combination of

a housing including a card supporting table,

a frame mounted on the base of said housing,

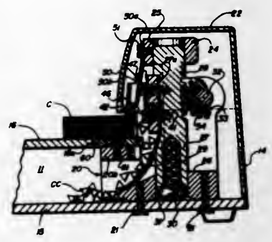
a rack mounted in said frame for vertical reciprocatory movement,

spring means for biasing said rack upwardly,

a pinion rotatably mounted in said frame and meshing with said rack,

a V-shaped knife secured to said rack adapted to cut notches in a stack of cards supported on said table when said rack is driven downwardly,

a flexible chip stripper mounted on said frame above said knife and having its lower end disposed within said knife so that its end bears against the inner side of the apex of said knife whereby when the knife is raised said stripper end strips the accumulation of chips deposited within said knife as a result of the notching operation,

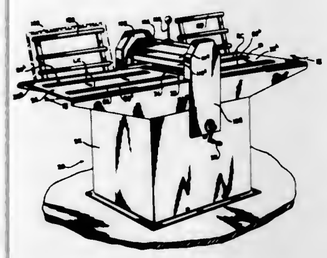


a cutting block mounted on said frame beneath said knife,

said frame having a portion underlying said cutting block and sloping downwardly and forwardly of the the housing to a point adjacent the bottom thereof,

and a flexible apron secured to the lower end of said rack with its lower end overlying the upper portion of said sloping frame portion and riding over said sloping frame portion during a notching operation thereby to divert chips stripped from said knife to the bottom of said housing away from said rack.

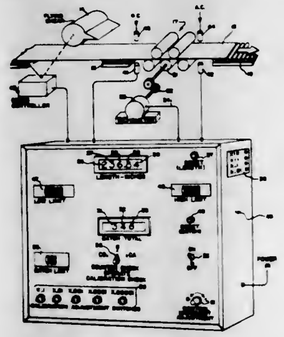
3,199,390
PLASTIC CUTTING MACHINE HAVING ENDLESS CONVEYING MEANS TO CARRY A DIE CUTTING ASSEMBLY BETWEEN PRESSURE ROLLERS
Marcel M. Arnould, East Orange, and Boleslaw L. Budzyn, Passaic, N.J., assignors to Plast-O-Craft Inc., Newark, N.J.
Filed Sept. 30, 1963, Ser. No. 312,627
5 Claims. (Cl. 83—284)



1. In a machine for cutting plastic sheets, a horizontal table having a pair of horizontally spaced sections, a first rotatable pressure roller disposed between the spaced sections of the table for movement thereover of an assembly of die cutting blades and at least one sheet to be cut by the blades, a second rotatable pressure roller, movable

means supporting said second roller rotatably over the first roller in vertically spaced relationship, and means for adjusting said support means in elevation to adjust and set the vertical spacing between the first and second rollers, motor drive means, an endless chain operatively connecting said motor drive means and said rollers for continuously driving the rollers, an idler sprocket carried by said support means and movable therewith, said chain being entrained on said sprocket so that the chain remains operatively engaged with said rollers in all positions of adjustment of the spacing between the rollers, said sections of the table having longitudinally extending slots, endless belts having straight courses disposed in said slots and projecting outwardly thereof, and idler rollers carrying said endless belts, certain of said idler rollers being disposed in engagement with the first pressure roller so that the endless belts are driven continuously in coordination with rotation of the pressure rollers.

3,199,391
FLYING SHEAR CONTROL AND SHEET NUMBER AND LENGTH INDICATOR
Lambert Haner, Rocky River, and Hugh E. Stebner, Peninsula, Ohio, assignors to Avtron Manufacturing, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Dec. 26, 1963, Ser. No. 333,426
6 Claims. (Cl. 83—359)



1. In electrical apparatus useful for readout and control of a flying shear used to provide leading and trailing edges of moving work material in a process line having at least one rotative device which in point of time is encountered by material after it has left the shear and which device is characterized by negligible slippage between itself and the sample material,

the combination of

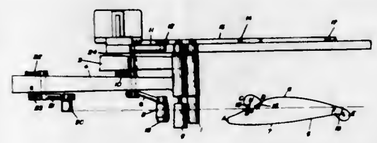
a first transducer means for oppositely signalling passing of leading and trailing edges of work material and which means are located in point of work material travel time ahead of said rotative device,

a second transducer means for oppositely signalling passing of leading and trailing edge of sample material and which second means are located in point of work material travel time after said rotative device,

a source of pulses whose frequency is determined by the speed of said rotative device,

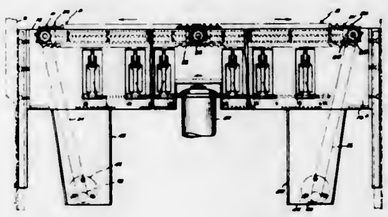
and means for gating said pulses in a through the gate sense from the time when the second transducer means indicates passage of a leading edge to the time when the first transducer means indicates passage of a trailing edge of said work material.

3,199,392
DEVICE FOR CUTTING A CIGAR WRAPPER
Erik R. Larsson, Vallingby, Sweden, assignor to Arenco Aktiebolag, Vallingby, Sweden
Filed Jan. 23, 1963, Ser. No. 253,409
Claims priority, application Sweden, Jan. 29, 1962, 926/62
1 Claim. (Cl. 83—512)



Means for cutting a cigar wrapper comprising a contour knife, two cutting rollers each cooperating with a half of said contour knife, the projection of the center axis of at least one of said cutting rollers on the associated half of the contour knife having more than one intersectional point along the contour of said knife, resilient, pivotable arms movable to and fro over said contour knife, auxiliary cutting rollers mounted on said arms to cut the wrapper along portions of the contour of said knife, each of said portions intersecting the projection of the center axis of the corresponding auxiliary roller on the contour knife at only one point, a fixed cam cooperating with said arms to maintain each of said auxiliary rollers at an elevated position upon movement of parts of said contour knife located out of said portions whereby parts of said contour knife are prevented from coming into contact with said auxiliary rollers.

3,199,393
CHAIN CUTTER FOR WEB MATERIALS
Clifford W. Birch, Lexington, Mass., assignor to Birch Brothers, Inc., Somerville, Mass., a corporation of Massachusetts
Filed June 20, 1963, Ser. No. 289,234
6 Claims. (Cl. 83—563)



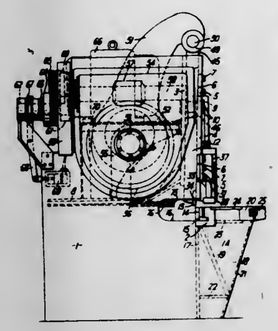
1. In a web winding machine of the class which includes a frame and a plurality of winding rolls received therein for supporting and winding a roll of cloth, the combination of a vertically reciprocating gate mounted between the sides of the frame, a pair of endless chain cutting means located in the gate for movement of travel in a horizontal plane in opposite directions, the inner ends of the chain cutting means being mounted about a common shaft transversely disposed between the intermediate portion of the cutter gate, the outer ends of the reciprocating chains being rotatably supported on two outer driven shafts transversely mounted through the opposite sides of the gate, said cutting means including spaced-apart cutting elements, and driving means supported on the underside of the gate for actuating said chain cutting means when the gate is in a raised position.

3,199,394
DISPENSER FOR ADHESIVE TAPE
Charles Castelli, New Brunswick, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Dec. 31, 1962, Ser. No. 248,355
6 Claims. (Cl. 83—578)



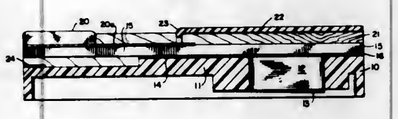
1. In a tape dispenser
a pair of end sections disposed parallel to each other, each end section having a rear portion and a front portion,
a cutter guide extending between and secured to the front portions of said end sections,
a tape container comprising a body section, a cover and the rear portions of said end sections,
a hinge connecting said cover to said body section, a plurality of spacers in said body section for positioning rolls of tape placed in said container, said spacers having slots therein for removably supporting a spindle thereon, means carried by said cover for maintaining said spindle in said slots when said cover is in a closed position, and
a cutter movable along said cutter guide for severing sections of tape.

3,199,395
GUILLOTINES
Frederick Ralph Savory, Sutton-in-Ashfield, England, assignor to Steel Construction & Engineering Co. (Notts) Limited
Filed July 11, 1963, Ser. No. 294,319
8 Claims. (Cl. 83—626)



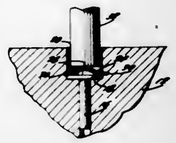
1. A guillotine comprising a pair of upstanding side-plates, a bolster-receiving member welded between corresponding upstanding edges of the side-plates at a convenient working height, a back-plate welded between the side-plates at a distance from the edges to which the bolster-receiving member is welded and extending downwards from the top of the side-plates to above the level of the bolster-receiving member, a horizontal plate welded between the side-plates and to the lower portion of the rear face of the back-plate, a front-plate extending between the side-plates from the top of the side-plates downwards to the same level as the back-plate, means for removably securing the front-plate to the side plates, and at least one bracing-piece removably secured to and between the back-plate and the front-plate substantially above the lower edges thereof, together with a bolster for supporting an upwardly-facing fixed blade, a carrier for a downwardly-facing movable blade guided for vertical movement between the back-plate and the front-plate, a vertically-extending slot in the carrier for accommodating the bracing-piece, a shaft extending parallel to the carrier, bearings for the shaft secured to the frame, means for rotating the shaft, at least two eccentrics on the shaft, and links journalled at one end on the eccentrics and pivotally connected at the other end to the upper edge of the carrier.

3,199,396
KEYBOARDS FOR MUSICAL INSTRUMENTS
Donald J. Winch, 255 W. 34th St., New York, N.Y.
Filed Apr. 29, 1964, Ser. No. 363,551
5 Claims. (Cl. 84—423)



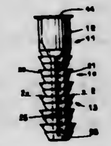
1. In an air operated musical instrument having a series of reed slots which are normally covered, a keyboard therefor, said keyboard comprising a series of elongated keys aligned side-by-side, and a flat key supporting strip disposed under said keys, said strip being of resilient material, all of said keys being directly cemented to said strip so as to be substantially unitary therewith, said strip being disposed substantially forwardly of the center of each key so as to normally urge and bias the forward end of said keys upwardly whereby the rear end of said keys may function to normally cover said reed slots and whereby downward manual pressure on said forward ends will serve to uncover said slots.

3,199,397
NAIL ANCHORING DEVICE
Benjamin F. Borsody, Seoul, Korea (USOM-Korea, UD-COMM, APO 301, San Francisco, Calif.)
Filed Nov. 2, 1962, Ser. No. 234,997
1 Claim. (Cl. 85—23)



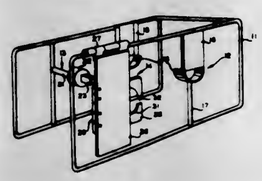
An anchoring structure comprising in combination a workpiece having a countersunk hole therein, a nail like fastener having a shank extending through the workpiece and the head being round with a smooth planar top surface seated on the base of the countersunk hole and contiguous to the walls thereof, a cap element of harder material than the workpiece being generally arcuately shaped and provided with flat edge portions upon diametrically opposite sides and of reduced width relative to the mid portion thereof for penetration of the side walls of the countersunk opening when the arcuately shaped portion is deformed to a flat shape in superimposed relation to said nail head.

3,199,398
FIXING PLUG
Tibor Weisz, Route des Cherbonniers, Saint-Florentin, Yonne, France
Filed June 19, 1962, Ser. No. 203,643
Claims priority, application France, June 22, 1961, 865,717
2 Claims. (Cl. 85—83)



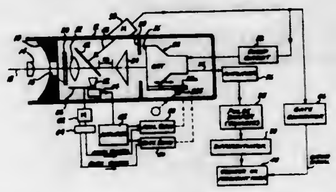
1. A wall plug, comprising an elongated tubular body of compressible synthetic resin material open at opposite extremities and formed with a smooth-surfaced interior surface and with a plurality of longitudinally spaced annular cylindrical external surfaces separated by annular frustoconical external surfaces converging inwardly from respective cylindrical surfaces, each of said frustoconical surfaces terminating at the beginning of a next-adjacent one of said cylindrical surfaces to provide a right-angle shoulder therebetween, said body having a leading end and a trailing end and being provided with a bore extending from end to end and with a pair of throughgoing diametrically opposite longitudinal slots lying substantially in a first diametral plane through said body and a respective pair of resilient diametrically opposite arcuately convex projections on each of said cylindrical surfaces diverging in the direction of said trailing end and lying in a second common diametral plane of said body perpendicular to the first-mentioned plane, said projections having radial thicknesses decreasing from their junction with the respective cylindrical surface and having upper surfaces constituting substantially continuations of the respective shoulders, said slots terminating short of said ends to provide circumferentially continuous end portions of said body, said body having an enlarged head at said trailing end.

3,199,399
SHOT HOLE LOADING DEVICE
Orville A. Gardner, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed May 17, 1963, Ser. No. 281,202
1 Claim. (Cl. 86—20)



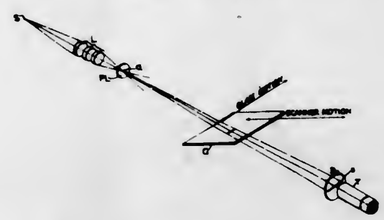
Means for handling flexible tubing being lowered from a reel into a shot hole, comprising:
a supporting frame;
a pair of supporting bearings to rotatably support said reel;
a counter wheel which contacts said tubing while said tubing is being lowered into said hole to measure the length of said tubing;
a supporting member hinged to said frame to be swung into a horizontal position adjacent said hole; and
a plate, hinged to said supporting member to be swung into a horizontal position over said hole supported by said supporting member, said plate including an opening in which said tubing is supported in open position for filling, and an unobstructed slot connecting said opening with the periphery of said plate through which a detonator wire is removed from said opening.

3,199,400
INTERFEROMETRIC DEVICE AND METHOD FOR DETERMINING RANGE
Edward F. Zalewski, 25419 124th SE., Kent, Wash.
Filed Oct. 9, 1961, Ser. No. 143,928
8 Claims. (Cl. 88—1)



1. An optical device for measuring range to a discrete source of light energy physically separate from the device, comprising a light collector operable to image the source along an optical path and at a definite path distance from the collector which varies with range of the source, a refractor disposed in such path beyond the image so formed to intercept such light, said refractor having an optical axis aligned with such path and having respective refracting portions on opposite sides of such axis which refract the intercepted light in different directions, thereby to produce a resolvable light interference pattern in a receiving plane beyond said refractor, and a photoelectric detector having sensitized means disposed in said receiving plane and electrical means cooperating therewith to measure the interference interval spacing of said pattern as a measure of source range.

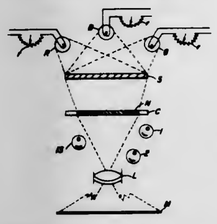
3,199,401
METHOD AND APPARATUS FOR OPTICALLY DETECTING ELONGATED DEFECTS IN GLASS
George E. Sleighter, Natrona Heights, and Joseph S. Zabetakis, Arnold, Pa., assignors to Pittsburgh Plate Glass Company, a corporation of Pennsylvania
Filed Nov. 2, 1959, Ser. No. 850,312
21 Claims. (Cl. 88—14)



21. A method of detecting the presence of defects in bodies of glass in sheet and ribbon form, resulting from the incomplete blending of various glass ingredients during the glass melting and fining operations, that are generally elongated in one direction and refract light, comprising: scanning said glass by projecting a beam of light therethrough, examining with said beam of light only incremental portions of the glass that are correlated in dimensions with and are elongated in the direction of said defects, said beam being refracted by said defects

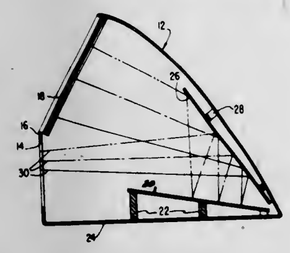
and thereby indicating the presence thereof; sensing, in progressive incremental portions of said glass, variations in light intensity caused by said refraction of said beam so as to detect the presence of said defects in said glass; and electrically comparing the intensity of said variations with predetermined values of light intensity to determine the severity of said defects.

3,199,402
PRINTING APPARATUS FOR COLOR PHOTOGRAPHY
Robert W. G. Hunt, Wealdstone, and Peter Bernard Watt, Stonyhall, Stevenage, England, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 1, 1960, Ser. No. 66,530
Claims priority, application Great Britain, Nov. 12, 1959, 38,346/59
6 Claims. (Cl. 88—24)



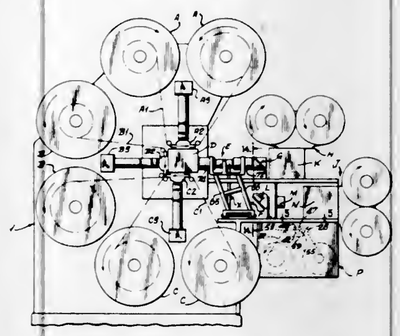
1. An apparatus for making color prints, comprising a light source, whose spectral composition may be varied, two photoelectric means responsive to two different regions of the spectrum each comprising one or more barrier layer photocells covered with optical filters, the electrical outputs of said photoelectric means being related to the light intensity in said two regions of the spectrum and being connected, so that said outputs oppose each other, to an electrical indicating device whose null output, when produced by variation of the spectral composition of the light source, corresponds to a predetermined color balance.

3,199,403
PROJECTION SYSTEM
Frank N. Moore, 8109 Dorchester Ave., Chicago, Ill.
Filed June 7, 1962, Ser. No. 200,812
2 Claims. (Cl. 88—24)



1. In a system for projecting images onto a screen for viewing purposes which includes a projector and a housing adjacent thereto for holding said screen, the improvement comprising means defining a pair of reflective surfaces disposed within said housing, the first of said surfaces being disposed approximately horizontally and the second surface being positioned at an angle of about 45° with respect to said first surface, an opening defined by said housing in alignment with said second surface, said projector being positioned for passing an image through said opening and to said second surface, said projector and said surfaces being disposed so that the direction of throw of said image from said projector causes the image to reflect off said second surface to said first surface, back to said second surface whereby the separate projections on said second surface are superimposed, and then onto said screen.

3,199,404
METHOD AND APPARATUS FOR AUTOMATICALLY AND REPETITIVELY MAKING COPIES OF PRESELECTED PORTIONS OF MOTION PICTURE FILMS
Herbert E. Bragg and Ralph D. Whitmore, New York, N.Y., Alex Eugene Alden, Stamford, Conn., and Fred D. Leslie, East Rochester, N.Y., assignors to Twentieth Century-Fox Film Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 21, 1962, Ser. No. 225,279
32 Claims. (Cl. 88—24)

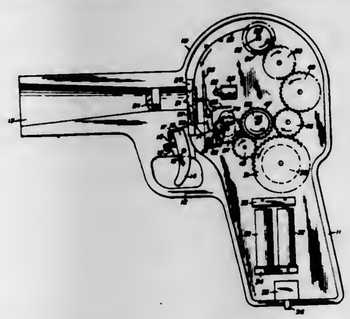


14. Apparatus for automatically printing motion picture images in accordance with preselected portions of wide scene recordings on motion picture films which comprises, means for positioning motion picture film to be printed from and motion picture film to be printed upon in spaced relationship, means for moving said films intermittently in synchronism, a projection lens system, means for mounting said lens system between said film positioning means, means for moving said lens system transversely with respect to the path of movement of film moved by said film moving means and means for controlling said movement in accordance with a preselected pattern.

3,199,405
TOY PISTOL MOTION-PICTURE PROJECTOR
Samuel Gold, Landing, N.J., assignor of one-half to Aro G. Gabriel
Filed Oct. 4, 1961, Ser. No. 142,822
4 Claims. (Cl. 88—28)

1. In mechanisms for intermittently advancing and exhibiting motion-picture film, means to guide a strip of film for lengthwise movement, said film having uniformly spaced sprocket openings along one margin, shutter means movable in a plane parallel with the film, claw means comprising a projecting element and strip member integral therewith, said projecting element adapted to engage with said shutter means and to removably engage with a film sprocket opening, means to mount the claw means for reciprocatory movement in a first path parallel with the film movement and concurrent in a second path normal thereto, means to urge said claw means in one

direction in said first path and in one direction in said second path to disengage said projecting element, drive means movably mounted for intermittent engagement with said claw means in one direction to move said claw means concurrently in said first and second directions, and motor



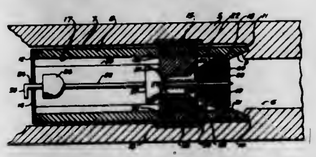
means to move said drive means, said integral strip member of said claw means being provided with a plurality of spaced teeth and said drive means including a rotatably mounted partial gear intermittently engageable with said first mentioned teeth.

3,199,406
IN-LINE LAUNCHING
Bert B. Gould, Berkeley, Calif., assignor, by mesne assignments, to MB Associates, San Ramon, Calif.
Filed June 21, 1961, Ser. No. 118,684
1 Claim. (Cl. 89—1.7)



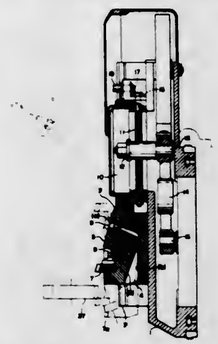
A rocket launching and ignition device comprising in combination an elongated tube, a plurality of rockets within said tube including at least a foremost rocket and a second rocket immediately behind said foremost rocket, each of said rockets having a propellant grain with a central burning port running the length thereof, means for igniting the foremost rocket in the tube, and a pyrotechnic fuse in the nose of the second rocket said fuse protruding beyond the nose of said second rocket, passing through the nose and terminating inside the rocket, whereby the nozzle blast from the foremost rocket will ignite the fuse and thus cause ignition of the second rocket.

3,199,407
BOLT FOR AUTOMATIC WEAPON
Raymond C. Henius, New York, N.Y. (R.R. 3, Columbia City, Ind.)
Filed May 22, 1964, Ser. No. 370,324
4 Claims. (Cl. 89—187)



1. A bolt for an automatic weapon having a receiver and cartridge chamber formed at one end, and comprising, an outer cylinder having a concentric inner wall, a conical rib extending inwardly adjacent one end of the cylinder, a floating bolt end received in the cylinder and engaging the inner side of the rib, flat locking lugs extending radially through slots formed in the cylinder and adapted for radial movement into further slots formed in the receiver to lock the bolt in a closed firing position, a cap closing the other end of the cylinder, a firing pin extending concentrically through the cap and cylinder and through the floating bolt end, and spring and wedge means urging said lugs in and out of engagement with said further slots in response to longitudinal movement of the firing pin and said floating bolt end.

3,199,408
RACK CUTTER
Tokio Nakamura, Mizuho-ku, Nagoya-shi, Masaharu Araki, Nakamura-ku, Nagoya-shi, and Hirohiko Kurei, Inaba-gun, Gifu-ken, Japan, assignors to Howa Sangyo Kabushiki Kaisha, Nagoya-shi, Japan, a joint-stock company of Japan
Filed July 9, 1963, Ser. No. 293,739
Claims priority, application Japan, July 11, 1962, 37/28,512
6 Claims. (Cl. 90—8)

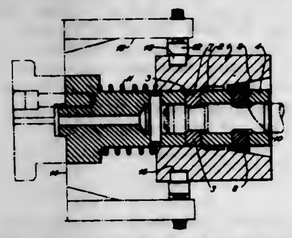


1. A rack cutter comprising a vertically reciprocable slide, means for reciprocating said slide, said slide having a cavity, a cutter box pivotally mounted in said cavity to rotate about a horizontal axis, a cutter carried by said cutter box, an arm on said cutter box projecting approximately parallel to said axis, a vertical actuating bar engageable with said arm to turn said cutter box about said axis from a working position in which said cutter engages a work piece to a retracted position in which said cutter does not engage the work piece, and means for moving said actuating bar horizontally while keeping it vertical to turn said cutter box about its axis from said working position to said retracted position.

3,199,409
INTERNAL BROACHING MACHINE
Victor James Bryant, 132 Westfield Ave., Watford, England, and Ronald Leonard Archibald, 291 Park Ave., Bushey, England
Filed June 1, 1962, Ser. No. 199,415
3 Claims. (Cl. 90—96)

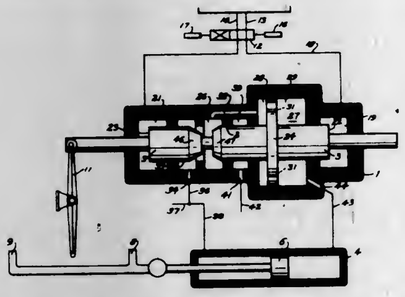
1. The combination with a broach puller having a puller body containing an opening for receiving the end of a broach, and a broach having a circular locking groove and a flat positioning land located at a predetermined angular position relative to the axis of the broach, said body containing axially spaced and circumferentially spaced openings for receiving, respectively, locking pins and positioning pins; of pins situated in said openings with their ends projecting from the outer side of said puller body, and a cam sleeve slidable on said puller

body, said sleeve containing internal recesses opposite the outer ends of the pins within which the pins are adapted to be received for clearance of their inner ends from engagement with the broach, and adjacent inclined



surfaces constituting cams engageable with the outer ends of the pins, by axial movement of the sleeve, to press the inner ends of the pins into engagement with the locking groove and the positioning land.

3,199,410
MULTI-FUNCTION CONTROL VALVE APPARATUS
Ralph F. Heroth, Port Orchard, Wash., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 31, 1964, Ser. No. 341,807
8 Claims. (Cl. 91—47)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Multifunction fluid valve apparatus and fluid pressure reciprocable actuating means comprising:
a main control valve casing provided with a longitudinal bore formed with a fluid sensing chamber,
a valve stem axially reciprocable in said bore and carrying a sensing piston partitioning said chamber into first and second sides,
control orifice means intercommunicating said first and second sides,
said bore further being formed with a metering fluid chamber having a means for fluid intercommunication with said first side of the sensing chamber,
fluid pressure inlet and outlet means disposed respectively one on each side of said metering fluid chamber,
a pair of metering valve means carried by said stem and disposed one for metering pressure inlet flow into said metering chamber and the other for metering fluid flow from said metering chamber to said fluid outlet means,
means for mechanically reciprocating said valve stem in its axial direction,
fluid-pressure reciprocable actuating means having a fluid pressure inlet and also being in fluid communication with said second side of the sensing chamber, and
controllable fluid pressure means for selectively reciprocating said valve stem in one axial direction or the other,
said controllable fluid pressure acting on the ends of said stem in counteracting opposition to pressure differentials across said sensing piston whereby a pressure balance across said piston is obtainable for producing a controlled and metered flow rate to and from said actuator means, and
said mechanical reciprocations of the stem being responsive to predetermined dispositions of the actuator means reciprocations for restricting and stopping said pressure inlet and outlet flow of said metering chamber.

3,199,411
AIR MOTOR MEANS
Gunnar Lennart Granstea, Lammersta, Sweden, assignor to Rederi AB Soya, Hagersten, Sweden, a joint-stock company limited of Sweden
Filed Dec. 10, 1962, Ser. No. 243,455
Claims priority, application Sweden, July 6, 1962, 7,594/62
1 Claim. (Cl. 91—204)



An air motor comprising a central fixed shaft with an air inlet passage and an air outlet passage, an eccentrically disposed rotatable motor housing with cylinders therein on said shaft, radially movable pistons disposed in said housing, said inlet and outlet passages being in communication with said cylinders for supplying air to rotate said motor, and throttle means in communication with said outlet passage for quickly stopping rotation of said motor comprising a ring piston, slidably disposed on said central shaft, a ring cylinder in which said ring piston is slidably disposed, said ring cylinder having an open end edge, a sealing sleeve member slidably disposed on said central shaft, biasing means normally urging said sleeve member toward said end edge to shut off flow of exhaust air from the motor, said sealing sleeve member being held out of engagement with said end edge during supply of air under pressure to said inlet passage, and variable air flow valve means on said air inlet passage including an internally grooved sleeve and spring means normally urging said valve toward an open position against the flow of outlet air under pressure through said outlet passage, whereby stoppage of air to said motor traps residual air therein and causes said rotatable motor housing to stop rotation.

3,199,412
SERVOMECHANISM
Reed A. Palmer, Los Alamitos, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Sept. 25, 1962, Ser. No. 226,027
20 Claims. (Cl. 91—357)

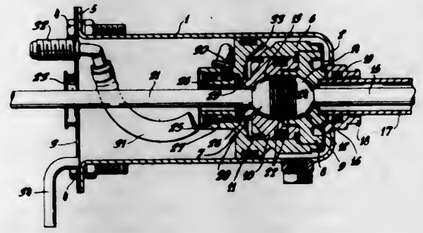
1. A servomechanism comprising a housing, a movable member carried by said housing and cooperating therewith to define a chamber in said housing, means defining a plurality of inlets in said housing, said inlets being interconnected with said chamber and facing a direction of

movement of said movable member toward said inlets, one of said movable member and said housing carrying means of different lengths aligned with said inlets, and means for selectively interconnecting one of said inlets



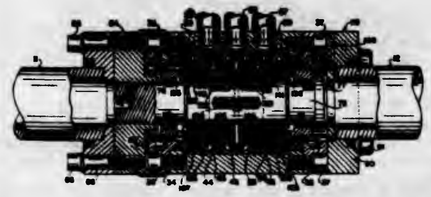
with a source of reduced fluid pressure whereby said movable member moves toward said inlets until said one inlet is closed by the cooperation of said movable member and the respective aligned means with said one inlet.

3,199,413
FLUID PRESSURE OPERATED SERVO-DEVICES
Hugh G. Margetts, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England
Filed May 29, 1963, Ser. No. 284,052
Claims priority, application Great Britain, July 10, 1962, 26,514
5 Claims. (Cl. 91—372)



1. A servo-device structure comprising a cylinder, a hollow piston slidably disposed therein, an end wall and a plug closing off the opposite ends of said piston and forming a hollow chamber, in said piston, an annular member slidably disposed in said member adjacent said end wall, a first biasing means normally urging said annular member away from said end wall and against said plug, said end wall being of substantially larger diameter than the remaining portion of said piston extending toward said plug, said piston portion forming an annular space with the inner surface of said cylinder, passage means in said piston in communication with said space and said chamber adjacent said end wall, said annular member and plug each having a central hemispherical recess in adjacent sides thereof and facing each other and providing socket joints, said end wall having a port therein in communication with said chamber and passage means, a valve housing projecting outwardly from said end wall and adjacent said port, a slidable valve disposed in said housing to close off said port, a valve seat on said end wall adjacent said port, a second biasing means normally urging said valve seated on said valve seat to close off said port, fluid supply means in said housing for supplying fluid under pressure to said port and passage means and annular space when said valve is opened to move said piston in said cylinder, an operator actuating rod extending through said housing, port and annular member and having a ball joint end on its end fitting into said annular member recess to provide a universal joint, a shoulder on said annular member adjacent said port adapted to unseat said valve when said rod is pulled to supply fluid pressure to said annular space and piston portion adjacent said plug, another rod extending through said plug and cylinder and having a ball joint end on its end fitting within said plug recess to provide a universal joint, said another rod being adapted to be connected to a brake actuating means.

3,199,414
POWER STEERING SYSTEM
Homer A. Gray, Macedonia, Ohio, assignor of one-half to Apco Manufacturing Corporation, and one-half to Air-O-Matic Power Steer Corporation, both of Cleveland, Ohio, both corporations of Ohio
Filed May 16, 1963, Ser. No. 280,996
16 Claims. (Cl. 91—372)



1. A control device for actuating a fluid motor in opposite directions for turning the wheels of a vehicle in opposite directions in response to turning of the steering wheel of the vehicle in opposite direction comprising, a hollow valve body having an inlet port and first and second outlet ports adapted to be connected to opposite portions of said motor, a first member movable in said body from a first position and having means for communicating said first outlet port with said inlet port to provide a first fluid passageway through the valve upon movement from its first position, a second member movable in said body relative to said first member from a first position and having means for communicating said second outlet port with said inlet port to provide a second fluid passageway through the valve upon movement from its first position, said first and second members when in their respective first positions defining a chamber therebetween, spring means located in said chamber engaging said first and second members and biasing said members away from each other and into their said first positions, means blocking the flow of fluid into said chamber when said first and second members are in their said first positions, and means adapted to be operatively connected with the steering wheel for movement in opposite directions upon turning of the steering wheel in opposite directions for selectively moving one of the members against the bias of said spring means relative to the other of said members and relative to said valve body to provide a fluid passage through the valve.

3,199,415
PNEUMATIC MOTOR
Arthur J. Stanton, Bethesda, Md., David F. Anderson, McLean, Va., and George B. Boniface, Parkland, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 3, 1957, Ser. No. 663,320
1 Claim. (Cl. 91—399)
(Granted under Title 35, U.S. Code (1952), sec. 266)

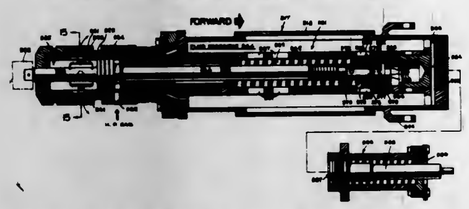
A pneumatic motor comprising:
a first cylinder having inlet and exhaust ports, and a plurality of longitudinal grooves on its inner wall;
a source of pressurized gas connected to said inlet port;
a power piston reciprocable in said cylinder, said power piston dividing said cylinder into first and second

chambers, and said power piston being movable during a working stroke from a first position to a second position by the force of pressurized gas selectively admitted through said inlet port into said first chamber of said cylinder;

said longitudinal grooves providing a bypass path whereby a portion of the pressurized gas is bypassed around said power piston from said first chamber to said second chamber during the working stroke of said power piston, thereby to provide a cushioning of said power piston at the end of its working stroke;

a second cylinder;

a buffer piston connected to and movable with said power piston and reciprocable in said second cylinder between first and second positions corresponding to the respective positions of said power piston;



biasing means in said second cylinder for normally maintaining said pistons in their respective first positions;

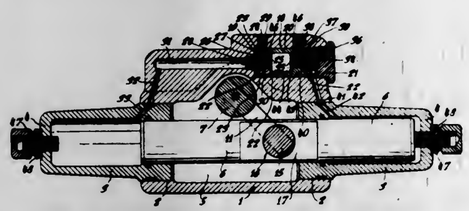
fluid reservoir means concentrically surrounding said second cylinder;

a plurality of radial ports spaced along said second cylinder, and providing communication between said second cylinder and said fluid reservoir means;

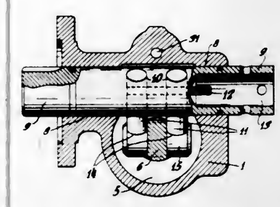
check valve means in said buffer piston operative to permit fluid flow through said buffer piston during the working stroke of said power piston, and further operative to block such flow during the return stroke of said pistons from their respective second positions to their respective first positions; and

throttling means in said second cylinder and on said buffer piston operative to provide a progressively increasing resistance to the advance of the buffer piston on its return stroke.

3,199,416
FLUID PRESSURE ACTUATORS FOR PRODUCING ROTARY MOTION
Gordon Raymond Robson, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England
Filed Apr. 6, 1964, Ser. No. 357,652
Claims priority, application Great Britain, Apr. 23, 1963, 16,002/63
4 Claims. (Cl. 92—13)

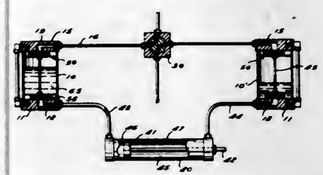


1. A fluid pressure actuator for producing rotary motion comprising a housing, an elongated piston in said housing, a pair of spaced cylinders, the opposite ends of said piston extending into said cylinders, a rotatable shaft extending out said housing and disposed at a right angle with said piston, said piston having vertical slots disposed in its opposite sides centrally thereof, said piston having a horizontal bore extending therethrough adjacent said slotted sides, a cylindrical horizontal trunnion journalled in said piston bore at a right angle with the piston axis, a pair of parallel bores extending through said trunnion



on opposite sides of said slotted sides, a pair of axially spaced diametrically extending parallel bores in said rotatable shaft, a pair of arms disposed in said shaft bores and said trunnion bores, a pin extending through said shaft and arms and locking them together, the end of said arms in said trunnion being slidably disposed therein.

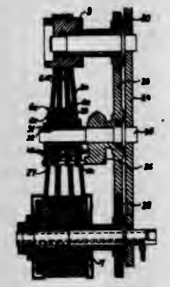
3,199,417
DISPERSION BAFFLE FOR AIR-OIL TANK
Alan H. Young, Bedford, and Merritt B. Sampson, Shaker Heights, Ohio, assignors to The S-P Manufacturing Corporation, Solon, Ohio, a corporation of Ohio
Filed Apr. 27, 1960, Ser. No. 24,981
13 Claims. (Cl. 92—79)



1. In a cycling oil and air system for operating a power cylinder the combination of, a tank having an opening at one end thereof, a hydraulic motor containing a supply of hydraulic fluid, means connecting the opening to said hydraulic motor and the contained supply of hydraulic fluid, said opening alternately serving as an inlet and an outlet, an orientation member carried by said tank and closely spaced from said opening, said orientation member having an imperforate central portion spanning and surrounding said opening, said orientation member having an outer portion, said outer portion including means to produce quiescent flow in individual stream substantially paralleling the axis of the tank when oil is introduced into the tank through said opening.

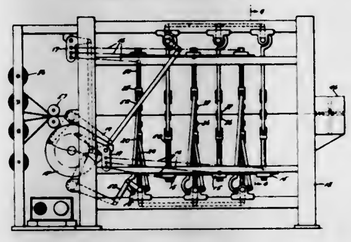
3,199,418
FILTER MACHINE
Bernhard Schubert, Hamburg-Lohbrugge, Germany, assignor to Hauni Werke, Körber & Co. K.G., Hamburg-Bergedorf, Germany
Filed Sept. 4, 1964, Ser. No. 396,465
Claims priority, application Germany, Nov. 25, 1958, H 34,898
17 Claims. (Cl. 93—1)

1. In an apparatus for producing composite mouthpieces of multiple unit length, in combination, a plurality of magazine chutes for discharging filter rods of different materials; a rotary feed drum adjacent to each chute; rotary transfer drums for receiving filter rods from said feed drums; cutting devices associated with said transfer drums for subdividing the respective filter rods into rod-like members of a length required in a mouthpiece of multiple unit length; an assembly drum for receiving such rod-like members; and spreaders including sets of disks arranged in side-by-side relation and interposed between the respective transfer drums and said assembly drum for transferring the rod-like members to said assembly drum in such a way that rod-like members of different materials alternate with each other, said spreaders further including shafts to support the respective sets of disks for rotation in planes which make acute angles with each other and diverge in directions from the respective trans-



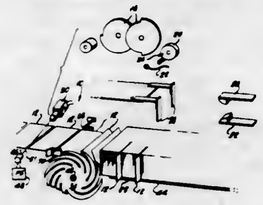
fer drums to said assembly drum, said disks having peripheral holders to receive rod-like members from the corresponding transfer drums and to deposit such members on said assembly drum in such a way that rod-like members deposited by one set of disks are spaced apart a distance sufficient to permit another set of disks to deposit rod-like members of different material therebetween, said transfer drums and said assembly drum being angularly displaced a distance of approximately 180 degrees as seen in the circumferential direction of the respective set of disks.

3,199,419
PROCESS AND APPARATUS FOR MAKING PLURAL RECEPTACLE CONTAINERS
Karl Lang, Jr., Nidda, Hesse, Germany, assignor to Multicup Automation Company, Inc., Jamaica, N.Y., a corporation of New York
Filed Jan. 2, 1962, Ser. No. 163,712
Claims priority, application Germany, Aug. 1, 1961, L 39,681
7 Claims. (Cl. 93—60)



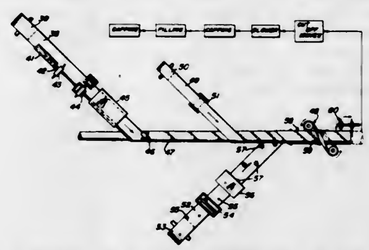
1. An apparatus for making multi-compartmented plural receptacle containers with cup-like compartments which comprises a plurality of banks of forming dies of opposed complementary construction, the first of which banks has dies of such size and location as to form shallow cups in a sheet of paper-like material pressed between them and the subsequent banks of which apparatus are of size and location to deepen the shallow cup-like compartments to desired size, means for feeding paper-like sheet material between the banks of dies and means for moving the dies of the banks inwardly as the paper-like material is formed, to compensate for the material formed into cup walls.

3,199,420
ENVELOPE COUNTER
Jack M. Ciccone, Westbury, N.Y., assignor to F. L. Smithe Machine Co., Inc., New York, N.Y., a corporation of New York
Filed Apr. 18, 1963, Ser. No. 273,945
1 Claim. (Cl. 93—93)



A counting, stacking and delivery mechanism for envelope-making machines comprising, conveyor means for delivering formed envelopes in flat, aligned spaced-apart relationship to rotary means for edge-stacking the envelopes, said rotary means including a pair of slotted positioning wheels adapted to receive the leading edge of envelopes from said conveyor means, means for counting individual envelopes as they are fed to said rotary means and for indicating the passage thereby of a predetermined number of envelopes, means responsive to said counting means for periodically transversely offsetting an envelope in the slotted area of said rotary means from the remainder of envelopes previously fed to said rotary means, and a substantially horizontal table in substantial alignment with said conveyor means and having projecting tabs extending within said slotted area of said rotary means for receiving the envelopes for edge-stacking thereon, whereby the stacked envelopes upon said table are segregated into readily identifiable groups of envelopes of desired predetermined number, said last means including a spring-biased plunger on one side of said rotary means and stop means on the other side of said rotary means to limit the amount of transverse offset imparted to an offset envelope.

3,199,421
CONTAINER
James N. Krause, Jeffersontown, and William L. Ahlemeyer, Louisville, Ky., assignors to The Anaconda Aluminum Company, a corporation of Montana
Original application July 31, 1962, Ser. No. 213,773. Divided and this application Sept. 21, 1964, Ser. No. 405,636
7 Claims. (Cl. 93—94)



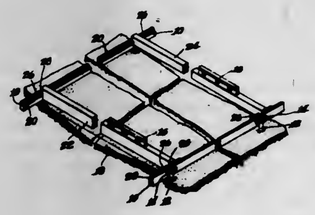
1. A method of forming a container having a substantially rigid body which includes bail receiving means mounted in the container wall to receive a carrying bail and on at least one end of which closure caps are subsequently to be secured comprising:

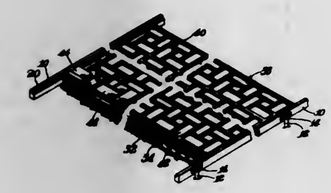
(a) continuously winding a strip of liner ply into container shape,

(b) continuously winding at least one strip of body stock about said liner ply,

(c) adhesively sealing said body stock to said liner ply,
(d) continuously winding a strip of label ply about said body stock,
(e) adhesively sealing said label ply to said body stock,
(f) inserting bail receiving means through at least one of said label ply and body stock prior to winding thereof such that said means extending outwardly and opening at the container wall at substantially diametrically opposed positions upon winding, and
(g) cutting the resultant member to size.

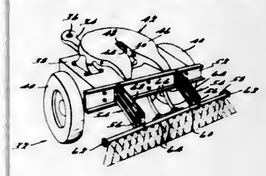
3,199,422
PAVEMENT LAYING APPARATUS
Andrew M. Rees, Jr., 158 E. 4th St., New Castle, Del.
Filed June 15, 1961, Ser. No. 117,329
2 Claims. (Cl. 94—22)





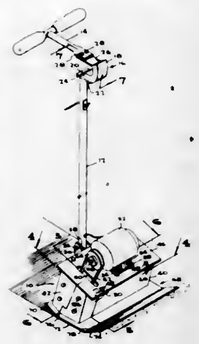
1. A method of laying paving units on the ground in a pattern in a cement mortar bed with the aid of a level rod and a patterned grating resting upon a pair of guide rails which comprises the steps of positioning and leveling said guide rails upon said ground a distance apart for supporting said level rod and said patterned grating between them, depositing said cement mortar bed upon said ground between said rails, determining the upper surface limit of said cement mortar bed by resting said level rod upon and between said rails and moving it across the space between them for striking off the upper surface of said cement mortar bed to said upper surface limit, positioning said grating upon and between said guide rails to dispose it at a predetermined height and horizontal position for guiding insertion of said paving units into said cement mortar, the lower surface of said grating being disposed a substantial distance above said determined upper surface limit of said cement mortar to permit said cement mortar to freely rise toward said grating and around said paving units when they are inserted through said grating into said cement mortar, inserting said paving units through said grating into said cement mortar bed, and aligning the top surfaces of said paving units with the upper surface of said patterned grating whereby they are disposed in a flat surface and immersed to a predetermined depth in said cement mortar to provide a substantial uniform joint between said paving units and said cement mortar.

3,199,423
RESURFACING APPARATUS
Charles N. Dickey, 9826 Auburndale, Livonia, Mich.
Filed June 7, 1960, Ser. No. 34,543
2 Claims. (Cl. 94—44)



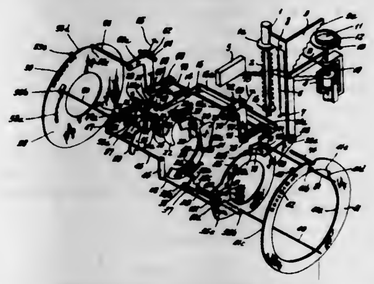
1. In road re-surfacing apparatus, a trailer dolly adapted to be secured to the rear end of a self-powered tank vehicle, said dolly including a main frame having road wheels mounted thereon, all of said road wheels having a common axis of rotation, a hollow distributor bar mounted on said frame at a position rearwardly of said road wheels, said distributor bar including discharge means for discharging fluid therein in a direction generally downwardly, means connected to said distributor bar for supplying liquid material thereto from said tank vehicle, a fifth wheel coupler on said main frame for attaching an aggregate storage and dispensing semi-trailer thereto, said fifth wheel coupler including a coupling plate pivotally mounted on said main frame and having a kingpin receiving slot therein, and detachable means provided on said dolly for connecting it to said self-powered tank vehicle.

3,199,424
SOIL TAMPING DEVICE
Carl R. Glass, 203 Poinciana Circle, Kissimmee, Fla.
Filed Sept. 21, 1962, Ser. No. 225,176
8 Claims. (Cl. 94—48)



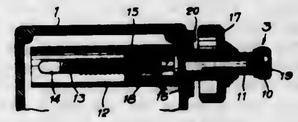
1. A vibrating machine, for earth tamping and the like, comprising a housing with four, rectangularly disposed walls including front and rear walls, and parallel end walls, said walls having co-planar, upper edges, and a cover plate secured to said housing in covering relation to said upper edges, said front wall being less in depth than said rear wall, and the bottom edges of said end walls each comprising two angularly disposed portions, one portion perpendicular to said rear wall, and extending inwardly therefrom, for a distance less than half the width of the end face, and the other portion extending from the said one portion to said front wall, a bottom plate in three angularly disposed sections, secured to the bottom edges of said walls, and extending outwardly of said end walls, and having a first section coinciding with said one portion, and extending outwardly of said rear wall, a second section coinciding with said other portion, and extending substantially beyond said front wall, and a third section disposed at an angle to said second section, and inclined toward the top of said housing, a motor carried by said coverplate, outwardly of said housing, a shaft within said housing, journalled to said end walls generally medially of the distance between said front and rear walls, and medially of the depth of said front wall, a driving connection between said motor and said shaft, and an eccentric weight carried by said shaft, medially of the length thereof, and comprising a solid right circular cylinder, having a longitudinal groove mating with the periphery of said shaft, and secured thereto, a handle comprising a first portion, pivoted to said housing, and means to adjust the inclination of said first portion, a second portion disposed transversely to said first portion, and a resilient coupling connecting said portions.

3,199,425
PHOTOGRAPHIC CAMERA WITH CONTROL INTERLOCKS
Franz W. R. Stapp, Calmbach (Enz), Germany, assignor to Alfred Gaedicke, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed Mar. 21, 1963, Ser. No. 267,028
8 Claims. (Cl. 95—10)



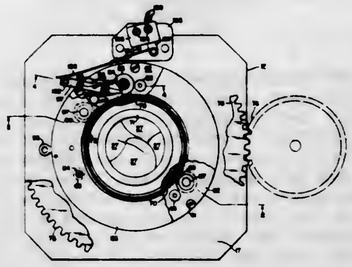
1. In a photographic camera comprising a first exposure setting control settable to a plurality of positions, a second exposure setting control settable to a plurality of positions, each of said positions of said second control corresponding to a specific position of said first control, said controls being separately settable to said corresponding positions as well as to non-corresponding positions, said camera further comprising a shutter and a shutter release trigger, means for preventing said shutter from operating to make a photographic exposure except when said controls are set to said corresponding positions, said means comprising: a first locking member connected to said first control to be moved thereby between a first position and a second position as said first control is set to different ones of its own positions; a second locking member connected to said second control to be moved thereby between a first position and a second position as said second control is set to different ones of its own positions, both of said locking members being in their respective first positions when said controls are in one set of said corresponding positions and both of said locking members being in their respective second positions when said controls are in another set of said corresponding positions, said first locking member engaging said shutter release trigger to prevent operation of said shutter when one of said members is in its first position and the other of said members is in its second position, said first locking member interfitting with second locking member when both of said members are in their respective first positions and when both of said members are in their respective second positions to permit said shutter release trigger to actuate said shutter.

3,199,426
STABILIZER FOR FUNDUS CAMERAS
Yasuharu Kuwahara, Tokyo, and Satoshi Hoshino, Showaku, Nagoya-shi, Japan, assignors to Kowa Company Ltd., Nagoya, Japan, a corporation of Japan
Filed Jan. 28, 1963, Ser. No. 254,254
Claims priority, application Japan, Jan. 31, 1962, (utility model) 37/3,244
1 Claim. (Cl. 95—11)



A stabilizing device for a fundus camera comprising a fitting cylinder secured on upper portion of said camera and extending in the interior of said camera, said fitting cylinder being provided in its peripheral wall with longitudinal guide grooves and having a thread provided on the inner peripheral surface of one end of said cylinder, a rotary cylinder having a thread adapted to engage with said thread on said fitting cylinder and having a rotary ring integral with it, a screw rod having at its end a bearing piece extending through said rotary ring and adapted to engage with the other end of said rotary cylinder, and said screw rod being provided with a guide means engaging in said guide groove to prevent it from turning with said rotary cylinder.

3,199,427
AUTOMATIC SHUTTER COCKING MECHANISM FOR CAMERA
Archie H. Gorey, Rochester, N.Y., assignor to Graflex, Inc., Rochester, N.Y., a corporation of Delaware
Filed May 13, 1963, Ser. No. 280,021
9 Claims. (Cl. 95—53)



1. A shutter for photographic cameras comprising
(a) a housing,
(b) a shutter leaf movably mounted in said housing,
(c) a first member connected to said shutter leaf and movable to actuate said shutter leaf to move it to and from closed position,
(d) a second member movably mounted on said housing,
(e) resilient means interconnecting said members and operative, when tensioned, to urge said first member in a direction to actuate said shutter leaf,
(f) an electric motor connected to said second member and operable to move the latter relative to said first member thereby to tension said resilient means,
(g) a switch for starting and stopping said motor,
(h) trigger means for releasably holding said first member against the resistance of said resilient means when the latter is tensioned,

(i) a brake member movably mounted on said housing in a position to engage and stop said first member after said first member has been released and after said first member has moved in said direction a distance sufficient to open and close said shutter leaf, and

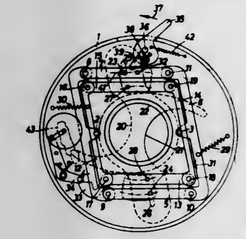
(j) control means operable by said brake member to actuate said motor upon movement of said brake member by said first member, said control means including

(k) a switch actuating arm connected to said brake member and movable thereby to actuate said switch to start said motor upon engagement of said first member with said brake member, and

(l) means for stopping the operation of said motor when said motor has tensioned said resilient means,

(m) a switch actuating arm connected to said brake member and movable thereby to actuate said switch to start said motor upon the engagement of said first member with said brake member.

3,199,428
CAMERA SHUTTER
Gerd Kiper, Unterhaching, near Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed May 11, 1962, Ser. No. 194,118
Claims priority, application Germany, May 16, 1961, A 37,446
12 Claims. (Cl. 95—62)



1. In a camera shutter, in combination, a pair of levers of equal length arranged parallel to each other; a pair of pivot means respectively supporting said levers for turning movement between their ends, said levers respectively having lever arms of equal lengths located on each side of a straight line drawn through the pair of turning axes formed by said pair of pivot means; a pair of links respectively extending parallel to and located on opposite sides of said straight line and respectively pivotally connected at their ends to the ends of said levers so that said levers and links form on opposite sides of said line a pair of parallelogram linkages constrained to move in opposite directions, respectively; and a pair of shutter blades symmetrically arranged with respect to the optical axis and operatively connected to said links to be moved thereby during turning of said levers.

3,199,429
STRUCTURE FOR PRODUCING ANIMATED PICTURES
Harold D. Rice, Leawood, Kans., assignor, by mesne assignments, to Pid Corporation, Beverly Hills, Calif., a corporation of California
Filed May 14, 1962, Ser. No. 194,383
11 Claims. (Cl. 95—73)

1. Structure for producing animated pictures comprising:

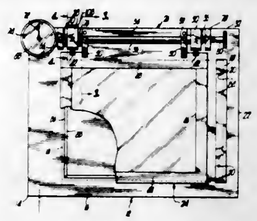
a base unit adapted to support a film sheet and a negative thereon;

said negative being superposed upon said film sheet; said base unit having alignment means thereon to accurately locate said film sheet and said negative and to maintain them in proper alignment with respect to one another;

a grid member having a series of alternate, elongated, generally parallel light transmitting areas and opaque segments, said areas being of less width than said segments;

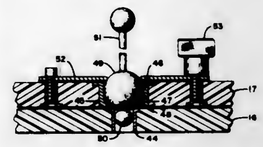
a grid member mounting means peripherally engaging said grid member;

said grid member mounting means being swingable to a position whereat said grid member overlies said negative on the side thereof opposite to said film sheet to thus sandwich said negative between said grid member and said film sheet;



said grid member mounting means including a mechanism for shifting said grid member relative to said film sheet through accurate, predetermined increments of travel in a direction generally transverse to the longitudinal length of said areas and of less width than an individual segment on said grid member whereby spaced sections of the film sheet may be successively exposed to light passing through said areas of said grid member.

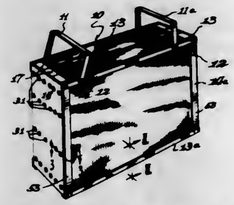
3,199,430
PHOTOPRINTING APPARATUS
Silas Arthur Brown, Lake Elmo, Minn., assignor to Buckbee-Mears Company, St. Paul, Minn., a corporation of Minnesota
Filed Oct. 7, 1963, Ser. No. 314,222
6 Claims. (Cl. 95—73)



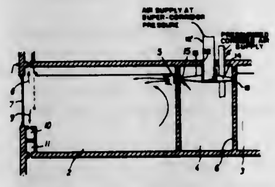
1. Photoprinting apparatus, comprising: a first photoprinting frame; a second photoprinting frame coextensive with and overlying said first frame in a parallel plane; and means for adjustably mounting the second frame to the first frame comprising a plurality of ball-socket joints each including a first diameter ball of solid material snugly but movably seated in said second frame and a smaller diameter ball of solid material fixedly attached to said first ball and snugly but movably seated in said first frame.

3,199,431
PHOTOGRAPHIC PRINT BASKET
William G. Hill, 1163 Walnut St., Des Plaines, Ill.
Filed Mar. 8, 1963, Ser. No. 263,772
7 Claims. (Cl. 95—100)

1. A photographic print basket comprising, a substantially rectangular open framework, a pair of vertical end plates closing off opposed ends of said framework, a plurality of prefabricated insert units preformed as a unitary assembly removeably secured between said end plates, each insert unit comprising a pair of plastic end bars adapted to be secured to said end plates, mesh wall members molded in said end bars and extending between said end bars, means fastening said end bars to said end plates to place said mesh wall members under tension when said end bars are secured to said end plates, said wall members forming compartments being open at the top for reception of photosensitive sheets, and means retaining said sheets within said compartments.

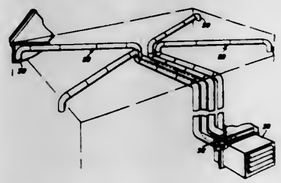


3,199,432
APPARATUS FOR SUPPLYING CONDITIONED AIR AT A PREDETERMINED OVER-PRESSURE TO A ROOM FROM A CORRIDOR
Otto Heinz Brandt, 34–42 Kolner Strasse, Frechen-Maradorf, near Cologne, Germany
Filed Dec. 26, 1962, Ser. No. 247,030
Claims priority, application Germany, Dec. 30, 1961, B 65,388
6 Claims. (Cl. 98—33)



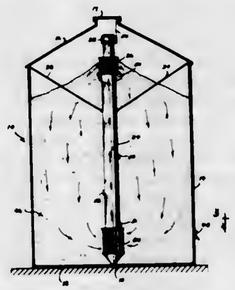
1. An apparatus for supplying conditioned air comprising a room, a corridor, means for supplying conditioned air at a predetermined over-pressure to the corridor, means for supplying the conditioned air from the corridor into the room, additional means for supplying the room with a limited amount of control-conditioned air at a pressure above the corridor pressure, and means for withdrawing air from the room.

3,199,433
VENTILATION SYSTEM
Thomas Bosma, Jr., Box 321, Buffalo Center, Iowa
Filed Apr. 16, 1963, Ser. No. 273,388
2 Claims. (Cl. 98—43)



2. In a ventilating system for a building having a ceiling, a plurality of generally coplanar diverging individual imperforate hollow ventilating ducts, each duct being positioned adjacent the building ceiling and having a first open intake end thereof opening downwardly adjacent a peripheral portion of the building and a second open exhaust end thereof projecting through a portion of the building and communicating with the exterior thereof, the first ends of the ducts being peripherally spaced about the interior of the building, the second ends of the ducts being adjacent but out of communication with each other and extending parallel to each other to the exterior of the building, said ducts, from the first ends thereof, extending individually toward each other, and a thermostat controlled variable speed exhaust fan mounted on the exterior wall with the fan blade positioned just outward of the exhaust ends of the ducts and orientated so as to draw air equally through each of the ducts.

3,199,434
METHOD OF AND MEANS FOR CONDITIONING STORED MATERIALS
Alfred J. Piel, Hubbard, Iowa
Filed June 18, 1962, Ser. No. 203,369
2 Claims. (Cl. 98—55)



1. In a particulate material agitating and aerating means, comprising, in combination,

a storage bin having a floor and a closed surrounding wall and a top,

an auger elevator means substantially vertically disposed within said storage bin,

means for rotating said auger elevator,

and means for retaining said auger in a substantially upright position;

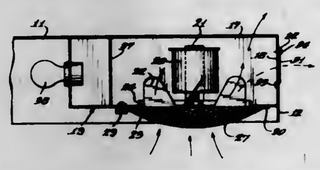
said auger mounted on and supported by a thrust bearing disposed on the bottom end of said auger and located on said floor;

the bearing surface of said thrust bearing being cam lobe shaped and the bottom end surface of said auger being of a corresponding cam lobe shape and wherein said two cam lobe surfaces are adapted to impart a vertical oscillation movement to said auger as it is being rotated.

3,199,435
VENT HOOD AND BLOWER DEVICE USABLE THEREIN
Kenneth S. Jenson, Wisconsin Rapids, Wis., assignor to Preway, Inc., a corporation of Wisconsin
Filed Nov. 5, 1962, Ser. No. 235,423
2 Claims. (Cl. 98—115)

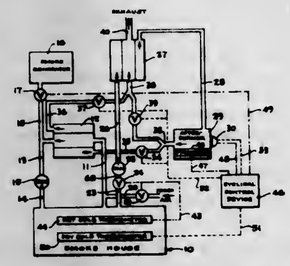
1. In a ventilating hood having a top wall and a back wall with an exhaust opening in each, a casing mounted within said hood enclosing both exhaust openings and defining a blower chamber, said casing including a casing bottom wall, an air inlet through said casing bottom wall, a blower mounted in said housing and including an air impeller disposed within said inlet and motor means for driving said impeller to draw air through said inlet

into said chamber and to exhaust air through one of said exhaust openings, removable cover means for closing the other of said exhaust openings, a domed filter having a shallow concave side merging at a circular perimeter into a circular flange-shaped edge, a receiver element on said casing bottom wall configurated to slidably receive and mount said edge of said filter at one portion of the perimeter of said filter against the casing bottom wall with the filter disposed across said air inlet with said concave side facing said air inlet and with said circular perimeter circumscribing the extremities of said impeller, and removable fastening means generally opposing said receiver element and adapted to fasten a second portion



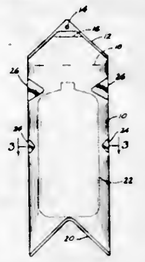
of the filter edge, spaced from said first portion, against said casing bottom wall with said first portion of said edge engaged by said receiver element, said receiver element comprising a tab projecting downward from said casing bottom wall and horizontally toward said inlet defining a slot between said tab and casing bottom wall for slidably receiving said first portion of the filter edge in said slot, said removable fastening means comprising a threaded opening through said casing bottom wall adjacent said inlet and a threaded thumb screw receivable in said threaded opening and having a knurled head extending sufficiently to secure said second portion of the filter edge against said casing bottom wall with said thumb screw removably threaded into said threaded opening.

3,199,436
SMOKEHOUSE APPARATUS
Harvey J. Rasmussen, Wheeling, Harvey R. Rasmussen, Roselle, George W. Fisher, Wheaton, and Le Roy G. Moskal, Arlington Heights, Ill., assignors, by mesne assignments, to Alkar Engineering Corporation, a corporation of Wisconsin
Filed Apr. 9, 1962, Ser. No. 185,973
4 Claims. (Cl. 99—259)



1. A heating and air pollution control apparatus for a smokehouse or the like, said apparatus including: a first heat exchanger having two separate passageways therethrough in heat exchange relationship; first means connected to the smokehouse and to one of said passageways to circulate air from the smokehouse through the one passageway and back to the smokehouse; a second heat exchanger having two separate conduits therethrough in heat exchange relationship; an afterburner; and second means connected to the smokehouse, the two heat exchangers and the afterburner to withdraw air from the smokehouse, pass that air through one conduit, the afterburner, and then the other conduit to atmosphere with at least part of the air flowing from the afterburner to the other conduit through the other passageway.

3,199,437
INFUSION APPARATUS
Silas E. Nelsen, 2715 Center St., Tacoma, Wash.
Filed Feb. 25, 1963, Ser. No. 260,515
1 Claim. (Cl. 99—317)



Infusion apparatus comprising:

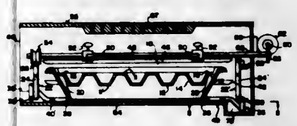
(a) a water-impervious, flexible, plastic tube sealed at its top and bottom and adapted to be filled with water to a predetermined level, and

(d) a water-pervious mesh fabric bag filled with the material to be infused and contained within the plastic tube,

(c) the sealed bottom of the tube being concave with the bottom of the fabric bag supported freely upon the apex of said concave bottom and the side walls of the tube being fused together at spaced intervals below the top thereof to provide inwardly extending projections freely engaging the side walls and top of the fabric bag for maintaining the mesh fabric bag submerged and spaced from the walls of the plastic tube,

(d) the plastic tube being adapted to be slit in its upper portion above the predetermined level of the water, thereby providing a filling opening for filling the bag with water and a discharging opening for discharging the infusion product of the apparatus.

3,199,438
COMBINED ADJUSTABLE BROILER PAN ASSEMBLY AND ROTISSERIE
George W. Myler, Emmaus, and Robert A. Clark, Allentown, Pa., assignors to Caloric Appliance Corporation, Topton, Pa.
Filed Jan. 24, 1961, Ser. No. 84,562
7 Claims. (Cl. 99—421)



1. For use within a compartment having a bottom wall and a heater above said wall,

a pan insertable into said compartment and having a bottom wall, side walls and end walls, said walls terminating in a rim,

said pan having a seat formed inwardly of and below said rim,

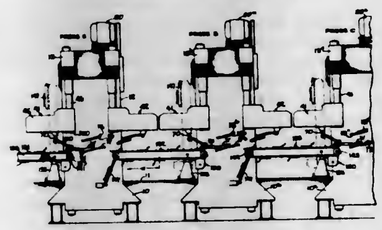
and a tray carried by said pan and including:

a body portion and a peripheral flange of a size to be engageable with said seat,

the thickness of said flange being less than the distance between said rim and said seat,

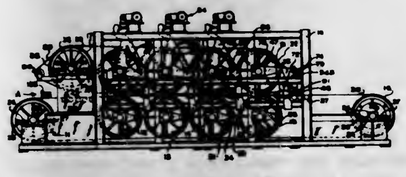
said body portion being corrugated to provide two discontinuous, parallel, planar food-supporting surfaces, one of which is in the plane of said flange and the other is in a plane spaced from and parallel to the plane of said flange, the distance between said planes being greater than the thickness of said flange, both of said surfaces being below the rim of said pan when one side of said flange is resting on said seat, and one of said surfaces being below said rim and the other of said surfaces being above the said rim when the other side of said flange is resting on said seat.

3,199,439
CONTROL ARRANGEMENT FOR AUTOMATIC PRESS LINE
James C. Danly, River Forest, Ill., assignor to Danly Machine Specialties, Inc., Chicago, Ill., a corporation of Illinois
Original application Mar. 26, 1964, Ser. No. 354,954. Divided and this application Nov. 24, 1964, Ser. No. 413,547
6 Claims. (Cl. 100—43)



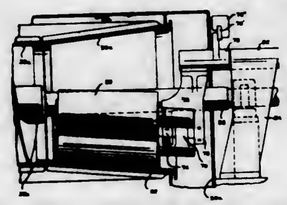
1. In a press line for performing a series of press operations on a workpiece, the combination comprising a series of power presses each having a drive shaft and slide as well as a motor and interposed variable energizable output control device for driving the shaft, transfer mechanisms coupled to the drive shafts of the respective presses for moving a workpiece in at one side of the press and out at the other time with the upward movement of the associated slide, a set of transmitting synchros, a set of receiving synchros electrically coupled thereto, said receiving synchros being mechanically coupled to the respective drive shafts, means including a variable speed motor for driving all of the transmitting synchros in unison with one another, and means responsive to the output signals from the receiving synchros for correctively varying the energization of the output control devices in the respective presses.

3,199,440
PAPERMAKING MACHINE
Charles T. Banks, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Nov. 6, 1962, Ser. No. 235,645
5 Claims. (Cl. 100—153)



1. A machine for compressing stacks of folded thin sheet material comprising a plurality of rotatable drums which have parallel spaced axes of rotation, said drums being arranged in an upper series and in a lower series with each drum in the upper series having a relatively thin nip with a drum in the lower series, said nips decreasing in thickness from a first pair of said upper and lower drums in said series at an intake end of the machine to the last pair of said upper and lower drums in said series at a discharge end of the machine, a flexible belt of sheet steel disposed about the series of upper drums and a flexible belt of sheet steel disposed about the series of lower drums for carrying said stacks through said nips, means for rotating said drums so as to move said belts in a direction from the thickest nip to the thinnest nip for progressively compressing the stacks disposed between said belts, an auxiliary flexible belt of sheet steel of about .005 inch thickness which extends about said first named upper belt and which is narrower than said first named upper belt, and an auxiliary roll located adjacent to the last drum in said upper series for holding said auxiliary belt out of contact with said upper belt adjacent said last drum and for providing a relatively small angle between said narrow belt and said lower belt at the discharge end of the machine for holding the upper sheet of each stack of thin material from adhering to said first named upper belt.

3,199,441
APPARATUS FOR DRAINING FIBROUS MATERIAL
Anton Joseph Haug, 64 Taylor St., Nashua, N.H.
Filed Mar. 9, 1961, Ser. No. 94,510
4 Claims. (Cl. 100—157)

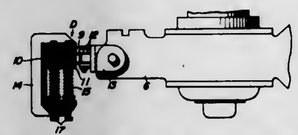


1. In a pulp drainer construction of the class which includes a casing, a screw conveyor mounted for rotative movement in the casing, a screen drum secured around said screw conveyor, said drum including an outwardly flared annular screen extension having a stock outlet formed at the lower side thereof, the combination of a conical press roll mounted for rolling contact with the inner periphery of the screen extension, a second conical press roll also mounted for rolling contact with the screen extension and positioned slightly above the first press roll, said second press roll being arranged closely adjacent to the said first press roll to provide a nip point for the stock between said second press roll and said screen closely adjacent and above the nip point between the first roll and the screen, means for yieldably supporting said press rolls in normal spaced relation, and means for applying the same pressure to each of said rolls.

3,199,442
VIBRATION PREVENTING DEVICES FOR ROLL STACKS
Isowo Kuno, Tokyo, and Toshio Nitsui, Mitaka, Japan, assignors to Shin-Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Apr. 11, 1962, Ser. No. 186,663
Claims priority, application Japan, Apr. 19, 1961, 36/13,995
4 Claims. (Cl. 100—163)

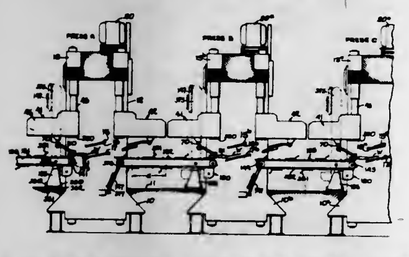
1. In a roll stack for processing a web material including a pair of spaced stationary supports and a plurality of rolls, a device for preventing vibrational movement of one of said rolls comprising a roll bearing member rock-

ably mounted at one end on one of said supports to rotatably mount said roll, a damper mechanism including a plurality of plate elements on said roll bearing member at the other end, and a plurality of plate members interleaved with said plate elements and rigidly secured to the



other support, and spring means bearing on said plate members for effecting frictional engagement of said plate elements with said plate members whereby the vibrational movement of said roll is absorbed by friction between said plate elements and said plate members.

3,199,443
AUTOMATIC TRANSFER MECHANISM FOR PRESS LINE
James C. Danly, River Forest, Ill., assignor to Danly Machine Specialties, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 26, 1964, Ser. No. 354,954
16 Claims. (Cl. 100—207)

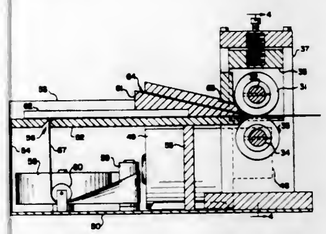


1. In a press line for performing a series of press operations on a workpiece, the combination comprising a power press having a frame and a slide defining a work area as well as a motor and output control device for driving the slide, a transfer mechanism for conveying a workpiece into the work area, said transfer mechanism including a horizontally extending bracket cantilever supported on the frame of the press on one side thereof, a carrier longitudinally movable in the bracket, a post vertically movable in the carrier, a gripper arm secured to the lower end of the post and extending in folded-back relation under the bracket and in the direction of the work area, a drive shaft journaled in the bracket and coupled to the motor output, said drive shaft having a pair of cams and associated cam followers coupled to the carrier and post respectively for achieving compound horizontal and vertical reciprocating movement of the arm into and out of the work area of the press, and a gripper at the end of the arm for engaging and disengaging a workpiece at its limits of movement.

3,199,444
CODED TAG PRINTER USING PUNCHED TAGS
Stanley F. Coil, Washington Courthouse, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Jan. 11, 1963, Ser. No. 250,892
2 Claims. (Cl. 101—45)

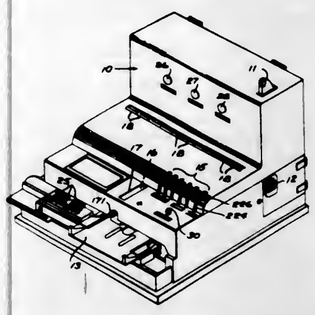
1. A mechanism for reproducing on a record material having a coating of ink-containing pressure-rupturable capsules the image of a merchandise tag having a plurality of punched holes representing data, comprising, in combination,

(a) a support member;
(b) a first roller mounted for rotation in said support member;
(c) a second roller slidably mounted in said support member and rotatably engaging said first roller;
(d) means continuously engaging said second roller for urging said second roller into engagement with said first roller;
(e) an elongated chute member mounted adjacent said rollers;



(f) a record material having a coating of ink-containing pressure-rupturable capsules positioned in said chute member and guided thereby into engagement with said first and second rollers;
(g) a merchandise tag guide member positioned within said chute member, said guide member having a tag-receiving slot, one end of which is located adjacent said first and second rollers;
(h) and means for driving said first and second rollers whereby a tag positioned within said tag-receiving slot is driven between said rollers together with said record material to reproduce on said record material the image of said tag.

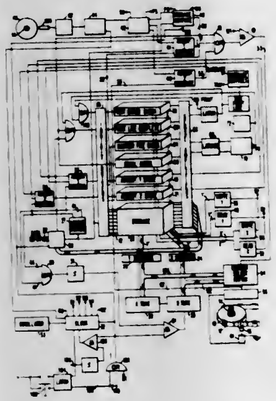
3,199,445
MACHINE FOR REGISTERING A SERIES OF TRANSACTIONS
Donald H. Mackenzie, 465 W. 23rd St., New York 11, N.Y., and Kenton D. McMahan, Scotia, and John Cherrybone, Roslyn Heights, N.Y.; said McMahan and said Cherrybone assignors to said Mackenzie
Original application July 27, 1959, Ser. No. 829,872, now Patent No. 3,169,623, dated Feb. 16, 1965. Divided and this application Apr. 23, 1964, Ser. No. 371,864
9 Claims. (Cl. 101—90)



1. A register for recording a series of transactions on successive line spaces of a record sheet, comprising a recording mechanism, a carriage adapted to support a record sheet in recording relation to said recording mechanism, a drive for said carriage comprising a motor and a drive connection between said motor and said carriage, said drive moving said carriage to bring a selected line

space of said record sheet in position to receive a recording impression from said mechanism, means for stopping said carriage against the driving action of said motor, a series of manually operable line selector keys for controlling the stopping position of said carriage, whereby the initial position of said carriage for the recording of the first line is predetermined, means for operating said recording mechanism through successive cycles, and escapement means for releasing said stopping means at recurrent periods in time relation to said recording mechanism operating means to cause said carriage to move step by step by the drive action of said motor and to cause thereby said transactions to be entered in said record sheet in the successive line spaces thereof.

3,199,446
OVERPRINTING APPARATUS FOR PRINTING A CHARACTER AND AN ACCENT
Fred W. Schaaf, Apalachin, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 7, 1962, Ser. No. 222,087
7 Claims. (Cl. 101—93)



1. In a printer,
a plurality of print hammers each at a separate print position and each having operating means for actuating the hammers,
a character bearing member continuously moving past said hammers having separate characters and accents thereon at distinctly different locations to be printed by said hammers,
separate storage means having one or more planes with different positions for storing representations of a character only, and one or more separate planes with corresponding positons for storing representations of an accent to be printed at each print position,
means including a counter for producing an output representation of the character or accent on the character bearing member at a particular print position,
compare means connected to the counter and storage means for separately comparing the character and accent representations in corresponding positions of said storage means for each print position with the character or accent on the character bearing member at that position and producing a compare signal upon a coincident compare,
and means, including means for simultaneously scanning said character and accent storage means for a plurality of scans, responsive to each coincident compare of a character or accent on separate scans for effecting operation of the hammer operating means for operating the hammer at the particular print position to print one or more times to print either the character alone in one print scan or both the character and accent in the same particular print position on separate scans.

3,199,447
SCREEN PRINTING METHOD AND APPARATUS
Matthew L. Jaffa, 92 Clark Court, Rutherford, N.J., and David Jaffa, 38—26 Allwood Place, Fair Lawn, N.J.
Filed Apr. 4, 1962, Ser. No. 185,113
15 Claims. (Cl. 101—123)



1. A method of screen printing sequential designs on a continuous strip of material, comprising the steps of:
(a) positioning a screen having a stenciled portion with an associated squeegee onto the material to be printed,
(b) indexing said material by simultaneously moving both the screen and material to be printed at the same speed through the repeat distance,
(c) printing said material simultaneously with the indexing of said material by moving said squeegee relative to said moving screen in a direction transversely of the direction in which said screen and material is being indexed, and
(d) gradually raising one end of the screen angularly off the material during the printing stroke of said squeegee transversely of said screen so that at the end of the printing stroke the screen is spaced above the material being printed,
(e) and returning the screen and squeegee to start position in readiness to repeat the printing and indexing operation.

3,199,448
SCREEN PRINTER IN WHICH THE SQUEEGEE IS MOVED IN DIRECTION OPPOSITE TO STENCIL MOVEMENT
Matthew L. Jaffa, 92 Clark Court, Rutherford, N.J., and David Jaffa, 38—26 Allwood Place, Fair Lawn, N.J.
Original application Dec. 18, 1961, Ser. No. 159,956. Divided and this application Oct. 30, 1964, Ser. No. 407,822
6 Claims. (Cl. 101—123)



1. An apparatus for continuously screen printing repeating designs on a strip of material comprising a frame, means for indexing the repeat of the material to be printed, a printing head including a carriage movably mounted on said frame, a screen carried by said carriage, said screen having a central stenciled portion and a leading and trailing well portion, a squeegee associated

with said screen mounted on said frame, means for moving said screen and squeegees between operative printing position and inoperative non-printing position, whereby said squeegee is initially and finally disposed in said well portions of the screen, means for securing said indexing means and material supported thereon to said carriage in the printing position of said screen and associated squeegee, drive means for moving said carriage, the screen carried thereby and indexing means secured thereto relative to said squeegee an amount substantially equal to the repeat of the design whereby said squeegee forces the color through said screen onto said material, and means for moving said squeegee in a direction opposite to that of the screen during printing an amount sufficient to finally position the squeegee in the trailing well portion of the screen.

3,199,449
METHOD AND APPARATUS FOR SCREEN PRINTING
Matthew L. Jaffa, 92 Clark Court, Rutherford, N.J., and David Jaffa, 38—26 Allwood Place, Fair Lawn, N.J.
Filed Dec. 18, 1961, Ser. No. 159,956
7 Claims. (Cl. 101—129)

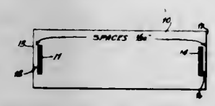
1. A method of continuously screen printing sequential designs on a continuous strip of material comprising the steps of:

(a) positioning a screen having a stencilled portion and opposed leading and trailing well portions with an associated movable squeegee onto the material to be printed whereby said squeegee is initially disposed in the leading well portion of the screen, and

(b) printing and indexing said material simultaneously by moving both the screen and the material to be printed in the same direction and at the same speed a predetermined relative amount relative to said associated squeegee acting on said screen,

(c) and moving said squeegee during said printing and indexing step relative to said moving screen and material whereby said moving associated squeegee forces the color in the leading well of the moving screen through the stencilled portion thereof and onto the material moving with said screen.

3,199,450
METHOD OF INSPECTING LABELS TO DETERMINE IF SUCH HAVE BEEN PROPERLY PRINTED AND CUT
William B. Leavens, Llewellyn Park, West Orange, N.J.
Continuation of application Ser. No. 124,679, July 17, 1961. This application Oct. 15, 1963, Ser. No. 316,798
1 Claim. (Cl. 101—211)



In the art of multicolor printing and cutting of a sheet to form a plurality of labels, a method which comprises the steps of:

simultaneously printing in one color on each of said labels data in a body portion thereof and a pair of spaced lines along a longitudinal edge portion thereof,

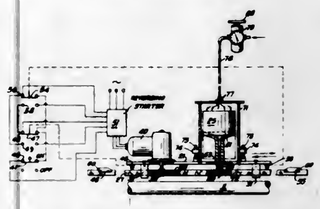
printing said lines perpendicularly to said longitudinal edge portion and printing each of said lines a predetermined distance from an associated transverse edge portion of said label,

subsequently printing in a second color on each of said labels additional data in a body portion thereof and an additional pair of spaced lines parallel to and at a predetermined distance from said first mentioned lines,

cutting said sheet to obtain individual labels therefrom,

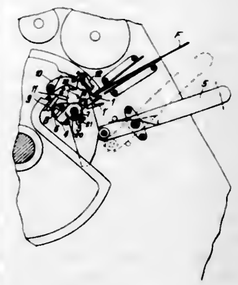
and electronically inspecting said individual labels to determine if all of said lines are separately distinguishable so as to determine if the first and second colors printed are in register with each other and to determine if the cut was properly registered with each of the printed colors.

3,199,451
INK DISTRIBUTION DEVICE
Charles D. Nitchie, Baltimore, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Aug. 2, 1963, Ser. No. 299,545
3 Claims. (Cl. 101—366)



1. An ink distributing assembly for a fountain roll comprising: a carriage, a pair of rails slidably supporting said carriage above said fountain roll, one of said rails having teeth thereon and constituting a rack, a pinion gear for engagement with said rack, a motor mounted on said carriage for actuating said gear to move said carriage on said rails, stops on said rails for limiting the movement of said carriage, and reversing means for said motor actuated by said stops whereby said carriage reciprocates axially of said fountain roll on said rails, means for supporting a container of ink on said carriage, and means for flowing ink from said container onto said fountain roll at a predetermined rate.

3,199,452
FOIL CLAMPING DEVICES FOR CLAMPING PRINTING FOILS ON THE CYLINDER OF DUPLICATING MACHINES
Erich Gericke, 14 Flemmingstrasse, Berlin-Steglitz, Germany
Filed Sept. 21, 1961, Ser. No. 139,689
Claims priority, application Germany, Oct. 28, 1960, G 30,808
6 Claims. (Cl. 101—415.1)



1. A clamping device for clamping printing foils on a cylinder of a duplicating machine such as an offset printing machine comprising a cylinder, a rotatable shaft thereon, means for rotating the shaft, a row of grippers rotatably mounted on said shaft for clamping

foils on said cylinder; each gripper having spring means associated therewith for maintaining the gripper in a closed position, and a cam for each gripper fixed to the shaft for affecting an opening movement of its respective gripper upon rotation of the shaft, the cam comprising a driver and means for adjusting the driver, so that a partial rotation of the shaft will cause selected grippers to either be opened or remain closed, depending upon the adjustment of their asociated drivers, and further rotation of the shaft will cause the remaining grippers to be opened.

3,199,453
SUBMARINE SIGNAL FUZE
Stanley M. Fasig, Bloomington, Ind., and Glenn C. Johnson, Hyattsville, Md., assignors to the United States of America, as represented by the Secretary of the Navy
Filed Feb. 10, 1964, Ser. No. 343,901
1 Claim. (Cl. 102—7)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A submarine signalling device adapted to be launched in a body of sea water beneath the surface thereof comprising;

a fuze body having an inner chamber therein,

a projectile shell attached to said fuze body and containing a pyrotechnic composition therein,

a pair of electrical squibs adjacent said pyrotechnic composition for igniting said pyrotechnic composition when said squibs are energized,

a sea water battery positioned in said inner chamber of said fuze body and connected through first and second terminals to said squibs,

valve means in said fuze body normally sealing said inner chamber of said fuze body from said body of sea water,

a shaft slidably attached to said fuze body and having a shorting disc engageable with said first and second terminals,

means connected to said shaft normally biasing said shorting disc away from said first and second terminals,

a guide shoe assembly pivotally connected on the outside of said fuze body engaging said valve means and said shaft thereby locking said valve means in a closed position and maintaining said shorting disc in engagement with said first and second terminals until said signalling device is launched in a body of sea water, and

means operatively connected to said valve means for actuating said valve means when the pressure applied to said valve means by said body of water has been reduced to a predetermined value thereby permitting the entrance of sea water into said inner chamber whereby said sea water serves as an electrolyte for said battery.

3,199,454
PREDATORY FISH CONTROL MEANS
Richard E. Hart, Costa Mesa, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Nov. 6, 1963, Ser. No. 321,840
6 Claims. (Cl. 102—39)

1. A predatory marine life repellent dispersal cartridge adapted to be manually energized and deployed comprising:

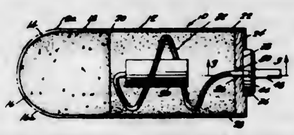
a generally tubular casing including a first open end and a second open end;

a ballast of a predetermined streamline shape and a specific gravity of the order of at least 2.80 secured to said first open end to close the same and to control substantially free gravitational sink rate of said cartridge in a fluid medium;

a predetermined quantity of repellent material provided within said casing, said repellent material including a composition consisting of a mixture of a dye substance, and fine sand characterized by very finely divided particles which provide an opaque-forming and a respiratory-irritating substance carrying barrier against marine life upon dispersal of said repellent material;

a predetermined size of explosive charge provided within said casing disposed generally centrally in said quantity of repellent material;

ignition means including a fuse have a predetermined burn time, one end of said fuse being connected to said explosive charge;



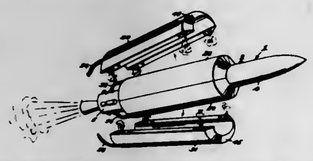
a cap having a port of a predetermined size therein secured to said second open end to close the same, said port being adapted to convey the other end of said fuse outside of said casing and is relatively small to limit the escape of gas generated by said fuse, when burning, to control the internal pressure in said cartridge so as to be in reasonable equilibrium with the external fluid pressure and prevent excessive compression of said casing and repellent material whereby sufficiently high external pressure with accompanying ingress of fluid would extinguish said fuse before detonation of said explosive charge;

initiator means affixed to said cap about said port and including a predetermined amount of primer material provided about said port and embedding the other end of said fuse therein, for energizing the other end of said fuse conveyed outside of said casing after a predetermined burn time of said primer material whereby a predetermined time interval is provided for aiming and throwing said cartridge into the fluid medium after manual energization of said primer material and another predetermined time interval is provided for said cartridge to sink at the controlled sink rate in the fluid medium after said fuse is ignited by said primer material before said explosive charge is detonated to explode said casing and disperse said repellent material contained therein.

3,199,455
MULTIPLE STAGE ROCKET
Adolphus Samms, Yuma Test Station, Ariz.
Filed Jan. 23, 1964, Ser. No. 339,832
2 Claims. (Cl. 102—49)
(Granted under Title 35, U.S. Code (1952), sec. 266)

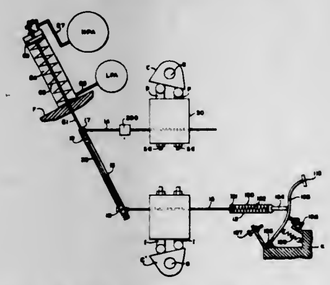
1. A multistage rocket comprising in combination with a conventional rocket including a tubular body containing a combustion chamber, a liquid propellant source, a pumping system in fluid connection between said propellant source and said chamber for pumping said propellant to said chamber and fluid inlet lines communicating

between said pumping system and the outside peripheral surface of said tubular body, said conventional rocket forming the last stage of said multistage rocket; pairs of semicircular liquid propellant tank halves secured together and arranged in concentric relation about said conventional rocket and each pair of tank halves forming a successive stage of said multistage rocket, the outermost pair being the first stage; a detachable fluid line connecting each said tank half with a said inlet line; means car-



ried by said tank halves for jettisoning said pairs of tank halves in succession upon exhaustion of the propellant therein by said pumping system, and means for automatically closing said inlet lines comprising an arcuate, spring biased arm slidably mounted in the wall of said tubular body and a plug carried by the outer end of said arm, said arm moving said plug into a said inlet line to seal it when a said fluid line has been withdrawn by jettison of its respective tank half.

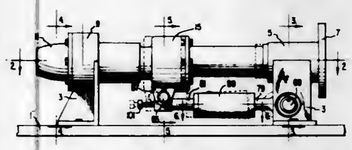
3,199,456
VEHICLE AND CONTROL SYSTEM THEREFOR
Erich A. Wachsmuth, Long Beach, Michigan City, Ind., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 12, 1960, Ser. No. 42,363
11 Claims. (Cl. 103—12)



1. Control apparatus for an engine driven pumping device comprising; a fuel consuming engine, a pressure fluid delivering pump driven by said engine, a fuel pumping means connected to deliver fuel to said engine, a regulator for varying the delivery rate of said fuel pumping means, a controller for varying the fluid delivery rate of said pump, means connecting said regulator and said controller for dependent simultaneous variation of said delivery rates, actuating means connected to said connecting means responsive to the pressure within a fluid discharged by said fluid pumping means for applying a variable ratio to said variation of said delivery rates as said pressure varies.

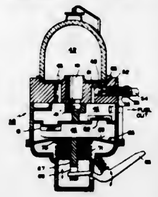
3,199,457
RECIPROCATING PUMP
Clyde A. Smart, Boise, Idaho
(% Ustick Repair & Custom Mfg., Ustick, Idaho)
Filed Sept. 26, 1963, Ser. No. 311,684
9 Claims. (Cl. 103—38)

1. A reciprocating pump for pumping slurries, comprising a pair of coaxial stationary conduit portions having their adjacent ends spaced apart, a movable conduit section having its ends slidably disposed in said adjacent ends, one-way valve means disposed in the movable conduit section, housing means for said one-way valve means, said housing means being disposed in said movable con-



duit section and having a greater diameter than the remaining portion of said movable conduit section, and power means for reciprocating the movable conduit section axially of said conduit portions.

3,199,458
FUEL CONTROL VALVE
Karl W. Hoehn, 5123 37th St., Red Deer, Alberta, Canada
Filed June 10, 1963, Ser. No. 286,653
3 Claims. (Cl. 103—42)

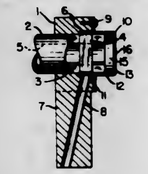


1. An automotive fuel pumping combination of the diaphragm type adapted to vary the pumping stroke with varying fuel back pressure to regulate the fuel output pressure comprising a first housing; diaphragm pumping means carried by said first housing; a second housing comprising an inflow chamber, an outflow chamber and valve means in each of said chambers for establishing fluid flow communication with the diaphragm pumping means; a removable cover housing for said second housing; a further separator housing interposed between and coupled to both the second housing and the removable cover housing; said further housing including inlet and outlet pasages therethrough to establish fluid communication with the inflow chamber and the outflow chamber respectively of said second housing; a pressure regulating check-valve in said outlet passage normally closing said outlet passage up to a predetermined fuel output pressure; said outlet passage comprising a bypass around the fuel pumping combination; said fuel pumping combination including fuel ingress and egress ports to said chambers; said further housing being adapted to convert pumps not having a bypass capability to pumps with such a capability by virtue of the addition of said further housing.

3,199,459
ROTARY PUMP
Knud Roelsgaard, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Apr. 1, 1963, Ser. No. 269,470
Claims priority, application Germany, Mar. 30, 1962, D 38,537
6 Claims. (Cl. 103—137)

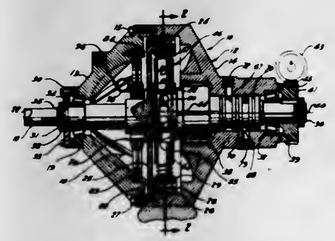
1. A rotary pump comprising a casing having a cylindrical pump chamber formed in one face of the casing, a smaller cylindrical bore opening eccentrically into said pump chamber, and an inlet passage opening into a suction portion of said pump chamber, a hollow shaft ro-

tatable in said bore and having an end portion projecting outwardly beyond said face of said casing, said shaft having an axially and diametrically extending slot in the portion of said shaft extending through said pump chamber, a single diametrically extending blade slidably received in said slot and having a length equal to the diameter of said pump chamber and a width in a direction axial of said bore equal to the axial dimension of said pump chamber, and a cup-shaped cover member for closing the open end of said pump chamber, said cover member being a single integral unit having a cylindrical



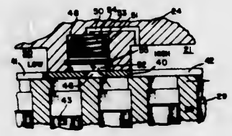
portion snugly receiving said projecting end portion of said shaft and extending beyond the end of said shaft, an end portion closing the outer end of said cylindrical portion and spaced from the end of said shaft and a flange portion engaging and secured to a portion of said face of said casing surrounding said pump chamber, said cylindrical portion having a radial enlargement at a location in its circumference providing communication between the compression portion of said pump chamber and the space between the end portion of said cover member and the end of said shaft.

3,199,460
HYDRAULIC PUMP OR MOTOR
Vannevar Bush, Belmont, and John A. Hastings, Bass River, Mass., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Jan. 11, 1962, Ser. No. 165,685
6 Claims. (Cl. 103—161)



1. A hydraulic pump or motor unit, comprising an annular cage having spaced shoe surfaces disposed symmetrically of its center axis, external drive means connected to said cage to move directly therewith during rotation of the latter about said axis, a pintle mounted on a rotational axis offset from said center axis, said pintle including integral therewith a cylindrical crank having its longitudinal center axis offset from the rotational axis by a distance similar to said first-mentioned offset and generally disposed at some eccentricity from the cage center axis, mating pistons and cylinders supported respectively, between the shoe surfaces and the crank and defining a plurality of fluid chambers, the distance between each shoe surface and the crank varying by twice the eccentricity during a rotation of the cage about its center axis, said pistons and cylinders being reciprocable thereby along axes extending radially from the crank center axis to vary the volumes of said fluid chambers, means operable to port the fluid chambers including separate inlet and outlet ports on the crank terminating in diametrically spaced relationship generally equidistant of a plane through the above-mentioned axes of the cage and pintle, and through the center axis of the crank when the latter is so positioned, and means to rotate the pintle about its rotational axis so as simultaneously to adjust the eccentricity of the cage axis from the crank axis and to phase the porting of the fluid chambers effective to vary the volumetric flow capacity per cycle of the unit.

3,199,461
HYDRAULIC PUMP OR MOTOR
Marvin L. Wolf, Hutchinson, Kans., assignor to The Cessna Aircraft Company, Wichita, Kans., a corporation of Kansas
Filed May 27, 1963, Ser. No. 283,376
12 Claims. (Cl. 103—162)



1. In a multi-cylinder, reciprocating piston type fluid pressure energy translating device in which there is relative movement between a cylinder block and a fluid handling section which defines internal, spaced, low and high pressure ducts, and in which such relative movement successively brings open ends of the piston chambers in the cylinder block into alternate open communication with the low and the high pressure ducts in the fluid handling section, and in which piston reciprocation and the relative movement between the cylinder block and said fluid handling section is timed so that each piston travels on at least a portion of its compression stroke between the time its chamber breaks communication with said low pressure duct and the time its chamber begins direct communication with said high pressure duct,

structure for adjusting the pressure in each successive piston chamber to substantially equal the pressure in said high pressure duct between the time each piston chamber breaks communication with the low pressure duct and the time it starts communication with said high pressure duct, comprising:

a liquid filled pressure control chamber located between said low and high pressure ducts defined by the said fluid handling section;

a differential pressure movable barrier traversing said control chamber and continuously dividing it into

(a) a variable volume, piston chamber pressure regulating compartment, and

(b) a separate variable volume, pressure regulation assisting compartment,

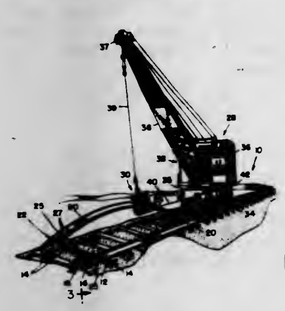
said pressure regulating compartment having an open port located to openly communicate with the open end of each successive piston chamber between the time the piston chamber breaks communication with said low pressure duct and the time the piston chamber begins direct communication with said high pressure duct; and

duct means affording open communication between said high pressure duct and said pressure regulation assisting compartment,

whereby, during the time each piston chamber is in communication with said pressure regulating compartment, the liquid in both is subjected, through the movable barrier, to the pressure existing in said high pressure duct, and vice versa, and the pressure on

the liquid in each successive piston chamber is thus adjusted, prior to the start of its communication with said high pressure duct, to substantially equal the pressure then existing in that duct.

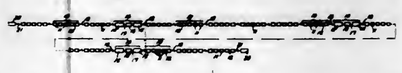
3,199,462
RAIL THREADER
Howard H. Hooker, Chicago, Ill., assignor to Cullen-Friestedt Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 29, 1964, Ser. No. 341,022
2 Claims. (Cl. 104—2)



1. A rail threader comprising an articulated, open, generally rectangular, frame-like structure through which rails are adapted successively to pass during movement of the threader along a roadbed, said structure including a fixed, generally C-shaped support including upper and lower fixed horizontal transverse frame sections and an interconnecting fixed vertical frame side section, a movable frame gate section pivotally connected at one end to the distal end of the lower transverse frame section for movement between a vertical closed position wherein its other free end engages the distal end of the upper transverse frame section, and an inclined open position for admission of the rails sideways into the structure, a pair of lower antifriction confining rollers supported on said lower transverse frame section for rotation about respective horizontal axes and adapted to underlie and contact the bases of the rails and thus support the rails, a composite upper roller including two normally coaxial roller sections, one of said roller sections being rotatably mounted on said fixed frame side section near the upper end thereof and the other roller section being rotatably mounted on said gate sections near the free end thereof, said roller sections, when the frame gate section near the free end thereof is in its closed position, being independently rotatable about common axes spaced upwardly from and parallel to the axes of rotation of the lower rollers, said other roller section being movable toward and away from the one roller section during closing and opening movements of said frame gate section respectively, and means for individually effecting vertical adjustment of said roller sections.

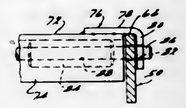
3,199,463
RAILROAD TRAIN, RAILROAD CAR AND CONTROL APPARATUS THEREFOR
John G. Kneiling, States Island, N.Y., assignor to Devenco Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 28, 1962, Ser. No. 248,017
7 Claims. (Cl. 105—1)

1. A railroad "car" for hauling freight, comprising a plurality of successive compartments with inseparable pivot articulations between them, each compartment being mounted on its own set of at least two four-wheel trucks and provided with its own independently operable drop-



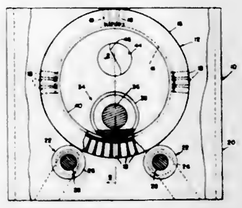
floor structure for discharging its cargo, and conventional separable coupling elements at the outer ends of the end compartments.

3,199,464
HORIZONTALLY AND VERTICALLY ADJUSTABLE RACK
Jackson A. Shook, Northville, Mich., assignor to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Original application May 2, 1961, Ser. No. 107,157, now Patent No. 3,126,102, dated Mar. 24, 1964. Divided and this application Dec. 18, 1963, Ser. No. 341,154
6 Claims. (Cl. 105—369)



1. A freight bracing member having at least one end adapted to be connected to a supporting member having a plate portion having a front face, a rear face, an edge extending between said faces, and said plate portion defining an aperture therethrough in spaced relation to said edge, said freight bracing member comprising an elongated body, means on said body at said one end of said bracing member adapted to extend over said edge and engage said rear face and defining an opening, the axis of which is parallel to said elongated body, a latch pin, means mounting said pin on said body for movement between an operative position in which said pin extends through said aperture in said supporting member plate portion and into said opening and a retracted position in which said pin is withdrawn from said opening and from said aperture.

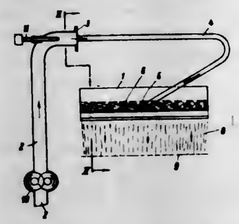
3,199,465
PELLETING MACHINE HAVING RESTRICTED PASSAGES
Raymond B. Cunningham, Royal Oak, Mich., assignor to Cunningham & Sons, Chicago, Ill., a partnership
Filed May 31, 1963, Ser. No. 284,573
4 Claims. (Cl. 107—14)



1. In a machine for compressing and pelleting a cut crop, a pelleting ring having a circular series of passages therethrough, a pressure roll having an axis of rotation perpendicular to the axes of said passages, said roll being rotatable to traverse all of said passages and to charge the cut crop into the inner ends of said passages and force the same outwardly therethrough, said passages adjacent their inner charging ends having walls which

taper radially and axially inwardly relative to the passage axes and also having walls which taper from the outer ends of said first-mentioned walls radially inwardly and axially outwardly relative to the passage axes.

3,199,466
METHOD AND DEVICE FOR REMOVING DISTURBING AIR BUBBLES IN CHOCOLATE MOLDING OR CHOCOLATE COATING MACHINES
Richard Winkler, Burgermeister Wink Strasse, Rengsdorf, near Neuwied, Germany, and Kurt Dünnebier, Renzentalweg 6, Wollendorf, near Neuwied, Rhineland, Germany
Filed Feb. 18, 1963, Ser. No. 259,081
Claims priority, application Germany, Feb. 21, 1962, W 31,711/62
6 Claims. (Cl. 107—54)



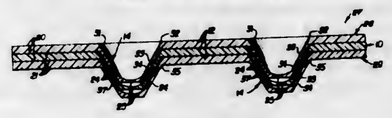
1. A method of liberating air bubbles contained in a flowable mass of chocolate for coating and molding respectively confections in a treatment station, said method comprising the steps of first pressure-feeding the flowable mass along a flow path of a fixed cross-sectional area, then pressure-feeding the mass along a fixed flow path of reduced cross-sectional area, thereby increasing the rate of speed of the mass proportional to the reduction of the cross-sectional area, and finally discharging the accelerated mass below the level of a supply of flowable mass at the treatment station.

3,199,467
NURSE AID TABLE
Earl R. Compton, 815 18th St., Des Moines, Iowa
Filed Aug. 2, 1963, Ser. No. 299,665
3 Claims. (Cl. 108—49)



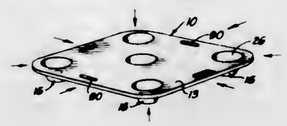
1. In a bed table assembly for a bed having a guard rail structure along each side thereof, comprising,
an elongated table top member having forward and rearward sides, an upstanding flange extending along said forward side; and
a pair of support members in spaced relationship along each end of said table top member and hingedly connected thereto, each of said support members having a hook portion at its free end adapted to engage the respective adjacent side rails of said guard rail structures, and each of the forward support members having a length exceeding that of the rearward support members to cause said table top to tilt forwardly and downwardly whereby liquid spilled thereon will flow forwardly away from a person in bed.

3,199,468
NESTABLE PALLETS
Charles M. Sullivan, 5649 Aladdin St., Los Angeles, Calif.
Filed Apr. 23, 1962, Ser. No. 189,502
2 Claims. (Cl. 108—53)



1. A pallet stackable and nestable with identical pallets for storage and for supporting extra-heavy loads, said pallet comprising:
a flat multi-sided platform formed of a molded plastic material rigid at all sections between its peripheral edges, said platform having parallel top and under surfaces and a plurality of spaced apart openings therethrough, each opening being defined by an inside surface of the platform which is inclined at an acute angle of about 60° from the top surface and meets the top surface along a peripheral edge;
a plurality of hollow legs molded integrally with said platform and of the same plastic material, said legs being respectively in axial alignment with the openings thereof,
each leg having a bottom wall extending parallel to said platform and a peripherally continuous side wall integral at its top with said platform and at its bottom with said bottom wall,
the inside and outside surfaces of said side wall being parallel and spaced from each other less than the thickness of said platform,
the outside surface of said side wall being inclined from said under surface at an angle equal to said acute angle of about 60° and meeting the bottom of said platform along a base line, said base line being of the same general configuration as said peripheral edge but slightly smaller in size,
the inside surface of said side wall of each leg being inclined at said acute angle of about 60° and forming a smooth continuation of said inclined inside surface of the corresponding opening of said platform,
whereby said pallet will nest with an identical pallet with the legs of one pallet extending into the legs of the other with the platforms of the two pallets in engagement with each other and with the outside surface of each leg of said one pallet spaced minutely from the inside surface of the leg of the other pallet into which it extends.

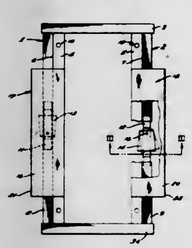
3,199,469
PALLET STRUCTURE
Charles M. Sullivan, 5649 Aladdin St., Los Angeles, Calif.
Filed Jan. 20, 1964, Ser. No. 338,943
15 Claims. (Cl. 108—53)



1. A pallet stackable and nestable with pallets identical therewith, each pallet having a platform and a plurality of hollow frustum legs depending therefrom with their interiors flaring toward and opening on a top surface of the platform, each hollow leg being closed by a bottom wall, the side walls of the hollow legs being shaped to be slightly apart when nested within corresponding legs of

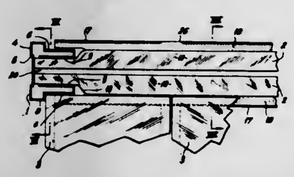
the stacked pallets, said pallet being characterized by being molded of a rigid water-proof plastic material with said platform and said hollow legs joined integrally with each other, the thickness of each bottom wall being equal to the thickness of said platform so that the platforms of the pallets when stacked are in contact with each other and so that the corresponding bottom walls of the legs of the stacked pallets are in contact with each other to form a column, any load applied to the top pallet of the stack thus dividing between the side walls of the nested hollow legs.

3,199,470
DROP-IN TABLE FOR MODULAR FURNITURE
Wayne W. Good, Sturgis, Mich., assignor to Harter Corporation, Sturgis, Mich., a corporation of Michigan
Filed Aug. 16, 1963, Ser. No. 302,687
4 Claims. (Cl. 108—64)



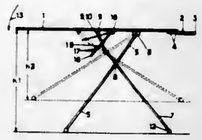
1. In combination, a plurality of modular furniture units each unit having a supported end terminated by a pair of inner and outer substantially rectangular channel members arranged with their channels in opposing relationship, and a modular drop-in table connected to said units, said modular drop-in table comprising a frame having a table top affixed thereto, a plurality of connecting clips each comprising a horizontal plate affixed at one end to said frame extending outwardly and terminating in a depending flange, the inner and outer channel members of each supported end being substantially parallel and spaced apart to form a slot of sufficient width to enable the depending flange of one of said clips to be received therein, the outer channel member of each modular furniture unit being engaged by one of said clips, and means detachably locking each outer channel member in place.

3,199,471
COLLAPSIBLE SHELVINGS
Luigi Oral, Florence, Italy, assignor to Brevets Crea (France), Paris, France
Filed Apr. 24, 1964, Ser. No. 362,423
Claims priority, application Italy, Apr. 30, 1963, 9,102/63
5 Claims. (Cl. 108—114)



1. A collapaible shelving comprising in combination a plurality of vertical uprights adapted to be disposed by pairs, one at the front and another at the back of the shelving, each upright consisting of a section of substantially U-shaped cross-sectional configuration and having therefore two side arms and an intermediate portion adapted to be disposed on the exterior of the shelving; a series of horizontal bracing members adapted to be disposed transversely between two uprights of a same pair, the end portions of said bracing members being adapted to be engaged in the channel of said vertical uprights; hooking projections formed on the end portions of said horizontal bracing members; the side arms of the respective section constituting each vertical upright being bent inwards on themselves to provide a pair of parallel flanges bounding the inner channel of the respective section, said flanges being formed with respective recesses complementary to said hooking projections formed on said end portions of said horizontal bracing members and adapted to receive said hooking projections whereby said bracing members may bear upon said uprights; a series of trays adapted to constitute shelves, complementary hooking means formed on said horizontal bracing members and on the ends of said trays to permit the horizontal mounting of said trays by engaging the tray ends on said bracing members.

3,199,472
FOLDABLE IRONING BOARD
Jacques Dominique Stelniceanu, 17 Rue Thome, Esbly, France
Filed Dec. 11, 1961, Ser. No. 159,822
Claims priority, application France, Nov. 22, 1958, 779,945
12 Claims. (Cl. 108—119)

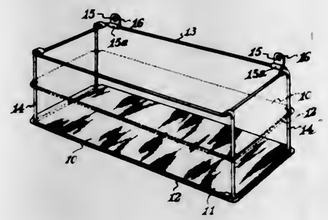


1. A folding ironing board of the type comprising an elongated work board, a rigid first leg having an upper end pivotally attached to said work board at an attachment point between the center of gravity of said work board and one end thereof, said first leg being longer than the distance between said attachment point and the other end thereof, stop means carried by said work board between said attachment point and said other end, a second rigid leg pivotally connected to said first leg at a pivot point which divides each leg into upper and lower portions, the upper portion of said second leg being movable lengthwise of said board between said stop means and said attachment point and adapted to cooperate with said stop means to form with said first leg an X-type support for said work board when said board is in a substantially horizontal position, said ironing board being characterized by the fact that the lower portion of said second leg is longer than the lower portion of said first leg, but the upper portion of said first leg is at least as long as the upper portion of said second leg, the weight of said supper portion of said second leg being counterbalanced to an extent such that when said first leg is vertical, and the lower portion of said second leg hangs free, said second leg will swing about said pivot point toward said first leg to bring said lower portions together.

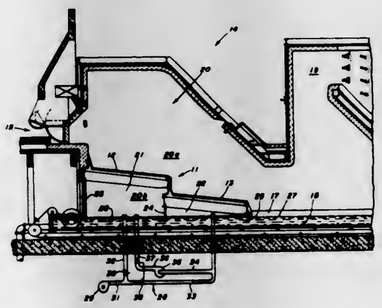
3,199,473
SHOE STORAGE RACK
Wilta L. Smith, 33 S. 70th East Ave., Tulsa, Okla.
Filed Nov. 27, 1962, Ser. No. 240,348
2 Claims. (Cl. 108—159)

1. A storage rack comprised by a top frame of rectangular construction, a pair of end frames narrower in width than the bottom frame and having side members flattened

at their tops, turned at right angles and terminating in beads encompassing the opposite ends of the top frame forming pivots mounting the end frames for swinging movement, a bottom panel having cut away corners receiving the side members of the end frames, and a bottom frame substantially identical in construction with the top frame receiving the free ends of the end frames and supporting the bottom.



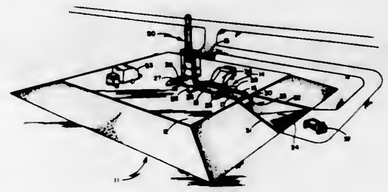
3,199,474
INCINERATOR AND METHOD OF OPERATING THE SAME
Bertram B. Reilly, 17 Briar Cliff Road, Pittsburgh 2, Pa.
Filed June 6, 1963, Ser. No. 286,048
5 Claims. (Cl. 110—8)



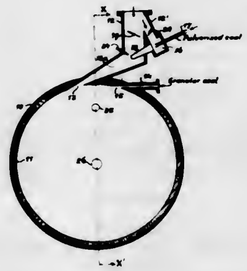
2. The method of incinerating rubbish which comprises discharging the rubbish onto a grate along which the rubbish is progressively moved, and alternately flowing combustion air upwardly through substantially the entire length of the grate and then through only a first portion of the entire length while simultaneously drawing gases from above the grate downwardly through another portion and mixing the gases so withdrawn with the air supplied to the first portion before the air supplied to the first portion has moved upwardly through the grate.

3,199,475
MUNICIPAL INCINERATORS
Harold Siegel, Granby, Mass., assignor to American Capital Corporation, Brookline, Mass., a corporation of Massachusetts
Filed Mar. 21, 1963, Ser. No. 266,971
11 Claims. (Cl. 110—18)

1. An incinerator comprising: means forming at least one open pit, a horizontally movable vertical smoke conduit, means for moving said conduit so as to cover said pit, means for forming a seal between the conduit and said pit, means forming an accessible area adjacent said pit for permitting a vehicle to dump refuse directly into said pit when said pit is uncovered by said conduit, a means associated with said tunnel for receiving ash from said pits and removing said ash from said tunnel.



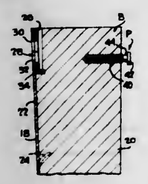
3,199,476
APPARATUS AND METHOD FOR COMPOUND CYCLONE COMBUSTION OF COAL AND OTHER FUELS
Frederick Nettel, 173 Chapel Road, Manhasset, Long Island, N.Y.
Filed Apr. 30, 1963, Ser. No. 276,863
4 Claims. (Cl. 110—28)



1. In a fuel burning system burning solid comminuted fuel, the combination of a substantially cyclindrical cyclonic furnace chamber having an opening for discharging fuel residue in molten state and another opening for discharging combustion gases generated in said furnace, a first source of coarse comminuted (granular) solid fuel, a second fuel source of finely comminuted (pulverized) solid fuel, first regulatable conduit means for admitting a stream of combustion air into said furnace chamber in a substantially tangential direction to the inner surface of said furnace for forming a violent vortex flow therein, first regulatable pipe means for admitting a stream of granular fuel from the said first fuel source into said furnace in substantially tangential direction to the inner surface fo said furnace and in the direction of the vortex flow in such manner that the stream of granular fuel penetrates into said vortex stream of combustion air, regulatable pulverized fuel burner means, second pipe means for admitting a regulatable stream of pulverized fuel from the said second fuel source to said burner means, second conduit means for regulatably branching off combustion air from said first conduit means into said pulverized fuel burner wherein said branched off air serves as combustion air, third conduit means for leading the hot combustion gases generated in said burner means into said first conduit means for mixing with the air stream therein, there-

by forming a hot air-gas mixture outside the furnace proper on its way into the furnace, said hot mixture serving as combustion supporting medium of regulatable temperature for the granular fuel issuing from the said first pipe means.

3,199,477
INTERLOCKING BRICK
Harry A. Marsh, Jr., Rosemont, Pa., assignor to E. J. Lavino and Company, Philadelphia, Pa., a corporation of Delaware
Filed Sept. 18, 1963, Ser. No. 309,750
18 Claims. (Cl. 110—99)



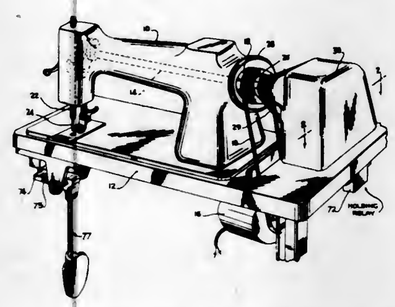
1. An interlocking refractory brick comprising a brick body of refractory material having at least two functional sides for interlocking connection with corresponding sides of another brick, an external plate overlying and secured to one of said sides, a pin reinforcing plate secured to said first plate between the latter and the body of the brick, the brick body having a recess therein covered by said plates, said plates having coinciding matching slots therein leading into said recess and having closed inner ends, and a coupling pin secured to the body of the brick and having a headed end projecting beyond the said other one of said sides, said headed end of said pin being adapted to be introduced in the recess in a brick of like construction and to have a portion of the pin between the head and the brick body introduced into said coinciding slots to the closed end thereof with said head spanning the slots on the inner side of the pin reinforcing plate.

3,199,478
REFRACTORY AND REINFORCEMENT THEREFOR
Robert A. Edwards and Donald C. Burklo, Columbiana, Ohio, assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,331
9 Claims. (Cl. 110—99)



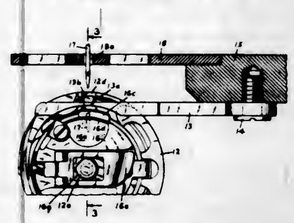
8. A refractory shape having two end faces and side faces, a hanger-receiving recess adjacent one end of said shape and opening onto one side face, a metal reinforcement of U-shaped cross-section embedded in said refractory and two arms adjoined to said web and disposed substantially perpendicular thereto and a metal insert disposed substantially perpendicular to said web and to said side arms and retained in slots in said arms, the web of the metal reinforcement lying in the plane of the second side face of the refractory shape, the arms being embedded in the refractory shape, said insert being longer than the distance between said side arms and less than the distance between two opposite side faces of said brick, whereby said insert is wholly embedded within said refractory shape and disposed between said one end face of said shape and said hanger-receiving recess.

3,199,479
AUTOMATIC NEEDLE POSITIONER FOR SEWING MACHINES
Ronald J. Boser, 261—79 Langston Ave., Glen Oaks, N.Y., and Eugene L. Weschler, 288 Bel-Air Drive, Massapequa, N.Y.
Filed Oct. 14, 1963, Ser. No. 315,822
9 Claims. (Cl. 112—219)



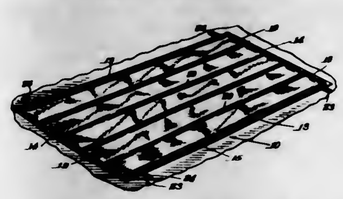
1. A needle positioner for a sewing machine having a drive shaft for moving the needle vertically through a stitching cycle, comprising a rotatable wheel hub, means operatively connecting the wheel hub and shaft so that the hub rotates in coordination with the shaft and completes one revolution while the needle moves through one stitching cycle, another shaft carrying said wheel hub, a pulley on said other shaft, a motor, another pulley driven by said motor, a belt loosely entrained on the pulleys for slipping with respect to the pulleys, a solenoid having plunger means for engaging and tensioning said belt when the solenoid is energized so that the motor drives the wheel hub, a normally closed switch in circuit with said motor, a first arm carried by the plunger and disposed to contact the wheel hub when the solenoid is energized, an obstruction on said wheel hub for engaging said arm at a certain point on the hub, a second arm engaged by the first switch arm and moved thereby when the first arm is engaged by said obstruction, said second arm being disposed adjacent to said switch for actuating and opening the same when the second arm is moved by the first arm, whereby the motor stops when said switch opens, the wheel hub stops rotation when engaged with the first arm, and the needle is positioned at a point coordinated with the position of said obstruction on the wheel hub.

3,199,480
ROTARY HOOK CONSTRUCTION
John N. Covert, Lombard, Ill., and Paul D. Pryor, Williamsport, Pa., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 19, 1962, Ser. No. 231,773
8 Claims. (Cl. 112—231)



2. A rotary hook for a lockstitch machine which comprises a rotary component mounted rotation about a horizontal axis and having a loop seizing beak, a reciprocatory needle for presenting a loop of thread to said loop seizing beak, a bobbin case retainer within said rotary component and about which said component is rotated, a bobbin case mounted within said retainer, readily releasable means for retaining said bobbin case within said retainer, said bobbin case and retainer being adapted to enable axial movement of the bobbin case into and out of the retainer, said bobbin case and retainer having aligned openings in their walls providing a passageway through which a needle may be passed into the interior of the case, and means carried by said bobbin case inwardly of the path of reciprocation of said needle providing a plow-like action across said passageway as the case is removed from the retainer.

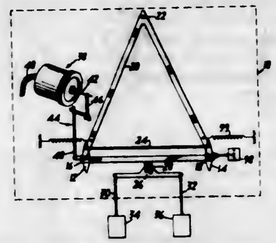
3,199,481
INSULATING ARTICLE
Gary R. Handwerker, Skokie, Ill., assignor to Midwest Canvas Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 18, 1961, Ser. No. 159,841
1 Claim. (Cl. 112—420)



An insulating article for application on the surface of substantially freshly poured concrete to retard dissipation of the heat liberated during the setting and hardening of the concrete comprising two plies of moisture-repellent canvas of substantially equal dimensions, the edges of the plies being stitched together in a manner to resist passage of moisture between the plies, a layer of lightweight thermal insulative fiber-like material of substantially uniform density and thickness encased within the canvas plies, said plies with said layer of insulative material therein being longitudinally stitched together at spaced substantially parallel intervals between the stitched longitudinal edges of the plies to form a plurality of compartments of substantially uniform dimensions each containing a portion of said layer of insulative material and to prevent movement of the layer of insulative material within the plies, the compartments being spaced apart a distance sufficient to enable the article to be folded upon itself along the stitches forming the compartments whereby the compartments can be positioned in stacked relation with respect to one another to place the article in a compact easy to store and handle form and to enable the article to be readily unfolded onto a concrete surface to conserve heat liberated during the setting and hardening of the concrete, and tab means on said article enabling the article to be attached to others of said article in an unfolded condition to provide heat insulation to substantially freshly poured concrete surfaces having dimensions greater than said article, said tab means also enabling said article to be supported in a position other than horizontal.

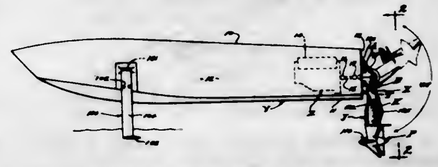
3,199,482
CONTROL MECHANISM
Daniel L. Jaffee, Bethesda, Md., assignor to Vitro Corporation of America, New York, N.Y., a corporation of Delaware
Filed Jan. 9, 1963, Ser. No. 250,373
11 Claims. (Cl. 114—16)

1. A device for restoring the axial orientation and position of a body functioning in a fluid medium, with relative motion therebetween, to a predetermined orientation and position, comprising dynamically actuated sensing means susceptible of controlled orientation relative to the axis of the body and responsive to the axial orientation of the body within the immersing fluid for providing error signals, static pressure sensing means for controlling the orientation of said dynamically actuated



sensing means, orientation control means, and a substantially triangular pivoted frame for activating said orientation control means in response to said error signals to provide a control response diminishing the change in the axial orientation, whereby the axial orientation of the body is restored.

3,199,483
MULTI-USE FOR HYDROFOIL SUPPORTED DISPLACEMENT VESSEL
Floyd P. Elkey, 2301 Marshallfield Lane, Redondo Beach, Calif.
Filed June 3, 1963, Ser. No. 284,889
3 Claims. (Cl. 114—66.5)



1. A multi-use hydrofoil supported displacement vehicle of the character described and including:
(a) a conventionally floatable and normally maneuverable hull,
(b) a pair of retractile hydrofoil units for support of one end of the hull when in horizontal high-speed motion and each comprising an arm pivoted to the side of the hull on a longitudinally disposed axis to swing to a position depending from the hull and having a wing at its lower end disposed in a substantially horizontal plane,
(c) a hydrofoil unit at the other end of the hull and comprising a vertically extensible arm rotatably depending from the hull on a vertical axis and a steerable propeller assembly at the lower end of the arm, and said propeller assembly having a wing disposed in a substantially horizontal plane,
(d) and means operable within the vessel to adjust inclination of the wing at the propeller assembly.

3,199,484
LOAD-ALLEVIATOR HYDROFOIL UNIT FOR WATERCRAFT
Walter R. Wilberg, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Oct. 19, 1964, Ser. No. 404,817
11 Claims. (Cl. 114—66.5)

1. In a watercraft having a hull, a load-alleviating hydrofoil unit comprising:
(a) a sweepback foil having an aft sweep back portion and forward sweep back portion;

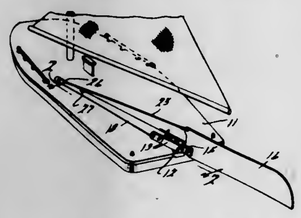
(b) reaction means responsive to movement of said foil and mounted on said hull;

(c) a first arm having one end connected to said reaction means and depending forwardly and downwardly, the other end of said arm fixedly connected to said foil after sweepback portion; and



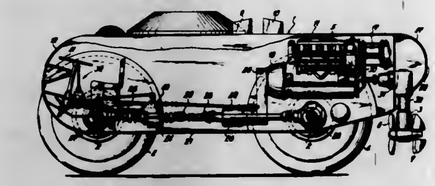
(d) a second arm having one end fixedly connected to said hull and depending downwardly, the other end of said arm pivotally connected to said foil forward sweepback portion, said second arm connection to said hull being longitudinally and laterally spaced apart from said reaction means with respect to the longitudinal axis of said watercraft.

3,199,485
RUDDER AND TILLER FOR SAILING SURFBOARD
Donald S. Snider, 22415 Raymond, St. Clair Shores, Mich.
Filed Dec. 24, 1963, Ser. No. 333,150
6 Claims. (Cl. 114—165)



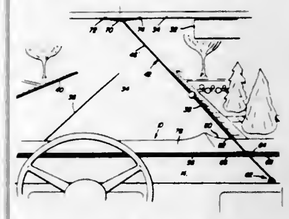
1. In a rudder and tiller for a sailing surfboard, the combination including a member mounted on a substantially vertical pivot adjacent the stern of the surfboard, a rudder pivoted to said member rearwardly of said vertical pivot and swingable between an upper retracted position and a lower steering position, a tiller, a horizontal pivot connecting said tiller with said member, and releasable means for holding said rudder in its upper retracted position.

3,199,486
AMPHIBIOUS VEHICLE
Jean Gillois, Westring 10, Rastatt, Germany, and Hermann Walter Gehlen, Pirmasenserstrasse 60, Kaiserslautern, Pfalz, Germany
Filed June 7, 1963, Ser. No. 286,225
Claims priority, application Germany, June 7, 1962, G 35,152
2 Claims. (Cl. 115—1)



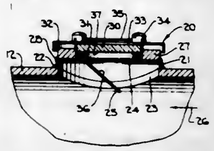
1. Amphibious vehicle having a body adapted to be armored and having power driven front and rear axles connected with front and rear wheels for travel on land, propeller means for travel on water, and drive means for said front and rear wheels and for said propeller means, said wheels being equipped with oversized, shot-proof low pressure tires, the tires for said power driven front wheels projecting ahead of said body, and said drive means including transmission means selectively operative to drive said front and said rear wheels together, said wheels and said propeller means simultaneously, and said propeller means separately, and said transmission mean including a propeller driving transmission portion and a land driving transmission portion operative at a land travelling speed not exceeding the speed of water travel, said propeller driving transmission portion including a horizontal drive shaft and said propeller means including a propeller drive shaft extending perpendicularly to said horizontal drive shaft and being connected thereto and pivotally movable about its own axis and about the axis of said horizontal drive shaft.

3,199,487
VEHICLE GUIDE
Frederick W. Heinkel, 2053 E. Wood St., Decatur, Ill.
Filed May 4, 1964, Ser. No. 364,730
7 Claims. (Cl. 116—28)



1. In combination with a vehicle including a driver's position and means defining a windshield assembly forwardly of said position, a vehicle driving guide for indicating to the driver of said vehicle when his vehicle edges too close to one side of the roadway along which the vehicle is traveling, said guide comprising a pair of upstanding thin guide members horizontally spaced apart at least at their mid-portions and supported in said vehicle inwardly of said windshield assembly and forwardly of and to one side of said position with said guide members defining an upstanding plane extending therebetween and generally longitudinally of said vehicle and slightly forwardly inclined toward said one side of said vehicle and upwardly inclined toward the other side of said vehicle whereby said plane is adapted to define a predetermined inclined line of sight superimposed upon said one side of said roadway.

3,199,488
DUST AND LIQUID DETECTOR
Richard S. Farr, Los Angeles, Calif., assignor to Farr Company, El Segundo, Calif., a corporation of California
Filed Apr. 9, 1963, Ser. No. 271,787
6 Claims. (Cl. 116—114)



5. A device adapted to be mounted over an aperture in a conduit for detecting solid or liquid particles carried in gas flowing through such conduit, the combination of:

a frame for fitting over the conduit aperture and being secured to the conduit, said frame having an element extending through said conduit aperture a small distance into the conduit, said frame having an aperture adjacent said element, a transparent member sealably engaging said frame and closing the said frame aperture, a cap having a central aperture and positioned over said transparent member, means securing said cap to said frame to releasably secure said transparent member to said frame in sealing relation, said element having a flat surface extending at an angle to the direction of gas flow, said surface extending inwardly in an upstream direction and being visible through said transparent member whereby some of the flowing gas is diverted by said surface of the element toward said transparent member to cause some of the particle to come to rest at least momentarily on said surface and said transparent member and are observable through said transparent member.

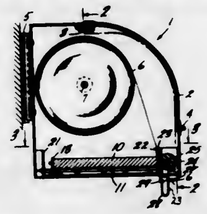
3,199,489
CONTAINER FOR MEDICAMENTS
Leo Ruoss and Ewald Wetzel, Moehlin, Friedrich Marx, Stein, and Hans Luescher, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
Filed Mar. 5, 1964, Ser. No. 349,705
Claims priority, application Switzerland, Nov. 12, 1963, 13,873/63
2 Claims. (Cl. 116—121)



1. A dispenser for a medicament to be administered at specific intervals, which medicament is in the form of pills and the like, comprising a walled container having a rigid base, said base formed with a plurality of concentrically arranged openings, of size sufficiently large to permit press out of said medicament, an easily tearable foil, completely covering said base, extending to the periphery of said base, a central shaft attached to said base, a removably movable dial of radius less than that of said concentrically arranged openings mounted on said shaft, means on said base cooperating with means on said dial for locking said dial, a scale on said foil concentric with and positioned adjacent to the periphery of said dial, each unit of said medicament being positioned on said easily-tearable foil, a non-rigid tear-resistant foil for encapsulating said medicament positioned in said container, whereby said medicament is maintained in registry with said concentrically arranged openings to permit press out egress through said openings.

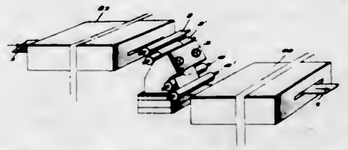
3,199,490
DEVICE FOR DISPENSING, COATING AND CUTTING PAPER WEBS
Laddie Karlik, 410 E. 163rd St., Bronx, N.Y.
Filed Dec. 13, 1961, Ser. No. 160,406
1 Claim. (Cl. 118—43)

A coating device comprising a support frame including a housing; means mounted in said housing to support a roll of material to be coated; a cylindrical element in parallel with said roll and mounted on a shaft within the housing; an end of said shaft extending through a wall of the housing for connection with drive means to effect rotation of the cylindrical element; a block of coating material disposed within the housing, free to ride in a horizontal plane passing through the axis of said shaft and bearing uniformly against an axial extent of the cylindrical element; a pusher and support plate carrying said block of coating material; means to bias said plate towards said cylindrical element to effect contact between the block and a web of material fed off said roll and passing between said block and cylindrical element; said cylindrical element having an abrasive outer surface to establish a frictional contact between the passing web and the block to effect the coating operation; a slot extending transversely of said depending plate; the lower edge of said slot defining a cutting edge substantially parallel to said cylindrical element; a pair of U-shaped strip spring elements each attached at one end,



and depending therefrom, at a respective end portion of said depending plate; a stretching cylinder mounted between the other ends of said spring elements, disposed horizontally below said cutting edge, and in operative alignment to receive therebeneath and guide therearound said passing web for immediate travel through said slot; said spacing elements being so formed that an extent of said web passed through the slot and subsequently pulled downwardly will flex said U-shaped spacing elements to thereby carry the stretching cylinder against the cutting edge and thus serves to clamp the web at said edge to facilitate severing thereof.

3,199,491
APPARATUS FOR COATING ONE SURFACE OF A STRIP BY A FLUID BED SINTERING PROCEDURE
Erich Bäder, Hanau am Main, and Günter Uhlig, Grosskrotzenburg am Main, Germany, assignors to Deutsch Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
Filed Mar. 20, 1961, Ser. No. 97,087
Claims priority, application Germany, Mar. 25, 1960, D 32,946
8 Claims. (Cl. 118—68)

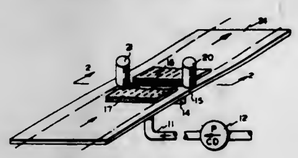


1. Apparatus for the continuous coating of one surface of a band of heat-resistant material, comprising means forming a chamber for containing a fluidized bed of resin power, said chamber having an opening therein, a preheater, and means to guide and feed the band through the preheater and thereafter though a path which includes a portion in which the band lies flatwise across such opening and substantially closes the opening so as to form a wall of the container and one surface of the band faces the interior of the chamber for contact with powder fluidized therein, such portion of the path forming a substantial angle with the horizontal, said guiding means in said portion of the path including means carried by said chamber engaging limited portions only of the other surface of the band including the edges thereof, leaving the main portion of such other surface exposed.

3,199,492
APPARATUS FOR APPLYING A LIQUID CONDITIONING AGENT TO A THIN LAYER OF SUBSTANTIALLY PARALLEL FILAMENTS

Theodore Rudolph Latour, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 14, 1962, Ser. No. 202,485
2 Claims. (Cl. 118—123)



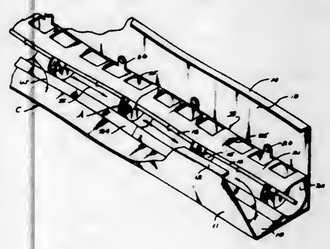
1. An improved apparatus for positively supplying and uniformly applying a liquid conditioning agent simultaneously to a thin layer of substantially parallel longitudinally moving textile filaments having a predetermined width, said apparatus consisting of a support and liquid supply unit positioned in alignment along the path of filament movement, said unit consisting of a horizontal member disposed transversely to the path of filament movement and provided with a planar surface for engaging a given longitudinal portion of one side of the layer of moving filaments, said member provided at each side of said planar surface with laterally opposed guide elements for engaging and controlling the lateral position and said predetermined width of the layer of moving filaments, said member further provided with an internal passageway having a first end intersecting said planar surface in a single elongated narrow slot extending transversely to the direction of filament movement and having an elongated dimension slightly longer than said predetermined width of said layer, and a second end, said opposed guide elements being positioned at each end of said elongated dimension of said slot to effectively narrow said elongated dimension of said slot to said predetermined width of said layer of moving filaments, said internal passageway having between its ends a portion of expanded transverse cross section forming a storage reservoir, said unit further consisting of a liquid agent positive displacement supply pump, said pump provided with one outlet connection; a single conduit element operatively connecting said pump outlet connection to said second end of said internal passageway to positively supply a liquid from said pump via said internal passageway to said reservoir and through said slot to filaments passing over said planar surface of said member, the position of said slot in said planar surface and the amount of liquid supplied by said pump so selected for a given rate of filament movement that the liquid positively supplied through said slot is substantially completely absorbed by said filaments before they pass from said planar surface.

3,199,493
POULTRY FEEDER

Harold W. Hart, P.O. Box 3456, Glendale, Calif.

Filed Aug. 21, 1962, Ser. No. 218,253
9 Claims. (Cl. 119—52)

1. A poultry feed-conveying, distribution and flow-control means engageable in a feed trough having a bottom, forward wall and back wall, including an elongate insert arranged in the lower forward corner of the trough and having a horizontally-disposed apertured top wall with a rearwardly and downwardly-turned lip, a front wall engaged on the front of the trough, a bottom wall adjacent the bottom wall and having an upwardly-projecting rear portion and a rearwardly and downwardly-inclined lip on the upper rear edge of the bottom wall engaging the bottom wall, and an elongate articulated conveyor chain arranged in the insert to extend longitudinally therethrough and adapted to draw feed longitudinally there-

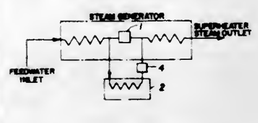


through, urge said feed through the open rear side of the insert, defined by the upper rear edge of the lip on the top wall and the rear edge of the bottom wall, into the trough and to engage and move feed deposited in the insert through the apertures in the top wall.

3,199,494
DEVICES FOR IMPROVING OPERATING FLEXIBILITY OF STEAM-ELECTRIC GENERATING PLANTS

Charles Strohmeyer, Jr., Wyomissing, Pa., assignor to Gilbert Associates, Inc., Reading, Pa.

Filed July 15, 1964, Ser. No. 383,559
5 Claims. (Cl. 122—1)



1. A load carrying steam generator for a steam-electric generating plant having a feedwater inlet, a superheater steam outlet, a water-steam heat absorption circuit therebetween, and a heating system for supplying heat input to said steam generator water-steam heat absorption circuit, said feedwater inlet, superheater steam outlet, water-steam heat absorption circuit and heating system forming an integral heat exchanger for normal operation of said plant, a startup auxiliary heat exchanger externally of said first mentioned heat exchanger and isolated from said heating system, a separate heat generation system externally of said first mentioned heat exchanger for supplying heat input to said startup auxiliary heat exchanger and for increasing the enthalpy of the fluid at said superheater outlet, conduit and flow control valve means included in said water-steam heat absorption circuit and connected between said water-steam heat absorption circuit and said auxiliary heat exchanger to selectively flow fluid during startup of said plant from an intermediate portion of said steam generator water-steam heat absorption circuit between said feedwater inlet and superheater outlet, directly through said startup auxiliary heat exchanger to a portion of said steam generator water-steam heat absorption circuit downstream from said intermediate portion and upstream of at least a portion of said water-steam heat absorption circuit which is connected to the superheater steam outlet, said conduit and flow control valve means including valve means for disconnecting said startup auxiliary heat exchanger from said downstream portion as fluid flow in said steam generator water-steam heat absorption circuit is increased above startup requirements.

3,199,495
TIMING DEVICES FOR ROTARY ENGINES

Lucien Péras, Billancourt, Seine, France, assignor to Regie Nationale des Usines Renault, Billancourt, France

Filed June 8, 1961, Ser. No. 115,809
Claims priority, application France, July 6, 1960, 832,246, Patent 1,269,802
1 Claim. (Cl. 123—8)

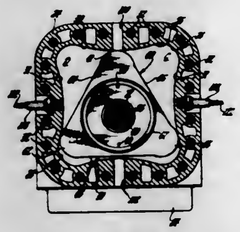


Rotary engine comprising a stator including a pair of end walls and a peripheral wall joining said end walls and defining a hollow working space, a rotating shaft lying along the axis of said working space, an eccentric secured to said shaft, a rotor in said working space rotatably journalled on said eccentric and mounted eccentrically on said shaft, said outer rotor surface being formed with a plurality of lobes of cycloidal configuration, said stator peripheral wall being formed with a plurality of chambers of a shape generally conforming to the shape of said rotor lobes, said stator having one more chamber than said rotor has lobes, valves in each of said chambers of said stator, and means to cause the lifting of said valves, said means comprising a cam rigidly secured to said rotor and consequently having an eccentric movement identical to the movement of the rotor, and members, one for each valve, provided with rollers which rest against the surface of the cam, each of said members being operatively connected to its valve so as to impart a lifting movement to its valve, said cam having a basic contour of generally cycloidal form, said basic contour being such that as the engine and cam rotate, the distance between said rollers and said stator peripheral walls remains constant, said basic contour being increased at suitable points by protuberances by means of which said lifting movement is obtained.

3,199,496
ROTARY INTERNAL COMBUSTION ENGINE

Nathaniel B. Kell, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 22, 1961, Ser. No. 118,881
2 Claims. (Cl. 123—8)



1. A rotary internal combustion engine comprising:

a stationary housing including axially spaced end walls and a peripheral wall, said peripheral wall interconnecting the end walls to form a cavity having an axis;

said peripheral wall comprising first and second pairs of oppositely disposed wall portions, said pairs of wall portions being convex as viewed from said axis, said first pair of wall portions being substantially perpendicular to said second pair of wall portions, and corner portions interconnecting said wall portions of the first pair of said wall portions of the second pair, said corner portions being concave as viewed from said axis, said cavity thus being of generally rectangular cross-section;

a generally triangular piston rotatably received in said cavity, said piston having three working faces disposed at 60° to each other and connected with one another by apexes, said apexes being arcuate and convex outwardly of said rotor;

means to move the axis of said piston rotatably about the axis of said cavity at a fixed distance therefrom, said piston axis being maintained parallel to said cavity axis, said piston being rotatable about its own axis whereby the piston rotation about its own axis is in the opposite direction as the rotation of the piston axis about said cavity axis;

the curvature of said wall portions and said corner portions of said peripheral wall being such that said piston apexes remain at all times closely adjacent said peripheral wall;

said piston working faces being displaced from said peripheral wall at all times, said piston working faces cooperating with said peripheral wall and the end walls of said housing to form three rotatable variable volume combustion chambers;

a combination inlet and exhaust port formed in each wall of the first pair of wall portions and generally intermediate the corner portions thereof and communicating with the cavity, each port adapted to permit air to enter and products of combustion to exhaust from the combustion chambers; and

fuel injection means and ignition means in each wall of the second pair of wall portions and generally intermediate the corner portions thereof and communicating with the cavity, each fuel injection means adapted for introducing fuel directly into the combustion chambers and each ignition means adapted for igniting fuel in the combustion chambers;

said combustion chambers being rotatable around the axis of the cavity and along each wall of the first and second pairs of wall portions to undergo cycles of sequential communication with each of the ports and each of the fuel injection and ignition means in alternating order, the smallest volume of each combustion chamber occurring during each cycle when the piston working face forming one wall of such chamber is substantially opposite and parallel to a wall of the first and second pairs of wall portions which forms another wall of such chamber.

3,199,497
INTERNAL COMBUSTION ENGINE HAVING BY-PASS FOR AUTOMATICALLY ACTUATING AN AUXILIARY SCAVENGER PISTON

Dale A. Dreisbach, 6768 Hinsdale St., Hiram, Ohio

Filed Jan. 24, 1963, Ser. No. 253,645
8 Claims. (Cl. 123—66)

1. A combustion engine of the character described, comprising:

(A) a combustion chamber having inlet and exhaust ports and further including an auxiliary chamber;

(B) a primary piston

(1) reciprocable in said combustion chamber between upper and lower positions and

(2) having a top surface;

(C) a secondary piston

(1) slidably positioned above said primary piston in said combustion chamber and

(2) having imperforate upper and lower surfaces and

(3) being shiftable between upper and lower positions;

(D) ignition means

(1) adapted to ignite gases trapped between said primary and secondary pistons when the same are in said upper positions

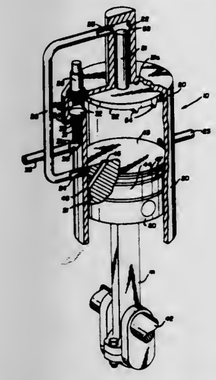
(a) whereby said primary piston will be driven downwardly in a power stroke;

(E) and bypass means carried by said primary piston and said combustion chamber

(1) diverting a portion of said ignited gases out of said combustion chamber and against the upper surface of said secondary piston following a predetermined amount of downward movement of said primary piston in said power stroke

(a) whereby said diverted gases propel said secondary piston downwardly during said downward stroke

(F) means disposed on one of said pistons maintaining a spaced relatinoship between said lower surface of said secondary piston and said upper surface of said primary piston.

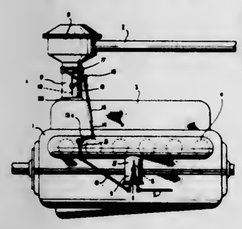


3,199,498

NOISE-SUPPRESSION SYSTEM FOR DIESEL ENGINES HAVING EXHAUST BRAKE MEANS

Wolfgang Scholtysek, Waiblingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany

Filed Sept. 10, 1962, Ser. No. 222,308
Claims priority, application Germany, Sept. 14, 1961, D 37,031
6 Claims. (Cl. 123—97)



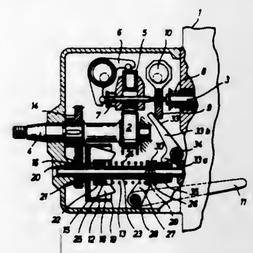
1. An arrangement for reducing the noises in a motor vehicle having a diesel engine and provided with an engine exhaust brake, said diesel engine having air suction means including a suction line, an air intake manifold and an oil-bath air filter between said suction line and said intake manifold, exhaust means provided with engine exhaust brake means, said engine exhaust brake means including throttle valve means and means for selectively actuating said throttle valve means, and means for reducing the noises occurring in the oil-bath air filter and the suction line including further throttle valve means within the suction means of the engine located to the rear of said oil-bath air filter, and means operatively connecting said first-mentioned throttle valve means with said second-mentioned throttle valve means to operate said throttle valve means essentially in unison and in the same sense.

3,199,499

DEVICE FOR REGULATING THE DELIVERY OF FUEL INJECTION PUMPS

Rudolf Kleeberger, Munich, Germany, assignor to Kugelfischer Georg Schafer & Co., Schweinfurt, Germany

Filed May 19, 1964, Ser. No. 368,508
5 Claims. (Cl. 123—140)



1. A device adapted to regulate the rate of fuel delivery of a fuel injection pump by varying the stroke length of a pump plunger which is adapted to be driven by a rotary cam, the starting position of the pump plunger before each delivery stroke being determined by the respective position of a rocker mounted on a pivot and constituting an abutment serving to limit the length of the suction stroke of the plunger, said pivot being adjustable independently of engine speed there being provided a speed transducer responsive to the speed of the associated internal combustion engine, wherein there is provided, for the purpose of transmitting the output force of the speed transducer to the suction stroke limiting rocker, a two-armed bell crank lever having a long arm resting against the free end of the pivotally mounted rocker, and having a short arm adapted to cooperate with a control member mechanically connected to the said speed transducer, the said bell crank lever and the said control member being adapted to act as a locking mechanism as long as the pump plunger abuts the said rocker.

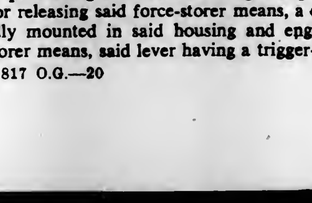
3,199,500

DISTRIBUTOR FOR INTERNAL COMBUSTION ENGINES AND CONTROLS THEREFOR

Heinz Möller, Stuttgart, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed May 21, 1963, Ser. No. 281,894
Claims priority, application Germany, May 25, 1962, B 49,325
4 Claims. (Cl. 123—146.5)

1. For use with an internal combustion engine, in combination, a distributor including rotary cam means adapted to be driven by the internal combustion engine, interrupter switch means actuated by said rotary cam means, centrifugal means operatively connected to said cam means for adjusting the latter according to the engine speed so as to adjust the timing of the distributor, and a turnable interrupter plate carrying said switch means for adjusting the latter relative to said cam means so as to further adjust the timing of the distributor; a throttle valve; an accelerator lever; first motion transmitting means operatively connected to and extending between said accelerator lever and throttle valve, said accelerator lever having an idling end position where said first transmission means places said throttle valve in a substantially closed position and said accelerator lever having an opposed open-throttle end position where said first transmission means places said throttle valve in a substantially fully open position; and second transmission means operatively connected to said first transmission means and said interrupter plate for adjusting the latter according to the position of said throttle valve, said second transmission means maintaining said interrupter plate stationary during movement of said lever from said idling end position thereof to an intermediate position between said idling and open-throttle end positions of said lever and said second transmission means transmitting movement of said first transmission means to said plate for turning the latter in a direction which retards the timing of the distributor during movement of said accelerator lever beyond said intermediate position thereof toward said open-throttle end position thereof, said second transmission means including a pair of motion transmitting elements and a pin-and-slot connection therebetween, the slot of said pin-and-slot connection having a curvature which prevents transmission of motion by said second motion transmitting means from said first motion transmitting means to said interrupter plate during turning of said accelerator lever between said idling end position and said intermediate position thereof and which provides turning of said interrupter plate when said accelerator lever is moved within the range of turning thereof located between said intermediate position and said open-throttle end position thereof, said distributor including a distributor housing, said pair of motion transmitting elements of said second motion transmitting means including a lever member turnably connected to said housing and a second member fixed to said interrupter plate, one of said members carrying the pin of said pin-and-slot connection and the other of said members carrying the slot of said pin-and-slot connection.



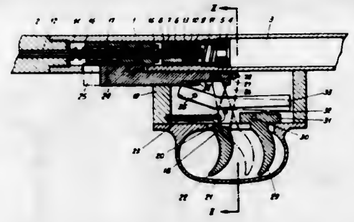
3,199,501

GAS-OPERATED, MANUALLY COCKED SHOOTING DEVICE

Jakob Bertschinger, "Im Hof," Lenzburg, Switzerland

Filed Dec. 30, 1960, Ser. No. 79,825
Claims priority, application Switzerland, Dec. 31, 1959, 82,540
4 Claims. (Cl. 124—11)

1. A gas-operated manually cocked shooting device, comprising a barrel, a casing joined with said barrel and forming a gas pressure chamber, a normally closed outlet valve through which said chamber communicates with said barrel, force-storer means for momentarily opening said valve when released, a trigger housing adjacent to said casing at the bottom side thereof, a shooting trigger downwardly protruding from said housing and pivotally movable for releasing said force-storer means, a cocking lever pivotally mounted in said housing and engageable with said storer means, said lever having a trigger-like actuator member protruding downwardly from said housing near said shooting trigger and pullable to the rear for charging said force-storer means, said actuator member being located sufficiently close to the trigger so that both the actuator member and the trigger can be operated by the index finger of the shooting hand without changing the position of the shooting hand.



3,199,502

BOW STRING SIGHT ASSEMBLY AND METHOD OF FORMING A BOW STRING SIGHT

Guy Austin Stonecipher, 6450 Calder, Beaumont, Tex.

Filed Sept. 24, 1962, Ser. No. 225,579
9 Claims. (Cl. 124—30)



1. A bow string sight, for use in archery, comprising a sight assembly installed at the locus of the line of sight in the strands of the bow string, the sight assembly including means interposed between the strands of the bow string for holding two or more of the strands of the string apart, providing a viewing path through which the target is seen by the archer, when the bow string is drawn proximate the archer's eye.

3,199,503

FIREPLACE STOVE

Carl J. Hanson, Box 312, Buffalo, S. Dak.

Filed Oct. 4, 1963, Ser. No. 314,070
2 Claims. (Cl. 126—25)

1. A fireplace stove comprising in combination:

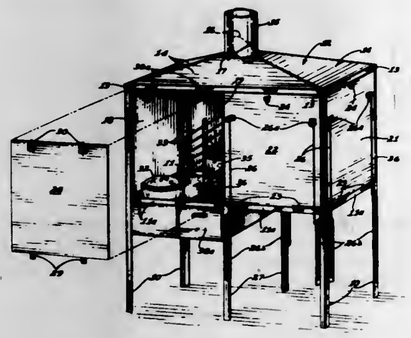
(A) a plurality of upright legs,

(B) an elevated floor supported at its corners intermediate the ends of said legs,

(C) a roof supported at its ends on the top ends of said legs,

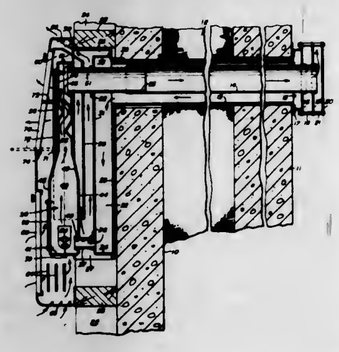
(D) upwardly and inwardly sloping panels on said roof,

(E) a stove pipe extending upwardly from the upper inward ends of said sloping roof panels,
(F) a control damper in said stove pipe,
(G) a series of hinged doors hinged at their bottom edges at outside edge portions of said elevated floor,



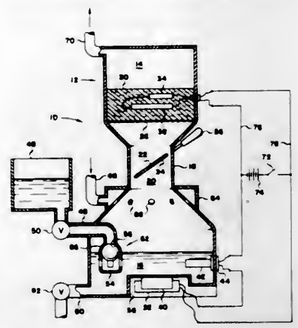
(H) a log fire ash grate in said elevated floor,
(I) a removable door having its lower edge supported on another edge portion of said floor adjacent said log fire ash grate and its upper edge demountable secured to said roof,
(J) and an ash box mounted under said floor below said ash grate.

3,199,504
DUAL PURPOSE SPACE HEATER
Lake O. Morin, Jr., Lookout Mountain, and Albert B. Chamberlain, Chattanooga, Tenn., assignors, by mesne assignments, to Royal Incorporated, Chattanooga, Tenn., a corporation of Tennessee
Filed Mar. 9, 1962, Ser. No. 178,606
2 Claims. (Cl. 126—91)



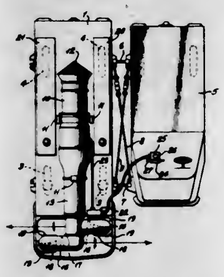
1. In sealed combustion chambers for wall mounted space heaters of the type wherein a pair of generally rectangular vertically arranged shallow pan-shaped metal stampings are joined to each other along their marginal edges in facing abutment to form a hollow chamber, said chamber having parallel front and back vertical upper walls and parallel front and back vertical lower walls, said lower walls being spaced from each other a substantially greater distance than the distance between the upper walls and being joined to the respective upper walls by tapering symmetrically arranged intermediate walls, said chamber being provided with an air inlet opening at the bottom and a combustion products outlet opening in a vertical wall at the top, said intermediate walls serving to delay the flow of combustion products from the lower portion of the chamber and the upper portion of the chamber being provided with means to restrict the flow of combustion products to said outlet means, said restriction means including a pair of inwardly directed ribs formed in the respective upper front and back walls and vertically offset with respect to each other below the level of the outlet opening and extending horizontally across substantially the entire width of the chamber.

3,199,505
CATALYTIC COMBUSTOR TYPE HEATING DEVICES
John Thomas Lloyd, Glendale, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif., a corporation of California
Filed May 9, 1962, Ser. No. 193,416
3 Claims. (Cl. 126—95)



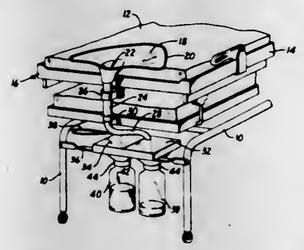
3. A catalytic combustor heating device comprising:
(a) a continuous housing having a lower fuel chamber and an upper gas chamber connected by means defining an open passage therebetween;
(b) a porous catalyst bed for causing combustion of a gaseous mixture of reactants capable of producing heat, said bed located in said upper gas chamber and covering the upper extremity of said passage means so as to require that all reactants entering said upper gas chamber pass through said bed;
(c) exhaust gas outlet means in an upper extremity of said upper gas chamber;
(d) means for introducing a fuel into said fuel chamber, said last mentioned means including a fuel level regulating means;
(e) manifold means surrounding a portion of said housing and adapted for introducing oxygen into said housing so as to mix with vapors emanating from said fuel in a manner to support combustion when such mixture is passed through said catalyst bed;
(f) mechanical regulating means disposed within said passage for regulating the quantity of reactant mixture passed through said passage to said catalyst bed;
(g) separate electrically operated heater means respectively located in said catalyst bed for heating said catalyst bed and in heat transfer contact with a portion of said lower fuel chamber with which said fuel maintains direct contact for heating said fuel; and
(h) separate thermostatically controlled switch elements respectively located in said catalyst bed and said lower fuel chamber to control said heating elements, said thermostatically controlled switch within said lower fuel chamber being located so as to be covered by fuel.

3,199,506
DEVICE FOR CLEARING WIDE ROADS OR RUNWAYS COVERED WITH SNOW AND ICE
Jean Henri Bertin, Neuilly-sur-Seine, and Ernest Dubois, Fontenay-aux-Roses, France, assignors to Société Bertin & Cie, Paris, France, a company of France
Filed Feb. 27, 1963, Ser. No. 261,462
Claims priority, application France, Mar. 3, 1962, 889,900
1 Claim. (Cl. 126—271.2)



A device to clear a wide strip along the ground by using hot gas jets to expel water, snow and ice away and to dry said strip, comprising, in combination, a turbojet engine having an air compressor, wheeled motor vehicle means for supporting and moving said turbojet engine along said strip, a jet pipe connected to said turbojet engine and disposed ahead of said vehicle means, at least two curved ducts, said jet pipe branching out into said ducts, said ducts having outlets positioned adjacent the ground and substantially transversely with respect to said vehicle means, said outlets facing each other in front view and being slightly offset in lateral view, a plurality of deflecting nozzles arranged around said outlets, distributing means controllable by an operator, and supply lines connecting said distributing means to the respective deflecting nozzles and to the engine air compressor, whereby compressed air can be selectively supplied to any one of said nozzles and deflect the exhaust gas issuing from said adjacent curved ducts.

3,199,507
BLOOD LOSS MEASURE
Michael L. Kamm, 62 Panoramic Way, Berkeley, Calif.
Filed Apr. 24, 1963, Ser. No. 275,355
4 Claims. (Cl. 128—2)



1. In combination with an obstetrical table, an obstetrical apparatus for measuring blood loss during an obstetrical operation which comprises: a fluid impervious web positioned on said table adjacent to one end thereof and having a peripheral raised portion thereof forming a dike against flow of fluids off said web and a sump conduit for directing fluids downwardly from said web, means supporting a pair of receptacles below said table for the receipt of different bodies of fluid, and manually operable means positioned below said table at said end thereof and manipulatable by the knees of the obstetrician for permitting the obstetrician to direct the fluid flow in said sump conduit into either of said receptacles, one of said receptacles being translucent and calibrated to indicate a content of about five hundred cubic centimeters.

3,199,508
CODING OF PHYSIOLOGICAL SIGNALS
Norman A. Roth, St. Paul, Minn., assignor to W/R Medical Electronics Co., St. Paul, Minn., a corporation of Minnesota
Filed Apr. 25, 1962, Ser. No. 190,013
9 Claims. (Cl. 128—2.06)



1. In combination: a plurality of electrical probes each adapted for sensing physiological signals of a different nature; an amplifier having its input coupled to said probes for producing output signals which are amplified substantial reproductions of said sensed physiological signals; a D.-C. voltage divider network for providing a plurality of D.-C. electrical reference coding signals; a signal output line for transmitting electrical signals to a utilization device; and means for selectively switching said signal output line to the output of said amplifier or respectively different ones of said voltage divider coding signals whereby each of the respective physiological signals appearing on said signal output line is suitably identified by associated D.-C. electrical coding signals on said output line.

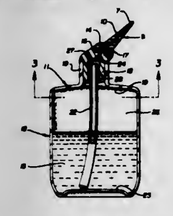
3,199,509
SWINGING SLING
Genevieve M. Smith, Medford, Oreg., assignor of one-third to Sacred Heart Hospital, Medford, Oreg., a corporation of Oregon
Filed July 17, 1962, Ser. No. 210,419
2 Claims. (Cl. 128—94)



1. An arm sling adapted to be used in conjunction with an elongated substantially horizontal overhead support for supporting an arm extending in substantially a straight line from the shoulder of a user of the sling and substantially parallel to the support, said arm sling consisting of an elongated generally cylindrical member having a first end positionable adjacent the shoulder of a user, and a second end positionable adjacent the wrist of a user, and a straight arm receiving open-ended passage extending longitudinally therethrough, said cylindrical member being formed solely of a flexible material provided with a soft interior capable of cushioning an arm received therein, said cylindrical member being flexible throughout the length thereof, two rows of apertures extending longitudinally along the upper portion of the cylindrical member in spaced parallel relation to each other, each aperture in each row being transversely aligned with a corresponding aperture in the other row thereby providing a series of pairs of apertures, a plurality of elongated tie straps, each strap having the central portion thereof extending between the apertures of one of said pairs within the interior of the cylindrical member, the opposite ends of the strap extending outwardly through and beyond the apertures for engagement with the overhead support and a

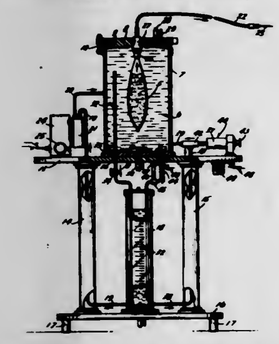
pair of tie straps secured solely to the upper part of the first end of said cylindrical member and extending rearwardly thereof for attachment to a suitable support so as to limit longitudinal movement of the member relative to an arm supported therein.

3,199,510
HYGIENIC DENTAL DEVICE
William W. Sinai, Orinda, Calif. (2844 Summit St., Oakland, Calif.)
Filed Aug. 27, 1962, Ser. No. 219,440
3 Claims. (Cl. 128—173)



1. A hygenic dental device comprising, a member having a pointed tip composed of soft flexible resiliently compressible material and being of elongated smoothly tapered form with the pointed and adjacent portions of the tip being of such size to enable said part to be inserted into the spaces between the teeth for ejection of food particles and for massaging adjacent gum tissue, said member being formed with an interior passage opening to said tip, and fluid discharge means connected to said member for inducing fluid flow through said passage and for discharge from said tip and cofunctioning therewith for dislodging and flushing out of said spaces food particles lodged therein.

3,199,511
APPARATUS FOR PRECISE ADMINISTRATION OF PARENTERAL FLUIDS
George Kulick, 111 E. 61st St., New York 21, N.Y.
Filed Apr. 26, 1961, Ser. No. 105,730
4 Claims. (Cl. 128—214)



1. Apparatus for the precise administration to a patient of parenteral fluids and the like comprising a parenteral fluid container connected to an infusion tube and needle for connection to and administration of parenteral fluid to a patient, an incompressible fluid container, said containers having a common wall therebetween to isolate the fluids in the respective containers, said wall being yieldable to communicate the pressure in the incompressible fluid container to the parenteral fluid container, a supply reservoir containing incompressible fluid therein, a positive displacement pump connected between the supply reservoir and the incompressible fluid container to pump incompressible fluid from the supply reservoir into said incompressible fluid chamber at a predetermined constant flow rate whereby to expel parenteral fluid from the parenteral fluid container at exactly the same flow rate as incompressible fluid is forced by the pump into the incompressible fluid container and independent of the impedance to flow presented by the connection to the patient.

3,199,512
VALVED DILATING DEVICE FOR HYGIENIC IRRIGATION
John J. Cavanaugh and Burton L. Forbes, Denver, Colo., assignors to Denab Laboratories Inc., Denver, Colo., a corporation of Colorado
Filed Feb. 1, 1963, Ser. No. 255,434
1 Claim. (Cl. 128—244)

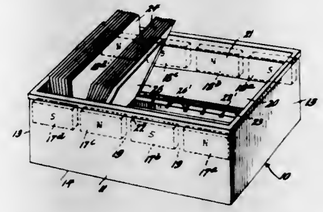


A device of the character described comprising a central tube having one end arranged for attachment to a source of fluid, a fluid discharge arranged on the opposite end of said tube, rotatable plug valve means intermediate the ends of said tube arranged to open and close the passage in said tube, a pair of speculum arms mounted externally of said tube and movable from a closed position substantially encompassing said tube to an open position extended away from said central tube, a pivot member interconnected with each said arm with one telescoped in the other and both mounted on said valve means, a handle interconnected with each said speculum arm arranged to open said speculum when said handles are pressed together, means interconnecting the pivot member of one of said speculum arms with one end of the plug of said valve whereby moving said handles together simultaneously opens said valve and said speculum arms, and means for pivotally securing the other said pivot member to the opposite end of said plug.

3,199,513
MAGNETIC CARD FILING DEVICE
Nicolaus Per Mathiesen, 1512 Primm Ave., San Jose 22, Calif.
Filed Nov. 30, 1962, Ser. No. 241,398
3 Claims. (Cl. 129—16)

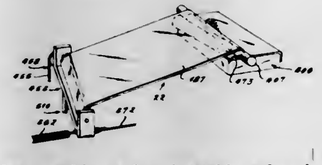
1. A card filing device comprising a tray having opposed side walls, opposed end walls and a bottom, and means for establishing a horizontal series of magnetic fields of alternately reversed polarity immediately adjacent each said side wall, each said magnetic field extending into said tray for a part of the length of the adjacent side wall, the magnetic fields extending toward each other from opposite sides of the tray being of equal longitudinal extent and being disposed in transverse alignment, and a liner of non-magnetic material disposed inwardly of each said side wall and defining a space between said liners for

the reception of file cards, said means comprising a plurality of permanent magnets arranged in two opposed series, the magnets of each series being disposed in side-



by-side relation with their magnetic axes disposed crosswise of said tray and their polarities alternating, said side walls being of steel and said magnets being adhered directly to the infacing surfaces of said side walls by magnetic attraction.

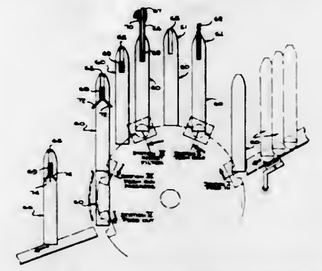
3,199,514
CIGAR MAKING MACHINE
Albert Louis Petri, Atherton, Calif., and Henry Lewin, Clarksville, Tenn., assignors, by mesne assignments, to Petri Cigar Company, Clarksville, Tenn., a corporation of Tennessee
Original application Mar. 13, 1959, Ser. No. 799,137, now Patent No. 3,105,497, dated Oct. 1, 1963. Divided and this application Nov. 26, 1962, Ser. No. 239,888
9 Claims. (Cl. 131—33)



1. In a cigar machine, a forming table, a forming apron on said table, a forming roller, means adapted to supply a filler charge to said apron, means adapted to supply a wrapper to said apron, means adapted to impel said roller rectilinearly along said table in a series of intermittent steps to advance the filler charge to predetermined positions relative to the wrapper whereby said filler charge is rolled in said wrapper in a loop of said apron to form a cigar, said apron being free at one end and secured to said table at the other end, apron engaging means engaged with said free end and adapted to apply tensioning force to said apron, and other means engaging said apron engaging means and adapted to apply stretching force alternately to each edge of said apron independently of the tensioning adjustment of said apron.

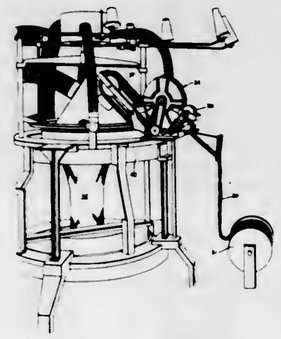
3,199,515
APPARATUS FOR MAKING SMOKING ARTICLES
Nicholas Lowe, Bayside, N.Y., and Frank T. Bartolomeo, deceased, late of Merrick, N.Y., by Julia A. Bartolomeo, executrix, Merrick, N.Y.
Filed Nov. 26, 1962, Ser. No. 240,175
9 Claims. (Cl. 131—94)

1. Apparatus for making smoking articles comprising article transfer means for transferring smoking articles from one position to another, feed means for feeding at least partially manufactured smoking articles to said article transfer means, air passage forming means for forming air passage means in each smoking article, said air passage means comprising a housing having an opening for receiving a smoking article, piercing means movably supported by said housing for piercing said smoking article and thereby forming said air passage means, article shifting means for moving a smoking article into and out of said housing, solenoid means operatively connected



with said piercing members for causing actuation thereof, and switch means engaged by a portion of said article shifting means for operating said solenoid means in timed relationship to the movement of a smoking article.

3,199,516
PROCESS OF MAKING LONG HAIRED PILE FABRIC AND MAKING ARTIFICIAL HAIR-PIECES THEREFROM
Daniel Frishman, Andover, Mass., assignor to Reid-Meredith, Inc., Lawrence, Mass., a corporation of Utah
Original application Sept. 12, 1963, Ser. No. 308,598, now Patent No. 3,139,093, dated June 30, 1964. Divided and this application Feb. 27, 1964, Ser. No. 356,997
10 Claims. (Cl. 132—5)



4. A method of fabricating long hair pile fabric from which a wig or other textile products may be made comprising

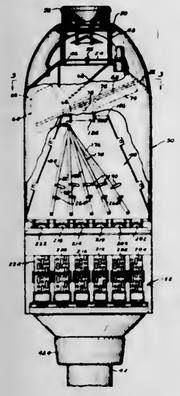
(a) arcuately feeding a continuous web of filaments substantially all of which have lengths of at least five inches to a plurality of knitting needles,

(b) allowing said needles to engage said filament at random points along the filament lengths,

(c) knitting a base fabric on said needles and allowing a portion of said filaments to be looped into the bights of the loops of the knit structure of said fabric as said fabric is formed,

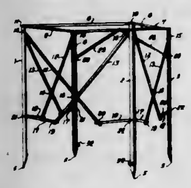
(d) through doffing means moving those portions of said filaments remaining on the doffing means over a straight line path continuous with said arcuate path which allows those portions of said filaments remaining on the doffing means to be pulled therefrom by said needles over increasingly angular paths to said straight line path whereby breakage and entanglements are minimized.

3,199,517
FARE BOX WITH SORTER
Albert S. Wheelhorper, Statesboro, Ga., assignor, by mesne assignments, to Farebox Corporation of America, Inc., a corporation of Kansas
Filed June 29, 1961, Ser. No. 120,641
27 Claims. (Cl. 133—3)



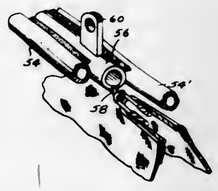
1. A coin sorting apparatus for separating and distributing coin pieces according to their denominations comprising: means providing a compartment having a coin inlet and a coin outlet; a row of coin guide members disposed in said compartment between said inlet and said outlet, means pivotally mounting said coin guide members independently of each other about substantially parallel spaced apart axes for movement in a substantially common plane from one position to another position spaced apart from said one position, said coin guide members being so arranged in said one position that they abut adjacently disposed ones of said coin guide members adjacent said inlet, and means responsive to different coin denominational sizes introduced into said apparatus for automatically shifting a different predetermined number of said guide members in succession from said one position to said other position to form a different guideway through said compartment for each denomination of coin piece to be sorted.

3,199,518
COLLAPSIBLE SHELTER FRAME
Herman A. Glidewell, 8155 San Benito, Dallas 18, Tex.
Filed Dec. 9, 1963, Ser. No. 328,812
5 Claims. (Cl. 135—4)



1. In a collapsible shelter frame,
four corner posts,
top braces extending between the posts,
each said top brace being pivotally attached at one end to a separate post
and disengageably attached at the other end to an opposite post;
diagonally extending crossed braces
pivotally attached at their upper ends to opposite posts
and pivotally attached together at the point where they cross;
links
having one of their ends pivotally attached to the lower ends of the crossed braces
and pivotally attached to opposite corner posts at their other ends;
the said corner posts being right angular in cross-section
and complementary in dimension
and disposed in opposed relationship to each other so as to provide a hollow rectangular housing when brought together;
and the braces being of such length and dimension that they may be confined within the rectangular housing when the frame is collapsed.

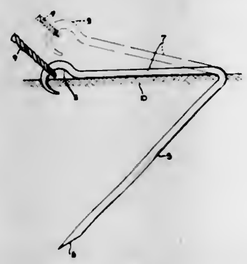
3,199,519
CARGO TENT
Bertie Ross, Metairie, La., assignor to Charles T. O'Neill, Brooklyn, N.Y.
Filed June 21, 1961, Ser. No. 118,675
6 Claims. (Cl. 135—6)



6. Cargo tent for mounting above the cargo hold of a ship or the like to facilitate cargo handling in inclement weather comprising: opposed tent sidewalls converging at their upper ends to define an apex portion, aligned tent cables carried along the apex portion of each of said tent sidewalls in spaced apart relationship, said tent cables being joined together at opposite ends of said tent sidewalls, auxiliary means connected at spaced points to each of said cables intermediate the ends thereof and means slidably engaging and operatively joining said auxiliary means in abutting relationship, said slidable means being movable relative to said tent cables whereby cargo lines passing between said tent cables are movable between the opposite joined ends of said tent cables to facilitate cargo handling.

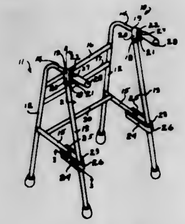
3,199,520
TENT PEGS
Allen Richard Hockly Cawood, Plot 232 Von Willigh Ave., Lyttelton Small Holdings, Transvaal, Republic of South Africa
Filed June 12, 1963, Ser. No. 287,427
Claims priority, application Republic of South Africa, June 29, 1962, 62/2,769
6 Claims. (Cl. 135—15)

2. For use with a tent part to maintain a restraining force thereon and connect said tent part to the ground, a tent peg consisting essentially of an earth-penetrable shank part adapted to be inserted at an angle in said ground, a tension resisting arm adapted to lie along the ground and including a free end and a further end coupled to said shank part, said arm and shank part being integrally connected and hook means on said free end for engaging said tent part, said arm having a normal position of rest relative to said shank part and, in said position of rest, being at an acute angle relative to said shank part, said arm being resiliently yieldable relative to said shank part, said hook means being adapted in all positions of said arm to engage said tent part with said restraining force having a direction substantially coplanar with the shank part and said arm, said shank part being at least as long as said arm, said hook means opening towards



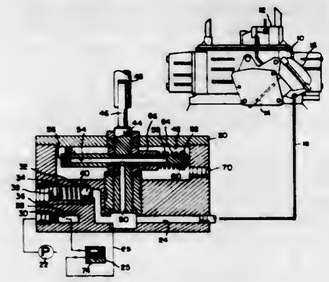
said shank part and projecting from said arm towards said shank part such that with said arm lying on the ground said hook means is resiliently urged against the ground to trap said tent part thereagainst.

3,199,521
WALKER OR WALKER AID
Elmer F. Ries, Cincinnati, Ohio, assignor to The Ries Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 22, 1961, Ser. No. 161,555
2 Claims. (Cl. 135—45)



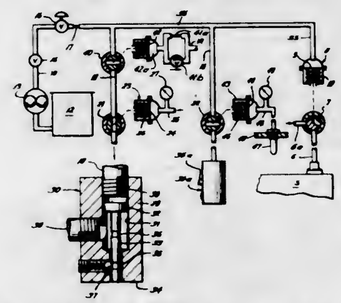
1. In a walker or walker aid the combination of a pair of side frames, each side frame including an upstanding front leg slightly rearwardly inclining and each front leg having a bottom end and a top end with said top end having integral therewith a rearwardly extending frame top, a rear leg for each side frame having a bottom end and a top end, each rear leg having its top end pivotally connected with its side frame top at a point rearwardly spaced from the top end of its front leg, said rear legs each being free of the other and each adapted to swing by gravity through a given arc toward and from its front legs wherefore the bottom ends of said front and rear legs are relatively close and relatively remote from one another at the opposite ends of the arc of swing of the rear legs but with said front and rear legs simultaneously having their bottom ends on a supporting surface at each end of the arc of swing of the rear leg, a rod carried by and rearwardly extending from each side frame front leg to be engaged by its back leg limiting the swinging movement of said rear leg toward its front leg so that the position of the rear leg is such that it has a position toward its front leg substantially vertically from its pivot, means associated with each side frame limiting the swinging movement of its rear leg from its front leg, and means spacedly joining the front legs of said frames to rigidly connect and space said frames laterally of one another and forming a space therebehind corresponding to the rearward spacing of the rear leg pivots from the front leg tops and laterally between the said rear legs.

3,199,522
HYDRAULIC SPEED AND TEMPERATURE GOVERNING SYSTEM
Thomas F. Cramer, Stratford, Ontario, Canada, assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Jan. 16, 1961, Ser. No. 82,867
12 Claims. (Cl. 137—20)



9. A hydraulic speed and temperature responsive throttle governing system interposed between a source of hydraulic pressure employing hydraulic fluid which has its viscosity variable in accordance with its temperature and a throttle controlling motor, comprising a speed and temperature responsive device including a hydraulic fluid supply passage, a bypass passage connected to said supply passage, a speed responsive valve in said bypass passage which forms a variable restriction in said bypass passage at speeds approaching governed speed, and temperature responsive means interconnected in said supply passage in series with said speed responsive valve operable to form a restriction variable in accordance with the temperature of the hydraulic fluid for maintaining the pressure of the fluid at a value independent of the effect of the temperature of the hydraulic fluid on its viscosity.

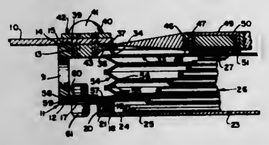
3,199,523
POWER PLANT SAFETY SYSTEM
Gareld R. McEathron, 5323 Northridge, Houston 33, Tex.
Filed June 12, 1961, Ser. No. 116,540
3 Claims. (Cl. 137—26)



1. The combination in a power plant safety system comprising a control having power plant normal running and stopping positions, an instrumentality sensitive to the occurrence of an abnormal condition of the power plant, a source of pressured fluid, means normally urging said control to said stopping position, motor means operatively connected to said control, and a fluid line connecting said source to said motor means, of a pressure venting device comprising a casing forming a working chamber having spaced inlet and venting ports in the wall thereof, a plunger slidable in said chamber from a first position closing communication between said ports to a second

position in which said ports are in communication through said working chamber, a fluid connection between said inlet port and said fluid line, a valve in said connection, and means operatively connecting said valve and said condition sensitive instrumentality for opening said valve responsive to an abnormality of the conditions sensed by said instrumentality to expose said inlet port and said plunger to pressure fluid from said fluid line and thereby cause shifting of said plunger to said second position with resultant venting of said fluid line and shifting of said control to said power plant stopping position.

3,199,524
MAGNETICALLY CONTROLLED EXHALATION VALVE
John Everett Mitchell, Costa Mesa, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,732
10 Claims. (Cl. 137—63)

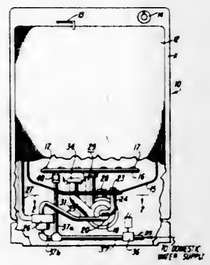


1. An exhalation pressure operated valve comprising a body portion formed with a plurality of exhaust openings therein, a downwardly directed valve seat supported adjacent the top of the body portion, a valve means having an upper and a lower surface, said valve normally being biased into engagement with said seat, said valve being secured to and supported by a spring extended bellows connected to the lower portion of said body portion and the lower surface of said valve, open frame means mounted in the upper portion of said body portion, magnet means supported in said frame cooperating with said spring extended bellows to positively retain said valve means seated in closed position against said downwardly directed valve seat intermittently between exhalation pressure unseated open position of said valve means, said valve means being disengaged from said valve seat by exhalation pressures on the upper face of said valve whereby said spring extended bellows is partially contracted with each exhalation and permits exhalation exhaust from said exhaust openings, and said valve means having a centrally positioned attraction plate carried thereby below said magnet means, said magnet being vertically adjustable in said frame, to thereby vary the effect of the magnetic field with respect to said attraction plate upon actuation of said valve means by exhalation pressure.

3,199,525
CONTROL SYSTEM FOR DISHWASHER
David A. Jellies, Fullerton, Calif., assignor to General Electric Company, a corporation of New York
Filed Dec. 26, 1962, Ser. No. 246,933
2 Claims. (Cl. 137—107)

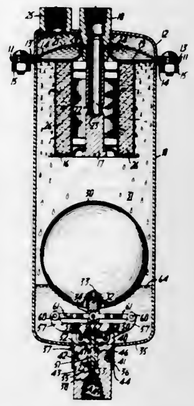
2. In a dishwasher including a dishwasher tub, the combination comprising:

(a) first and second electric switch means adapted to be operated between open and closed circuit conditions in a predetermined time sequence,
(b) a drive motor controlled by said first switch,
(c) a drain pump driven by said drive motor,
(d) a recirculation pump driven by said drive motor,
(e) an electrically operated valve in circuit with said second switch and operated thereby between closed and open positions, said valve communicating with a water supply system,
(f) a conduit communicating between the dishwasher tub and said first valve to supply water to the dishwasher tub,



(g) said first switch means operating to maintain said drive motor energized throughout a predetermined period and said second switch means operative intermittently to open and close said valve during said period,
(h) a normally open second valve to control the removal of water from the dishwasher tub, and
(i) means for causing said second valve to be closed whenever said first valve is open and allowing water to flow therethrough.

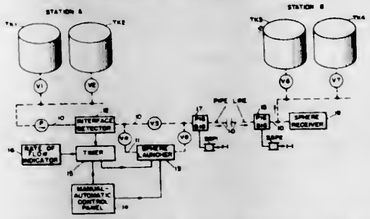
3,199,526
FLOAT OPERATED SEPARATOR
David B. Pall, Roslyn Estates, N.Y., assignor to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Continuation of application Ser. No. 82,442, Jan. 13, 1961. This application Apr. 18, 1963, Ser. No. 274,393
7 Claims. (Cl. 137—192)



1. A separator for removing a dispersed heavy liquid from a suspending lighter liquid, comprising, in combination, an upright casing, a coalescer in said casing, a liquid collecting sump chamber therebelow, and at the bottom of the casing a float-operated valve comprising, a float for liquid-buoyed motion above a discharge outlet in the sump chamber, a valve seat about the discharge outlet, a valve below said float closing said seat and movable axially away therefrom, and linkage means connecting said float to said valve including pull link means pivotally supported at one end to said float and at another end to one end of a lever positioned between said float and valve, the levers being pivotally supported at an intermediate fulcrum point separate from and fixed with respect to said movable valve, said pull link means being

pivotally attached to an upstanding portion of said lever in a manner such that the pull link means is substantially horizontal when said valve is in a closed position, said lever having on the opposite side of the fulcrum point a thrust-applying end, said thrust-applying end being turned inwardly to define a hook with its tip swung upwardly by lift of said force-receiving end, means connecting said valve to said hook to cause said hook in upward swing to thrust said valve away from the said seat, and the pull link means due to their horizontal position with respect to the lever and float giving to the lever and thus to said valve initially a relatively great opening force with movement of said float in a direction to open the valve, and thereafter a gradually diminishing amount of force as said float continues to move in said direction.

3,199,527
SYSTEM FOR MARKING AND INDICATING THE PRESENCE OF AN INTERFACE IN A PIPELINE
Nelson B. Coley, Honeoye Falls, and Stuart M. Phelps and Frank A. Daly, Rochester, N.Y., assignors to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 14, 1963, Ser. No. 302,068
6 Claims. (Cl. 137—268)

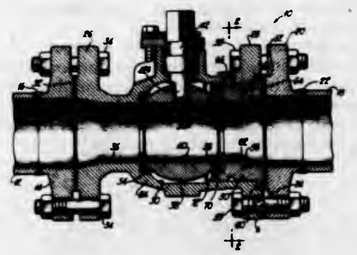


1. A system for marking the presence of an interface in a fluid pipeline having a main valve in a main portion of the pipeline and a bypass portion of the pipeline extending around said main valve portion comprising:

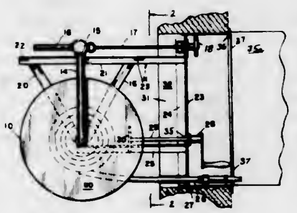
(a) launching means in said bypass portion for launching an object into said pipeline,
(b) interface detecting means at a point in said main portion of the pipeline upstream relative to connection of the bypass portion for registering when an interface arrives at that point,
(c) said launching means being rendered effective in response to the registration of an interface by said interface detecting means to launch said object into the pipeline,
(d) object detecting means disposed in said pipeline downstream from said launching means for registering the presence of said object, and
(e) means responsive to said object detecting means for opening said main valve.

3,199,528
BALL VALVE
Robert W. Oetjens, Arlington Heights, Ill., assignor to Clayton Mark & Company, Evanston, Ill., a corporation of Delaware
Filed Sept. 4, 1962, Ser. No. 221,213
6 Claims. (Cl. 137—329.01)

1. A ball valve comprising a body having a valve chamber and a passageway communicating with said chamber, an unthreaded rotatable and lengthwise movable annular spacer positioned in said passageway and having a radial face adapted to abut against an opposed face in the valve body and an end face disposed axially beyond the body, an annular V-shaped groove on the outer surface of said spacer disposed intermediate its ends, securing means having V-shaped ends engageable with one of the surfaces of the V-shaped groove whereby the said securing means are adjustable toward the spacer to hold the latter with its radially disposed face in engagement with the corresponding face on the valve body, and a pipe flange engaging said end face additionally to secure said spacer in the body.



3,199,529
HOSE REEL
Albert L. Fracassi, 1006 E. 37th St., Erie, Pa.
Filed Nov. 13, 1962, Ser. No. 236,938
1 Claim. (Cl. 137—355.26)



In combination, a hose reel and a plate adapted to be attached to the wall of an enclosure,
said reel comprising a drum having a flange at each end,
a truss,
said truss being connected to said plate and to said drum and supporting said drum on said plate with the axis of said drum parallel to the plane of said plate,
a hub attached to said drum,
means to connect a water supply line to said hub,
a hose connected to said hub and adapted to be wound on said drum,
a hole through said plate adapted to receive said hose,
a crank,
and a friction wheel engaging one said flange,
and means extending through said plate and connected to said crank and to said friction wheel,
said crank being adapted to rotate said friction wheel and thereby rotate said drum whereby said drum may be rotated by an operator on the opposite side of said plate from said drum.

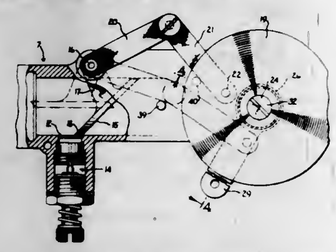
3,199,530
SELF-GOVERNING CARBURETOR
Ib H. Svendsen, Bjerringbro, Denmark, assignor to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware
Filed Dec. 5, 1963, Ser. No. 329,614
15 Claims. (Cl. 137—382)

1. In a governor for internal combustion engines of the type wherein the pulsating hydrostatic and hydrodynamic forces produced by the engine and acting upon

an unbalanced throttle valve in the duct which supplies the fuel mixture to the engine impart a pulsating non-linear turning moment to the valve tending to close same, and a baising force-produced non-linear turning moment acts upon the valve tending to open the same, the improvement which comprises:

(A) a movably mounted inertia member;

(B) a plurality of interconnected motion-transmitting elements providing a motion transmitting connection between the throttle valve and the inertia member to at all times translate motion of the throttle valve into motion of the inertia member,



(1) said elements together having considerably less inertia than the inertia member and being so constructed and arranged that they non-linearly translate said motion of the throttle valve into motion of the inertia member in such manner that the ratio of inertia member motion to throttle valve motion is large when the throttle valve is nearly closed and small when the throttle valve is nearly wide open, so that the dynamic resistance to motion which the inertia member imposes upon the valve is maximum when the engine produced forces tending to close the valve are strongest and minimum when those forces are weakest.

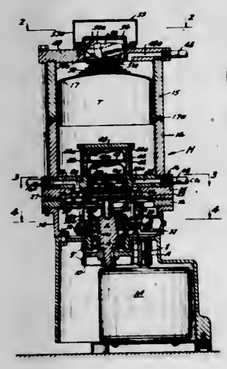
3,199,531

APPARATUS FOR METERING AND MIXING FLOWABLE INGREDIENTS TO CONTINUOUSLY SUPPLY A PREDETERMINED MIXTURE

Richard T. Cornelius, Minneapolis, and Harold E. Dufresne, St. Paul, Minn., assignors to The Cornelius Company, Anoka, Minn., a corporation of Minnesota

Filed June 18, 1962, Ser. No. 203,361

6 Claims. (Cl. 137—394)



1. In apparatus for predeterminately metering and mixing flowable ingredients to produce a reserve supply of a predetermined mixture comprising

an elongated unitary housing having a reserve tank disposed therewithin, said tank including a flexible volume varying portion disposed within the upper portion of said housing thereof,

means defining a mixing chamber disposed inwardly of said tank within said housing and having communication with said tank,

said housing including means adjacent said mixing chamber defining inlet passages connectible with said respective sources of said flowable ingredients,

flow-inducing mechanisms mounted within said housing adjacent said mixing chamber, one being provided for each of said inlet sources and communicating at discharge with said mixing chamber,

said flow-inducing mechanisms having displacement means proportioned respectively to induce volumetric flow into said mixing chamber at a predetermined ratio, and

operating mechanism operatively connected to said flow inducing mechanism to operate said flow inducing mechanism substantially simultaneously and to cause the mixed ingredients therein to flow into the tank simultaneously with the flow of ingredients into the mixing chamber,

control mechanism also mounted within said housing for intermittently actuating said operating mechanisms in response to predetermined variation in the volume of said reserve tank.

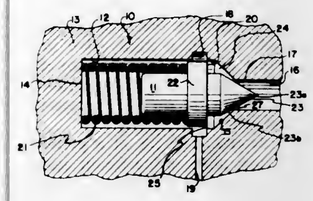
3,199,532

VELOCITY COMPENSATED POPPET VALVE

Robert E. Trick, Racine, Wis., assignor to Webster Electric Company, Racine, Wis., a corporation of Delaware

Filed Dec. 26, 1962, Ser. No. 247,233

9 Claims. (Cl. 137—469)



1. A poppet valve comprising means defining a valve chamber having a valve seat, an inlet connected to said valve seat, a poppet in said chamber having a tapered valve portion, means acting against said poppet to urge said poppet towards a closed position wherein said valve portion is seated against said seat, the pressure of fluid in said inlet acting against said poppet to move said valve portion away from said seat towards an open position when said pressure exceeds a predetermined value, thereby forming a primary orifice between said seat and said valve portion, said poppet being movable through a predetermined normal range extending from the closed position towards the open position, the length of said tapered portion being such that at least some of said tapered portion extends beyond said seat and into said inlet when the poppet is in the open position, an outlet from said chamber spaced from said valve seat, said poppet including means cooperating with said valve chamber and said valve portion to form a regulating chamber intermediate said inlet and said outlet for receiving fluid from said primary orifice, means defining a secondary orifice for delivering fluid from said chamber to said outlet, said secondary orifice defining means being so constructed and arranged that the size of said secondary orifice remains constant as said poppet moves through said range and is greater than that of said primary orifice, whereby the primary orifice at all times exercises primary control over the movement of the poppet through said range, the pressure of the fluid in the regulating chamber being effective to act upon said poppet to move it as a function of the flow through the secondary orifice in order to compensate for increasing flow rates between the inlet and outlet.

3,199,533

FLUID-PRESSURE RELIEF VALVE

Martin Fountain-Barber, Cheltenham, England, assignor to Dowty Mining Equipment Limited, Ashchurch, near Tewkesbury, England, a British company

Filed June 26, 1963, Ser. No. 290,662

Claims priority, application Great Britain, June 29, 1962, 25,093/62

6 Claims. (Cl. 137—543.13)



3. In a pressure relief valve for a pressurized fluid, a pair of relatively movable valve members which have mutually aligned end portions that are relatively biased toward one another so that the end faces thereof assume a normally closed condition, the end face of one member having an opening in the center portion thereof which provides an escape passage for the fluid when the valve is opened, and the end face of the other member having a recess therein in which there is engaged a cup-shaped resilient non-metallic plug the rim of which is disposed so that it faces outwardly of the recess in the direction of the one member's end face, said one member having its end portion slidably engaged in the recess so that the peripheral portion of its end face is abutted into sealing contact with the rim of the plug, and said center portion of the one member's end face having a planar annulus thereon which is disposed around the edge of its opening so as to form a substantially right angular section with the terminal wall of the same, and there being an anti-extrusion member which is located between and engages the plug and the one member with one face thereof covering the mouth of the opening so as to prevent the plug from extruding into the same in said closed condition said face of the anti-extrusion member having a planar annulus thereon which is disposed around the edge of the opening opposite the annulus on the one member so that all of the fluid escaping from the opening impinges on the face of the anti-extrusion member before it can escape between the rim of the plug and the peripheral portion of the one member's end face.

3,199,534

FLUID FILLING AND DRAINING APPARATUS FOR TANKS

Harry N. Shaw, Lake Forest, and Robert E. Poethig, Glenview, Ill., assignors to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois

Filed Aug. 1, 1962, Ser. No. 214,140

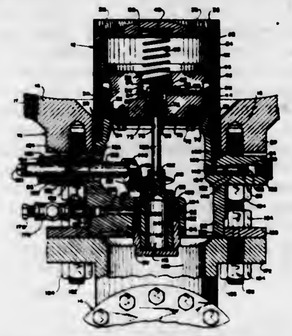
12 Claims. (Cl. 137—565)

3. An apparatus secured to a tank for draining fluid therefrom comprising in combination:

a flange secured to the tank defining an opening therein,

an automatic safety shut-off valve received in said opening within the tank and secured to the flange with its outlet opening coaxial through said opening, and

with the inlet thereof coaxial with and against the a fluid pressure pump secured directly to the flange



outlet opening of the valve in sealed relationship therewith to transfer fluid from the tank.

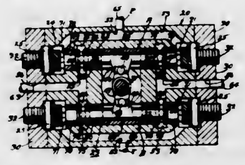
3,199,535

BALANCED HYDRAULIC VALVE ASSEMBLY

Peter E. Baer, Cheltenham, Md., assignor to Dixon Valve & Coupling Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed July 13, 1962, Ser. No. 209,522

4 Claims. (Cl. 137—596)



1. A hydraulic valve assembly comprising in combination: a casing having a pair of spaced, axially extending, parallel, cylinder bores therein and an axially slidable cylinder sleeve unit mounted in each of said bores; each of said cylinder sleeve units comprising a plurality of axially aligned parts having a bore therein; first fluid duct connections from a common fluid source connecting the ends of one of said sleeve receiving bores, and second fluid duct connections from a common fluid source connecting the ends of said other sleeve receiving bore; ports near each end of each of said sleeves and spaced inwardly of said fluid duct connections; an axially extending valve piston positioned in each of said bores of said sleeves, said pistons having an axial length less than the distance between associated duct connections whereby at all times only the opposite ends of said pistons are exposed to fluid from their associated duct connections thereby providing hydraulically balanced pistons in all positions; means interconnecting said valve pistons to reciprocate said pistons, said pistons cooperating with said ports to control the flow of fluid through said ports; and means positioned in said bore at either end of said sleeve units engaging the ends thereof to adjust said cylinder sleeve unit parts relative to said casing and said piston.

3,199,536

THREE-POSITION ELECTROMAGNETIC VALVE

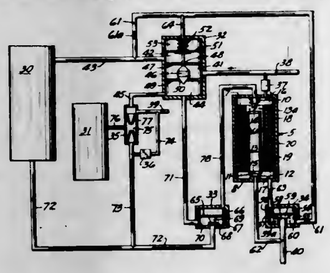
Richard G. Thompson, Stillwater, Minn., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey

Filed Sept. 1, 1960, Ser. No. 53,386

1 Claim. (Cl. 137—609)

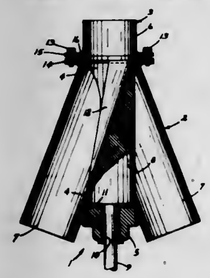
In combination, a three-position electromagnetic valve comprising a tubular member and end closures for said

member defining an elongated chamber, said end closures having opposed valve seats disposed at opposite ends of said chamber respectively defining first and second ports, one of said end closures having a third port communicating with an end of said chamber at all times, said third port being restricted relative to said first port and being adapted for connection to a high pressure source, said second port being adapted for connection with a low pressure region, and the other end closure having a fourth port communicating with the other end of said chamber open at all times, an elongated solenoid armature plunger movable longitudinally in said chamber, having heads at opposite ends disposed to selectively close said first port while opening said second port and to close said second port while opening said first port; first and second independently energized coils surrounding said chamber, the polarity of said first coil being such as to actuate said plunger to



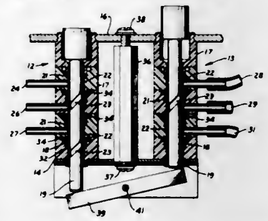
close said first port and open said second port, and the polarity of said second coil being such that when both coils are energized the heads on the plunger are held in open relation to said first and second valve seats; means for selectively energizing and deenergizing said coils whereby said plunger may be selectively set in any of the three positions in relation to said first and second ports; and first and second independently operable pressure responsive valves of the type having a fluid pressure motor with an operating pressure chamber which when subjected to high pressure maintains said valves in closed position and when vented permits opening of said valves by force exerted on the fluid pressure motor opposite the operating pressure chamber, the operating chambers of said pressure responsive valves being connected respectively to said first and fourth ports of the electromagnetic valve.

3,199,537
DIVERTER VALVE
Arden E. Swanson, Minneapolis, Minn., assignor, by mesne assignments, to Hart-Carter Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,187
1 Claim. (Cl. 137—625.11)



A diverter valve comprising:
a valve body having an elongated cylindrical bore formed therein and having a pair of ends;
a conduit element extending from one of the ends of the valve body;
plural conveyor legs extending from the valve body and spaced about the bore thereof;
the conveyor legs having passages formed therein communicating with the bore adjacent the conduit element;
the conveyor legs being of tubular form, and each having a radius;
an elongated cylindrical valve element rotatably mounted in the bore and having opposite top and bottom ends;
the valve element having a generally axially extending, radially opening groove therein, the groove being enlarged in depth adjacent said one end of the valve body adjacent the conduit element and linearly diminishing in depth adjacent the other end thereof;
the valve element being rotatable to positions wherein the groove is aligned with the conveyors legs, individually;
the groove including a groove face, the face having a surface transversely curved about a radius common to the radius of the aligned conveyor leg throughout the length thereof;
the aligned conveyor leg and groove having a common longitudinal axis; and
means associated with the valve element for rotation thereof.

3,199,538
VALVE
Erik W. Anthon, Kensington, Calif., assignor, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J.
Filed Mar. 29, 1962, Ser. No. 183,506
4 Claims. (Cl. 137—625.18)

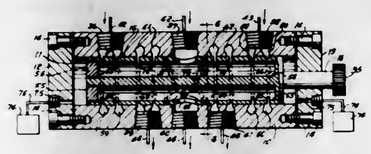


1. A valve comprising a housing enclosing an elongated chamber having a substantially uniform cross-section, a rod having a substantially uniform cross-section mounted for axial movement within said housing, said rod being of a size somewhat smaller than the chamber of the housing to define a space between the outer surface of the rod and the inner surface of the housing, a plurality of sealing units carried in said housing adapted to fit around the perimeter of said rod and divide the space between the rod and the housing into a plurality of compartments, and a recess in the rod adapted to provide communication past any one of said sealing units when in juxtaposed position thereto to provide communication between two adjacent compartments, said recess being formed in the surface of the rod by a cut extending at an acute angle to a plane perpendicular to the axis of the rod.

3,199,539
PROPORTIONING CONTROL VALVE FOR HYDRAULIC CYLINDERS
McKinley B. Leathem, 1909 Georgia St., Jeanerette, La.
Filed July 12, 1963, Ser. No. 294,576
3 Claims. (Cl. 137—625.24)

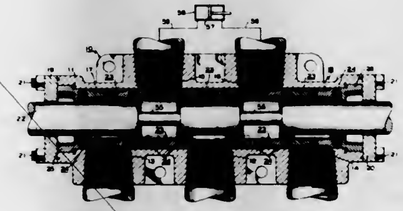
1. In a control valve for equalizing pressures in a plurality of hydraulic cylinders, each having a piston therein

adapted for unequal loading conditions, the said valve comprising, in combination, a housing having a plurality of fluid inlet and outlet ports therein, a cylindrical valve element rotatively arranged in said valve housing and capable of limited longitudinal movement in said housing, the said valve element having a pair of separate parallel chambers formed longitudinally thereof, each having a port intermediate its ends on opposing sides of said



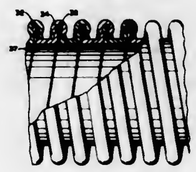
element, a plurality of sets of slotted ports formed in each of the chambers in said element and alternately registrable with said inlet and outlet ports of said housing when partially rotated therein, and capable of being partially closed upon limited longitudinal movement of said element, the said element having flow passages providing communication between each of said chambers and the outer surface of said element for equalizing pressure circumferentially thereof internally of said housing.

3,199,540
VALVE DEVICE
Walter R. Forster, Pittsburgh, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Sept. 28, 1962, Ser. No. 226,853
13 Claims. (Cl. 137—625.69)



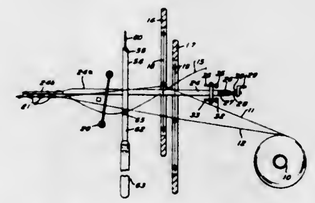
1. A sealer assembly for disposition in a bore in a casing to effect a seal between the casing and a member movable in the bore, comprising:
(a) an annular sealer member for removable disposition in said bore in coaxial relationship therewith and comprising a pair of resilient concentrically disposed annular members separated and supported by a rigid annular member, whereby the outer annular resilient member of said pair of annular resilient members is adapted to sealingly engage the casing and the inner resilient member of said pair of concentric resilient members is adapted to sealing engage the movable member, and
(b) an annular rigid spacer element removably disposed on each side of said sealer member in abutting relationship with said annular rigid member, each rigid spacer element including a shoulder engaging the annular rigid member to dispose said annular rigid member coaxially with said rigid spacer element in said bore.

3,199,541
INTERLOCKING STRIP FLEXIBLE HOSE
Charles G. Richitelli, Branford, Conn., assignor to Flexible Tubing Corporation, Guilford, Conn., a corporation of Connecticut
Filed Apr. 3, 1963, Ser. No. 270,465
9 Claims. (Cl. 138—129)



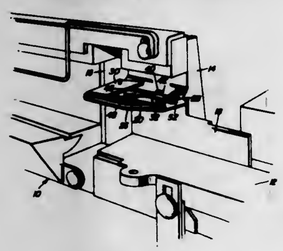
1. In a flexible hose wherein at least one elongated strip is helically wound into tubular form, including male and female connecting elements formed on the respective marginal portions of said strip, and one marginal portion of said strip overlapping the adjacent marginal portion of an adjoining convolution to interlock the male and female connecting elements, the improvement comprising at least one of said male and female elements having a composite structural formation defined in part by said strip and in part by a resinous plastic material substantially stiffer than the strip material to provide a stiff reinforcing element within the resulting helical joint formed between adjacent convolutions.

3,199,542
APPARATUS FOR WEAVING PILE FABRICS
Joseph P. Erkes, Rock Hill, S.C. (% Steel Heddle Manufacturing Co., 2100 W. Allegheny Ave., Philadelphia, Pa.)
Filed Aug. 14, 1964, Ser. No. 389,636
12 Claims. (Cl. 139—46)



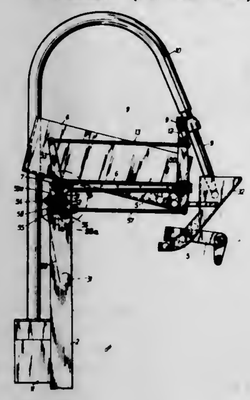
1. Apparatus for weaving pile fabrics having ground warp threads and a pile warp comprising members for positioning the ground warp threads to provide successive sheds for the successive insertion of filling threads, a filling thread beat-up member, a longitudinal pile wire having a mounting end and an opopsite pile gage end extending beyond said beat up member, a fixed mounting for said mounting end of said pile wire, a member for tilting said pile wire intermediate its ends to different positions in timed relation, and a pile control member for controlling said pile warp in relation to the successive sheds, said control member including a pile heddle having opposite separable side strips between which said pile wire is disposed, a pile warp engaging portion having a needle for positioning said pile warp on one side or the other of said pile wire as determined by the tilting thereof and the positioning of said needle, and a member for controlling the raising and lowering of said control member.

3,199,543
BACK BOX LEATHER LATCH FOR LOOMS
Bobby L. Franks, 3215 Howland Drive, and Fox B. Cahaly, P.O. Box 698, both of Anderson, S.C.
Filed Oct. 2, 1963, Ser. No. 313,325
11 Claims. (Cl. 139—183)



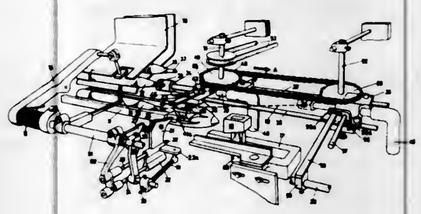
1. In a loom shuttle box, a shuttle stop means comprising a horizontally extending back box plate mounted in the shuttle box for engaging upon its underside a shuttle when the latter is positioned in the inner end of the shuttle box, a shuttle box leather comprising a pliable strip covering the underside of said back box plate and having its ends folded about the ends of said back box plate and over the top surface of the latter, anchor means releasably but fixedly securing one end of said pliable strip to said back box plate top surface, tensioning latch means movably mounted upon said back box plate and engaging the other end of said pliable strip and operable to tension the latter upon the underside of said back box plate.

3,199,544
BOBBIN SUPPLY DEVICE FOR LOOMS
Wilhelm Nauen and W. J. Heinrich Flürmann, Krefeld, Germany, assignors to Maschinenfabrik Carl Zangs Aktiengesellschaft, Krefeld, Germany
Filed Oct. 15, 1962, Ser. No. 230,624
Claims priority, application Germany, Oct. 13, 1961, M 50,573
12 Claims. (Cl. 139—245)



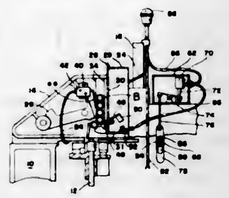
1. An automatically operable bobbin supply device for use in connection with looms, which includes: a bobbin supply box open at the top, pneumatically operable bobbin gripper means for grasping and releasing bobbins, chute means also open at the top and adapted for feeding bobbins to a transfer station, and intermittently operable means operatively connected to said bobbin gripper means and operable to move said gripper means into said bobbin supply box from above for picking up a bobbin therefrom and then to move said gripper means together with the bobbin gripped thereby into said chute means from above to deliver the bobbin to the chute means.

3,199,545
DRIVE MECHANISM ARRANGED ON AN AUTOMATIC LOOM FOR THE STRIPPER FOR THE END WINDING OF A WEFT-BOBBIN TO BE INSERTED INTO THE SHUTTLE
Lothar Köhler, Tann, Ruti, Zurich, Switzerland, assignor to Maschinenfabrik Ruti AG, formerly Caspar Honegger, Ruti, Zurich, Switzerland, a corporation of Switzerland
Filed Jan. 28, 1963, Ser. No. 254,335
Claims priority, application Switzerland, Mar. 20, 1962, 3,326/62
9 Claims. (Cl. 139—257)



1. A drive mechanism for a loom for driving a stripper for the end winding of a weft-bobbin to be inserted into the shuttle provided with a mouthpiece engageable with the tip of said bobbin carrying said end winding, a carrier member supporting said stripper for displacement forwardly and rearwardly over the tip of said bobbin, a driving member for displacing said stripper, said driving member including an entrainment member, stop means operatively connected with said stripper located in the path of movement of said entrainment member for engagement by the latter to displace said stripper forwardly and rearwardly over the tip of said bobbin, a bobbin-change mechanism, and means responsive to operation of a bobbin-change to initiate operation of said stripper immediately after a bobbin-change has taken place.

3,199,546
SIGNALLING DEVICE
Arthur N. Verrier, Warwick Neck, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Sept. 19, 1963, Ser. No. 309,988
3 Claims. (Cl. 139—336.4)



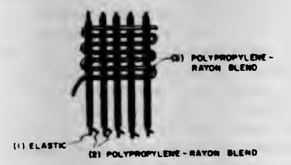
1. In a loom having a mechanical stop motion means comprising a plurality of toothed bars one of which reciprocates relative to another operative to stop said loom when said relative reciprocation is stopped and a bobbin changing mechanism including a vertically arranged magazine for holding a supply of reserve bobbins, the combination therewith of a source of electrical power, a solenoid, a blade positioned adjacent said bars and connected to said solenoid whereby said solenoid when energized moves said blade between the teeth on said bars to stop the relative reciprocation thereof, said solenoid when deenergized being operable to remove said blade from said teeth, and means in the path of travel of bobbins in said magazine for completing an electrical circuit from said source of power to said solenoid when the supply of bobbins in said magazine is depleted to a predetermined amount.

3,199,547
CAMOUFLAGE NET
Stig Erik Knutson, Stockholm, and Roland Karl Wallin, Sollentuna, Sweden, assignors to Mölnlycke Aktiebolag, Gothenburg, Sweden, a corporation of Sweden
Filed Feb. 21, 1963, Ser. No. 260,132
Claims priority, application Norway, Mar. 5, 1962, 143,510
2 Claims. (Cl. 139—383)



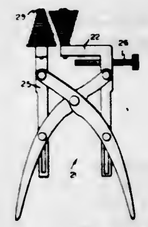
1. A camouflage unit comprising a wide-meshed supporting net consisting of spaced-apart groups of warp and spaced-apart groups of weft threads, and a covering net consisting of spaced-apart groups of warp and spaced-apart groups of weft threads, said supporting net warp and weft threads overlapping warp and weft threads, respectively, of said covering net, said nets being interwoven to form a single fabric in which the distance between the groups of the supporting net is considerably greater than the distance between the groups of the covering net, said camouflage unit being further characterized in that threads used in the covering net have different shrinkage characteristics than have threads used in the supporting net, whereby puckering of less shrinkable threads ensues upon shringage, and in that at least two to five groups of threads of the covering net are provided between each pair of groups of supporting threads.

3,199,548
ELASTIC FABRICS
Harold W. Conant, Southampton, Mass., assignor to United Elastic Corporation, Easthampton, Mass., a corporation of Massachusetts
Filed May 2, 1963, Ser. No. 277,453
4 Claims. (Cl. 139—421)



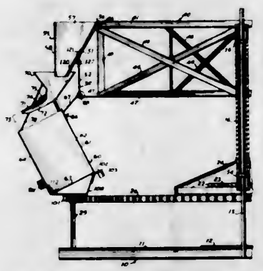
1. An elastic fabric of covered elastic warp threads having elastic cores and textile filling threads, said covered elastic threads comprising a cover of threads of a blend of from 10 to 50 percent staple polypropylene with the balance staple cellulosic fiber, whereby said fabric has a shrinkage in the warp direction on laundering reduced to not more than about two-thirds that of fabrics having elastic warp threads covered with cotton.

3,199,549
WIRE CURVING TOOLS
Melvin Wallshein, 8645 Bay Parkway, Brooklyn, N.Y.
Filed Mar. 21, 1962, Ser. No. 185,771
6 Claims. (Cl. 140—106)



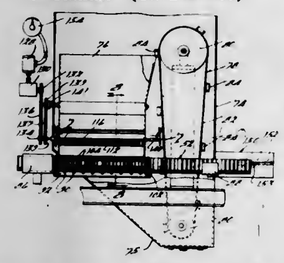
4. In a wire curving tool of the character described, three rollers carried on a frame; said rollers extending in one general direction; at least one of said rollers being different in cross-sectional area at parallel planes across its length; said frame including two relatively movable parts; one of said rollers being on one of said parts and intermediate the other two rollers, and the other two rollers being detachably mounted on the second of said parts, means on said second part for attaching said two rollers thereon at different positions in relation to said intermediate roller and means to hold said parts in any desired spaced relation.

3,199,550
AUTOMATIC BAGGING APPARATUS
Felton V. Crowe, 2616 Fairoaks Road, Decatur, Ga.
Filed July 3, 1961, Ser. No. 121,526
7 Claims. (Cl. 141—76)



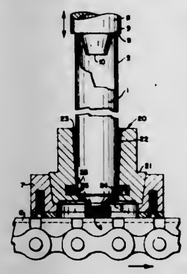
1. In a bagging apparatus, a base, a rotatable turntable carried by said base, a vibrator cam track supported from said base between said base and said turntable, and a plurality of bag filling assemblies carried by said turntable, each of said assemblies including a hopper, a spout in communication with and supported by said hopper, a receptacle rotatably supported under said spout for receiving and holding a bag, a cam follower supported from said receptacle and so positioned as to contact and ride along said cam track, a tilting cam follower supported by said receptacle and disposed rearwardly thereof, and a tilting cam mounted on said base inwardly of said cam track for contact by said tilting cam to tilt said receptacle and thereby discharge said bag.

3,199,551
APPARATUS FOR FILLING PACKAGES
Archie C. Hall, Everett, Sanford K. Carlisle, Jr., Andover, Ira D. Boynton, Lexington, and Bertram A. Fulton, Lynnfield, Mass., assignors, by direct and mesne assignments, to Diamond Crystal Salt Company, St. Clair, Mich., a corporation of Michigan
Filed Mar. 22, 1963, Ser. No. 267,160
9 Claims. (Cl. 141—83)



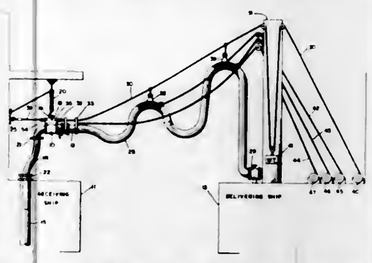
1. A packaging apparatus including a frame, guide means on said frame for movably and guidably supporting a continuous fluted ribbon defining a plurality of containers moving rapidly therealong, a filler mechanism on said frame for dispensing a controlled volume of a finely particulated solid material into the containers, said filler mechanism including a hopper formed with an elongated aperture in the base thereof disposed in overlying alignment with the direction of travel of the containers being filled, an elongated shaft rotatably mounted in said hopper and disposed in closing relationship in said aperture, said shaft formed with a plurality of depressions extending substantially uniformly along the peripheral surface thereof, drive means for rotating said shaft in said aperture and for discharging the material carried in said depressions from the interior of said hopper in the form of a substantially uniform planar curtain into the containers moving therebelow, a receptacle disposed below the containers for receiving the particulated solid material which is not intercepted by the containers, and conveyor means for returning the material from said receptacle to said hopper.

3,199,552
CONTAINER HOLDER
Arthur Warren Nordfors, 676 Jacquelyn Road, Westwood, N.J.
Filed Oct. 10, 1961, Ser. No. 144,220
12 Claims. (Cl. 141—313)



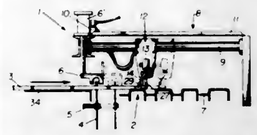
1. A container holder comprising means providing a passage for receiving and guiding a container into a desired position in said holder, said container having a wall and a top, means cooperating with said passage means for supporting said container top to maintain said container in said position, and resilient means closely adjacent said support means and projecting into said passage means near said support means for firmly gripping said container wall near said top and retaining said container in said position, said resilient means being so closely adjacent said container top supporting means as to grip said container wall near enough to the intersection of said wall with said container top to allow the top to reinforce the wall where the wall is gripped.

3,199,553
SHIP TO SHIP REFUELING DEVICE
Douglas R. Garrett, Burbank, and Don F. Preston, Pacific Palisades, Calif., assignors to Parker Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 19, 1959, Ser. No. 854,158
14 Claims. (Cl. 141—388)



1. In a device for making a conduit connection between first and second relatively movable objects, first and second coupling elements having cooperating means for coupling the elements to each other, a flexible connection between said first element and said first object whereby said first element is movable independently of said first object, a flexible conduit connecting said second element and said second object, a flexible cable connecting said first and second objects, means for attaching said coupling elements to said cable equidistantly therefrom and in predetermined alignment therewith whereby said elements are in coupling alignment with each other when said cable is taut, said second coupling element being movable along said cable, and means for making said cable taut as said objects move relative to each other whereby said first coupling element is moved relative to said first object into alignment with said cable.

3,199,554
ADJUSTABLE BOARD STOP FOR FLYING SAWS
John H. Thedick, Klamath Falls, Oreg., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Dec. 13, 1962, Ser. No. 244,421
8 Claims. (Cl. 143—47)



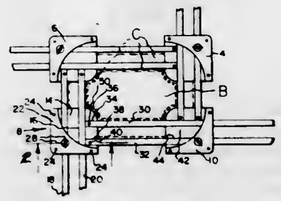
1. A flying saw for cutting wood panels or boards into predetermined lengths, comprising: clamping means engageable with said wood panels, mechanical limiting means spaced a predetermined distance from said clamping means including a limit switch, valve means actuated by said limiting switch adapted to actuate said clamping means, an L-shaped stop means with a lateral extension, said stop means pivotally mounted on said mechanical limiting means engageable with said wood panels to positively hold said wood panels said predetermined distance between said mechanical limiting means and said clamping means, and means mounted on said mechanical limiting means releasably engaging said lateral extension of said stop means to positively hold said stop means into engagement with said wood panels.

3,199,555
APPARATUS FOR PRODUCING AND DRYING VENEERS
Robert Hildebrand, Nurtinger Strasse 68, Oberboihingen, Wurttemberg, Germany
Filed Mar. 6, 1963, Ser. No. 263,336
1 Claim. (Cl. 144—3)



An apparatus for producing and drying veneers comprising a peeling machine for continuously peeling a veneer layer from a trunk section at a high speed, a drier, a plurality of horizontal conveyers disposed at different levels above each other in said drier and movable at a low speed in one direction through said drier, feeding means for feeding said layer at said high speed from said peeling machine in said direction, said feeding means comprising a conveyer and means for pivoting said conveyer about an axis near said peeling machine and disposed at a right angle to said feeding direction to move the free end of said conveyer intermittently to different levels equal to the levels of said conveyers of said drier, a multiple-tier collecting stage intermediate said feeding means and said drier and having a length at least substantially equal to the length of said drier and comprising a plurality of horizontal conveyers disposed at different levels equal to the levels of said drier conveyers, driving means for driving each of said conveyers of said collecting stage alternately at said high speed and said low speed, severing means near the rear end of said collecting stage, said feeding means being adapted to feed said veneer layer at said high speed into a tier of said collecting stage in which the conveyer of said tier while moving at said high speed moves said layer to a point near the front end of said collecting stage, said severing means then adapted to sever said veneer layer at the rear end of said collecting stage from the veneer section inserted into said tier, whereupon said feeding conveyer is pivoted to move its free end to the level of the next tier of said collecting stage and said veneer layer is then fed at said high speed into said next tier and is again severed from the inserted veneer section, said driving means being adapted to feed each veneer section at said low speed from said collecting stage into said drier, control means associated with each tier of said collecting stage and adapted to be actuated by the front end of the veneer section in said tier to actuate said severing means and to change the speed of said driving means from said high speed to said low speed, said control means further adapted to be actuated by the rear end of said veneer section when leaving said tier to change the speed of said driving means from said low speed to said high speed, a multiple-tier receiving stage behind said drier and substantially equal to said collecting stage and also having a plurality of horizontal conveyers, driving means for alternately driving said last conveyers at said low speed for filing each tier of said receiving stage successively with the dried veneers as they pass out of said drier, and at said high speed to move each veneer after being completely inserted in said tier out of said receiving stage, control means adapted to be actuated by the front and rear ends of each veneer in said receiving stage to change the speed of said last driving means from said low speed to said high speed and vice versa, and cutting means subsequent to said receiving stage for cutting each veneer layer into smaller veneer sheets, pivotable feeding means intermediate said receiving stage and said cutting means and substantially equal to said first feeding means and also movable at said high speed for feeding the veneer layers from the different tiers of said receiving stage to said cutting means, and a sorting station at the end of said entire apparatus for sorting out said veneer sheets.

3,199,556
ROUTING TEMPLATE
Albert L. Wing, 1220 McKemy St., Tempe, Ariz.
Filed Oct. 1, 1962, Ser. No. 227,517
5 Claims. (Cl. 144—144.5)

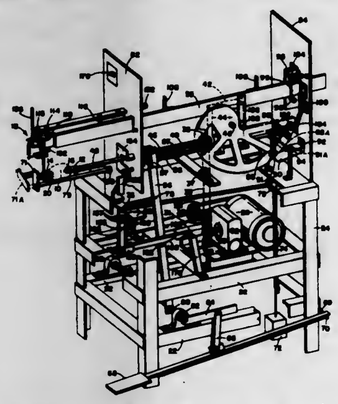


1. In a routing template the combination of: a plurality of panel corner-engaging assemblies interconnected to form the template; means on each assembly for engaging a corner of a panel; bar means projecting from each of said assemblies; means on each of said assemblies slidably receiving the bar means from an adjacent assembly; and means for fixing the bar means of one assembly securely in engagement with another of said assemblies; the line of the inner edge of the bar means of each of said assemblies intersecting the line of the inner edge of the bar means of an adjacent one of said assemblies; each of said assembles having holding means disposed above said bar means; the inner edges of the several bar means and means of said assemblies disposed inwardly of said corner-engaging means and serving as a guide for a router for the purpose of routing a recessed ornamental design in the side of a panel enaged by said corner assemblies; said holding means being spaced outwardly away from said intersections of said lines of said corner engaging assemblies, thereby providing clearance for portions of a router frame when the roller spindle is disposed near said intersections and engaging the upper surfaces of said bar means.

3,199,557
EGGPLANT PARING MACHINE
Warren S. Pease, Honeoye Falls, and Kenneth R. Healy, Rochester, N.Y., assignors to F. B. Pease Company, Rochester, N.Y., a corporation of New York
Filed July 25, 1961, Ser. No. 126,634
19 Claims. (Cl. 146—43)

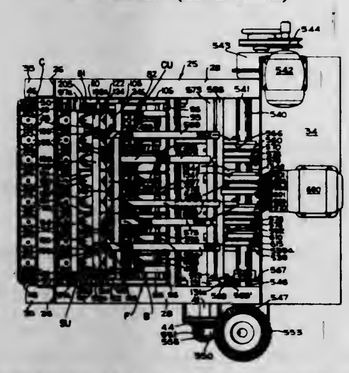
1. A method for paring fruits and vegetables having a blossom end and a stem end with a woody portion overlying the fruit comprising the steps of supporting said fruit at both the blossom and stem ends on a pair of axially aligned spike members having a plurality of radially spaced spikes received internally of said fruit, rotating said fruit axially at a selected speed, maintaining a paring blade in an engaging position with said fruit while being rotated, moving said blade axially of said fruit at a varying rate corresponding to the shape of said plant when being rotated at the selected speed to substantially uniformly pare said fruit, releasing the blossom end of said fruit so that the fruit is supported only at the stem end,

ejecting said fruit from the spike member supporting it at the stem end.



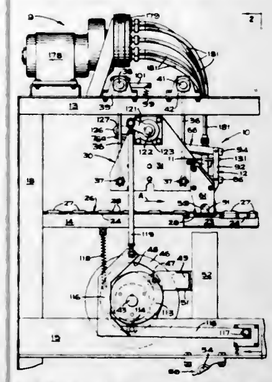
2. Apparatus for paring an eggplant having blossom end and stem end comprising, in combination, means rotatably supporting said blossom end, means more firmly supporting said stem end than said bottom end and capable of supporting said stem end, both of said supporting means coacting to rotatably support said eggplant on a first axis extending through the blossom and stem ends thereof, means rotating said stem end supporting means at a selected speed, a paring blade, means maintaining said blade in an engaged position with said eggplant, means controlling the cutting depth of said blade and control means moving said blade maintaining means substantially parallel to said axis at a varying rate of speed corresponding to the shape of said eggplant when being rotated at the selected speed to substantially uniformly spirally pare said eggplant.

3,199,558
FRUIT STEMMING, CORING AND SPLITTING MACHINE
Gerald R. Anderson, Campbell, and Sherman H. Creed, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 4, 1962, Ser. No. 221,174
33 Claims. (Cl. 146—52)



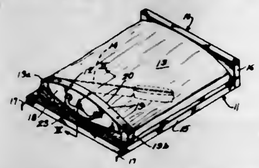
1. A fruit processing apparatus comprising means for conveying fruit along a predetermined path and for grasping the fruit as it is moved along said path to maintain the fruit in predetermined position and for subsequently releasing the fruit; a stemming tube; means for thrusting said tube through the fruit on said conveying means to provide a bore in each fruit; means engaging the fruit prior to thrusting of said tube for seating the fruit in said conveying means whereby the fruit is held in said position during stemming thereof; latch means for preventing movement of said seating means away from said fruit while said tube is being withdrawn from the fruit thereby to enable withdrawal of the tube from the fruit and for allowing concurrent movement of said seating means and tube away from the fruit after the tube has been withdrawn from the fruit; a coring knife; means supported on said thrusting means and engageable with the surface of the fruit for inserting said knife into the bore of a stemmed fruit on said conveyor to the depth of the seed cell of the fruit; means for rotating said knife while in said bore for cleaning out said seed cell; a rack mounted in substantially fixed spaced relation to said conveying means; a locking pawl mounted on said knife inserting means for movement between projected and retracted positions, said inserting means including means for moving said pawl into projected position, when said inserting means has traveled a predetermined distance toward said fruit, and into engagement with said rack to preclude further movement of said inserting means toward said fruit; a splitting blade mounted on said thrusting means in spaced relation to said stemming tube, said coring knife being located between said tube and said blade with respect to said path, said thrusting means thrusting said blade through said fruit following coring thereof; means engageable with said conveyor prior to and during stemming and coring of the fruit by said tube and knife, respectively, for causing said conveying means to grasp said fruit during stemming and coring thereof; means engageable with said conveyor prior to engagement of said splitting blade with the fruit for causing said conveying means to release said fruit during splitting thereof; and means for lifting fruit from said conveying means just prior to completion of splitting by said blade for unseating the fruit from said conveying means and for assisting in splitting the fruit.

3,199,559
FRUIT TRIMMER
Sandor Csimma, Sunnyvale, Calif., assignor to FMC Corporation, a corporation of Delaware
Filed Sept. 26, 1960, Ser. No. 58,256
10 Claims. (Cl. 146—81)



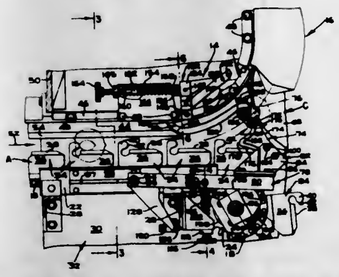
1. In a mechanism for trimming fruit, the combination of a body having one end formed with axially projecting teeth, a cutter shaft for supporting the other end of said body, a drive shaft disposed substantially parallel to and spaced from said cutter shaft, means for continuously rotating said drive shaft, and means interconnecting said drive shaft with said cutter shaft to effect orbital movement of said body about the axis of said drive shaft and to effect rotation of said body about the axis of said cutter shaft, the radius of the circular cutting path defined by the teeth as they rotate about said cutter shaft being greater than the distance between said two shafts.

3,199,560
CUTTING GUIDE AND SUPPORT
Michael F. O'Donovan, Kenilworth, Ill., assignor by court decree to Elizabeth O'Donovan
Filed Oct. 16, 1961, Ser. No. 145,243
12 Claims. (Cl. 146—150)



4. A steak cutting guide which comprises a member having a flat end wall adapted to abut the eye portion of a steak to be cut from a slab of meat, a flange on said end wall for overlying and engaging the slab of meat, a guide edge on said flange spaced from and parallel with said end wall for directing a knife therealong, a turned down flange portion on one end of the flange for engaging the tail portion of the slab of meat to be cut, and a handle projecting from the end wall adapted to be manually grasped for holding the guide in position on the slab.

3,199,561
METHOD OF SAWING A DRUPE
Leslie Vadas, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application June 24, 1958, Ser. No. 744,172, now Patent No. 3,080,903, dated Mar. 12, 1963. Divided and this application June 21, 1962, Ser. No. 204,112
4 Claims. (Cl. 146—241)



1. The method of preparing drupaceous fruit comprising the steps of cutting through the meat of a fruit along a plane defined by the stem-blossom axis to produce an incision in the meat encircling the pit, progressively spreading the fruit meat to each side of the incision in the area immediately in front of the leading end of the pit and at opposite sides of the fruit along the entire length thereof to provide an open incision for the entry of a pit cutting saw, and concurrently sawing the pit in two along said plane in the open incision provided by the spreading action to sever the pit without affecting the fruit meat.

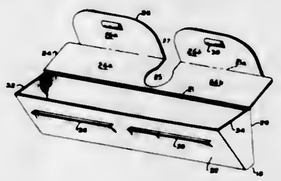
3,199,562
MULTI-POCKET WALLET
Joseph K. Seitz, Sunland, Calif.
(4551 Coldwater Canyon, North Hollywood, Calif.)
Filed July 18, 1963, Ser. No. 296,064
7 Claims. (Cl. 150—30)

1. A multi-pocket wallet comprising a rectangular main sheet adapted to be folded along the central portion thereof, a first pocket-forming sheet attached to one outer edge of said main sheet and along portions of the opposite edges of said main sheet and over less than one-half of the length of said outer edges, a second pocket-forming sheet attached to the other outer edge of said sheet and along other portions of the opposite edges of said main sheet and over less than one-half of the length of said outer edges, a third pocket-forming sheet attached to the



opposite side of said main sheet at a certain central portion of said main sheet and along two opposite edges of said main sheet, and a fourth pocket-forming sheet attached to the opposite side of said main sheet along another certain central portion of said main sheet and along said opposite edges of said main sheet, said first two pocket-forming sheets forming two inner pockets and the other two pocket-forming sheets forming outer pockets when said main sheet is folded.

3,199,563
WINDSHIELD WIPER PROTECTOR
Robert E. Forrest, Tulsa, Okla.
Filed Oct. 9, 1963, Ser. No. 315,034
1 Claim. (Cl. 150—52)

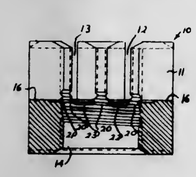


A windshield wiper attachment comprising an elongated front wall and an elongated back wall joined together at the lower edges thereof to form a generally V-shaped cross section, first and second end walls attached to respective first and second ends of said front wall and said back wall to form a container, a cover member having a first edge attached to the upper edge of said back wall, said cover member having first and second spaced apart extension members attached to a second edge thereof opposite said first edge, said cover member having an opening at a point intermediate the ends thereof and extending to said second edge between said first and second spaced apart extension members and adapted to allow connection of the wiper blade to a means for operating same, said front wall having first and second spaced elongated slots substantially parallel to the upper edge thereof and adapted to receive said first and second spaced apart extension members, respectively, and first and second securing means positioned on the sides of said first and second spaced apart extension members, respectively, and adapted to secure the respective extension member in the corresponding elongated slot.

3,199,564
CASTELLATED NUT

Ronald Waeltz, Hatboro, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania

Filed Feb. 17, 1964, Ser. No. 345,258
1 Claim. (Cl. 151—21)

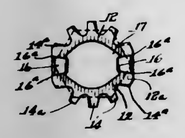


A self-locking castellated nut having a minimum hardness of Rockwell C–20 and characterized in that the crest and flank of the thread in those portions of the nut body lying generally in the plane of the bottom of at least one of the slots is displaced horizontally into the bore and vertically from the normal helix line of the thread, the displaced portion of the slot bottom extending outwardly from the nut bore to a locus outboard of the major diameter of the nut thread, the width of the displaced portion of the slot bottom being less than the width of the slot and wherein the castellated portion of the nut is threaded with threads having a uniform major and minor diameter which is the same as that of the normal threads in the non-castellated body portion of the nut.

3,199,565
LOCKWASHER

Ouglesa Jules Poupitch, Itasca, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Feb. 11, 1963, Ser. No. 257,550
5 Claims. (Cl. 151—35)

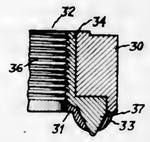


1. A sheet metal lockwasher including an annular body, a plurality of locking prongs supported by and extending from the outer margin of a limited circumferential first section of said body, a plurality of locking prongs supported by and extending from the outer margin of a limited circumferential second section of said body, said prongs being deflected so as to present locking teeth projecting axially beyond the bounding planes of said prong supporting sections of said body, intermediate circumferential sections of said body extending between and having substantially greater radial width than said first and second body sections and a circumferential extent substantially greater than the width of a prong, and tabs extending from and formed integral with the inner margin of each of said intermediate body sections, said tabs being folded along a line adjacent and substantially parallel to said margin and traversing and adjacently superimposing one side of said intermediate body sections whereby to provide a plurality of abutments for counteracting tendency for said locking teeth to become flattened when the washer is finally tightened against a workpiece said intermediate body sections of greater radial width exceed in circumferential extent the circumferential width of said tabs and present exposed extremities on opposite sides of said tabs.

3,199,566
WELD FASTENERS

Joseph A. Dyka, 19 Richmond St., Adams, Mass.

Filed Apr. 30, 1962, Ser. No. 191,241
2 Claims. (Cl. 151—41.7)



1. A light metal weld fastener comprising; a body member formed of a light, non-ferrous metal, welding projections provided on said body member, a threaded member of ferrous metal secured to said body member, the threads of said threaded member positioned to secure an external member to said body member, said threaded member being provided with projecting portions which extend below and through said welding projections on said body member, whereby said projecting portions will contact the part to which the fastener is to be welded.

3,199,567
TIRE TREAD

Gerald Kunz, Cuyahoga Falls, Ohio, and Samuel E. Stover, Grabill, Ind., assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed Dec. 30, 1963, Ser. No. 334,378
4 Claims. (Cl. 152—209)



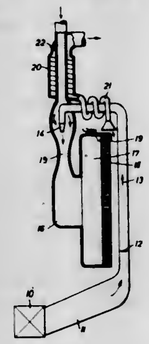
1. In a pneumatic tire having an elastomer tread provided with a traction pattern including slit-like grooves, the improvement which comprises the sidewalls of at least a portion of said grooves radially inwardly of the tread surface being undulating in the direction transverse of the depth of the grooves while the edge portions of said grooves at the tread surface are devoid of the said undulations.

3,199,568
OIL HEATING APPLIANCE

Herbert Baumanns, 187 Bellerstr., and Friedrich Schmitz, 54 Giesenkirchenerstr., both of Rheydt, Germany

Filed July 3, 1962, Ser. No. 207,255
Claims priority, application Germany, July 5, 1961, B 63,148
5 Claims. (Cl. 158—71)

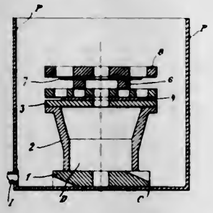
5. An oil-burning heating beating appliance comprising a burner plate at which the oil is burned in air, an oil supply conduit, oil pressurizing means connected to one end of said supply conduit and adapted to supply oil thereto under pressure, an oil vapor outlet means connected to the other end of said supply conduit, an air intake pipe connection leading from said vapor outlet means to said burner plate, said burner plate being an infra-red burner, a heat exchanger for preheating combustion air supplied to said burner, and a conduit for directing heat from said burner to said heat exchanger.



3,199,569
COMBUSTION CHAMBER FOR LIQUID FUEL

Ernest Rudolphe Rozsnyo, 69 Blvd. Sainte-Agathe, Nice, Alpes-Maritimes, France

Filed Dec. 3, 1963, Ser. No. 327,774
Claims priority, application France, Dec. 10, 1962, 7,143
4 Claims. (Cl. 158—91)



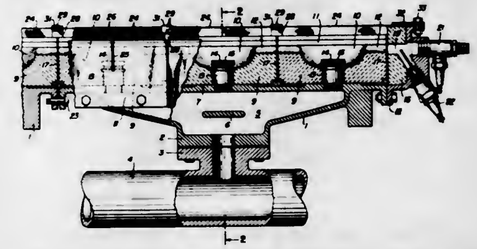
1. A combustion chamber having a bottom wall and upstanding side walls, a corrugated member resting on the bottom wall and spaced inwardly from the side walls, and an upright tubular member resting on the corrugated member with the corrugations extending radially so that said corrugated member provides passageways into the bottom of the tubular member, and means for introducing liquid fuel into the bottom of the combustion chamber outwardly of the corrugated member.

3,199,570
INDUSTRIAL BURNER

John R. Williams, Ambler, and Chung Liao Feng, Horsham, Pa., assignors to Selas Corporation of America, a corporation of Pennsylvania

Filed May 28, 1963, Ser. No. 283,807
6 Claims. (Cl. 158—104)

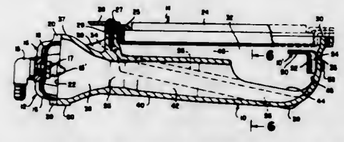
1. An industrial burner comprising a plurality of refractory blocks, each block being provided with a cup-shaped depression on one surface thereof, structure including side plates supporting said blocks side by side with said surfaces exposed flexible means to separate said blocks from each other and from said side plates. means extending through said structure and blocks into the base of each depression to hold said blocks on said structure and through which fuel is supplied to burn along the surfaces of said depressions, a screen extending over each of said blocks, said screens being closely woven thereby to retard the flow of combustion gases therethrough, means to fasten said screens loosely to said side plates at opposite sides of each block, and means to fasten said screens loosely to each other above said surfaces to form an enclosed combustion space above said depressions.



3,199,571
BURNER CASTING FOR INFRARED GAS BURNER

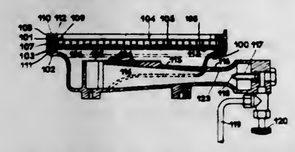
Ernst R. Koppel, Perrysburg, Ohio, assignor, by mesne assignments, to General Precision, Inc., Tarrytown, N.Y., a corporation of Delaware

Filed Oct. 1, 1962, Ser. No. 227,263
1 Claim. (Cl. 158—114)



In an infrared gas burner, a housing having an open box-like configuration including a bottom, a pair of side walls and front and back end walls, a venturi tube extending along the bottom of said housing, one end of said venturi tube defining a mouth adjacent to said front end wall for introducing fuel into said housing, a burner mat mounted over the open top of said housing, gas injecting means for injecting a mixture of gas and air into said mouth of the venturi tube, said venturi tube having a restriction intermediate the ends thereof and flaring outwardly from said restriction toward the other end of the venturi tube, which other end terminates in spaced relation to said back end wall, said bottom having a triangular fan-shaped depression therein extending the flare of the venturi tube to substantially the entire width of said back end wall to distribute the fuel over said back end wall, said venturi tube and housing being formed as a single casting with the portions of said bottom on either side of said venturi tube sloping upwardly from said fan-shaped depression toward said front end wall whereby the volume of the housing becomes progressively smaller toward the front of said housing, and baffle plate means projecting forwardly from said back end wall along the under side of said burner mat, the juncture between said fan-shaped depression and the bottom of said back end wall being curved to smoothly deflect the fuel upwardly toward said baffle plate means, said baffle plate means extending over substantially the entire width of said back end wall to direct fuel flowing up said back end wall from said triangular depression back along the under side of said burner mat, said baffle plate means having an angle-shaped cross section with one leg being fixed to said back end wall and the other leg extending forwardly beneath and spaced from the burner mat, said one leg cooperating with said rear end wall to define a channel extending substantially the width of said baffle plate means for passing part of the fuel to the portion of the burner mat overlying said other leg.

3,199,572
RADIANT GAS BURNER
Auguste Emile Boulet, "La Palmeraie," Avenue Urbain Bosio, Nice, France
Filed Sept. 26, 1962, Ser. No. 226,396
1 Claim. (Cl. 158—116)



A device for the combustion of a gas comprising an enclosure having a narrow inlet end and a widened output end, fuel gas injection means at the narrow inlet end and an opening for the admission of ambient air under the entraining action of the injected gas, a single wire gauze at the outlet end having a total area of voids which ranges from 25 to 50 times that of the narrow inlet end, partition means surmounted on said wire gauze in contact relationship therewith, said partition means being constituted of thin partitions the height of which is substantially of the same order of magnitude as the width of the cells bounded thereby, each partition being provided with a notch on the edge thereof which is in contact with said wire gauze to provide communication between the cells.

3,199,573
GAS BURNER
Charles S. Flynn, 2991 Sherwood Court, Muskegon, Mich.
Filed Jan. 17, 1963, Ser. No. 252,115
3 Claims. (Cl. 158—116)



1. A non-glowing pressure-type high temperature combustion burner comprising: a housing; conduit inlet means into said housing adapted to introduce pressurized combustible gaseous mixture; an opening means in the wall of said housing; a relatively coarse metal screen mesh in said housing covering said opening and overlapping the peripheral edge thereof; an integral felt layer of compressible, fibrous, refractory insulating material in said housing substantially coextensive with said opening means, said material being free of any catalyst; said layer having a uniform porosity and a surface of myriads of adjacent minute orifices free from any pinholes; the fibers of said layer being compacted to an interengaged and integrated state capable of withstanding pressures equivalent to several inches of water per square inch without shifting of said fibers; said felt layer having uniformity of porosity completely therethrough to its outer surface; a sheet of relatively fine mesh screen coextensive with and over said felt layer to retain the individual fibers on the surface of said layer from projecting up and blowing off; a relatively coarse mesh, rigid metal screen wrapped over said fine mesh screen and fastened around portions of the outside of said housing to hold said fine mesh screen in place and prevent it from blowing outwardly under operational heat; and said felt layer fitting into engagement on its periphery against said housing, and being initially slightly larger in diameter than said opening in said housing, to seal against said housing and prevent edge leakage.

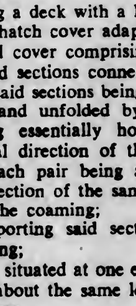
3,199,574
FALLING FILM-EVAPORATORS AND ROTOR STRUCTURE THEREFOR
Emil Keller, Zurich, Switzerland, assignor to Luwa A.G., Zurich, Switzerland
Filed Nov. 13, 1961, Ser. No. 151,671
Claims priority, application Switzerland, Nov. 14, 1960, 12,729/60; Germany, Nov. 2, 1961, L 40,371
5 Claims. (Cl. 159—6)



1. In apparatus for processing fluent material in thin layer form; a housing having inner wall portions defining a fluent material processing zone extending from an inlet region to an outlet region, means for providing heat transfer through the inner housing wall portions at said processing zone, means for directing the delivery of fluent material to said processing zone at said inlet region, rotor means disposed within said housing at said processing zone, drive means for rotating said rotor means to cause layer forming action thereby within said processing zone, said rotor means including elongated upstream and downstream vane portions that are rigidly supported and extend integrally through said processing zone, the upstream vane portion presenting a relatively fixed outer edge portion thereof for layer forming action in spaced relation to said inner housing wall portions adjacent the inlet region of said processing zone, the downstream vane portion being of lesser radial extent so as to present a relatively fixed outer edge portion thereof in substantially greater spaced relation to said inner housing wall portions than said upstream vane portion, and said downstream vane portion carrying at least one wiper blade element for layer forming action at said inner housing wall portions under the influence of centrifugal force adjacent the outlet region of said processing zone.

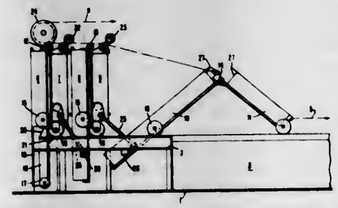
3,199,575
OSCILLATORY ROTOR BLADE FOR TREATMENT OF FLUENT MATERIAL IN THIN LAYERS
Emil Keller, Zurich, Switzerland, assignor to Luwa A.G., Zurich, Switzerland, a corporation of Switzerland
Filed Oct. 31, 1962, Ser. No. 234,505
Claims priority, application Germany, Nov. 2, 1961, L 40,371; Switzerland, May 24, 1962, 6,301/62
8 Claims. (Cl. 159—6)

1. An oscillatory rotor blade for fluent material processing apparatus of the type in which fluent material is spread in thin layer form over the inner surface of a tubular process chamber by a rotor structure mounted axially within said chamber, said blade forming an active layer spreading element of said rotor structure and said blade being characterized, in combination with said process chamber and rotor structure, by a hinged mounting on said rotor structure about a coplanar axis displaced



radially from the axis of said rotor structure and by a radial extent when fully extended from said hinging axis proportioned to reach radially short of actual contact with the inner surface of said process chamber for presenting a layer spreading edge thereof at minimal clearance with respect to said surface on which said fluent material is to be spread.

3,199,576
HATCH COVERS OF THE TYPE COMPRISING A PLURALITY OF PAIRS OF SECTIONS FOLDABLY CONNECTED TO ONE ANOTHER
Boris Jericijo, Goteborg, Sweden, assignor to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden
Filed Feb. 18, 1963, Ser. No. 259,134
Claims priority, application Sweden, Mar. 20, 1962, 3,071/62
1 Claim. (Cl. 160—193)



In a ship having a deck with a hatch opening therein, a coaming and a hatch cover adapted to cooperate with said coaming, said cover comprising a number of pairs of first and second sections connected to each other by means of hinges, said sections being arranged to be automatically folded and unfolded by means of a pulling mechanism acting essentially horizontally both ways in the longitudinal direction of the hatch opening, the first section of each pair being about as much wider then the second section of the same pair as corresponds to the beight of the coaming;

tracks for supporting said sections along two sides of the coaming;

a stowing ramp situated at one end of the opening and arranged at about the same level as the upper edge of the coaming;

a single pair of first supporting wheels on the first, larger section arranged near the transverse axis through the center of gravity thereof;

a single pair of second supporting wheels on the second section arranged at the corners thereof remote from the stowing ramp;

lugs arranged at the meeting edges of the hinged sections of each pair adapted in cooperation with the pertaining hinges to prevent a sinking down of the portion of the sections between the two pairs of supporting wheels;

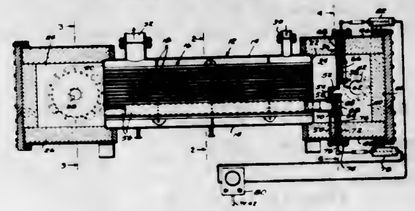
vertical guiding slots in the ramp adjacent the end of the ramp remote from said hatch opening;

hinge means connecting the larger end section of the first pair to the ramp, said hinge means containing pin-shaped members at the front corners of said larger section adapted for cooperation with said vertical guiding slots;

and linkage means connecting the larger section of each succeeding pair with the second pair with the second section of a preceding pair, said linkage accommodating a considerable displacement between abutting edges of said large and second sections;

said hinge means being so designed that the pair of first supporting wheels constitute a turning center during the early part of the opening movement of the pretaining section and reversely a corresponding center during the later part of the closing movement, whereas the hinge means constitutes the center during the remaining parts of the opening and closing movements.

3,199,577
HEAT EXCHANGER CONTROL SCHEME
Robert A. McCallister, Hackensack, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed June 14, 1962, Ser. No. 202,619
4 Claims. (Cl. 165—36)



1. A heat exchanger unit of the type designed for a low pressure drop therethrough comprising:

a shell;

a tube bundle supported and disposed therein;

inlet and outlet headers at opposite ends of the heat exchanger and in fluid communication with the tubes of said tube bundle;

means defining a collection chamber in flow communication with said tubes adjacent the outlet header and arranged to collect the fluid passing through said tube bundle, said means having an opening therein in fluid communication with said outlet header;

a first butterfly-type valve disposed in said opening;

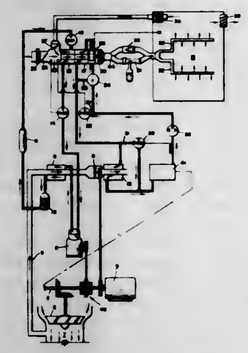
a by-pass line disposed within said shell extending between said inlet and outlet headers and by-passing said collection chamber, said by-pass line being of larger diameter than the tubes of said tube bundle and having a lower heat flow rate from the fluid per unit of flow;

a second butterfly-type valve disposed in said by-pass line;

first adjusting means for opening and closing said first butterfly-type valve; and

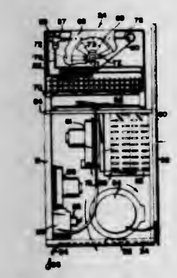
second adjusting means for opening and closing said second butterfly-type valve.

3,199,578
AIR CONDITIONING SYSTEM FOR GROUND EFFECT MACHINES
Brian Howard Rogers, Yeovil, England, assignor to Normalair Limited, Yeovil, England
Filed July 8, 1963, Ser. No. 293,333
Claims priority, application Great Britain, July 14, 1962, 27,141/62
5 Claims. (Cl. 165—44)



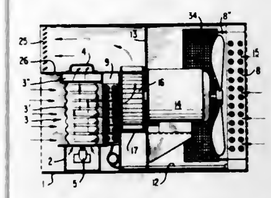
1. In combination with a ground effect machine having an enclosure and having means for supplying pressurized air for supportnig the machine, an air conditioning system for the enclosure, comprising: a closed circuit vapor-cycle refrigeration circuit having a refrigerant compressor, a refrigerant condenser, and an evaporator; means for passing air to the enclosure through said evaporator to be cooled thereby; said condenser having an inlet and an outlet for coolant fluid; and means communicating said coolant inlet with the supply of pressurized air so as to have the supporting air function as the condenser coolant.

3,199,579
HEATING AND COOLING FOOD STORAGE CABINET
Lawrence H. Foster, Scarsdale, and Harold E. Bush, Philmont, N.Y., assignors to Foster Refrigerator Corporation, Hudson, N.Y., a corporation of New York
Filed Feb. 11, 1960, Ser. No. 8,155
7 Claims. (Cl. 165—48)



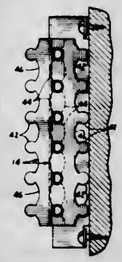
1. A food storage apparatus comprising a cabinet having insulated walls to provide a food storage space with an opening at the front, a mullion dividing the opening in the front of the cabinet, said mullion having a vertical slot therein, a vertically arranged drawer slidable into and out of said cabinet through the slot in the front to divide the food storage space into separate compartments, said drawer mounting a compressor, condenser, evaporator and metering device connected to provide a refrigerating circuit in a portable, self-contained unit, a heater in said drawer, and partition walls dividing said drawer into separate passageways, one set of partition walls enclosing the evaporator and having openings communicating with one compartment to define a passageway for circulating air in said compartment over over the evaporator, another set of partition walls enclosing the heater and having openings communicating with the other compartment to define a passageway for circulating air from the other compartment over the heater, and another set of partition walls enclosing the condenser and having openings communicating with the exterior of the apparatus for circulating outside air over the condenser.

3,199,580
COMBINED HEATING AND AIR-CONDITIONING APPARATUS
Charles O. Vaughn, Dayton, Tenn., assignor to Suburban Manufacturing Company, a corporation of Tennessee
Filed Mar. 26, 1963, Ser. No. 268,088
1 Claim. (Cl. 165—64)



In a combined heating and air conditioning apparatus comprising a casing adapted for mounting in the window of a house, the casing having inner and outer compartments separated by a bulkhead extending from the bottom to the top of the casing and from side to side thereof, the front wall of the inner compartment coinciding with the front wall of the casing and being located within the house and the rear wall of the outer compartment and a portion of the side walls thereof being located outside the house, a heating unit including a combustion chamber, a heat exchange device through which products of combustion from the combustion chamber are passed and exhaust conduit for combustion gasses which have passed through the heat exchange device, an air conditioning unit including a compressor for a refrigerant, a condenser and an evaporator device, a fan for causing a flow of air in heat exchange relationship with said condenser for removal of heat of compression from the compressed refrigerant, a blower for circulating air through the heat exchange device and the evaporator device and discharging the air within the inner compartment, a motor operative to drive said fan and blower, the heat exchanger device, the evaporator device and the blower being disposed within the inner compartment, and the compressor, condenser, fan and said motor being disposed in the outer compartment, the heat exchange device and the evaporator device being substantially coextensive in air flow area and being disposed in juxtaposition to one another side by side and the blower being arranged with its intake adjacent such assembly for causing air to flow successively in heat exchange relationship with said exchange device and evaporator device, respectively, and then through said blower, the front wall of the inner compartment having an air intake area in the lower portion thereof and an air discharge area lengthwise of the upper portion thereof, the evaporator and heat exchange devices being also coextensive in length with each other and with the length of the air intake and discharge areas, said assembly extending along the intake area below the discharge area and into the inner compartment so that the air issuing from the blower is directed by the walls of the compartment and by said assembly to said discharge area, the rear wall of the outer compartment also having therein an air inlet and outlet and the fan being arranged to draw air through said inlet and through the condenser and to discharge air through the rear wall outlet.

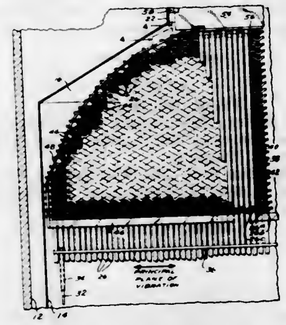
3,199,581
FIN-TYPE HEAT EXCHANGE UNIT WITH NON-REGISTERING FIN EDGES FOR FROST-INHIBITING PURPOSES
Richard W. Kritzer, Chicago, Ill., assignor to Peerless of America, Incorporated, a corporation of Illinois
Filed Jan. 11, 1961, Ser. No. 82,107
2 Claims. (Cl. 165—67)



1. A heat exchange unit comprising in combination a length of tube stock of serpentine configuration and presenting straight parallel reach sections lying in a common plane and connected together at their ends by reverse bends, and a series of closely spaced elongated parallel strips of fin stock secured to and extending transversely between said reach sections at a right angle to said common plane, each strip presenting oppositely facing inside and outside edges respectively, said strips being of identical size and configuration, the inside edges of the strips being formed with circular notches in the form of major circle sectors and within which the reach sections are pressed with a tight fit, the outside edges of the strips being formed with outwardly projecting ears which correspond in size and shape to the size and shape respectively of said circular notches, said notches and ears being in paired transverse alignment across the strips, the inside edges of the strips terminating in the vicinity of said common plane, one set of alternate strips in the series being reversely positioned with respect to the other set of alternate strips whereby the outside eared edges of the two sets lie on opposite sides of said common plane and terminate in respective planes which are parallel to and equally spaced from said common plane, and whereby adjacent eared edges of each set are disposed on strips which are once removed from each other and which are consequently devoid of intervening fin stock material.

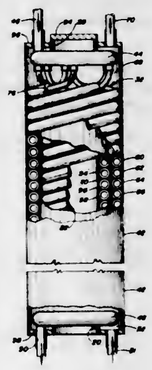
3,199,582
HEAT EXCHANGER TUBE ANTI-VIBRATION STRUCTURE
Edward Vogt, Westfield, and Samuel J. Carpenter, Woodbridge, N.J., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Apr. 6, 1962, Ser. No. 185,542
9 Claims. (Cl. 165—69)

1. In a heat exchanger having a shell and a tube bundle within the shell including a plurality of layers of U-shaped tubes, successive layers of tubes having progressively graduated radii of curvature; an anti-vibration structure comprising a plurality of convoluted spacing rods disposed between the layers of tubes at the apices thereof extending in a direction perpendicular to the tube planes, the rods having a thickness and configuration of crests and troughs conforming to the spacing and pitch of the tubes, the tubes in abutting relationship with certain of said crests and troughs whereby the tubes are restrained against movement in said perpendicular direction, and strap



means encompassing the U-bend portion of the tube bundle and connected to ends of said rods.

3,199,583
SPIRAL TUBE HEAT EXCHANGER
Charles B. Hood, Jr., and James G. Pierce, Columbus, Ohio, assignors to Cryovac, Inc., Columbus, Ohio, a corporation of Ohio
Filed Aug. 10, 1962, Ser. No. 216,083
18 Claims. (Cl. 165—135)



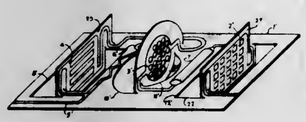
1. A heat exchanger comprising, in combination, a plurality of inner tubes in parallel spiral configuration; a plurality of outer tubes in parallel spiral configuration; a tubular wall interposed between said inner tubes and said outer tubes; spiral insulating wall means between each adjacent pair of said inner tubes and forming separate spirally extending annular passages for conducting return flows of fluid in heat exchange relationship with the outer surfaces of said inner tubes; spiral insulating wall means between each adjacent pair of said outer tubes and forming separate spirally extending annular passages for conducting a return flow of fluid in heat exchange relationship with the outer surfaces of said outer tubes; a first manifold operatively connected to said inner and outer spiral tubes for distributing fluid to said inner and outer spiral tubes; a second manifold operatively connected to said inner and outer spiral tubes for collecting the flows from said inner and outer spiral tubes; a first chamber open to one end of said annular passages for distributing fluid to said annular passages; and a sec-

ond chamber open to the opposite end of said annular passages for collecting fluid from said annular passages, each of said spiral insulating wall means being formed by two coextensive flexible filler strips disposed in confronting edge to edge relationship.

3,199,584
HEAT EXCHANGER

Charles A. Heuer, East Alton, Ill., assignor to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia

Original application Sept. 29, 1958, Ser. No. 763,877, now Patent No. 3,089,225, dated May 14, 1963. Divided and this application Feb. 8, 1963, Ser. No. 264,994
3 Claims. (Cl. 165—144)

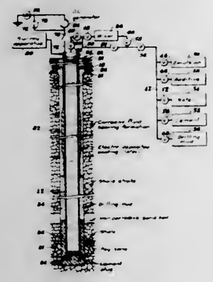


1. A heat exchange unit comprising
(A) a panel,
(B) at least one hollow tube within said panel,
(C) at least one fin extending through and integral with said panel, said fin comprising two integral tab portions rotated out of the plane of said panel on a hinge portion common to both said tab portions, and
(D) a hollow tube circuit within said fin in communication with the hollow tube within said panel.

3,199,585
WELL TREATING METHOD

Luther C. Cronberger, Sanford, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Mar. 13, 1963, Ser. No. 264,827
13 Claims. (Cl. 166—1)

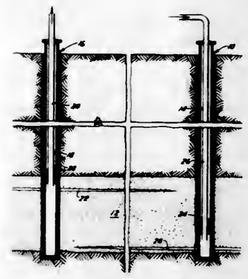


1. A method of depoisting a protective coating on the outer surface of a tubular member disposed in the bore of an earth well comprising connecting said tubular member to a source of electrical potential such that said tubular member constitutes a first electrode, connecting a second electrode spaced from said tubular member and contacting the earth to said source of electrical potential, disposing an electro-platable dispersion containing solids between said outer surface and said well bore and then applying an electric current of predetermined polarization between said first electrode and said second electrode whereby current passes through said dispersion to deposit solids from said dispersion onto said surface, the polarization of the charge on said tubular member being opposite that of solids in said dispersion.

3,199,586
RESIDUAL OIL RECOVERY PROCESS USING WATER CONTAINING A SURFACTANT

James H. Henderson, Gibsonia, and Joseph J. Taber, Cheswick, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed May 31, 1961, Ser. No. 113,725
8 Claims. (Cl. 166—9)

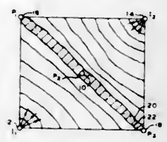


1. A water flooding process for the recovery of residual oil from an underground oil-bearing formation having an injection well and a production well spaced from the injection well penetrating the formation comprising forming a first passage extending into the oil-bearing formation from the injection well, forming a second passage extending into the oil-bearing formation from the production well, said first and second passages being substantially parallel, injecting an aqueous dispersion of a surfactant from the injection well into the formation at a pressure whereby the pressure differential in pounds per square inch between the first and second passages per foot of distance between the passages divided by the interfacial tension in dynes per centimeter between the oil in the formation and the aqueous dispersion exceeds about 5 displacing said dispersion through the formation to drive oil through the formation to the production well, the area of the formation exposed to each of said first and second passages being at least 1/10 of the area swept by the aqueous dispersion measured perpendicular to the direction of flow of the aqueous dispersion, and producing oil through the production well.

3,199,587
RECOVERY OF OIL BY IMPROVED FLUID DRIVE

Melcon Santourian, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 10, 1962, Ser. No. 223,298
16 Claims. (Cl. 166—9)

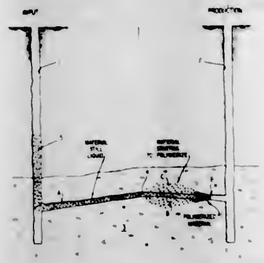


1. The method for producing an oil-bearing subterranean stratum by fluid drive displacement using a well pattern including a central well and an even number of at least 4 surrounding wells in a conventional odd-numbered-spot pattern, which comprises injecting driving fluid through alternate surrounding wells and producing the driven oil through said central well and through the remaining surrounding wells as producing wells; maintaining back pressure on the production wells; controlling the back pressure on said producing wells so as to effect breakthrough (production of displacing fluid) at the producing wells substantially at the same time; and continuing injection of said fluid through said injection wells until breakthrough at all of said producing wells occurs.

3,199,588
FORMATION PLUGGING METHOD

Don R. Holbert, Tulsa, Okla., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

Filed Oct. 31, 1961, Ser. No. 149,089
9 Claims. (Cl. 166—33)



1. A process for selectively plugging an oil-bearing, subterranean, high-permeability area which extends between and communicates with first and second well bores spaced apart from each other, which comprises introducing catalyzed resin-forming material into said first bore and through the high-permeability area to a position at least about 60 percent of the distance to said second bore at which position the catalyzed resin-forming material sets to plug said high-permeability area, and pumping at an increased pressure from said first bore an amount of catalyzed resin-forming material into the high-permeability area, said latter catalyzed resin-forming material being pumped against the resistance of previously set catalyzed resin-forming material, to regressively plug the high-permeability area from said position to a position in said area in the vicinity of said first bore, thereby plugging at least about 60 percent of the length of the high-permeability area.

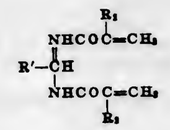
3,199,589
METHOD FOR POLYMERIZING RESIN-FORMING MATERIALS AND USE IN SUBTERRANEAN AREAS

John L. Boyd and Robert O. Perry, Tulsa, Okla., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

Filed Feb. 6, 1962, Ser. No. 171,371
14 Claims. (Cl. 166—33)



6. A method of decreasing the permeability of a permeable area in a well, the steps comprising introducing an aqueous solution containing a mixture of (a) about 1 to 25 weight percent of a monomeric alkylidene bisacrylamide of the formula



in which



is a hydrocarbon residue of an aldehyde containing from about 1 to 10 carbon atoms and R_2 is of the group consisting of hydrogen and methyl, (b) about 75 to 99 weight percent of another ethylenic monomer copolymerizable with (a) and (c) a catalytic amount of an oxidizing agent which is a peroxy catalyst derived from a per-acid, into a permeable area, contacting the aqueous mixture with a composition containing a catalytic amount of ascorbic acid and a water-soluble inorganic ferrous compound, in the presence of a Group I to III metal halide to solidfy the aqueous mixture therein and decrease the permeability of the well area.

3,199,590
METHOD OF CONSOLIDATING INCOMPETENT SANDS AND COMPOSITION THEREFOR

Bill M. Young, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,831
19 Claims. (Cl. 166—33)

1. A method of permeably consolidating loose sands, comprising the steps of:
(a) introducing a non-catalyst bearing acid curable consolidating fluid into a formation to be consolidated selected from the group consisting of calcareous formations and non-calcareous formations, said consolidating fluid being selected from the group consisting of furfuryl alcohol resin, furfuryl alcohol and mixtures thereof; and,
(b) thereafter, introducing an oil overflush solution, having a relatively high degree of immiscibility with the consolidating fluid, into the formation, and said overflush solution containing a quantity of a catalyst dispersed therein for curing said consolidating fluid in the formation, thereby consolidating said loose sands into a hard permeable mass.

3,199,591
SUBTERRANEAN FORMATION FRACTURING METHOD AND COMPOSITION

James A. Kepley, Oklahoma City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Dec. 7, 1962, Ser. No. 242,923
12 Claims. (Cl. 166—42)

1. A method for treating a subterranean formation to reduce sulfate formation which comprises fracturing said formation with a mixture consisting essentially of a carrier fluid, a propping agent, a bactericide effective against sulfate reducing bacteria, said bactericide being present in at least 100 parts per million parts of injection mixture and producing fluid from said subterranean formation including substantially all of said mixture.

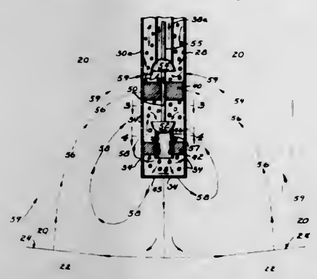
3,199,592

METHOD AND APPARATUS FOR PRODUCING FRESH WATER OR PETROLEUM FROM UNDERGROUND RESERVOIR FORMATIONS AND TO PREVENT CONING

Charles E. Jacob, 8949 Reseda Blvd., P.O. Box 347, Northridge, Calif.

Continuation of application Ser. No. 52,102, Aug. 26, 1960. This application Sept. 20, 1963, Ser. No. 311,283

29 Claims. (Cl. 166—42)



1. A method of removing a lighter liquid from an underground reservoir formation in which said lighter liquid overlies a heavier, gravity-segregated, less desirable liquid, with a normal static interface between said lighter and heavier liquids, comprising: providing a well which penetrates the reservoir saturated by the lighter liquid; dividing said well into lower intermediate, and main upper chambers, by sealing said well at two spaced locations, the lower of which is near the bottom of the well and above the said static interface; circulating a portion of lighter liquid into said intermediate chamber of the well and thence into said lower well chamber, and injecting said portion of lighter liquid from said lower well chamber downwardly from the well in sufficient quantity to depress the underlying heavier liquid in the region of the well; circulating lighter liquid from the reservoir formation into the main upper chamber of the well and removing such lighter liquid to the surface; said portion of lighter fluid injected downwardly from the well comprising up to about 10% of the volume of lighter fluid removed to the surface.

3,199,593

WIRE LINE SHOOTING TOOL

John C. Kinley, 5815 Royalton St., Houston, Tex.

Filed Aug. 9, 1963, Ser. No. 300,989

6 Claims. (Cl. 166—54.6)



1. A wire line shooting tool for cutting a wire line in a well, comprising:

(a) a tool barrel having an explosive charge therein,

(b) a knife mounted in the barrel for lateral movement to effect a cutting of a wire line,

(c) a drive wedge disposed in said barrel below said explosive charge and above said knife for longitudinal movement downwardly to drive the knife laterally when the explosive charge is detonated,

(d) a stop wedge disposed in said barrel below said drive wedge,

(e) said drive wedge and said stop wedge having inclined co-acting faces with substantially the same angle of inclination for contact to stop the longitudinal movement of the drive wedge in the tool barrel, and

(f) said stop wedge having a longitudinally extending ridge on its inclined face which is made of a deformable metal and is adapted to be deformed upon contact by the face of the drive wedge to assist in absorbing shock as the longitudinal movement of the drive wedge is stopped.

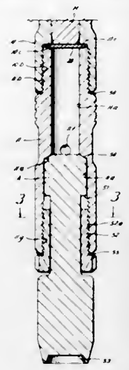
3,199,594

EXPLOSIVE JAR

Myron M. Kinley, Chickasha, Okla., assignor to John C. Kinley, Houston, Tex.

Filed Jan. 8, 1962, Ser. No. 166,734

9 Claims. (Cl. 166—63)



1. An explosive jar adapted to deliver a jarring blow in a well comprising,

(a) a body having a chamber therein,

(b) an explosive disposed in said chamber,

(c) a force transmitting member operably connected with said body and longitudinally movable relative thereto when said explosive is fired,

(d) a jarring member adapted to be hit by said force transmitting member with a jarring force for imparting a jarring movement to said jarring member to thereby apply a jarring force to any object contacted by said jarring member,

(e) means for mounting said jarring member for longitudinal movement relative to said body and so that the jarring member projects below the lower end of said body before and after detonation of the explosive, and

(f) coacting means on the body and the jarring member to prevent the jarring member from being expelled from the body.

3,199,595

SECONDARY CONTROL SYSTEM FOR UNDERWATER WELLS

Carl W. Lafitte and John A. Haeber, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 28, 1961, Ser. No. 162,693

10 Claims. (Cl. 166—66.5)

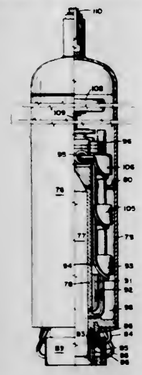
1. A control system for an underwater well installation, said system comprising

(a) a housing member lowerable through a body of water to an underwater well assembly, said housing member having first sealing surface means thereon,

(b) a plurality of conduit means in said housing member with an end of each of said conduit means terminating at said first sealing surface means,

(c) valve means carried by said housing member in said conduit means for controlling the flow of fluid therethrough,

(d) a source of pressure fluid in communication with conduit means of said housing member,



(e) a mating well member fixedly secured to said underwater well installation and adapted to support said housing member,

(1) said well member having second sealing surface means arranged thereon to be positioned adjacent said first sealing surface means of said housing member,

(f) a plurality of conduit means through said well member, one end of each of said conduit means terminating at said second sealing surface means and in fluid communication with conduit means in said housing member, the other end of each of said conduit means terminating at another surface of said well member,

(g) said housing member and said mating well member including positioning means carried by at least one of said members for positioning said first and second sealing surface means in substantial face to face engagement, and seal means carried between said first and second sealing surfaces for sealing the space therebetween in a fluidtight manner, said means isolating said cooperating conduit means.

3,199,596

DROPPABLE TOOL FOR INJECTING FLUIDS

George M. Wood, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 20, 1962, Ser. No. 224,944

8 Claims. (Cl. 166—115)

1. A droppable tool for injecting fluid in deep wells wherein tubing is employed, comprising in combination an elongated tool body having landing stop means on the exterior thereof for cooperative engagement with complementary stop means in said tubing, catch means for holding said tool in place when landed in said tubing, a cylindrical chamber means for containing said fluid, a piston slidably movable in said chamber means, a piston rod attached to said piston for moving said piston in said chamber means, said piston rod extending out the top of said tool body and having an enlargement at the extremity thereof for engagement by an overshot, passageway means connected to said cylindrical chamber means for directing the displaced fluid to a predetermined location relative to said tool body, means for confining said displaced fluid to a predetermined longitudinal location in the annulus between said tubing and said tool and including openings in said tubing for causing injection of said fluid into the bore hole at such location, fluid by-pass



means for providing a path around said confining means to permit circulation of fluid freely through said annulus, and latch means for releasing at least part of said tool from said landed position for withdrawal up the well.

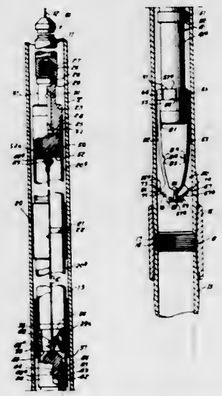
3,199,597

DUMP BAILER

Warner M. Kelly, Houston, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware

Filed May 9, 1961, Ser. No. 108,777

7 Claims. (Cl. 166—117)



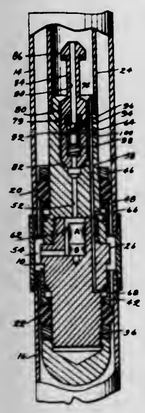
1. A well tool for carrying and discharging materials in a flow conductor comprising: a barrel adapted to pass through said flow conductor; anchoring means having a closure means thereon disposed in the lower end of said barrel to close said lower end thereof, said anchoring means being operable in response to predetermined movements of said barrel in said flow conductor to anchor said closure means in said flow conductor; means for releasably connecting said anchoring means to said barrel whereby said barrel is separable from said anchoring means upon longitudinal movement of said barrel relative to said anchoring means thereby opening said lower end of said barrel; said barrel being movable longitudinally of said flow conductor away from said anchoring means and closure means after said anchoring means has been anchored in said flow conductor; a piston slidably mounted in said barrel; and operator means connecting said piston to said barrel and movably engageable with said anchoring means, said operator means moving said piston through said barrel toward the open end thereof at a rate in excess of the rate of

movement of said barrel away from said anchoring means upon movement of said barrel away from said anchoring means to discharge the contents of said barrel below said piston through said open lower end at a rate exceeding the rate of movement of said barrel in said flow conductor away from said anchoring means.

3,199,598
APPARATUS FOR TESTING AND REPAIRING WELL PIPES

Glenn L. Loomis, Pasadena, Tex.; Jean Doyle Loomis, executrix of said Glenn L. Loomis, deceased, assignor to Jean Doyle Loomis

Filed July 2, 1962, Ser. No. 206,631
19 Claims. (Cl. 166—147)



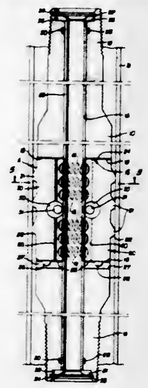
1. In an apparatus for testing well pipe in a well for leaks and repairing the same in situ: an elongated body structure of smaller diameter than the inside diameter of the well pipe; at least one upper and one lower fluid expansible packer element mounted exteriorly on the body structure in spaced relationship to each other, both of said packer elements having a relaxed diameter smaller than the inside diameter of the well pipe; means for supplying fluid under pressure through said body structure to said packer elements for causing said packer elements to set in sealing engagement with the wall of the well pipe; means in said body structure independent of said last-mentioned means for flowing a testing fluid under a measurable pressure through the body structure into the annular sealed off space for testing the well pipe for leaks; and means for carrying a batch of sealant with said body structure and supplying the same when needed through said last-mentioned means into the annular space between said packers.

3,199,599
SCRAPERS FOR TUBULAR STRINGS

Archer W. Kammerer, Jr., Houston, Tex., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California

Filed Aug. 20, 1962, Ser. No. 218,000
16 Claims. (Cl. 166—173)

1. In a tubular string scraper: a main body having means for attachment to a running-in string and having a central longitudinal passage therethrough; said body having opposed lateral slots extending inwardly from its periphery and opening directly into said passage throughout substantially the entire length of said slots; a tubular member in said passage extending across said slots for conducting drilling fluid through said body; opposed cutters slidable laterally in said slots, each cutter having inner portions extending partially around and astride said tubular member, said inner portions being slidable along

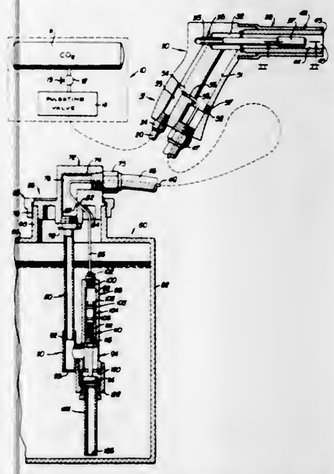


the sides of said slots; and means normally urging said cutters laterally outwardly.

3,199,600
FOG-PROJECTING FIRE EXTINGUISHER CONSTRUCTION

Alan Jacobs, 408 S. Spring St., Los Angeles, Calif.

Filed Apr. 17, 1962, Ser. No. 188,200
5 Claims. (Cl. 169—9)



1. In a fire extinguisher of the type adapted to project a cooling and smothering fog essentially comprising a liquid and a nonflammable gas, in combination:

a source of liquefied pressurized nonflammable gas including means for controllably supplying liquefied gas therefrom;

a housing tank for liquid having an outlet opening and an internal pipe communicating the outlet opening with the lower portion of the tank;

a normally closed valve in said internal pipe and gas actuated means for simultaneously opening said valve and communicating compressed gas to the interior of the tank;

a gun for mixing liquid and gas to form a fog including a tubular barrel for directing the discharge of fog;

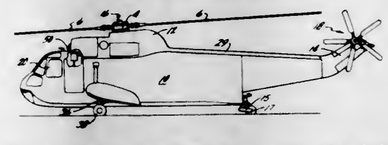
a flexible hose for communicating liquid from said outlet opening to said gun;

and flexible means communicating liquefied pressurized gas from said source to said gun and to said gas actuated means.

3,199,601
FLIGHT CONTROL SYSTEM

James C. Dean, Stratford, John A. Keder, Jr., Milford, and Albert J. Tolomeo, Stratford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Feb. 2, 1962, Ser. No. 171,331
14 Claims. (Cl. 170—135.22)



4. In combination in a helicopter; a rotor head; blades mounted on said head for pitch changing movement; first means for cyclically changing the pitch of said blades to provide lateral movement of said helicopter; second means for cyclically changing the pitch of said blades to provide longitudinal movement of said helicopter; a tail rotor; said tail rotor having tail rotor blades mounted for pitch changing movement; third means for collectively changing the pitch of said tail rotor blades; and fourth means for actuating said first means for cyclically changing the pitch of said blades, said second means for cyclically changing the pitch of said blades, and said third means for collectively changing the pitch of said tail rotor blades to provide a collective pitch change.

3,199,602
SPINNER HUB

Alvin Ratering, 1101 Hazen St. SE., Grand Rapids, Mich.

Filed Dec. 13, 1963, Ser. No. 330,449
5 Claims. (Cl. 170—159)



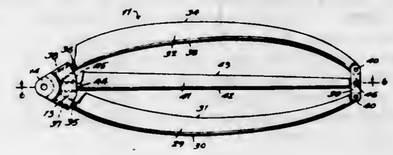
1. A prop spinner cap comprising: a generally conically shaped housing having a shaft-receiving chamber in its base; opening means in said housing transversely of the axis of said housing; a securement pin in said opening means, extending across said chamber; said pin being shiftable axially in said opening means; an actuator blade type lever recessed within the periphery of said housing and pivotally attached thereto; said blade type lever having a sliding connection to said pin for shifting said pin axially in said opening means with pivoting of said blade type lever; said blade type lever and housing having interfitting locking means to maintain said blade type lever recessed within the housing until purposed manual withdrawal thereof.

3,199,603
CURVED ROTOR BLADES

Isadore Margolis, 151 Prospect Drive, Stratford, Conn.

Filed Jan. 25, 1965, Ser. No. 427,885
9 Claims. (Cl. 170—171)

1. A rotor blade for rotary wing aircraft, comprising a forward beam having in board and outboard ends, a rearward beam spaced rearwardly from said forward beam and having inboard and outboard ends, supporting means for the inboard ends of said beams comprising a socket member having a pair of cylindrical socket bearings opening to the outboard side of said socket member and respectively disposed with their longitudinal axes at outwardly inclined angles laterally at each side of the central longitudinal axis of said socket member, cylindrical shaft extensions respectively carried by said forward

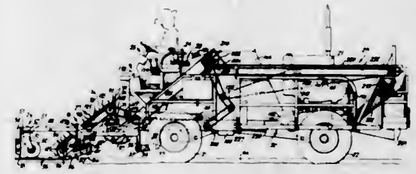


and rearward beams at their inboard ends disposed in convergent relation to each other and coaxially engaged within said respective socket bearings for relative rotary and axial movement therein, and connection means connected between the outboard ends of said beams, the central longitudinal axis of said blade being disposed in the space between said forward and rearward beams and extending through said supporting means and said connection means.

3,199,604
TOMATO HARVESTER

Coby Lorenzen and Istvan J. Szluka, Davis, and Fredrick L. Hill, Rio Vista, Calif., assignors to The Regents of The University of California, Berkeley, Calif.

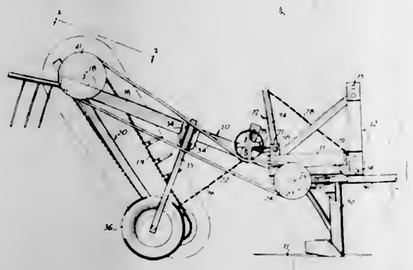
Filed Sept. 28, 1960, Ser. No. 59,031
47 Claims. (Cl. 171—27)



1. A tomato harvesting machine, including in combination: cutting means supported by the forward end of said frame; an elevator subframe supported by said main frame just to the rear of said cutting means; a plurality of spaced-apart parallel generally longitudinally extending guide strips on said subframe along and over which tomato plants that have been cut off by said cutting means can slide; a series of rigid fingers mounted for movement between each adjacent pair of guide strips; means for moving said fingers cyclically from the lower end to the upper end of said guide strips and for then returning them beneath said strips; cam means on said subframe for causing said fingers to descend forwardly beneath and nearly parallel to said guide strips, then to turn at the forward end to pick up said plants while extending substantially parallel to the ground and then to lift the plants while turning until they are substantially perpendicular to said guide strips and to move in that position to carry said plants over said guide strips, and then descend again as before; a pair of oscillating means mounted transversely on said main frame, one behind the other with the forward one lower than the rear one; a plurality of walking bars mounted on said oscillating means and extending behind said guide strips, each bar having upwardly extending resilient fingers for engaging said plants and shaking, rolling, and bouncing them from their forward end to their rear end; a plant disposal hopper in said frame

at the rear end of said walking bars into which plants fall from the upper end of said walking bars; a rearwardly and upwardly moving de-leafer conveyor belt below said walking bars, on which said tomatoes fall from said plants and by which leaves falling from said plants are moved into said hopper; conveyor means on said frame extending from a tomato-outlet end of said de-leafer conveyor belt; a sorting and inspection conveyor belt on said frame moving longitudinally thereof, to which said conveyor means carry said tomatoes; means extending longitudinally along said sorting conveyor and providing a division for said conveyor into a select stream and a cull stream; a collection means at the output end of each said select stream into which the select tomatoes drop from said sorting conveyor; and a cull disposal means for each said cull stream.

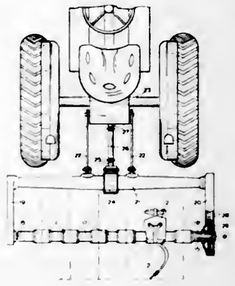
3,199,605
SHAKER-WINDROWER
Carroll J. Whitfield and Jack C. Whitesides, Albany, Ga., assignors to Lilliston Implement Company, Albany, Ga., a corporation of Georgia
Filed Mar. 26, 1962, Ser. No. 182,187
7 Claims. (Cl. 171—101)



1. In a shaker-windrower including a main frame having a forward section and a rear section, a rattler frame mounted on said main frame for adjustment relative thereto, a pick-up conveyor carried by said rattler frame, a drive shaft for said conveyor rotatably mounted on said rear section, tubular means fixed to said main frame and concentrically arranged about said drive shaft for rotation of said drive shaft therein, mounting means fixed to said rattler frame and rotatable about said tubular means pivotally mounting said rattler frame thereon, drive means on said forward section of said main frame, and a drive connection between said drive means and said drive shaft.

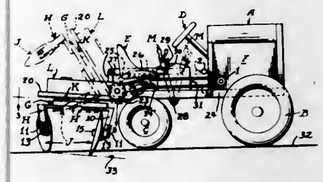
3,199,606
ACTUATING MEANS FOR THE DIGGING BLADES OF A MACHINE FOR CULTIVATING THE SOIL
Herbert Vissers, Nieuw Vennep, Netherlands, assignor to Landbouwwerktuigen- en Machinefabriek H. Vissers N.V., Nieuw Vennep, Netherlands
Filed June 5, 1964, Ser. No. 372,882
Claims priority, application Netherlands, June 7, 1963, 293,810
4 Claims. (Cl. 172—95)

1. In a machine for cultivating the soil, digging blades arranged in at least one circular set, stub shafts on which the blades are individually secured, the axis of said of said stub shafts lying in a plane substantially perpendicular to the axis of the set of blades, a hollow shaft having a hub body forming part thereof, said stub shafts of the digging blades being rotatably journaled in said hub body, a traveling frame rotatably supporting the hollow shaft, a stationary axle extending in said hollow shaft a toothed rack mounted for axial sliding movement in said hub body, toothing provided on each stub shaft, said rack



being in meshing engagement with said toothing, a guide track located around said stationary axle for reciprocating said rack, driving means for rotating said hollow shaft with the toothed rack being substantially housed and located between the side walls of the guide track and having end faces in contact with the side walls of the guide track.

3,199,607
ATTACHMENT FOR GARDEN TRACTOR
Emil J. Granius, 1969 Tyler St., San Pablo, Calif.
Filed Jan. 13, 1964, Ser. No. 337,258
1 Claim. (Cl. 172—111)

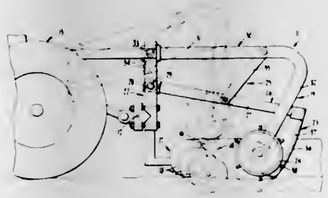


The combination with a garden tractor of an attachment therefor comprising:

(a) a platform pivotally connected to said tractor so that the leading and trailing edges of said platform will extend at right angles to the line of tractor travel during its forward movement;
(b) platform swinging and holding means operatively connected to said tractor and said platform for adjustably holding said platform in an inclined position with the trailing platform edge being disposed at a greater distance above the ground than the leading edge;
(c) a drive shaft rotably carried by said platform, the axis of the shaft being substantially normal to the plane of said platform; and extending an angle to the surface of the ground;
(d) a member secured to said shaft and being rotatable thereby, the plane of said member paralleling the plane of said platform;
(e) said member having a plurality of arms that extend radially from said shaft axis;
(f) a plurality of disc-carrying arms equal in number to the number of arms on said member; each disc-carrying arm rotatably supporting a disc;

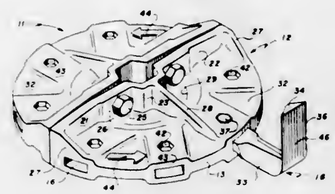
(g) adjustable means for securing said disc-carrying arms to the arms of said member;
(h) said means permitting said disc-carrying arms to be moved toward or away from the axis of said drive shaft for spacing the discs the desired distance from said drive shaft axis; and
(i) said means including means pivotally connecting said disc-carrying arms to said member arms for permitting said disc-carrying arms to be swung about said pivot means into desired angular positions with respect to radial lines extending from said pivot means to said drive shaft axis and to be secured in this position, this adjustment regulating the rake angle of the discs;
(j) the vertical extent of said disc carrying-arms and said disc being such that the oil-engaging portions of said discs move in a plane when said shaft is rotated that parallels the plane of said member and said platform and that is inclined with respect to the surface of the ground;
(k) the discs being carried by their arms at points that will cause the discs when swinging through orbital portions of their arcs that are disposed near to the leading edge of said platform to dig deeper into the ground for tilling the ground as the tractor moves forwardly, and the same discs, when 180° later in their orbital swing, will have their lower edges positioned substantially level with the ground surface and will level the previously tilled portion of the ground as the tractor advances;
(l) said platform swinging and holding means operable for inclining said platform in the opposite direction so that the leading platform edge is disposed higher with respect to the ground surface, than the trailing platform edge; whereby
(m) the soil-engaging portions of said discs will dig deeper into the ground during the orbital arc portions that are disposed near to the trailing edge of said platform than during the orbital arc portions that are disposed near to the leading edge of said platform; the tractor operator causing the tractor to back up when the platform is so inclined in the opposite direction.

3,199,608
RIDGE GAP BLOCKER
Burch D. Robbins, Union City, Calif. (5312 Maul Way, Fair Oaks, Calif.)
Filed Feb. 25, 1963, Ser. No. 260,494
7 Claims. (Cl. 172—234)



1. A ridge gap blocking device comprising a support frame adapted for towing by a draft vehicle, a pair of lift elements pivotally secured to said support frame for independent movement about a transverse axis, a pair of wheels respectively journalled at the free ends of said elements, a second pair of lift elements pivotally secured to said support frame for independent movement about a transverse axis, a pair of scrapers secured at the free ends of said second elements in inwardly spaced relation to said wheels, said scrapers depending from said elements into engagement with a ground surface upon which said wheels are supported, and a cross link pivotally secured at its opposite ends to adjacent ones of said first and second lift elements.

3,199,609
HUB AND MOUNTING MEANS FOR A CULTIVATING TOOL
Mayes R. Robinson, Gilroy, Calif. (P.O. Box 45, San Martin, Calif.)
Original application Mar. 28, 1960, Ser. No. 18,077, now Patent No. 3,101,122, dated Aug. 20, 1963. Divided and this application Sept. 24, 1962, Ser. No. 225,711
2 Claims. (Cl. 172—556)

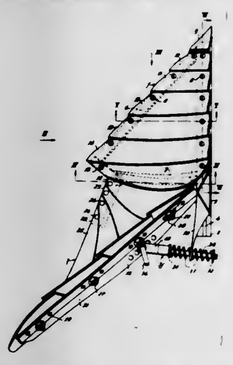


1. A ground cultivator tool holder disc having formed therein an even numbered plurality of rectangular tool sockets equally spaced peripherally thereof, each of said sockets having the side walls thereof opposed axially of said disc and of equal thickness, each of said sockets having its axis parallel to and offset from a radius of said disc, said disc being formed with a polygonal sided axial shaft opening, the number of sides of said shaft opening and the number of tool sockets, one with respect to the other, not being a whole number, and said disc being divided into two semicircular parts formed to have therebetween a lenticular opening extending diametrically of said disc and formed so that contact between said parts is limited to peripheral portions thereof; and means for securing together said semicircular parts; and secured in each of such sockets the shank of a ground engaging tool, each of said tools being in the form of a flat bar bent out of the plane of a side thereof so that there are outer and inner faces thereof with a portion to one side of such bend being a straight rectangular shank of a size to conform to a such socket and to extend beyond the periphery of such disc, and the portion to the other side of said bend being a head formed with opposite cutting edges joined by the outer face of said head, said face and edges being substantially normal to the faces of said shank, and said edges being continuous of said head, said bend, and substantially the shank extension beyond said periphery; and a single bolt securing said shank in said socket.

3,199,610
PLOUGH BODIES
Cornelis van der Lely, Zug, Switzerland, assignor to C. van der Lely, N.V., Maasland, Netherlands, a Dutch limited-liability company
Filed May 14, 1963, Ser. No. 280,406
Claims priority, application Netherlands, May 29, 1962, 279,080
9 Claims. (Cl. 172—736)

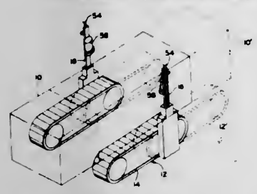
1. A plough body having as oil confronting surface, said surface consisting of a plurality of separate strip-shaped elements arranged one behind the other in overlapping relationship, each element having a trailing edge portion overlapping the leading edge portion of a follow-

ing element considered in the direction in which a furrow slice moves relative to the plough body during the use thereof, means for adjusting the position of at least some



of said elements relative to one another and in a direction extending substantially parallel to the first-mentioned direction.

3,199,611
TOOL MOUNTING
Neal W. Densmore, Franklin, Pa., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 727,808, Apr. 11, 1958. This application Aug. 28, 1961, Ser. No. 134,264
5 Claims. (Cl. 173—24)



1. A tool mounting for a mine roof drilling apparatus comprising, a crawler propelled support movable over a surface, means secured to said propelled support for slidably supporting and orbitally guiding endless flexible crawler treads for propelling said support, tool support means connected to said treads, drilling means secured to said tool support means wherein said tool support means positions said drilling means in constant engagement with said surface for forming holes in such mine roof, and means cooperable at least when one of the tread plates is surface engaged for maintaining said drilling means stationary when said propelled support is moving relative to such surface.

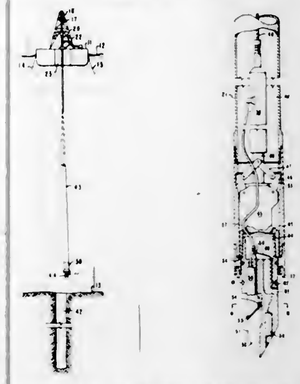
3,199,612
CARTRIDGE-POWERED IMPACT WRENCH
Robert T. Catlin and Robert O. Swain, Trumbull, Conn., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Oct. 30, 1962, Ser. No. 234,116
9 Claims. (Cl. 173—93)

1. An impact-turning tool having means at one end thereof adapted to be detachably connected to a member to be turned, means in operable engagement with said detachable means to translate a longitudinally-acting force into a rotational force, a cartridge-powered firing mechanism adapted to provide an explosive, longitudinally-acting force to said translating means, said firing mechanism comprising a chamber means in which an explosive cartridge is positioned, a breech block detachably connected to said chamber means, said breech block having an eccentrically positioned opening therethrough, sleeve means mounted on said breech block having an opening therein which in the non-firing position is laterally offset from said breech block opening, a firing pin having its lower and upper ends slidably positioned in the breech block opening and the sleeve



opening respectively, means permitting relative movement of said sleeve and breech block wherein said firing pin can be moved into and held in firing position whereby the longitudinal axis of said firing pin is in substantial alignment with the longitudinal axis of said breech block opening, and means operable to release said firing pin in order to strike said explosive cartridge and release explosive pressure thus providing the longitudinal force required to actuate said translating means.

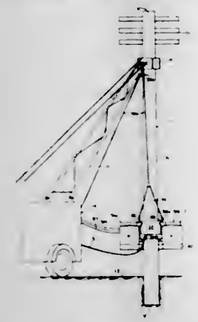
3,199,613
METHOD AND APPARATUS FOR DRILLING AN UNDERWATER WELL
Raymond A. Malott, Fullerton, and Glenn D. Johnson, Downey, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 28, 1962, Ser. No. 226,797
15 Claims. (Cl. 175—5)



1. A method of locating and establishing contact with an underwater well from a vessel on the surface of a body of water, said method comprising
(a) positioning a drilling vessel at a selected offshore location
(b) making up at the vessel a pipe string having an axial opening in the lower end thereof,
(c) lowering the lower end of said pipe string from said vessel to a position near the ocean floor beneath said body of water,
(d) lowering down through said pipe string and positioning in the lower end of said pipe string well finding means operatively connected to indicating means on said vessel
(e) moving said pipe string and said well finding means means to scan the ocean floor and locate the top of the well drilled in said ocean floor and to position the lower end of the pipe string in register thereabove, and
(f) lowering said pipe string until at least the lower end thereof is in the well.

10. Apparatus for locating and establishing contact between a vessel on the surface of the ocean and a hole in the ocean floor, said apparatus comprising
a pipe string depending from said vessel with the lower end of the pipe string near the ocean floor,
means on said vessel for suspending said pipe string near its upper end,
television mean carried at least partially within said pipe string at the lower end thereof and television receiving means carried on said vessel for viewing the area around the lower end of the pipe string,
a cable extending from said television means upwardly through said pipe string to the television receiving means on the vessel at the surface, and means for moving said pipe string relative to said ocean.

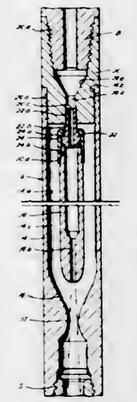
3,199,614
SONIC WAVE SYSTEM FOR PLANTING UTILITY POLES IN THE GROUND
Albert G. Bodine, Jr., Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif.)
Filed Oct. 3, 1962, Ser. No. 228,085
11 Claims. (Cl. 175—19)



1. The method of planting in the ground a pole for utilities and the like, such pole being of elastic material and being capable of having a sonic elastic standing wave set up therein, characterized by velocity anti-nodes at the extremities of the pole and at least one intervening stress antinode, which comprises:
positioning the pole vertically, with its lower end in engagement with the ground,
clamping to the pole, at a position spaced below the lowermost stress antinode in the pole, a sonic wave generator capable of setting up in the pole a sonic elastic standing wave as aforesaid,
allowing the weight of said wave generator to be imposed onto the pole and to constitute a bias loading thereon whereby the pole is pressed against the ground by virtue of its own weight plus that of said generator,
operating said generator to set up said standing wave in the pole, whereby the pole is caused to descend into the earth,
and discontinuing said standing wave in the pole when the lower end portion of said pole has been sunk a predetermined distance into the ground.

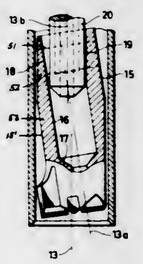
3,199,615
APPARATUS FOR MAINTAINING A VERTICAL WELL BORE WHILE DRILLING
Lynn W. Storm, 2900 Bowman Road, Austin, Tex.
Filed Mar. 18, 1963, Ser. No. 265,941
5 Claims. (Cl. 175—73)

1. An anti-drift tool adapted to assist in maintaining the drilling of a well hole vertically, comprising:
(a) a tubular body adapted to be connected in a drill string,
(b) nozzle means having a longitudinal passage therethrough and mounted in said tubular body for directing a fluid stream in said tubular body,



(c) pivotal connector means for mounting said nozzle means for pivotal movement in response to gravity to maintain the fluid stream therefrom vertically or substantially vertically,
(d) said connector means having a passage therethrough communicating the interior of the drill string above said connector means with said passage in the nozzle means for directing flow from the drill string through the nozzle means, and
(e) means in said tubular body adapted to be contacted by the fluid stream discharging from said nozzle means when said tubular body is out of vertical alignment to urge same back towards vertical alignment.

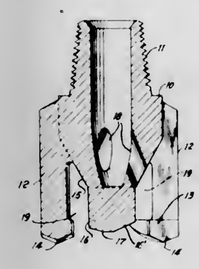
3,199,616
DRILL FOR ROTARY PERCUSSION DRILLING
John Anders Hjälsten, Sandviken, Sweden, assignor to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden
Filed July 8, 1963, Ser. No. 293,397
Claims priority, application Sweden, July 10, 1962, 7,694/62
2 Claims. (Cl. 175—284)



1. A drill bit and drill rod assembly, said drill bit having a lower cutting portion and an upper shank portion, a

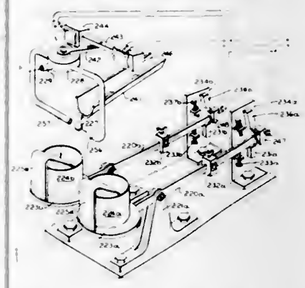
longitudinal bore in said shank portion, said drill rod extending into said bore, a depression having limiting end shoulders in the side of said drill rod at a distance from the lower end thereof, a locking member secured to said drill bit and extending into said bore and depression, said locking member having a substantially smaller dimension in the direction of the longitudinal axis of said drill bit than said depression and the distance between the lower end shoulder of said depression and the end of said drill rod being substantially smaller than the distance between said locking member and the bottom of said bore, the lower portion of said bore having a cross sectional size and shape corresponding to the size and shape of the lower end portion of said drill rod, said bore adjacent the upper end of said shank portion having a beveled inner surface that is inclined upwardly and outwardly relative to the axis of said shank portion, said shank portion having a lower outer cylindrical surface on one side thereof adjacent to the lower end thereof and an upper outer cylindrical surface on the opposite side thereof adjacent to the upper end thereof, said cylindrical surfaces being approximately concentric with the axis of said shank portion, said cutting portion having an eccentric cutting edge that extends radially beyond the extension of said lower cylindrical surface, said shank portion having also a first beveled outer surface adjacent to the upper end thereof opposite to said upper outer cylindrical surface and a second beveled outer surface adjacent to the lower end thereof radially opposite to said lower outer cylindrical surface, said outer beveled surfaces and said beveled inner surface all being substantially parallel to an axis that is inclined with respect to the axis of said shank portion and said first beveled outer surface adjacent to the upper end of said shank portion being substantially alined with the outermost extension of said eccentric cutting edge.

3,199,617
DRILLING BIT
Thomas A. White, P.O. Box 27, Quanah, Tex.
Filed Dec. 3, 1962, Ser. No. 241,801
2 Claims. (Cl. 175—404)



2. In a drilling bit for oil wells, having a body formed with means for attachment to a drill string, and a tapered portion formed on said body opposite said attachment means, a core breaking element, cylindrical in transverse section, forming a coaxial extension of said tapered portion and having a pair of cutting elements on its outermost end in offset parallel alignment transverse to the axis thereof, a plurality of blades formed radially of said body and spaced from and depending axially about said tapered portion and said core breaking element, and below the outermost end thereof, the said blades being arcuate in transverse section whereby each defines a segment of a circle and having cutting surfaces on their leading edges.

3,199,618
ARTICLE WEIGHING APPARATUS AND METHOD
Roy M. Magnuson, deceased, late of Saratoga, Calif., by Genevieve I. Magnuson, executrix, Saratoga, Calif., assignor of one-half to Genevieve I. Magnuson and one-half to Genevieve I. Magnuson, Robert Magnuson, and Lois J. Fox, trustees
Original application Aug. 6, 1956, Ser. No. 602,355, now Patent No. 2,990,665, dated July 4, 1961. Divided and this application Sept. 19, 1960, Ser. No. 57,604
3 Claims. (Cl. 177—1)



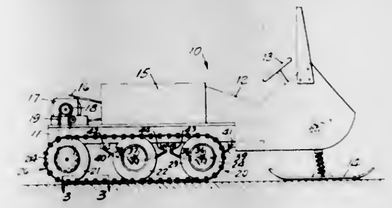
1. A method of providing measured quantities of articles of unknown mass to provide a total unknown mass which varies from a desired mass by the weight of one article or less, which comprises imparting a standard or uniform velocity to each article, causing each article to travel for a fixed distance to a point of impact where a mass is present or accumulated, and individually measuring the impact of each article on the mass as a measure of the total weight of the mass when the article is added thereto.

3,199,619
LOAD SUSPENSION FOR RESISTANCE STRAIN GAGE WEIGHING
Claude M. Hathaway, Colorado Springs, Colo., assignor to Western Electrodynamics, Inc., a corporation of Colorado
Filed July 2, 1962, Ser. No. 206,679
12 Claims. (Cl. 177—136)



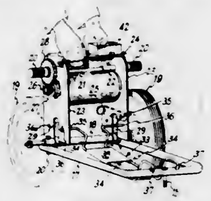
1. A load suspension system for resistance strain gage weighing means including:
a lower support member;
an upper weighing platform adapted to support the load to be weighed, superimposed over the lower member and spaced therefrom;
a plurality of weighing means disposed in the interspace between the support member and the weighing platform;
said weighing means each comprising;
a support bearing block rigidly secured to the top side of the lower support member;
a platform bearing block rigidly secured to the underside of the weighing platform and laterally spaced from the support bearing block;
a load bar disposed between said bearing blocks and having resistance strain gages bonded thereto and having top and bottom apertures therein;
a cantilever beam having one end disposed in said top aperture of the load bar and its other end supported by the support bearing block;
a load carrying beam having one end disposed in said bottom aperture of the load bar and its other end mounted in the platform bearing block;
and a like plurality of stabilizer bars pivotally interconnecting the lower support member and the upper weighing platform, said pivotal connections having parallel axes of rotation which axes are substantially perpendicular to the direction of gravitational force exerted on the load being weighed.

3,199,620
TRACTION DEVICE
Carl L. Wheeler, Jr., Crane Lake, Minn.
Filed Oct. 10, 1963, Ser. No. 315,225
2 Claims. (Cl. 180—9.58)



2. A traction device for a land vehicle,
comprising a frame having transverse sides,
a plurality of rubber tired fore and aft drive and support wheels arranged in tandem on each side of the frame and including front ground support wheels and rear ground support wheels,
a plurality of axles having cantilever ends extending outwardly of the transverse sides of said frame and means mounting said wheels on said ends,
mounting means connecting said axles to the frame and including rotary bearings journaling the axle of said rear wheels and also including releasable fastening means rigidly connecting said bearings to the frame and facilitating fore and aft adjustment of said bearings and said axle relative to said frame, said mounting means also including a pair of elongate fore and aft leaf spring assemblies respectively disposed adjacent the opposite transverse sides of the frame, the forward spring assemblies having intermediate portions affixed to the axle of said front wheels and said assemblies also having fore and aft ends, means connecting the ends of said assemblies to the frame whereby to permit upward and limited rearward yielding of said front wheels,
a pair of elongate and endless tracks each disposed at a respective side of the frame and extending around and between said rubber tired tandem wheels, said tracks having endless belts of fixed lengths and means restraining said tracks against transverse movement relative to said wheels whereby to retain the tracks on the wheels,
and drive means on the frame and connected with said rear wheels to produce rotation thereof and thereby effect propulsion.

3,199,621
SELF-PROPELLING POWER UNIT FOR GOLF BAG CART
Joseph W. Seaman, Cincinnati, Ohio, assignor to Seaman Enterprises, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 25, 1962, Ser. No. 168,743
10 Claims. (Cl. 180—11)



10. In a self-contained portable power unit for a golf bag cart, a U-shaped frame, an axle fixedly secured to said U-shaped frame and mounting a pair of traction wheels, a motor mount positioned between said traction wheels and overlying said axle, said motor mount including an electric motor operatively connected to a drive shaft having drive rollers positioned for contact with said traction wheels, said motor mount being free for limited vertical movement relative to said traction wheels, whereby the weight of said motor mount is utilized to bias said drive rollers into driving engagement with said traction wheels, said drive rollers contacting the peripheries of said traction wheels at an angle of substantially 45° from a vertical plane extending through the axis of rotation of said traction wheels, said motor mount being secured to a base plate connected at one end only to said U-shaped frame, said U-shaped frame having spaced apart sets of slots therein, said base plate having depending pins selectively engageable in said sets of slots, whereby said motor mount may be displaced relative to said traction wheels.

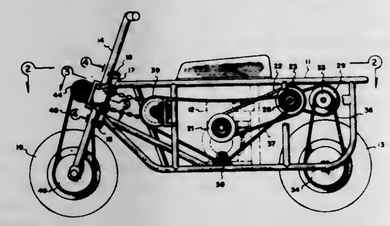
3,199,622
CARGO TRUCK TRAIN
Howard F. Cook, Pasadena, Calif., assignor to Henry C. Harbers, Pasadena, Calif.
Filed Oct. 15, 1962, Ser. No. 230,411
1 Claim. (Cl. 180—14)



A tractor suitable for hauling trailers and the like, said tractor having a motor-supporting main frame, a carriage having steerable front wheels underlying the front end of said frame and connected thereto through resilient suspension means expressly designed to carry only the load imposed thereon by said tractor and inadequate for supporting loads normally imposed on front tractor springs by a cargo trailer coupled to the tractor, a carriage assembly extending across the rear end of said tractor frame having fifth wheel means secured thereto, differential power transmitting means mounted on said carriage assembly to drive the wheels thereof, flexible power transmitting means between said motor and said differential power means, and entrapped-rubber torsion hinge means having a horizontal axis extending transversely of said frame providing the main draft connection between said carriage assembly and the rear end of said tractor frame and effective to substantially isolate trailer load forces from being transmitted to said front tractor carriage and

its associated resilient suspension means while resiliently resisting all except limited pivotal movements of said carriage assembly relative to the rear end of said tractor, said entrapped-rubber torsion hinge means being effective to transmit the entire weight of the rear end of said tractor to said carriage assembly for support thereby, pairs of resilient stabilizers spaced vertically above and below said torsion hinge means having one end of each stabilizer pivotally connected to the tractor frame and the other end of each pivotally connected to said carriage assembly closely adjacent a vertical plane through a wheel axis thereof, said stabilizers cooperating with said torsion hinge means in holding said carriage assembly movably connected to the rear of the tractor frame with the axis of the fifth wheel means upright and normal to a horizontal plane through the tractor frame.

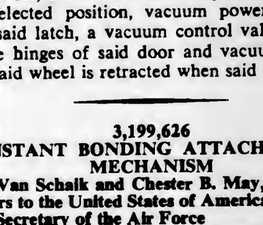
3,199,623
FRONT WHEEL DRIVE FOR MOTORCYCLE
Uvas S. Mangum, 830 East 6600 South, Midvale, Utah
Filed Sept. 9, 1963, Ser. No. 307,689
1 Claim. (Cl. 180—31)



A front wheel driven motor scooter comprising a main frame having a rear wheel; a motor mounted on said frame; an elongated front frame having a front wheel at its lower end and a passageway through at least a portion of its longitudinal centerline; bearing means on said main frame and said front frame mounting said front frame to the front of said main frame for steering movement by rotation of said front frame about a substantially vertical steering axis; spaced apart guide means on the forward end of said main frame adjacent said passageway of said front frame, said guide means being located on opposite sides of and in substantially the same transverse plane with said steering axis and vertically displaced from said bearing means; a horizontal shaft and rotatable pulley fixedly mounted on said front frame forward of said steering axis; means operatively connecting said pulley to said front wheel; and power transmission means comprising an endless belt driven by said motor on said main frame and trained about said pulley on said front frame and extending therefrom to said main frame through said passageway of said front frame and through said steering axis between said guides of said main frame whereby upon rotation of said front frame said endless belt is laterally restrained by said guide means.

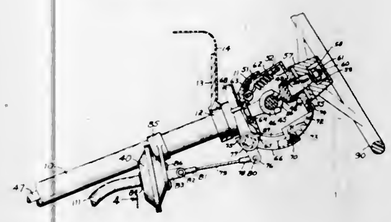
3,199,624
BATTERY RETAINER
Ronald N. Burns, Utica, and Louis P. Zetye, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 23, 1963, Ser. No. 304,093
4 Claims. (Cl. 180—68.5)

1. Battery retainer means for a battery having a groove adjacent the lower edge thereof and comprising:
a tray having a battery receiving surface and an angularly outwardly extending flange along one edge thereof, said flange forming a ramp adjacent said groove in said battery, a portion of said flange being formed out of the plane of said flange and substantially parallel to said battery receiving portion of said tray;
a substantially planar retainer member lying slideably upon said flange, said retainer having an edge receivable in said groove in said battery and having a portion formed out of the plane thereof and substantially parallel to said portion of said flange;



and means for securing said retainer member to said flange at said portions and with said edge of said retainer member in secure engagement in said groove in said battery.

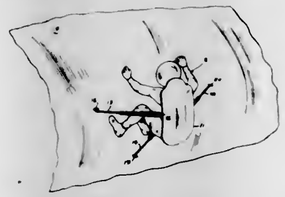
3,199,625
AUTOMATIC CONTROL FOR ADJUSTABLE STEERING WHEELS
Oscar P. Liebreich, 2658 N. Main St., Waterbury, Conn.
Filed Jan. 30, 1964, Ser. No. 341,351
8 Claims. (Cl. 180—77)



1. In an automobile, a normally closed exit door, hinges for said door, an operator's seat, and adjustable steering wheel selectively positionable relative to said seat, retraction means associated with said adjustable steering wheel for normally retracting said wheel away from said seat, a latch for normally holding said wheel in a preselected position, vacuum powered means for releasing said latch, a vacuum control valve actuated by one of the hinges of said door and vacuum connections whereby said wheel is retracted when said door is opened.

3,199,626
INSTANT BONDING ATTACHMENT MECHANISM
Peter N. Van Schaik and Chester B. May, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force
Filed June 3, 1964, Ser. No. 372,432
4 Claims. (Cl. 182—3)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An apparatus for attaching a man to a working surface and for releasing him therefrom, comprising: a body support member, means for attaching a man to said support member, a plurality of extendible arms pivotably attached to said support member, a wafer dispensing mechanism at the end of each of said arms remote from said body support member, a plurality of controllable adbesive wafer elements in each of said dispensing mechanisms, means for activating said controllable adhesive elements to thereby secure a wafer in said dispensing mechanism to the working surface, means on each of said dispensing mechanisms for releasing the wafers adhesively secured to said working surface when



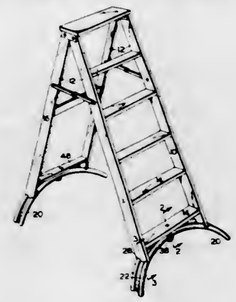
it is desirable to release the man from said working surface and for permitting a new wafer to move into its place in the dispensing mechanism.

3,199,627
ROLL-UP LADDER
Quentin V. Wagner and Helmut W. Dettloff, Bellevue, Ohio, assignors to Aladdin Ladders, Inc., a corporation of Ohio
Filed Apr. 17, 1962, Ser. No. 188,201
7 Claims. (Cl. 182—163)



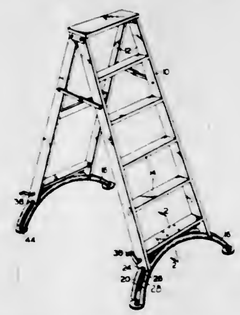
1. A ladder having a front side and a rear side comprising two spaced side rails,
transverse rungs longitudinally spaced along and fixed to said side rails,
each said side rail comprising:
a plurality of short hollow sections each having a substantial depth from front to rear and having
a first thin hollow portion and
a second hollow portion rearward of said first hollow portion,
a plurality of flat braces disposed in said first hollow portions and pivoted at one end to alternate sections,
each said brace extending from the section to which it is pivoted across the adjoining section and into the succeeding section,
tensile means holding said sections together
a stud projecting from second hollow portion of each section into the hollow portion of the adjoining section,
said stud being spaced from the rear surface of said second hollow portion,
and a guide strap passing through said second hollow portions between said stud and said rear surface.

3,199,628
LADDER CONSTRUCTION
Robert W. Fagaly, 6133 SE. 17th, Portland, Oreg.
Filed Mar. 21, 1963, Ser. No. 266,981
3 Claims. (Cl. 182—200)



1. A ladder construction having side rails and a plurality of steps supported by the side rails including a lowermost step spaced upwardly from the bottom edges of said side rails, a portion of the bottom edges of said side rails being recessed, a laterally disposed foot member for the ladder comprising an elongated longitudinally arcuate support disposed in slidable guided engagement laterally of the ladder in each bottom edge recess of said rails, an elongated arcuate web integral with said support, means in said web defining a slot extending in the same plane as the ladder, a clamp screw secured to said lowermost step and depending downwardly in projecting relation through said slot, and a clamp nut operable on the projecting portion of said screw to clamp the foot member in adjusted position relative to the ladder to level the same.

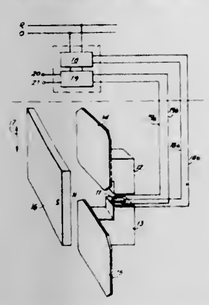
3,199,629
LADDER CONSTRUCTION
Robert W. Fagaly, 1521 SE. Reedway, Portland, Oreg.
Filed Nov. 12, 1963, Ser. No. 322,642
2 Claims. (Cl. 182—200)



1. A ladder construction having side rails and a plurality of steps supported transversely on the rails and including a lowermost step spaced upwardly from the bottom edges of the side rails, means defining a pair of transverse recesses in each of the bottom edges of said rails, an arcuate foot member slidably connected to said side rails and having a pair of longitudinal projections on its upper surface extending through a portion of the length thereof, said foot member having a horizontal web portion interconnecting said longitudinal projections, said projections being adapted for slidable engagement in said recesses in the bottom edges of the ladder side rails for guiding adjustable movement relative thereto in a leveling

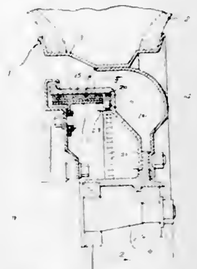
function, a worm rotatably mounted on said ladder, a worm gear on the horizontal web portion of said foot member in meshing relation with said worm for movement of said arcuate foot member upon rotation of said worm, and means connected with said worm for turning the same to adjustably move said foot member.

3,199,630
POSITION SENSING DEVICES, PARTICULARLY IN HOISTING AND CONVEYING SYSTEMS
Walter Engel, Friedrich Kuhrt, Hans-Joachim Lippmann, and Walter Hartel, all of Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Aug. 12, 1959, Ser. No. 833,185
Claims priority, application Germany, Jan. 24, 1958, S 56,700; Sept. 9, 1958, S 59,754; Sept. 25, 1958, S 60,050
6 Claims. (Cl. 187—29)



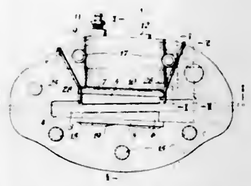
3. A system for determining the position and direction of movement of a moving object comprising means producing a magnetic field, said means including a first structure carrying magnetic material influencing said field, position-responsive sensing apparatus comprising a ferromagnetic structure magnetizable by proximity to said magnetic field, a magnetic-field responsive Hall voltage member of semiconducting substance joined with said ferromagnetic structure for varying the Hall voltage of said member when said ferromagnetic structure is so magnetized, the said structures being mounted for relative dispalcement, said Hall voltage member having Hall electrode means, and an electric control circuit connected to the Hall electrode means and responsive to change in Hall voltage caused by said relative displacement, said ferromagnetic structure comprising a magnetizable yoke formed of two separate magnetizable limbs, each having an end pole face, the limbs forming a magnetic circuit having two opposite flux gaps, a first one of said gaps being in a central region of the yoke, the second gap being between the end pole faces, the Hall voltage member being a semiconductor plate having its large area faces disposed transversely of the flux path in the first gap, said magnetic material influencing said field comprising a magnet that traverses the second gap, traversing over one end pole face and then over the other end pole face, during said relative displacement, the magnetic axis of which magnet is transverse to the displacement path, the two end pole faces of the yoke being located in a plane normal to that defined by the first gap and normal to said semiconductor plate, said displacement path extending in front of said plane, the magnet being a flat plate, the displacement direction being in the plane of the plate, the magnetic axis of the plate being transverse to the opposite-flat surfaces thereof, the length of the plate in the displacement direction being greater than the width of the second gap, to over-lap the gap during its displacement, so that said Hall voltage passes from a positive maximum value through a zero value to a negative maximum value during said traverse when one of said first structure and said ferromagnetic structure moves relative to the other in one direction from a first point on one side of the other structure to a second point on the opposite side of said other structure and said Hall voltage passes from a negative maximum value through a zero value to a positive maximum value when said one of said first structure and said ferromagnetic structure moves relative to the other in the opposite direction from said second point to said first point thereby indicating the position and direction of movement of the moving structure.

3,199,631
BRAKE ALARM
William J. Blankemeyer, 1715 E. 4th St., Ottawa, Ohio
Filed June 21, 1963, Ser. No. 289,557
5 Claims. (Cl. 188—1)



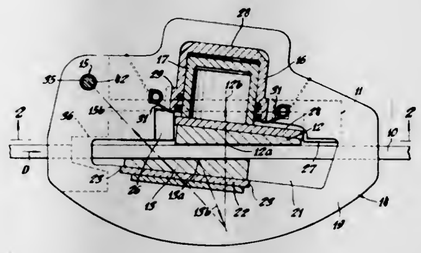
1. In a brake assembly, an annular brake drum having a braking surface, annularly arranged serrations adjacent said braking surface, a brake shoe operatively mounted to engage said braking surface and having a brake lining, and a flexible leaf spring mounted on said shoe and extending laterally therefrom in a position to cause the edge thereof to engage said serrations when the brake lining is worn down a predetermined amount, whereby to provide an audible warning signal.

3,199,632
CLOSED LOOP, SPOT TYPE, DISC BRAKE
Leslie Cyril Chouings, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England
Filed Oct. 17, 1961, Ser. No. 145,634
Claims priority, application Great Britain, Oct. 18, 1960, 35,727/60
16 Claims. (Cl. 188—73)



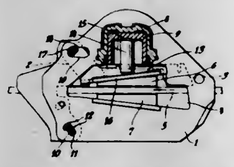
1. A disc brake comprising a fixed support having a substantially horizontal portion, a closed loop member, defining a central opening, slidably disposed on said horizontal portion, one end of said horizontal portion and said loop member being pivotally connected together, the opposite adjacent ends of said horizontal portion and closed loop member being unconnected to each other and freely movable with respect to each other to permit swinging of said loop member in a substantially horizontal plane with respect to said fixed support.

3,199,633
CLOSED LOOP, SPOT TYPE, DISC BRAKES
John Rodway, Leamington Spa, England, assignor to Automotive Products Company Limited, Warwickshire, England, a British company
Filed June 14, 1963, Ser. No. 287,898
Claims priority, application Great Britain, June 15, 1962, 23,198/62
6 Claims. (Cl. 188—73)



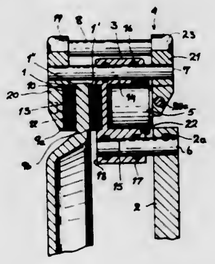
1. A disc brake comprising a fixed support with a substantially horizontal portion, a closed loop member slidably disposed on said horizontal portion, vertical pin means pivotally connecting one end of said horizontal portion and closed loop member to each other, the opposite adjacent ends of said horizontal portion and closed loop member being movable with respect to each other, a brake disc adapted to extend into the opening defined by the closed loop member, pad members on said loop member disposed on opposite sides of said brake disc, actuating means on one side of said loop member operatively connected to said pad members to move a pad member on one side of said brake disc into contact with said brake disc to swing said loop member in a horizontal plane and move said pad member on the opposite side of said brake disc into contact with said brake disc, said pin means being laterally offset from said opening and brake disc on said one side of the closed loop member on which said actuating means is disposed, and said pad members being offset from each other in a direction extending parallel to the plane of said brake disc.

3,199,634
PIVOTABLE AND SLIDABLE, CLOSED LOOP TYPE SPOT DISC BRAKE
Leslie C. Chouings, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England
Filed Nov. 21, 1963, Ser. No. 325,309
Claims priority, application Great Britain, Nov. 22, 1962, 44,232/62
5 Claims. (Cl. 188—73)



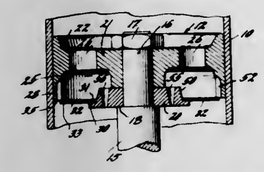
1. A disc brake comprising a fixed support forming a flat platform, a first movable member including a flat integral closed loop plate having a central opening to receive the peripheral portion of a brake disc and brake pads on opposite sides of the brake disc, said first movable member having an elongated slot, a first pivot pin extending through said slot and fixed support pivotally connecting said first member on said fixed support for swingable movement in a plane normal to the plane of rotation of the brake disc, said pivot pin having a shank portion disposed in said slot to permit said first movable member to be slidably movable with respect to said brake disc substantially in the direction of the axis of rotation of the brake disc, a second movable member disposed on said fixed support provided with an arm portion extending along one side of the opening in said first member, said second member having an elongated slot, a second pivot pin extending through said second member slot and said fixed support pivotally connecting said second member on said fixed support for swingable movement in a plane normal to the plane of rotation of the brake disc, said second pin having a shank portion slidably disposed in said second member slot to permit said second member to be slidably disposed with respect to said brake disc substantially in the direction of the axis of rotation of the brake disc, said slots being disposed in spaced relationship with each other a substantial distance apart and in lateral alignment with each other, brake pads on said first and second members and disposed in said central opening on opposite sides of a brake disc adapted to extend therein, a brake actuating cylinder carried by said first member operatively connected to said second member to cause swinging movement of said second member to bring said second brake pad into contact with the brake disc extending through said opening, to move said brake pad on said first member into contact with the opposite side of said brake disc.

3,199,635
SPOT TYPE DISK BRAKE
Alfred Bessler, Heinz Rabe, Heinz Dobbelstein, and Hermann Von Ey, all of Gifhorn, Germany, assignors to Alfred Teves Maschinen- und Armaturenfabrik K.G.
Filed Mar. 5, 1964, Ser. No. 349,776
7 Claims. (Cl. 188—73)



1. A disk brake comprising a support member; a brake disk journaled for rotation relative to said support member and having a pair of opposite brake faces; a brake member provided with a respective braking surface juxtaposed with one of said faces and displaceable toward and away from said disk; a yoke member extending around the periphery of said disk while being shiftable relative to said brake member and having a respective braking surface juxtaposed with the other face of said disk; actuating means for displacing said brake and yoke members relative to one another and selectively shifting said surfaces jointly toward and away from said disk; a first pair of guide rods rigid with one of said brake and support members and extending generally transversely to said faces, said brake member being slidably mounted on said first pair of guide rods for displacement transversely to said faces; and a second pair of guide rods offset from said first pair while extending generally transversely to said faces and slidably interconnecting said brake and yoke members for relative displacement thereof transverse to said faces.

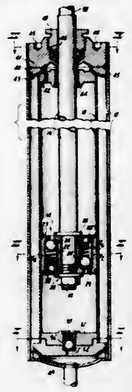
3,199,636
FLOATING VALVES FOR SHOCK ABSORBERS
Christian-Marie-Lucien-Louis Bourcier de Carbon, 64 Blvd. Maurice Barres, Neuilly-sur-Seine, France
Continuation of application Ser. No. 229,386, Oct. 9, 1962. This application Apr. 25, 1963, Ser. No. 275,767
Claims priority, application France, Apr. 26, 1962, 895,729
7 Claims. (Cl. 188—96)



1. In a direct-acting piston-and-cylinder shock absorber, a cylinder containing damping fluid, a piston disposed for reciprocation therein, means for by-passing damping fluid through the piston from one side to the other, said means including an annular cavity formed in said piston and having inner and outer circular walls, at least one thin annular resilient valve disc positioned within said cavity, a fixed annular seat on one wall of said cavity facing in one axial direction and a fixed annular seat on the other of said walls facing in the opposite axial direction, the outer marginal portion of said disc normally seated in the axial direction against the seat on the outer one of said walls, and the inner marginal portion of said disc seated against the seat on the inner one of said walls, whereby movement of said piston in one direction causes pressure of damping fluid against the valve disc in the opposite direction and causes the disc to yieldably flex away from one of said seats and afford an annular opening between the adjacent portions of the disc and the seat for the controlled passage of fluid therethrough, characterized by the provision of an obstruction to flow of fluid comprising a part projecting from at least a portion of the periphery of the support so as to throttle the flow of damping fluid past this inner portion of the valve disc, and the obstruction so constructed and arranged as to gradually decrease the throttling effect as the flexing of the disc increases.

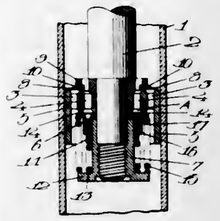
3,199,637
SHOCK ABSORBERS
Alejandro Herman, Perez Valenzuela 1257, Apt. 11, Santiago, Chile
Filed Dec. 3, 1963, Ser. No. 327,636
1 Claim. (Cl. 188—96)

In a double acting shock absorber comprising in combination an outer cylinder which acts as a fluid reservoir, an inner cylinder within said outer cylinder, a valve at one end of said inner cylinder which permits fluid flow only from said outer cylinder to the inner cylinder of the shock absorber, orifices at the other end of said inner cylinder which communicate with said outer cylinder, a piston within the inner cylinder, and a piston rod attached to said piston which extends axially outside the cylinders, the improvement according to which said piston is perforated by six axial holes, said shock absorber comprising check valves for said holes positioned to permit passage of said fluid through three of said holes in one axial direction and through the other three of said holes in the other axial direction, those check valves permitting passage of fluid in said one direction being alternated with those permitting passage in the other direction around a circle in the piston concentric with said axis, said check valves being individually adjustable to provide various degrees of resistance to the passage of fluid through said holes and comprising setting means which protrude at all settings beyond a working surface of the piston, washer means on said piston rod lapping over said setting means while permitting the free passage



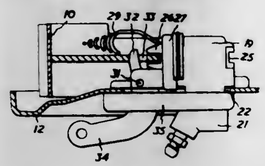
of fluid through said holes, and means for applying pressure to said washer means to lock said setting means in position.

3,199,638
VARIABLE VOLUME PISTON CHAMBER IN A SHOCK ABSORBER
Masaru Otomo, Urawa-shi, Saitama-ken, Japan, assignor to Kayaba Industry Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Dec. 20, 1963, Ser. No. 332,142
Claims priority, application Japan, Sept. 16, 1963, 38/49,096
2 Claims. (Cl. 188—100)



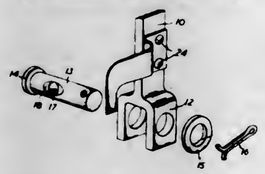
1. A shock absorber comprising an elongated housing means containing a fluid, a piston rod mounted in said housing means for movement along the length thereof, a piston head mounted on said piston rod within said housing means, said piston head being disposed in sealing relation with said housing means to provide upper and lower fluid chambers, said piston head having a first fluid passageway communicable with said upper and lower chambers, a check valve mounted on said piston head operable to permit fluid flow through said first fluid passageway when said piston is moving in a first direction, said piston head having a second fluid passageway communicable with said upper and lower chambers, a valve member disposed on said piston head operable to permit fluid flow through said second passageway when said piston head is moving in a direction opposite from said first direction, yieldable means for urging said second mentioned valve member in a closed position, said piston head having a chamber, a movable piston member mounted on said piston rod receivable within said chamber and operable to vary the volume of said chamber, thereby providing a variable volume chamber, means for biasing said piston member into said chamber and said second mentioned valve member having a restricted passageway permitting communication between said second passageway and said variable volume chamber.

3,199,639
SHOE DRUM BRAKES
William Robin Newton, Aldridge, England, assignor to Girling Limited, Birmingham, England, a British company
Filed Feb. 25, 1963, Ser. No. 260,559
Claims priority, application Great Britain, Mar. 16, 1962, 10,122/62
1 Claim. (Cl. 188—106)



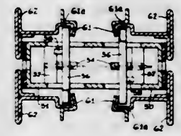
A shoe drum brake of the duo-servo type comprising a rotatable brake drum, a relatively stationary back plate, a pair of arcuate brake shoes carrying friction linings for engagement with said rotatable drum to apply the brake, said shoes having actuated and non-actuated ends, floating means operatively interconnecting the non-actuated ends of said brake shoes, and said brake applying means engaging the actuated ends of said brake shoes, said brake applying means comprising a single-ended hydraulic cylinder and piston assembly, said cylinder being in freely separable engagement with the end of one of said brake shoes and said piston being in freely separable engagement with the end of the other of said brake shoes, means slidably mounting said assembly wholly on said stationary back plate for movement in a direction substantially parallel to the direction of movement of the shoe ends in the application of the brake, an anchor pin mounted on the back plate on the radially outer-side of the hydraulic cylinder and piston assembly and forming an abutment for the actuated ends of said shoes, and means for separating said shoes mechanically comprising a bell crank lever, a pivot for said bell crank lever on said cylinder and piston assembly, one arm of said lever extending substantially at right angles to said back plate and engaging in an opening in the web of the shoe normally actuated by the piston of said cylinder and piston assembly at a point spaced circumferentially from said assembly, and the other arm of said lever extending substantially parallel to said back plate and adapted to be coupled to a hand lever.

3,199,640
AUTOMATIC ADJUSTER
George Eric Thompson, Edgbaston, Birmingham, England, assignor to Girling Limited, Tyseley, England, a British company
Filed July 2, 1963, Ser. No. 292,225
Claims priority, application Great Britain, July 5, 1962, 25,774/62
6 Claims. (Cl. 188—196)



1. Mechanism for transmitting movement incorporating a lever having a first end and a second end, and a rod, a stationary pivot about which the lever at said first end is angularly movable, a forked end at said second end of said lever, a trunnion mounted in the forked end of said lever and having an opening through which said rod is carried, a shoulder on the rod adapted to bear against one side of the trunnion, a toothed wheel carried by one end of the rod, a blade fixed at one end to the lever at a point between said stationary pivot and said trunnion, and a pawl tooth formed at the free end of said blade and adapted to engage the toothed wheel to rotate the rod when angular movement of the lever exceeds a predetermined value.

3,199,641
LOCKING DEVICE FOR BUILDING PANELS AND THE LIKE
William H. Yake, Connersville, Ind., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed May 3, 1961, Ser. No. 107,396
6 Claims. (Cl. 189—36)



1. In a building wall construction wherein panels are attached to a grid, a mounting plate constituting a part of said grid and having an aperture, a locking device mounted upon said mounting plate, said locking device comprising a tubular bolt having an axial bore entirely therethrough and a locking member, said bolt passing through said plate and threadedly engaging said locking member, said locking member having a tab engageable with said plate upon rotation of said bolt in one direction, to hold said locking member against rotation with said bolt in an unlocking position, whereby said locking member, upon rotation of said bolt in said one direction, moves to an unclamping position, means operative upon rotation of said bolt in the other direction, to hold said locking member against rotation with said bolt in a locking position, whereby said locking member, upon rotation of said bolt in said other direction, moves to a clamping position, said bolt having an internal tool engageable configuration smaller than the said bore, whereby said bolt may be rotated from either end by a correspondingly configured tool having a shank of a size which will pass through said tool engageable configuration, and said tool may be passed entirely through said bolt to operate a like locking device having a like bolt in axial alignment with the first mentioned bolt.

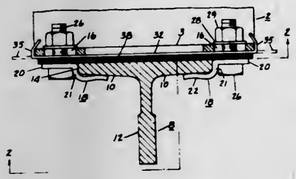
3,199,642
RAIL POSITIONING AND FASTENING DEVICE
George Clifford Anderson, Bergenfield, N.J., assignor to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 87,002, Feb. 3, 1961. This application Feb. 21, 1964, Ser. No. 347,648
4 Claims. (Cl. 189—36)

1. Apparatus supporting a vertically disposed guide rail on a structure, comprising,
a mounting member attached to said structure and having a substantially vertical surface spaced therefrom,
said member having formed therein two elongated apertures the long axes of which are substantially horizontal,

said guide rail including a guiding web and a pair of oppositely disposed flanges,

a pair of rail clips each engaging one of said flanges and each having an aperture formed therein,

a pair of mounting bolts extending through said apertures in said clips with a snug fit and also extending through said elongated apertures, and



a locking plate positioned between said supporting member and said flanges and clips and having two apertures formed therein of such diameter as to receive said bolts with a snug fit,

said apertures in said locking plate being spaced apart a predetermined distance selected to properly position said clips with respect to said flanges,

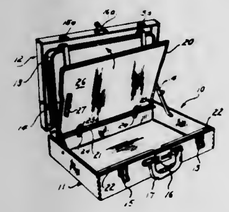
said locking plate being positively locked to said mounting member to prevent relative lateral movement therebetween after said rail is aligned.

3,199,643

ATTACHÉ CASE

Don Korchmar, Amberley, Ohio
(6885 Fair Oaks Drive, Cincinnati 37, Ohio)

Filed Oct. 28, 1963, Ser. No. 319,315
2 Claims. (Cl. 190—51)



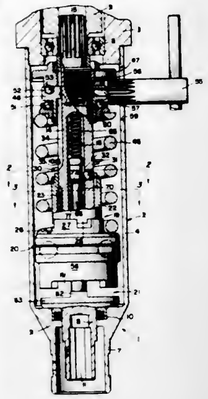
1. In an attaché case comprising a cover portion and a bottom portion hingedly interconnected, the improvement which consists in providing supporting ledges peripherally mounted within the interior of said bottom portion, a panel member normally supported upon said supporting ledges to provide a convenient writing surface, said panel member being removably and pivotably attached to said attaché case, and pivotable away from its normal position to expose interior storage space within said bottom portion of said attaché case, spring clip means mounted upon that side of said panel member facing said storage space to provide means for retaining papers against the underside of said panel and within said interior storage space within said bottom portion of said attaché case, said spring clip means comprising upper and lower elements each in part comprising a jaw portion, a pin upon which said upper and lower elements are both pivotably mounted, and spring means normally urging said jaw portions together, said jaw portions and said pin being disposed parallel to one side of said panel member, and adjacent to said one side.

3,199,644

AUTOMATIC RELEASING CLUTCH MECHANISM RESPONSIVE TO TORQUE LOADS FOR USE IN POWER TOOLS

John M. Clapp, Athens, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Sept. 24, 1963, Ser. No. 311,152
5 Claims. (Cl. 192—56)



1. A torque transmitting apparatus comprising:

(a) a hollow drive shaft;

(b) first and second clutch sleeves mounted on said shaft for axially slidable movement and having normally interengaged clutch teeth locking the two clutch sleeves against relative rotation;

(c) said first clutch sleeve being mounted on said drive shaft by a driving connection to be driven thereby;

(d) a third clutch sleeve rotatably mounted on said shaft and being drivingly interengaged with said second clutch sleeve by torque clutch release means operative to force said first and second clutch sleeves axially away from said third clutch sleeve when the torque on said torque clutch release means exceeds a predetermined load;

(e) a driven member connected to said third clutch sleeve to be driven thereby;

(f) first biasing means yieldably forcing said second clutch sleeve axially against said third clutch sleeve;

(g) second biasing means yieldably forcing said first clutch sleeve axially against said second clutch sleeve;

(h) latch means operative to lock said first clutch sleeve in an axially retracted and spaced position from said second clutch sleeve after being moved to said retracted position by said torque clutch release means; and

(i) means operative in one direction of rotation of said drive shaft to prevent said latch means from locking said first clutch sleeve in an axially retracted position.

3,199,645

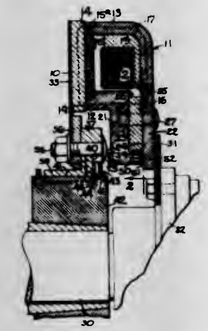
ELECTROMAGNETIC FRICTION COUPLING

Dale A. Henning, Janesville, Wis., assignor to Warner Electric Brake & Clutch Company, South Beloit, Ill., a corporation of Delaware

Filed Mar. 22, 1963, Ser. No. 267,269
11 Claims. (Cl. 192—84)

10. In a magnetically controlled coupling, the combination of an armature and a magnet mounted for relative rotation about an axis and adapted for releasable coupling with one another, said magnet having laterally

spaced first and second pole pieces terminating in faces opposing said armature and adapted for releasable magnetic attraction therewith, said pole pieces providing opposed surfaces spaced from said faces, a permanent magnet disposed between and abutting said surfaces and cooperating therewith to complete a series magnetic flux circuit extending through the permanent magnet, said pole pieces, and said armature, said permanent magnet



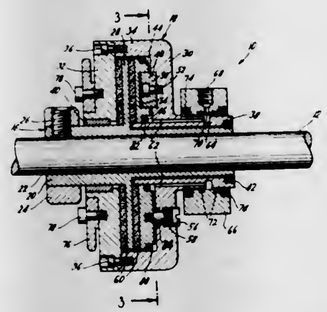
creating magnetic flux threading said circuit to normally attract said armature to said pole faces, a multiple turn winding constituting, when energized, means to create a flux threading said series magnetic flux circuit and said permanent magnet in a direction opposite to the permanent magnet flux and substantially neutralizing the latter at said pole faces, and means providing a magnetic shunt around that portion of the magnetic flux series circuit which includes said permanent magnet.

3,199,646

FLUID CLUTCH MID-SHAFT

William McBride, Emporium, Pa., assignor to Emporium Specialties Co., Inc., Emporium, Pa., a corporation of Pennsylvania

Filed May 28, 1962, Ser. No. 198,106
2 Claims. (Cl. 192—85)



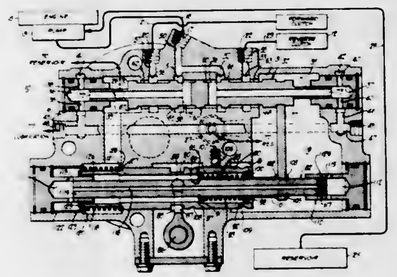
1. A fluid-controlled clutch for mounting at an intermediate location along the length of a shaft comprising a hub and clutch plate assembly including a generally cylindrical hub having an axial opening therethrough for receiving a shaft, securement means for securing the hub to the shaft, and a clutch plate coaxial with and perpendicular to the hub intermediate its ends, a clutch housing including a facing plate, a backing plate, and a marginal flange within which is positioned said clutch plate, said backing plate formed with a central axial opening larger than an outer diameter of said cylindrical hub, said hub positioned within said backing plate axial opening and extending through said backing plate, bearing means mounting said housing on said hub and clutch plate assembly including a first bearing between said backing plate and said hub on one side of said clutch plate and a second bearing between said facing plate and said hub on the other side of said clutch plate, an annular presser plate positioned coaxial to and within said housing about said hub between said clutch plate and said facing plate forming a variable volume chamber within said facing plate, presser plate, marginal flange and hub, coupling means mounting said presser plate for rotation with said housing and for axial movement with respect thereto for varying the size of said variable volume chamber, an axial extension of said facing plate including passage means therethrough for entry of fluid into said variable volume chamber, said axial extension of said facing plate formed with a central axial opening larger than the axial opening of said hub for receiving the shaft on which said clutch is to be mounted, a rotatable fluid coupling collar mounted for rotation about said axial extension in communication with said passage means, sealing means for preventing the loss of fluid from said variable volume chamber including seals between said presser plate and said marginal flange and said hub and between said rotatable fluid coupling collar and said axial extension, friction means between said clutch plate and said backing plate and said presser plate for frictionally interconnecting said clutch plate and said housing when said presser plate is moved away from said facing plate, and power take-off means secured to said housing for rotation therewith when driven from said hub in response to the introduction of fluid into said clutch.

3,199,647

CONTROL VALVE MEANS FOR FORWARD AND REVERSE CLUTCHES

Donald C. Staab, Long Lake, Minn., assignor, by mesne assignments, to Minneapolis-Moline, Inc., Hopkins, Minn., a corporation of Delaware

Filed Aug. 21, 1962, Ser. No. 218,345
11 Claims. (Cl. 192—87)



1. Control valve means for selectively actuating forward and reverse clutches of a truck transmission to provide inching of the truck and comprising a valve housing having a valve chamber including a valve cylinder, a valve element slidably mounted in said cylinder, first passageway means communicating with said valve cylinder for connection to a source of hydraulic fluid under pressure, means in said valve chamber including said valve element forming a first expandable chamber, means in said valve chamber including said valve element forming a second expandable chamber, a first passageway in said

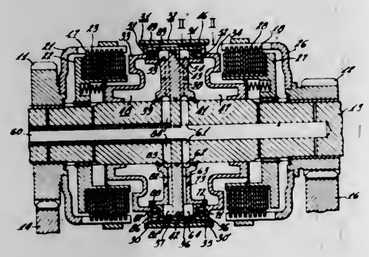
valve element for interconnecting said first passageway means and said first expandable chamber, a second passageway in said valve element for interconnecting said first passageway means and said second expandable chamber, second passageway means communicating with said first and second expandable chambers for connection to the lubricating system of the truck and including a first port in said first expandable chamber and a second port in said second expandable chamber, said first port being at least partially closed upon movement of said valve element in a first direction and said second port being at least partially closed by movement of said valve element in a second direction; third passageway means communicating with said valve cylinder for connection to a first fluid actuated clutch, fourth passageway means communicating with said valve cylinder for connection to a second fluid actuated clutch, means including said valve element for placing said first passageway selectively in communication with said third and fourth passageway means, said valve element being provided with means for maintaining said first passageway means and said first expandable chamber in communication when said valve element is moved in said first direction and closing said first passageway means relative to said first expandable chamber when said valve element is moved in said second direction and additionally provided with means maintaining said first passageway means and said second expandable chamber in communication when said valve element is moved in said second direction and closing said first passageway means relative to said second expandable chamber when said valve is moved in said first direction, actuating means operable to move said valve element in said first and second directions toward a position to contract said expandable chambers to close said first and second ports respectively to provide a pressure build-up in the respective one of said chambers which tends to expand said chambers, and spring means connected to resiliently restrain the expansion of said expandable chambers due to the pressure therein so as to at least partially maintain open said first and second ports respectively until the pressure in the associated expandable chamber is in equilibrium with the restraining force of the spring means, the restraining force of said spring means being a function of the distance through which actuating means is moved.

3,199,648

FLUID TRANSFER TYPE CLUTCH ACTUATOR

Charles L. Schwab, Wauwatosa, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Nov. 26, 1963, Ser. No. 325,843
9 Claims. (Cl. 192—87)



1. A double acting fluid transfer type actuator for a pair of axially spaced clutches interposed between a shaft and gearing mounted thereon, comprising:

an actuating cylinder mounted coaxially on said shaft and having axially opposite ends shiftable therewith between positions of engagement with said clutches,

an annular reaction member within said cylinder mounted on and secured against axial movement relative to said shaft and dividing the interior of said cylinder into a pair of large pressure chambers,

walls within said cylinder radially outwardly of said reaction member defining a cylindrical face in sliding fluid sealing engagement with the radially outer periphery of said reaction member and defining an axially exending fluid transfer passage between said large pressure chambers independent of said shaft and reaction member,

a pair of axially spaced and radially outward facing cylindrical surfaces formed on opposite sides of said reaction member radially inwardly from said cylindrical face,

annular pistons disposed betwen said cylindrical face and said cylindrical surfaces, respectively, defining therewith a pair of small pressure chambers, each of said pistons being shiftable axially outwardly relative to said cylinder from a position of fluid transfer to a position of sealing engagement with one of said ends of said cylinder in which fluid transfer between said large pressure chambers is prevented and

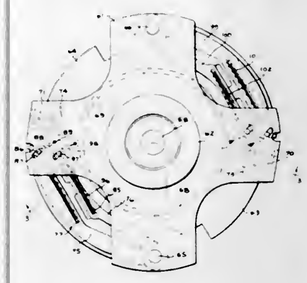
means biasing said annular pistons to their fluid transfer position in which free flow of fluid is permitted between said large pressure chambers through said fluid transfer passage.

3,199,649

CENTRIFUGAL TYPE CLUTCH WITH MASS VARYING MEANS

John Bochan and John W. Toma, Louisville, Ky., assignors to General Electric Company, a corporation of New York

Filed Jan. 28, 1963, Ser. No. 254,321
6 Claims. (Cl. 192—105)



1. A multi-speed clutch comprising:

(a) an input drum;

(b) a driven output member coaxial with said drum;

(c) a clutch shoe mounted on said driven member and having a clutching surface engageable with said drum;

(d) pivot means supporting said shoe on said driven member at a location angularly removed from said surface;

(e) spring means biasing said surface against said drum;

(f) the mass of said shoe being arranged about said pivot means so that centrifugal force acts equally on said shoe on opposite sides of said pivot means thereby causing said spring means to exert a constant biasing force on said surface independently of rotation of said driven member;

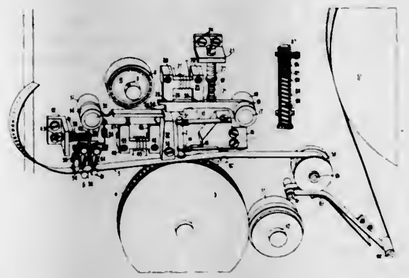
(g) and mass-changing means for selectively providing an excess of shoe mass subject to centrifugal force on the same side of said pivot means as said surface relative to the shoe mass subject to centrifugal force which is on the other side of said pivot means from said surface.

3,199,650

HAMMER WITH DAMPENING MEANS FOR HIGH SPEED PRINTER

Edgar A. Brown, Gilroy, and Gunter H. Schacht, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Aug. 2, 1961, Ser. No. 128,871
5 Claims. (Cl. 197—18)



1. In an on the fly printer having a rotating type font and a firing pin for coaction therewith to create an impression thereof on a print medium, hammer means for operating said firing pin, spring actuator means for moving said hammer from a ready position to a strike position to operate said firing pin, first magnetic latch means, means for energizing said latch means to retain said hammer in the ready position against the force of said spring actuator, pivot means supporting said hammer for movement by said actuator means to operate said firing pin upon deenergization of said latch means, restore means for said hammer comprising a cam, means for continuously driving said cam at an integral multiple of the speed of said print wheel, a cam follower operable between an idle and a restore position, second magnetic latch means, means for energizing said second latch means to hold said follower in the idle position, means for deenergizing said second latch means to release said follower at selected points during rotation of said type font to follow said cam, and means affixed to said follower for engaging said hammer during movement from the idle to the restore position to move said hammer into said ready position against said first latch means.

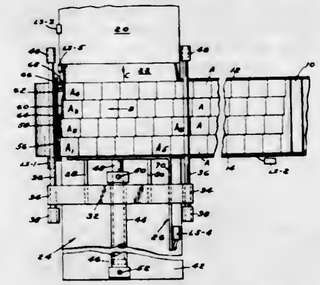
3,199,651

APPARATUS FOR TRANSFERRING GROUPS OF CARTONS

James L. Loblik, Holyoke, Mass., assignor to Cesco Container Mfg. Co., Northampton, Mass., a corporation of Massachusetts

Filed Aug. 14, 1963, Ser. No. 302,167
6 Claims. (Cl. 198—24)

1. In apparatus for transferring groups of articles for the purpose described, and infeed conveyor along which a plurality of rows of articles are delivered; stop means extending generally transversely across the downstream end of said conveyor for interrupting movement of said articles to provide a compacted accumulation of articles on the conveyor; transfer means positioned at one side of said conveyor and operable at right angles to the direction of conveyor movement to sweep a group of articles from said accumulation laterally off the conveyor; said stop means including portions aligned respectively with each of said rows of articles, said portions being offset from one another with the portions disposed progressively farther from the transfer means in the direction of transfer movement being disposed successively farther upstream along said conveyor.

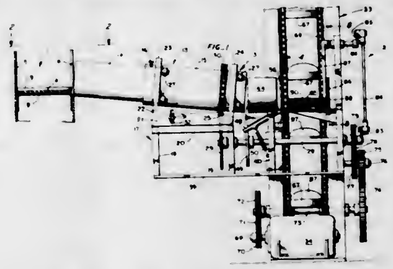


3,199,652

FEEDER

George E. Kilner, Oakland, and Leonard McGihon, San Leandro, Calif., assignors to Filper Corporation, San Ramon, Calif.

Filed Mar. 14, 1962, Ser. No. 179,552
15 Claims. (Cl. 198—34)



1. In a fruit feeder for rollable whole fruit bodies, including a fruit receiving station and a fruit discharge station laterally spaced from said fruit receiving station at a lower level than the latter;

(a) an elongated, open ended, hollow cylinder through which said fruit bodies are adapted to roll from one end thereof to the other end and through said ends;

(b) cylinder supporting means supporting said cylinder for rotation about its longitudinal axis in an inclined position relative to horizontal with said one end of said cylinder at said receiving station for receiving said bodies and with said other end adjacent to said discharge station;

(c) the inside diameter of said cylinder being greater than the maximum diameter of fruit bodies adapted to roll therethrough and less than double the minimum diameter of said bodies whereby said bodies will be restrained for movement therethrough in substantially a single file;

(d) cylinder rotating means connected with said cylinder for rotating it about its longitudinal axis,

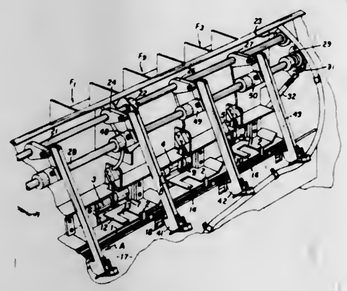
(e) fruit spacing means adjacent to said other end of said cylinder supported for movement to and from a position for alternately holding and releasing each fruit body as it moves out of said other end for spacing each body so released from the next one thereto in the file that is within said tube,

(f) and actuating means connected with said fruit spacing means for so moving the latter.

3,199,653
ARTICLE TRANSFER AND STACKING DEVICE FOR POWER-DRIVEN CONVEYORS

Kenneth G. McGowan, Lawrence Township, Van Buren County, Mich., assignor to Winkel Machine Co., Inc., Kalamazoo, Mich., a corporation of Michigan

Filed Sept. 13, 1963, Ser. No. 308,914
6 Claims. (Cl. 198—35)



1. In a stacking machine having a continuously moving conveyor and a series of successive stations on said conveyor, and spaced feeding means arranged alongside of said conveyor for successively discharging panels toward said conveyor, the improvement comprising in combination:

transfer means including a substantially vertically positioned, elongated body part and panel grasping means carried at the lower end of said body part for transferring said panels from said feeding means to said conveyor;

the upper end of said transfer body part having two vertically spaced pivot points thereon;

a guide arm having one end pivoted to the first of said pivot points and its other end pivotally supported on the frame of said machine;

a drive arm having one end pivotally connected to the second of said pivot points and its other end mounted for receiving an oscillatory driving movement and means applying such oscillatory driving movement thereto, said guide arm and said drive arm being normally positioned with respect to the desired direction of said transfer so that said first end of said guide arm is arranged for said pivotal movement in a direction substantially perpendicular to said direction of desired transfer and said drive arm being positioned so that movement of said second pivot point will have a substantial component in a direction parallel to said desired direction of said transfer;

whereby an arcuate driving movement of said drive arm will move said transfer body part both in a direction parallel to said desired direction of transfer and will simultaneously move it sufficiently perpendicularly thereto to compensate for normal arcuate movement around said first pivot point and thereby effect a substantially lineal movement of said transfer means across said conveyor.

3,199,654
MAGNETIC CONVEYOR

Dario Bucciconе, Gary, Ind., assignor to Bucciconi Engineering Co., Inc., Gary, Ind., a corporation of Indiana

Filed May 14, 1962, Ser. No. 194,510
4 Claims. (Cl. 198—41)

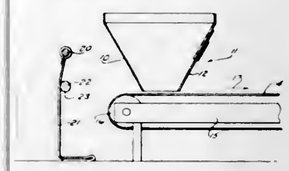
1. In a rail type electromagnetic conveyor having an elongate mounting frame comprising laterally spaced side frame plates, a downwardly facing channel-shaped housing between the side frame plates, a plurality of electromagnets mounted in depending longitudinally spaced relation in said housing, downwardly facing belt supporting and guiding members mounted in the bottom face of said housing, said side plates and said belt supporting and guiding members having the bottom surfaces thereof bowed downwardly toward the center of said mounting frame to provide belt guideways which conform to predetermined belt sag, a pair of parallel endless belts mounted on end supports at the opposite ends of said mounting frame and having their lower runs traveling in said belt guideways, said supports at one end of the mounting frame comprising a separate pulley housing for each of said belts, a pulley mounted on a cross shaft in each said housing, an elongate hollow mounting member of rectangular cross section extending from each said pulley housing into the end of said mounting frame, an elongate guideway forming housing in the end of said mounting frame for receiving each of said hollow mounting members in sliding telescoped relation, a coil spring housed within each of said mounting members, a tension adjusting bolt positioned in axial alignment with each said spring and having one end connected to the innermost end of each said spring, cross bar members arranged in spaced longitudinal relation at the inner end of said guideway within said mounting frame and above said magnet housing, said cross bar members being apertured to slidingly receive the free end of each of said bolts, said bolts each having its free end threaded and provided with an adjusting nut which is positioned so as to abut the outwardly facing side of one of said cross bar members, and said guideway forming housing and its associated spring and tension adjusting bolt having the long axis thereof extending substantially parallel with the adjacent end portion of the bottom surface of said belt guideways so that the spring urges the end pulley in a direction to exert an upward pull on the belt and to hold the same in the belt guideway.



3,199,655
BELT GRAVIMETRIC FEEDER ZEROING DEVICE

Wilbur H. Frazel, Riverside, R.I., assignor to The New York Air Brake Company, a corporation of New Jersey

Filed Sept. 12, 1963, Ser. No. 308,425
3 Claims. (Cl. 198—53)

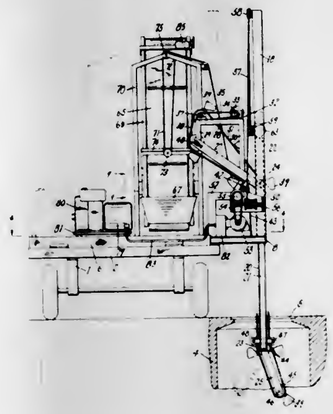


1. A feeder comprising a traveling belt, means to move the belt, a hopper above a portion of the belt, said hopper having a discharge opening substantially parallel to and spaced from said belt, a closure device comprising a stationary sheet of flexible material having a surface area sufficient to cover the hopper discharge opening and extend outward therefrom a substantial distance, said sheet throughout its extent resting upon said traveling belt and being pressed thereagainst by material in said hopper.

3,199,656
CATCH BASIN EXCAVATING MACHINE

Oscar S. McBride, Isabella County, and Glen Vernor Runge, Hudsonville, Mich.; said McBride assignor, by mesne assignments, to Twinwood, Inc., Mount Pleasant, Mich., a corporation of Michigan

Filed Mar. 21, 1962, Ser. No. 190,514
5 Claims. (Cl. 198—88)



1. In a catch basin cleaning machine having a wheeled carriage with a vertically extending and vertically adjustable bucket conveyor having upwardly and downwardly moving sides horizontally adjustably mounted on said carriage to project beyond and below said carriage,

the combination of means forming a laterally inwardly and upwardly inclined reach at the upper end of the upwardly moving side of said conveyor connected at its laterally inward upper end to a short generally vertically downwardly directed reach,

supports directing said conveyor in a second inclined downwardly and laterally outwardly directed reach from the bottom of said short generally vertically downwardly directed reach to the top of said downwardly moving side of said conveyor,

an off-feed belt support frame having a vertically swinging portion and being pivotally supported on said carriage and horizontally adjustable with said bucket conveyor,

said frame having its discharge end positioned adjacent its pivotal support at an approximately fixed elevation and in projecting relation beyond the outline of said carriage,

vertical guide means guiding the swinging portion of said frame with one side of the frame under said short generally vertically downwardly directed reach of said bucket conveyor and the other side of the belt projecting laterally away from the bucket conveyor,

an off-feed belt carried by said frame and driven with its upper reach advancing to the discharge end of the frame,

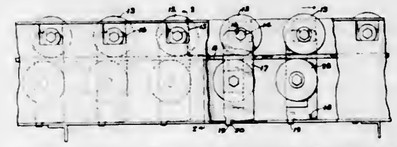
a splash retaining hopper carried by said frame and extending across said belt at the swinging end of the belt,

and means forming an adjustable support for the swinging portion of said frame connected to drive means for also vertically adjusting said bucket conveyor whereby said belt and said hopper are maintained in fixed vertical relation below said short generally vertically downwardly directed reach in all positions of said bucket conveyor.

3,199,657
LIVE ROLLER CONVEYOR

Homer S. Harrison, Detroit, Mich., assignor to Mechanical Handling Systems, Inc., Detroit, Mich., a corporation of Michigan

Filed Aug. 5, 1963, Ser. No. 299,856
12 Claims. (Cl. 198—127)



1. In a live roller conveyor, the combination comprising a frame,

a plurality of conveyor rollers,

means for rotatably supporting each said conveyor roller in said frame with its axis extending transversely of said frame and movable upwardly and rearwardly,

each said conveyor roller normally positioned downwardly and forwardly of the frame,

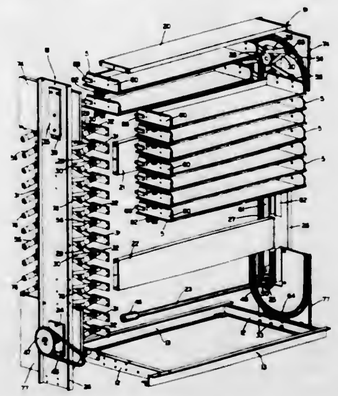
means for frictionally engaging said conveyor rollers adjacent the underside for driving the conveyor rollers,

such that when a load is interrupted in its movement along said conveyor rollers, the conveyor rollers under said load are caused to move upwardly and rearwardly by tracking engagement with the underside of the load out of driving engagement with said engaging and driving means thereby interrupting rotation of said conveyor rollers under said load.

3,199,658
POWER FILING APPLIANCE

Carl D. Graber, Orrville, and Raymond L. Alvarez, Canton, Ohio, assignors to Diebold, Incorporated, Canton, Ohio, a corporation of Ohio

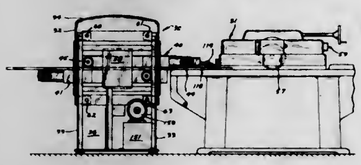
Filed June 24, 1963, Ser. No. 289,822
14 Claims. (Cl. 198—137)



1. A power filing appliance of a type composed of separable parts for shipment including a plurality of adjacent card-carrying pans having spaced ends with end walls and the pans being movable in a continuous orbit of travel including upper and lower turning portions and intermediate vertical portions; first pan-support means at one end of the pans and including a first vertical support member, vertically spaced chain-support sprockets operably connected to the support member, a continuous chain mounted on the sprockets, a pan-support arm for each pan extending outwardly from and operably connected

to the chain, a pan-support trunnion pivotally connected to the outer end of each pan-support arm, a trunnion-mounting plate on the end of each trunnion remote from the arm, pan-stabilizing guide means operably connected to the one end of each pan and operably connected to the first vertical support member for stabilizing the pan at least during the travel of the pan through the upper and lower turning portions of the orbit of travel, and pan-stabilizing bracket means operably connected to the one end of each pan for engaging the trunnion of a next adjacent pan during the travel of the pan through the vertical portions of the orbit of travel; second pan-support means at the other end of the pans and including a second vertical support member, vertically spaced chain-support sprockets operably connected to the vertical support member at levels corresponding to the chain-support sprockets of the first support means, a continuous chain mounted on the sprockets, a pan support arm for each pan extending outwardly from and operably connected to the chain, and a pan-support trunnion pivotally connected to the outer end of each pan-support arm, a trunnion mounting plate on the end of each trunnion remote from the arm, pan-stabilizing guide means operably connected to the other end of each pan and operably connected to the second vertical support member for stabilizing the pan at least during the travel of the pan through the upper and lower turning portions of the orbit of travel, and pan-stabilizing bracket means operably connected to the other end of each pan for engaging the trunnion of a next adjacent pan during the travel of the pan through the vertical portions of the orbit of travel; the pan-stabilizing bracket means having upper and lower ends and having a trunnion-receiving notch in one of said ends; and each trunnion mounting plate being detachably mounted to an end wall of one pan, whereby the first and second pan-support means and the pans constitute separate subassemblies which are packageable for shipment in readily handled containers.

3,199,659
BOARD HANDLING AND CONVEYING APPARATUS
Edmund W. F. Rydell, % The Rydell Company, 2328 N. 2nd St., Minneapolis 11, Minn.
Filed June 6, 1961, Ser. No. 115,125
14 Claims. (Cl. 198—165)



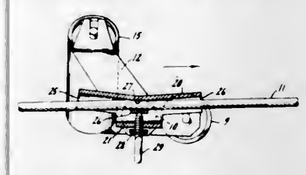
2. A board handling apparatus for use in conjunction with a ripsaw or the like, comprising in combination, a frame, conveyor means for conveying said boards therethrough, reversible drive means operatively connected to said conveyor means, means connected to said drive means and responsive to the presence of a board at predetermined positions to control the operation of said drive means, said reversible drive means being adapted to drive said conveyor means to move material through said apparatus in a first direction away from said ripsaw and said drive means being reversible responsive to movement of material through said apparatus beyond a preselected position so as to drive said conveyor means in the opposite direction whereby said material is moved through said apparatus in a direction opposite said first direction, said conveyor means comprising upper and lower spaced apart cooperating conveyor assemblies adapted to grip a board therebetween, an upper and lower carriage mounted on said apparatus for sliding movement along axes extending laterally of the path of movement of said boards through said apparatus, said upper and lower conveyor assemblies being supported from said upper and lower carriages respectively and being pivotally connected thereto for swinging movement about a common vertical axis, and actuator means connected between the frame and carriages for simultaneously sliding said carriages and pivotal connections along said laterally extending axes whereby said conveyor assemblies will slide laterally with the carriages and at the same time swing horizontally about said pivotal connections when resistance is imposed upon the assemblies at one side of the vertical axis.

3,199,660
CONVEYOR DEVICE
William Hanson, Jr., Dover, and Glenn E. Gray, Tippecanoe, Ohio, assignors to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 15, 1961, Ser. No. 110,106
11 Claims. (Cl. 198—192)



1. A variable troughing conveyor device comprising; an elongated flexible element flexible throughout the length therof in all lateral directions; first, second and third idlers; means mounting said first and second idlers on said flexible element in longitudinally spaced relationship to each other laterally of and on one side of said flexible element; and means mounting said third idler laterally of and on the opposite side of said flexible element.

3,199,661
TROUGHING ROLLER ASSEMBLIES
Herman E. Smith, Park Forest, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 27, 1961, Ser. No. 162,418
4 Claims. (Cl. 198—192)



1. A wire rope sideframe conveyor which includes, in combination,
generally parallel and spaced wire ropes,
a pair of spaced connectors engaging the wire ropes,
a crosspiece extending to said wire ropes,
a plurality of idler rollers joined to the crosspiece, the ends of the crosspiece connected to the connectors which engage the wire ropes,
each connector having an elongated inverted U-shaped member which engages the top of the rope, a clamp associated with the U-shaped member to engage the bottom of the rope and securely hold the connector to the rope, said clamp being of minor dimensions relative to said U-shaped member, a longitudinal central portion of the U-shaped member clamped to the top of the rope, a downstream portion flaring away from the rope, and an upstream portion likewise flaring away from the rope,
whereby an impact on the idler rollers will tilt a flaring portion of the U-shaped member into contact with the wire rope.

3,199,662
SHOCK ABSORBING TROUGHING IDLER ASSEMBLY FOR INCLINING CONVEYORS
Murray A. Gleeson, Downers Grove, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 16, 1962, Ser. No. 173,641
8 Claims. (Cl. 198—192)



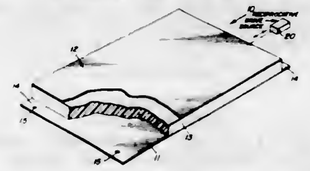
1. A troughing roller assembly for a rope sideframe conveyor including, in combination,
a center roller flanked by a pair of wing rollers,
the rollers being rotatably mounted on center and wing shafts respectively,
interconnections between an inner end of each wing shaft and an adjacent end of the center shaft, said interconnections enabling relative, vertical, angular movement between the shafts,
a rope-engageable clamp connected to the outer end of each wing shaft,
an elongated, twistable, elastic torsion member spaced below and substantially parallel to each wing roller, each torsion member having one end portion secured to one of the clamps and having at the opposite end portion an offset lever arm engaging the corresponding interconnection and restraining that interconnection against displacement in a horizontal direction, whereby tensile loads pass through wing shafts, interconnections and clamps but bypass said offset lever arm and torsion member,
and an impact load exerted against the rollers in a horizontal direction normal to the rollers deflects said lever arm and twists said torsion member to absorb said impact load by torsional strain in the torsion member.

3,199,663
CONVEYING APPARATUS
George Baechil, New Philadelphia, Ohio, assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 659,352, May 15, 1957. This application Aug. 20, 1962, Ser. No. 219,811
14 Claims. (Cl. 198—192)



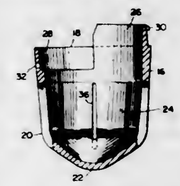
10. A conveyor apparatus support structure comprising, an elongated flexible member having rotatably supportable spaced portions, resilient sheathing concentrically molded to said flexible member intermediate said spaced portions thereof, and a plurality of hub portions spaced longitudinally along said flexible member integral with said sheathing and concentric therewith, said hub portions being adapted to receive cooperating annular roller portions respectively.

3,199,664
VIBRATORY CONVEYOR
Jacob G. Baker, P.O. Box 28248, Dallas 28, Tex.
Filed Dec. 26, 1963, Ser. No. 333,592
8 Claims. (Cl. 198—220)



1. A vibratory conveyor comprising a stationary base member, a vibratory work member spaced above said base member and movable with respect thereto having an upwardly facing surface for supporting objects to be conveyed, said stationary base member and work member having confronting upper and lower surfaces, respectively, and an intervening body of closed-cell foamed elastomeric material substantially filling the space between said confronting surfaces and bonded to said confronting surfaces, said body of foamed material having a prestressed condition induced therein during curing thereof producing hysteresis characteristics whereby movement of the work member responsive to vibration of the work member to propel objects placed on the work surface along the work surface produces upwardly propelling force components and thrust components along the plane of the vibrating work surface to effect travel of objects placed on the work surface.

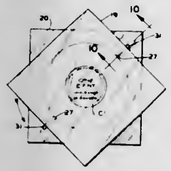
3,199,665
RUST PREVENTING CAPSULE
Ernst A. Eriksson, Lexington, Mass., assignor to Herbert J. Atkinson, doing business as Sudbury Laboratories, Sudbury, Mass., a sole proprietorship
Filed Sept. 6, 1963, Ser. No. 307,191
1 Claim. (Cl. 206—.5)



For use in a fuel storage tank of the type connected to a remotely positioned inlet by an intermediate fill piping system, said fill piping system including straight lengths of pipe interconnected by standard pipe fittings such as 45° and 90° elbows, means for carrying a rust inhibiting compound from said inlet through said piping system into the interior of said tank comprising: two identical cup-shaped members, each said members having a truncated conical wall section tapering gradually from an enlarged open end to a rounded peripheral shoulder, said shoulder connecting said wall section to an integral relatively blunt conically shaped end, said cup-shaped members each further provided with spaced inlet slots beginning in said truncated conical wall section adjacent the open end thereof and extending across said rounded peripheral shoulder into said integral relatively blunt conical end; interlocking means for joining two of said cup-shaped members at their open ends to form a capsule having an enlarged midsection and an inner chamber adapted to contain said rust inhibiting compound, the outer diameter of said midsection being slightly smaller than the inner diameter of said pipe and fittings, the distance between the rounded peripheral shoulders of said

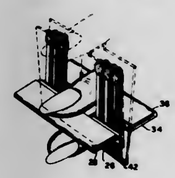
joined cup-shaped members and the enlarged midsection of the capsule formed thereby being such that as said capsule progresses through a straight length of fill pipe connected to a pipe fitting, said midsection will pass beyond the end of the pipe before the leading rounded peripheral shoulder of the capsule is contacted and turned by the inner curved surface of the fitting.

3,199,666
COIN-HOLDERS
Richard Burdick, Dallas, Tex.; Republic National Bank of Dallas, administrator of said Richard Burdick, deceased
Filed Aug. 20, 1962, Ser. No. 217,972
3 Claims. (Cl. 206—.82)



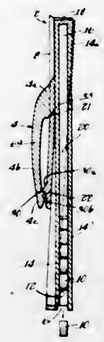
1. A coin-holder comprising two plate-like members formed of transparent material and being shaped for overlying marginal registration, one of said members having a circular recess opening upon one face thereof, a ring adapted for snug-fitting disposition within the recess, said ring having a coin-receiving pocket and being shorter in axial length than the recess so as to leave the outer portion of the recess unoccupied, the other plate-like member having a circular boss adapted to fit snugly within the recess and occupying the space in the outer portion of the recess not occupied by the ring, each of said plate-like members having channels formed therein, said channels being arranged in pairs so that one channel of each pair opens into the recess at one end and at its other end communicates with the other channel of such pair when the two plate-like members are rotated with respect to each other so as to assume a predetermined position of relative orientation, the other channel of said pair in turn opening at its other end upon the external face of the coin-holder so that when the two plate-like members are rotated into such predetermined position air may flow freely outwardly from the recess through said channels as the two plate-like members are being pushed into overlying position, said pair of channels being so located that when the two plate-like members are turned axially with respect to each other and thereby brought into marginal registration the two channels will be shifted into relative non-communicating positions, thereby cutting off the passageway for air flow to and from said recess.

3,199,667
MATCHBOOK
Alan B. Todd, 2500 N. Vernon St., Arlington, Va.
Filed Oct. 18, 1962, Ser. No. 231,409
3 Claims. (Cl. 206—29)



1. A matchbook comprising, in combination: match means incorporating at least one sheet having an unslit bottom edge portion and an upper portion provided with a series of vertical slits thereby forming a plurality of individual matches each having a free upper end, each of said matches having at its free upper end a head; and a cover made of one piece of foldable material and surrounding said match sheet, said cover having a front wall located in front of said sheet and a rear wall located behind said sheet, said front and rear walls being connected to said bottom edge portion of said match sheet, and said front and rear walls being spaced apart through their entire height and width so that there is formed one vertical opening between one vertical side edge of said front wall and the opposite vertical side edge of said rear wall and another vertical opening between the other vertical side edge of said front wall and the opposite vertical side edge of said rear wall, the width of said front and rear walls being greater than the width of the space occupied by said upper portion of said match sheet so that there will be formed an interspace between said front and rear walls unoccupied by said upper portion of said match sheet, said interspace being located away from at least one of said vertical openings, said cover further having a single top web hingedly connected to and joining said front and rear walls, said web having a width substantially equal to the difference between the width of said front and rear walls and the width of said upper portion of said match sheet and therefore a width substantially equal to the width of said unoccupied interspace, said web overlying said unoccupied space and thus also being located away from at least said one vertical opening, said front and rear walls being foldable along horizontal fold lines which allow said front and rear walls to fold away from said match sheet, whereby said single web may be pressed at least partially downwardly into the space unoccupied by the upper portion of said match sheet, thereby exposing the latter and allowing individual matches to be torn from said match sheet and withdrawn from the matchbook through that particular vertical opening away from which said unoccupied space and said web are located and whereby, further, a match may be torn from said match sheet and withdrawn laterally even though said single web is pressed but partially downwardly into said space unoccupied by the upper portion of said match sheet.

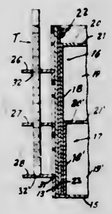
3,199,668
TABLET DISPENSING DEVICE
Harold Brandeis, Chicago, Ill., assignor to Continental Glass Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 20, 1963, Ser. No. 324,913
10 Claims. (Cl. 206—42)



1. A tablet dispensing device comprising: a vertically elongated container for tablets sized to fit vertically into the user's pocket, said elongated container having a vertical tablet-receiving chamber therein for stacking tablets

one on top of the other, the chamber loosely receiving the tablets wherein the weight of the tablets would cause it to drop to the lowest unobstructed point in the chamber, a tablet discharge opening at the bottom end of said container through which opening the bottom-most table in said chamber may freely drop when the opening is unobstructed, said discharge opening facing downwardly wherein a tablet falls out of the container where the discharge opening is unobstructed for any angle of the device when the normally bottom end thereof is below the normally upper end thereof, tablet metering means on the container movable between a normal discharge opening covering position where the bottommost tablet cannot drop through said discharge opening and a discharge opening uncovering position where the bottommost tablet in said chamber drops through said opening, force applying means providing a force which resiliently urges said metering means into said discharge opening covering position, a tablet stopping projection which is positioned laterally on the side of said container chamber when said metering means is in said discharge opening covering position and is moved into said container chamber to engage the bottom of the tablet above the bottommost tablet in the chamber falling through said discharge opening when the metering means is in said discharge opening uncovering position and operating means to be engaged by the user's fingers for moving said metering means from said discharge opening covering to said discharge opening uncovering position against the restraining force of said force applying means, wherein release of said operating means returns the metering means to said discharge opening covering position.

3,199,669
COMBINATION CONTAINER AND RACK
Eric H. Straus, Jackson Heights, and Allyn D. Stafford, Staten Island, N.Y., assignors to Clay-Adams, Inc., New York, N.Y., a corporation of New York
Filed Aug. 22, 1963, Ser. No. 303,858
3 Claims. (Cl. 206—44.11)



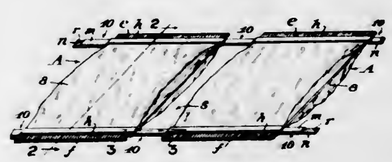
1. A container for packaging small bore tubular liquid containers, said container comprising a plurality of upstanding walls, rack forming means comprising a panel coextensive with one of said walls and adhesively secured to the outer surface thereof, said panel being precut and precreased along predetermined lines providing therein a plurality of horizontally extending shelf forming portions, said shelf forming portions being adapted to be bent out of the plane of said panel and hinged thereto along said crease lines, said shelf forming portions being formed with longitudinally spaced openings providing a plurality of sets of vertically aligned openings to respectively receive said tubular containers, the openings in the bottommost of said shelf forming portions being of a diameter slightly smaller than that of the other shelf forming portions to receive and locate the bottom ends of said liquid containers, the outer surface of said one upstanding wall being exposed when said shelf forming portions are bent out of the plane of said panel.

3,199,670
CONTAINER
Charles E. Palmer, Somers, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 30, 1962, Ser. No. 191,018
17 Claims. (Cl. 206—45.34)



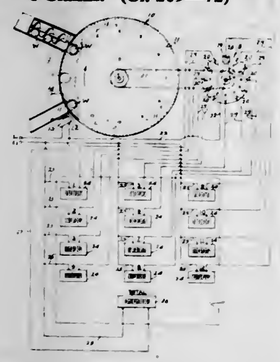
1. A display container having a paperboard frame and a window of semi-rigid synthetic plastic sheet material having at least one substantially rectilinear fold therein, said paperboard frame overlapping parallel side margins of the plastic window normal to the direction of the fold in said window, said plastic window having opposed notches in its side margins at said fold and said paperboard frame having inwardly projecting finger portions extending in overlapping relationship beyond the margins of said notches to conceal the same from external view; and means adhesively bonding said plastic window and paperboard frame along the overlapping side margins and terminating adjacent to the notches and finger portions, the overlapping surfaces of the projecting finger portions and window adjacent the notches being free from bonding to permit relative slippage therebetween.

3,199,671
PACKAGE ASSEMBLY
Robert E. Davy, La Mesa, Calif., assignor to Coroga Company, Anaheim, Calif., a corporation of California
Filed Apr. 9, 1963, Ser. No. 271,665
2 Claims. (Cl. 206—56)



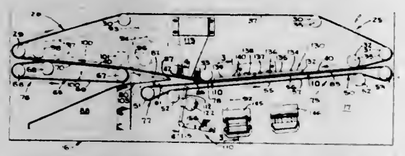
2. A chain assembly of packages comprising a multiple of complementary product containing one-piece, independently sealed bags aligned side-by-side with adjacent bags spaced apart, said bags having opposed side walls and having opposite ends consisting of straight marginal tongues composed of overlying portions of said side walls adhered together; and ribbons uniting the multiple of bags consisting of a pair of ribbons extending longitudinally astride each of said marginal tongues and across the space between adjacent bags, the ribbons of each pair being permanently adhered to opposite sides of a tongue throughout said ribbons and to each other between the adjacent bags, the portions of said pairs of ribbons extending between adjacent bags being elongate with such portions of each pair overlying throughout the space extending between the ends of the tongues on the adjacent bags, and in which the adhesion of said ribbons to each other is throughout said overlying portions to permit adjacent bags to be folded in stacked relation upon eacn other.

3,199,672
MULTIPLE TEST UNIT TESTER AND METHOD
George A. Charland, Conshohocken, Pa., assignor to Campbell Soup Company, Camden, N.J., a corporation of New Jersey
Filed July 20, 1962, Ser. No. 211,332
6 Claims. (Cl. 209—72)



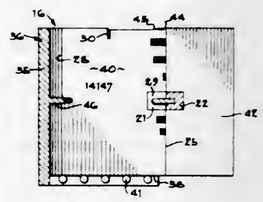
6. In combination, a test apparatus including a plurality of test units for testing articles mounted for movement along a predetermined path, feed means along said path for supplying articles one at a time to said test units, first and second discharge stations along said path through which articles are discharged respectively depending on whether they are passed or rejected by said test unit, a counter for registering the number of articles discharged at one of said stations from each of said test units comprising a commutator with a plurality of contacts corresponding in number to the number of test units and a contact arm traversing said contacts and mounted for relative movement thereto in synchronization with the rate of movement of said test units along said path, said arm registering with a given contact when its respective test unit is registered with said one station, sensing means for sensing when an article is received at said one station and for transmitting a signal to said commutator, a recording device for each test unit operatively connected to said commutator for registering separately the articles discharge at said station from each of said test units.

3,199,673
APPARATUS AND METHOD FOR HANDLING ARTICLES
Alan G. Flint, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 19, 1962, Ser. No. 188,800
2 Claims. (Cl. 209—79)



1. Apparatus for sorting flat, flexible articles according to their degree of flexibility comprising a conveyor including a portion for gripping opposite flat sides of the articles and conveying the articles along a delivery path; an air jet nozzle, said nozzle being spaced downstream of the article gripping portion of said conveying means and at one side of the article delivery path; the spacing of said nozzle from said gripping means being substantially less than the length of the articles, so that when a leading portion of each article is opposite said nozzle, the trailing portion of the article remains gripped by the gripping portion of said conveyor; first and second article receiving channels downstream of said air jet nozzle, said first channel having an article receiving portion that is aligned with said delivery path for receiving relatively stiff articles, said second channel having an article receiving portion that diverges from said delivery path for receiving relatively flexible articles; means for maintaining a normally flowing jet of air through said nozzle for simultaneously testing the flexibility of all artices that pass the air jet nozzle and diverting the relatively flexible articles into said second channel, said jet of air permitting the relatively stiff articles to continue on into said first channel.

3,199,674
DATA RETRIEVAL APPARATUS AND METHOD
Robert J. Kalthoff and Paul H. Ornstein, Cincinnati, Ohio, assignors to O.K. Partnership, Wyoming, Ohio, a limited partnership of Ohio
Filed Aug. 15, 1961, Ser. No. 131,646
56 Claims. (Cl. 209—110)

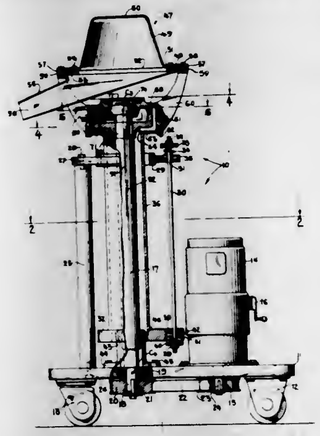


3. In apparatus for mechanically removing edge notched cards bearing a predetermined coding from a plurality of different cards, a platen, a plurality of vertically spaced sorting bars carried by said platen, means for selectively extending said bars outwardly from said platen, said bars being effective to shift cards not having the predetermined coding from the selected cards having said coding, means for shifting said platen relative to cards in a direction parallel to the extent of said sorting bars, and means carried by said platen for engaging the separated cards and withdrawing said cards outwardly upon retractive movement of said platen.

3,199,675
VIBRATORY MACHINES
William F. Huck, Forest Hills, N.Y., and John F. Ree, Glen Rock, N.J.; said Ree assignor to said Huck, doing business as Huck Company, New York, N.Y., a sole proprietorship
Filed Feb. 14, 1961, Ser. No. 89,218
20 Claims. (Cl. 209—332)

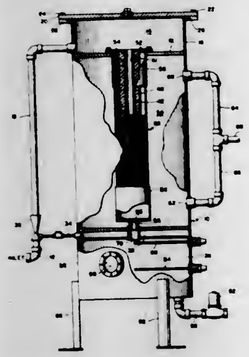
4. A machine for subjecting materials to vibratory treatment, comprising a stationary base having a first bearing mounted thereon, an elongated shaft mounted for rotation in and extending upwardly from said bearing in fixed angular relation to said base, a non-rotary structure for supporting the material to be treated, said structure being mounted on an upper end portion of said shaft through a second bearing in which said end portion is rotatable but is immovable radially and angularly relative to said structure, said shaft being rotatable at a low speed on an axis substantially coinciding with the centers of said bearings, driving means for rotating said shaft to high speed, eccentric mass means fixed to said shaft and operative upon rotation of said shaft at high speed to dispose the dynamic axis of said shaft to one side of the center of said second bearing and substantially in axial alignment with said first bearing, so as to impart to said structure gyratory nutational movements of high frequency about said dynamic axis, a counterweight of greater mass than said

structure rigidly connected with said structure and located below and remote from said second bearing to center said movements at a nodal point nearer to said base



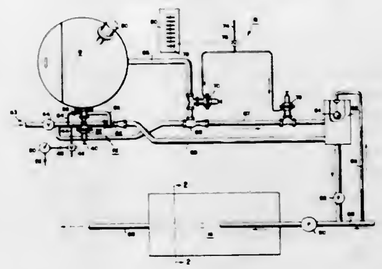
than to said structure, and means yieldably interconnecting said counterweight and said base to resist and absorb vibrations of said counterweight.

3,199,676
COALESCING AND FILTERING APPARATUS
Clifford H. May, Fairfax, Va., assignor to The Briggs Filtration Company, Washington, D.C., a corporation of Maryland
Filed Jan. 2, 1962, Ser. No. 163,436
5 Claims. (Cl. 210—114)



2. A filter-separator for lubricating oil comprising, in combination:
(a) a tank having an inlet line for the contaminated oil disposed in the upper portion of the tank and a water outlet line disposed in the lower end of the tank,
(b) a first partition disposed in the upper portion of the tank forming with the tank an inlet chamber for receiving the contaminated oil,
(c) a second partition disposed in the lower portion of the tank forming with the tank a second chamber and a third chamber,
(d) filter means disposed in the second chamber and connected with the first chamber, said filter means adapted to coalesce the water in the oil and remove solid contaminant therefrom,
(e) screen means forming a water barrier in surrounding spaced relation with respect to said filter means, said screen means including an elongated non-perforated shield at each end,
(f) means for collecting the water and directing it to the third chamber, and
(g) two outlet lines connected to the second chamber for receiving the filtered oil which passes within said second chamber and located one at each end of said second chamber to effect a balanced radial flow throughout substantially the length of said filter means.

3,199,677
FILTER AID FEED SYSTEM
John R. Schneider, Belvedere, Calif., assignor, by mesne assignments, to De Laval Turbine Inc., Trenton, N.J., a corporation of Delaware
Filed Feb. 19, 1960, Ser. No. 9,876
11 Claims. (Cl. 210—128)



11. In combination, a filter having a septum, means for supplying liquid to be filtered to said septum, a filter aid body feed system including a source of filter aid suspension, a first conduit for conducting said filter aid suspension to said septum, an eductor in said first conduit, an auxiliary conduit including a valve connecting said source of filter aid suspension with the suction of said eductor, and means for supplying diluting liquid to said auxiliary conduit between its valve and the suction of said eductor, a precoat system including a second conduit for conducting said filter aid suspension to said septum, an eductor connected in said second conduit, a valve connected in said second conduit on the downstream side of said eductor, a second auxiliary conduit connecting said source of filter aid suspension with the suction of the last mentioned eductor, a valve connected in said second auxiliary conduit, and means automatically causing delayed action opening of said second conduit valve relative to said second auxiliary conduit valve, and delayed action closing of the latter relative to said second conduit valve, a float controlled tank open to atmosphere, connected in said first and second conduits downstream of said eductors and upstream of said septum, and receiving the discharge from said eductors, and means supplying additional diluting liquid to said tank, said float being operative to provide a constant head of liquid against which said eductors discharge.

3,199,678
WATER TREATMENT UNIT
Allan H. Willinger, New Rochelle, N.Y., assignor to Aquariums Incorporated, Maywood, N.J., a corporation of Delaware
Filed Aug. 7, 1961, Ser. No. 129,803
3 Claims. (Cl. 210—169)

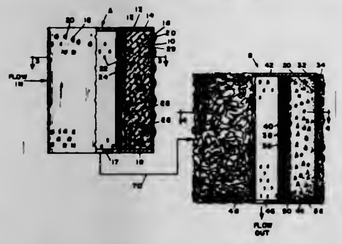
1. An aquarium water treatment assembly comprising a housing having a water inlet, a water outlet conduit for said housing extending upwardly therefrom to a water discharge end thereof, an air inlet conduit provided on

said housing to supply air thereto for causing the water therein to flow up said water conduit to the discharge end thereof, and a cartridge adapted to contain granular treatment material, said cartridge being provided on said water conduit, said cartridge having an inlet end containing apertures therein and coterminous with said water conduit discharge end and an apertured outlet end spaced upwardly from said inlet end thereof for the flow of air and water upwardly through said cartridge from the discharge end of said water conduit, a tubular collar



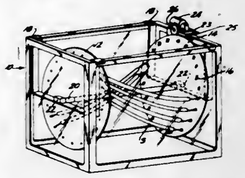
coaxial with said water conduit and provided within said cartridge at said inlet end thereof, said tubular collar encompassing said inlet end apertures of said cartridge so as to space granular treatment material upwardly from the inner surface of the inlet end of said cartridge, and a discharge aperture defined in said cartridge adjacent to and outwardly of said collar to discharge air and water from said cartridge adjacent to said inlet end thereof if the flow passage to the outlet end of said cartridge is blocked.

3,199,679
FILTER SYSTEM FOR DRY CLEANING SOLVENTS
Bert Montgomery Salyer, Jr., 3111 NW. 19th, Oklahoma City, Okla.
Filed Aug. 15, 1962, Ser. No. 217,196
3 Claims. (Cl. 210—259)



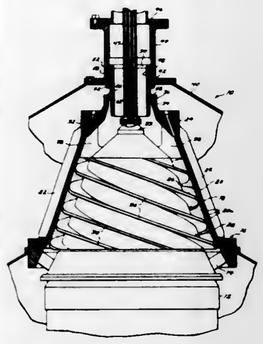
1. In a dry cleaning plant, a filtration system for dry cleaning solvents comprising a seriesed combination of first and second filter cartridges, the first cartridge comprising:
- an outer perforated, substantially cylindrical cannister;
- an inner perforated, substantially cylindrical cannister located coaxially within said outer cannister;
- top and bottom closure plates connecting said cannisters and defining an annular space between them;
- a sleeve of synthetic cloth material surrounding the exterior of said inner cannister;
- a fatty acids-removing filtering medium substantially filling said annular space; the second cartridge comprising:
- a first perforated, substantially cylindrical cannister;
- a second perforated, substantially cylindrical cannister located coaxially within said first cannister;
- top and bottom closure plates connecting said cannisters and defining an annular space between them;
- said annular space being filled with a color and odor removing filtering medium; and
- separate matted random fiber bristle blankets secured about the outer periphery of said first and said second cannisters.

3,199,680
DIALYZING APPARATUS
Raymond M. Schiff, 9 Henry Ave., Park Ridge, N.J.
Filed Jan. 17, 1961, Ser. No. 83,264
15 Claims. (Cl. 210—321)



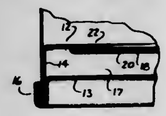
1. Apparatus for the dialysis or separation of liquid solutions in an elongated closed membrane comprising, in combination, a chamber adapted to contain a liquid buffer, a pair of spaced rotatable discs disposed in said chamber, means adapted to couple the ends of said elongated closed membrane between said spaced discs, said coupling means including a pair of swivels, one of said swivels being coupled to one of said rotatable discs for coupling thereto one end of the membrane and the other of said swivels being coupled to the other of said rotatable discs for coupling thereto the other end of said membrane, said swivels being circumferentially spaced on said discs inwardly from the outer periphery thereof, at least one membrane being adapted to be connected between each of said one of said swivels and said other of said swivels, said other swivel being displaced from said one swivel by a disc angle of at least 12°.

3,199,681
CENTRIFUGE
William J. Kirkpatrick, Springfield, Pa., assignor to Pennsalt Chemicals Corporation, a corporation of Pennsylvania
Filed Aug. 2, 1961, Ser. No. 138,701
5 Claims. (Cl. 210—374)



1. In a centrifuge comprising a perforate frusto-conical rotor element and a correspondingly frusto-conical conveyor element nesting within said rotor, means for driving said elements at different respective speeds, said elements defining a centrifuging chamber, said chamber having an inlet comprising an opening in the smaller end of one of the elements, the opening being defined by a generally radial annular surface, the opening extending to the periphery of the conveyor, a tubular feed conduit supported axially of the rotor adjacent the opening; the improvement of a transition sleeve telescopically associated with said tubular feed conduit and slidably extending into the opening in said one element, said sleeve having an annular outwardly extending flange intermediate its ends, the face of said flange adjacent said opening mounting a resilient ring with a flat substantially radial surface opposing and spaced from said generally radial annular surface about said opening a distance no greater than the largest dimension across a perforation in the perforate rotor element, said sleeve being so constructed and arranged as to be axially adjustable with respect to said tubular feed conduit and said opening, and means for fixing the relative axial position of said sleeve.

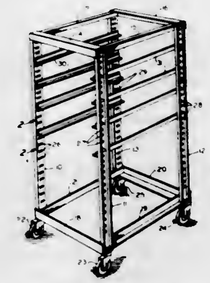
3,199,682
COFFEE MAKER CAN
Arthur P. Scholtz, Chicago, Ill., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 27, 1960, Ser. No. 78,423
1 Claim. (Cl. 210—479)



A can comprising a can body and can ends hermetically sealing both ends of the body, one of the can ends being a disc, a filter within the can body in spaced relationship to each of the can ends and being closer to the disc than to the other can end to permit filtering of liquid through the filter into the space between the filter and disc; said filter comprising a yieldable filter element and a ring, said ring having an inward projection, an outward projection folded back on the inward projection, and an additional inward projection, the outward projection and additional inward projection forming a seam pressing the opposite sides of the filter element along the periphery thereof; means at the central part of the disc for supporting the center of the filter element with respect to the disc to prevent sagging of the filter element into contact with any appreciable area of said disc, said ring having its peripheral portion surrounding the filter element and hermetically sealed to the body of the can, the disc being of frangible material to permit puncturing of the same by a tool to form an outlet for liquid that has passed through the filter, the spacing of the filter from the disc being sufficient to avoid piercing the filter by the puncturing tool.

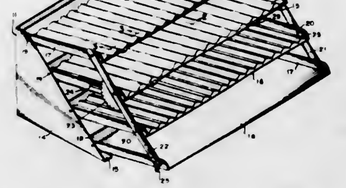
3,199,683
PORTABLE AND ADJUSTABLE RACK FOR SUPPORTING PANS
Edward Graswich, Walnut Creek, Calif., assignor to Dohrmann Hotel Supply Co., Brisbane, Calif., a corporation of California
Filed Dec. 30, 1963, Ser. No. 334,301
5 Claims. (Cl. 211—71)

1. In a portable rack for slidably receiving and supporting a plurality of pans horizontally one above the other, the combination of a portable frame having a plurality of upright members, said upright members forming corner members of said frame, each of said upright members having a plurality of substantially equally spaced notches such that corresponding notches in said upright members are all positioned at the same elevation in said frame, a plurality of elongated angle-shaped slide members each having a vertical portion and a horizontal pan supporting portion, said slide members having inwardly tilted channel portions attached thereto, the end parts of said channel portions being loosely positioned in corresponding opposed notches of said upright members so that the upper end parts of said tilted channel portions are positioned adjacent to said upright members above these notches and the slide can be disengaged therefrom only by lifting the slide so that the horizontal part thereof is in a



substantially vertical position and the upper walls of said selected slots extend into said channel portions and then unhooking the ends of the channel portions from the respective slots by moving the slide downwardly and inwardly.

3,199,684
ADJUSTABLE TEST TUBE RACKS
Rex Lee Bradley, 307 E. 45½ St., Austin, Tex.
Filed July 6, 1964, Ser. No. 380,430
6 Claims. (Cl. 211—74)

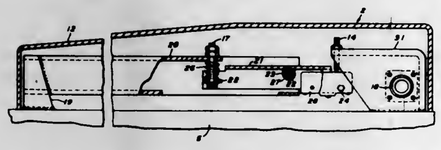


1. A test tube rack adapted to hold test tubes at an adjustable angle of inclination comprising a supporting frame, a plurality of trays adapted to receive and hold test tubes, said trays pivotally connected to the supporting frame in staggered positions, side bars pivotally connected to the front corners of each tray to provide adjustable support at the front of the trays, a position locking device, a position indicating device and test tube guide means.

3,199,685
OVERLOAD SAFETY DEVICE FOR MATERIAL HANDLING MECHANISM
Cecil W. Bopp, Waterloo, Iowa, assignor to The Greater Iowa Corporation, Des Moines, Iowa, a corporation of Iowa
Filed Mar. 2, 1964, Ser. No. 348,593
8 Claims. (Cl. 212—39)

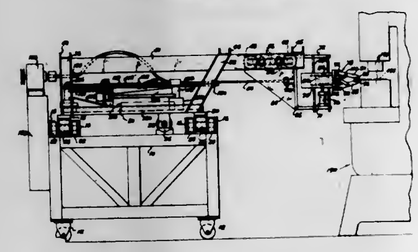
1. In a material handling apparatus of the type described having load-stressed mast and boom members and electrically controllable means for actuating a plurality of forward and reverse movements of a load suspended from said boom member, in combination,
- (a) a first member disposed in spaced adjacent relation to one of said stressed members and having one end portion fixed to said stressed member,

(b) switching means mounted upon the free end of said first member and electrically connected in series with the means for actuating forward movements of said load and in parallel with the means for actuating reverse movements of said load,



(c) a second member fixed to said stressed member and in spaced overlapping relation to said switching means and actuating the latter upon a predetermined deflection of said stressed member to interrupt electrical circuits in series with said switching means.

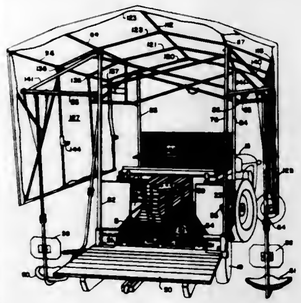
3,199,686
PATTERN CONTROLLED WORK FEEDER
Alvin Wasserman, 19145 Marlowe, Detroit, Mich.
Filed Nov. 15, 1962, Ser. No. 237,962
2 Claims. (Cl. 214—1)



1. A device for feeding a work blank to a plurality of discrete positions with respect to an operating machine, comprising: a work holder; means for supporting the work holder in such a manner that it is free to move to any point within a bounded plane; a pattern formed of an elongated strip arranged in a closed loop configuration with one edge of the strip disposed in the horizontal plane so that the width of the strip extends in the vertical plane; a tracer operative to engage a point along the length of the pattern and to move along the pattern when powered by a rotary source; a source of rotary power operatively connected to said pattern; a mechanical linkage connecting the tracer to the work holder in such a manner that the work holder moves with the tracer through a path similar to that followed by the tracer as it moves along the pattern; a plurality of signal means disposed at various points along the length of the pattern and at various distances from the edge of the pattern; and a plurality of switch means carried by the tracer each being operative to cooperate with those of said signal means disposed at a particular distance from the edge of the pattern strip at such time as the tracer reaches the particular point along the length of the pattern at which a signal means is disposed.

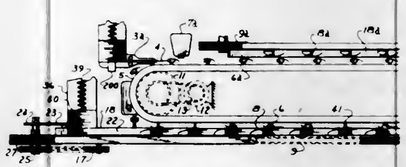
3,199,687
TOBACCO HARVESTER TRAILER
William A. Mish, Jr., P.O. Box 264, Washington, N.C.
Filed Apr. 18, 1963, Ser. No. 274,011
6 Claims. (Cl. 214—5.5)

1. A trailer for harvesting and loading green tobacco leaves for transfer by tobacco pickers in the field from trailer suspended outrigger seats to a curing location comprising a chassis frame, a platform on said chassis frame, said platform being so shaped and so proportioned as to provide a restricted aft portion and a fore portion relatively wider than said aft portion, ground wheels on each side of said aft portion, a swivel seat at the front of said aft portion adjacent the said fore portion of the platform, tobacco receiving tables mounted over each of said wheels on each side of said swivel seat, an upwardly extending framework having lateral elevated side portions above said platform, outrigger workman seats suspended from said lateral side portions of said upwardly extending



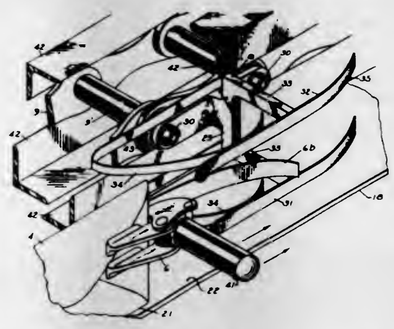
framework, said tables on the inboard sides being within reach of the tobacco collecting occupant of said swivel seat on the outboard sides and adjacent to each of said outrigger seats, and baffle means at the fore and aft ends of each respective table adjacent each outrigger seat, to thereby retain the green picked tobacco leaves on the tables until removed therefrom by an occupant of said swivel seat during an approximate 180 degree turning movement of the said seat alternately between the respective oppositely positioned inboard sides of the tables to and from said respective tables.

3,199,688
APPARATUS FOR SORTING FLAT ARTICLES
Maurice M. Levy, 208 Clemow Ave., Ottawa, Ontario, Canada
Original application Feb. 8, 1961, Ser. No. 87,887. Divided and this application June 26, 1964, Ser. No. 383,268
5 Claims. (Cl. 214—7)



1. Apparatus comprising a plurality of carriers each for transmitting movement to an individual flat article, means mounting said carriers for movement successively along a primary path of travel, a plurality of accumulators for receiving said articles, means mounting said accumulators spaced apart along and adjacent said path of travel, means for deflecting each said article carrier laterally from said primary path of travel into a deflected path of travel associated with a selected accumulator, each said accumulator including spaced stop means extending across its associated deflected path of travel to engage and detain an article carried into such accumulator by an article carrier while allowing unimpeded passage to said article carrier through such accumulator,

a stacker, means for moving said accumulators relative to said stacker to present said accumulators sequentially



to said stacker for transfer of batches of articles accumulated in said accumulators successively to said stacker.

3,199,689
DUNNAGE DEVICE
John G. Feldkamp, Homewood, Ill., assignor to Interlake Steel Corporation, a corporation of New York
Filed Dec. 23, 1960, Ser. No. 77,986
3 Claims. (Cl. 214—10.5)



3. A pneumatic dunnage device for cushioning a load in a transportation vehicle comprising, a longitudinally-extending, substantially-flat tube of relatively thin, flexible, synthetic thermoplastic film material sealed at its opposite ends to provide an independent, inflatable, airtight bladder, a longitudinally-extending, substantially-flat tube of strong flexible paper having only two longitudinally-extending natural fold lines therealong so as to preserve its strength, said second-mentioned tube loosely containing said first-mentioned tube, a lateral reinforcing strip embracing each end extremity of said second-mentioned tube, stitching means permanently securing together the opposite walls of said second-mentioned tube and said reinforcing strips at the respective opposite ends of said second-mentioned tube and independently of said first-mentioned tube, and a stem on said first-mentioned tube extending through the side wall of said second-mentioned tube and to the exterior thereof, said first-mentioned tube being inflatable through said stem, and the flexible paper of said second-mentioned tube being of sufficient strength to provide reinforcing backing for all portions of said first-mentioned tube, when the latter is inflated, to prevent rupture of said first-mentioned tube when said dunnage device is subjected to impacts from the load.

3,199,690
SILO UNLOADER
Newell B. Hanson, Lake Lillian, Minn., assignor to Hanson Silo Company, Lake Lillian, Minn., a corporation of Minnesota
Filed May 22, 1963, Ser. No. 282,436
1 Claim. (Cl. 214—17)

In a silo unloader,

(a) an elongated frame adapted to be suspended over ensilage to be unloaded and having longitudinal dimensions greater than the radius but less than the diameter of a silo in which it is to be used,

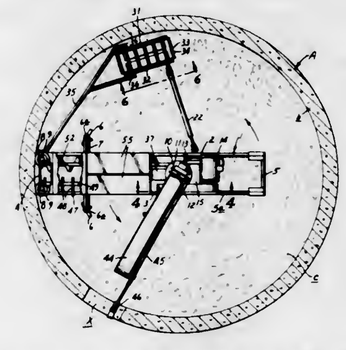
(b) cable means suspending the radially inner end portion of said frame for rotation about an axis concentric with the vertical axis of the silo,

(c) wheel means mounting the radially outer end portion of said frame for movements over the ensilage within said silo,

(d) guide roller means on the extreme radially outer end of said frame adapted to engage the cylindrical wall of said silo during rotary movements of said frame,

(e) a radially extended chopping rotor journalled in said frame immediately rearwardly of the leading edge thereof and extending from the radially outer end of said frame to a point adjacent to but laterally offset in one direction with respect to said suspension cable,

(f) an axially extended feed auger mounted for rotation in said frame in rearward laterally spaced paral-



lel relation to said chopping rotor and extending from the radially outer end of said frame to a point adjacent to said suspension cable but laterally offset therefrom in the opposite direction,

(g) and impeller equipped ensilage pickup and discharge means mounted in said frame adjacent the delivery end of said auger,

(h) shroud means cooperating with said frame to define a downwardly opening housing for said chopping rotor and said feed auger,

(i) means imparting relatively higher speed rotation to said chopping rotor than to said feed auger in a common direction against the direction of rotation of said frame,

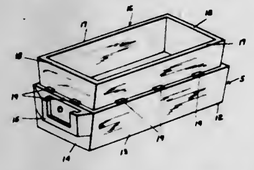
(j) power means for imparting rotation to said frame about the axis of said suspension cable,

(k) and having a plurality of series of radially projecting cutting and chopping blades thereon which are rotated at a speed materially greater than that of the feed auger and at a speed sufficient to throw the cut and chopped ensilage onto the feed auger.

3,199,691
CHARGING APPARATUS FOR OPEN HEARTH FURNACES OR THE LIKE
Henry F. Lukas, Jr., 6936 Farview Road, Brecksville, Ohio
Filed Jan. 29, 1963, Ser. No. 254,685
4 Claims. (Cl. 214—26)

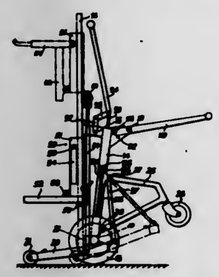
1. In an open hearth charging apparatus the combination comprising, an open top charging box having a bottom portion and enclosing side and end wall portions extending upwardly from said bottom portion, a material retaining frame having open top and bottom portions and being of a size so as to be removably supported within

said charging box, said frame being comprised of an expendable material, such as a scrap steel or the like, so as to be disposed as part of the charge into an open hearth furnace, and a plurality of spaced members ex-



tending from said frame and removably supporting the latter at a predetermined depth within said charging box for substantially increasing the load capacity of said charging box.

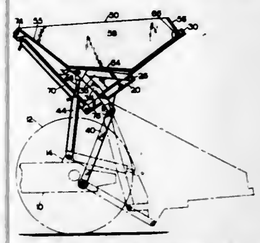
3,199,692
HAND-OPERATED LIFTING TRUCK
Charles Jean Pierre Lèbre, 35 Ave. de l'Orangerie, Sainte-Genevieve-des-Bois, France
Filed May 8, 1964, Ser. No. 366,037
Claims priority, application France, May 11, 1963, 934,529
6 Claims. (Cl. 214—95)



1. A hand controlled lifting truck comprising a wheeled chassis having two front carrying wheels at the ends of a transverse axle and a rear castor wheel adapted to roll on the ground when the chassis is rocked rearwards, vertical slide-bars connected with the chassis and arranged on the front thereof, a mechanism adapted to be moved along said slide-bars for lifting a load, a hydraulic control mechanism incorporated in said chassis for operating said mechanism, a frame with lateral arms slidably carried by said chassis for being movable in a substantially horizontal direction and small lateral wheels carried by the front ends of said lateral arms for ensuring a retractable additional support for the truck in the front of said front carrying wheels.

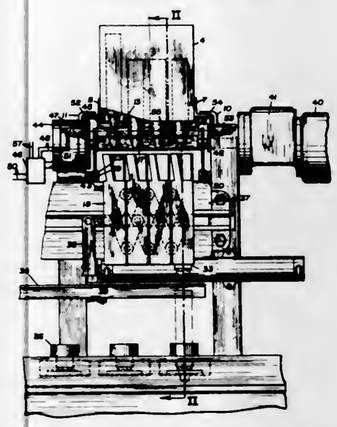
3,199,693
MATERIAL HANDLING APPARATUS
Lester V. Schedeen, Gresham, Oreg. (1315 NE. 181st, Portland, Oreg.)
Filed Dec. 23, 1963, Ser. No. 332,824
5 Claims. (Cl. 214—140)

1. Material handling apparatus adapted for connection with a first hitch member including an anchor member and a second hitch member including a powered arm rotatable vertically comprising: a frame, a receptacle on said frame, means pivotally connecting said receptacle to said frame adjacent one end of the receptacle, means adapted to pivotally connect said frame to the powered arm, lever means projecting upwardly from said frame, first power means connected to said lever means and arranged to pivot said frame on the powered arm, and second power means supported on said frame and connected between said receptacle and said frame to pivot said receptacle relative to said frame, said second power



means being operable independently of said first power means whereby to pivot the receptacle in any selected pivoted position of said frame.

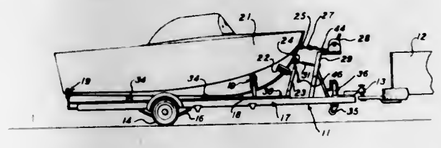
3,199,694
MACHINE FOR FILLING COLLAPSIBLE TUBES
Karl A. Garney, Stuvsta, and Georg Lindberg, Vallingby, Sweden, assignors to Arenco Aktiebolag, Vallingby, Sweden
Filed Jan. 21, 1963, Ser. No. 252,860
Claims priority, application Sweden, July 9, 1962, 7,665/62
5 Claims. (Cl. 214—307)



1. An apparatus for feeding collapsible tubes from cartons divided into upwardly open cells which are arranged in rows and columns and which each contain an empty collapsible tube, to a plurality of equally spaced underlying tube holders, comprising in combination a carton supporting surface for a filled carton with the openings of the cells directed towards said carton supporting surface, said carton supporting surface having an opening therein to uncover said cell openings when aligned therewith, means for driving said cartons along said carton supporting surface towards and past said opening to uncover said cell openings when aligned therewith, a movable tube supporting means having a surface positioned below said opening of said carton supporting surface and above said tube holders so as to allow the tubes of a row to slide downwardly through said surface opening onto the surface of the movable tube supporting means so that part of the length of the respective tubes in the row is visible, a photo-electric sensing device arranged to sense the position of the row of tubes on the surface of said movable tube supporting means which tubes are being advanced and to generate an output signal

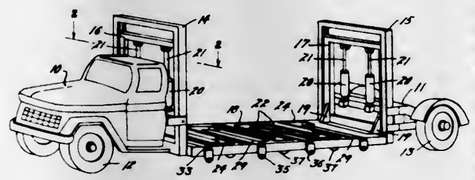
when said row of tubes is in a predetermined position above said tube holders, an electrically controlled stop mechanism for said driving means connected to said photo-electric sensing device and responsive to said output signal to disable said driving means and to stop the carton when said row of tubes is in said predetermined position, and an electrically controlled actuating mechanism for said tube supporting means which is connected to said photo-electric sensing device and responsive to said output signal to move said tube supporting means from below said surface opening and to uncover the underlying tube holders, so that the tubes on the surface of said tube supporting means can fall into said tube holders.

3,199,695
SMALL CRAFT TRAILER AND LAUNCHER
Joseph Scofield, Jr., 1614 Perkins Drive, Arcadia, Calif.
Filed Dec. 18, 1962, Ser. No. 245,518
2 Claims. (Cl. 214—506)



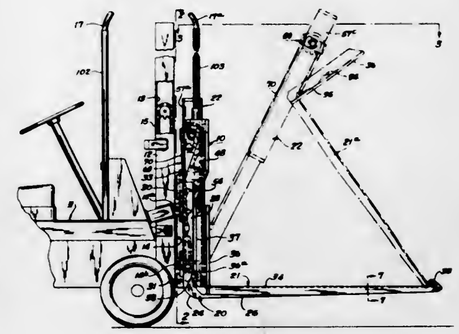
1. A highway trailer for hauling and launching a boat comprising a wheeled trailer chassis, an enclosure carriage, an enclosure on the carriage adaptable to encompassing the boat, a boat carriage, means securing selectively one of the carriages to the chassis for longitudinal movement thereon, carriage support rollers fixed to the enclosure carriage and adapted to receive the boat carriage thereon for longitudinal movement with respect to the enclosed carriage, carriage locking means for selectively preventing longitudinal boat carriage motion relative to the trailer, boat support means on the boat carriage, boat locking means on the boat carriage for fixing the boat relative to the carriage, means for tilting the trailer chassis about its wheels to depress the trailer remote from its hitch to a towing vehicle, and means adapted to control longitudinal motion of each carriage relative to the chassis and longitudinal motion of the boat relative to the boat carriage.

3,199,696
SELF-LOADING AND UNLOADING VEHICLE
Louis Chrysler, 743 Glencoe St., and Paul M. Stockton, Box 412, 2000 W. 92nd, both of Denver, Colo.
Filed Oct. 3, 1963, Ser. No. 313,484
8 Claims. (Cl. 214—512)



1. A vehicle bed comprising: an elongated, rectangular bed frame; a plurality of floor beams extending transversely of said frame in spaced-apart relation; track members extending longitudinally of said floor beams; an outer box element movably supported in the track members between adjacent floor beams; a vertically movable inner element in said outer box; means for urging said inner element upwardly; means for moving said outer box element longitudinally of said track members; and a lift arm pivotally mounted at its inner extremity on a horizontal axis in said inner element and extending to one side thereof parallel to and between adjacent floor beams so as to be projected sidewardly from said bed frame when said outer box element is moved toward the latter side.

3,199,697
LIFTING AND DUMPING APPARATUS
Ray John Gatz, Lakewood, and Warren E. Beutler, Willoughby, Ohio, assignors to The Lamson & Sessions Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 6, 1962, Ser. No. 221,769
10 Claims. (Cl. 214—620)

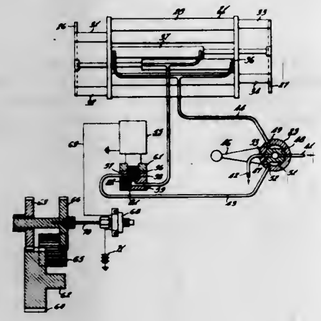


5. An attachment for a fork lift truck having a load handling elevator and connecting means for detachably supporting the handling device on said elevator, said attachment comprising a framework including an upright portion having means for cooperating with said connecting means for detachably connecting the framework to the lift truck elevator and a generally horizontal load supporting portion extending forwardly from said upright portion at its lower end thereof comprising a pair of laterally spaced fork members with a clearance space therebetween to adapt the members for insertion beneath a palletized load, a load carrier superposed on said horizontal portion comprising a pair of laterally spaced arms superposed on said fork members and having a clearance space therebetween to provide for insertion of said arms with said fork members beneath a palletized load, hinge means pivotally connecting said arms to said fork members at their outer forward end thereof for swinging movement about the forward end of said load carrier to an inclined dumping position, a generally vertical mast assembly on said framework adjacent said upright portion and including an elevator, and means operatively connecting said elevator to said load carrier to swing the rear of said load carrier upwardly to move said load carrier to its said inclined dumping position, said hinge means comprising lug portions on the forward ends of said fork members with said lug portions having sloping forward sides providing forwardly and downwardly sloping bevels on said fork members to facilitate movement of the forward ends of said arms underneath a pallet having separate recesses for receiving said fork members and said hinge means projecting upwardly sufficiently from said arms to form a stop for a container on said carrier during dumping.

3,199,698
CONTROL SYSTEM FOR PREVENTING THE OPENING OF A CLAMP DEVICE ON A LIFT TRUCK WHEN THE TRUCK IS IN MOTION

Frank C. Schuster, Chicago, Ill., assignor to Allis-Chalmers Manufacturing Corporation, Milwaukee, Wis.

Filed Mar. 5, 1964, Ser. No. 349,555
6 Claims. (Cl. 214—653)



3. In a lift truck having a pair of driving wheels and a power train for said wheels including rotary power transmitting elements in constant driving relation to said wheels, the combination comprising:

a clamp attachment,

a hydraulic jack for opening and closing said attachment,

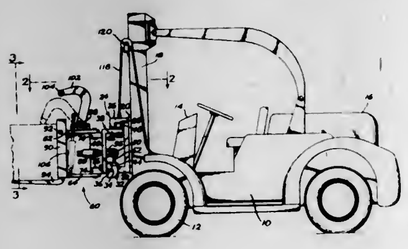
a hydraulic control system for operating said hydraulic jack including a control valve, and

a safety mechanism for preventing opening of said attachment while said driving wheels are rotating including automatically operated shutoff valve means.

3,199,699
LOAD CARRYING MECHANISM FOR LIFT TRUCKS

Donald W. Dayton, P.O. Box 6, Boring, Oreg.

Filed July 16, 1962, Ser. No. 210,163
3 Claims. (Cl. 214—654)

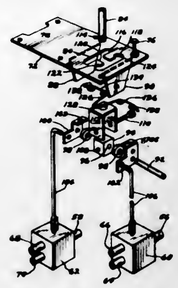


2. A load carrying mechanism for a lift truck, comprising a support member adapted for mounting on a lift truck for vertical movement, a laterally elongated shift frame mounted on the support member for lateral movement relative thereto, power means interconnecting the support member and shift frame for providing said lateral movement, pivot support means on the shift frame projecting forwardly from the center thereof, a pivot frame having rearward edges converging rearwardly substantially to a central apex, vertical axis pivot means interconnecting the pivot support means and the pivot frame at said central apex and mounting the pivot frame on the shift frame for lateral pivotal movement, power means interconnecting the shift frame and the pivot frame for providing said pivotal movement, load engaging members on the pivot frame, a load c amp member, laterally disposed pivot means on the upper end of the pivot frame mounting the clamp member on the pivot frame for movement of the clamp member between a retracted raised position and a load engaging forward position, and power means interengaging the pivot frame and clamp member for rotating the load clamp member about the axis of the pivot means between said retracted raised position and said load engaging forward position.

3,199,700
LIFT TRUCK FORK OPERATING CONTROL MECHANISM

Clifford C. Bigley, Minneapolis, Samuel H. Cottrell, Mound, Earle C. Fossom, Hopkins, and Robert B. Singer, Minneapolis, Minn., assignors to Minneapolis-Moline, Inc., Hopkins, Minn., a corporation of Delaware

Filed Feb. 12, 1963, Ser. No. 258,075
2 Claims. (Cl. 214—674)



1. An operating control for a fork lift truck comprising in combination, a mounting plate having an opening therein, supporting means positioned below said opening and movable to a plurality of positions, means within said opening to retain said lever in at least one of said positions, a control means extending through said opening, a yoke mounted upon the lower end of said control means, pivot means at the lower end of said yoke for supporting said yoke upon said supporting means for movement about mutual.y perpendicular axes at the lower end thereof, laterally spaced means positioned upon either side of said yoke and including portions adapted to selectively engage said yoke when said yoke is moved about one of said axes into proximity therewith, said yoke being adapted to disengage one of said spaced means when engaged upon the other of said spaced means, each of said spaced means being pivoted about a second axis positioned at right angles to said first axis, and additional control means operatively connected to said spaced means.

3,199,701
POLYETHYLENE CONTAINER INCLUDING IN SITU POLYMERIZED STYRENE IMPREGNANT

Thomas R. Santelli, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed May 19, 1960, Ser. No. 30,087
1 Claim. (Cl. 215—1)

A container of polyethylene plastic which is normally permeable to liquid and gaseous chemicals, an in situ-formed polystyrene within the interstices of an entire surface of said container, said container having no visible

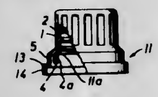


external coating of said in situ-formed polystyrene on said surface.

3,199,702
TAMPER-PROOF SCREW CAPS

Alfred Fischbach, Runderoth, Rhineland, Scheffert, Germany, assignor to Alfred Fischbach Kunststoff-Spritzgusswerk, Runderoth, Bezirk Cologne, Germany

Filed Apr. 11, 1963, Ser. No. 272,281
Claims priority, application Germany, Apr. 16, 1962, F 36,567; Dec. 4, 1962, F 38,454
3 Claims. (Cl. 215—42)



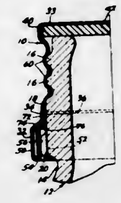
1. A tamper-proof sealing cap comprising a generally cylindrical shell, said shell including an internally threaded portion, at least one extended frangible member positioned inside of said shell below said internally threaded portion, said frangible member projecting into the path of a bottle neck having external tooth portions below the threaded portion of the shell, said tooth portions having a sloping cam surface terminating in a sharp angle, said frangible member and said tooth portions cooperating so that said frangible member is broken by said tooth portions when said cap is removed from a bottle on which it is placed, a protective collar means extending axially along said shell and externally of said frangible member, said collar means being provided with an opening located adjacent said frangible member, said collar having a lower portion of a larger external diameter than an upper portion of said shell to prevent the insertion of thin instruments between the cap and the bottle upon which it is placed.

3,199,703
CONTAINER CLOSURE

Claude C. Alexander, Chicago, Ill., assignor to The West Company, Phoenixville, Pa., a corporation of Pennsylvania

Filed June 15, 1964, Ser. No. 375,161
3 Claims. (Cl. 215—42)

1. In combination, a container and a closure member adapted to be removably secured to the container; said container having an open ended neck portion with at least one external spiral thread portion thereon, an annular flange on said neck at the opposite side of said thread portion from the open end of said neck, said flange having a series of ribs positioned about the periphery thereof extending generally parallel to the axis of said neck portion, said closure member including a generally cylindrical cap portion having one end seated on the neck of said container to close the same and an annular side wall extending downwardly from said one end, a retaining ring portion depending from said cap portion and connected to the annular side wall of said cap portion in a position coaxial with the cap portion by fracturable bridge means, said retaining ring comprising a generally cylindrical outer wall section and an inner wall section confronting the outer wall section and spaced radially inwardly therefrom, said inner and outer wall sections formed integrally to define a rounded lower edge, a plurality of grooves on said inner wall section

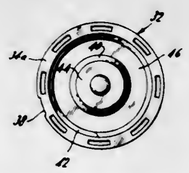


extending generally parallel to the axis of said retaining ring and formed about the periphery of said inner wall section, the free terminal end of said inner wall section terminating in an inwardly directed frusto-conical rim overlying the ribs on the container, said closure member positioned over said container neck portion with the grooves engaging the ribs on said container to prevent rotation of said retaining ring relative to the container, and the annular side wall of said cap portion being deformed to conform to the shape of the spiral thread portion on said container neck.

3,199,704
CLOSURE AND SEALING ASSEMBLY FOR BOTTLES

Emil Davidson, Scarsdale, N.Y., assignor to Guild Molders, Inc., Elmsford, N.Y., a corporation of New York

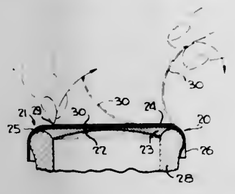
Filed Oct. 22, 1963, Ser. No. 317,957
4 Claims. (Cl. 215—43)



1. The combination with a bottle including a neck terminating in a neck top wall and having external threads and an internal bore meeting said neck top wall at a junction of a combined closure and sealing assembly for said bottle comprising a cap including a top wall and a depending body wall defining a socket and terminating in an open end, an insert of yieldable material including a mounting wall force fitted into said socket, internal threads on said mounting wall dimensioned to engage said external threads on said neck, a depending hollow and thin-walled yieldable frusto-conical sealing member disposed coaxially of and in spaced relation to said internal threads and dimensioned for sealing engagement with said neck adjacent said junction, and means operatively connected to said mounting wall and to said sealing member for suspending the latter such that said sealing member may yield and accommodate to any irregularities in said neck adjacent said junction and provide a seal about said neck

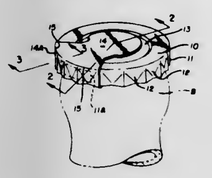
adjacent said junction, said means including a suspension flange of a radial inward extent to overlie and confront said neck top wall and being spaced therefrom when said threads are engaged and said seating member provides said seal about said neck.

3,199,705
THREE-PIECE EASY OPENING CROWN CAP CLOSURE
Halford E. Brockett, Elmhurst, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 4, 1963, Ser. No. 321,171
3 Claims. (Cl. 215—46)



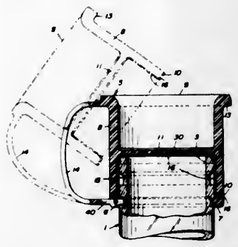
1. An easy opening crown cap closure comprising a shell including an end panel and a skirt, a cut line in said end panel defining a pull tab readily bendable out of the plane of said end panel and an end panel wall portion completely surrounding said pull tab, said cut line having spaced ends, a pair of weakening lines extending across said end panel wall portion outwardly from the ends of said cut lines and partially down said skirt to define a tear strip integrally connected to said pull tab for removal thereby, a rigid metal reinforcing disc bridging said pull tab and being firmly seated on said end panel wall portion to prevent the rupture of the crown cap closure by inward deflection of said pull tab, and a sealing liner bonded to both said shell and said disc to seal against flow around said disc and between said disc and said liner.

3,199,706
BOTTLE CAP WITH SELF-OPENING TAB
Tony F. Marchionda, 708 5th St., Struthers, Ohio
Filed June 18, 1964, Ser. No. 376,177
1 Claim. (Cl. 215—46)



A self-opening bottle cap comprising an annular disc having an annular depending flange thereabout arranged to be crimped upon a neck of a bottle so as to be secured thereto thereby, said depending flange having an opening therein of a height slightly less than the height of said flange and a width approximately three times its height, said annular flange having an integral extension adjacent said opening forming a pull tab said extension being wider than said opening, said extension normally folded back over said opening in said flange and extending over said annular disc and lying adjacent thereto, said extension arranged to be crimped in the manner of the annular flange of said cap so as to substantially engage said bottle through said aperture.

3,199,707
SAMPLING CONTAINER
Bern D. Folkman, Van Nuys, Calif., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Apr. 29, 1964, Ser. No. 363,400
6 Claims. (Cl. 215—99)



1. A sampling container comprising:
(a) a vial having an open end, a closed end, and an external peripheral groove spaced from said open end;
(b) a closure adapted to close the open end of said vial, said closure including
(1) a retaining ring fitting within said external peripheral groove,
(2) a sleeve having a lower portion adapted to fit over the open end of said vial to cover and keep sterile a portion of the vial between its open end and said peripheral groove, said sleeve extending from a lower end adajcent said peripheral groove to an upper end that lies a substantial distance above the open end of the vial,
(3) a transverse diaphragm within said sleeve adapted to fit against the open end of said vial, said diaphragm spaced between the two ends of said sleeve and a substantial distance from the upper end of the sleeve,
(4) an external flange projecting radially outwardly about the upper end of said sleeve, said closure manipulatable by said flange to axially slide the closure selectively off and on said vial, thereby opening and closing the sampling container without contaminating the vial between its external peripheral groove and its open end, and
(5) a flexible web connecting said retaining ring to said sleeve.

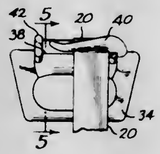
3,199,708
BOTTLE ANTI-THEFT DEVICE
Bernard Edward Shlesinger, Jr., Annandale, and George A. Arkwright, Alexandria, Va., assignors of one-third to Jack Y. Dinsmore, Silver Spring, Md.
Filed Dec. 20, 1963, Ser. No. 332,038
16 Claims. (Cl. 217—19)

1. An anti-theft device for preventing the removal of containers from storage racks comprising a rigid, one-piece, non-deformable front plate, said front plate having a plurality of openings therein for receiving the containers, said openings therein for receiving the containers, said openings generally conforming to the cross-sectional shape of the containers and having a cross-sectional area greater than the greatest cross-sectional area of the containers to permit the containers to readily pass therethrough, a one-piece, flexible, resilient, generally non-compressible backing plate secured to the back of said front plate, said backing plate having a plurality of openings therein aligned with the openings in said front plate, the openings in said backing plate having a cross-sectional area substantially less than the greatest cross-sectional area of the containers, whereby when the containers are passed through said front plate openings for storage in a rack, said backing plate will flex sufficiently to permit passage of the containers through said backing plate openings, and whereby when an attempt is made to remove the containers, said backing plate will cooperate with the opening in said front plate to form a constriction therein, thereby reducing the cross-sectional area of said front



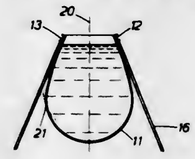
plate opening to less than the greatest cross-sectional area of the container thereby preventing removal of the container from the rack, said front plate having a plurality of enlarged surface areas, said enlarged surface areas being located between at least three of said openings, said backing plate being secured to said front plate at said enlarged surfaced areas, fingers projecting from said backing plate into said openings and radially extending from adjacent said enlarged surface areas.

3,199,709
PACKAGE EDGE PROTECTOR
Robert O. Morrison, 731 SW. King Ave., and Louis W. Chundelak, Jr., 3114 NE. Oregon, both of Portland, Oreg.
Filed Nov. 8, 1961, Ser. No. 151,106
1 Claim. (Cl. 217—69)



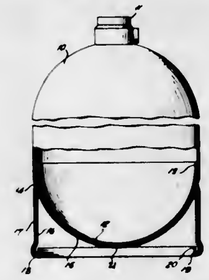
An edge protector for packages bound with strapping, comprising an imperforate L-shaped body member adapted to overlie a package edge, a resilient clip member secured at one end to and projecting outwardly from the imperforate apex of the body member adjacent one lateral side of the latter and having its opposite end positioned freely adjacent the apex and terminating inwardly of and adjacent the opposite lateral side of the body member for frictionally gripping a strapping between said end portion and the underlying imperforate apex of the body member, and an abutment member projecting outwardly from the imperforate apex of the body member adjacent said opposite lateral side of the latter and outwardly of the free end of the clip member for confining a strapping between the clip member and abutment member.

3,199,710
TANK FOR HOLDING FLUIDS
Charles M. Hovey, Winnipeg, Manitoba, Canada, assignor to Bristol Aero-Industries Limited, Montreal North, Quebec, Canada, a corporation of Canada
Filed Nov. 8, 1961, Ser. No. 150,936
Claims priority, application Canada, Oct. 3, 1961, 832,995
5 Claims. (Cl. 220—1)



1. An open top tank for holding a given liquid to a predetermined free surface level, comprising:
a pair of end walls,
a continuous side and bottom structure having a pair of longitudinal upper edges,
means secured to said edges for supporting said side and bottom structure only at the said upper edges thereof,
said side and bottom structure being formed of a sheet of material extending between said end walls and having orthogonal to the longitudinal axis of the tank a cross section with such a radius of curvature from the said liquid level downward that any point on said cross section is inversely proportional to the depth of the point below the said predetermined liquid surface level to cause a substantially constant tensile force in said structure per unit of tank length and to cause in conjunction with said supporting means substantially a zero transverse force in said structure at each of said upper edges.

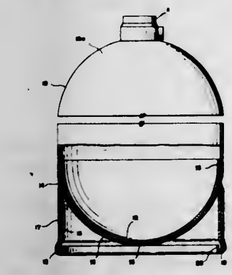
3,199,711
FIRE EXTINGUISHING TANKS
Ignatius Nurkiewicz, Colt's Neck, N.J., assignor to Stop-Fire Inc., New Brunswick, N.J., a corporation of New York
Continuation of application Ser. No. 643,194, Feb. 28, 1957. This application Nov. 7, 1958, Ser. No. 772,481
3 Claims. (Cl. 220—3)



1. A fire extinguisher container comprising a shell having a top adapted to be closed by a dispensing mechanism, and cylindrical walls extending downwardly therefrom, a substantially hemispherical bottom member fitted within said shell with its convex side downwardly, a bottom supporting member having its central portion concentric with said bottom element, and in engagement therewith, and having peripheral downwardly extending flanges of a diameter to fit tightly within the walls of said shell below the body of said support, the lower

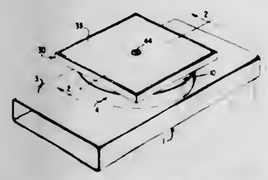
edge of said shell extending below the lower edge of the flange of said support and being bent inwardly back upon itself around the lower edge of said flange.

3,199,712
FIRE EXTINGUISHER TANKS
Ignatius Nurkiewicz, Princeton, N.J., assignor to Stop-Fire, Inc., Monmouth Junction, N.J.
Filed Dec. 13, 1963, Ser. No. 330,456
6 Claims. (Cl. 220—3)



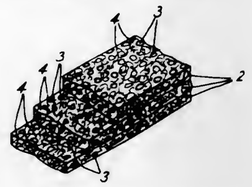
1. A container for storing pressurized contents particularly adapted for a fire extinguisher, and comprising an outer shell having a cylindrical wall closed at one end by a hemispherical top, a hemispherical bottom member closely fitted within said cylindrical shell wall at the other end thereof with its convex side directed away from said top, a bottom supporting member having a central portion concentric with said bottom member and contiguous with said bottom member convex side, said bottom supporting member having a flange extending from the periphery of said central portion in a direction away from said top with said flange having such a diameter so as to fit closely within said cylindrical shell wall, the bottom edge of said shell at said other end thereof extending below the bottom edge of said supporting member flange and being bent backwardly upon itself around said supporting member flange bottom edge to form an inner flange which is parallel to said cylindrical shell wall.

3,199,713
ADAPTER FOR ACCESS UNITS OF UNDER-FLOOR DUCTS
Charles T. Flachbarth, Springfield Township, Delaware County, Pa., assignor to Walker Brothers, a corporation of Pennsylvania
Filed Nov. 10, 1961, Ser. No. 151,470
4 Claims. (Cl. 220—3.7)



1. An access unit for an underfloor duct comprising a body member extending upwardly from the underfloor duct and having an opening therethrough to provide access to the underfloor duct, said body member including a collar mounted on the underfloor duct and a ring adjustably mounted within the collar and adjustable vertically relative thereto, a flange carried by said ring and extending radially inwardly with respect to the body member, a polygonal adapter element extending over and protruding beyond the upper edge portion of the body member and having an opening therein, a cover plate in the opening in the adapter element, means to support the cover plate relative to the adapter element comprising at least one L-shaped bracket having one leg attached to the inner edge of the adapter element defining the opening therein and extending downwardly towards the underfloor duct, and the other leg of the L-shaped bracket extending inwardly from the lower end portion of said one leg, and means for securing the adapter element to said flange in any of a plurality of different angular adjusted portions with respect to the body member.

3,199,714
THERMAL INSULATION
Warren J. Bodendorf, Montgomery, Mass., and David I-J Wang, Buffalo, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed July 20, 1962, Ser. No. 211,176
25 Claims. (Cl. 220—9)



16. A composite multi-layered insulation for use in a vacuum space between warm and cold boundaries comprising permanently precompacted low-conductive layers of (1) fibers having diameters less than about 20 microns for reducing heat transfer by conduction, being oriented substantially perpendicular to the direction of heat inleak across the vacuum space; (2) finely divided radiant heat reflecting bodies of sizes less than about 500 microns having metallic surfaces, being incorporated in and uniformly dispersed through the layers in an amount between about 10% and 60% by weight of the layers; and (3) a binder for cementing the heat reflecting bodies to said fibers.

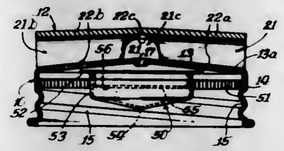
3,199,715
INSULATION CONSTRUCTION
John A. Paivanas, Williamsville, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed July 20, 1962, Ser. No. 211,229
21 Claims. (Cl. 220—9)



1. A composite multi-layered insulation for use in a vacuum space comprising low-conductive fibrous sheet material layers of permanently precompacted paper composed of fibers having diameters less than 20 microns, the paper layers containing finely-divided radiant heat reflecting bodies of sizes less than about 500 microns in an amount between about 10% and 60% by weight of said paper and having metallic surfaces being uniformly dispersed throughout the paper layers and separated by said fibers; and thin, flexible radiant heat reflecting shields of less than about 0.2 mm. thickness being supportably carried in super-imposed relation by said paper layers, each shield being disposed in contiguous and coextensive relation on opposite sides with a paper layer, the fibers of said paper layer being oriented substantially parallel to the heat reflecting shields and substantially perpendicular

to the direction of heat inleak across the vacuum space, and said multi-layered composite insulation being arranged in the vacuum space to provide between about 4 and 250 paper layers per inch of said composite insulation.

3,199,716
CAP
Albert R. Price, Sullivan, Ill., assignor to Community Industries, Ltd., a corporation of Illinois
Filed June 11, 1962, Ser. No. 201,540
1 Claim. (Cl. 220—44)



A round gas tank cap adapted to prevent the blocking of the ventilating port by accumulation of snow and the like thereon, which cap comprises a circular top wall with an interiorly threaded cylindrical side wall extending downwardly at the periphery thereof, grippable means on the exterior of said side wall for turning said cap in engagement with cooperating threads of a threaded lip around a gas tank opening, a ventilating port in said top wall adjacent the axis of said top wall, said top wall defining a conical outer top surface sloping radially downwardly from the ventilating port to the top wall periphery, a circular gasket force fitted within said side wall and adjacent said top wall within the cap, an opening through said gasket, said gasket carrying a dust trap assembly defining a passage from said vent opening through said gasket within said cap, and a circular shield having a plurality of radial impressions on its lower surface, said lower surface being spot welded to said conical outer top surface, said impressions and conical outer top surface defining a plurality of air conduits intercommunicating with the ventilating port adjacent the axis of the top wall and providing air communication of said vent port laterally and down said conical outer top surface, said shield protecting said top wall at said port from accumulation of snow and the like thereby maintaining free passage of air through said port.

3,199,717
CLOSURE FOR CONTAINERS
Sam Povering, Woodbridge, Ontario, Canada (36 Rivalda Road, Weston, Ontario, Canada)
Filed July 9, 1963, Ser. No. 293,616
1 Claim. (Cl. 220—82.5)



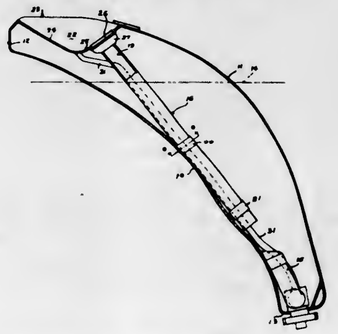
A see-through metal-glass cover for saucepans or other cooking vessels comprising a permanently secured assembly which consists of

(1) a glass member including an upstanding knob, located at the center of a generally flat horizontal cover portion, a downwardly sloping wall extending from the periphery of said generally flat horizontal portion and terminating in a pair of rounded flanges, the first of which extends outwardly horizontally from said sloping wall and the second of which extends downwardly vertically from said wall toward the inside of the vessel on which the cover is to be supported, said glass member being permanently secured to

(2) a sturdy one-piece metal ring of relatively thick material consisting of a horizontal portion at its uppermost extremity, a curved transition section connecting said horizontal portion with an annular vertical side wall the lowermost end of which is stepped so as to be received on the rim of a vessel to be covered and

(3) means permanently securing said glass member (1) to said metal ring (2) said means comprising a one-piece band of relative thin metal and of uniform width throughout disposed securely about the uppermost horizontal edge of said metal ring and holding same adjacent to said first flange on said glass member, and turned over said first flange, the shape of said band consisting of an "S," the upper loop of which embraces said first flange and the lower loop of which is flattened so as to embrace the horizontal edge of said ring, so as to secure said glass member to said metal ring in a permanently bonded cover.

3,199,718
LIQUID STORAGE TANK
Paul R. Hughes, Englewood, Ohio, assignor to United Aircraft Products Inc., Dayton, Ohio, a corporation of Ohio
Filed Sept. 10, 1963, Ser. No. 307,823
3 Claims. (Cl. 220—85)

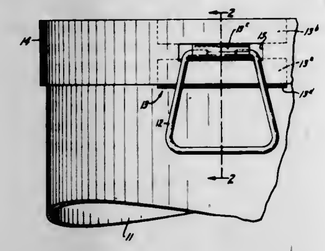


1. In a liquid storage tank of arcuate configuration having top and bottom portions and providing a back concave wall and in spaced approximately parallel relation thereto a front convex wall, means forming a depression in said convex wall in the top portion of the tank, said depression being comprised of a downwardly sloping wall in a plane intermediate said concave and convex walls and an outwardly projecting wall extending from said sloping wall to said convex wall, and a level sensor mounting slideway in said tank opening at one end through the said outwardly projecting wall of said depression and terminating at its other end within the tank in the bottom portion thereof, said slideway being straight and having an intermediate portion bearing on an interiorly facing surface of said concave wall, said other end of said slideway being formed with tabular detents inturned at angles less than right angles and made resilient for spring action.

3,199,719
CONTAINER HANDLE CONSTRUCTION
Laurens Heinrich Fronczek, Audincourt-sur-Eure, France, assignor, by mesne assignments, to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,650
Claims priority, application France, June 30, 1961, 866,675, Patent 1,305,436
6 Claims. (Cl. 220—94)

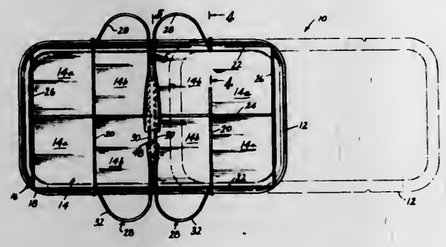
5. A container comprising, in combination, an imperforate outer body wall, means defining a pair of bearing members each having a base portion adapted to engage the outer surface of said outer body wall and an

outwardly projecting socket, said outer body wall and said bearing members being respectively formed of mutually infusable materials, lift means pivotally connected to said sockets, a fastening strap extending at least partially about said outer body wall and adhesively secured thereto, said strap overlying each of said base portions and having a pair of spaced apertures formed therein for reception of respective ones of said sockets, said



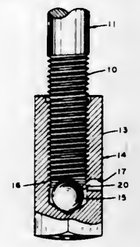
base portions including downwardly extending portions projecting beneath the lower edge of said overlying fastening strap, said downwardly projecting portions of said base portions each being bent outwardly relative to said outer body wall over at least part of their lengths so as to project outwardly beneath said fastening strap whereby upward sliding movement of said bearing members relative to said outer body wall is inhibited.

3,199,720
FOOD OR BEVERAGE CARRIER AND SERVER
Sol Forman, Brooklyn, and Seymour Sloyer, Lawrence, N.Y., assignors to Forman Family, Inc., Brooklyn, N.Y., a corporation of New York
Filed Jan. 4, 1963, Ser. No. 249,504
12 Claims. (Cl. 220—103)



1. A carrier and server for containers comprising, wire means having sides interconnected by ends and comprising means defining a plurality of openings through which may pass a plurality of said containers, respectively, a tray positioned below said wire means and spaced therefrom, said tray having side edges and end edges and a solid container supporting surface positioned below said openings for supporting the bottoms of said containers, and other wire means integral with the first mentioned wire means, extending downwardly and outwardly from the middle of opposite sides of said first mentioned wire means for holding said tray in said spaced position below said first mentioned wide means, said other wire means having a pair of longitudinally spaced parts positioned at each of opposite side edges of said tray and releasably engaging longitudinally spaced portions of the side edges of the latter, whereby said tray is removably mounted below said first mentioned wire means for removal of said tray from the carrier and server.

3,199,721
WRENCH COUPLING
Chester I. Williams, 347 Greenbriar SE., Grand Rapids, Mich.
Filed July 22, 1963, Ser. No. 296,614
2 Claims. (Cl. 81—53)



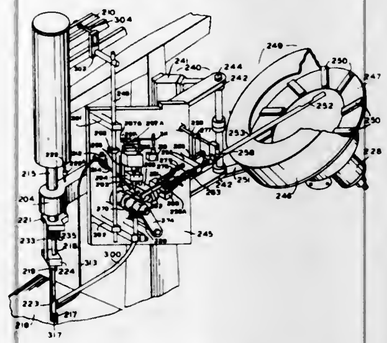
1. A wrench coupling for transferring torque to a threaded rod-end, said coupling comprising:

a body having a polygonal cross section and having a bore with a threaded portion adapted to receive said rod-end, said bore extending only over a fractional part of the length of said body,

said body having at least one peripheral recess at an intermediate point along said body, and

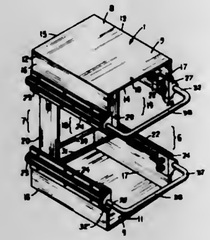
a bearing member inserted in said bore, said bearing member having clearance with respect to the wall of said bore, said body having at least one portion thereof at said recess extending radially inward from the wall of said bore to entrap said bearing member, said portion being disposed axially inward in said bore from the innermost position of the outer portion of said insert member.

3,199,722
ORIENTING AND FEEDING APPARATUS
Robert S. Madeux, Watertown, Conn., assignor to The Bristol Company, Waterbury, Conn., a corporation of Connecticut
Filed Jan. 23, 1959, Ser. No. 788,543
3 Claims. (Cl. 221—9)



1. Orienting apparatus for objects which are distinguishable by a predominant characteristic in one end, comprising a feeder tube bearing said objects in random orientation, rotatable receptacle means adapted to receive said objects one by one and expose one end of each of same to inspection, a first gate member pivoted on said feeder tube adaptable for controllably retaining said objects in said feeder tube, a second gate member in said receptacle means, means on said second gate member for engaging and for controllably retaining said objects during inspection and orientation, means on said feeder tube for positioning said second gate member and said retaining means to receive and engage said objects, orientation-sensing means responsive to said predominant characteristic at the exposed end of said object, an output tube through which said objects are discharged, and means for effecting a pre-established cycle of operation whereby said receptacle means is successively moved to a first position in operative association with said feeder tube to receive one of said objects from said tube, then to a second position juxtaposed to said orientation-sensing means with which it is thereupon momentarily brought into sensing relation, and, under further selective control of said sensing means, alternatively either said second gate member and said retaining means are opened to release said object to said output tube or said receptacle means is rotated through 180 degrees to release said object into said output tube, and means for propelling said object from said receptacle means through said output tube, said receptacle means comprising a cylindrical member with diametrically drilled hole for receiving the said object, said hole being slotted lengthwise, a separable member concentric with said cylindrical member, a slot in said separable member juxtapositioned to said slotted hole in said cylindrical member, said second gate member being pivotally connected adjacent one of its ends in said slot in said separable member and reciprocable at its other end in said slot and adapted to be inserted into or withdrawn from said slotted hole in said cylindrical member, first motor means to operate said separable member, rack and pinion means to rotate said receptacle means, second motor means operatively associated with said rack and pinion means, a stop member determining a position of said rack and pinion means intermediate between fully withdrawn and fully extended position of said second motor means, and means for positioning said stop member.

3,199,723
BAG DISPENSER
Lester W. Hein, 1526 E. Alton, Independence, Mo.
Filed Apr. 1, 1963, Ser. No. 269,423
4 Claims. (Cl. 221—47)



1. A dispenser for folded paper bags of the satchel-bottom type having a bottom flap which may be grasped by the fingers comprising:

(a) a hollow frame substantially of sheet metal and having a front and a rear and including a pair of opposed spaced-apart end members respectively having rectangular parallel end walls with parallel pairs of side and end edges, said side edges respectively having opposed side wall portions fixed thereto and extending at right angles from said end walls toward the opposite end wall, said side wall portions together extending only partially the distance between said end walls forming side openings between said end members providing access into said frame,

(b) structural means joining said end members and maintaining said end members in fixed relation with respect to each other,

(c) elongated slots through said end members and extending parallel to said side edges, elongated generally semi-cylindrical cover members having outwardly extending flanges secured to said end members and covering said slots on the exterior of said end members, said cover members having a greater inside diameter than the width of said slots and cooperating therewith to form an elongated passageway extending parallel to and communicating with said respective slots, said passageways extending substantially the entire distance between said frame front and rear,

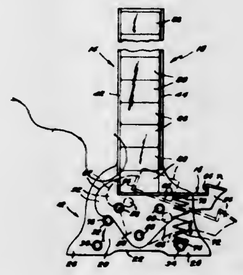
(d) a closely fitting plug slidable longitudinally in each of said passageways, cap members secured to said end members and respectively covering the front end of each of said passageways, an elongated helical compression spring in each of said passageways and bearing respectively on said cap members and on said plugs for resiliently slidably urging said plugs rearwardly of said frame,

(e) a paper bag-engaging bar portion secured to each of said plugs and extending transversely through the respective slot into said frame, said bar portions being movable parallel to said slots within said frame in response to the movement of said respective plugs,

(f) a loading rod slidably extending through each of said cap members and longitudinally into said passageways and slidably within said respective springs, said rods adjacent one end thereof engaging said plugs and at the other end thereof extending externally of said frame for grasping to conveniently move said bar portions, and

(g) abutting means extending across the rear of said frame and aligned with said bar portions forming clamp members for resiliently retaining a stack of paper bags therebetween, said clamp members being adapted to engage the top paper bag on said stack at positions exposing said bottom flap for grasping and extracting.

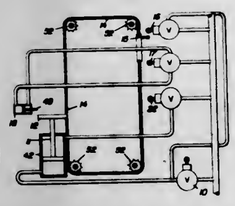
3,199,724
DEVICE FOR DISPENSING SMALL ARTICLES
Joseph Di Domenico and Frank Mellion, Providence, R.I., assignors to Jo-Dee Corp., Providence, R.I., a corporation of Rhode Island
Filed June 17, 1963, Ser. No. 288,297
1 Claim. (Cl. 221—257)



In a device for dispensing small oblong articles therefrom, a base defined by opposed walls that are located in spaced-apart, parallel relation, horizontal spacer members extending between said walls and joined thereto for locating them in their spaced-apart position, a

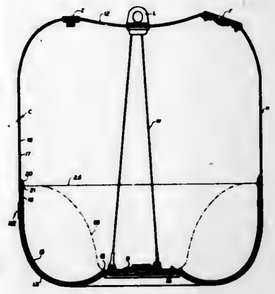
vertically extending magazine for receiving the articles to be dispensed therein and including spaced-apart, parallel walls that are formed as integral extensions of the walls of said base, a dispensing tray defined by walls that are located in spaced-apart, parallel relation and a flat plate that is joined to the walls of said tray and that receives the lowermost article in said magazine thereon, the full length of said flat plate being normally located directly beneath said magazine in a horizontal plane, spacer members joined to the walls of said tray for locating them in their spaced-apart position, the walls of said tray being located in close, parallel relation to the walls of said base and being shaped so as to be substantially confined within said base when said tray is in the normal position thereof, one of the spacer members for said tray extending through the walls of said tray and into the walls of said base for pivotally mounting said tray about a horizontal axis, one of the spacer members for said base being rearwardly displaced with respect to the horizonal axis of said tray, the walls of said tray being shaped to engage the rearwardly displaced spacer member that defines a rearward stop therefor, another of the spacer members for said base being forwardly displaced with respect to the horizontal axis of said tray, the walls of said tray being shaped to engage the forwardly displaced spacer member that defines a forward stop therefor, said tray walls further including article arresting portions that move beneath the magazine for retaining the articles therein during a dispensing operation, and spring means engaging said tray for retaining said tray in the normal position thereof, wherein said plate is located in a horizontal plane, said tray being pivoted against the action of said spring for moving the plate and an article thereon to a forwardly inclined position, wherein the article slides forwardly for removal from said tray, said article arresting portions being simultaneously moved into communication with the lower end of said magazine for preventing movement of the next-located article therein onto said tray.

3,199,725
PALLET MAGAZINE
John Miller, Cambria Heights, N.Y., assignor to The F. & M. Schaefer Brewing Company, Brooklyn, N.Y.
Filed June 16, 1961, Ser. No. 117,722
3 Claims. (Cl. 221—290)



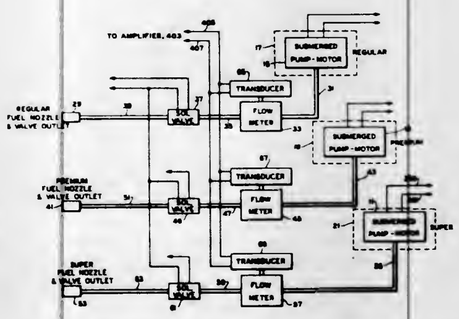
1. A magazine for pallets and the like and dispensing means therefor comprising a container wherein said pallets may be stacked, means supporting said stacked pallets, a lift movable vertically upwardly and downwardly under said stacked pallets, means for removing said supporting means when said lift is in its upper position and then returning said supporting means when said lift has moved downwardly the depth of one pallet, a conveyor for moving pallets from said container extending below said container at the sides of said lift, an endless chain driven by said lift, a cam upon said chain and means cooperating with said cam controlling the movements of said supporting means and said lift.

3,199,726
COLLAPSIBLE CONTAINER AND METHOD OF EMPTYING THE SAME
Robert E. Pierson, East Greenwich, R.I., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 12, 1963, Ser. No. 323,021
5 Claims. (Cl. 222—1)



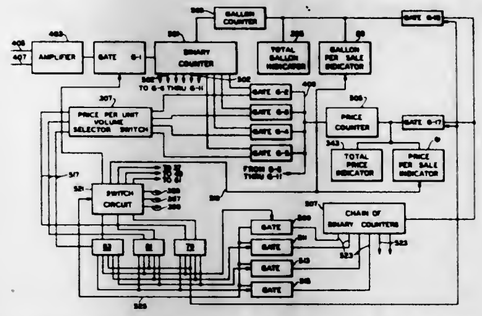
1. In a collapsible fluid-tight shipping container formed primarily of coated fabric and having a cylindrical body portion and two rounded heads, the lower of said heads having a discharge opening centrally located therein, said container having a central tie connection within itself between said heads and a removable closure fitting for said discharge opening, the improvement comprising:
an annular bladder layer attached to the inner wall of said container,
the outer edge of said bladder layer being attached to said cylindrical body portion of said container,
the inner edge of said bladder layer being attached to said lower head of said container adjacent to said discharge opening therein;
and means for introducing gas under pressure between said bladder layer and said inner wall of said container.

3,199,727
FUEL DISPENSING SYSTEM
Albert F. Romanowski, Fort Wayne, Ind., assignor to Bowser, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Dec. 12, 1961, Ser. No. 158,670
20 Claims. (Cl. 222—20)



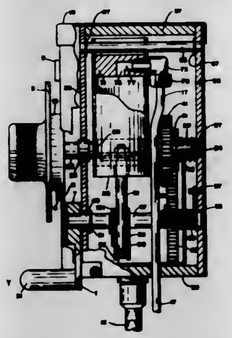
1. An electrically controlled fuel dispensing system comprising, in combination:
(a) a number of pumps communicating with separate storage tanks,
(b) a separate meter connected to each pump,
(c) a combination computer and indicator,

(d) transducer means for transferring impulses directly proportional to the flow rate of fuel through the meter being actuated to said computer and indicator,
(e) a repeater indicator spaced from the combination computer and indicator,
(f) said repeater indicator adapted to be operated by said combination computer and indicator,



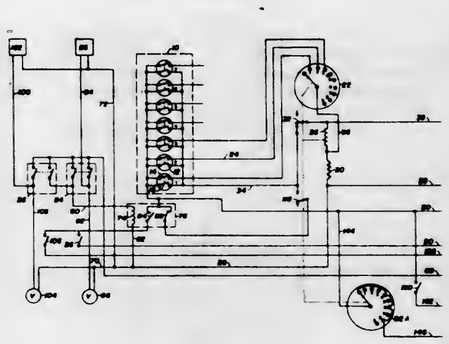
(g) each meter provided with a discharge hose having a nozzle and valve at one end,
(h) selector switch means for controlling the operation of each pump,
(i) and interlock means for preventing the operation of the other pumps when one selector means has been actuated.

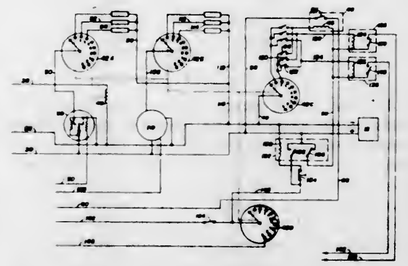
3,199,728
CONTROL DEVICE FOR LIQUID DISPENSERS
Robert B. Taylor and Robert G. Walker, Fort Wayne, Ind., assignors to August J. Lassus, Jr., Elmer L. Lassus, and William F. Lassus, all of Fort Wayne, Ind.
Continuation of application Ser. No. 111,330, May 19, 1961. This application Mar. 23, 1964, Ser. No. 355,992
18 Claims. (Cl. 222—20)



1. A control device for attachment to a liquid dispenser connected to liquid supply means for conveying liquid from a bulk supply thereof to an outlet nozzle valve, a computer cooperating with said supply means for computing the monetary value of the liquid dispensed, said control device adapted to be driven by the liquid dispenser and adapted to discontinue liquid flow from said outlet nozzle when a preselected monetary value of liquid has flowed therethrough, said control device comprising; actuator means connected to the computer to be driven thereby in accordance with the monetary rate being indicated by said computer, impulse means adapted to close the outlet valve, release means operated by the actuator means to activate the impulse means, and manually operated means for cocking and setting the release means at a position corresponding to a predetermined selected monetary value to be recorded on the computer.

3,199,729
ELECTRICAL CONTROLLED DISPENSING SYSTEM
Joseph A. Samp, Arlington Heights, Ill., assignor to The Pure Oil Company, Palatine, Ohio, a corporation of Ohio
Filed Aug. 7, 1963, Ser. No. 300,445
9 Claims. (Cl. 222—26)





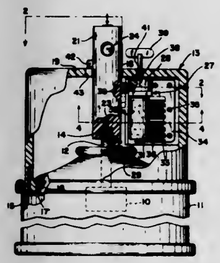
1. In an electrical control system adapted to be actuated by any one of a first plurality of switch means,
(a) a first selector switch including a first stepping means and a first contact bank having a first plurality of spaced contacts and a first contact arm adapted to successively engage said first contacts,
(b) said first stepping means being adapted to successively engage said first contact arm with said first contacts,
(c) each of said first contacts being electrically connected to one of said first plurality of switch means, said plurality of switch means being electrically connected to a potential source, whereby one of said contacts has electrical potential impressed on it upon closure of one of said switch means,
(d) a first circuit, including a potential source and said first stepping means, adapted to stop the movement of said first contact arm when said first contact arm is engaged with the contact having electrical potential impressed on it,
(e) a second selector switch including a second stepping means and a second contact bank having a second plurality of spaced contacts and a second contact arm adapted to successively engage said second contacts, said second contacts being similar in number and corresponding to said first contacts,

(f) said second stepping means being adapted to successively engage said second contact arm with said second contacts, said first and second stepping means being electrically connected such that said first and second contact arms move in synchronism,

(g) a second circuit including a potential source, said second contact arm, said second contacts, and first time delay means, and

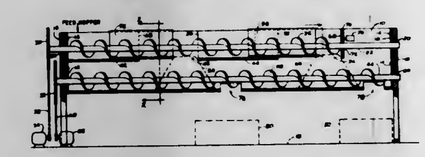
(h) a third circuit including a potential source and electrically-actuated control means, said first time delay means including switch means for closing said third circuit.

3,199,730
MUSICAL DISPENSING CONTAINER
Robert Winthrop Young, Jr., New York, N.Y., and Thomas Jack Armstrong, Jr., Summit, N.J. (both % Colgate-Palmolive Co., Colgate-Palmolive Bldg., 300 Park Ave., New York 22, N.Y.)
Filed June 12, 1963, Ser. No. 287,388
10 Claims. (Cl. 222—39)



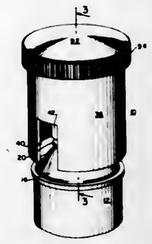
1. For use with a dispensing container containing fluid material under pressure and having a valve operable by a movable control member to selectively discharge said material, a cap adapted to be mounted on said container, means mounting a sound producing unit within said cap, means on said cap adapted to be operatively connected to said control member for actuating said control member to discharge said material, and means within the cap responsive to said actuation of said control member for automatically concomitantly operating said sound producing unit during discharge of said material.

3,199,731
AUTOMATIC ANIMAL FEEDER
George M. Brauer, Oakford, Jerry L. Harper, Eureka, and Russell L. Jeckel, Delavan, Ill.
Filed Apr. 9, 1962, Ser. No. 185,890
11 Claims. (Cl. 222—56)



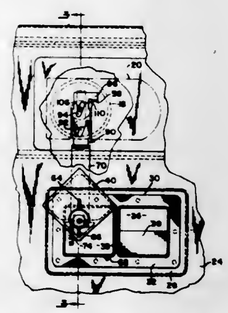
8. A feeding device for animals comprising an upper and a lower trough, arranged in parallel relation, said upper trough having a discharge opening in its bottom, conveyor means above and below said upper trough, said lower trough having a discharge opening in its bottom, staggered with respect to the opening in said upper trough, means for actuating the first, upper conveyor means for a first predetermined period of time, means for actuating the second, lower conveyor means, after termination of said first period of time, for a second period of time, and time-delay means controlling movement of the lower of said conveyor means.

3,199,732
SPRAY TIMER
Robert Strachan, Wolcott, Conn., assignor to Robertshaw Controls Company, a corporation of Delaware
Filed Mar. 20, 1963, Ser. No. 266,708
14 Claims. (Cl. 222—70)



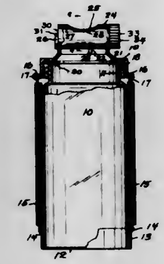
1. Means for effecting a spray discharge from a pressurized container, said container having a displaceable discharge valve stem and a valve cover having a re-entrant cavity therein surrounding said valve stem, said valve cover having a raised annular molding defining the said re-entrant cavity therein said means comprising a spray nozzle on said valve stem including a discharge port, a housing adapted to partially enclose said nozzle, mounting means in said housing releasably engaging said annular molding within said re-entrant cavity of said valve cover partially enclosing said nozzle and including a discharge opening in registry with the said discharge port of said nozzle, whereby said housing is releasably mounted on said container, drive means in said housing having a timed periodic output and actuating means adjacent said nozzle and driven by said drive means to periodically engage said nozzle and effect a spray discharge therefrom of a predetermined duration.

3,199,733
DETERGENT DISPENSER
Richard L. Perl, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed June 25, 1964, Ser. No. 377,851
12 Claims. (Cl. 222—70)



1. A detergent dispenser for supplying detergent to the washing chamber of dish washing machines and the like comprising compartment means adapted to receive and temporarily store detergent received therein, cover means adapted in a closed position to cover said compartment thereby retaining the detergent therein, means for mounting said cover for movement between such closed position and an open position wherein the cover is displaced laterally out of the front plane of the compartment and rotated to substantially uncover the compartment to permit emptying of the detergent into the washing chamber, means for releasably retaining said cover in such closed position, and means for releasing said retaining means to permit movement of said cover to such open position.

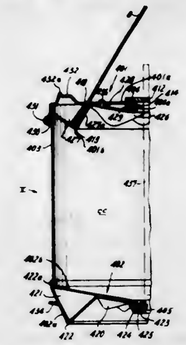
3,199,734
DISPENSER
Nels J. Hvistendahl, 1324 S. Mulberry St., Sioux City, Iowa
Filed Apr. 15, 1963, Ser. No. 272,896
1 Claim. (Cl. 222—83.5)



A dispenser comprising a lower substantially cup shaped member adapted to receive the bottom portion of a receptacle, a dispenser unit adapted to receive the upper neck portion of said receptacle, resilient means attached between said cup shaped member and said dispenser for firmly supporting said dispenser unit against said neck portion, said dispenser unit including an outer shell, and an inner shell snugly engaged with said outer shell, said outer shell having an opening communicating with said receptacle, and having a further opening positioned oppositely to said opening, said inner shell having a still further opening adapted to communicate with either said opening, or said further opening, said dispenser unit including a transverse bar attached thereto, a pair of blade members attached to said transverse bar at opposite ends thereof, and being adapted to penetrate through and cut the paper covering top of a receptacle, a centrally positioned downwardly projecting prong attached to said bar, said prong having an end portion at right angles thereto, for removing said paper covering top.

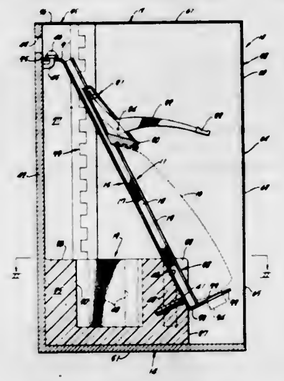
3,199,735
CONTAINER
Ernst Hans Doerpinghaus, Hamburg, Germany, assignor to Container Patent Co., G.m.b.H., St. Moritz, Switzerland
Filed Oct. 26, 1960, Ser. No. 65,105
Claims priority, application Germany, Feb. 24, 1960, D 32,725
8 Claims. (Cl. 222—92)

1. A container, particularly for liquid, powdered and like cargo, said container comprising, in combination, a first rigid component constituting the bottom of the container; a second rigid component constituting the top of the container, at least one of said rigid components comprising two shells secured to each other and defining a space between themselves; and at least one flexible tubular coat extending between and having a first and a



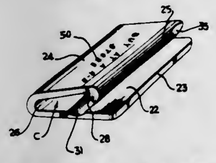
second tubular end portion respectively connected with said first and second rigid component.

3,199,736
TOOTHPASTE DISPENSER AND BRUSH HOLDER
Grover C. Smith, 26310 Yale St., Hemet, Calif.
Filed Apr. 21, 1964, Ser. No. 361,424
2 Claims. (Cl. 222—93)



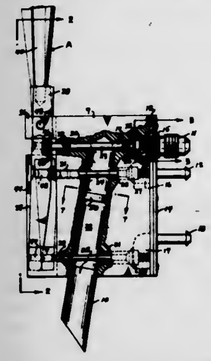
1. A combination toothpaste dispenser and toothbrush holder comprising an elongated tray member adapted to receive and support in a predetermined manner a compressible tube of toothpaste, selectively operable tube compressing means carried by the tray member and engageable with a tube of toothpaste disposed in the tray member and including an operating handle, the selectively operable means being operable upon actuation of the operating handle to compress the tube to dispense a selected amount of toothpast from the tube, a base including a post member extending substantially vertically upwardly from a rear portion thereof, a tray mounting block carried by the base and receiving and supporting the lower end of the tray member at a front portion thereof, the tray member extending upwardly and rearwardly from the mounting block to an upper end disposed adjacent the post member, means carried by the post member and engaged with the tray member upper end for further supporting the tray member, the mounting block defining a plurality of upwardly opening receptacles each adapted to receive a toothbrush, and a housing carried by the base and enclosing the block member and the tray member.

3,199,737
COLLAPSING DEVICE FOR TUBULAR CONTAINER
Henry Koffler, 119 Sutton Drive, Plainview, N.Y.
Filed Jan. 30, 1964, Ser. No. 341,239
4 Claims. (Cl. 222—99)



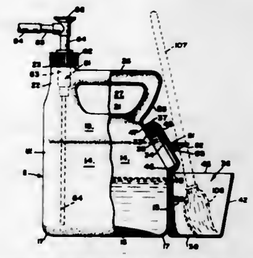
1. A coiling device for winding a flattened end portion of a collapsible tube having a crimped end, comprising a channel-shaped body having a pair of diverging generally rectangular walls defining a channel therebetween for receiving said end of the tube, one of said walls being wider than the other wall to provide a free end portion extending beyond a free edge of the other wall to be grasped and turned while winding the flattened end portion of the tube around said body, the narrower other wall having a bead formed at its free edge extending inwardly toward the wider wall for engaging the crimped end of the tube in said channel, said free edge of the narrower other wall being notched below said bead to facilitate entry of the crimped end of the tube into said channel, opposite sides of both of said walls being formed with parallel corrugations extending lengthwise of said body to facilitate grasping said walls for turning said body on the tube and for gripping turns of the coiled end portion of the tube.

3,199,738
BEVERAGE DISPENSING HEAD
James E. Cary, Edmonds, and Walter D. Walker, Seattle, Wash., assignors to Sweden Freezer Manufacturing Co., Seattle, Wash., a corporation of Washington
Original application Jan. 25, 1960, Ser. No. 4,504, now Patent No. 3,112,656, dated Dec. 3, 1963. Divided and this application Nov. 28, 1962, Ser. No. 240,507
3 Claims. (Cl. 222—129.2)



1. In a dispensing head, a block having a mixing bore of circular cross section discharging at one of its ends and having its other end closed, a carbonated liquid supply duct tangentially intersecting said bore adjacent said closed end whereby carbonated liquid supplied to said duct under pressure flows in a spiral path along said bore toward its discharge end, a flow straightening baffle in said bore between said supply duct and said discharge end, a liquid flavoring supply duct intersecting said bore between said baffle and said discharge end, and means for supplying pressurized carbonated liquid and liquid flavoring, respectively, to said carbonated liquid supply duct and to said flavoring supply duct.

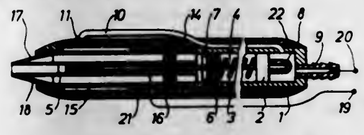
3,199,739
CONTAINER FOR TOILET BOWL CLEANING FLUID AND RECEPTACLE FOR MOP
Leon M. Corning, Redwood City, Robert L. Friedenthal, San Mateo, and Robert E. Sarafan, San Francisco, Calif., assignors to Advance Chemical Company, San Francisco, Calif., a corporation of California
Filed Oct. 12, 1964, Ser. No. 403,207
7 Claims. (Cl. 222—130)



1. A combination comprising container having a hollow body with a substantially rectangular horizontal bottom, a front end, a rear end parallel to said front end, sides perpendicular to said ends, said front end being substantially vertical for substantially its entire length, said sides being substantially vertical up to horizontal shoulders on either side and slanting inward above said shoulders at about a 45° angle to form converging flanks, a horizontal top interconnecting said flanks at about the level of the upper level of said front end, said top having a length about equal to one-half the width of said bottom, said rear end extending substantially vertical to a height about half the height of said shoulders and then slanting forwardly-inwardly in a rear flank at about an angle of 45° to merge with said top, an approximately circular neck at the front of said container merging with said front end and projecting above said top, and a hollow handle extending horizontally rearward from a point near the top of said neck and then downward in a leg connecting with the rear end of said top, said handle having a length to accommodate the fingers of the hand, a manually actuated pump attached to the upper end of said neck and vertically reciprocable, a feeder tube extending from said pump down said neck adjacent said bottom, a finger grip for actuation of said pump vertically reciprocable in proximity to said handle for actuation of said pump with the same hand which grasps said handle, an elongated flexible tube connected to receive the discharge of said pump and a fitting on the outer end of said flexible tube formed with a spray orifice, said rear flank formed with an outward protruding boss, a cup external to said container positioned at the rear end of said container, and said cup formed with an upward extending band shaped to engage said boss to position said cup relative to said container.

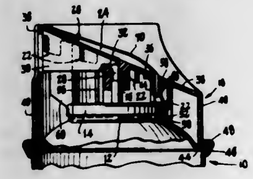
3,199,740
EJECTION DEVICE
Richard Juffa and Helmut Krüger, Leverkusen, and Rudolf Michaelis, Cologne-Deutz, and Hans-Joachim Rehberg, Josef Schmahl, and Hans-Hermann Schulz, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Aug. 7, 1963, Ser. No. 300,428
5 Claims. (Cl. 222—146)

1. An ejection device for extruding thermoplastic material, which comprises:
(a) A support housing;
(b) A tubular ejection cylinder for receiving material to be extruded therefrom, said cylinder being made of an electrically conductive material having a selected resistivity for heating said material in response to an electrical current passed through said cylinder, thereby converting said material from a solid to a plastic state;
(c) Means connected to said housing for supporting said ejection cylinder;



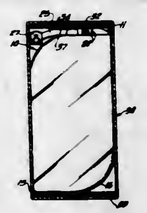
(d) A piston slidably disposed within said ejection cylinder for extruding said material therefrom;
(e) Electrically conductive means for passing an electrical current through said ejection cylinder; and,
(f) Pneumatic actuating means for driving said piston whereby said material is extruded from the ejection cylinder in a plastic state.

3,199,741
ACTUATOR CAP CONSTRUCTION FOR AEROSOL DISPENSER
Herbert G. Lehmann, Easton, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Mar. 25, 1963, Ser. No. 267,710
9 Claims. (Cl. 222—182)



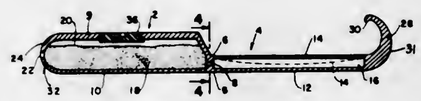
1. An aerosol actuator comprising, in combination:
(a) a stationary cap body having an outer tubular peripheral wall,
(b) said body having an expansive top wall provided with a centered opening,
(c) said top wall having a flange depending from an edge of the top opening, all portions of said flange being located below the immediately adjacent portions of the top wall,
(d) a finger-engageable depress button disposed in said centered opening and separated from said depending flange by space, said button having means engageable with a movable valve stem of an aerosol container to actuate the stem, said button having an expansive top surface for engagement by an operating finger, and having a discharge passage and an orifice at the end of the discharge passage, through which the aerosol substance passes,
(e) an integral tie web extending between and joining the said button and bottom of the depending flange of the cap body, said web supporting the button centralized in the top opening for limited downward movement to operate the valve stem,
(f) said web being downwardly removed from the top edge of said centered opening and thereby partially concealed from view,
(g) said web being disposed substantially at the same level as the said valve stem engageable means to minimize horizontal movement of said means when the button is shifted downward to depress the valve stem to its discharging position.

3,199,742
CONTAINER
Donald A. Hill, Arcadia, Calif., assignor to Hill Brothers Chemical Company, City of Industry, Calif., a corporation of California
Filed June 28, 1963, Ser. No. 291,326
8 Claims. (Cl. 222—183)



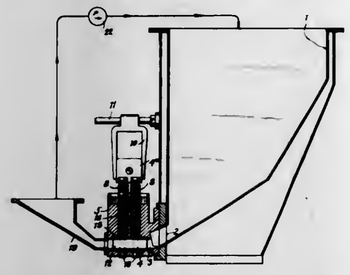
1. In a container for storing and discharging liquids, a unitary plastic liner forming a completely enclosed chamber, said liner incuding vertical front and back walls and an end wall, said end wall being joined to said front wall by a rounded portion, the material of said rounded portion being thin and flexible, said end wall being joined to said back wall at an acute angle, said end wall tapering in thickness so that at said joint it is thick and inflexible relative to said rounded portion, said back wall at said joint also being relatively thick and inflexible whereby a line joint is formed between said walls, and a spout located at said joint of said end and back walls and having a passageway therethrough which communicates with said chamber, the inner end of said passageway lying directly astride said line joint.

3,199,743
POWDER DISPENSING DEVICE
Noach Berger, 123—25 82nd Ave., Kew Gardens 15, N.Y.
Filed Sept. 22, 1964, Ser. No. 398,175
7 Claims. (Cl. 222—193)



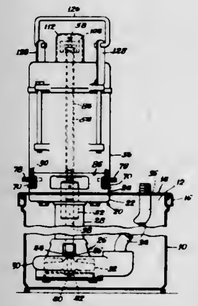
1. A powder dispensing unit comprising first and second hollow body sections, said sections being sealingly and flexibly connected at a common end region, the latter having at least one aperture therewithin to provide communication interiorly of said body sections, said first section including a pair of rigid opposing wall surfaces, said second section having a pair of opposing wall surfaces, one of the latter being rigid and the other resilient, a filler plug removably disposed within one wall of said first section and a plurality of discharge ports disposed through the free end thereof, the free end of said second section including a closure cap integral therewith, said sections being foldable at said common end region into mutual superposition to form a compact unit wherein the resilient wall of said second section is disposed contiguously with respect to one of the rigid wall surfaces of said first section, and wherein said closure cap will overlie said discharge ports when said sections are mutually superposed.

3,199,744
APPARATUS FOR FEEDING PORTIONS OF A MIXTURE OF A FLUID AND SOLID MATERIALS
Robert L. Greenberg, Englewood, N.J., assignor to National Equipment Corporation, New York, N.Y., a corporation of New York
Filed Apr. 9, 1963, Ser. No. 271,698
2 Claims. (Cl. 222—255)



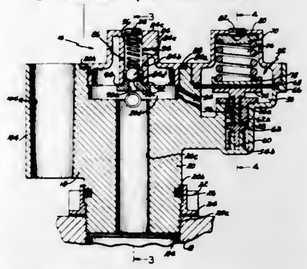
1. An apparatus for drawing-off predetermined amounts of a mixture of a fluid and solid material comprising, a hopper constituting a source of supply for the mixture, an auxiliary hopper, a passage extending between the hoppers, a pump including a cut-off member operative in the passage, said pump having piston means co-operating with the cut-off member in drawing off portions of the mixture out of the passage while the material is flowing therethrough from one of the hoppers to the other hopper and while the cut-off member is in a certain position, and forcing said material out of the passage while the cut-off member is in another position, and circulating means for drawing the material from the auxiliary hopper and returning it to the supply hopper.

3,199,745
PORTABLE PUMP ASSEMBLY
Raymond Hollis, Park Ridge, and Earl E. Scheibe, Northbrook, Ill., assignors to Graymills Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 15, 1963, Ser. No. 258,750
5 Claims. (Cl. 222—324)



2. Portable pumping apparatus comprising a container, a lid therefor, a pump suspended from the underside of the lid for positioning said pump within the container below the fluid level when the lid is in the closed position, a base member mounted on said lid, a drive shaft extending from said pump through the container lid and through the base member, a motor mounted on said base member with the motor drive axis coaxial to the drive shaft of said pump, a hollow rotatable drive shaft in said motor accommodating therein said pump shaft, means coupling said motor shaft with said pump shaft for joint rotation, said coupling means including a tightening member connected to said pump shaft for drawing said pump shaft axially through said motor shaft during said connection, and guard means responsive to the axial drawing of said pump shaft for movement therewith to a position adjacent said motor shaft to deflect liquid ejected from said container from said motor shaft.

3,199,746
LIQUID TRANSFER MECHANISMS
Edwin C. Dives and Thomas L. Dives, both of 916 S. Gerhart St., Los Angeles, Calif.
Filed Sept. 10, 1962, Ser. No. 222,367
3 Claims. (Cl. 222—396)

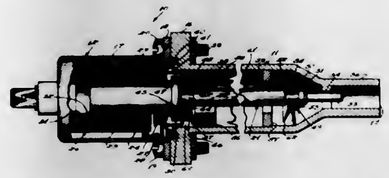


1. A quickly demountable liquid transfer mechanism adapted for use with a container having a threaded opening comprising:
(a) a housing having male threads thereon for connection with the threaded opening in the container;
(b) a vertically disposed cavity in said housing;
(c) a first vertically disposed passageway in said housing for connecting said cavity with the interior of the container;
(d) a vertically disposed chamber in said housing,
(e) a second passageway in said housing, a portion of said second passageway being parallel to said first passageway;
(f) a third passageway in said housing connecting said cavity and said chamber;
(g) a fluid pressure limiting means operatively positioned within said cavity to exhaust said first passageway when the fluid pressure therein exceeds a predetermined safe maximum limit;
(h) fluid pressure means including a pressure regulator operatively positioned within said chamber to provide a predetermined fluid pressure within said container;
(i) a first conduit portion connected to said second passageway and telescopingly extending into said container; and
(j) a second conduit portion connected to said second passageway, extending exterior to said housing and container and including flow control means having a flow preventing position and a flow permitting position allowing fluid pressure within said container to force the liquid therein through said conduit portions.

3,199,747
SANITIZING MEASURING VALVE FOR FLUID DISPENSER
Howard L. Erickson, Bensenville, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Mar. 12, 1964, Ser. No. 351,407
3 Claims. (Cl. 222—453)

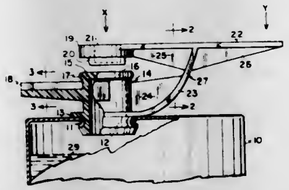
1. A fluid dispensing measuring valve comprising, a valve body having a tubular side wall and having formed therein an inlet, an outlet which opens laterally through said side wall and spaced axially from said inlet and an elongated passage communicating said inlet and said outlet, an axially extending valve stem in said body carried for axial movement within said passage, a pair of valve seating members in said passage situated respectively axially inwardly of said inlet and said outlet and having fluid flow path defining apertures formed respectively therein and forming therebetween a fluid measuring chamber for confining a slug of dispensing fluid having a predetermined volume,

a pair of axially spaced valve members fixedly mounted on said valve stem and movable relative to and cooperable respectively with said seating members to close and to open said apertures to confine and then to discharge a slug of fluid from said valve body,



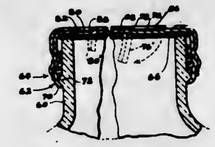
said valve member which is cooperable with said seating member adjacent said outlet being situated axially outwardly of said cooperating seating member and having a peripheral outer surface spaced radially inwardly of said side wall of said valve body to preclude engagement therebetween and engaging said cooperating seating member only in abutting engagement to close its associated aperture, and a shoulder formed on said valve stem for engaging and for urging said valve member adjacent said outlet into good seating engagement with its cooperating seating member in the closed position of the valve member.

3,199,748
CLOSURE MEANS
Helmut Karl Bross, Altenberg uber Nurnberg, Germany, assignor of fifty percent to Frank T. Johmann, Berkeley Heights, N.J.
Filed Sept. 5, 1962, Ser. No. 221,508
Claims priority, application Germany, Oct. 7, 1961, B 64,310
10 Claims. (Cl. 222—517)



1. An integral one-piece molded plastic dispenser comprising a discharge member having an upper end defining a sealed discharge opening which is unsealed by the consumer, a plug molded completely outside of said discharge opening but frictionally insertable within said discharge opening after said opening is unsealed by said consumer to thereby close said opening, a substantially rigid lever arm extending outwardly from said plug, and a connecting member connecting said discharge member and said lever arm at a point on said lever arm between the ends of said lever arm to thereby divide said lever arm into an inner portion carrying said plug and an outer portion, said connecting member pivotally supporting said lever arm for see-saw movement about a pivot point at a substantial lateral distance from said discharge member, whereby said inner portion and said plug can be pressed downwardly to pivot said lever arm and insert said plug into the unsealed discharge opening to close said opening, and whereby the outer portion of said lever arm can be pressed downwardly to pivot said lever arm in the opposite direction and withdraw said plug from said opening.

3,199,749
CAM OPERATED CLOSURE
Anthony F. Driscoll, 6528 78th St., Middle Village, Long Island, N.Y.
Original application Feb. 9, 1959, Ser. No. 791,903, now Patent No. 3,101,877, dated Aug. 27, 1963. Divided and this application Aug. 22, 1963, Ser. No. 303,837
8 Claims. (Cl. 222—520)



1. In a closure structure of the class wherein a cylindrical hub is attached to a container and the cylindrical hub has a side wall and a top wall with an opening therein, and a cap fits over the hub and has a side wall and a top wall adjacent to the corresponding walls of the hub, and the cap oscillates on the hub to bring an opening through the cap into register with the opening through the top wall of the hub, and there are cam means on the confronting side walls of the hub and cap including a cam track on one of the walls and a cam follower on the other of said walls with the cam track shaped to pull the top walls together when the openings through the top walls are in register and when they are shifted out of overlapping relation with one another, the intermediate portion of the cam track rising progressively and then running down again between the portions of the track that pull the top walls together, the improvement which comprises,

(a) a resilient top wall on the hub having a domed contour across the center portion of the top wall, the top wall of the cap being flatter than said contour,

(b) the cam track and follower being correlated with the heights of the hub and cap to hold the cap down on the hub and flatten the dome-shaped contour for all positions of the follower along the cam track,

(c) the closure structure being on a container in which goods are sold and the opening in the hub being originally closed by a portion of the hub extending over the area of the hub in which the opening is to be made by the ultimate consumer,

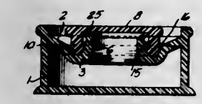
(d) the top wall of the hub having a depressed area at the location where the opening through the top wall of the hub is to be made, and

(e) the closure structure being applied to the upper edge of a cylindrical container and forming the entire top of the container.

3,199,750
COVER FOR EXTENSIBLE SPOUT, RELEASABLE AS SPOUT IS EXTENDED
Jay G. Livingstone, 715 W. Market St., Akron 3, Ohio
Filed Feb. 13, 1963, Ser. No. 258,678
15 Claims. (Cl. 222—529)

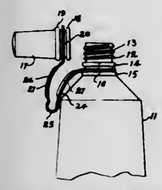
7. A vessel with a depressible spout thereon having an opening therethrough, the top of the vessel flexibly attached to the wall of the vessel and having a shallow frusto-conical top extending outwardly from the base of

the spout, which top is flexibly joined to the wall of the container and an indentation surrounding the neck at the juncture of the spout and said top of the vessel which



indentation is narrowed and widened as the neck is depressed and extended, said indentation narrowing at the mouth when the neck is depressed.

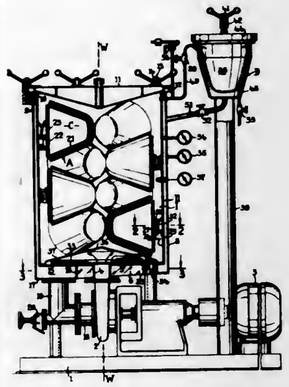
3,199,751
SELF CLUTCHING CAPTIVE CLOSURE CAP UNIT
Pete Jovanovich, West Valley, Anaconda, Mont.
Filed Feb. 19, 1964, Ser. No. 345,908
2 Claims. (Cl. 222—542)



1. The combination with a container having a discharge neck formed with a screw thread and a circumscribing groove inwardly of the screw thread and having a larger diameter than the screw thread diameter, a closure cap threaded on the screw thread to seal the end of the neck and provided with a circumscribing groove near its mouth edge, and a coupling strip of pliable plastic material having a terminal ring on one end which is formed with a central hole and a marginal edge having radial slits therein and a thickened beaded edge having a self clutching engagement with the groove of the container neck and provided with a terminal ring on the opposite end thereof which is formed with a central hole and with a marginal edge portion for said hole which is formed with radial slits and a beaded edge providing relatively yieldable sectors having a clutching engagement with the groove of the closure cap, the cap being freely turnable on the neck in either direction and being swivelled to said strip and said strip being swivelled to said neck, the radial slits of each terminal ring extending through said edge bead thereof.

3,199,752
MACHINE FOR PRESSURE DYEING FELT BLANKS AND THE LIKE
Marcel Casse, 69 Rue Ferray, Essonnes, Seine et Oise, France
Filed Nov. 20, 1962, Ser. No. 239,015
Claims priority, application France, Dec. 6, 1961, 881,170, Patent 1,315,157
12 Claims. (Cl. 223—10)

1. In a machine for pressure dyeing hat bodies by the circulation of a dyeing liquid through the hat bodies, the combination of wall means defining a dyeing chamber having a vertical axis, perforated substantially frusto-conical hollow supports arranged in tiers about said axis for respectively supporting a plurality of hat bodies fitted one inside the other, and connecting means mounting each support directly to the wall means, each support extending from the wall means in a radial direction relative to said axis and the conicity of the support being convergent in a direction away from the mounting of the support on the wall means, the supports being grouped together into an assembly of supports to an extent which takes advantage of the shape of the supports and the wall means having a contour in plan which substantially conforms to the



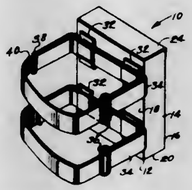
general contour in plan of said assembly, and the supports being grouped as close together and said assembly of supports being as close to the wall means as is compatible with a proper dyeing of the hat bodies.

3,199,753
ZIPPER MANIPULATING APPARATUS
Henry L. Robertson and Frances K. Robertson, both of 4714 Amigo Ave., Tarzana, Calif.
Filed Oct. 22, 1962, Ser. No. 232,175
5 Claims. (Cl. 223—111)



1. In an apparatus adapted to be used on a relatively vertical support surface of the type having vertically spaced upwardly and downwardly facing surfaces facing away from each other for manipulating the movable element of a zipper from a remote location, the combination of: a pair of pulley means adapted to be mounted in laterally spaced relationship on the support surface, another pulley means adapted to be mounted on the support surface in vertically spaced relation with and at a substantial distance from said pair of pulley means, means for resiliently urging at least one of said pulley means away from the other pulley means, a flexible element passing over each of said pulley means in operative relation, said flexible element having ends joined to form a continuous loop having two major vertical portions substantially spaced from each other, and means secured to said flexible element on one of said vertical portions for releasably engaging the movable element of the zipper for causing movement of the movable element upon movement of said flexible element relative to said pulley means.

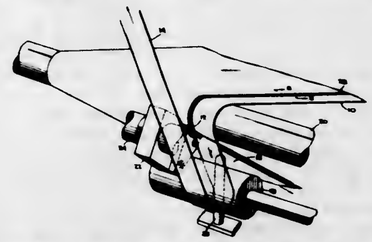
3,199,754
ATTACHABLE CIGARETTE CASE
Walter H. Sorensen, 3268 W. Woodlawn Ave., San Antonio 28, Tex.
Filed July 6, 1962, Ser. No. 207,944
1 Claim. (Cl. 224—5)



An attachable type cigarette case comprising in combination a substantially rectangular container, said container, possessing six joined walls including a first front wall, a second and third side wall, a fourth back wall equal in height to said first wall, a fifth bottom wall spanning and attached to the bottom of said four walls, and a sixth top wall or cover spanning the tops of said first four walls and hingedly jointed only to said fourth back wall, but also hingedly joined to a downwardly directed flap of decreasing width, the height of said flap being slightly less than one-half the height of said front wall, said front wall having a horizontal slit therethrough at approximately one-quarter the total height down from the top of said front wall, and of a length only slightly more than the average width of said flap, means to hold said cover in closed position comprising a two part snap fastener, including a first part including a finger button facing outwardly of said front wall and a button connected female snap grip facing inwardly of said front wall, said front wall portion of said snap fastener overlying the hidden lower part of said closed flap, the second part of said snap fastener including a male snap grip on the flap and directly aligned in closed flap position with and towards said first front wall part of the snap fastener, means carried by said case for securing it to the limb of a wearer and including at least one pair of horizontally aligned foam rubber loops each with an upper end and a lower end integrally fastened to said back wall, with an unattached bridging portion therebetween, a horizontal and adjustable length elastic strap freely received between said bridge portions of said loops and said back wall, said strap including movable rigid loop means on the strap portion adjacent one of said foam rubber loops to adjust the overall ength of said strap, and a co-operating rigid hook and rigid loop means on the strap portion and adjacent the other of said foam rubber loops to connect and disconnect portions of said adjusted strap.

3,199,755
METHOD OF TRIMMING SHEET MATERIAL
Charles O. Barbre, Belvidere, N.J., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 130,328, Aug. 9, 1961. This application Nov. 23, 1964, Ser. No. 420,479
1 Claim. (Cl. 225—3)

A process of continuously tearing a longitudinally pre-scored length of cellulose triacetate sheet material into at least two sheet portions, which comprises advancing said pre-scored sheet in a substantially horizontal plane to a tearing station provided by first and second roller surfaces disposed in different horizontal and vertical planes with respect to one another, wrapping said sheet material upon said first roller surface and while said sheet material is so wrapped, applying a restraining force thereto immediately adjacent said pre-scored line while simultaneously directing one portion of said sheet material in wrapping relation upon said second roller surface while continuing to advance the remaining portion of said sheet material in wrapping relation upon said first roller surface, whereby said sheet material is torn longitudinally along said pre-scored line during application of



said restraining force and said one and said remaining portions of said sheet material are caused to travel in different horizontal and vertical planes from said first and second roller surfaces.

3,199,756
PACKAGE CHAIN ASSEMBLY AND CONVEYING MEANS
Robert E. Davy, La Mesa, Calif., assignor to Coroga Company, Anaheim, Calif., a corporation of California
Filed Apr. 9, 1963, Ser. No. 271,666
2 Claims. (Cl. 226—76)

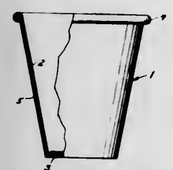


1. The combination of a pair of spaced parallel rotors, a rotary shaft on which said rotors are mounted, radiating spokes on said rotors, laterally tapered inwardly inclined sprockets projecting from inturned shoulders on said spokes, the sprockets on one rotor being opposite the sprockets on the other rotor, a chain assembly of packages comprising a multiple of complementary rectangular product-containing tubular bags aligned end-to-end and having sealed ends, a pair of spaced apart narrow webs connecting the ends of adjacent bags at the corners thereof, said sealed ends and webs defining an elongate rectangular aperture between adjacent bags, said chain assembly extending longitudinally over said rotors circumferentially thereof with the sprockets on adjacent spokes extending into the apertures at the opposite ends of a package and with the webs at the ends of said apertures seated on said shoulders whereby said package is suspended solely at its corners on said shoulders by said spaced apart webs.

3,199,757
COMPOSITE PLASTIC CONTAINER
Albert L. McConnell, Chester, Pa., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 675,629, Aug. 1, 1957. This application Nov. 20, 1962, Ser. No. 246,644
3 Claims. (Cl. 229—1.5)

1. A thermoplastic article of manufacture suitable for directly receiving contents usable for human consumption, the said container comprising a unitary circular side wall, a bottom seamlessly fully integrated with said side wall, and a circumferential lip, the said container characterized as having a side wall in a frusto-conical shape, tapering downwardly from a larger diameter adjacent to its upper end, seamlessly, fully integrated with said lip, the said side wall tapering to a smaller diameter and seamlessly, fully integrated with said bottom end, the said side wall, bot-

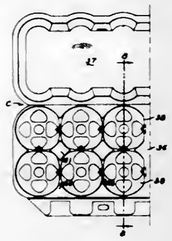
tom and lip being substantially free from defects caused by wrinkles, folds and breaks in its structure, the said container having an outer shell of a polystyrene foam organic material, and an interior liner of a hard, smooth, scuff-resistant, enamel-like polystyrene solid material, said outer shell and liner being integrally united without interposition of an adhesive, the said circumferential lip being finished exposing the hard, enamel-like interior liner in a circumferential partial annulus at the said receiving opening of said frusto-conical container, the said side wall characterized by having one layer of said foam material, and one layer of an interior material of a unitary, seamless structure having the said outer foam material and the said interior material thermally, compositely united, the unitary side wall construction being self-supporting and substantially expandingly, non-bulging when said container is in a loaded condition, said side wall being paper-like and of a thickness of from about 0.015" to about 0.022", the said side wall being further characterized by the partial compressive flexibility and recovery of original shape without breaking and destroying the impermeability



of said hard enamel-like interior liner, without breaking and permanently greasing the outer foam layer and without destroying the bond between the contiguous, thermally compositely united foam layer and said interior liner, the said side wall having a relatively rough surface in comparison with the interior due to the attenuated foam structure, the said foam structure imparting complementary rigidity to said more flexible interior liner, the said bottom characterized by being less flexible than said side wall, thereby imparting structural, dimensional stability to said flexible side wall, the said seamlessly, fully incorporated circumferential lip characterized by being less flexible than said side wall but more flexible than said bottom, the said lip thereby imparting dimensional stability by resisting breaking, the said container being further characterized by the seamless differential rigidity of said seamless bottom, seamless lip and seamless side wall, the differential rigidity in the unitary, continuous, seamless container co-acting to impart structural, dimensional stability to said container, the dimensional stability being characterized by a high volume ratio per total weight of container.

3,199,758
MOLDED PULP EGG CARTON
Richard F. Reifers, New Canaan, Conn., assignor to Diamond International Corporation, a corporation of Delaware
Filed July 16, 1959, Ser. No. 827,512
6 Claims. (Cl. 229—2.5)

1. A molded pulp container comprising a bottom section having a plurality of article receiving cells therein comprising a longitudinally extending partition and a plurality of transverse partitions, adjacent walls of adjacent cells being upwardly and outwardly inclined and converging in a saddle-like juncture below the upper margin of said cells, a flap integral with and substantially the same thickness as one side wall of a pair of the adjacent cells, said flap extending upwardly from a region adjacent said saddle-like juncture and terminating at its upper end adjacent the upper margin of said cells, whereby to prevent lateral shifting of said articles in said pair of adjacent cells and engagement therebetween, the portion of the adjacent walls of said pair of adjacent cells which underlies said flap being of re-



duced height to define an opening permitting flap entry of another like container placed below in stacked relation.

3,199,759
FOLDABLE DEVICE
Robert J. Hickin, Seville, Ohio, assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed Dec. 3, 1962, Ser. No. 241,884
3 Claims. (Cl. 229—15)

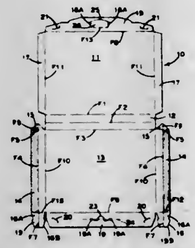


1. A device of the class described formed from an elongated piece of stiff foldable material, said piece including end sections and intermediate sections foldably connected to one another, one of said end sections having the free end thereof provided with a pair of tabs, said one end section being folded relative to said intermediate sections and said other end section and having one of said tabs secured to the free end of said other end section whereby said end sections are substantially contiguous and lie in intersecting planes, the other tab being secured to one of said intermediate sections whereby said one intermediate section and said one end section are disposed in substantially coplanar relation; said end sections and said intermediate sections cooperating with one another to delimit adjacent areas.

3,199,760
BOX CONSTRUCTION
Sidney Conescu, 188 Beach 147th St., Neponsit, Long Island, N.Y.
Filed May 1, 1964, Ser. No. 364,076
3 Claims. (Cl. 229—16)

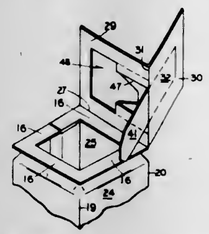
1. A folding box adapted to be folded between a collapsed and erected position comprising,
(a) a single sheet of blank material,
(b) said blank material having a plurality of foldline extending transversely of said blank to define a front panel, a back panel, and a bottom wall interconnected between adjacent lower edge portions of said front and back panels,
(c) said front and back panel being substantially equal in size,
(d) and said bottom wall having a preformed foldline extending longitudinally thereof along a medial line thereof,

(e) a side panel hingedly connected to each of the opposed sides of said front panel,
(f) each said side panels being longitudinally creased along a medial line thereof so as to be reversely folded inwardly between said front and back panel in the collapsed position of said blank,
(g) an imperforate triangularly shaped corner flap hingedly folded along its base to one end of each of said side panels,
(h) and a winged locking tab connected along a foldline to the other end of each of said side panels,
(i) a side flap connected along a foldline to the opposed sides of said back panel,
(j) said side flap being adapted to be folded inwardly onto said back panel in the collapsed position of said box,



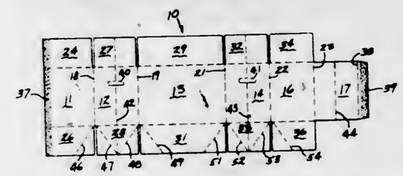
(k) means for securing the side flaps to said side panel in the folded position of said blank,
(l) a top forming flap connected along a foldline to the upper edge of the respective front and back panels,
(m) the top forming flaps being adapted to be disposed in overlapping relationship in the folded position of said box,
(n) the overyling one of said top forming flaps having cut away corner portions, so as to expose the corner portions of the underlying top forming flap,
(o) said winged tab being adapted to be interlockingly received in said die cut slit of the respective overlying and underlying top forming panel in the erected position of the box,
(p) and a retractable handle forming means connected to the top forming flaps of said box.

3,199,761
ONE PIECE DISPENSING CONTAINER
Howard M. Hill, Hamilton, Va.
Filed Feb. 10, 1964, Ser. No. 343,744
11 Claims. (Cl. 229—17)



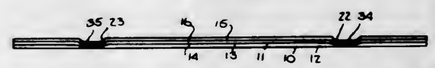
1. A container comprising a rectangular tubular body of the foldable material closed at its lower end; the side walls of said body terminating at their upper edges in a necked-in area and outwardly extending end seam flanges; an integral elongated flap articulated to the upper edge of one side wall of said body, said flap hinged at substantially a median position and folded and adhesively attached to said flanges and to itself forming a two-ply closure, the outer of said plies having a tear strip the edges of which lead directly into the edges of an integral tear tab, said tear tab produced from material cut from the second of said plies while forming a dispensing opening therein, and an integral pouring weir partially cut from material surrounding said tear tab and folded upon said second ply forming an enlarged filling and dispensing opening therein.

3,199,762
COLLAPSIBLE CONTAINER
Everett A. Coons, West Monroe, La., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed July 29, 1963, Ser. No. 298,316
1 Claim. (Cl. 229—27)



A single sheet blank for a collapsible container fabricated from corrugated meduim, said blank having in the erected condition top, bottom, side and end walls comprising a first one-half side panel, a first end panel, a full side panel, a second end panel, a second one-half side panel, a transverse partition panel and a partition flap hingedly connected in series and disposed in the sequence named, said series of hinged panels defining a body strip, each panel of said body strip having hinged thereto a pair of substantially identical, substantially rectangular. flap elements defining a first top one-half flap, a first bottom one-half flap, a first top end flap, a first bottom end flap, a top full side flap, a bottom full side flap, a second top end flap, a second bottom end flap, a second top one-half side flap, a second bottom one-half side flap, all said bottom flaps being scored diagonally, said end panels and said partition panel being scored vertically, and each of said first and second bottom end flaps having a score line extending from the score line of their associated end panels to their edge to render said erected blank collapsible, a marginal portion of one side panel and said partition flap being crushed to facilitate gluing.

3,199,763
CORRUGATED CARTONS HAVING CRUSH-RELIEVED FLAPS
Herbert R. Anderson, Massapequa, N.Y., assignor to Tri-Wall Containers, Inc., New York, N.Y., a corporation of New York
Original application Apr. 13, 1959, Ser. No. 805,924. Divided and this application June 12, 1963, Ser. No. 287,245
4 Claims. (Cl. 229—37)



1. A carton formed of triple-wall corrugated paper board material, said carton being formed from a blank having transverse score lines extending along one surface thereof to form the walls of the carton, longitudinal score lines extending along said one surface thereof, transverse slots extending from the longitudinal edges of said blank to said longitudinal score lines to define the flaps of the carton at each of the opposite sides thereof, and a crushed relief zone extending along said one surface contiguous

to the side of each longitudinal score line which is adjacent to said flaps to facilitate infolding of said flaps, the portion of the blank contiguous to the other side of said longitudinal score line having a normal thickness of board material, the exposed bottom portion of said crushed relief zone being disposed beneath the plane of said one surface of the blank and above the bottom-most portion of said longitudinal score line, said exposed bottom portion being blended toward said one surface along the area of said crushed relief zone disposed opposite to said longitudinal score line.

3,199,764
FOOTED CARTON
David L. Oliver, Palmyra, N.J., and Stephen A. Herbetko, Philadelphia, Pa., assignors to Connelly Containers, Inc., Bala-Cynwyd, Pa., a corporation of Pennsylvania
Filed Feb. 5, 1964, Ser. No. 342,740
13 Claims. (Cl. 229—37)



1. A blank for a carton comprising at least four wall panels in serial array separated by fold lines, a pair of bottom flaps each hingedly connected to a said wall panel by a fold line, a pair of platform flap means alternating with said bottom flaps and each extending from a said wall panel and being delineated therefrom by a first fold line permitting folding of the platform flap means in a first direction, each said platform means having second and third fold lines therein parallel to and spaced from said first fold line and from each other, said third fold line being more remote from said first-mentioned fold line than said second fold line and permitting folding in said first direction, and said second fold line permitting folding only in a direction opposite to said first direction, said flap means each comprising a pair of spaced flaps.

3,199,765
MAILING FOLDER
Frank W. Locke, Minneapolis, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn.
Filed June 11, 1963, Ser. No. 287,015
4 Claims. (Cl. 229—40)



1. A mailing folder including,
a series of five elongated rectangular panels of substantially equal size connected by parallel longitudinally extending fold lines,
said panels being foldable in such a manner that the fourth and fifth panels of the series overlie the first and second panels of the series respectively to provide a tubular body of triangular cross section,
a triangular flap hinged along one side to an end of said fourth panel of said series, the other sides of the flap being of substantially equal width and longer than the width of said rectangular panels and adapted to fold over the end of the first panel of the series and at an acute angle thereto, said other flap sides extending along the inner surfaces of the second and third panels of the series, and
a pair of generally triangular flaps secured to said other flap sides and folded into face contact with said second and third panels between the angularly inclined triangular flap and the adjoining ends of the panels.

3,199,766
SHOPPING BAG
Joseph H. Vineberg, 235 Somerset St. W., Apt. 1207, Ottawa, Ontario, Canada
Filed Mar. 23, 1964, Ser. No. 353,872
5 Claims. (Cl. 229—54)



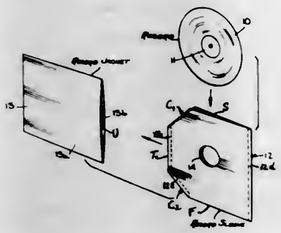
1. In a shopping bag having a pair of opposed side walls and a mouth defined by marginal portions of said side walls, first handle means comprising a first strand having end portions fixed to one of said side walls and an intermediate handle loop projecting from said mouth, and a second strand having its end portions fixed to the other of said side walls, and an intermediate handle loop projecting from said mouth, said handle loops being of substantially equal length, and second handle means comprising a third strand having end portions fixed to one of said side walls between said end portions of said first strand and an intermediate handle loop projecting from said mouth, and a fourth strand having end portions fixed to the other of said side walls between said end portions of said second strand and an intermediate handle loop projecting from said mouth, said second handle loops being of substantially equal length less than that of said first handle loops.

3,199,767
IMPERVIOUS BAG AND METHOD OF MAKING SAME
Alfred B. Haslacher, deceased, late of San Francisco, Calif., by Robert L. Haslacher, administrator, Palo Alto, Calif., assignor to Mabel L. Haslacher
Original application Nov. 25, 1959, Ser. No. 855,467. Divided and this application Jan. 18, 1963, Ser. No. 252,462
14 Claims. (Cl. 229—60)



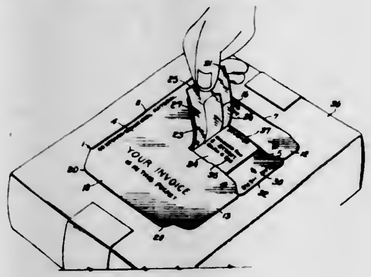
1. A bag comprising a length of flattened tube having an inner ply of thermoplastic material, said bag having a diamond fold bottom including flaps providing confronting flap edges, said diamond fold having a central heat-sealed seam along said flap edges and transverse heat seals adjacent both sides of the ultimate bag bottom, and a bead of additional thermoplastic material deposited along the jointure of the inner of said flap edges for filling any opening where said transverse heat seals cross said central seam.

3,199,768
PROTECTIVE COVER FOR PHONOGRAPH DISCS
Harry G. Farmiett, 41—67 Judge St., Elmhurst 73, Long Island, N.Y.
Filed Nov. 12, 1963, Ser. No. 322,919
1 Claim. (Cl. 229—68)



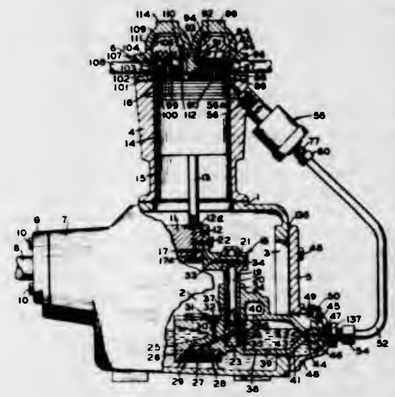
A protective cover for a single phonograph disc comprising a generally rectangular paper sleeve telescopically receivable within a rectangular jacket of relatively stiff cardboard having only one open side, said sleeve enclosing said disc and having two adjacent corners which are chamfered to define a tongue facilitating telescopic insertion of said sleeve in said jacket, both the first side of said sleeve which includes said two adjacent corners and the second side opposed thereto being sealed, the third side which includes one of two said corners being also sealed, and the fourth side which includes the other of said two corners being unsealed to provide an opening for said disc, whereby when said sleeve is inserted in said jacket the second and sealed side of said sleeve is aligned with the jacket opening, whereby the unsealed fourth side and the other of said two corners are enclosed in said jacket and the disc is fully protected against dust.

3,199,769
LABEL POCKET
Joel Hillman II, Harrison, and Morde M. Bloom, Rye, N.Y., assignors to Tension Envelope Corporation, Kansas City, Mo., a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 340,404
8 Claims. (Cl. 229—74)



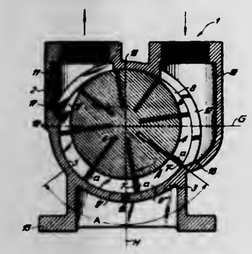
1. A label pocket for application to a mailing piece and the like, said label pocket including
upper and lower generally rectangular panels having two side edges thereof interconnected to provide a pocket between said panels and open at the other two side edges for insertion of an enclosure into said pocket,
the upper of said panels having
marginal portions at the open edges thereof projecting over corresponding edges of the lower panel to provide faces cooperating with the under face of the lower panel for closing said insert opening when said faces are secured to a mailing piece,
a recess in one of the projecting marginal portions of the upper panel,
a patch inside the pocket having an end thereof extending freely into said recess, and
adhesive between said patch and said upper panel to seal the patch to the upper panel,
said free end of the patch providing a tab for grasping and pulling the patch in a reverse direction over the upper panel for producing lines of tear in the upper panel guided by side edges of said patch to produce a removal opening in the upper panel at a point from the recess through which an enclosure is removed from the pocket after the label pocket has been applied to the mailing piece.

3,199,770
LUBRICATING OIL PRESSURE CONTROL APPARATUS FOR UNLOADING COMPRESSORS
Frank W. Shirey, Irwin, Pa., assignor to Westinghouse Air Brake Company, a corporation of Pennsylvania
Filed July 30, 1963, Ser. No. 298,736
4 Claims. (Cl. 230—27)



1. A fluid compressor unloader mechanism conversion kit for a fluid compressor having a casing providing a crankcase chamber and a compressing chamber, said casing having a cylinder wall through which a passageway extends from the discharge end of the compressing chamber to the exterior of the cylinder wall, a crankshaft rotatable in said crankcase, and a pump operated by the crankshaft for supplying hydraulic fluid lubricant under pressure to the bearings of the compressor, said conversion kit comprising:
(a) a pump piston cylinder having a chamber for receiving hydraulic lubricant under pressure, and a hollow boss through which hydraulic lubricant can be discharged from the chamber,
(b) an adapter fitting having an O-ring seal for encircling the hollow boss to form a rotary seal therewith,
(c) a hydraulic fluid lubricant pressure operated unloader valve device provided with means whereby it can be secured to the cylinder wall at the exterior end of the passageway through the cylinder wall, and
(d) conduit means for connecting said adapter fitting to said hydraulic fluid lubricant pressure operated unloader valve device whereby said unloader valve device is operated by variations in the pressure of hydraulic fluid lubricant supplied by the pump to the bearings of the compressor.

3,199,771
MULTICELL MACHINE OPERATING AS A COMBINATION PRESSURE-VACUUM GENERATOR
Otto Becker, Wuppertal-Barmen, and Günter Jeschke, Wuppertal-Ronsdorf, Germany, assignors to Gebr. Becker G.m.b.H., Wuppertal-Barmen, Germany, a firm
Filed Oct. 16, 1962, Ser. No. 230,908
Claims priority, application Germany, Oct. 19, 1961, B 64,428
4 Claims. (Cl. 230—47)

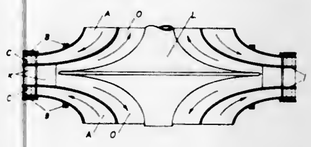


1. In a vane pump operating as pressure and vacuum pump, in combination, a cylinder having an inner peripheral surface and opposite closed ends; a circular cylindrical drum turnable in one direction about its axis and arranged in said cylinder eccentrically with respect thereto so as to form between said inner surface of said cylinder and the outer surface of said drum an arcuate working space, said drum being formed with a plurality of slots angularly spaced from each other and extending through the whole length of said drum; a suction chamber and a pressure chamber respectively communicating with the interior of said cylinder in the region of opposite ends of said arcuate working space; a sliding vane in each slot and having an outer edge engaging said inner peripheral surface of said cylinder so as to divide said arcuate working space into a plurality of chambers, said arcuate working space extending over an angle greater than that enclosed by three adjacent vanes and the inner peripheral surface of said sylinder having at the region of the apex of said working space a circular cylindrical surface portion having an axis coinciding with the axis of said drum and said circular cylindrical surface portion extending from said suction chamber through an angle greater than that enclosed by three adjacent vanes but being smaller than the angle over which said working space extends and the remainder of said inner peripheral surface of said cylinder having a surface portion approaching said drum in the direction of rotation of said drum so as to form a portion of said working space of decreasing volume; and an auxiliary suction opening providing communication between the atmosphere and said working space in the region thereof defined between said drum and said circular cylindrical surface portion of said cylinder, said suction chamber having a controlling edge at the inner surface of said cylinder trailing in direction of rotation of said drum and being spaced from said auxiliary suction opening through an angle greater than that included by two adjacent vanes and said pressure chamber having a controlling edge at the inner surface of said cylinder leading in direction of rotation of said drum and being angularly spaced from the leading end of said circular cylindrical surface portion through an angle at least substantially equal to that included by two adjacent vanes, whereby, when said suction chamber is connected to a space of subatmospheric pressure, air at atmospheric pressure will pass through said auxiliary suction opening into a chamber defined by two vanes respectively trailing and leading said auxiliary suction opening at any moment during rotation of said drum, which air will be prevented from passing into said suction chamber and which will be compressed in said portion of decreasing volume of said working space during further rotation of said drum before being discharged into said pressure chamber, and so that the amount and pressure of pressurized air furnished by the pump will be independent of the degree of vacuum in the space connected to said suction chamber.

ERRATUM

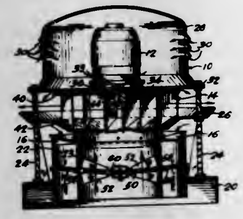
For Class 230—56 see:
Patent No. 3,200,249

3,199,772
TURBOCOMPRESSOR
Rudolph Leslie Leutzinger, 1521 N. Holder, Independence, Mo.
Filed Sept. 6, 1963, Ser. No. 307,165
2 Claims. (Cl. 230—116)



1. A turbocompressor consisting of a centrifugal compressor having inner and outer runners, being of the double entry two section type, upper and lower sections being connected and driven through a final set of turbine blades or vanes distributed concentrically around the periphery between upper and lower sections of the centrifugal compressor and attached to the inner runners thereof, said runners being concentric discs extending radially outboard from the compressor inlet and sloping outboard toward each other and toward the central radial plane, there being two inner runners and two outer runners provided to contain the vanes in both the upper and lower sections of the compressor, said vanes between runners having a curvature for turning the flow and discharging it outboardly into the upper and lower sections of a counter-rotating blade ring assembly, said assembly comprising a central turbine section containing turbine blades, each blade set vertically between two vertically spaced interior horizontal mounting rings, and joined at each end through said mounting rings to two diffuser blades, upper and lower, mounted vertically between two vertically spaced exterior horizontal mounting rings and said interior rings, such that each integral blade, consisting of a central turbine section and its associated diffuser profiles, has its longitudinal axis approximately vertical and approximately parallel to the compressor center line about which it rotates, the integral blades being distributed uniformly around the mounting rings, said interior mounting rings being parallel, self equilibrating and containing labyrinths for separating the outflow diffuser sections, top and bottom, from the central inflow turbine section, the labyrinth valves acting to distribute leakage flow to the blade ring bearings, the blade ring assembly being free to rotate between bearings in the exterior mounting rings under the impulse and reaction transmitted to its central turbine blades by the inflowing stream, said stream being directed radially inboard through the interior blading of the blade ring assembly onto the counter-rotating turbine means of the centrifugal compressor whose inner runners together with a center body flow divider form an exhaust chamber for transforming the radial inflow into two axial, oppositely directed streams, being emitted, top and bottom, from the inner runners, said runners being connected to wall means, through labyrinth valves, for containing and utilizing said streams.

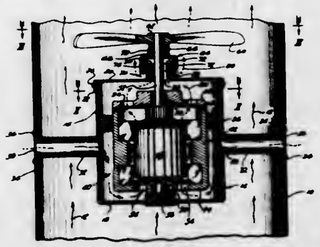
3,199,773
CONTRA-FLOW VENTILATING APPARATUS
Leo M. Stirling, 5460 Cranbrooke Ave., Montreal, Quebec, Canada
Filed Oct. 14, 1963, Ser. No. 315,967
6 Claims. (Cl. 230—117)



1. A contra-flow ventilating fan assembly adapted for use in industrial air circulating systems comprising, a first fixed cylindrical air conducting outer casing of constant diameter, a second fixed cylindrical inner casing of lesser diameter than said outer casing mounted to and concentrically of said outer casing, said inner casing being of slightly lesser length than said outer casing and having one end disposed below the corresponding end of said outer casing, a contra-flow fan blade assembly mounted in axial alignment with and above said inner and outer casings, means to support said fan assembly, a flat top plate and an inwardly tapering bottom collar of annular formation, said fan assembly having a first fan wheel having fixed tapered fan blades extending radially inwards between said flat top plate and said inwardly tapering bottom collar of annular formation, and a second set of fan blades mounted at the roots to said fan wheel annular collar so as to extend radially outwards therefrom and being inclined whereby when rotated with said fan wheel to cause a movement of air in a direction opposite to that caused by said fan wheel blades, means supporting said inner cylindrical casing concentrically of and relative to said outer casing permitting free rotation of said second fan blade assembly within an annular space between said inner and outer casings, driving means including a driving motor partitioned from and mounted directly above said contra-flow fan assembly with a connection to said first fan wheel, a fixed annular air flow deflecting means surrounding said fan wheel and having a portion extending inwardly between the outer periphery of said fan wheel and the blades of said second blade assembly thereby being adapted to maintain separate the opposite air flows passing through said inner and outer casings under the influence of said first fan wheel and second blade assembly, and damper means located beneath said second blade assembly to control the said separate opposite air flows.

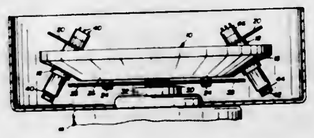
3,199,774
IN-DUCT FAN
Mahlon A. Lowell, Jackson, Mich., assignor to Acme Industries, Inc., Jackson, Mich., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,863
5 Claims. (Cl. 230—117)

1. A fan assembly adapted to be mounted within a duct comprising, in combination,
(a) a motor housing having upstream and downstream facing walls with respect to the gas flow in the duct,
(b) a plurality of support arms extending from said housing adapted to support said housing within the duct,
(c) at least one of said support arms being tubular having an inner end communicating with the interior of said housing and an outer end adapted to communicate with the atmosphere surrounding the duct in which said housing is mounted,
(d) an electric motor within said housing including a casing having a first end wall disposed adjacent said housing upstream wall and a second end wall disposed adjacent said housing downstream wall, and a drive shaft extending through said second end wall and said housing downsream wall,
(e) an opening defined within each of said casing end walls,
(f) sealing means interposed between said motor casing and housing intermediate said casing end walls, said tubular support arms communicating with said



housing intermediate said sealing means and said upstream wall,
(g) a tubular open-end-neck centrally defined on said housing downstream wall extending away from said housing and communicating with the interior thereof, said motor drive shaft extending through said neck,
(h) a fan blade attached to said shaft located exteriorly of said housing and adjacent said neck, the lower pressure created by said fan blade adjacent said neck causing gas flow through said tubular arm, motor casing and neck, and
(i) an annular cup-shaped collar supported relative to said housing having an open end extending over said neck and radially spaced therefrom, preventing direct access to the interior of said housing through said neck.

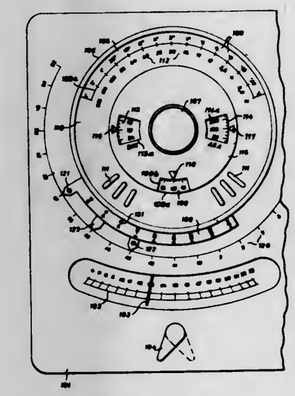
3,199,775
SEDIMENTATION RATE CENTRIFUGE AND METHOD DETERMINING SEDIMENTATION RATE
Kenneth G. Drucker, P.O. Box 507, Astoria, Oreg.
Continuation of application Ser. No. 135,881, Sept. 5, 1961. This application Nov. 26, 1963, Ser. No. 327,872
13 Claims. (Cl. 233—25)



1. A centrifuge comprising:
a main rotor journaled for rotation about a main axis,
a secondary rotor carried by said main rotor and spaced radially from said axis, said secondary rotor being journaled on said main rotor about a secondary axis inclined with respect to said main axis,
means to support on said secondary rotor an elongated container for material to be centrifuged with

said container extending axially of said secondary rotor and being spaced radially of said secondary rotor from said secondary axis,
means to rotate said main rotor about said main axis,
and means to rotate said secondary rotor about said secondary axis relative to said main rotor in order to provide said container with planetary rotation about said secondary axis.

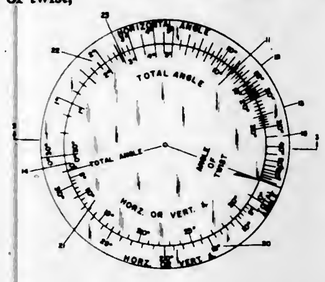
3,199,776
EVALUATION DEVICE FOR A PHOTOELECTRIC EXPOSURE METER
Carl Koch, Vorderstaig 2, Schaffhausen, Switzerland
Filed Mar. 29, 1963, Ser. No. 268,931
Claims priority, application Switzerland, Apr. 4, 1962, 4,090/62
3 Claims. (Cl. 235—64.7)



1. Evaluation device for a photoelectric exposure meter used to determine the appropriate exposure information for photographic materials of varying sensitivity, said device comprising a disc member having an exposure information scale thereon, a movable reference pointer member superposed upon said exposure information scale and being movable relatively thereto in accordance with appropriate exposure information for photographic material of a certain sensitivity, adjustable means operable to set up the maximum and minimum brightnesses of an object to be photographed, mean brightness determining means controlled by said adjustable means and connected to said disc member to move the same until said reference pointer indicates a specific first value on the scale thereof, and at least one auxiliary reference pointer cooperating with said exposure information scale independently of said reference pointer member to indicate a second value on said scale, said second value defining the correct exposure information for a photographic material having a sensitivity different than said certain sensitivity.

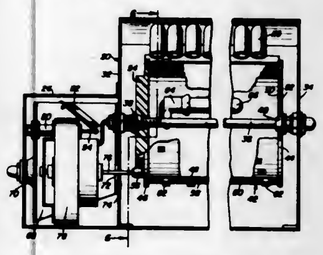
3,199,777
DISC COMPUTER FOR USE IN PIPE BENDING
George H. Martens, 116 Prairie St., Stevens Point, Wis.
Filed Dec. 20, 1963, Ser. No. 332,089
4 Claims. (Cl. 235—78)

1. A disc computer comprising
(a) a first, a second and a third disc,
(b) said first, second and third discs mounted one on top of the other in concentric, rotatable relation,
(c) said first and second discs carrying a first pair of corresponding, opposed, arcuate scales graduated in degrees representing vertical and horizontal angles,
(d) said first pair of arcuate scales being graduated in proportion to the square of the sine of the angle marked on a graduation, said first pair of scales being adapted to cooperate to indicate a resultant total angle computed from said vertical and horizontal angles,
(e) said first and second discs further carrying a second pair of matching, arcuate scales graduated in degrees, one of the scales of said second pair of scales representing said total angle computed from said first pair of scales,
(f) said second pair of arcuate scales being graduated in proportion to the logarithm of the sine of the angle marked on a graduation, said second pair of scales being adapted to cooperate to indicate a resultant angle of twist,



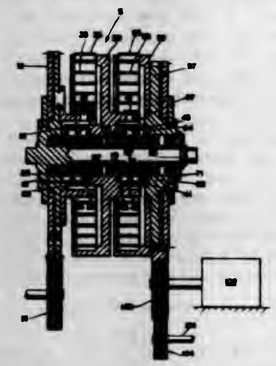
(g) said third disc carrying a third pair of corresponding, opposed, arcuate scales representing said angle of twist and graduated in actual degrees and covering a range of 90°,
(h) said third disc further carrying four marks spaced around a circle at 90° intervals,
(i) two of said four marks defining the end marks for said third pair of arcuate scales,
(j) said second disc further carrying an arcuate, linear scale covering a full circle, and
(k) said third pair of scales being adapted to cooperate with said lineal scale of said second disc to pictorially indicate the lineal amount and direction of twist corresponding to said angle of twist.

3,199,778
PRICE COMPUTING DEVICE
Herbert E. Treadaway, Bandon, Oreg., assignor of fifty percent to Kenneth E. McKay and Don Borneman, both of Coos Bay, Oreg.
Filed June 24, 1963, Ser. No. 289,977
16 Claims. (Cl. 235—87)



1. A computing device comprising; a housing having a plurality of quantity display windows therein, a movable member operatively mounted in said housing bearing indicia for exposure through said display windows, drive means yieldably engageable with said movable member for frictional displacement thereof when energized, a plurality of selectors movably mounted on said housing, means responsive to and during the period of actuation of any of said selectors for energizing said drive means, and stop means mounted on said movable member for engagement by said selectors when actuated to stop movement of the movable member in different positions corresponding to the selector actuated exposing said indicia through said display windows.

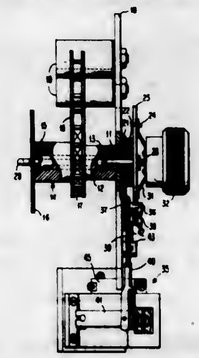
3,199,779
COINCIDENCE MECHANISM
Robert I. Aboczky, Garfield, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed July 23, 1962, Ser. No. 211,530
3 Claims. (Cl. 235—91)



2. A motion storage mechanism comprising a drive member, a driven member and an intermediate member positioned in spaced relation to the drive member and the driven member, a shaft affixed to one of said members, means for rotatably mounting the other of said members on said shaft, a first set of pile-up stop members for connecting the drive member to the intermediate member, a second set of pile-up stop members for drivingly connecting the intermediate member to the driven member, a first spring member wound about the first set of pile-up stop members and resiliently connecting the drive member to the intermediate member and a second spring member wound about the second set of pile-up stop members and resiliently connecting the intermediate member to the driven member, means for applying a braking force to the driven member to effect a storage of information in the mechanism upon rotation of a drive member in one sense and a storage of other information upon rotation of the drive member in an opposite sense, and said stored information being effectively applied to the driven membe upon release of the braking means.

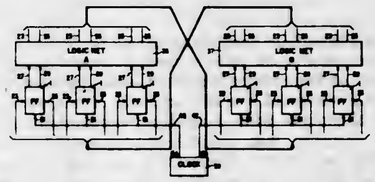
3,199,780
COUNTER CORRECTING APPARATUS
Robert N. Eichorn, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 7, 1962, Ser. No. 221,961
9 Claims. (Cl. 235—132)

1. Apparatus of the class described comprising:
a register for registering as items predetermined increments of motion;
driven means having motion imparted thereto representative of items being accumulated;
clutch means between said register and said driven means for transmitting said motion in a predetermined direction to said register, with said clutch means capable of being disengaged to vary the amount of motion so transmitted; and
auxiliary transmission means becoming operable when said clutch means is disengaged for transmitting said



motion in said predetermined direction to said register.

3,199,781
POWER JET CLOCKING
Herbert F. Welsh, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 5, 1963, Ser. No. 285,759
7 Claims. (Cl. 235—201)



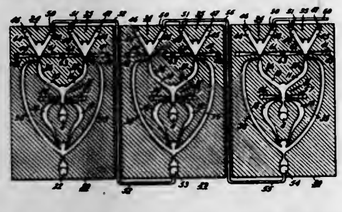
1. The combination comprising: first and second logic networks; first and second groups of bistable fluid amplifiers, each amplifier having at least one control stream nozzle, a power stream nozzle, and an output signal passageway; connecting means for applying output signals from said first logic network to the control stream nozzles of the bistable amplifiers of said second group and output signals from said second logic network to the control stream nozzles of the bistable amplifiers of said first group; means for alternately applying power streams to the power stream nozzles of the amplifiers in said first and second groups whereby said first and second groups of amplifiers alternately produce fluid output signals; and further connecting means for applying output signals from said first group of amplifiers to said first logic network and applying output signals from said second group of amplifiers to said second logic network.

3,199,782
REVERSIBLE FLUID BINARY COUNTER
Jeffrey N. Shinn, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 28, 1963, Ser. No. 305,051
11 Claims. (Cl. 235—201)

1. A fluid-operated reversible binary counter comprising
first means for converting succesive fluid pulses into alternating fluid flows which represent particular states of binary logic,
second means responsive to a first of said alternate flows and to a first pulse counting direction flow for

effecting counting of the pulses in a forward direction, and

third means responsive to a second of said alternate



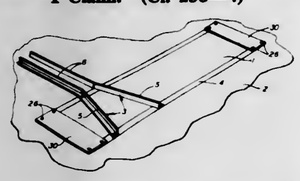
flows and to a second pulse counting direction flow for effecting counting of the pulses in a reverse direction.

3,199,783

AUTOMOBILE POSITIONING DEVICE

Mowatt M. Hurst, San Carlos, Calif., assignor, by mesne assignments, to S. C. Johnson & Son, Inc., Racine, Wis., a corporation of Wisconsin

Filed Apr. 24, 1963, Ser. No. 275,248
1 Claim. (Cl. 238—4)



An automobile positioning device for moving the ends of automobiles of widely varying wheels gauges transversely of their respective longitudinal axes and for guiding the wheels at one side of each of such automobiles into alignment with a straight, horizontally extending path of travel that includes an upper surface for supporting the ground wheels of an automobile at said one side of said automobile for rolling thereover when said automobile is moved toward said path with its wheel at said one side of each of said automobiles offset to one side or the other of said path;

(a) means for defining said path of travel;

(b) a horizontal, elongated platform extending across one end of said path in adjacent relation thereto projecting a substantial distance oppositely outwardly of said path, and with its upper surface approximately flush with the upper surface of said path;

(c) means for supporting said platform from below for horizontal movement in two opposite directions relative to and transversely of said path from a stationary neutral position free from supporting any portion of an automobile thereon;

(d) means for yieldably holding said platform in said neutral position and for yieldably returning said platform to said neutral position upon movement of said platform longitudinally thereof in either of two opposite directions and release thereof after said last mentioned movement;

(e) a pair of substantially corresponding horizontally elongated guide rails substantially symmetrically positioned at opposite sides of an extension of the longitudinal axis of said path projecting above and adjacent to the upper surface of said platform and extending transversely completely across one end portion only of said platform from one longitudinally extending edge of said platform to the other and to the end of said path adjacent to said platform with said pair of rails extending divergently relative to each other from said one end of said path and spaced apart at their convergent ends substantially equal distances from the axis of said path at opposite sides thereof to successively pass only one of said ground wheels at a time at said one side only of said automobile to said path upon movement of said automobile across said platform to said path and with the other wheels at the other side of such automobile supported on the other end portion of said platform that is opposite to said one end portion and spaced from said rails, which other end is free of any wheel guides;

(f) said pair of rails having opposed surfaces above said platform extending convergently to said path to successively engage one or the other sides of said wheels at said one side only of said automobile when said last mentioned wheels are out of alignment with said path and the respective ends of said automobile are successively supported on said platform during movement of the automobile across said platform;

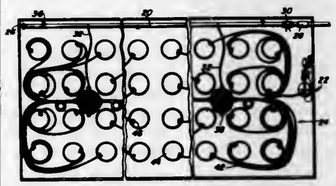
(g) said means for defining said path of travel comprising straight, horizontally extending stationary rails in continuation of said divergent pair of rails for guiding said wheels at one side only of said automobile along said path upon said last mentioned wheels leaving said platform, said continuation rails being of a length at least equal to the distance between the front and rear wheels of said automobile.

3,199,784

PLANT WATERING DEVICE

Richard D. Chavin, 368 N. Colorado Ave., Watertown, N.Y.

Filed Oct. 12, 1962, Ser. No. 230,114
11 Claims. (Cl. 239—65)



1. For use in a water distribution system for a plurality of plants, a water supply main, at least one distributing unit, said unit including a supply tube and an enlarged manifold, said supply tube having one end in water receiving communication with said supply main and the second end in communication with the enlarged manifold, a plurality of equal length elongated leader tubes extending outwardly from said manifold toward separate ones of the plurality of plants, and holder means for both retaining each leader tube in the vicinity of the related plant and smoothly dispersing the water flowing from the leader tube so as to prevent a washing away of the plant soil.

3,199,785

PORTABLE SPRAYING DEVICE AND SUPPORT

Heinz Schmierer, Maichingen, Wurttemberg, Germany, assignor to SOLO Kleinmotoren G.m.b.H., Maichingen, Wurttemberg, Germany

Filed June 24, 1963, Ser. No. 289,859
Claims priority, application Germany, June 26, 1962, S 80.079
13 Claims. (Cl. 239—153)

1. A unitary support for a portable spraying device, comprising a mounting plate adapted to rest against the back of a user, a pair of marginal struts integral with said mounting plate along opposite lateral edges thereof, and a receptacle integral with said mounting plate and

said struts along a further edge of said mounting plate generally transverse to said struts, said plate, struts and receptacle being continuous with one another and inte-



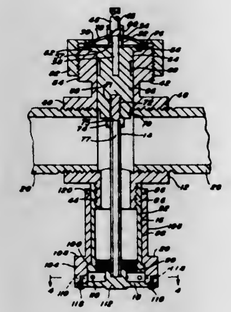
grally molded from synthetic-resin sheet material, said receptacle being defined between layers of said sheet material.

3,199,786

NOZZLE FOR LIQUID SPRAYING DEVICE

John E. Waldrum, Ambler, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware

Filed Dec. 17, 1963, Ser. No. 331,185
1 Claim. (Cl. 239—223)



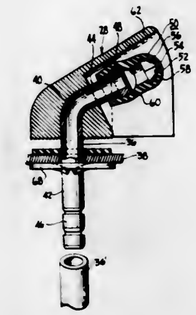
A liquid spraying device comprising a fixed inner stator, means to supply liquid under pressure to said stator, a movable rotor having a spray section with spray openings, said rotor being generally telescoped about said stator with said spray section being positioned beyond said stator, a rotor cap including a socket secured to and adapted to drive said rotor, and drive shaft means extending through said stator and being secured within said rotor cap socket, said drive shaft means being driven by an assembly including a drive spindle and a drive coupling, a source of power associated with said drive spindle, said drive spindle including an undersurface having an opening adapted to receive a pin projecting from said drive coupling, said drive coupling also including a flange at an end opposite of said pin, said flange having an internally threaded bore adapted to receive the stem of a drive link having a head with an opening adapted to receive the internal end of said drive shaft means, whereby rotation of said drive spindle in conveyed through said pin to said drive coupling and then further conveyed through said drive link to said drive shaft means, whereby rotation of said drive shaft is conveyed via said rotor cap to said rotor with the liquid passing through the moving openings of said spray section with the avoidance of the performance of substantial work thereon.

3,199,787

WINDSHIELD WASHER SYSTEM

John R. Oishei, Buffalo, and Anthony C. Scinta, Hamburg, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.

Filed Aug. 26, 1963, Ser. No. 304,474
3 Claims. (Cl. 239—284)



1. A nozzle assembly for discharging finely divided particles over a relatively wide area of a windshield comprising a conduit, a nozzle of elastomeric material mounted at the end of said conduit and means for sheltering said nozzle to protect against nozzle maladjustment, said nozzle including a tubular body portion and a closed end portion, said means for sheltering being open adjacent said closed end portion of the nozzle, said closed end portion of the nozzle having a substantially transversely extending slit of a length sufficient to provide wetting of substantially the entire wiping pattern, said nozzle being normally biased to closed position and said slit being open when subjected to increased fluid pressure, said conduit having an enlarged diameter adjacent said end, said enlarged diameter being of greater dimension than the inner diameter of said tubular portion for retaining and stressing said nozzle to effect biasing of said slit to closed position and said conduit being of material and relative to said nozzle.

3,199,788

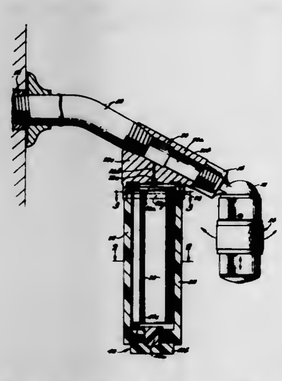
DISPENSER

John E. Davis, Sherman Oaks, Calif., assignor to J. Briskin, Inc., Sherman Oaks, Calif., a corporation of California

Filed Aug. 5, 1963, Ser. No. 299,932
10 Claims. (Cl. 239—310)

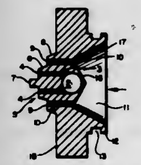
1. A mechanism for use in conjunction with a shower head and adapted to be coupled into a conduit carrying shower water to the shower head for dispensing a substance under pressure from an aerosol container into the shower water, said aerosol container having a nozzle at one end thereof for discharging substance from the container under pressure when the nozzle is moved relative to the container, said mechanism including: a tubular adapter configured to be interposed between the conduit and the shower head and having a first portion with a passageway extending therethrough for carrying water from the conduit to the shower head, and having a second portion with an aperture therein extending into said passageway; a housing removably mounted on said second portion of said adapter for supporting the aerosol container with the nozzle thereof extending into the end of said aperture remote from said passageway; and actuator

means mounted on said housing and engaging said aerosol container for selectively moving said container relative to said housing and said nozzle, thereby to cause said nozzle



to discharge the substance from the container under pressure to the aperture in said second portion and into the shower water.

3,199,789
SPRAY NOZZLE HAVING A RECTANGULAR HIGH VELOCITY GAS OUTLET AND LOW VELOCITY LIQUID OUTLETS
James R. James, Louisville, Ky., assignor to The Martin Sweets Company, Inc., Louisville, Ky., a corporation of Kentucky
Filed July 22, 1963, Ser. No. 296,724
4 Claims. (Cl. 239—424)



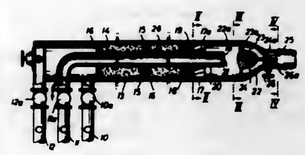
1. In a liquid spraying appliance wherein a liquid component is conveyed by a pressurized gas stream:

(a) a nozzle for producing a substantially elliptical spray pattern on a substrate, said nozzle having a face portion located in a plane and containing a gas pattern forming means and liquid channels having liquid outlets which open in the face portion of said nozzle in which

(i) said gas pattern forming means comprises a gas channel containing a high velocity gas outlet which opens near the center of the face of said nozzle in the form of a jet opening of relatively small dimension and which is in operative relation with a source of pressurized gas to form a low pressure area which defines a substantially rectangular gas pattern of narrow cross section in close proximity to said face portion of said nozzle, said gas channel having an axis which lies essentially perpendicular to the plane of the face of said nozzle and which lies essentially parallel to the longitudinal axis of said nozzle; and

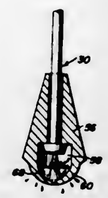
(ii) said liquid channels terminate in low velocity liquid outlets of large dimension relative to the dimension of said high velocity gas outlet which are located on each of two sides of said gas pattern forming means in the face portion of said nozzle, said liquid channels being in operative relation to a source of liquid so as to produce at least two liquid streams of low velocity which are aspirated into said gas pattern in an area outside of said nozzle but which is closely adjacent to the face portion of said nozzle.

3,199,790
SPRAYING APPARATUS FOR THE PRODUCTION OF FOAMED PLASTIC MATERIALS FOR USE AS FILLERS AND INSULATIONS
Herbert Giesemann, Don Bosco Str. 3, Bonn, Germany
Filed Nov. 15, 1962, Ser. No. 237,940
Claims priority, application Germany, Nov. 15, 1961, G 33,593; Mar. 3, 1962, G 34,394
12 Claims. (Cl. 239—428)



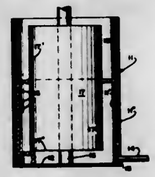
1. A foam-producing spraying apparatus comprising, at least two coaxially related pipes forming inner and outer chambers having an upstream and downstream end; conduit means connected to the upstream end of said respective inner and outer chambers for directing a supply of mixable fluid material thereto; mechanical pre-foaming means disposed in the outer chamber promoting the formation of foam in the fluid material passing therethrough prior to mixture with the fluid in the inner chamber; restricting means on the downstream end of said inner chamber controlling the emission of fluid for mixture with the pre-foamed fluid material; and a chamber-forming member secured to said pipe forming said outer chamber and forming a mixing chamber downstream of said inner and outer chambers and in which said supply of pre-foamed fluid material and fluid from the chambers are mixed prior to leaving said apparatus.

3,199,791
WATER DISTRIBUTING SYSTEM
Richard D. Chapin, 368 N. Colorado Ave., Watertown, N.Y.
Filed Oct. 30, 1963, Ser. No. 320,018
10 Claims. (Cl. 239—542)



1. For use in a water distributing system, an integral one-piece tube weight, said tube weight being generally conical in shape and including a small apex and an enlarged base, an enlarged centrally located recess extending inwardly from said base, a plurality of tabs depending from the base at spaced points about said recess, said tabs being bendable toward each other in a manner so as to span the central portion of the recess in spaced relation to portions of the periphery thereof, and an elongated passage extending inwardly through the apex into communication with the recess.

3,199,792
COMMINUTING AND DISPERSING PROCESS AND APPARATUS
Robert W. Norris, Jr., 1710 Front St. NE., Salem, Oreg.
Filed July 20, 1962, Ser. No. 211,341
11 Claims. (Cl. 241—30)



1. An apparatus for finely comminuting solid material and for dispersing agglomerates of finely comminuted material which comprises:

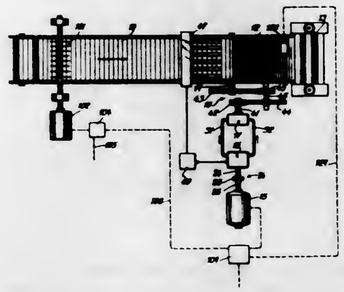
(a) a substantially vertical chamber, said chamber being bounded laterally from top to bottom by a curved surface;

(b) said chamber being at least partially filled with a plurality of attritive elements;

(c) said chamber having disposed therein at least one substantially vertical elongated impeller means for imparting a continuous flow of said attritive elements in an arcuate path and radially inwardly and outwardly with reference to the curved surfaces of said chamber throughout the vertical extent of said impeller means, said impeller means being rotatable about a substantially vertical axis within said chamber, said impeller means having a vertical surface which has portions spaced at different distances from said axis than other portions of said surface, said impeller means having a portion closest to said curved surface of said chamber extending continuously at a substantially constant distance from said curved surface throughout the vertical extent of said impeller means, means for rotating said impeller means about said axis to cause the portions of said impeller surface closest to said curved surface to move in an arcuate path parallel to said curved surface, the minimum distance between said impeller means and said curved surface at any time being at least three times the diametric measurement of the largest of said attritive elements.

11. A method for uniformly comminuting a solid material and for dispersing agglomerates of finely comminuted material which comprises introducing said material into a substantially vertical elongated zone which is at least partially filled with a plurality of attritive elements, said zone being bounded laterally from top to bottom by a curved surface, rotating at least one substantially vertical elongated impeller means about a substantially vertical axis within said zone, said impeller means having a vertical surface which has portions spaced at different distances from said axis than other portions of said surface, said impeller means having a portion closest to said curved surface of said zone extending continuously at a substantially constant distance from said curved surface throughout the vertical extent of said impeller means, the minimum distance between said impeller means and said curved surface at any time being at least three times the diametric measurement of the largest of said attritive elements, said rotation causing the portions of said impeller surface closest to said curved surface to move in an arcuate path parallel to said curved surface thereby imparting a continuous flow of said attritive elements in an arcuate path and radially inwardly and outwardly with reference to the curved surfaces of said zone throughout the vertical extent of said impeller means.

3,199,793
AUTOMATIC FEED OF SUGAR CANE AT OPTIMUM RATES TO SUGAR CANE MILLS
Nestor Sabi, New Orleans, La., assignor to Hydraulics, Inc., New Orleans, La., a corporation of Louisiana
Filed June 27, 1963, Ser. No. 291,075
19 Claims. (Cl. 241—34)



1. In a crushing mill for sugar cane having a conveyor for transporting the cane to a chute discharging the cane for passage between rotated crushing rolls; the combination of

(A) sensing means responsive to changes in the average height of cane across said conveyor at a location in advance of said chute;

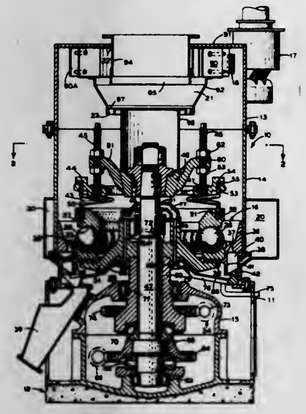
(B) drive means for the conveyor including a substantially constant speed prime mover, a variable displacement, piston-type hydraulic pump driven by said prime mover, a fixed displacement piston-type hydraulic motor in closed circuit connection with said pump so as to be driven by hydraulic fluid circulated by said hydraulic pump at a speed exactly determined by the displacement of said pump, and mechanical transmission means connecting said hydraulic motor to the conveyor so that the latter is driven at a linear speed corresponding to the displacement of said pump; and

(C) control means actuated by said sensing means and operative to vary the displacement of said hydraulic pump as an inverse function of the average height of cane to which said sensing means responds, thereby to accurately maintain a predetermined volumetric rate of feed of cane to the crushing rolls.

3,199,794
PULVERIZER
Edward M. Poole, Alliance, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed May 23, 1962, Ser. No. 197,061
2 Claims. (Cl. 241—89)

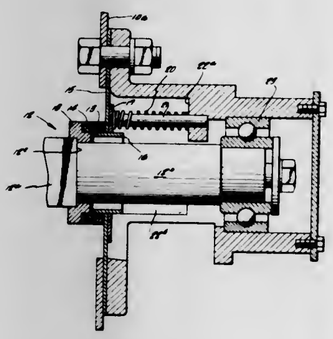
1. A pulverizer comprising a housing, a lower rotary grinding ring, drive means including a first motor for rotating said lower grinding ring at a selected rate, a circular row of rolling grinding elements supported on said lower grinding ring, a rotary upper grinding ring supported on said grinding elements, drive means includ-

ing a second motor for rotating said upper grinding ring at a selected rate and in a direction opposite to the direction of rotation of said lower grinding ring, means for delivering material to be pulverized to said row of grind-



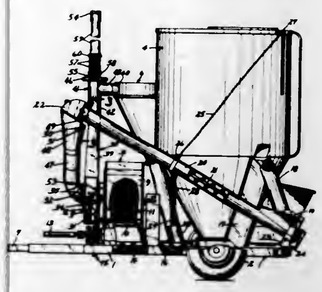
ing elements, and means for directing a stream of carrier air past the material discharge side of said grinding elements for withdrawing pulverized material from said housing.

3,199,795
MIXING MACHINE
Marvin D. Bennett, Manhattan Beach, and Richard D. Bennett, Pasadena, Calif., assignors to Royal Industries, Inc., Pasadena, Calif., a corporation of California
Filed Jan. 21, 1963, Ser. No. 252,976
7 Claims. (Cl. 241—101)



1. A shaft seal for a rotatable shaft comprising a pair of sealing rings constructed of a material harder than any material to which the shaft is to be exposed, one of the adjacent surfaces of each of the rings being ground flat to preselected mircroinch tolerances to eliminate any air gap between the polished surfaces when the adjacent surfaces are mounted on a rotatable shaft to be sealed, means for resiliently mounting one of said sealing rings in a stationary sealing position with respect to a shaft and yet follow the movements of the shaft, means for mounting the other sealing ring in a sealing relationship with a rotatable shaft and to be rotatable with said shaft, and means for maintaining a preselected amount of pressure on said sealing rings to maintain them in an aligned sealing relationship and yet allow the resiliently mounted ring to continuously seal against the other ring.

3,199,796
PORTABLE FEED GRINDER AND MIXER
Charles L. Callum and Donald T. Sorlie, Hopkins, Minn., assignors to Daffin Corporation, Hopkins, Minn., a corporation of Delaware
Filed May 27, 1963, Ser. No. 283,420
6 Claims. (Cl. 241—101)



1. An attachment for portable feed mills and mixers of the type involving, a grinding mill, a mixing chamber for reception of material from said mill, a discharge conveyor exteriorly of said chamber and having an inner end communicating with the chamber and a delivery end remote therefrom for delivery of mixed material from said chamber, a blower for removal of dust from said mill, an air-dust separator, and a duct extending from said blower to said separator, said attachment comprising,

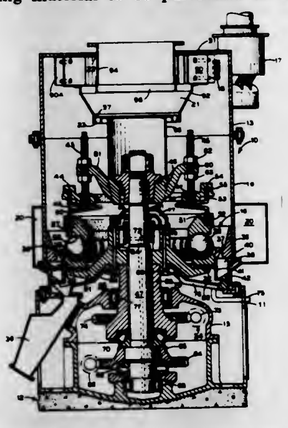
(a) a chute,

(b) means for releasably attaching one end of said chute to the delivery end of the discharge conveyor and the other end of the chute to an inlet portion of the blower for delivery of mixed material to said blower,

(c) and means including a delivery conduit adapted to be operatively connected to the discharge portion of said blower for intercepting the flow of material from the blower toward the separator and directing said flow of material away from the separator.

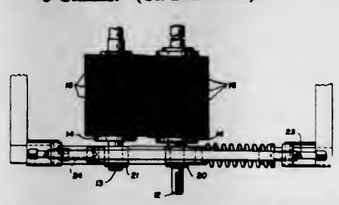
3,199,797
PULVERIZER
Neil W. Eft and Richard A. Miller, Alliance, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed May 23, 1962, Ser. No. 197,062
5 Claims. (Cl. 241—117)

1. A pulverizer comprising a housing, a lower rotary grinding ring, means for rotating said lower grinding ring, a cicular row of rolling grinding elements supported on said lower grinding ring, a rotary upper grinding ring supported on said grinding elements, means for rotating said upper grinding ring in a direction opposite to the direction of rotation of said lower grinding ring including means for imposing a resilient grinding pressure on said grinding rings and elements, said resilient grinding pressure means simultaneously providing the sole driving connection between said rotating means and said upper grinding ring for rotating said upper ring, means for delivering material to be pulverized to said row of



grinding elements, and means for withdrawing pulverized material from said housing.

3,199,798
CRUSHERS
Charles W. Turner, Jr., Delmar, N.Y., assignor to Frontier Sixty Corporation, a corporation of New York
Filed Apr. 17, 1961, Ser. No. 103,652
8 Claims. (Cl. 241—242)

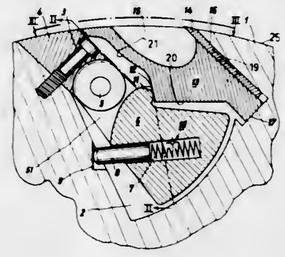


1. In a crusher for reducing the size of stone, a housing, a roll in said housing on an axis, said roll having spaced apart generally parallel lands separated by grooves extending around the circumference of the roll, anvil means spaced from the roll parallel to the roll axis, said roll being spaced apart from anvil means a distance substantially equal to the size of the particles desired and said grooves being a width substantially equal to said distance and driving means rotating said roll to carry stone to be crushed between it and the anvil.

3,199,799
CUTTER FOR WOOD-SHAVING MACHINE
Hans Sybertz, Bad Kreuznach, Germany, assignor to Hombak Maschinenfabrik K.G., Bad Kreuznach, Germany, a corporation of Germany
Filed Nov. 20, 1962, Ser. No. 238,909
Claims priority, application Germany, Nov. 20, 1961, H 44,175
6 Claims. (Cl. 241—294)

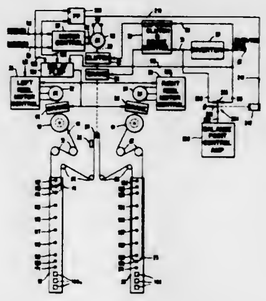
1. A cutter for a wood-comminuting machine, comprising a generally cylindrical body rotatable about an axis and formed with at least one outwardly open peripheral recess; blade means seated in said recess, said blade means comprising a blade-support member and a blade mounted upon said support member; and securing means in said recess yieldably bearing upon said support member for clamping said blade means releasably within said recess in a stationary condition of said body and centrifugally actuatable to wedge said blade means in said

recess upon rotation of said body, said securing means including a journal block secured within said recess, an axially extending shaft in said block, a weighted detent member swingably mounted on said shaft and having a center of gravity intermediate an axial plane of said body through said shaft and said support member, said mem-



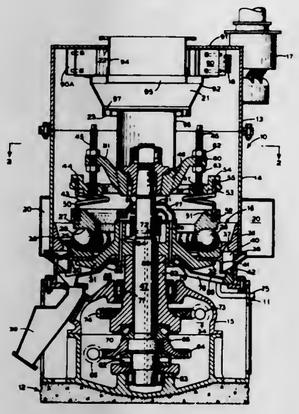
bers being formed with co-operating surfaces for wedging said support member within said recess upon said rotation of said body, and spring means within said recess for urging said detent member against said support member, thereby releasably retaining the latter within said recess.

3,199,800
TAPE REWIND CONTROL
Trevor Drake Reader, Wayne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 10, 1962, Ser. No. 229,617
5 Claims. (Cl. 242—55.12)

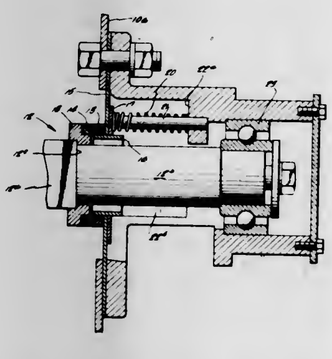


1. In a tape transport utilizing vacuum loop boxes to store separate lengths of tape between a supply reel and a capstan and a take-up reel and said capstan, a rewind control comprising means for controlling the speed of drive of said supply reel in response to the relative position of the tape loop end in an upper portion of the loop box associated with said supply reel, said control being operative to effect a maximum rate of drive by said supply reel when said loop end is in a lower portion of said supply reel box, means for controlling the speed of drive of said take-up reel in response to the relative position of said tape loop end in said lower portion of said supply reel loop box, said last-named means being operative to effect a maximum rate of drive by said take-up reel when said loop end is in said upper portion of said supply reel box.

ing a second motor for rotating said upper grinding ring at a selected rate and in a direction opposite to the direction of rotation of said lower grinding ring, means for delivering material to be pulverized to said row of grinding elements, and means for directing a stream of carrier air past the material discharge side of said grinding elements for withdrawing pulverized material from said housing.

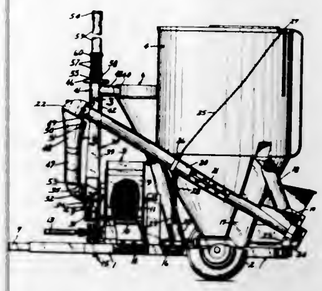


3,199,795
MIXING MACHINE
Marvin D. Bennett, Manhattan Beach, and Richard D. Bennett, Pasadena, Calif., assignors to Royal Industries, Inc., Pasadena, Calif., a corporation of California
Filed Jan. 21, 1963, Ser. No. 252,976
7 Claims. (Cl. 241—101)



1. A shaft seal for a rotatable shaft comprising a pair of sealing rings constructed of a material harder than any material to which the shaft is to be exposed, one of the adjacent surfaces of each of the rings being ground flat to preselected mircroinch tolerances to eliminate any air gap between the polished surfaces when the adjacent surfaces are mounted on a rotatable shaft to be sealed, means for resiliently mounting one of said sealing rings in a stationary sealing position with respect to a shaft and yet follow the movements of the shaft, means for mounting the other sealing ring in a sealing relationship with a rotatable shaft and to be rotatable with said shaft, and means for maintaining a preselected amount of pressure on said sealing rings to maintain them in an aligned sealing relationship and yet allow the resiliently mounted ring to continuously seal against the other ring.

3,199,796
PORTABLE FEED GRINDER AND MIXER
Charles L. Callum and Donald T. Sorlie, Hopkins, Minn., assignors to Daffin Corporation, Hopkins, Minn., a corporation of Delaware
Filed May 27, 1963, Ser. No. 283,420
6 Claims. (Cl. 241—101)



1. An attachment for portable feed mills and mixers of the type involving, a grinding mill, a mixing chamber for reception of material from said mill, a discharge conveyor exteriorly of said chamber and having an inner end communicating with the chamber and a delivery end remote therefrom for delivery of mixed material from said chamber, a blower for removal of dust from said mill, an air-dust separator, and a duct extending from said blower to said separator, said attachment comprising,

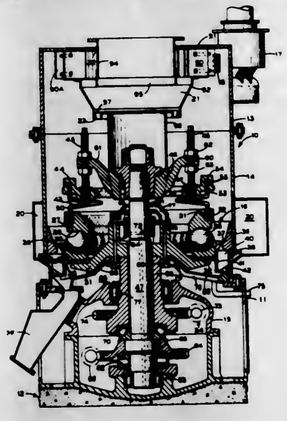
(a) a chute,

(b) means for releasably attaching one end of said chute to the delivery end of the discharge conveyor and the other end of the chute to an inlet portion of the blower for delivery of mixed material to said blower,

(c) and means including a delivery conduit adapted to be operatively connected to the discharge portion of said blower for intercepting the flow of material from the blower toward the separator and directing said flow of material away from the separator.

3,199,797
PULVERIZER
Nell W. Eft and Richard A. Miller, Alliance, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed May 23, 1962, Ser. No. 197,062
5 Claims. (Cl. 241—117)

1. A pulverizer comprising a housing, a lower rotary grinding ring, means for rotating said lower grinding ring, a cicular row of rolling grinding elements supported on said lower grinding ring, a rotary upper grinding ring supported on said grinding elements, means for rotating said upper grinding ring in a direction opposite to the direction of rotation of said lower grinding ring including means for imposing a resilient grinding pressure on said grinding rings and elements, said resilient grinding pressure means simultaneously providing the sole driving connection between said rotating means and said upper grinding ring for rotating said upper ring, means for delivering material to be pulverized to said row of grinding elements, and means for withdrawing pulverized material from said housing.

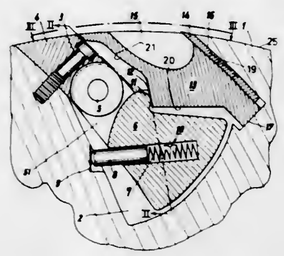


3,199,798
CRUSHERS
Charles W. Turner, Jr., Delmar, N.Y., assignor to Frontier Sixty Corporation, a corporation of New York
Filed Apr. 17, 1961, Ser. No. 103,652
8 Claims. (Cl. 241—242)

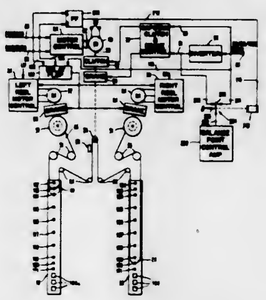
1. In a crusher for reducing the size of stone, a housing, a roll in said housing on an axis, said roll having spaced apart generally parallel lands separated by grooves extending around the circumference of the roll, anvil means spaced from the roll parallel to the roll axis, said roll being spaced apart from anvil means a distance substantially equal to the size of the particles desired and said grooves being a width substantially equal to said distance and driving means rotating said roll to carry stone to be crushed between it and the anvil.

3,199,799
CUTTER FOR WOOD-SHAVING MACHINE
Hans Sybertz, Bad Kreuznach, Germany, assignor to Hombak Maschinenfabrik K.G., Bad Kreuznach, Germany, a corporation of Germany
Filed Nov. 20, 1962, Ser. No. 238,909
Claims priority, application Germany, Nov. 20, 1961, H 44,175
6 Claims. (Cl. 241—294)

1. A cutter for a wood-comminuting machine, comprising a generally cylindrical body rotatable about an axis and formed with at least one outwardly open peripheral recess; blade means seated in said recess, said blade means comprising a blade-support member and a blade mounted upon said support member; and securing means in said recess yieldably bearing upon said support member for clamping said blade means releasably within said recess in a stationary condition of said body and centrifugally actuatable to wedge said blade means in said recess upon rotation of said body, said securing means including a journal block secured within said recess, an axially extending shaft in said block, a weighted detent member swingably mounted on said shaft and having a center of gravity intermediate an axial plane of said body through said shaft and said support member, said members being formed with co-operating surfaces for wedging said support member within said recess upon said rotation of said body, and spring means within said recess for urging said detent member against said support member, thereby releasably retaining the latter within said recess.



3,199,800
TAPE REWIND CONTROL
Trevor Drake Reader, Wayne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 10, 1962, Ser. No. 229,617
5 Claims. (Cl. 242—55.12)

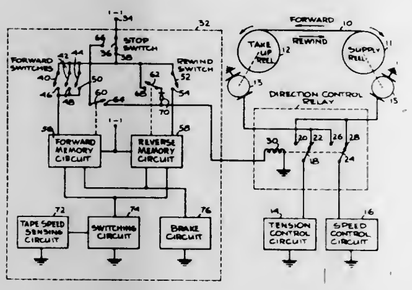


1. In a tape transport utilizing vacuum loop boxes to store separate lengths of tape between a supply reel and a capstan and a take-up reel and said capstan, a rewind control comprising means for controlling the speed of drive of said supply reel in response to the relative position of the tape loop end in an upper portion of the loop box associated with said supply reel, said control being operative to effect a maximum rate of drive by said supply reel when said loop end is in a lower portion of said supply reel box, means for controlling the speed of drive of said take-up reel in response to the relative position of said tape loop end in said lower portion of said supply reel loop box, said last-named means being operative to effect a maximum rate of drive by said take-up reel when said loop end is in said upper portion of said supply reel box.

3,199,801
TAPE TRANSPORT BRAKE SYSTEM

Gordon D. Svendsen, San Carlos, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed July 12, 1963, Ser. No. 294,526
10 Claims. (Cl. 242—55.12)



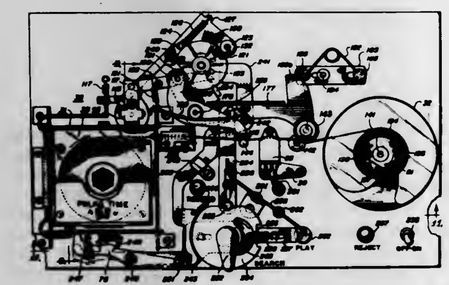
1. In a tape transport unit including first and second reels having first and second motors respectively coupled thereto, a tape length having first and second ends respectively wound on said first and second reels; a tension control circuit; a speed control circuit; means driving said first motor for causing said tape length to wind on said first reel and unwind from said second reel; means connecting said tension control circuit to said first motor; means connecting said speed control circuit to said second motor; and means for braking said tape including means for connecting said tension control circuit to said second motor and said speed control circuit to said first motor.

3,199,802
TAPE RECORDER

Eugene J. Polley, Lombard, and Richard L. Root, Barrington, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Original application July 10, 1961, Ser. No. 122,930. Divided and this application Sept. 3, 1963, Ser. No. 305,988

2 Claims. (Cl. 242—55.13)



2. In a tape recorder for transporting a continuous flexible tape from a storage reel to a take-up reel, the improvement comprising:

a transport mechanism including a capstan for moving said tape between said reels;

a pivotally supported lever having first and second cam portions;

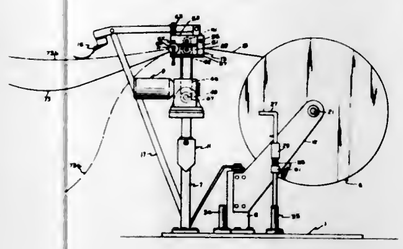
a pressure roller assembly comprising a pliant roller rotatably mounted on said lever and having a rest position in which said roller is spaced from said capstan but movable to an operating position in which said roller is contiguous said capstan to effect transport of said tape by said capstan;

and cam follower means cooperating with said first cam surface for moving said assembly from said rest position toward said operating postion with a force of a first magnitude and cooperating with said second cam surface for maintaining said assembly in its operating position under the influence of a second force of a magnitude substantially greater than said first force whereby damage incident to moving said assembly from said rest position to said operating position is prevented.

3,199,803
FEEDING DEVICE

William R. Mattson, Gloucester, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed July 17, 1961, Ser. No. 124,632
1 Claim. (Cl. 242—57)



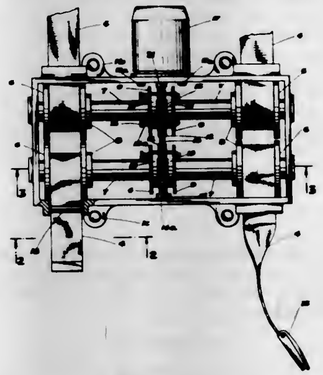
Apparatus comprising in combination: a stock reel; means for rotatably supporting said stock reel; means for withdrawing stock from said reel comprising a pair of deburring rollers disposed tightly against each other; tensioning means holding said rollers together; a motor operatively associated with one of said rollers whereby said roller can be driven; an initiator switch and a time prolonging switch, said switches operatively associated said motor when stock previously fed from said roller trips said initiator switch which in turn activates said time prolongating switch thereby withdrawing stock from said reel and dereeling a predetermined amount of stock as predetermined by said time prolongating switch.

3,199,804
RETRACTING DEVICE FOR AUTOMOBILE SEAT BELTS

John Garfield Fontaine, 2817 SE. 26th Court, Fort Lauderdale, Fla.

Filed May 17, 1963, Ser. No. 281,281
2 Claims. (Cl. 242—67.1)

1. A retracting device for automobile safety belts comprising, a fixed spindle having two co-axial tubular shafts rotatively mounted on it, each of said shafts carrying a belt-receiving reel, a motor, transmission means between the motor and shafts to rotate the shafts, said transmission means including a gear driven from the motor and rotatively mounted on the spindle between the ends of the shafts, each of the shafts carrying a friction disk between which the gear is located, a ring freely and slidably mounted on each of the shafts, with the friction disks and gear being disposed between said rings, means connecting the rings to the gear and spring means for urging the rings toward one another to cause them to

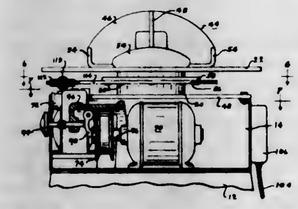


frictionally engage the friction disks between them to cause the shafts to be rotated by the rotation of the gear from the motor.

3,199,805
PAY-OFF REEL

Robert Kohn and Mortimer C. Winski, Michigan City, Ind., assignors to Northern Indiana Steel Supply Co., Inc., Michigan City, Ind., a corporation of Indiana

Filed Aug. 20, 1962, Ser. No. 218,005
7 Claims. (Cl. 242—78)



3. A wire handling reel using a carrier for a coil of wire, comprising a base, a housing on said base, a rotatable support for the carrier having a disc-shaped plate, a bearing means for rotatably supporting said plate on said housing including a vertically positioned axle secured to said housing and a rotatable hub journalled on said axle, a guide means for said carrier including a pair of intersecting arcuate vertically positioned plate members on said disc-shaped plate for driving engagement with a wire coil carrier, a sprocket on said rotatable hub, variable speed power drive mechanism disposed in said housing and having an output shaft, a sprocket on said output shaft, and a chain connecting said first and last mentioned sprockets.

3,199,806
DEVICE FOR DECREASING YARN TENSION

Rudolf Jenny, Thalwil, Switzerland, assignor to Maschinenfabrik Schweiter AG., Horgen, Switzerland, a corporation of Switzerland

Filed Apr. 10, 1963, Ser. No. 271,913
Claims priority, application Switzerland, Apr. 16, 1962, 4,348/62
11 Claims. (Cl. 242—128)

1. Device for decreasing yarn tension during unwinding of yarn from a cop, which yarn is moving from the cop through a predetermined path of travel towards a yarn infeed location, comprising disturbance means for yarn balloons disposed in said path of travel between said cop and said yarn infeed location, said disturbance means consisting of only one pair of impact surfaces located at substantially right angles to one another, said impact surfaces meeting along a line of intersection substantially situated along the yarn axis and axis of the cop, the position of said impact surfaces between said cop and yarn infeed location as well as the length of said impact surfaces extending in the direction of said cop axis being so selected that in spite of changes in the yarn withdrawal length between the point of yarn outfeed from the cop and the yarn infeed location during unwinding of the yarn from the cop a multiple yarn balloon is maintained.



3,199,807
DEVICE FOR LAYING WIRE COILS

Karl Kirsch, Haunstetten, near Augsburg, and Siegfried Uhl, Augsburg, Germany, assignors to Keller and Knappich G.m.b.H., Augsburg, Germany, a corporation of Germany

Filed July 3, 1963, Ser. No. 292,698
Claims priority, application Germany, July 14, 1962, K 47,238
3 Claims. (Cl. 242—129)



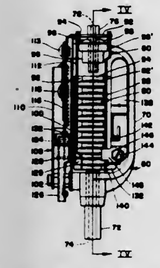
1. A device for simultaneously laying wire from at least three wire coils provided with barbs comprising: a pair of spaced annular flange members positioned radially outwardly of each wire coil, the peripheries of each pair of flange members contacting the peripheries of another pair of flange members at two points, said annular flange members being joined together by studs extending through apertures formed by the annular flange members at said contacting portions, and means interconnecting the spaced annular flanges of each pair and forming support surfaces for the periphery of the wire coils, one of the support means interconnecting the spaced annular flanges terminating in a check pin whereby, when the wire is simultaneously removed from each of the coils, the check pins contact the movement of the wire as it is removed from the coils.

3,199,808
APPARATUS FOR TENSIONING YARN

Raymond V. Tata, Warwick, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Continuation of application Ser. No. 198,367, May 28, 1962. This application Feb. 11, 1964, Ser. No. 344,105

4 Claims. (Cl. 242—154)



1. Apparatus for tensioning yarn comprising:
a first member,
a second member,
each of said members having a yarn input and a yarn output end and a plurality of yarn engaging fingers therebetween,
said fingers of said first and said second members being alternately spaced with respect to each other to thereby intermesh and apply tension to an advancing strand of yarn,
pivot means connecting said second member with said first member at the input ends thereof to afford pivotal movement of said second member relative to said first member,
a lever having an inner end pivotally supported intermediate the ends of said second member and having an outer end which extends beyond the output end of said second member,
a pin positioned on said lever and arranged to engage said second member intermediate the inner end of said lever and the output end of said second member to pivot said lever in response to movement of said second member,
the outer end of said lever being movable in a path proportionately greater than that of said second member when pivoted by said second member, and
a resilient element connected at the outer end of said lever and arranged to exert a force to bias said pin against said second member to urge the fingers of said second member into mesh with the fingers of said first member,
said resilient element acting through an effective moment arm to increase the biasing force as said fingers of said first and second members mesh to an increasing degree, and to decrease the biasing force as said enmeshing decreases, the length of said moment arm being controlled by movement of said lever.

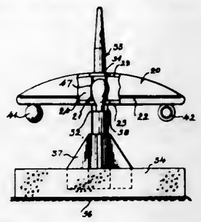
3,199,809
CIRCULAR WING FLYING CRAFT

James N. Modesti, 914 W. 94th St., New York, N.Y.

Filed Aug. 12, 1963, Ser. No. 301,317

7 Claims. (Cl. 244—12)

1. A flying craft comprising a central body and a rotatable circular disc-like airfoil shaped wing journalled upon the central body, horizontally-extending rocket motors respectively carried on the respective opposite sides of the circular foil and extending substantially tangentially thereto and serving to spin the circular wing upon the central body to provide gyroscopic action upon the flying craft, and vertically-extending rocket motors respectively disposed on respective opposite sides of the circular wing to discharge gases downwardly to provide the lift of the flying craft upon the gyroscopic action having been effected, and means for supplying combustion fuel and gas to said rocket motors.

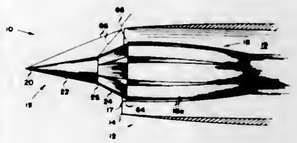


3,199,810
SUPERSONIC DIFFUSER

John F. Stroud, Northridge, and Daniel M. Coleman, Los Angeles, Calif., assignors to Lockheed Aircraft Corporation, Burburk, Calif.

Filed Aug. 29, 1963, Ser. No. 305,553

9 Claims. (Cl. 244—53)



1. A supersonic diffuser for an aircraft comprising:
(a) a cowl having a lip;
(b) compression surface means having a downstream end mounted dowstream of said lip for turning the flow of air to said cowl in such a manner that supersonic diffusion takes place upstream of said lip;
(c) bleed scoop means connected to the downstream end of said surface means for bleeding off the boundary layer of air flowing along said surface means during supersonic operation of said aircraft;
(d) means to extend said compression surface upstream; and
(e) linkage means to close said bleed scoop means when said compression surface means is extended upstream.

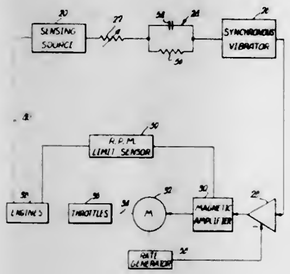
3,199,811
AUTOMATIC AIRCRAFT THROTTLE CONTROL APPARATUS

Robert J. Darby, Parkville, and Joseph F. Nemecek, Kansas City, Mo., and Stanley G. Granger and Clarence H. Brainerd, Shawnee-Mission, Kans., assignors to Trans World Airlines, Inc., Kansas City, Mo., a corporation of Delaware

Filed Feb. 28, 1963, Ser. No. 261,628

4 Claims. (Cl. 244—76)

4. In an aircraft having a device for generating an error signal when the aircraft deviates from a referenced air speed, apparatus responsive to the error signal for automatically controlling the throttle of an engine of the aircraft to maintain the aircraft at the referenced air speed, said apparatus comprising:
a servomotor having an electrical control input and a rotatable output shaft;
motor drive means responsive to said error signal for providing a control signal to operate said servomotor, said drive means having an input connection adapted for coupling with the output of said device and an output connection for delivering said control signal;
means coupling said electrical control input of the servomotor with the output connection of said drive means, said servomotor including structure for converting the control signal from said drive means into degrees of rotation of said shaft;
a rate generator operably coupled with said shaft;
circuit means coupling the output of said rate generator with said drive means for providing negative feedback control of the servomotor to maintain constant the servomotor torque gradient;
a limit sensor operably associated with said engine of the aircraft and said drive means for interrupting the output of the drive means during reduction of the speed of said engine below a predetermined level of engine response; and
means for coupling said shaft with said throttle, whereby the throttle is advanced or retarded by the servomotor to maintain the aircraft at the referenced air speed.

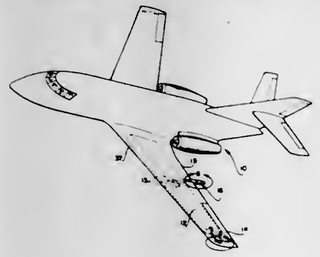


3,199,812
LIGHTNING PROTECTIVE VAPOR VENT

Walter W. Spoecker, Van Nuys, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Dec. 18, 1963, Ser. No. 331,457

10 Claims. (Cl. 244—135)



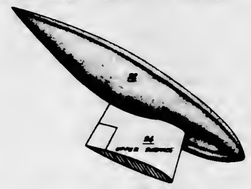
1. A lightning protective fuel vent for flight vehicles comprising:
(a) a vent line leading from a fuel tank to a region adjacent an external surface of the vehicle and including an outlet portion; and
(b) cover means attached to said vehicle positioned over said vent outlet portion so as to prevent lightning from directly striking said outlet portion, and defining at least a portion of a continuously open conduit for continuously conducting air past said vent outlet portion during flight operation.

3,199,813
AIRCRAFT AIRFOIL PODS

Alan T. Roper, Covina, Calif., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed June 3, 1964, Ser. No. 372,143

6 Claims. (Cl. 244—135)



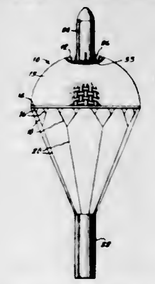
1. A pod for use in combination with an aircraft having a swept airfoil, said pod comprising an elongated container of noncircular cross section substantially throughout its length adapted to be mounted on said airfoil, said container having closed forward and rearward ends and a longitudinally extending substantially vertically oriented inboard surface which commences forward of the leading edge of said airfoil and extends beyond the trailing edge, said inboard surface forming an end-plate and being contoured to conform to contiguous two-dimensional streamline paths of air existing around said airfoil when the aircraft is moving at substantially cruise velocity.

3,199,814
BREAKABLE CROWN PARACHUTE

Leonard P. Frieder, 145 Station Road, Kings Point, Great Neck, Long Island, N.Y.

Filed Dec. 3, 1963, Ser. No. 327,587

17 Claims. (Cl. 244—145)



1. A parachute canopy consisting of a central portion and a peripheral portion encircling said central portion, said central portion consisting of a non-woven breakable sheet material, and said peripheral portion being comprised of woven textile cloth.

3,199,815
UNIVERSAL MUFFLER HANGER

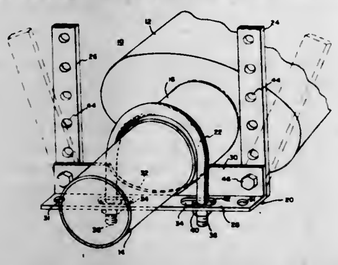
Paul Steve Martinkovic, 17607 Gable St., and John Joseph Martinkovic, 7482 Buhr St., both of Detroit 12, Mich.

Filed Nov. 21, 1961, Ser. No. 154,404

4 Claims. (Cl. 248—59)

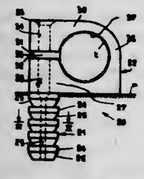
1. In combination with a motor vehicle exhaust system having a cylindrical portion therein, a universal muffler hanger for suspendingly supporting said cylindrical portion comprising an integral L-shaped support frame including a horizontal, laterally extending base member and a vertical flange of the same length as said base member, an arcuate seat for receiving and supporting the cylindrical portion formed in the upper portion of said vertical flange intermediate its ends, a pair of spaced elongated apertures formed in said base member, a U-shaped clamp

member having a pair of integral straight, extended legs adapted in its inverted position to straddle and embrace said cylindrical component with said legs extending through said apertures, threaded means for securing said legs to said support frame for clamping said cylindrical portion in position, securing apertures formed adjacent each end of said base member and said vertical flange, a pair of elongated, relatively stiff, rubberized fabric standards having a plurality of spaced apertures formed along their lengths, means for connecting said standards at their lower ends at said securing apertures, said standards being adapted on their other ends to be secured to a motor vehicle for suspendingly supporting the cylindrical portion



of the motor vehicle exhaust system, and an integral guide seat positioned and supported upon said horizontal, laterally extending base member, said guide seat including a pair of spaced vertical saddle flanges each of which has formed on its upper edges intermediate its ends an arcuate seat for receiving and supporting said cylindrical component thereon, and a pair of laterally spaced apertures formed in said integral guide seat intermediate said spaced saddle flanges for receiving the legs of the clamp member, each of said arcuate seats formed on the upper edges of said saddle flanges comprising an arc of a circle having a circumference which is less than the circumference of a circle of the arc comprising the arcuate seat formed in the upper portion of said vertical flange.

3,199,816
PIPE-MOUNTING DEVICE
Tibor Weisz, Rte. des Charbonniers, Saint-Florentin, Yonne, France
Filed Feb. 20, 1963, Ser. No. 259,909
Claims priority, application France, Feb. 22, 1962, 888,889
7 Claims. (Cl. 248—71)



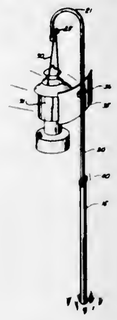
1. A mounting device for attaching a member having a closed periphery to a surface of a structure, comprising an integral clamping body having an abutment portion adapted to rest against a structure surface and a through-going opening of a configuration generally similar to that of said member for receiving the latter, said body being provided with a slot extending from the periphery of said body to said opening generally parallel to the bottom contacting surface of said body and spaced from said abutment portion, said slot subdividing said body into a pair of clamping portions laterally offset from said opening for clamping said member therewithin upon drawing of said clamping portions together; means for drawing said clamping portions together; and generally tubular fastening means integral with said body and projecting from said abutment portion transversely to said slot for extending into a hole formed in the structure surface, said body having at least one bore aligned with said fastening means and opening at the periphery of said body for passing an element into said fastening means to secure said body to said structure.

3,199,817
SOIL-SOAKER HOLD-DOWN
Ray Fox, Rte. 1, Box 404, Ord Bend, Calif.
Filed Aug. 6, 1963, Ser. No. 300,247
3 Claims. (Cl. 248—87)



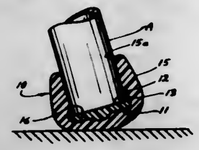
1. A sprinkler-soaker support structure comprising a planar U-shaped rod support having a transverse bight portion and a pair of legs with pointed ends for insertion into the ground, a base plate mounted between said legs and secured thereto by extensions bent onto said legs and said bight portion, and a threaded hose-receiving cap rotatably mounted on said base plate.

3,199,818
LANTERN STAND
Howard B. Ahara, 7648 Shadow Mountain Road, Phoenix, Ariz.
Filed May 25, 1964, Ser. No. 369,925
6 Claims. (Cl. 248—156)



1. A lantern stand comprising:
(a) a stake to be driven partially into the ground,
(b) a tubular member adapted to slide over said stake to the extent said stake protrudes above ground; the end of said tubular member remote from the ground being cut at an angle to the axis of said tubular member,
(c) a support member slidably mounted within said tubular member,
(d) a locking means slidably mounted on said support member for engaging the end of said tubular member cut at an angle thus preventing downward movement of said support member relative to said tubular member comprising:
(1) a pair of flat rigid members each having an opening therein of sufficient size to slide on said support member but of insufficient size to slide over said tubular member,
(2) a flat resilient member separating said pair of rigid members.

3,199,819
CHAIR LEG CUSHIONING DEVICE AND METHOD OF MAKING THE SAME
Duane O. Widmark, Minneapolis, Minn., assignor to Spartek, Inc., Sparta, Wis., a corporation of Wisconsin
Filed Mar. 14, 1963, Ser. No. 265,221
2 Claims. (Cl. 248—188.9)



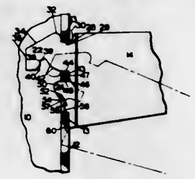
1. A cushioning tip for tubular leg structures including:
(a) an outer shell of relatively soft cushioning material having an imperforate bottom portion with a portion extending upwardly therefrom having a generally cylindrical inside leg embracing portion defining a leg receiving cavity;
(b) an inner reinforcing member disposed in fixed relation in the bottom of said cavity having an upwardly extending flange portion integrally formed therewith to surround the lower marginal portion of a leg inserted into said cavity;
(c) said inner member being made of substantially harder, more durable material than the outer cushioning material for engaging the end of the tubular leg to prevent the leg from cutting through the softer material of the outer shell.

3,199,820
SUPPORT HANGER FOR FISH, GAME AND THE LIKE
William J. Thompson, 1414 8th St., Wichita Falls, Tex.
Filed Oct. 29, 1963, Ser. No. 319,740
1 Claim. (Cl. 248—224)



In a hanger for use on a support member, an apertured bracket, an outwardly extending portion on said bracket, said bracket having a second outwardly extending portion, which portion is apertured, an upright portion extending between said outstanding portions, a headed hook mounted within said aperture in said second outwardly extending portion of said bracket and being supported thereby for rotation of said hook about a vertical axis, and a reentrant portion on the distal end of said second outwardly extending portion, which reentrant portion extends over the upper end of said headed hook to restrain upward movement of said hook beyond a predetermined point.

3,199,821
SHELF BRACKET
Thomas Story, Aloha, Oreg., assignor to S. Birkenwald Company, Portland, Oreg., a corporation of Oregon
Filed Jan. 29, 1963, Ser. No. 254,706
5 Claims. (Cl. 248—242)



1. A shelf bracket adapted for use with a vertical standard having spaced horizontal supporting bars defining apertures therebetween, comprising a plate-like body portion adapted to support a shelf plate on its upper edge, upper and lower integral projections extending rearwardly from said body portion, means defining an upwardly opening first notch in the top edge of said first projection adjacent the juncture of the latter with said body portion, means defining a rearwardly opening second notch intermediate said first and second projections, the distance between the bottom of the first notch and the top of the second notch being substantially the same as the distance between the horizontal supporting bars and said notches being arranged for engagement with the supporting bars for holding the body portion in an outward projecting horizontal plane, the vertical dimension of said first projection immediately rearwardly of the first notch being greater than the distance between the horizontal supporting bars and the first projection being narrowed rearwardly from said first notch to an outer end dimension less than the distance between the horizontal supporting bars whereby the projections are arranged to be directed into apertures between the horizontal supporting bars while the body portion is downwardly inclined, and means defining a downwardly opening third notch in the lower edge of said first projection, said third notch being disposed rearwardly of said first notch and being arranged to engage a supporting bar in lieu of said first notch for holding the body portion in a downwardly inclined plane.

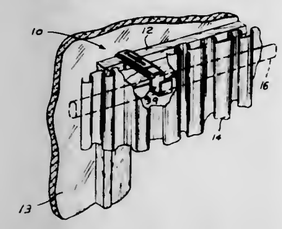
3,199,822
SUPPORT CLIP
Richard R. Rulmke, Skokie, Ill., assignor to Garcy Corporation, a corporation of Illinois
Filed June 21, 1962, Ser. No. 206,122
14 Claims. (Cl. 248—243)



1. A support clip adapted to be mounted on a bracket, said clip comprising a flat body portion for supporting an article thereon, a plurality of ears depending from said body portion, said ears being spaced to engage opposite sides of a bracket, one of said ears having one section offset from and parallel to said body portion, and an integral projection extending laterally from said one section in a direction parallel to the longitudinal axis of

said body portion, said projection being engageable with a bracket on which said clip is mounted to lock said clip against accidental displacement.

3,199,823
CURTAIN ROD MOUNTING ASSEMBLY
Dolores A. Stall, Rte. 1, Ankeny, Iowa
Filed Aug. 14, 1963, Ser. No. 302,079
4 Claims. (Cl. 248—265)



1. An assembly for mounting curtain rods on a molding affixed to a wall around the edges of a window in said wall comprising;

a first place bracket having a first portion and a second elongated portion integral therewith extending at a right angle thereto and said first portion adapted to be secured between said molding and said wall with said second portion extending outwardly from said wall adjacent to the outer edge of said molding;

a second plate bracket having a first portion and a second elongated portion integral therewith extending at a right angle thereto and said first portion adapted to abut the opposite side of said molding from said first portion of said first bracket, said second portion of said second bracket extends outwardly from said molding in mating engagement with said second portion of said first bracket;

each of said second portions of said first and second brackets is channel-shaped in transverse cross-section with one of said second portions nested into the other second portion thereby preventing lateral movement between each of said second portions when secured tightly together;

first means for adjustably securing together said second portions of said first and second brackets to hold said molding clamped between said first portions of said first and second brackets, said first means including an elongated slot in one of the second portions of one of said first and second brackets and a hole formed in the other second portion in alignment with the slot, and a bolt means extending through the slot and the hole; and

a second means provided on the free end of one of said first and second brackets for engagement with a curtain rod.

3,199,824
MOUNTING BRACKET
Matthew F. Chappa, 705A Foothill Blvd., Monrovia, Calif.
Filed Apr. 9, 1964, Ser. No. 358,601
3 Claims. (Cl. 248—289)

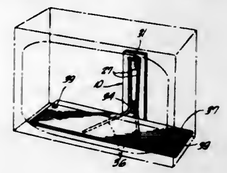
1. Apparatus for mounting auxiliary equipment such as television receivers and the like comprising, in combination,

a mounting plate;

means to attach said plate to a support surface;

support means affixed to said plate including a rod spaced apart from the surface of said plate and a spaced-apart, apertured projection in vertical alignment therewith;

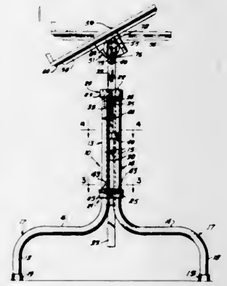
an L-shaped bracket having a spaced apart sleeve and pin affixed to one arm thereof to support said bracket



on said rod and interior of said aperture, respectively, for rotation with respect thereto; and,

means including the other arm of said bracket to support auxiliary equipment.

3,199,825
TABLE-EASEL COMBINATION
Foy E. Bellows, 1305 W. 2nd St., Arlington, Tex.
Filed July 27, 1964, Ser. No. 385,395
5 Claims. (Cl. 248—397)



1. In a combination table and easel having a foldable base and a vertically adjustable standard supported in said base, the combination comprising, two pairs of leg members having elongated vertical portions and outwardly and downwardly extending foot elements, each pair of said leg members having rotatively interconnecting means for providing for synchronous rotative movement with respect to each other to extend and retracted positions, upper and lower castings connecting and rotatively supporting the two pairs of leg members and providing guide means for said vertically adjustable standard, a spring biased serrated cam on one of said castings for releasable securing said standard in adjusted positions, a frame pivotally attached to the uppermost end of said standard for detachably supporting a panel thereon, and a latch mechanism on said frame whereby to releasable secure the same in horizontal, vertical and inclined planes.

3,199,826
SELF-RETURN SWIVEL OF OPPOSED PLATE TYPE
Austin V. Miller and Howard S. Hunt, Louisville, Ky., and Everett L. Thompson, New Albany, Ind., assignors to Middletown Manufacturing Co., Inc., Middletown, Ky., a corporation of Kentucky
Filed Jan. 13, 1964, Ser. No. 337,363
10 Claims. (Cl. 248—417)

1. In a self-return swivel of the opposed plate type wherein the upper plate is vertically spaced from the lower plate and mounted thereon for horizontal rotary movement about a vertical axis, an improved arrangement for

urging the rotary plate toward and yieldably holding it in a neutral position, comprising:

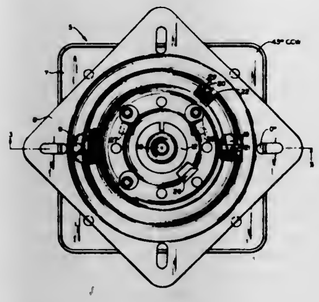
(A) means providing the inner faces of said lower and upper plates with opposed grooves cooperatively forming, between said plates, a longitudinal passageway which extends circularly about said axis; and

(B) means urging said rotary plate toward, and yieldably holding it in its neutral position, said means including

(1) an elongated helical spring extending longitudinally in and along said circular passageway,

(2) spring-stopping means

(a) providing a pair of stationary abutments mounted on the lower stationary plate, one to abut one end of said spring and the other to abut the other end thereof, and



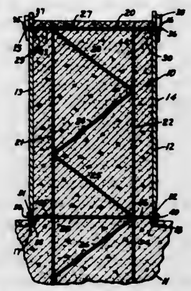
(3) spring-compressing means

(a) providing one actuating abutment, which is stationarily mounted on the upper rotary plate to abut one end of said spring and which is operative, when the upper plate is moved one way out of said neutral position, to compress said spring in one direction against said other stationary abutment,

(b) providing another actuating abutment, which is stationarily mounted on the upper rotary plate to abut the other end of said spring and which is operative when the upper plate is moved the other way out of said neutral position, to compress said spring in the other direction against said one stationary abutment.

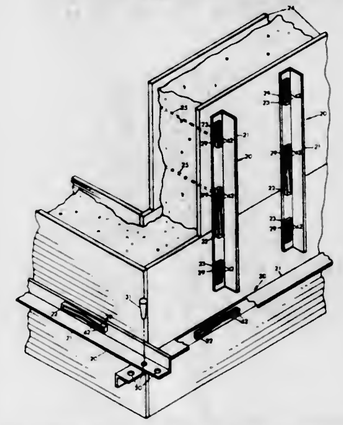
3,199,827
FORMS FOR PLASTIC MATERIAL
Cameron D. Terry, Orange, Calif., assignor to Dur-O-wal National, Inc., Cedar Rapids, Iowa, a corporation of Iowa
Filed Jan. 4, 1963, Ser. No. 249,356
15 Claims. (Cl. 249—41)

1. A tie for supporting a pair of spaced-apart panels in parallelism, said tie lying in substantially a single plane and resisting relative shear motion between the panels in the plane of said tie, comprising: a pair of spaced-apart stringer members each having a dimension of length, said dimensions being non-orthogonally oriented; a plurality of diagonal members attached to and rigidly and non-rotatably interconnecting the stringer members, adjacent diagonal members intersecting each other substantially at a common intersection with a stringer member; a plurality of pairs of abutment means, each pair comprising two elements, one disposed on each side of the pair of stringer members, the pairs being attached to members at different locations along the dimension of length of the stringer members; and retention means for each abutment means engaged to the tie and



adapted to stand on the opposite side of a panel from the abutment means to hold a panel thereagainst, the members forming a substantially flat assembly.

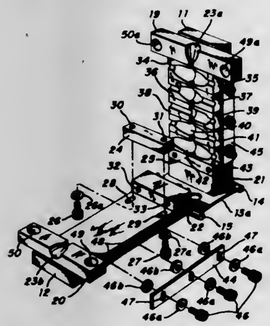
3,199,828
SUPPORTING AND CLAMPING DEVICE
Willie E. Newton, 134 Pleasant Drive NW., Albuquerque, N. Mex.
Filed Jan. 8, 1964, Ser. No. 336,601
1 Claim. (Cl. 249—46)



In a clamping device for spaced form members having apertures therethrough, the form members being spaced so as to have facing surfaces and so as to have the apertures in one form member substantially in alignment with a corresponding aperture in the opposite form member, the combination comprising "snaptie" means extending between said spaced form members; "whaler" means; and "hairpin" means; said "snaptie" means comprising a plurality of elongated rod-like members having first and second ends, which ends are enlarged relative to the diameters of the rod-like members, and two abutment members fixedly attached to each of said rod-like members and spaced from said first and second ends respectively, said enlarged ends of each rod-like member extending through aligned apertures in the spaced form members, and said abutment members abutting against the inner faces of the forms to space said forms apart; said "whaler" means comprising an elongated metal member having a plurality of slots spaced therealong and extending from an edge of the elongated member inwardly toward the longitudinal axis of the elongated member, said elongated member being positioned so as to have each slot receive one of the

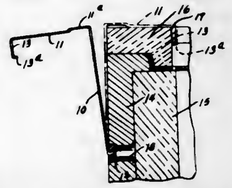
ends of said "snaptie" means which ends extend through the apertures in said spaced form members; said "hairpin" means comprising a plurality of wedge-shaped elongated members each having a channel therein along the longitudinal axis thereof, which channel is generally of less width than the diameter of the enlarged ends of said "snaptie" means and is enlarged in one portion for receiving an enlarged end of said "snaptie" means; attachment means fixedly attached to said "whaler" means and engaging said "hairpin" means whereby said "hairpin" means are slidably attached to said "whaler" means and form a unit therewith, and the channels in said "hairpin" means intersect the slots in said "whaler" means and each receive an enlarged end of one of said "snaptie" means so that said "whaler" means and said "hairpin" means engage said "snaptie" means as a unit, and said "snaptie" means, said "whaler" means and said "hairpin" means coact to retain the forms in position; said attachment means comprising at least two pins each having one end attached to said "whaler" means and another end enlarged, whereby the enlarged ends engage the outer portion of the channel in said "hairpin" means to slidably attach said "hairpin" means to said "whaler" means and position the channels to pass over and intersect the slots in said "whaler" means.

3,199,829
MOLDING APPARATUS
Thomas E. Calim, 5420 Patterson Road, Dayton 30, Ohio
Filed July 13, 1962, Ser. No. 209,537
17 Claims. (Cl. 249—94)



1. A molding apparatus comprising a book frame of two leaves connected at one end of each by a hinge assembly, a pair of lugs affixed to and projecting inwardly from the opposed inner faces of each of said leaves at similarly spaced points longitudinally thereof, releasable means for holding said leaves with the lugs of each in contact with the lugs of the other whereby the opposed inner faces of said leaves and the opposed surfaces of said lugs enclose four sides of a space open along the edges of said book frame, a plurality of removable, interchangeable and reusable cavity-forming insert blocks each having a quarter-mold-cavity-forming depression opening upon one planar surface thereof and upon a surface perpendicularly disposed to said planar surface, all of said blocks being of the same cross sectional dimensions whereby they may be interchangeably paired in side-by-side, half-cavity forming, abutting relation transversely of the inner face of each of said leaves at one position relative to the length of the leaves, and whereby the mold cavity depressions of at least four of said blocks thus arranged will be in registry to define a complete mold cavity, the shape of which may be changed by interchanging said blocks within the four or with other such blocks which are also positioned in side-by-side relation against the inner face of said leaves and which completely occupy the remaining space between said lugs.

3,199,830
ATTACHING MEANS FOR HOT TOP BOTTOM RING
Albert G. Polenschat, Cleveland, Ohio, assignor to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware
Filed Jan. 23, 1962, Ser. No. 168,283
4 Claims. (Cl. 249—202)

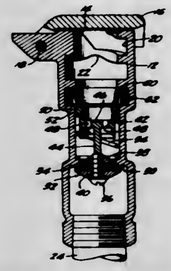


1. In combination, a bottom ring for a hot top casing and an attaching clip for attaching the bottom ring to the underside of the hot top casing, said clip being of spring wire and comprising a hook portion at one end for reception in a receiving opening in the hot top casing, a generally vertical elongated leg extending downwardly from said hook portion, and a generally horizontal ring engaging and supporting portion at the lower end of said vertical leg which extends angularly from said vertical leg underneath said ring to engage the underside of the ring and support the bottom ring against the underside of the casing, said hook and bottom ring engaging portions having first angularly related positions when attaching said bottom ring to a hot top casing in which said vertical leg is torsioned and urges said portions to swing to different angularly related positions where said vertical leg is untorsioned, said portions having said different angularly related positions when said clip, casing and ring are unassembled, said ring engaging and supporting portion having a stop portion engaging a generally vertical inner surface on said ring to resist the swinging of said ring engaging and supporting portion outwardly of said ring when said vertical leg is torsioned and said hook portion being dimensioned relative to said receiving opening to be limited against being swung out of said opening by the torsion in said vertical leg.

Accordingly, the value of "K" is:

3,199,831
VALVE
Frank H. Sully, La Mirada, Calif., assignor to Western Brass Works, Los Angeles, Calif., a corporation of California
Filed Nov. 28, 1962, Ser. No. 240,593
7 Claims. (Cl. 251—149.6)

1. In a valve adapted to receive an external member, the combination comprising: a valve housing having a bore therein, an annular shelf extending into said bore intermediate the ends thereof and an annular rough-walled groove remote from said shelf in communication with said bore; a valve cage slidably mounted in said bore on one side of said shelf; a valve body slidably mounted in said bore on the other side of said shelf and adapted to seat thereon; means connecting said valve cage to said valve body whereby movement of said valve cage toward said shelf causes said valve body to move away from said shelf; spring means mounted in said bore on said shelf to bias said valve cage away from said shelf; and a generally annular sealing member positioned in said groove and extending partially into said bore, said sealing member having a first tapered generally annular wall; a second tapered generally annular wall coaxial with said first wall; said second wall being positioned outwardly of said first wall and being thicker than said first wall; a third wall connecting said first and said second generally annular walls, said first and second generally annular walls tapering away from said connecting wall; and a plurality of flexible annular projections extending outwardly from said second wall and engaging the wall of said groove.



3,199,832
PIVOTED SHUT-OFF VALVE FOR SPRAY GUN
Rocco Calamia, 3685 Mt. Alvarez, San Diego, Calif.
Filed Sept. 1, 1961, Ser. No. 135,620
3 Claims. (Cl. 251—152)



1. A combination coupling and shut-off valve, comprising a coupling body having a passage therethrough and forming a surrounding seat for a gasket; an endless elastic gasket on said seat and defining an opening aligned with the passage, said gasket having a hollow boss formed integrally therewith and extending from the periphery thereof, said coupling having an opening therethrough, the periphery of said boss being in sealing relationship with the wall of said opening; an elastic diaphragm aligned with the passage in said coupling and forming a valve for controlling the flow of fluid through said passage; and a rotatable stem attached to the diaphragm and extending through said gasket and hollow boss, the periphery of said stem being in sealing relationship with the interior wall of said hollow boss, said stem having a handle section disposed exteriorly of the coupling for rotating the stem about its longitudinal axis where it extends through the gasket.

3,199,833
SEALING WASHER ENERGIZED BY AN ANNULAR SPRING ELEMENT
Ralph L. Skinner, Sr., Birmingham, Mich., assignor to Skinner Products, Inc., Birmingham, Mich., a corporation of Michigan
Filed July 22, 1964, Ser. No. 384,475
7 Claims. (Cl. 251—176)

5. A sealing washer for use in a valve of the type having

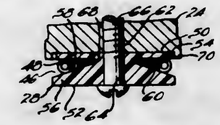
a body provided with

a fluid passage having an opening and a valve seat around said opening, and

a valve stem mounted in said body for movement along the axis of said opening and relative to said seat,

said washer being of normally inert polyeterafluoroethylene resin material and adapted to be mounted on the inner end of said valve stem to move therewith against and from said valve to control fluid flow through said passage,

said sealing washer having a forwardly and outwardly tapered rear face,



means providing a radial bearing surface behind and spaced from the rear face of said washer, and

an annular spring element simultaneously engaging said tapered rear face and said bearing surface,

said spring adapted to be flexed when said valve stem is actuated to tighten said washer against said valve seat and operable under said conditions to energize said washer whereby to hold the same under pressure against said valve seat.

3,199,834
TILTING VALVE WITH FLOATING LINK OPERATOR
Edward H. Short III, Tulsa, Okla., assignor to National Tank Company, Tulsa, Okla., a corporation of Nevada
Filed July 26, 1962, Ser. No. 212,512
10 Claims. (Cl. 251—228)



1. A valve and actuating linkage including:

means providing a seat opening for the passage of fluid therethrough,

a valve element having,

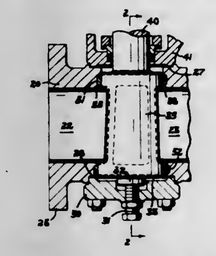
(a) a round flat base fitting over the seat opening and adapted to be tilted about any point on its round edge in function to vary the restriction of the seat opening,

(b) and a protuberance extending from the middle of the base and with an axis at right angles to the plane of the base;

a link member axially aligned with the protuberance and with an axial hole journalled over the protuberance and adapted to move axially and pivot to axially misalign with the valve element to exert a transverse force on the protuberance with the wall of the hole to tilt the base about a point on its round edge to move the valve element from its fully seated position over the seat opening to a position which will restrict the seat opening,

and a base member adjustable along a line parallel with the valve element and link member in providing a pivot point for the link member which varies the position of the pivot point about which the link member is misaligned with the valve element protuberance.

3,199,835
SLEEVE LINED PLUG VALVES
Jacob B. Freed, Dayton, Ohio, assignor to The Duriron Company, Inc., Dayton, Ohio, a corporation of New York
Filed Aug. 31, 1961, Ser. No. 135,298
12 Claims. (Cl. 251—309)

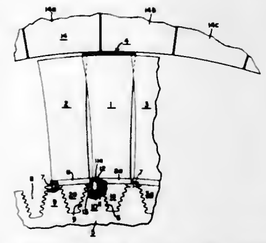


1. In a sleeve lined plug valve including a metallic body having a bore extending transversely thereof and ports therethrough opening into said bore in angularly spaced relation, the combination of a tapered metallic valve plug received in said bore and having a port therethrough for alignment with said body ports, means to effect movement of said plug from one position to another relative to said body to place said plug port in and out of fluid communication with said body port, said plug being of sufficiently smaller radial dimensions than said bore to establish an annular clearance between the opposed surfaces thereof, sleeve liner means received in said clearance and having ports therein matching said body ports, means maintaining said plug in sealing engagement with said liner means during movement from one position to another, said liner means being formed of a fluorocarbon material having a coefficient of thermal expansion substantially greater than that of said plug and body, said bore having a continuous annular groove surrounding each of said body ports, said body including an annular shoulder forming the inner wall of each said annular groove and also the inner end of the associated said body port, said liner means including means defining a continuous circumferential seal extending completely around the outer periphery of said plug, said liner means including integral portions received in said grooves and providing a continuous ring portion of said liner material surrounding said body ports, said shoulders interfitting with said liner ports to confine said surrounding rings of liner material against movement with respect to said bore and flow into said body ports, and said ring portions of said liner means being of sufficient thickness to maintain said plug out of contact with said shoulders.

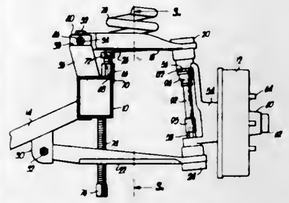
3,199,836
AXIAL FLOW TURBO-MACHINE BLADE WITH ABRASIVE TIP
Wayne B. Moyer, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 4, 1964, Ser. No. 364,501
8 Claims. (Cl. 253—77)

2. A shroudless blade member for an axial flow turbomachine having a blade tip portion with a radially outermost abrasive layer composed of:

a layer of a relatively ductile matrix bonded to the blade tip, and abrasive particles with cutting edges in random orientation dispersed throughout said matrix.



3,199,837
AUTOMOBILE FRONT END ALIGNMENT TOOL
Odrah E. Vestal, Rte. 1, Grain Valley, Mo., and James E. Ulry, 6940 Avalon, Parkville, Mo.
Filed June 28, 1963, Ser. No. 291,385
9 Claims. (Cl. 254—1)



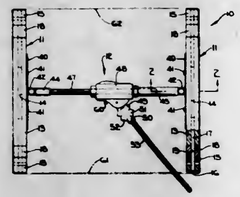
1. For use with an automobile of the type having a frame, a pair of front wheels, and suspension means for suspending each front wheel respectively from the frame including a lower arm operably coupled with the wheel and pivotally mounted on the frame for swinging movement about a generally horizontal axis, an upper arm operably coupled with the wheel, the frame including a member disposed between the arms, and releasable means pivotally mounting the upper arm on the frame for swinging movement about a generally horizontal axis and, upon release thereof, for shifting movement in directions to vary the caster and camber of the wheel to properly align the latter, a tool for adjusting the caster and camber comprising:

bracing means for engagement with said member and said upper and lower arms for maintaining the spacing between the member and the arms constant during said shifting movement of the upper arm to align the wheel; and

adjustable means for disposition between said upper arm and said frame and adapted for coupling with the upper arm for shifting the latter in said directions to vary the caster and camber of the wheel upon release of said releasable means.

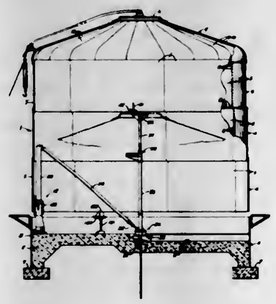
3,199,838
APPARATUS FOR RESIZING UPHOLSTERY CUSHION CASINGS
Donald D. Gillen, 14609 Manecita Drive, La Mirada, Calif.
Filed Apr. 1, 1963, Ser. No. 269,578
7 Claims. (Cl. 254—60)

1. In an apparatus for resizing a shrunken cushion casing, the combination of: a pair of end members which are approximately of the right shape and dimensions to fit within and conform to opposite end portions of said casing prior to the latter having been shrunk, which members are adapted to be inserted through an opening in one side edge of said shrunken casing and have said end portions of the latter manually stretched into conformation with said members, said members being provided with dowel holes extending lengthwise therein and opening at opposite ends of said members; extension blocks having dowel pins fitting into said holes to form endwise extensions of said members which blocks are optionally assembled on said members to vary the length of the latter to fit casings



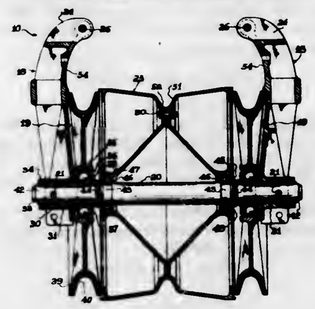
varying in size; and expandable jack means insertable through said opening to hold said members in spaced relation and operable through said casing opening to expand said members to stretch said casing endwise by precisely that amount required to restore said casing to its original size and shape, said jack means being collapsible after said casing has set in its resized shape and size for removing said apparatus through said opening from said casing.

3,199,839
APPARATUS FOR ERECTING STORAGE STRUCTURES
Paul A. Linder, Hartley, Iowa, and Fred W. Dissmeyer, Bradley, Ill., assignors to A. O. Smith Harvestore Products, Inc., Kankakee, Ill., a corporation of New York
Filed Oct. 31, 1962, Ser. No. 234,430
14 Claims. (Cl. 254—89)



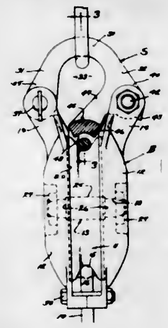
1. An apparatus for erecting storage structures having a plurality of cylindical vertically disposed successively adjoined sections with each section formed of a plurality of generally curved panels joined together along vertical joints, comprising a plurality of circumferentially spaced vertically disposed jack assemblies, a lifting head associated with each jack assembly, means for securing the lifting heads to a cylindrical section, connecting means interconnecting said jack assemblies, drive means for driving said connecting means to raise and lower the lifting heads and thereby raise and lower the cylindrical sections, and means for simultaneously rotating said lifting heads as the lifting heads are raised and lowered to thereby move the cylindrical section in a rotary path and compensate for the offset relationship between the vertical joints of adjacent cylindrical sections.

3,199,840
CONVERTIBLE STRINGING BLOCK ASSEMBLY
L. E. Lindsey, 2262 E. Mountain, Pasadena, Calif.
Filed June 25, 1963, Ser. No. 290,418
8 Claims. (Cl. 254—192)



1. A pulley block assembly readily convertible for use to string both single and multiple sets of power conducting lines between the lower ends of suspension-type insulators supported from the towers of a cross-country power line, said pulley block assembly including as principal subassemblies a pair of single pulley block assemblies each provided with suspension means adapted to be detachably connected to suspension means closely adjacent the lower end of a power line insulator, a third subassembly including roller means and means for rotatably supporting the same between and in axial alignment with said pair of single pulley block assemblies, and means for detachably securing said three subassemblies together for conjoint use in stringing multiple sets of power conducting lines and for releasing said roller means and permitting said single pulley block assemblies to be used separately when stringing but a single power conducting line.

3,199,841
LOGGING BLOCK SUSPENSION AND LINE RETAINER
John M. McKean, San Clemente, Calif., assignor to Alloy Steel and Metals Company, Los Angeles, Calif., a corporation of California
Filed Mar. 27, 1962, Ser. No. 182,728
7 Claims. (Cl. 254—193)



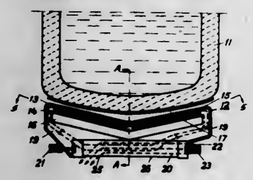
1. A removable suspension member for a sheave block having a sheave rotatably journalled between a pair of like side frames, there being oppositely positioned ears and one projecting from each side frame, and including:

(a) a shackle extending between and pivotally fastened to one of the ears and releaseably fastened to the other ear,

(b) an arcuate guide carried by the shackle to overlie the periphery of the sheave when the shackle is positioned to extend between said ears and for retaining a line at the sheave,

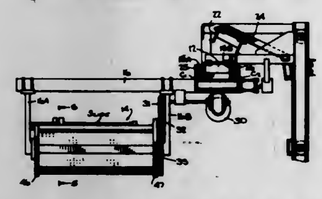
(c) and a stop to limit pivotal movement of the shackle at said one ear so as to form an open hook thereof when the shackle is released from the said other ear and pivoted to an open position.

3,199,842
GAS-COOLED ELECTRO-MAGNETIC STIRRER
Gösta Karlsson, Kåre Folgerö, Mats Rydinger, and Thor Thelemarck, Vasteras, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Apr. 4, 1963, Ser. No. 270,714
Claims priority, application Sweden, Apr. 12, 1962, 4,067/62
5 Claims. (Cl. 259—1)



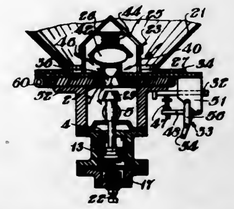
1. Gas-cooled electro-magnetic stirrer for metallurgical furnaces, said stirrer having windings and a sheet iron core, said stirrer comprising means forming a closed inner circulation path for cooling gas, a heat exchanger positioned on the opposite side of the stirrer from the furnace, said heat exchanger including first passages forming a part of said inner circulation path, said path being in heat contact with the windings and sheet iron core of the stirrer, means forming a second path including second passages in said heat exchanger in heat-exchange relation with said first passages for guiding cooling gas from outside through said second passages in said heat exchanger, said second passages being separated from said inner path.

3,199,843
ELECTROPLATING BARRELS
Harold G. Abbey, 189—10 Aberdeen Road, Jamaica 23, Long Island, N.Y.
Filed July 16, 1963, Ser. No. 295,397
5 Claims. (Cl. 259—3)



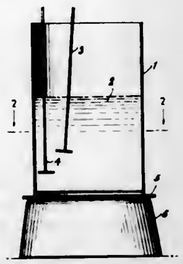
2. In a conveyor system having a track and a trolley movable thereon, said trolley being provided with a cantilever arm, a pair of spaced standards depending from said arm, and an electroplating barrel rotatably mounted between said standards, said barrel being constituted by a plurality of perforated panels polygonally arranged between end plates, said end plates having journal hubs engaged by said standards, all of said panels but one being joined together and to said end plates, guide means secured to adjacent panels engaging the edges of said one panel, whereby it is slidable relative to the other panels to permit loading and unloading of said barrel, said guide means being formed by a pair of resilient strips made of a metallic material unreactive to electroplating solutions and imposing a tension on the edges of the slidable panel sufficient to hold the slidable panel at any adjusted position thereof, the resilience of said strips preventing sticking of the slidable panel in the event of warpage.

3,199,844
MIXING APPARATUS
Ralph W. Moore and Owen M. Stoops, Hagerstown, Md., assignors to Pangborn Corporation, Hagerstown, Md., a corporation of Maryland
Filed Oct. 19, 1961, Ser. No. 146,144
4 Claims. (Cl. 259—4)



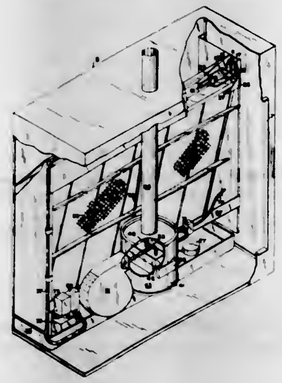
4. A mixing apparatus including a particle supply tank having a floor with an outlet for delivering particles from the tank, a propellant fluid conduit below said outlet and having a passageway communicating with it, said conduit being hinged to the tank to pivot the passageway toward and away from the outlet, locking means on the conduit and the tank for locking the conduit against the outlet to form a port for delivery of the particles to the fluid propellant in said conduit, a resilient closure member positioned above the floor outlet, means for urging said resilient member against the floor outlet, and an extension connected with said closure which is urged upwardly to in turn urge the resilient closure out of the floor outlet when the conduit is pivoted against the floor of the tank.

3,199,845
APPARATUS AND METHOD OF DEAERATING VISCOUS LIQUIDS
John C. Wittwer, R.F.D. 2, Armonk Road, Mount Kisco, N.Y.
Filed Jan. 18, 1963, Ser. No. 252,391
7 Claims. (Cl. 259—78)



5. An apparatus for eliminating air bubbles in a viscous mixture during the mixture of such material comprising, a vessel containing the material to be mixed, mixing means operative within the vessel, and means for oscillating the vessel back and forth around its axis while causing the vessel to travel progressively in one direction and while the mixing means is in operation, said oscillating means adapted to move said vessel in discontinuous movements in one direction and in different discontinuous movements in the opposite direction, said mixing means being a rotatable stirrer in said mixture off center from said axis.

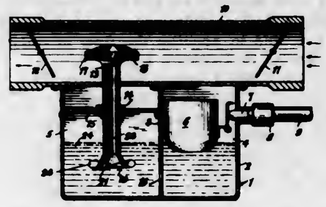
3,199,846
APPARATUS FOR PURIFYING AND CONTROLLING THE RELATIVE HUMIDITY OF AIR
Raymond F. Durham and John R. Schreiner, Liverpool, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed July 5, 1960, Ser. No. 40,865
2 Claims. (Cl. 261—3)



1. An air treating apparatus comprising a contact surface adapted to be wetted by a liquid air treating solution and arranged for contact with the air to be treated; a sump beneath the contact surface containing the liquid air treating solution; means for discharging solution from said sump over said contact surface; a bypass line directing a portion of the solution from the contact surface; a regenerator; receiving means within the regenerator for receiving the bypass solution; means for heating the solution in said receiving means for precipitating solids therefrom; a blower; a conduit leading air from said blower into the solution in said receiving means to remove the odorous vapors therefrom and to cause the solids to overflow the receiving means; a duct for passing off vaporous odors released during regeneration; and a return line from the regenerator to the sump, returning the regenerated solution and precipitated solids thereto, and means for adding water to the solution in said sump in response to the humidity of the purified air including a conduit adapted to be connected to a source of water, a solenoid valve in said conduit, control means for said solenoid adapted at a predetermined relative humidity of the air to actuate said solenoid and admit water to said sump, and means responsive to the level of solution in said sump to limit flow of water through said conduit thereby to limit the dilution of the solution and prevent overflowing of the sump.

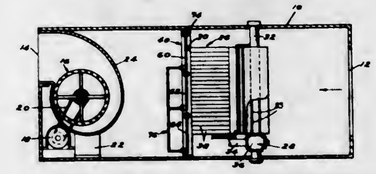
3,199,847
CARBURETORS
George I. Wahnish, 246 E. Plenty St., Long Beach, Calif.
Filed May 8, 1964, Ser. No. 366,103
7 Claims. (Cl. 261—35)

1. In a carburetor, (1) a fuel chamber, (2) an air flow passage through which air is drawn by engine operation, (3) a rotatable liquid-absorbent element in the form of a rod composed of ceramic material extending between said fuel chamber and said air flow passage, said rod having a part disposed in the fuel chamber and submerged in the fuel contained therein and becoming saturated thereby, and also having a portion disposed in the path of air flow through said air flow passage so that fuel vapor will be extracted from this portion of the element and become mixed with the air flow and resultantly form a combustible mixture, (4) means for feeding fuel to said liquid-



absorbent element, and (5) means provided on the portion of said liquid-absorbent element in the path of air flow whereby said element is rotated by air flowing past it.

3,199,848
FUEL GAS FIRED HEATER WITH AUTOMATIC DAMPER MEANS
James A. Harrison, 24450 Telegraph Road, Southfield, Mich.
Filed Jan. 9, 1963, Ser. No. 250,314
8 Claims. (Cl. 263—19)



1. In a fuel gas fired heater: means for inducing a flow of air through said heater; means for delivering fuel gas to said heater under pressure; a burner defining a plurality of burner port openings for receiving and dividing a portion of said air into a plurality of individual combustion air steams and gas escape orifice means for introducing fuel gas into said air streams; and a movable air control damper supported in said heater alongside of said burner in said air stream, and including means yieldingly biasing the damper to a normally closed position preventing said flow of air from by-passing said burner, said damper responsive to increased air pressure thereagainst to be shifted to progressively more open positions permitting increasing amounts of air flowing through the heater to by-pass said burner in direct proportion to the increase in air pressure differential across said damper to thereby maintain the rate of flow of sad combustion air through said burner port openings substantially constant during variations in the total rate of flow of air through said heater.

3,199,849
MEANS FOR HEATING BLAST FURNACE AIR
Frank J. Koinis, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed Jan. 15, 1963, Ser. No. 251,512
7 Claims. (Cl. 263—19)

1. A blast furnace air heating system comprising, in combination:

a cold blast main;

a hot blast main;

at least three heating stoves;

conduit means associated with each stove for connecting the stoves to the cold blast main and to the hot blast main in parallel to each other;

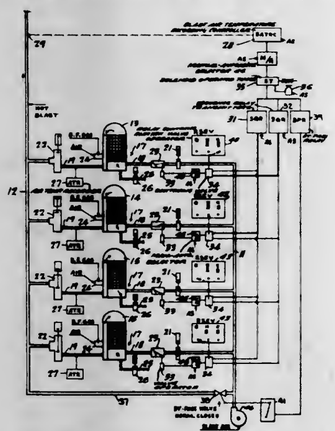
first valve means in each conduit means adapted, when closed, to block the flow of blast air from the cold blast main to the hot blast main through the respec-

tive conduit means, the first valve means in the conduit means associated with two stoves being open to flow;

second valve means in each of said conduit means comprising a flow modulating valve and a valve operator operable to position the flow modulating valve in response to a control signal;

temperature control means responsive to a condition indicative of the temperature of the hot blast air in the hot blast main for emitting a first control signal of an intensity from a low value to a high value;

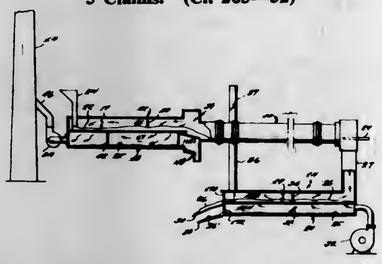
a reversing transmitter responsive to a condition indicative of the temperature of the hot blast air in the



hot blast main for transmitting a second control signal whose intensity is high when the intensity of the first control signal is low and whose intensity is low when the intensity of the first control signal is high;

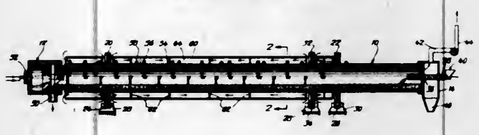
and switch means operatively associated with each of the valve operators for selectively making the operation of the valve operator responsive to one of the control signals when the associated stove is serving as a heating stove with a relatively high thermal content and responsive to the other of the control signals when the associated stove is serving as a heating stove with a relatively low thermal content.

3,199,850
HEAT EXCHANGE FOR KILNS
Tsun-Yuan Lee, Allentown, Pa., assignor to Fuller Company, Catasauqua, Pa., a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 315,961
5 Claims. (Cl. 263—32)



1. Heat exchange apparatus for treating granular solid material with gases and for separating fine particles from the mass comprising: a horizontal annular casing; a generally horizontal annular rotatable grate within said casing dividing the latter into upper and lower chambers; means for rotating said grate about its central axis; inlet means associated with said casing for depositing a layer of granular solid material on the upper surface of said grate; means for discharging the granular solid material from said grate; a generally horizontal annular rotatable pan disposed at the bottom of said casing below and concentric with said grate; means for rotating said pan about its central axis; means for discharging granular solid from said pan; inlet means for introducing a stream of gas into one of said chambers; and outlet means for discharging a stream of gas from one of said chambers; and baffle means within said casing for directing the incoming gas stream transversely through said grate at least once.

3,199,851
ROTARY KILNS
Michael J. Prigotsky, Morganville, N.J., assignor to R–N Corporation, New York, N.Y., a corporation of Delaware
Filed June 27, 1963, Ser. No. 291,108
7 Claims. (Cl. 263—33)

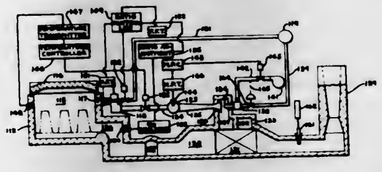


1. A rotary kiln comprising an elongated tubular reaction chamber, means mounting said reaction chamber for rotation about its longitudinal axis with said axis slightly offset from horizontal, an ingredient feed mechanism positioned at the higher end of said reaction chamber and communicating with the interior thereof for supplying ingredients thereto, a heat source positioned in communication with the interior of said reaction chamber and operable to direct heat energy at elevated temperatures axially through said interior to elevate the temperature of the ingredients therein, and a tubular outer shell completely surrounding and extending over the length of said reaction chamber except in the region of said mounting means and affixed to said reaction chamber for rotation therewith, said tubular outer shell being arranged with its ends displaced longitudinally and isolated from said ingredient feed mechanism and from said heat source so that the ends of said tubular outer shell are positioned such that the annular space defined by said tubular outer shell and said reaction chamber communicates solely with the outer atmosphere at the ends of said shell, whereby there is maintained within said annular space and over the surface of said reaction chamber, a heat insulative space which serves to maintain an even control of temperature about said kiln while substantially reducing heat loss therefrom.

3,199,852
COMBUSTION SYSTEM FOR SOAKING PITS
Frank J. Koinis and Carroll Cone, Toledo, Ohio, assignors to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed May 7, 1962, Ser. No. 192,719
4 Claims. (Cl. 263—36)

1. In soaking pit apparatus having wall means defining a plurality of combustion and heating chambers, a burner associated with each chamber for delivering heating flame thereto, an exhaust, passageway in fluid communication with all of the chambers for exhausting combustion products from each chamber, recuperator means disposed in the exhaust passageway and having an air passageway in indirect heat transfer relationship with the flow of combustion products through the recuperator, jet

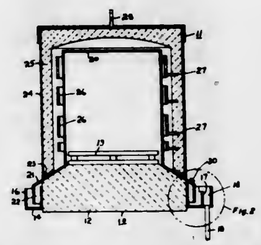
jump means for drawing heated air through the recuperator and delivering heated air to each burner, said jet pump means comprising, in combination: a manifold; a venturi tube having a diffuser portion in fluid communication with the manifold and an inlet portion in fluid communication with the outlet of the air passageway of the recuperator; a combustor adapted to promote the combustible reaction of fuel and air to produce a stream of products of combustion and disposed adjacent to and directed toward the inlet portion of the venturi tube for introducing products of combustion from the combustor into the venturi tube in inspirating relationship with heated air from the recuperator; pipe means for delivering fuel and air to the combustor; control means responsive to fluid pressure within the manifold for controlling the rates of flow of fuel and air to the combustor at a fixed ratio to each other in a manner to maintain fluid pressure in the manifold substantially constant; a first conduit associated with each chamber for delivering fluid from the manifold to the burner; a second conduit associated with each chamber



for delivering fuel to the burner; temperature control means comprising a flow control valve in one of said first and second conduits operable in response to a signal indicative of the difference between the temperature within the chamber with which said one of the first and second conduits is associated and a predetermined set point temperature for controlling the rate of flow therethrough; ratio control means associated with each chamber for controlling the rate of flow through the other of the first and second conduits associated with the chamber in a manner to maintain a fixed ratio between the rates of flow through the first and second conduits associated with each chamber; and ratio adjustment means responsive to a condition indicative of change in the percentage of oxygen in the fluid in the manifold to adjust the fixed ratio at which the ratio control means controls the rate of flow through the other of the first or second conduits in a manner to increase the ratio of the rate of flow of fluid through the first conduit to the rate of flow of fuel through the second conduit when the percentage of oxygen in the fluid in the manifold decreases.

3,199,853
BELL-TYPE ANNEALING FURNACE AND METHOD OF SEALING SAME
Willy Olsen, Lynchburg, Va., assignor to H. K. Porter Company, Inc., Lynchburg, Va., a corporation of Delaware
Filed Apr. 25, 1962, Ser. No. 190,069
7 Claims. (Cl. 266—5)

1. A bell type furnace, comprising in combination, a furnace base provided with an open-topped annular trough extending completely peripherally thereabout, said trough having an inner wall secured to said base and an outer wall positioned radially outward therefrom, means for establishing a continuous flow of water through said trough at a predetermined desired level, a furnace bell including a hood adapted for seating dispostion on the base and having formed at the lower end thereof a depending skirt extending completely thereabout, said skirt being disposable within said trough in radially outwardly spaced relation to the trough inner wall and with the lower edge of the skirt extending downward below the aforesaid predetermined desired trough water level to thereby seal the hood interior from the external atmosphere, and means associated with said bell for injecting a sufficient quantity of a low volatility substance of specific gravity less than unity into the region between said trough inner wall and said bell skirt to form an unbroken film of said substance over the complete surface of the water in said region, said means for establishing a continuous flow of water through said trough at a predetermined desired level including means for continuously injecting water into said trough and means for continuously withdrawing water from the trough surface between the depending bell skirt and the trough wall more remote from the furnace base.

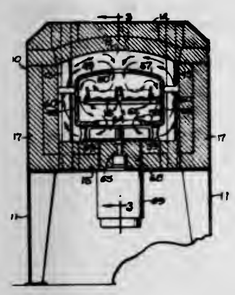


7. The method of sealing the furnace chamber of a bell type furnace from the external atmosphere, in which the furnace is of the type including a base having an open-topped water trough disposed peripherally thereabout and secured thereto, a bell adapted for seating disposition on the base and having formed at the lower end thereof a depending skirt extending completely thereabout with the lower edge of the skirt being disposable within the water trough below the top of and in radially outwardly spaced relation to the trough wall closest to the furnace base, comprising the steps of, filling the trough with water to a predetermined desired level above the lower edge of the bell skirt to effect a water seal for the furnace chamber, injecting a low volatility liquid of specific gravity less than unity into the region between the bell skirt and the trough wall closest to the furnace base from a point above the water level in sufficient quantity to permit the formation of an unbroken film of said liquid over the complete surface of the water between said bell skirt and trough wall closest to the furnace base and simultaneously adding cool water to and withdrawing relatively warmer water from said trough in equal amounts to thereby maintain the predetermined desired water level and hold the temperature of the low volatility liquid below the vaporization point, the added cool water being injected into the trough in such manner as to avoid disruption of the unbroken film of low volatility liquid and the withdrawn warmer water being taken from the water surface between the depending bell skirt and the trough wall more remote from the furnace base.

3,199,854
HEAT TREATING FURNACE
Harold N. Ipsen, % Ipsen Industries Inc., P.O. Box 500, Rockford, Ill.; The Illinois National Bank & Trust Co., executor of the will of said Harold N. Ipsen, deceased
Filed Aug. 10, 1962, Ser. No. 216,152
3 Claims. (Cl. 266—5)

1. In a heat treating furnace, the combination of, a walled structure defining a heating chamber, an elongated endwise reciprocable hearth comprising two elongated side-by-side trays extending generally horizontally through said chamber to support two successions of work-

pieces to be treated, the adjacent sides of said trays being spaced apart, means for shaking said hearth endwise back and forth and advancing said workpieces step by step through said chamber, a baffle in said chamber having a top, a bottom and sides disposed respectively above, below and on opposite sides of said hearth, said baffle having an outlet opening therein beneath said hearth and an inlet opening disposed above said hearth elongated longitudinally of the hearth and generally centered on the space between said trays in position to direct a jet of air



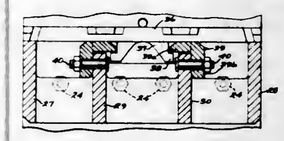
downwardly through said space and onto the workpieces moving along the hearth, a plurality of heating elements in said chamber arranged around said baffle to heat the atmosphere outside the baffle, and a centrifugal fan disposed below said outlet opening and operable when rotated at high speed to draw atmosphere out of said baffle, circulate said atmosphere upwardly past said heating elements, then downwardly at high velocity through said inlet opening and onto said hearth to heat the workpieces thereon, and out through said outlet opening for recirculation past said heating elements.

3,199,855
PREFABRICATED FLOORING AND CHARGING BUGGY TRACKWAY FOR OPEN HEARTH FURNACES
Reuben Miller, Chicago, Ill., assignor to United States Steel Corporation, a corporation of New Jersey
Filed May 11, 1962, Ser. No. 194,115
9 Claims. (Cl. 266—13)



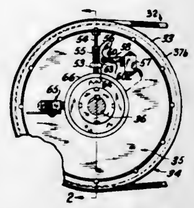
1. In a charging buggy trackway and flooring for open hearth furnaces of the type having floor beams projecting outwardly from the charging side thereof, the combination with said floor beams of a plurality of prefabricated concrete slabs respectively having a pair of laterally spaced parallel rails extending longitudinally between opposite ends thereof, said slabs being supported on said beams in end-to-end positions in which the said rails therein cooperate to form a trackway for the movement of charging buggies along the charging side of said furnace, and means including tie plates fastening opposite ends of said rails in said buggy trackway.

3,199,856
REMOVABLE PALLET CAP BAR
Samuel A. Huffman, deceased, late of Tucson, Ariz., by Frances B. Huffman, administratrix, Tucson, Ariz., and Kenneth M. Haley and Kenneth R. Judkins, Silver Bay, Minn., assignors to Reserve Mining Company, a corporation of Minnesota
Continuation of application Ser. No. 21,508, Apr. 11, 1960. This application June 23, 1964, Ser. No. 377,771
2 Claims. (Cl. 266—21)



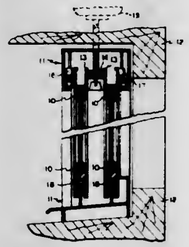
1. Protective means for a pallet of the character described wherein said pallet includes a hollow frame and a transverse rib extending between opposite sides of the frame and adapted to support a grate bar structure, said rib having a flat upper surface and a flat side face depending substantially at right angles to said upper surface, said protective means comprising a cap bar having two integral flanges at right angles to each other consisting of a top flange in planar surface contact with the flat upper surface of said rib and with its free edge extending beyond said flat side face to provide a protruding flange projection for complementary cooperation with a grate bar retaining lug, and said cap bar having a second flange depending downwardly in planar contact with said flat side face of said rib, said rib and said second flange having aligned apertures to receive retaining means extending horizontally therethrough whereby to reduce warpage of said cap bar.

3,199,857
DOOR OPERATOR CONTROL MECHANISM AND SYSTEM
William Klamp, 22340 Hilliard Road, Rocky River, Ohio
Filed Mar. 27, 1961, Ser. No. 98,641
12 Claims. (Cl. 268—59)



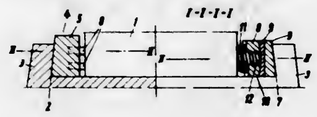
1. A drive mechanism including a reversible motor and a slip clutch having a rotatable input element driven by said motor and a rotatable output element connected to drive a load, said clutch slipping and said output element stalling when a predetermined load is applied to the latter, control means for selectively energizing said motor to rotate in either of its directions of rotation and including reversing means for reversing said motor and causing the latter to operate in one direction and conditioned to be effective when said motor is energized to operate in its other direction comprising first means responsive to the rotation of said output element and operated momentarily from a normal condition which it has with said output element at rest or rotating to an actuated condition and returned to its normal condition when said output element changes from a rotating condition above a predetermined angular speed to one below that speed, said first means having said actuated condition only during the momentary operation thereof, and means responsive to the momentary actuation of said first means for energizing said motor to operate in a reverse direction to said other direction.

3,199,858
POWER WINDOW OPERATOR
Joseph P. Koblensky, Box 38, Markham Village, Ontario, Canada
Filed Sept. 11, 1962, Ser. No. 222,895
1 Claim. (Cl. 268—97)



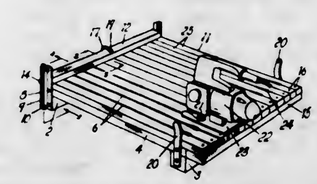
In a power operated window assembly, a window frame, two windows, each of said windows comprising a window light and a sash, said window lights being mounted in said sashes, each of said sashes having a first part extending along one edge of said window light mounted in said sash and a second part extending along the opposite edge of said window light mounted in said sash, means mounting said windows in said frame for sliding horizontal movement relative to each other with one of said windows behind the other of said windows and with said first and second parts of said sash of said one window lying horizontally and being parallel to and opposite said first and second parts respectively of said sash of said other window, a pair of toothed racks, one of said racks being on said first part of said sash of said one window, the other of said racks being on said first part of said sash of said other window, said racks facing each other, a single gear positioned between said first parts of said sashes and engaging said racks, a shaft terminating at said gear and extending through said frame away from said windows, said shaft being connected to said gear, motor means for rotating said shaft to rotate said gear and drive said windows horizontally, said frame having side walls on both sides thereof, said windows both being positioned between said side walls, said side walls overlapping said first parts of said sashes, said side walls hiding said gear, shaft and racks from any horizontal line of sight in any relative position of said windows, said means mounting said windows in said frame comprising first rollers engaging said second parts of said sashes and supporting said windows, said first rollers substantially preventing said windows from binding against frame during movement thereof, and second rollers engaging said first parts of said sashes on the surfaces of said first part opposite to said racks, said second rollers also being hidden by said side walls from any horizontal line of sight, said second parts of said sashes each having a channel therein extending the length of said second parts of said sashes, said first rollers being mounted in said channels, said means mounting said windows in said frame including parts of said frame projecting into said channels between the side walls thereof and engaging said first rollers at points positioned within said channels.

3,199,859
CLAMPING ARRANGEMENTS FOR TOOLS OR WORKPIECES
Max Heynen and Kurt Wiesemann, Remscheid-Vieringhausen, Germany, assignors to Heyco-Werk Heynen & Co., Remscheid-Haddenbach, Germany, a German firm
Filed May 21, 1962, Ser. No. 196,285
Claims priority, application Germany, May 24, 1961, H 42,690
7 Claims. (Cl. 269—25)



7. A clamping arrangement comprising, in combination, a base plate adapted to support an object to be clamped by the clamping arrangement and having along opposite edges thereof abutment portions projecting upwardly from the upper face of the base plate; hydraulic clamping means abutting with one side thereof against one of said abutment portions and adapted to clampingly engage with gripping pistons at the other side thereof the object to be clamped; at least one wedge engaging with one face thereof the other of said abutment portions and having an opposite face facing said object; an intermediate plate extending along said wedge and abutting with one surface thereof said opposite face of said wedge; at least one gripping member having a substantially spherically curved rear face abutting along the whole surface thereof against a correspondingly curved surface portion of said intermediate plate matching said curvature of said rear face and a front face adapted to clampingly engage said object so that the same may be securely clamped between said gripping portions of said clamping means and said front face of said gripping member, said gripping member being spaced from said upper face of said base plate so that said gripping member may universally tilt with respect to said intermediate plate; and resilient connecting means connecting said gripping member to said intermediate plate.

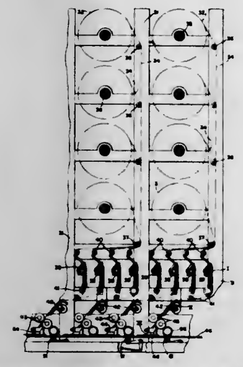
3,199,860
SHEET MATERIAL CUTTING APPARATUS
Frank Moberg, 5402 N. Westnedge Ave., Kalamazoo, Mich.
Filed Sept. 10, 1962, Ser. No. 222,481
9 Claims. (Cl. 269—87.2)



9. An apparatus of the class described comprising a bed member provided with supports for supporting it in an elevated position relative to a surface on which it is disposed, and having a plurality of laterally spaced cutter receiving slots therein, a work clamp member mounted on said bed member for adjustment to and from work clamping position and having a plurality of blade receiving slots therein aligned with said blade receiving slots of said bed member when the work clamp member is in work clamping position, the upper surface of said work clamp member being adapted to slidably support a cutter device having a blade adapted to be disposed through the aligned slots in said bed member and clamp member, and

spring means acting to clampingly hold said work clamp member in work engaging position and to also yieldably support it in retracted work releasing position.

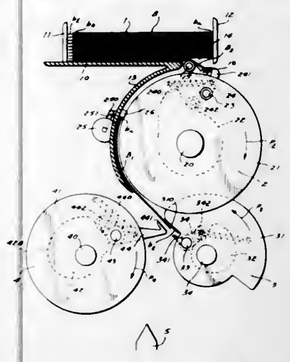
3,199,861
APPARATUS FOR FOLDING WEB MATERIAL
Charles W. Presnell, Media, and Walter A. Schuh, Lansdowne, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 10, 1961, Ser. No. 101,757
8 Claims. (Cl. 270—40)



1. In apparatus for forming stacks of folded webs, the combination of a conveyor for a stack of folded webs, a preliminary folding device adapted to have a web passed thereover, said folding device being capable of alternatively folding one or both edge portions of the web conveyed thereover, final folding means disposed adjacent the stack of webs on said conveyor, said final folding means being adapted upon receiving a web having but one folded edge portion to fold the other edge portion of said web about an edge portion of the top-most web on said stack of webs and upon receiving a web having both edge portions folded of guiding said web onto the top-most web on said stack of webs, and means for adjusting said preliminary folding device to thereby set the apparatus for the production of a stack of interfolded webs or the production of a stack of non-interfolded webs.

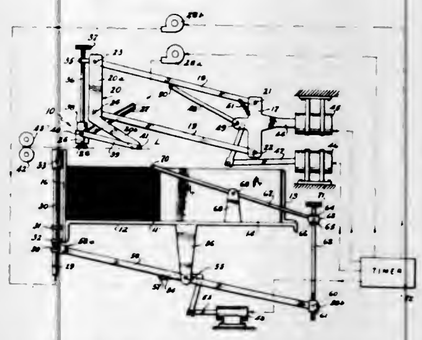
3,199,862
SHEET DEPOSITING MACHINE
Hans Müller, Buschgut, Zofingen, Switzerland
Filed Sept. 24, 1962, Ser. No. 225,776
Claims priority, application Switzerland, Oct. 3, 1961, 11,448/61
4 Claims. (Cl. 270—54)

1. A machine for at least partly unfolding asymmetrically folded sheets, each having a folded end and an opposite open end where a longer layer of each sheet terminates in a projecting portion projecting beyond a shorter layer thereof, and for depositing the unfolded sheets, comprising, in combination, a first rotary drum having first gripper means which rotate with said drum for gripping one sheet of a stack of folded sheets at the folded end thereof to withdraw the sheet from the stack and for releasing the sheet when it reaches a transfer position; holding means located adjacent with said first drum and engaging said folded end for holding the released sheet in said transfer position in which said open end assumes a position located in a tangential plane of said first drum; second and third rotary drums located adjacent said first drum and forming between each other a gap for receiving the open end of the sheet in said transfer position, said tangential plane extending into said gap; single gripper means for gripping in said transfer position said longer layer of said sheet only at said projecting portion thereof so as to pull said sheet into said gap while permitting said shorter layer to move away from said longer layer; a deflector means carried by said third drum for engaging said shorter layer and deflecting the same away from said longer layer as soon as said open end of said sheet reaches said gap, said second and third drums having directions of rotation which



move said gripper means and said deflector means apart from each other when they respectively engage said layers so as to unfold the sheet at least partially while it moves from said transfer position through said gap; and receiving means located in the path of movement of the thus unfolded sheet in a plane passing through said holding means and through said gap transversely to a plane passing through the axes of said second and third drums to receive the unfolded sheet when released by said gripper means and deflector means.

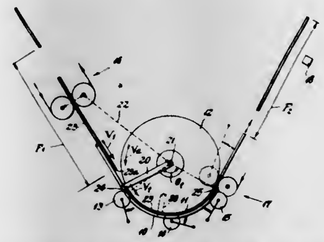
3,199,863
SHEET-FEEDING DEVICE
Josef Müller, Poststrasse 2, Monheim, Rhineland, Germany
Filed Apr. 26, 1963, Ser. No. 275,830
Claims priority, application Germany, Apr. 28, 1962, M 52,679
18 Claims. (Cl. 271—26)



1. A sheet-feeding device comprising a stationary support for a stack of sheets to be fed individually to a receiver therefor; a vertically movable carrier above said support; feeler means on said carrier adapted to be lowered upon the top sheet of a stack positioned on said support; suction means on said carrier disposed at a fixed distance above and forwardly of said feeler means for lifting a front edge of said top sheet off the remainder of

the stack; drive means for reciprocating said carrier relatively to said support, said drive means including a reciprocable element with a vertical stroke length sufficient to permit vertical displacement of said carrier over a distance greater than the maximum height of said stack, said element being positively engageable with said carrier during a working stroke of said drive means for lifting said feeler means off said stack and disengageable therefrom for letting said feeler means come to rest on said stack upon a subsequent return stroke; and operating means synchronized with said drive means for actuating said suction means during said working stroke whereby said top sheet is pulled off the stack.

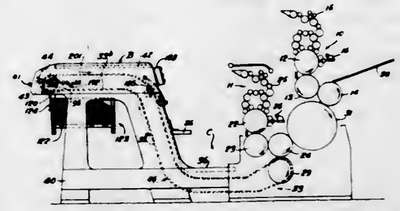
3,199,864
DOCUMENT HANDLING APPARATUS
Robert Irvine, Riverside, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Feb. 21, 1963, Ser. No. 260,265
14 Claims. (Cl. 271—51)



1. Apparatus for adjusting the phase relation of each of a series of moving documents: comprising
means establishing a predetermined document synchronizing feed path;
document feed means for imparting a frictional driving force to each of a plurality of successive documents so as to yieldably move each document along said synchronizing feed path;
braking means when operable to temporarily frictionally retard a document moving along said synchronizing feed path to a speed below the synchronized feed speed;
timing means controlling the operation of said braking means whereby each document moving along said path may experience a phase adjusting movement in either endwise direction relative to an adjacent document so that the extent of the initial spacings between predetermined portions of the successive documents may be respectively increased or decreased as needed in order to obtain a desired sequential timing of the documents leaving said synchronizing feed path; and
drive means for operating said timing means.

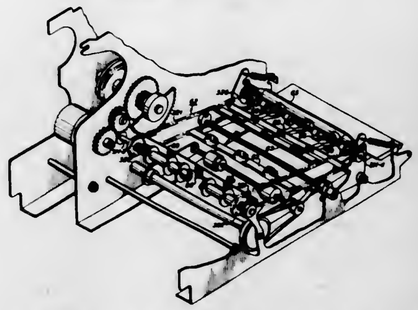
3,199,865
SHEET DELIVERY MECHANISM
Robert E. Lindeman, Medina, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Apr. 12, 1962, Ser. No. 186,993
19 Claims. (Cl. 271—64)

1. A delivery mechanism comprising a conveyor having a delivery run moving in one direction and a reversing section at the exit end of said delivery run for reversing the direction of movement of the conveyor, spaced gripper means on the conveyor each adapted to grip a sheet and move through the delivery run to move the sheet along a sheet path to a release position at the end of the delivery run and over a pile to which sheets are to be delivered, first means at the exit end of said delivery run for causing a sheet to be delivered to said pile or to selectively bypass said pile and move through said reversing section comprising sheet guide means movable between a pile delivery position above said path and a bypass position below said path, the tail of a sheet being carried through said reversing section clearing said sheet guide means due to movement imparted to it by



said gripper means at a predetermined time in the cycle of the mechanism, means for actuating said first means in timed relationship to the approach of a sheet to said pile position, and sheet advancing means adjacent the exit end of said delivery run for advancing the tail of a sheet being carried past said pile position to cause the tail portion thereof to clear said sheet guide means at an advanced time in the cycle of the mechanism.

3,199,866
SHEET FEED MECHANISM
Roger H. Elchorn, Webster, and Donald L. Pease, Jr., Marion, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 24, 1963, Ser. No. 282,952
3 Claims. (Cl. 271—79)



1. In a sheet feeding apparatus having a pair of conveyor chains adapted to transport a sheet gripper device from a sheet receiving station to a sheet delivery station, wherein the sheet gripping device includes a gripper bar secured to said conveyor chains transversely therebetween,
a sheet gripper jaw portion on said gripper bar serving as a common lower gripper jaw, and apertures and elongated slots therein positioned between said gripper jaw portion and the leading edge of said gripper bar as determined by its direction of travel as conveyed by said conveyer chains,
a plurality of pins secured to the leading edge of said gripper bar,
a plurality of grippers pivotably secured to said pins on said gripper bar, each of said grippers having a centrally located depending tang portion terminating in a curved-lip portion, said depending tang portion extending through one of said elongated slots, jaw portions positioned on opposite sides of said

depending central tang portion adapted to cooperate with said common lower gripper jaw to grip the leading edge of a sheet therebetween,

a plurality of springs,

each of said springs being formed with a central portion, coiled portions on opposite sides of the central portion and with bent arms at opposite extremities thereof, each of said springs being mounted with its coiled portions encircling a pin on opposite sides of the gripper with which it cooperates and with the central portion of the spring engaging the curved-lip portion of the gripper and with the bent arm portions extending through apertures in the sheet gripper jaw portion to engage the underside of the gripper bar to normally bias the grippers into cooperating relation with the lower gripper jaw,

and said depending tang portion being adapted to be actuated by cams located adjacent and between said conveyor chains at said sheet receiving station and said sheet delivery station.

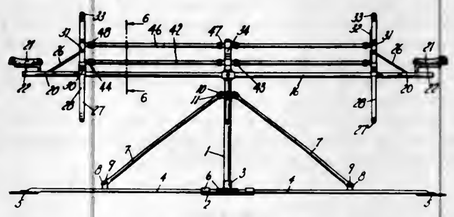
3,199,867
RIDING GAME DEVICE
David R. Pembridge, 6465 Pinehaven Road, Oakland 11, Calif.
Filed May 22, 1961, Ser. No. 111,517
1 Claim. (Cl. 272—1)



A game device comprising, a hobby horse pole adapted for mounting between the legs of a child player, a plurality of distinct flat sheet playheads picturing a plurality of modes of transportation and having edges formed to simulate the outline of the transportation pictured, at least one of said heads being arranged for mounting in a substantially vertical plane and another of said heads being arranged for mounting in an horizontal plane, and means provided on each of said sheets and on said pole for interchangeably mounting said heads on the normally upper end of said pole in a common mounting position, said pole being substantially symmetrical in cross-section rearwardly of said means on the pole and rotatable in the hands of the player to properly orient and present the particular head carried by said pole.

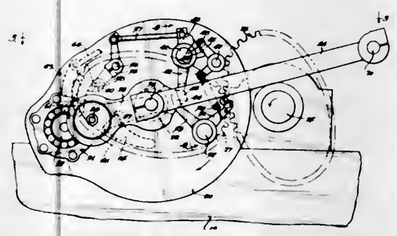
3,199,868
COMBINED SEE-SAW AND ROUND-ABOUT APPARATUS
Walter Motyka, Ludington, Mich., assignor to Motyka Metal Products, Inc., Ludington, Mich.
Filed Apr. 24, 1961, Ser. No. 104,866
9 Claims. (Cl. 272—30)

9. A device of the class described comprising a standard, a carriage having its mid-section mounted on said standard for vertical tilting and rotative movement thereon, seats mounted on swinging portions of opposite ends of said carriage, actuating members pivotally mounted on horizontal pivots on said carriage in spaced operative relation to said seats, fixed nonrotatable vertically spaced arms projecting oppositely relative to the axis of rotation of said carriage on said standard, strut links universally pivotally connected to one of said arms and pivotally connected to said carriage at points adjacent said actuating members, and actuating links pivotally connected to said actuating members in vertically spaced relation to the connections of said strut links to said carriage and universally pivotally connected at their



other ends of the other of said arms, the pivotal connections to said arms being spaced on opposite sides of the axis of rotation of said carriage.

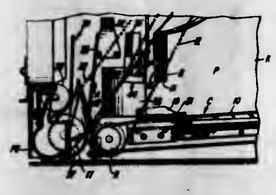
3,199,869
VARIABLE THROW CRANK DRIVE MECHANISM FOR AUTOMATIC PINSETTER
Michael G. Gautraud, Muskegon, Mich., and Alexander J. Albrecht, West Englewood, N.J., assignors to Brunswick Corporation, a corporation of Delaware
Filed Apr. 25, 1962, Ser. No. 190,076
18 Claims. (Cl. 273—42)



3. A pinsetter comprising: a frame, a pinsetter deck mounted on said frame for movement between a first position and other positions including an extended position and an intermediate position, a multi-revolution shaft normally operable to move the deck from said first position in each revolution, a crank mechanism for controlling operation of said deck between said deck positions and including at least three crank members movably connected to define a variable stroke crank, one end of said crank on one of said crank members being rotatably mounted on said shaft and an opposite second end of said crank on another of said crank members being operatively connected with said deck, said crank members being relatively movable between extended and intermediate positions, and a retracted position in which the second end connection is concentric with the one end connection thereby allowing the shaft to rotate without imparting movement to the deck through the crank, and said first, extended and intermediate deck positions corresponding, respectively, to retracted, extended and intermediate crank positions.

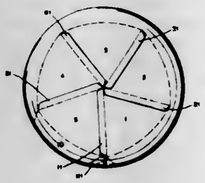
3,199,870
BALL AND PIN HANDLING MECHANISM INCLUDING A RESILIENT PIN DEFLECTOR
George Fried, Stamford, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed May 18, 1962, Ser. No. 195,924
10 Claims. (Cl. 273—43)

4. Ball and pin handling apparatus for use in the pit of a bowling lane, in combination, a ball elevator comprising an endless belt and ball track spaced therefrom, a pin elevator, a conveyor in said pit, a backstop extending across said pit between the kickbacks of said lane, said backstop being provided with a ball opening, means for directing balls on said conveyor passing through said opening in said backstop to said ball elevator, and a resilient deflector mounted between said belts and said track



and in the path of a travel of a ball to said ball elevator, adapted to yield when engaged by a ball enroute to said ball elevator so that said ball can be elevated to a point of discharge, and to operate as a deflecting barrier to a pin or pins and direct said pins away from said ball elevator for discharge by said conveyor into said pin elevator.

3,199,871
BALL AND METHOD OF MAKING SAME
Randolph J. Dorn, Sandusky, Ohio, assignor to The Barr Rubber Products Company, Sandusky, Ohio, a corporation of Ohio
Filed Apr. 10, 1959, Ser. No. 805,529
12 Claims. (Cl. 273—65)



1. The method of making a ball from distortable sheet material comprising the steps of cutting the sheet material to be shaped to a spherical curvature in the form of a development of an icosahedron, laying said development on a spherically curved surface, and joining the edges of said development as they would be oriented in an icosahedron while distorting the sheet material of said development to assume the curvature of said spherical surface.

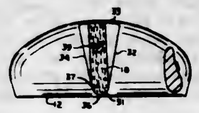
11. A ball comprising a bladder and a flexible ply covering said bladder, said ply being formed of distortable sheet material cut in the form of a belt section having a length substantially equal to the circumference of said ball and joined at opposite ends and polar sections of said ply comprising a plurality of adjacent substantially isosceles triangular portions having substantially equal bases integral with said belt section, said polar sections having substantially equal altitudes extending from said belt portion to a pole of said ball, said altitudes being substantially equal to one-sixth of the circumference of said ball, and adjacent edges of said triangular polar sections being seamed together from said pole to said belt portion.

3,199,872
GOLF PUTTER WITH MARBLE HEAD
Lewis Frederick Taylor, 2821 Satsuma, Sarasota, Fla.
Filed Oct. 27, 1961, Ser. No. 148,236
6 Claims. (Cl. 273—80.5)



5. A golf putter having a head attached to a supporting metal portion including a shaft, the head consisting essentially of solid marble, the marble extending completely from the front face to the rear face.

3,199,873
GOLF PUTTER EQUIPPED WITH USER-POSITIONED SIGHTING MEANS
Dwight F. Surratt, 137 Walnut St., Versailles, Ky.
Filed Apr. 1, 1963, Ser. No. 269,561
3 Claims. (Cl. 273—163)



1. A golf club of the class described comprising a club head and a shaft connected thereto, said head having a planar front face, a rear face, a top surface and a sole surface, said top surface having a shallow fan-shaped recess therein, bounded by a continuous wall portion extending downwardly from the top surface of said head and with the narrower end of said recess being located adjacent said front face, and an elongated sighting stripe disposed in said recess and being adapted for affixing to the bottom surface of said recess by the user of the club and in accordance with his individual golfing characteristics, said recess having a depth greater than the thickness of said stripe and having a width sufficient to permit angular lateral adjustment of said stripe when disposed in said recess, said stripe comprising a thin member having a length at least three times its width and including a pressure-sensitive adhesive material on its underside characterized by its ability to form a tight weather-resistant bond to the bottom surface of said recess upon application of appropriate pressure thereto, said stripe being adapted for angularly adjustable contact with the bottom surface of said recess following application of a comparatively light bonding pressure thereto and for fixed contact therewith following the establishing of the optimum sighting relation by the user of said club and the subsequent application of a comparatively heavy bonding pressure to said stripe.

3,199,874
GOLF CLUB HEAD INCLUDING LIQUID MERCURY IN ROTATABLE TURNTABLE
John J. Blasing, 4929 Marburg St., Cincinnati 9, Ohio
Filed Feb. 25, 1963, Ser. No. 261,251
3 Claims. (Cl. 273—170)

3. A golf club having a head having a recess therein having vertical walls, manually rotatable means rotatably mounted in said recess, said means having a channel

therein whose side walls normally extend transversely of said head and directly from its rear end toward its front end, mercury contained in said channel and being adapted to rush forward into the front of said channel on contact of said head with a golf ball during the forward stroke of the player and forward movement of said head thereby imparting force to said head to drive said ball through the



air, said manually rotatable means capable of being rotated to cause the walls of said channel to extend at an angle with respect to the rear end and the front end of said head whereby contact of said head with said ball causes the mercury to shift the normal movement of said head thereby imparting spinning movement to said ball to cause said ball to travel in a curve during its travel through the air after being contacted by said head.

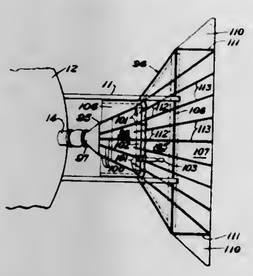
3,199,875

PAVEMENT SEALER SPREADER APPARATUS

Godfrey R. Dabelle, Eden, N.Y., assignor, by mesne assignments, to E. D. Etnyre & Co., Oregon, Ill.

Original application Nov. 16, 1959, Ser. No. 853,391, now Patent No. 3,153,992, dated Oct. 27, 1964. Divided and this application Sept. 30, 1963, Ser. No. 319,626

2 Claims. (Cl. 275—14)



1. Apparatus for dispensing liquid or semi-liquid material from a tank truck to pavement while the truck is passing along the same, said apparatus comprising inclined plate means having a relatively narrow upper entry end for receiving a flow of such material from the tank of said truck and a lower discharge end of substantially the width of the band of material to be deposited, a first set of diverging partition members on said plate means extending from the entry end to a point partway down said plate means to form a plurality of open channels, and a second set of diverging partition members on said plate means beginning generally at the lower ends of the first set of partition members and extending downwardly substantially to the discharge end of said plate means to divide the lower portion of the plate means into a plurality of open channels, said second set of partitions being greater in number than the first set whereby the channels of the two sets are of the same general order of width, the lower ends of the partitions of one set being movable laterally in unison to deflect the discharge of material in either direction transversely relative to the direction of movement of the tank truck.

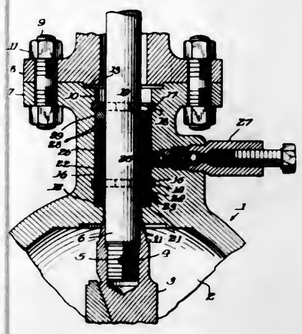
3,199,876

STUFFING BOX CONSTRUCTION

John P. Magos, Wilmette, and Kurt B. Bredtschneider and Joseph A. Englert, Chicago, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois

Filed June 10, 1963, Ser. No. 286,695

4 Claims. (Cl. 277—21)



1. A stuffing box construction for a bonnet or the like comprising a shaft and a bonnet, said bonnet having an upper relieved portion consisting of an annular chamber for the shaft around a longitudinal portion thereof, upper and lower snap-rings substantially defining the respective end limits of the said chamber, the said snap-rings fitting within annular grooves of the chamber and being axially immovable relative to said chamber, plastic packing filling at least an intermediate portion of the said chamber between said end limits, a plurality of V-rings cooperating with the upper one of said snap-rings to define the said upper end limit of the chamber, the remainder of said V-rings being disposed at substantially an opposite and lower end of the chamber, the latter V-rings being mounted in the lower portion of the chamber below said lower snap-ring, pressure feed means for supplying said plastic packing to the intermediate portion of said annular chamber, an end disposed back-up ring and a filler ring within the chamber below the said lower snap ring cooperating with the said V-rings at said lower end of the chamber whereby upon the application of fluid pressure by the plastic packing feed means to the intermediate portion of the said chamber the said V-rings are acted upon and moved slightly axially in opposite directions.

3,199,877

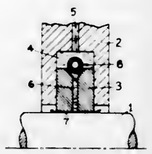
SHAFT SEAL FOR GAS-FILLED ELECTRIC MACHINES UTILIZING SEALING LIQUID INTRODUCED INTO SEALING RING LOCATED IN ANNULAR CHAMBER SURROUNDING SHAFT

Robert Cuny, Wettingen, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company

Filed Jan. 12, 1962, Ser. No. 165,918

Claims priority, application Switzerland, Jan. 24, 1961, 842/61

9 Claims. (Cl. 277—29)



1. In a shaft seal for gas-filled electric machines, particularly gas-cooled turbo-generators, the combination comprising a housing wall structure through which the shaft of said machine extends, said wall structure providing an annular chamber surrounding said shaft and opening onto the surface of the shaft, a sealing ring located within and partly filling said annular chamber and surrounding said shaft with a small clearance gap, means supplying a sealing liquid to said annular chamber and which flows through channels in said sealing ring to reach said clearance gap, the pressure of the sealing liquid being higher than that of the gas within said machine, the remainder of said annular chamber not occupied by said sealing ring being provided with means for at least partly reducing the amount of said sealing liquid therein to compensate the pumping effect on said housing otherwise ensuing from vibrations transmitted to said ring from said shaft.

3,199,878

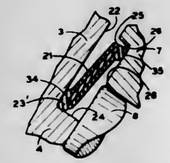
SEAL BETWEEN A PAIR OF RELATIVELY ROTATABLY, RADIALLY EXTENDING SURFACES

Robert A. Cunningham, Bellaire, and Gerald O. Atkinson, Pasadena, Tex., and William H. Cline, Jr., deceased, late of Bellaire, Tex., by Marilynn C. Cline, independent executrix, Houston, Tex., assignors to Hughes Tool Company, Houston, Tex., a corporation of Delaware

Filed Dec. 10, 1962, Ser. No. 243,672

The portion of the term of the patent subsequent to Jan. 29, 1980, has been disclaimed

7 Claims. (Cl. 277—88)



1. In a machine having a first member relatively rotatably mounted with respect to a second member to define therebetween a gap having an elongated radial dimension and a relatively short axial dimension, said gap being bounded by a generally radially extending annular surface on such first member and both a generally radially extending annular surface and a generally axially extending annular surface on the second:

an annular seal ring having inner and outer peripheries and interferingly and sealingly mounted at one said periphery on said axially extending surface in non-rotatable relationship therewith, said seal ring in relaxed position having the general form of a frusto-conical shell with an axial height greater than the axial dimension of the gap, a thickness less than such gap axial dimension, and a slant height between said peripheries elongated in comparison with both its axial height and thickness but less than the radial dimension of the gap,

said seal ring being elastically axially flattenable to reduce its axial height,

said seal ring having a pair of axially oppositely facing annular surfaces adjacent its inner and outer peripheral portions, one of which sealingly engages the portion of the radially extending surface on the second member adjacent the axially extending surface thereof, and the other of which sealingly and slidingly engages the radially extending surface of the first member, such engagement resulting from a partial flattening of said seal ring between and by the radially extending surfaces of such members, said seal ring being free of engagement with said members except for said interference fit and said flattening.

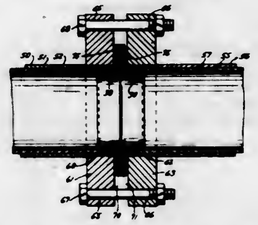
3,199,879

PIPE SEALING UNIT

Robert S. Fleming, Pompton Plains, N.J., assignor to Amerace Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 16, 1962, Ser. No. 230,828

1 Claim. (Cl. 277—212)



A sealing ring adapted to be used in effecting joints of lined pipes for the carrying of corrosive liquids, said sealing ring being of generally circular configuration and having an aperture therethrough running axially thereof of diameter no greater than the inner diameter of the pipe liner, a surface along one side thereof lying in a plane perpendicular to the axis of said ring, and an outer surface comprising a conical portion and a shoulder portion, said shoulder portion being between said conical portion and said planar surface, and said conical portion having a diameter most removed from said planar surface substantially equal to the inner diamter of the liner of the pipe to be joined, and a diameter adjacent the shoulder thereof greater than said most removed diameter but less than the outer diameter of the liner of the pipe to be joined, said conical surface varying from its greater to its lesser diameter in substantially uniform manner, said sealing ring having a rigid internal core structure and an outer surface of elastomeric material.

3,199,880

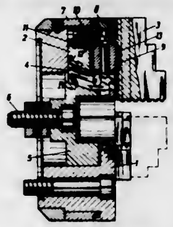
MULTIPLE JAW CHUCK

Hans Blättry, Dusseldorf, North Rhine-Westphalia, Germany, assignor to Paul Forkardt K.G., Dusseldorf, Germany, a limited partnership of Germany

Filed Mar. 12, 1964, Ser. No. 351,348

Claims priority, application Germany, Mar. 20, 1963, F 39,289

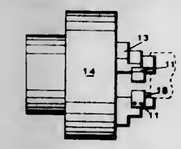
6 Claims. (Cl. 279—121)



1. In a multiple jaw chuck, having a round body and a quick-action mechanism, the combination of a plurality of radially movable main jaws adapted to be adjusted radially simultaneously by said mechanism relative to said body, each main jaw comprising a drive member and a driven member in driving connection therewith, a secondary jaw connected to each main jaw and being radially movable therewith and being also radially movable relative thereto substantially throughout the radial extent of the body, and being in driven connection with said drive member and thereby movable relative to said main jaw, a drive actuator mounted on said body and engaging all of said driven members, whereby the operation of the

drive member of one main jaw will result in the simultaneous operation of the drive members of all the main jaws and thereby in the simultaneous radial movement of all the secondary jaws relative to the main jaws, said quick-action mechanism acting on said main jaws independently of said drive members.

3,199,881
ATTACHMENT TO LATHE CHUCKS
William H. Duxbury, 42 Tregoning St., Linksfield, Johannesburg, Transvaal, Republic of South Africa
Filed Aug. 5, 1963, Ser. No. 299,783
Claims priority, application Republic of South Africa, Aug. 23, 1962, 62/3,570
5 Claims. (Cl. 279—123)



3. A stop for mounting on a lathe chuck jaw consisting of a separable and adjustable steel unit, having the form of a channel, with clamping screws projecting through at least one wall of the channel and in which the bottom of the channel is bored parallel to its bottom face and has a screw screwed into said bore from the rear thereof, a plug positioned within said bore from the front thereof, said screw engaging said plug to adjust the position thereof within said bore.

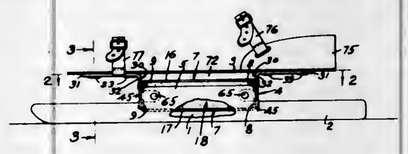
3,199,882
MANUFACTURING METHOD FOR A SKI AND SKI OBTAINED BY THIS METHOD
Paul Peillex, 24 Ave. des Vallees, Thonon-les-Bains, France
Filed Mar. 11, 1963, Ser. No. 264,094
Claims priority, application Switzerland, Mar. 18, 1962, 3,228/62
2 Claims. (Cl. 280—11.13)



1. A ski comprising a plurality of parallel elongated bodies extending lengthwise of the ski in a common horizontal plane and spaced laterally from each other, and resin-bonded glass fiber in the form of a unitary body that surrounds each said elongated body and spaces said elongated bodies laterally apart, said elongated bodies having cross-sectional configurations of substantial extent in all directions, the material of said elongated bodies having a density substantially less than the density of said unitary body.

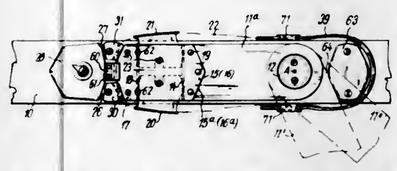
3,199,883
DOUBLE RUNNER ICE SKATE HAVING RESILIENTLY MOUNTED FOOT PLATE
Quilla H. Freeman, 1050 N. Gardner St., Los Angeles, Calif.
Filed Sept. 16, 1963, Ser. No. 308,964
4 Claims. (Cl. 280—11.14)

1. In skate construction: a sole and heel plate, a pair of spaced apart parellel blades and means connecting the sole and heel plate and the blades substantially intermediate the lengths thereof; said means comprising substantially rigid parallel upper and lower plates, link connections between said plates and the blades and between



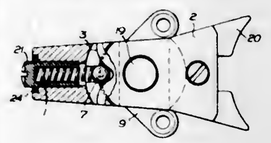
the heel and sole plate and a resilient block interposed between said plates.

3,199,884
SKI SAFETY BINDING PROVIDED WITH ELASTIC SOLE PLATE
Walter Voster, Stuttgart, and Eugen Schnell, Stuttgart-Bad Cannstatt, Germany, assignors to Vereinigte Baubeschlag-Fabriken Gretsch & Co. G.m.b.H., Leonberg, near Stuttgart, Germany
Filed Feb. 26, 1962, Ser. No. 175,550
Claims priority, application Germany, Feb. 25, 1961, V 20,228; July 8, 1961, V 20,937
9 Claims. (Cl. 280—11.35)



1. A ski safety binding comprising an elastic sole plate for supporting a ski boot, a heel plate secured to said ski behind said sole plate for supporting a portion of the heel of the boot, means for mounting said sole plate on the ski so as to be pivotal about an axis located in front of said heel plate and extending substantially perpendicularly to the upper surface of the ski, said heel plate increasing in width by tapering outwardly like a wedge at least at the front side facing said sole plate, and means including forwardly disposed detent means for retaining said sole plate together with the ski boot supported thereon in such a manner that upon pivotal movement of said sole plate the latter is deflected upwardly by the wedge-shaped enlarged front side of said heel plate.

3,199,885
FASTENING DEVICE IN SAFETY SKI BINDINGS
Thomas G. Smolka and Johann Zelinka, Schwechat, Austria, assignors to Wiener Metallwaren- und Schnallenfabrik Schar-Smolka, Schwechat, Lower Austria, Austria, a firm of Austria
Filed Oct. 16, 1963, Ser. No. 316,614
Claims priority, application Austria, Oct. 26, 1962, A 8,485/62
9 Claims. (Cl. 280—11.35)



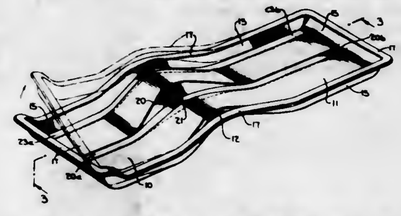
1. A safety ski binding comprising, in combination, support means adapted to be mounted on the top surface of a ski; a ski boot holding device mounted on said support means for turning about an axis, said holding device having a longitudinal axis extending longitudinally of the ski; cam surface means, a roller means, and spring means, all interposed between said support means and said holding device; said roller means being operatively engaged with said cam surface means and said spring means maintaining said roller means and said cam surface means in operative engagement; said spring means being mounted on one of said support means and said holding device, and said cam surface means being mounted on the other of said support means and said holding device; said holding device swinging about its turning axis, when excessive pressure is applied against the ski boot, to release the latter; said cam surface means including a pair of similar and oppositely extending cam surfaces, the inner ends of said cam surfaces conjointly defining a relatively deep recess centered on the longitudinal axis of said holding means; each cam surface including a first surface portion extending from said recess and a second surface portion extending from said first surface portion; said first surface portion being inclined at a relatively small angle relative to the direction of action of said spring means, and said second surface portion being inclined at a sharply large angle relative to the direction of action of said spring means; whereby the effective force of the spring means is substantially constant in the range of smaller movements of said holding device relative to its normal operating position, and said spring means, in the range of larger movements of said holding device relative to its normal operative position, having a substantially constant effective force which ranges from a minor fraction of the effective force in the range of smaller movements of said holding device to zero.

3,199,886
SKI POLE
George Kent Dover, Conway, N.H., assignor to Dynacone Inc., a corporation of Maine
Filed Nov. 14, 1963, Ser. No. 323,722
2 Claims. (Cl. 280—11.37)



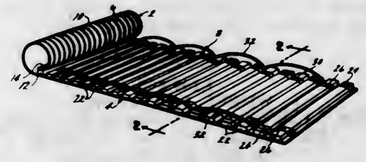
1. A ski pole having a handle end and a snow engaging end, said snow engaging end comprising a ring member secured to the terminal end of the pole, said ring member comprising a central hub with a plurality of radiating spokes disposed at an obtuse angle to each other in a plane passing through the axis of said hub and extending in a generally downward direction from said hub, each spoke having a downwardly projecting rib of substantial width compared to the thickness of the spoke, a peripheral rim terminating the end of each spoke, and a plurality of pins on said rim, each pin projecting downwardly from the rim member at the junction of the spokes and the rim.

3,199,887
SLED
Terry A. McKelvey, 4516 Daleridge, La Canada, Calif.
Filed Mar. 18, 1963, Ser. No. 265,627
5 Claims. (Cl. 280—18)



1. In a one-piece sled of the toboggan type, the combination comprising: spaced front and rear ground engaging sections; an upwardly arched intermediate section integral with the front and rear sections; said intermediate section having a central, longitudinally extending depression of which the bottom wall is also arched upwardly but to a lesser extent than the intermediate section at either side of the central depression; and hand grip means at the sides of the intermediate section.

3,199,888
SNOW VEHICLE
William P. Rowland, Southington, Conn., assignor to Rowland Products, Incorporated, Kensington, Conn., a corporation of Connecticut
Filed May 13, 1963, Ser. No. 279,909
15 Claims. (Cl. 280—18)

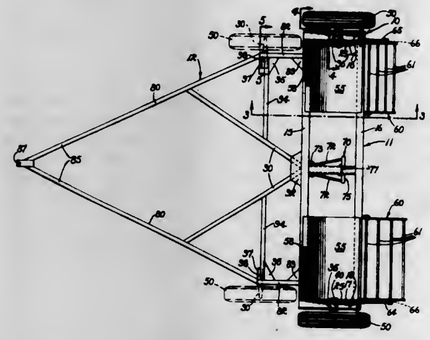


1. A snow vehicle having a self-forming curved-up tip portion extending across the front end thereof, said tip portion being preformed and being self-retaining in its curved-up configuration during operative assembly and an integrally formed, elongated body portion of synthetic plastic sheet material, extending rearwardly from said tip portion and said plastic sheet material having a relatively high degree of flexibility and impact resistance at temperatures below 0 degrees centigrade, said curved-up tip portion being integrally formed with the plastic sheet material of said body portion and comprising a reversely curved end portion of the sheet material fastened to said body portion to provide a closed, substantially cylindrical end portion, said body portion being rollable upon itself and said tip portion into a compact unit for portage and readily flattenable upon unrolling.

3,199,889
TRAILER
Herbert H. Gadbury, 30713 Road 76, Visalia, Calif.
Filed Jan. 6, 1964, Ser. No. 335,783
3 Claims. (Cl. 280—34)

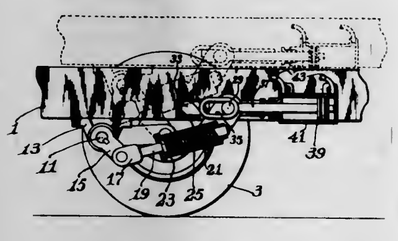
1. A trailer adapted to be drawn by a powered vehicle comprising a frame having a draft portion providing a tongue connectable to such a vehicle and a load carrying portion having opposite side members transversely outwardly extended from the draft portion, a pair of opposite ground engaging frame support wheels, a pair of stub axles individually rotatably mounting the wheels, a pair of first sleeve members individually mounted in

said side members of the load carrying portion in transversely spaced axially aligned relation individually to receive said axles for mounting the wheels in ground engaging relation transversely outwardly of the side members of the load carrying portion of the frame, and a second pair of sleeve members mounted on said draft portion of the frame in transversely spaced axially aligned relation and spaced parallel relation to the axis of the first pair of sleeves and transversely inwardly disposed there-



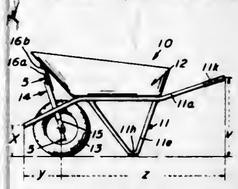
from, said second pair of sleeves interchangeably receiving said stub axles for alternately mounting the wheels in ground engaging relation transversely inwardly of said mounting on the load carrying portion of the frame thereby to reduce the width of the trailer.

3,199,890
WHEEL MOUNTING
Everette V. Caldwell, 4145 S. Norfolk Ave., Tulsa, Okla.
Filed June 21, 1963, Ser. No. 289,597
3 Claims. (Cl. 280—43.23)



1. In a wheeled vehicle having a chassis and a wheel supporting the chassis, the improvement comprising means mounting the wheel for movement relative to the chassis comprising a bell crank mounted on the chassis for rotation about a first horizontal axis, the bell crank having a pair of arms extending away from said first axis, the wheel being mounted on one said arm for rotation about a second horizontal axis spaced from and parallel to said first axis, and means carried by the chassis and acting against the other arm continuously yieldably to press the wheel against a subjacent support, the last-named means including a coil compression spring, a fluid motor between the chassis and the spring, and a lost motion connection between the fluid motor and the spring and interconnecting the fluid motor and the spring for vertical swinging movement relative to each other.

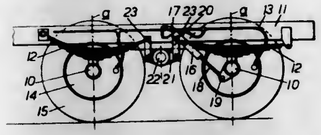
3,199,891
WHEELBARROW HAVING A RESILIENTLY MOUNTED WHEEL
Lawrence I. Grable and Gilbert W. Grable, both of 12325 La Cadena Drive, Colton, Calif., and Donald L. Grable, 2937 Carl St., Riverside, Calif.
Filed Sept. 18, 1962, Ser. No. 224,297
2 Claims. (Cl. 280—47.31)



1. For a wheelbarrow, a frame comprising a rigid center section of welded tubular steel comprised of bent side frame members each having a substantially horizontal center section; a center tie bar welded at each end to one of said side frame members at their center sections in a horizontal plane parallel to the ground; a ground engaging support welded to the center section of each said side frame member and angled out from the vertical at the bottom on an angle of 20 degrees; four recessed tray anchor lugs; two of said tray anchor lugs welded to the center section of each said side frame member at the front and back of said center section; a tray having anchoring holes therein; the area adjacent to said anchoring holes deformed outwardly to enter the recesses in the top of the anchor lugs, and said tray bolted to said anchor lugs by anchor bolts whose heads are flush with the inside bottom surface of the tray; said side frame members extending rearwardly and upwardly from the rear of said center section of said side frame members to provide handle portions which are substantially at right angles to the force resulting from the down-thrust of the load and the resistance of the wheelbarrow to forward motion; said side frame members provided with a forward portion extending forwardly and downwardly from said center section of each of said side frame members; said forward portions joined adjacent their front end by a front tie bar; adjacent the mid-point on the inside of each said forward portions there is welded a tubular tray support member, each said tubular tray support member extending forwardly and upwardly from its connection with said forward portions and secured to the top of said tray; each said tubular tray support member extending below and rearwardly of its connection with said forward portions; each said tubular trays support member provided with an open lower end portion and a tubular axle carrying member telescoped within and extending beyond said open lower end portions of said tubular tray support members; a wheel carrying axle attached to and extending between the lower ends of said tubular axle carrying members; and spring means positioned within said tubular tray support members for resiliently supporting said tubular axle carrying members.

3,199,892
VEHICLE SPRING SUSPENSIONS
Godfrey F. Boys, Walsall, England, assignor of one-half to Henry Boys & Son Limited, Walsall, England
Filed Mar. 13, 1963, Ser. No. 264,940
Claims priority, application Great Britain, Mar. 21, 1962, 10,782/62
6 Claims. (Cl. 280—104.5)

1. In a vehicle having a chassis, an axle, leaf spring means interconnecting the chassis and axle, wheels supported on said axle and means for applying brakes associated with said wheels, the improvement which comprises a linkage interconnecting the axle and chassis, said linkage including an arm rigidly secured to the axle and extending transversely thereof, and including also a telescopic link connected at one end to the arm and extending generally at right angles to the arm, the other end of the link being connected with the chassis, said link being normally variable in its effective length to accommodate relative movement between the axle and chassis, and means



controlled by operation of said brake applying means for preventing variation in the length of said link so that the latter operates as a rigid member for opposing any torsional force on said axle to prevent rotation of the latter during the brake applying operation.

3,199,893
ADJUSTABLE FOOT REST FOR A STROLLER
Earl F. Hamilton, Columbus, Ind., assignor to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Original application Jan. 13, 1960, Ser. No. 2,201, now Patent No. 3,063,729, dated Nov. 13, 1962. Divided and this application Sept. 10, 1962, Ser. No. 222,278
8 Claims. (Cl. 280—47.4)



1. In a stroller having a wheel-supported base frame including two generally parallel sides, a seat supported above said base frame, a footrest, and two yokes interconnecting said footrest and base frame, each of said yokes comprising a metal rod of circular cross-section bent into a general U-shape to provide an intermediate leg and two parallel sides, the intermediate legs of said yokes being pivotally connected to said footrest on spaced parallel axes, and the ends of the sides of each yoke being bent outwardly into coaxial relation and rotatably received in holes in the sides of the base frame, the sides of one of said yokes having outward offsets the distance over which is greater than the space between the sides of the base frame, said yokes being swingable about the respective axes of their outwardly bent ends to permit movement of the footrest between upper and lower positions, said offsets being so located that as the footrest nears upper position the offsets pass through and beyond the plane of the base-frame sides to engage such sides resiliently above their horizontal diameters and releasably hold the footrest in its upper position.

3,199,894
VEHICLE HITCHES AND WHEEL COUPLING MEANS THEREFOR
William J. McClive, 24019 Hartland St., Canoga Park, Calif.
Filed Jan. 30, 1962, Ser. No. 169,732
9 Claims. (Cl. 280—483)

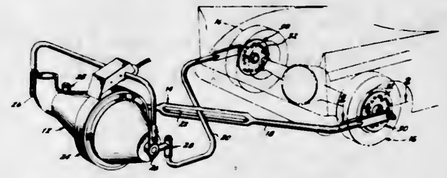
9 In a hitch for attaching a trailer to a towing vehicle, the combination comprising:

a hitch frame including a pair of torsionally elastic hitch arms adapted to straddle the rear wheels of the towing vehicle,

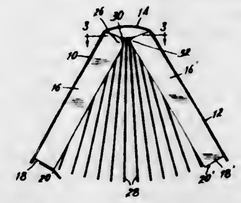
a pair of wheel coupling plates between and laterally offset from the forward ends of said arms,

means rotatably mounting each plate on its adjacent arm for turning on a transverse axis of the respective arm including a universal swivel coupling having its swivel center located approximately on the turning axis of the respective plate, and

each plate having a series of holes arranged about the turning axis thereof to receive lug bolts for attachment to a rear wheel of the towing vehicle.



3,199,895
ALBUM
Nicola De Tullio, 591 De Kalb Ave., Brooklyn, N.Y.
Filed Nov. 18, 1963, Ser. No. 324,563
1 Claim. (Cl. 281—29)



An enclosed album comprising a page pile attached to the lining and enclosed by a front cover and a back cover situated on opposite sides of a spine, side enclosures integrally mounted along the edge of said front and back covers at a point opposite the spine, top enclosures and bottom enclosures integrally mounted on the top and bottom of the edge of said covers and to the ends of the side enclosures thereof, at least one of said top and bottom enclosures having a curvature cut thereon at the ends which comes into abutting contact with the spine and said side, top and bottom enclosures on said front cover capable of coming into abutting contact with its opposite member on said back cover.

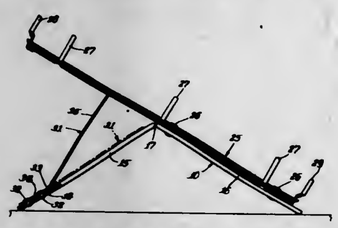
3,199,896
BOOK COVER AND MACHINE FOR MAKING SAME
William H. Caddoo, Darien, Conn., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Sept. 7, 1961, Ser. No. 136,584, now Patent No. 3,145,033, dated Aug. 18, 1964. Divided and this application Apr. 29, 1964, Ser. No. 363,572
15 Claims. (Cl. 281—29)



1. A book cover comprising two spaced leafboards and a thin tape hingedly connecting together said leafboards, said leafboards having depressed edge portions with said edge portions being compressed and said leafboards being otherwise uncompressed, and edges of said tape being

fully seated in said leafboard edge portions with said tape being wholly disposed between the planes of the opposite faces of said leafboards.

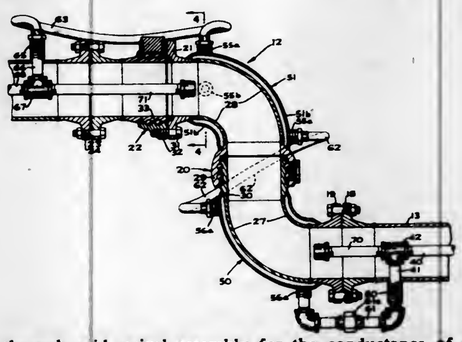
3,199,897
EASEL TYPE DISPLAY DEVICE
Edgar H. Wolfe, Winnetka, Ill., assignor to The Barrett Bindery Co., Chicago, Ill., a corporation of Illinois
Filed Aug. 2, 1963, Ser. No. 299,515
2 Claims. (Cl. 281—33)



2. In a foldable display device, a plurality of hingedly connected primary members foldable into book form and comprising a backbone and cover members, a supplementary member hinged to one of said primary members foldable rearwardly thereof to provide means for supporting said device at an upward and rearward inclination on a supporting surface therefor, said device normally being folded into book form with said supplementary member disposed in overlying parallel relation to said one of said primary members and being foldable downwardly and rearwardly in a setting-up operation to set-up position, and a substantially rigid resilient brace member disposed between said one of said primary members and supplementary member and having a transverse bend providing a relatively short arm secured to said one of said primary members and said supplementary member and a relatively long substantially straight arm, said relatively long arm being confined under tension between said one of said primary members and said supplementary member when said device is folded and otherwise free and effective for exerting outward pressure on said supplementary member and thereby moving the latter downwardly and rearwardly to set-up position with said longer arm providing a supporting brace extending between said one of said primary members and said supplementary member, incident to a setting-up operation.

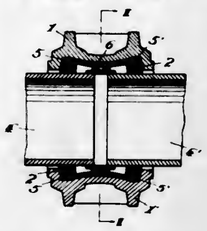
3,199,898
SWIVEL PIPE JOINT ASSEMBLY
Armand L. Faccou, Santa Ana, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed June 18, 1962, Ser. No. 203,054
2 Claims. (Cl. 285—41)

1. A swivel pipe assembly comprising a pair of interconnected relatively rotatable swivel pipe members, an elbowed pipe section joined at one end to each of said members, a flanged pipe member joined to the other end of each of said elbowed pipe sections, a pair of arcuate jackets welded at their annular ends to said swivel pipe members and to said flanged pipe members to form closed chambers around said elbowed pipe sections, a pair of threaded fittings circumferentially spaced one quarter turn about said jacket at each end of each of said jackets for providing communication to said chambers, plugging means on one of each pair of said fittings, a flexible hose connected to the others of said fittings at both sides of said swivel pipe members and providing communication between said chambers, said hose being of such a length that said swivel pipe members may be relatively rotated through a full 360 degrees, and fluid conducting lines connected to the others of said fittings at the ends of said jackets adjacent said flanged pipe members, said lines and said chambers and said hose forming a continuous passage



through said swivel assembly for the conductance of a heat supplying fluid to heat material flowing within said pipe sections.

3,199,899
PIPE COUPLING
Shokichi Fujii, 14 3-chome, Ogikubo, Suginami-ku, Tokyo, Japan
Filed Sept. 6, 1962, Ser. No. 221,679
2 Claims. (Cl. 285—231)



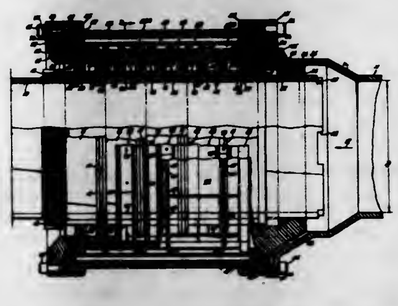
1. A flexible, pipe-coupling arrangement for coupling two substantially axially aligned pipes comprising in combination:

a unitary elastomeric coupling member with an inner cylindrical wall having inwardly projecting flanges at both ends thereof, said flanges terminating in two axially extending faces, one of said flange faces resting on each pipe, and cylindrical grooves extending along each of the outer peripheral ends of the coupling member, a radius of each groove being normal to the axis and bisecting one of said faces, said grooves being sized to partially receive flexible cylindrical ring means therein and being located substantially equally distant from the center of said coupling member;

flexible cylindrical ring means disposed and retained in said grooves, the outermost portion of said ring means partially extending radially outward from the outer periphery of said coupling member, said ring means including telescoping guide means;

and, a sectional housing consisting of at least two sections adapted to completely encircle said pipes, each of said sections having inwardly projecting legs at both ends thereof and an axially extending web sized to snugly encompass the outer periphery of said coupling member and said ring means and including adjustable fastening means to fasten said closure firmly, contracting said ring means on said coupling member, said inwardly projecting legs diverging axially outwardly from the outer margins of said coupling member so as to afford a clearance therebetween to permit said leg portions to pivot about said rings in response to pressure differences exerted on said elastomeric coupling member.

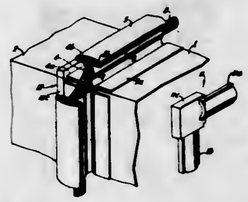
3,199,900
PIPE SLIP JOINT WITH DUAL FLUID PRESSURE BALANCING MEANS AND BUFFER MEANS
Peter E. Baer, Cheltenham, Md., assignor to Dixon Valve & Coupling Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 27, 1962, Ser. No. 205,631
5 Claims. (Cl. 285—302)



1. A pipe line slip joint comprising in combination, an outer pipe including a socket having an axially extending wall portion, a spigot member telescopically disposed in said socket in radial spaced relation to said axially extending portion, at least one piston member secured on said spigot, said piston member including a radially outwardly projecting shoulder, at least one radially inwardly projecting annulus mounted on said axially extending portion, said piston and annular members being axially spaced to form at least one first chamber therebetween, means to convey a first fluid to said chamber, means to render said chamber fluid tight, a second axially extending wall portion on said socket member, radially spaced from said first wall portion and forming therewith an annular chamber to receive therein said first fluid, diaphragm means positioned between said spigot and socket member and disposed in a position to be contacted on one side by said first fluid and on its opposite side by fluid conveyed through said pipe line, the above parts being so constructed and arranged that surges above and below a datum pressure norm in said pipe line are transmitted by said diaphragm to said first fluid for reaction in said first chamber to compensate for shock in said pipe line.

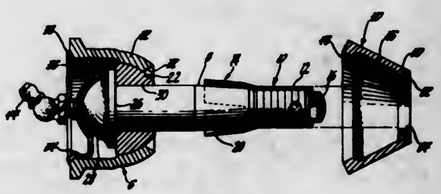
3,199,901
MEANS FOR CONNECTING THIN-WALLED PLANE ELEMENTS
Allan Jeppsson, Jarna, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Jan. 11, 1963, Ser. No. 250,887
Claims priority, application Sweden, Jan. 15, 1962, 417/62
1 Claim. (Cl. 285—364)

Apparatus for sealingly connecting aligned, adjacent, terminal ends of polygonal ducts: said apparatus comprising complementary assemblies surrounding said terminal ends of said ducts; each assembly comprising a U-shaped channel for each plane portion and coextensive therewith, and a corner member for each corner portion of said duct; said corner members connected to said U-shaped channel members thereby rendering said assemblies continuous about said terminal ends; each of said U-shaped channels having a web and first and second spaced flanges projecting from the same side of said web, each channel being adapted for mating relation with its complement, web-to-web; the first flange of each channel being bifurcated to accommodate therebetween plane portions of the adjacent duct; a guide rail having inturned facing flanges to overlap, underlie, and thereby grip each of the second flanges when said channels are in mating relation thereby uniting said complementary assemblies; each of said webs having a central convex portion defining a groove between the webs when they mate, and a sealing cord in said groove circumscribing



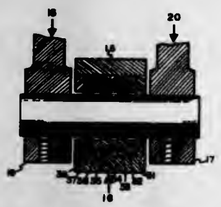
said terminal ends of said ducts; each corner member comprising an upstanding body portion and projecting legs, each of said legs having a convex cross section engaging and overlying the web of said channels, and connected thereto to provide said continuous connection; said body portion having an offset portion forming with its complement a passage in registry with and connecting the grooves of adjoining channels, said offset portion being positioned and dimensioned to squeeze said cord against said corner portion to seal said corner.

3,199,902
BALL JOINT UNIT WITH COMBINATION THREAD PROTECTOR AND SEAL RETAINER
Burton A. Flerstine, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 8, 1962, Ser. No. 236,195
5 Claims. (Cl. 287—87)



1. In a ball joint unit, a ball stud having a semi-spherical head formed at one end thereof and a threaded portion formed at the other end thereof, a cylindrical portion adjacent said head, a tapered intermediate portion connecting said cylindrical portion and said threaded portion, a bearing ring rotatably engaging said cylindrical portion and abutting said head, and a push-on sleeve-like plastic protective element surrounding said threaded portion, said element including a normally flared split end portion forming an annular wall of tapered longitudinal section overlying said tapered portion, said annular wall being dimensioned so that when collapsed against said tapered portion the outer periphery thereof forms an outside diameter no greater than the outside diameter of said cylindrical portion, whereby said bearing ring may be assembled on said cylindrical portion after installation of said protective element.

3,199,903
SHOCK ABSORBING BEARING
William H. Wood, Roanoke, Va., assignor to General Electric Company, a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,802
1 Claim. (Cl. 287—100)



In a shock absorbing device for absorbing the shock between a connecting arm having an eye at one end and a clevis having spaced arms receiving said eye therebetween and the arms of the clevis having apertures axially aligned with the eye, a plurality of donut shaped washers of varying inside diameters fitted together in the end of the connecting arm eye, a pin connecting the spaced arms of the clevis and extending through the said apertures and through said plurality of rubber donut shaped washers, with alternate washers engaging the pin and eye with their inner and outer peripheries respectively and the remaining washers engaging the eye with their outer peripheries and having their inner peripheries larger than the diameter thereof and spaced from the outer periphery of the pin, and set screws set in the ends of the connecting arm to hold said pin in the apertures therein.

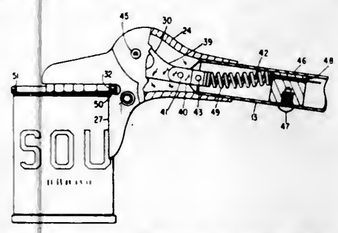
3,199,904
MEAT TONGS
Robert W. Lincoln, P.O. Box 129, Old Ocean, Tex.
Filed Nov. 21, 1963, Ser. No. 325,398
1 Claim. (Cl. 294—16)



Meat tongs comprising a first hollow cylindrical shaft which is maintained in a horizontal plane during use including a handle secured to one end portion thereof and the opposite end portion thereof bent downwardly and inwardly in the direction of the one end portion, a second hollow cylindrical shaft including a handle secured to one end portion thereof and the opposite end portion bent perpendicularly downward, the bent portions of said first and second shafts terminating in essentially the same horizontal plane, a band passing around said first shaft with a sliding fit and pivotally connected to said second shaft, and prong means consisting of a shaped wire terminating in projecting tine portions, said prong means being inserted into the downwardly depending portions of said shafts and fixedly secured therein so that the tine portions are opposing each other.

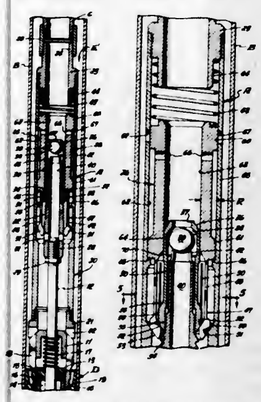
3,199,905
PACKAGE AND ARTICLE HANDLING DEVICE
Duke A. Johnson, 1019 Terminal, Houston 11, Tex.
Filed July 1, 1963, Ser. No. 291,864
2 Claims. (Cl. 294—22)

1. An article handling device comprising an elongated handle, at least one handle segment including a pivoted joint joined at its bottom end to the upper end of said handle for limited angular movement with respect to the handle, a hollow head section attached to the upper end of said handle segment, the head section having a V-block portion extending substantially normal to said handle segment, and a second portion of the head extending substantially normal to said V-block portion, the said second portion having a recess in the bottom portion thereof, a movable jaw mounted in said recess, a manual actuating handle means pivoted to the lower end of



said handle, a wire connecting the handle means to the said movable jaw whereby movement of the actuating handle is adapted to move the jaw at an angle, toward said V-block, resilient means urging the said jaw away from said V-block, the said head section having a pair of slidable pins extending transversely thereof, a cam on said jaw interiorly of said head section and being adapted upon movement of said jaw toward said V-block to extend said pins transversely of said head section.

3,199,906
RELEASABLE FLUID CONTROL APPARATUS FOR RETRIEVING SUBSURFACE WELL DEVICES
David V. Chenoweth, Houston, Tex., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed July 5, 1963, Ser. No. 292,918
16 Claims. (Cl. 294—86.15)



1. In combination: a device adapted to be disposed in a well bore and having a downwardly facing shoulder; a member adapted to be connected to a running-in string for movement in the well bore and to be disposed over the device; latch means carried by and movable longitudinally of said member and movable inherently inwardly to a position under said shoulder to be engaged therewith; said member having shifting means engaging said latch means when said latch means moves in one direction longitudinally of said member to hold said latch means laterally inwardly under said shoulder and in coupling relation to the device; and fluid operated means responsive to the pressure of the fluid in the well bore externally of said member for moving said latch means in the opposite direction longitudinally of said member away from said shifting means to allow said latch means to be shifted by said shoulder laterally outwardly to uncoupled relation from the device.

3,199,907
UNDERGROUND WIRE LINE CORE BARREL APPARATUS
Leonard A. Braun, St. Paul, Minn., assignor to E. J. Longyear Company, Minneapolis, Minn., a corporation of Delaware
Original application July 24, 1959, Ser. No. 829,429, now Patent No. 3,120,283, dated Feb. 4, 1964. Divided and this application Oct. 23, 1963, Ser. No. 318,265
3 Claims. (Cl. 294—86.29)



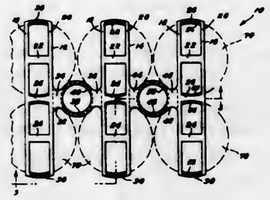
1. A wire line overshot assembly for retracting a core barrel inner tube assembly from the bit end of the drill stem comprising a generally cylindrical main body portion having an outer diameter smaller than the inner diameter of the drill stem to provide an annular space between the main body portion and a drill stem, said main body portion including at one end grapple means for selectively attaching to the core barrel inner tube assembly, and a generally cylindrical coupling portion connected to the opposite end of said main body portion for limited slidable movement inwardly toward and away from the grapple means, said coupling portion including a reduced diameter outer end portion and an enlarged diametric cylindrical portion, said cylindrical portion having a fluid channel extending axially therethrough to open into the hollow portion of the drill stem on either side of said cylindrical portion when said assembly is positioned in said drill stem, said main body portion including means for blocking the fluid channel when said coupling portion has been moved to an inner position relative to the main body portion and unblocking said channel when the coupling portion has been moved outwardly relative to said main body portion, and wire line means connected to said coupling portion on the opposite end thereof from the main body portion.

3,199,908
CONTAINER CARRIER AND PACKAGE
Ouglesa Jules Poupitch, Itasca, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed July 17, 1959, Ser. No. 827,748
5 Claims. (Cl. 294—87.2)



1. A packaging device of resilient deformable material for engaging axially and radially projecting peripheral beads of a plurality of containers and providing means for transporting the containers; and comprising a plurality of bead-engaging socket means in the material; each socket means comprising a circumferentially continuous top portion to overlie the top of a container bead, and tooth formations depending from said top portion and circumferentially spaced around the periphery thereof to engage the outer and the under surfaces of a container bead; web means connecting adjacent socket means between adjacent tooth formations; and said packaging device including handle means.

3,199,909
CAN CARRIER
Joseph Di Domenico and Frank Mellion, Providence, R.I., assignors to Jo-Dee Corp., Providence, R.I., a corporation of Rhode Island
Filed Nov. 5, 1962, Ser. No. 235,468
1 Claim. (Cl. 294—87.2)

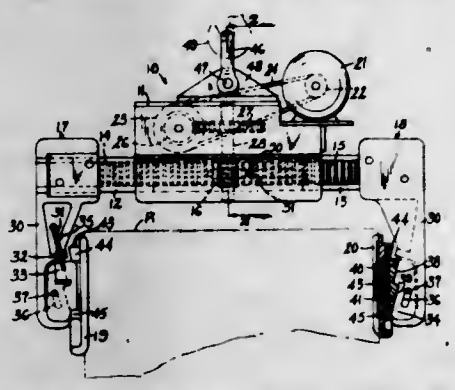


In a carrier for carrying cans that have an annular beaded edge formed on at least one end thereof, a one-piece skeleton-like member molded of a plastic material and including a plurality of spaced, parallel arms, each of which is defined by laterally extending, spaced, parallel ribs, each of said arms including two pairs of spaced, depending arcuate shaped gripping elements, an outer depending gripping element of each pair being located adjacent to the outermost ends of each arm, and having an arcuate shaped shoulder formed thereon, an intermediate portion connecting the ribs of each arm and including a depending portion on which are formed a pair of inner gripping elements having arcuate shaped shoulders that cooperate with said outer gripping elements to retain cans therebetween, connecting portions joining said spaced, parallel arms intermediate the ends thereof and in aligned relation with respect to said depending portions and thereby cooperating with said depending portions to reinforce the skeleton-like member, said connecting portions including generally circular rib-like portions that define finger openings for said carrier, and reinforcing ribs joining said parallel arms adjacent to the outer ends thereof, said reinforcing ribs extending in a direction generally perpendicular to said arms and overlying the upper surfaces of the cans that are secured between said pairs of gripping elements.

3,199,910
GRAPPLE AND CONTROL THEREFOR
Harvey Bradley, Stony Creek, Conn., assignor to Mansaver Industries, Inc., New Haven, Conn.
Filed Jan. 30, 1963, Ser. No. 254,902
6 Claims. (Cl. 294—88)

1. A grapple comprising a pair of work-engaging jaws, an electric motor drivingly connected to move said jaws towards each other to engage an object therebetween and away from each other to open said jaws, said motor having terminals connectable to a source of electric power, means for controlling the direction of rotation of said motor to control opening and closing of said jaws, means for limiting outward movement of said jaws,

a relay in circuit with said motor, said relay being effective to sense when said jaws engage an object and when outward movement of said jaws has been limited



by sensing stalling of said motor, and circuit means responsive to sensing of stalling of said motor for interrupting electric power to said motor.

3,199,911
MANIPULATOR FOR LOADING MACHINE
Paul Alliot and Daniel Denoit, Paris, France, assignors to Electricite de France (Service National), Paris, France
Filed Sept. 5, 1962, Ser. No. 221,503
Claims priority, application France, Sept. 18, 1961, 873,425
8 Claims. (Cl. 294—95)



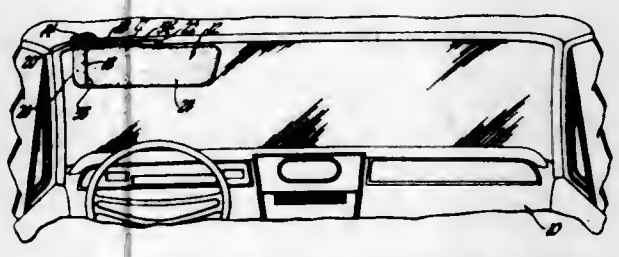
1. A manipulator for a loading machine, comprising: a head, a member mounted inside said head for sliding movement longitudinally thereof; a plurality of concentrically arranged claws designed to grip a load pivotally mounted intermediate the opposite ends thereof on said member; an annular cam member having first and second cam surfaces thereon rotatably mounted on said member for longitudinal movement therewith, and designed to control pivotal movement of said claws, one of the extremities of said claws being continually maintained in operative engagement with one of said cam surfaces, said one cam surface being generally concentric with said claws and including a plurality of spaced apart eccentric portions, said other cam surface including a pair of opposed, saw-tooth camming tracks arranged concentrically with said one cam surface, the camming teeth on one of said tracks being staggered in relation to the teeth on the other of said tracks; and rigid finger means integral with said head and extending between said opposed camming tracks for cooperation therewith, whereby longitudinal movement of said head with respect to said member resulting in said finger means alternately engaging said pair of saw-tooth camming tracks which results in step by step rotation of said annular cam member and successive opening of said claws and locking them in open position and in closing said claws and locking them in closed position.

3,199,912
BODIES OF AUTOMOTIVE VEHICLES
Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Oct. 14, 1963, Ser. No. 316,083
Claims priority, application France, Oct. 24, 1962, 913,310, Patent 1,345,097
4 Claims. (Cl. 296—28)



1. An assembly for joining the roof panel of an automobile to the inner and outer members of the hollow rail portion of the side panels thereof, comprising two substantially vertical and parallel joints, one at each longitudinal edge of the roof; each of said joints comprising at least one upwardly turned lip on the edge of said roof panel, one upwardly turned lip of said inner member, and one upwardly turned lip of said outer member, said lips being mutually parallel and said lip of the inner member lying between and in contact with each of said other lips; and means rigidly securing said lips together.

3,199,913
VEHICLE BODY SUNSHADE
Herbert C. Field, Grosse Pointe, and Walter Wenger, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 13, 1963, Ser. No. 287,539
2 Claims. (Cl. 296—97)

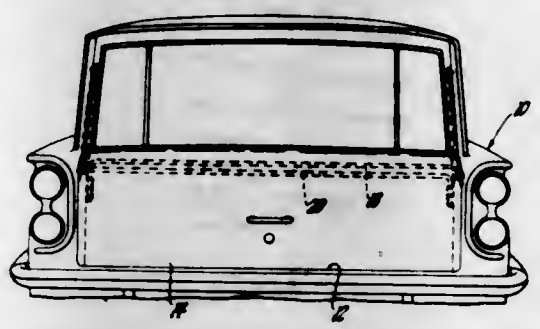


1. A vehicle body sunshade, comprising, a sheet of flexible material including a pair of grooves each extending between opposite edges of said sheet, said grooves generally orthogonally intersecting with each other to define four portions of said sheet, each of said grooves providing an integral hinge swingably interconnecting a pair of portions on one side thereof with a pair of portions on the other side thereof for movemet of said pairs of portions relative to each other, said sheet including a bowed portion adjacent at least one of said grooves providing integral overcenter snap action means operable to resiliently releasably hold one of said pairs of portions respective to said one groove in a selected overcenter position relative to the other pair of said portions respective thereto, and means for mounting said sheet on a vehicle body whereby said snap action means is operable to hold said one pair of portions in a selected overcenter position relative to said other pair of portions and the vehicle body.

3,199,914
COUNTERBALANCE ASSEMBLY
Glen A. Smith, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 21, 1962, Ser. No. 247,472
7 Claims. (Cl. 296—106)

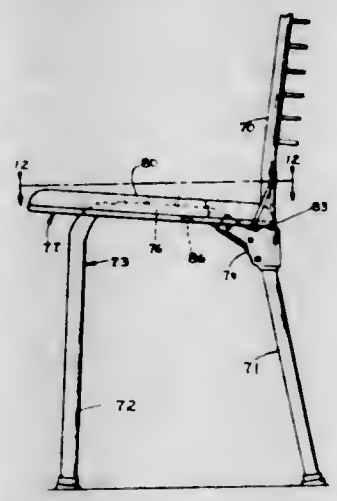
1. In a vehicle body having an opening therein, a closure for said opening, hinge means swingably mounting said closure adjacent an edge portion thereof on said body for movement between open and closed positions with respect to said opening, said closure including a wall located in generally juxtaposed relationship to a wall of

said opening in the closed position thereof, an elongated torsion member, means anchoring said member adjacent one end thereof to said closure, said member extending outwardly of said closure wall and including a laterally extending crank portion, a link member pivotally connected adjacent one end thereof to said crank portion and adjacent the other end thereof to said body, said crank portion and said link member providing a toggle interconnecting said closure and said body, said crank portion and link member being located intermediate said juxta-



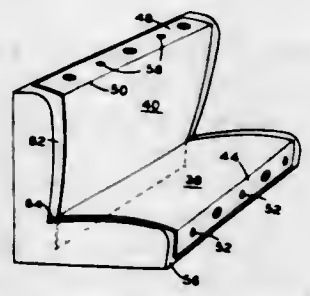
posed walls and within said opening in a folded position relative to each other in the closed position of said closure, said torsion member being torsionally stressed to swing the crank portion thereof relative to said closure and swing said link member outwardly of said opening upon movement of said closure to open position to locate said crank portion and link member in an unfolded position relative to each other wherein said crank portion and link member provide a strut extending outwardly of said opening and resiliently holding said closure in open position.

3,199,915
FOLDING CHAIR
Earl F. Hamilton, Ralph B. Lay, and Edwin K. Moore, Columbus, Ind., assignors to Hamilton Cosco, Inc., a corporation of Indiana
Filed July 31, 1963, Ser. No. 299,055
3 Claims. (Cl. 297—42)



1. In a collapsible chair,
(a) a back member providing rear supporting legs,
(b) a seat,
(c) a pair of side members each of which is provided with a front leg and horizontal seat support swingably associated with said back member for horizontal swinging between a retracted position generally coplanar with the back member and an operative position in which the front legs are disposed well forwardly of the back member to provide front supporting legs for the chair,
(d) a seat rod having a transversely extending intermediate stretch rotatably connected to said seat on a first transverse axis and end stretches projecting outwardly from said seat and rotatably connected to said back member on a second transverse axis rearwardly of said first transverse axis, whereby upon movement of said side members into retracted position said seat is swingable downwardly about said first and second axes from its operative position in which it is supported on the horizontal seat supports of said members to its retracted position in which it overlies and is disposed in a plane generally parallel to said side members in their retracted positions,
(e) said seat having a pair of laterally spaced longitudinally extending grooves receivable over said horizontal seat supports, and
(f) a pair of bosses on the walls of said grooves adjacent the rear of the seat receivable under said horizontal seat supports upon movement of said seat and side members into operative position, said bosses releasably retaining said seat in a fixed position with respect to at least said first axis when said seat is in operative position.

3,199,916
CAR UPHOLSTERY COVER
Sebastian P. Chiarenza, 10 Wayside Court, Passaic, N.J.
Filed May 11, 1964, Ser. No. 366,478
1 Claim. (Cl. 297—223)

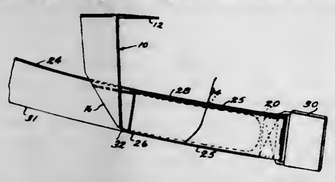


A car upholstery cover for a car seat having mating snaps on its backrest and its seat portion, said cover comprising a body portion having a seat-covering section and a backrest-covering section, a resilient insert panel attached along a folding line to one edge of each of said sections and adapted to be inserted in the space between the seat portion and backrest of a car seat, a first attachment panel connected along a second folding line to the edge of the seat-covering section opposite to that with the insert panel, and a second attachment panel connected along a third folding line to the edge of the backrest-covering section opposite to the with the insert panel, each attachment panel having a set of snaps for selective attachment to the mating snaps on the backrest and seat portion of the car seat as desired for alternative use, each attachment panel having apertures in register with the snaps of the other attachment panel to permit the fastening of both attachment panels to the backrest and the seat portion of the car seat.

3,199,917
SEAT BELT GUARD
Ronald A. Veley and Irene P. Veley, both of 713 3rd Ave., Williamsport, Pa.
Filed Nov. 30, 1962, Ser. No. 241,186
12 Claims. (Cl. 297—385)

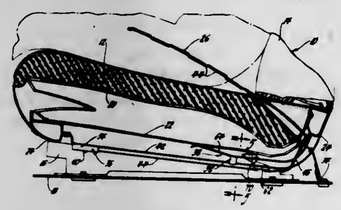
6. A seat belt including an end for receiving a buckle; and means defining a relatively long pocket on said belt extending longitudinally thereon from adjacent said

buckle end; an elongated flexible finger received within said pocket, said finger being stiffer than said belt and



pocket, whereby said finger substantially reduces the susceptibility of said belt and pocket to twisting and bending.

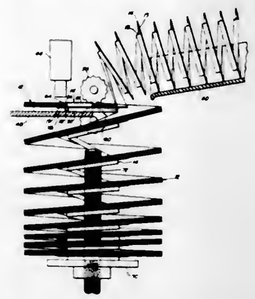
3,199,918
RETRACTABLE SEAT BELT
Andrew P. Nakolan, New Baltimore, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 19, 1963, Ser. No. 324,733
2 Claims. (Cl. 297—388)



1. In combination with a seat adapted to be mounted in a motor vehicle, said seat having a seat cushion and a seat frame and spring means supporting said cushion on said frame, a retractable seat belt assembly comprising a seat belt secured at one end to said vehicle in spaced relationship with said seat, retracting means normally, yieldingly exerting a force on said belt in a retracting direction, said retracting means including a spring assembly, guide means attached to said frame and supporting said spring assembly, a flexible cable having one end connected to said spring assembly and the other end connected to the other end of said belt, stop means connected between the ends of said flexible cable and mounted in said guide means for travel therein in response to extension and retraction of said belt, a cantilever spring supported by said seat frame and in abutting relationship with said spring means, a pawl pivotally mounted on said cantilever spring, said cantilever spring adapted to be deflected when said seat is occupied to place said pawl in the path of movement of said stop means, said pawl adapted to allow travel of said stop means in response to extension of said belt to an operative position and to thereafter prevent travel of said stop means in a belt retracting direction whereby said force is automatically removed during use of said belt, said cantilever spring returning to a non-deflected position when said seat is no longer occupied to allow automatic retraction of said belt.

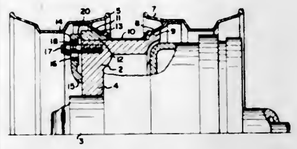
3,199,919
METHOD OF MAKING A BUFFING WHEEL
George R. Churchill, Cohasset, Mass., assignor to George R. Churchill Company, Inc., Hingham, Mass., a corporation of Massachusetts
Original application May 21, 1959, Ser. No. 814,750, now Patent No. 3,086,333, dated Apr. 23, 1963. Divided and this application Nov. 23, 1962, Ser. No. 239,481
16 Claims. (Cl. 300—21)

1. The method of making a helically formed buffing element which comprises the steps of placing together and applying a fastening element through the leading ends of a helically shaped, freely movable metal band and a marginal portion of an elongated strip of buffing material, guiding and advancing the assembled parts through a rotary path and applying successive fastening



elements through the parts in spaced relation throughout the length of the parts to provide an elongated helically formed buffing element for use in making a buffing device.

3,199,920
RIM CLAMP FOR TRUCK WHEELS
Charles L. Hurst, Dayton, Ohio, assignor to Manufacturers Machine Co., Dayton, Ohio, a corporation of Ohio
Filed Sept. 11, 1961, Ser. No. 137,164
11 Claims. (Cl. 301—13)

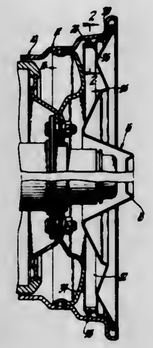


1. In combination, a wheel having a felly for mounting rims, a plurality of two piece rim clamping devices, tightening means for interconnecting said rim clamping devices to said wheel, and an inner and outer rim mounted on said felly, said rim clamping device comprising, a lever member mounted radially on said wheel and a wedging member positioned axially on said wheel, a heeling shoulder depending axially inward from the radially inner portion of said lever member, interconnecting means depending axially inward from the radially outer portion of said lever member to prevent said wedging member from sliding circumferentially when said rim clamping device is operably mounted on said wheel, a bore medial of said shoulder and said interconnecting means adapted to accommodate said tightening means, a contacting surface on the axially outer edge of said wedging member adapted for contacting the axially inner surface along the radially outer edge of said lever member, a felly engaging projection depending radially inward from each end of said wedging member and a conical surface on the radially outer portion of said wedging member for engaging the flange of said outer rim.

3,199,921
WHEEL COVER
Peter Boroday, Livonia, and William G. Crary, Utica, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 4, 1964, Ser. No. 342,452
4 Claims. (Cl. 301—37)

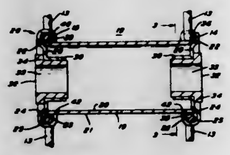
2. A wheel cover comprising a cover member including an annular flange portion provided with a radially extending recessed portion having a radially inner wall

and a juncture shoulder at one end of the recessed portion, a retaining member including a body portion conforming to the shape of said flange portion and seating thereagainst adjacent said shoulder, means securing said body portion to said flange portion, said retaining member further including a cantilever arm portion extending from said body portion over said juncture shoulder and



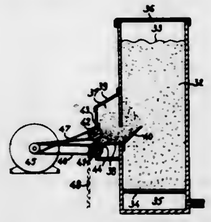
said recessed portion and normally being located generally parallel to said flange portion, said shoulder providing a fulcrum for said arm portion upon displacement of said arm portion relative to said body within said recessed portion, and means on said arm portion engageable with said radially inner wall of said recessed portion to limit displacement of said arm portion relative to said body portion.

3,199,922
HUB AND SPOKE CONSTRUCTION FOR WIRE WHEELS
Joseph H. Krenz, % Krenz Wheel Manufacturing, 110 Harbor Lane, Somers Point, N.J.
Filed May 8, 1964, Ser. No. 366,018
7 Claims. (Cl. 301—59)



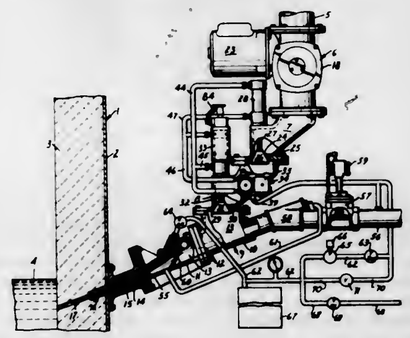
1. A wheel hub construction comprising a hub sleeve having a cylindrical portion with inner and outer surfaces and an outwardly flared end, a hub flange at the end of the sleeve having a plate portion extending radially inwardly of said sleeve and having outwardly of said plate portion a rim, a spoke having a radial portion and a circumferential portion extending partially around said sleeve and in engagement therewith, said hub flange having an inner surface with which said flared end is in engagement, said flange rim extending around the circumferential spoke portion in engagement therewith and having a terminal face in facing relation to said outer surface of said hub sleeve.

3,199,923
FLUIDIZED BED DISPENSER
Donald Herbert Brooks, District Vanderbijl Park, Transvaal, Republic of South Africa, assignor, by mesne assignments, to International Protected Metals, Inc., a corporation of New Jersey
Filed Jan. 24, 1961, Ser. No. 84,551
Claims priority, application Republic of South Africa, Feb. 12, 1960, 60/4,595
6 Claims. (Cl. 302—29)



1. A particle dispenser comprising a container having side walls and a gas-pervious particle-supporting bottom wall, gas outlet means at the top of the container, means for passing an aerating gas upwardly through said gas-pervious bottom wall, a particle outlet through one of said side walls, baffle means internally of the container having a lower end adjacent said one wall below the particle outlet and its upper end extending upwardly and outwardly thereof for screening the particle outlet from a rising gas stream and directing a flow of particles through said particle outlet, and a sloping ramp extending downwardly and outwardly from the said particle outlet for receiving and directing particles from the said particle outlet.

3,199,924
APPARATUS FOR INJECTING BULK SOLIDS INTO MATERIAL CONTAINED IN A VESSEL
Edward E. Mueller, Excelsior, Donald B. Bartz, St. Paul, Melvin J. Christensen, Fridley, and Marvin C. Mueller, Le Sueur, Minn., assignors to Whirl-Air-Flow Corporation, Minneapolis, Minn., a corporation of Illinois
Filed Apr. 18, 1963, Ser. No. 273,918
8 Claims. (Cl. 302—36)



1. Apparatus for injecting bulk material into a pressurized receptacle, said apparatus comprising,

(a) conduit means including an upper hopper for reception of bulk material from a source thereof and a lower hopper for reception of said material from said upper hopper,

(b) a first valve controlling flow of material from said upper hopper to said lower hopper,
(c) means defining a charge-receiving chamber having a gas inlet at one end, a material outlet at its opposite end, and a material inlet intermediate its ends for communication with said second hopper,
(d) a second valve for controlling flow of said material from said second hopper to said chamber,
(e) at least a portion of said chamber tapering from a relatively large cross-sectional area toward a relatively small cross-sectional area at the material outlet end thereof,
(f) an injector tube communicating with said material outlet for directing material from said chamber to said receptacle.
(g) a normally closed check valve in said chamber intermediate said material inlet and said outlet,
(h) valve operating means for opening and closing said first and second valves in a predetermined sequence, whereby, when each thereof is opened, the other thereof is closed,
(i) means including a gas valve for introducing material propelling gas at relatively high pressure to said gas inlet,
(j) means for opening said gas valve to admit gas to said chamber to open said check valve and propel a charge of material from said chamber through said injector tube,
(k) and independent means for admitting gas to said chamber at relatively low pressure at least equal to the pressure in said receptacle, whereby to maintain said low pressure in said chamber and injector tube when said second valve is open.

3,199,925
PNEUMATIC OR GRAVITY DISCHARGE HOPPER ARRANGEMENT

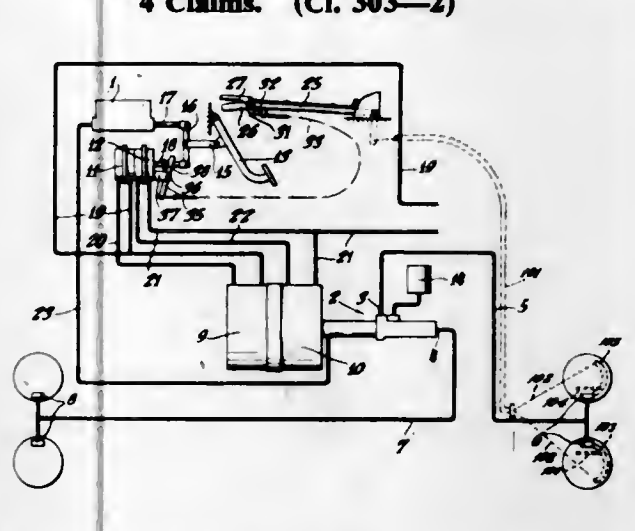
Jack W. Borger, Calumet City, Ill., assignor to Pullman Incorporated, a corporation of Delaware
Original application Jan. 10, 1962, Ser. No. 165,429, now Patent No. 3,153,558, dated Oct. 20, 1964. Divided and this application Jan. 2, 1964, Ser. No. 346,583
1 Claim. (Cl. 302—52)



An apparatus for conveying granular material from a hopper by way of a pneumatic feed system employing a suction comprising an attachment including a substantially V-shaped housing having end walls and converging side walls, a tubular feed member extending through said housing and between the end walls thereof and being spaced from the converging side walls and the nadir of said housing, an opening provided in said tubular member between said end walls opposing said nadir, said tubular member including an outlet end projecting from one of said end walls being adapted to be connected to said suction means, and gravity discharge means including an opening formed in one of said converging side walls and gate disposed over said opening and forming a continuation of said one converging side wall when in a closed position.

3,199,926
VEHICLE BRAKES

Leslie C. Chonings, Leamington Spa, England, assignor to Automotive Products Company Limited, Warwickshire, England
Filed May 2, 1963, Ser. No. 277,645
Claims priority, application Great Britain, May 3, 1962, 17,058/62
4 Claims. (Cl. 303—2)



1. A servo operated fluid pressure braking system for vehicles comprising separate fluid pressure brake circuits for the front and rear wheel brakes of a vehicle, master cylinder means for supplying fluid under pressure to said separate brake circuits, separate servo devices independently operable of each other and each operatively connected to said master cylinder means to supply fluid to said brake circuits, a separate valve operatively connected to each said servo device for controlling the respective operation thereof, foot pedal means operatively connected to each said valve for actuating it to control operation of its respective servo device, and hand brake means operatively connected to each said valve for actuating it and simultaneously actuating said servo devices to control operation of its respective servo device to provide servo assistance when said hand brake means is applied.

3,199,927
ANTI-SKID BRAKE CONTROL MECHANISM

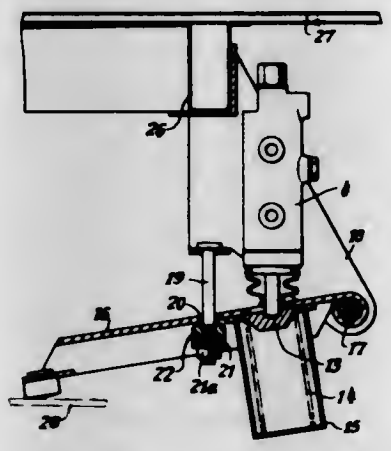
Jerald D. Bidlack, Fraser, and Roland J. Barlow, Madison Heights, Mich., assignors to Cadillac Gage Company, Roseville, Mich.
Filed July 10, 1961, Ser. No. 122,845
6 Claims. (Cl. 303—21)



1. In a skid preventing brake control system for a vehicle wheel, the combination of: a source of fluid under pressure; wheel retarding means responsive to fluid pressure; sensing means supplying an electrical signal commensurate to the deceleration of the vehicle wheel; conduit means connecting said source of fluid to said wheel retarding device; and a control apparatus interposed in said conduit means, said apparatus comprising: fluid pressure inlet in fluid communication with said source of fluid pressure, fluid return outlet connected to conduit means for the return of exhausted fluid to a fluid pressurizing means, and control outlet in fluid communication with said wheel retarding means; manual input control means;

valving and regulating means responsive to said manual input means for effecting a connection between said pressure inlet and said control outlet and for regulating the pressure applied to said wheel retarding means in function of the force actuating said manual input means; feedback means responsive to said electrical signal for disconnecting said pressure inlet from said control outlet and for venting said control outlet to said return outlet by direct action upon said valving and regulating means in the event that the vehicle wheel is skidding and for reconnecting said pressure inlet to said control outlet as soon as the vehicle wheel is rotating normally, said feedback means comprising a chamber to which is supplied fluid under pressure, an outlet nozzle from said chamber, target means adapted to restrict the flow of fluid through said nozzle in response to said electrical signal and means applying the increase of fluid pressure in said chamber as a function of the restriction of fluid flow through said nozzle as an input to said valving and regulating means.

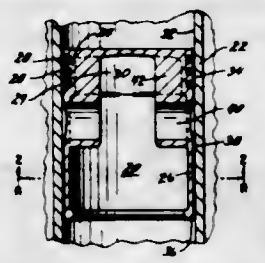
3,199,928
LOAD RESPONSIVE VALVE
Leslie C. Chouings, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England
Filed Mar. 9, 1962, Ser. No. 178,702
Claims priority, application Great Britain, Mar. 9, 1961, 8,677/61
8 Claims. (Cl. 303—22)



1. A valve for a fluid pressure braking system of a vehicle with a spring loaded movable valve member movable from a normally open position to which it is urged by the spring action, to a closed position by pressure created in the system in which the valve is connected, said valve member being secured to the vehicle platform, a rod member operatively connected to said spring loaded valve member to vary the loading of the spring, an arm member pivotally connected at one end to the vehicle platform and with its other end freely disposed against the bracket plate member of the vehicle axle, a casing secured to said arm member in alignment with said rod member, biasing means in said casing acting against said rod member, said arm member being operable to pivot by relative movement between the vehicle platform and bracket member caused by variations in the vehicle loading to cause said biasing means to move said rod member to vary the loading in said spring member.

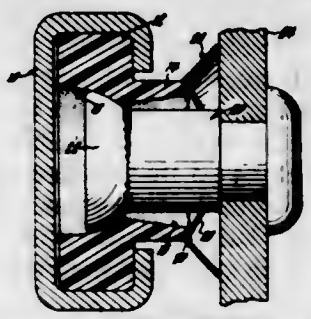
3,199,929
SLIDING SURFACE PROTECTION
John O. McLean and William B. Jenkins, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Dec. 5, 1960, Ser. No. 73,573
2 Claims. (Cl. 308—4)

1. In an internal combustion engine, an aluminum piston member having a slidable contact surface, an aluminum cylinder wall member having a slidable contact surface slidably contacted by the slidable contact surface of said aluminum piston member, the slidable contact surface of one of said members being made with a structural adhesive containing a curing agent adhesively se-



cured, cured and solidified on said one of said members, said structural adhesive being selected from the group consisting of an epoxy resin based adhesive, a nitrile adhesive, and an epoxy phenolic adhesive.

3,199,930
GUIDE ROLLER ASSEMBLY
James J. Carleton and Edward J. King, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 29, 1962, Ser. No. 220,297
6 Claims. (Cl. 308—6)



1. The combination comprising, a guide channel, a window regulator member, and a guide roller assembly for rotatably and slidably interconnecting the regulator member and the guide channel including, a roller member having an annular portion rotatably and slidably received within the guide channel, a roller mounting member secured to the regulator member, a semispherically shaped seat formed on one of said roller and roller mounting members, a ball portion formed on the other of said roller and roller mounting members complementary in shape to said seat and bearing thereagainst to universally connect said roller member and said mounting member and permit rotational movement of said members relative to each other about a plurality of axes upon relative movement of the regulator member and the guide channel as said roller member annular portion rotates and slides relative to the guide channel, and resilient means holding said ball portion in engagement with said seat.

3,199,931
EXTERNALLY PRESSURIZED FLUID BEARING
Emmett L. Martz, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed May 7, 1963, Ser. No. 278,790
4 Claims. (Cl. 308—9)
(Granted under Title 35, U.S. Code (1952), sec. 266)

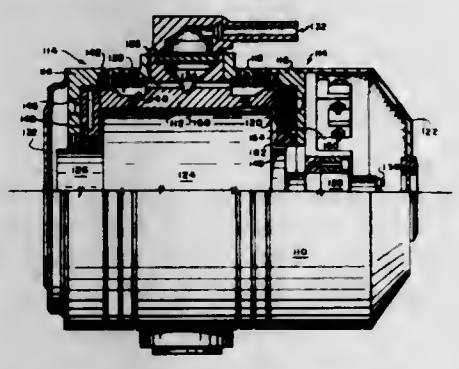
1. In an apparatus for supplying a lubricating film from a pressurized fluid source to a gap between two opposed contiguous bearing surfaces, one of a support member and one of a supported member, said supported member having an axis and moveable about said axis relative to a said support member, the combination comprising:

(a) an annular reservoir within said support member extending around said axis;

(b) a first communicating means for directing pressurized fluid from said source to said reservoir;

(c) an annular fluid distribution slot in said support member extending around said axis and having an enlarged exit opening into said gap between said two opposed contiguous bearing surfaces;

(d) a second communication means for directing said pressurized fluid from said reservoir to said fluid distribution slot;



(e) restricting means in said second communication means for restricting the flow of said pressurized fluid from said reservoir to said enlarged exit opening into said gap between the supported member and the support member;

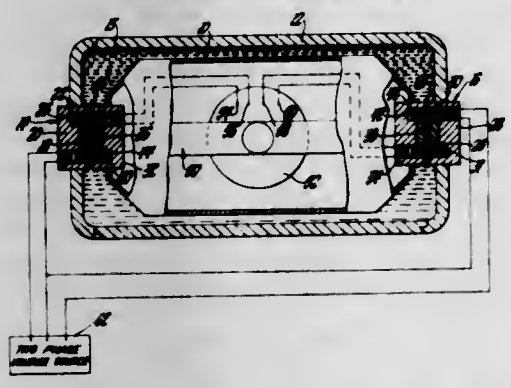
(f) whereby the annular reservoir supplies pressurized fluid uniformly to said annular fluid distribution slot, said fluid flow is reduced by said restriction means, and the velocity of said fluid leaving said enlarged annular exit opening into said gap between said contiguous surfaces is reduced and uniform along said exit annular opening so that tangential pressure gradients along said annular exit opening is substantially zero thereby substantially eliminating turbine torque influences on said supported member.

3,199,932

COMBINED MAGNETIC SUSPENSION AND TRANSFORMER

Harold E. Clark, Middleton, Mass., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 1, 1962, Ser. No. 176,550
4 Claims. (Cl. 308—10)



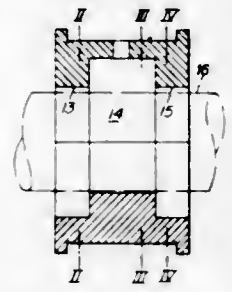
1. The combination of a magnetic suspension system and power supply transformer for a body which is rotatable about a predetermined axis comprising first and second electromagnets, the electromagnets including respective coils disposed normal to and coaxial with the predetermined axis, a body freely suspended between the electromagnets and including first and second magnetic armatures disposed in magnetic proximity to the first and second electromagnets respectively, a source of alternating voltage connected with each electromagnet for excitation thereof whereby the body is suspended by the attractive magnetic forces between the armatures and the respective electromagnets, a secondary coil disposed on the body coaxially adjacent one of the electromagnet coils and spaced therefrom, means to define a magnetic circuit between said one electromagnet coil and the secondary coil thereby to transfer electrical energy between the coils, electrical load means carried by the body, and output circuit means connecting the secondary coil with the electrical load for energization thereof.

3,199,933

MACHINE BEARINGS

John Rogerson, Greasby, Wirral, and Harold Curzon Wilding, Willaston, England, assignors to Cammell Laird and Company (Shipbuilders & Engineers) Limited, Shipbuilding & Engineering Works, Birkenhead, England, a company of Great Britain

Filed Oct. 4, 1963, Ser. No. 313,867
Claims priority, application Great Britain, Sept. 27, 1962, 33,090/60
6 Claims. (Cl. 308—121)



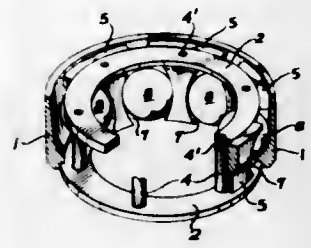
1. A restricted clearance bearing for a journal, comprising a bushing formed of at least three integral end-to-end sections which collectively define an axial bore, each of said sections having its bore surface shaped to include a cylindrical journal support segment smaller than a semicylinder substantially concentric with the axis of said bore and a clearance segment larger than a semicylinder eccentric to the bore axis, and said journal support segment of each section being spaced circumferentially with respect to the journal support segments of the other sections and collectively defining a zone of restricted journal clearance for a thin load-carrying oil film fed from said eccentric clearance segments, whereby to provide rigidly connected and relatively fixed bushing sections that adequately lubricate, cool and dampen vibrations of a supported journal.

3,199,934

SELF LUBRICATING COMPOSITION

Jan W. Van Wyk, Kirkland, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Oct. 24, 1963, Ser. No. 318,625
8 Claims. (Cl. 308—199)



5. In a ball bearing assembly, the combination comprising an inner race member supporting a plurality of ball bearings, said plurality of ball bearings being separated by inserted sections of a lubricant composite material comprised substantially as follows:

Constituent:	Percentage by weight
Silver (Ag)	7.50 to 22.50
Platinum (Pt)	7.50 to 22.50
Molybdenum disulfide (MoS_2)	26.25 to 78.75
Lead oxide (PbO)	5.45 to 27.55
Silicon dioxide (SiO_2)	0.40 to 1.20

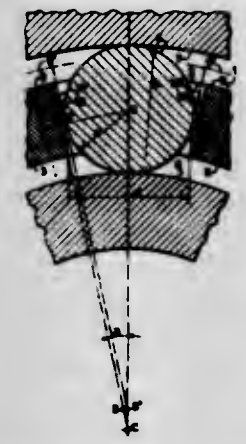
said sections of a lubricant composite material being held in place around said inner race member by a jacket re-

tainer assembly and said jacket retainer assembly having an outer race member adapted to fit around said jacket retainer assembly.

3,199,935
SEGMENTED CAGE FOR ROLLER OR NEEDLE BEARINGS

Alfred O. Pitner, Paris, France, assignor of one-half to Societe Anonyme des Roulements a Aiguilles, Rueil-Malmaison, Seine-et-Oise, France, a French body corporate

Filed June 4, 1962, Ser. No. 199,866
Claims priority, application France, July 31, 1961, 869,542, Patent 1,303,538
7 Claims. (Cl. 308—217)



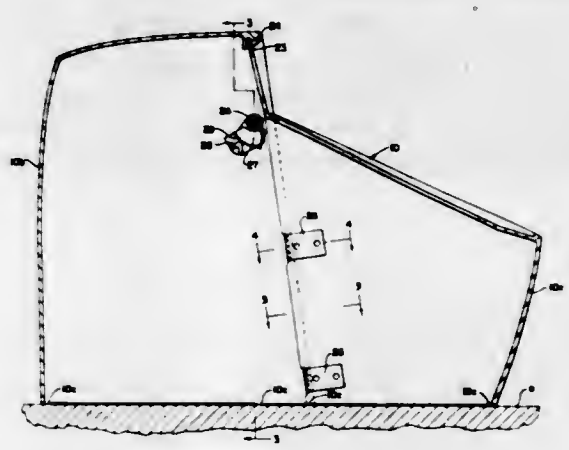
1. In a radial rolling bearing having an outer bearing member and a coaxial inner bearing member, the combination comprising a series of substantially cylindrical rolling elements interposed between said bearing members on a pitch circle coaxial with said bearing members, and a floating solid segmented cage for the rolling elements, the cage comprising a plurality of part-cylindrical cage segments, each segment having crossbars defining apertures therebetween, said crossbars each having opposite ends, circumferentially extending end rim portions connecting the ends of the adjacent crossbars, the crossbars having lateral portions extending inwardly from said pitch circle and inwardly converging to offer a minimum chordal distance therebetween which is less than the diameter of the rolling elements, the crossbars and rim portions of each segment constituting a single integral member, said lateral portions having a plane part extending in the region of said pitch circle, said chordal distance and said convergence of said lateral portions and the diameter of the rolling elements all being such that the rolling elements radially project from the cage segments when the rolling elements radially and inwardly abut the converging lateral portions, whereby the rolling elements hold the cage segments away from the outer bearing member in bearing operation notwithstanding centrifugal force acting on the segments.

3,199,936
CABINET MOUNTING FOR CASH REGISTERS, ACCOUNTING AND LIKE MACHINES

Emil P. Kuhlmann, Westheim, near Augsburg, Germany, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Nov. 26, 1963, Ser. No. 325,933
Claims priority, application Germany, Nov. 27, 1962, N 22,469
10 Claims. (Cl. 312—208)

1. Screwless cabinet structure for a business machine having a supporting base member and a mechanism carrying framework affixed thereto, comprising a machine-covering cabinet front section; a machine-covering cabinet rear section; cabinet section carried means for interconnecting said cabinet front and rear sections along contiguous edge portions thereof; and manipulative means carried by said framework for engaging the assemblage of

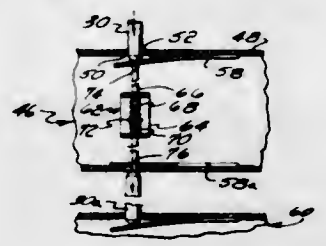


said interconnected cabinet front and rear sections and clamping same against said base member.

3,199,937
LOCKING DEVICE

John E. Mitchell, Costa Mesa, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Sept. 16, 1963, Ser. No. 309,174
3 Claims. (Cl. 312—221)



1. A drawer interlock device including a cabinet structure having a supporting frame for a plurality of drawers and such device for preventing the opening of more than one drawer at a time to prevent tipping of the cabinet structure comprising:

a rod positioned between first and second of said plurality of drawers,

a support mounted on said frame and slidably receiving said rod,

said first drawer having an opening therein for receiving an end portion of said rod,

a cam surface formed adjacent said first drawer opening,

a return spring mounted on said first drawer and positioned opposite the end portion of said rod for forcing the rod back to its original position as said second drawer is slidably returned within the cabinet,

a cam surface formed within said second drawer opening,

a second return spring mounted on said second drawer, for biasing the other end portion of said rod,

whereby opening either first or second drawer will lock the other drawer.

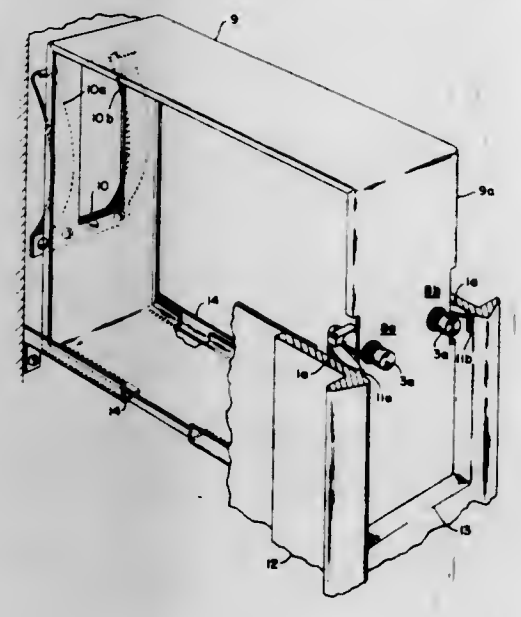
3,199,938
LATCH MECHANISM

Kenneth L. Vouk, Willowick, Ohio, assignor to Bailey Meter Company, a corporation of Delaware

Filed Aug. 5, 1963, Ser. No. 299,785
2 Claims. (Cl. 312—333)

1. Apparatus for releasably holding a frame in a home position on a mounting rack or panel, said frame having

a front, back, top and bottom of generally rectangular configuration forming a box-like member; said mounting rack having a front opening through which the frame may be inserted or withdrawn and a pair of horizontal rails for supporting and guiding said frame to the home position, a pair of spaced apart leaf springs mounted on the rear wall of said rack engaging the back of said frame on either side of its vertical center line when said frame is in the home position and independently urging the



frame forwardly out of the home position toward said front opening, a lip formed on each of the two vertical edges of the front opening in said rack and two independently acting latch release mechanisms mounted on the front of said frame each engaging a separate one of said lips to lock said frame in the home position against the action of said springs and permitting said springs to move said frame forwardly when released out of engagement with said lips.

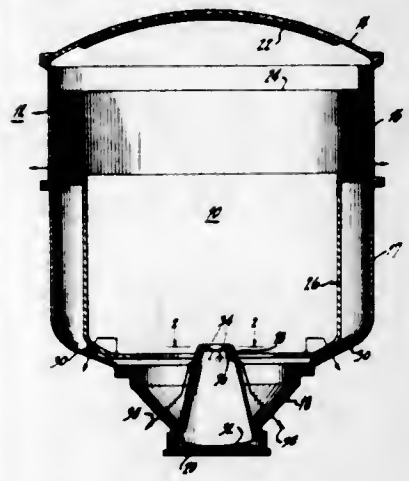
3,199,939

PHOSPHOR DEPOSITION

Herman A. Stern, Lancaster, Pa., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed May 8, 1962, Ser. No. 193,290

1 Claim. (Cl. 316—5)



The method of manufacturing a ray sensitive discharge device comprising the steps of:

(a) positioning at least two crimped metal evaporator boats containing different ray sensitive materials and having separate electrical leads, in an envelope;

(b) evacuating said envelope;

(c) opening sequentially said crimped metal boats by heating sequentially each boat by passing an electrical current through said electrical leads;

(d) evaporating directionally, sequentially, and quantitatively the different ray sensitive materials on a specific portion of the inside of the envelope by further sequential heating of said boats by sequentially passing an electric current through said separate electrical leads;

(e) condensing said ray sensitive materials on a surface in said envelope; and,

(f) then sealing said envelope from the atmosphere.

CHEMICAL

3,199,940

PROCESS FOR DYEING POLYPROPYLENE BLENDS

Daniel Cesar Toureille, Lyon, France, assignor to Soclete Rhodiaceta, Paris, France, a French body corporate

No Drawing. Filed Dec. 29, 1961, Ser. No. 163,054

Claims priority, application France, Jan. 10, 1961, 849,293

7 Claims. (Cl. 8—21)

1. A process for dyeing a material consisting essentially of a blend of crystalline polypropylene and a polyamide, which comprises dyeing the material at a temperature above 95° C. and in the presence of orthophenylphenol and a compound which is a non-solvent for the said blend under the treatment conditions and is selected from the class consisting of liquid monocyclic or bicyclic hydrocarbons and their chlorination products, the weight ratio of the orthophenylphenol and the said non-solvent compound being between the limits 5:1 to 2:1, and the weight ratio of dye material to said non-solvent compound is between 6:1 and 0.12:1.

3,199,941

N - (2 - BENZOTHIAZOYL) - 1,4,5,8 DIAMINO DIHYDROXY ANTHRAQUINONES, MIXTURES AND SYNTHESIS THEREOF

André Albert Paul Simonnet, Creil, and Louis Antoine Cabut, Nogent-sur-Oise, France, assignors, by mesne assignments, to Etablissements Kuhlmann, Paris, France, a corporation of France

No Drawing. Filed July 10, 1962, Ser. No. 208,934

Claims priority, application France, Aug. 21, 1961, 871,188

7 Claims. (Cl. 8—25)

3. Mixtures of dyestuffs consisting of N-(2-monobenzothiazolyl)-1,5-diamino-anthrarufin and N-(2-monobenzothiazolyl)-1,8-diamino-chrysazin.

3,199,942

DIVINYL SULFONE, DIISOCYANATE, DICARBOXYLIC ACID OR DIHYDROXYSULFIDE REACTION PRODUCTS WITH POLYETHYLENE ETHERS IN HIGH TEMPERATURE PAD DYEING AND PRINTING

Robert Kuth and Hanswilli von Brachel, Cologne-Sulz, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Mar. 12, 1962, Ser. No. 179,245

Claims priority, application Germany, Mar. 14, 1961, F 33,413

9 Claims. (Cl. 8—55)

1. In a process for dyeing and printing synthetic textile materials and blends thereof with natural fibers by coloring the textile materials with a dyeing member selected from the group consisting of a padding dyebath preparation and dye printing paste, applying the dyeing member to the textile materials and fixing by heating to a temperature of at least 180° C., the improvement consisting in applying to said textile materials and blends thereof, said dyeing member and an active amount of a polyether selected from the group consisting of

(I) the reaction product of a first member consisting of a polyethylene oxide ether of dihydroxy benzene with a second member selected from the group consisting of

(a) a β,β'-dihydroxy-alkyl-sulfide

(b) a diisocyanate and

(c) a divinyl sulfone, and

(II) the reaction product of a first member consisting of polyoxyethylene ethers of polyalkanol amines with a second member selected from the group consisting of

(a) a diisocyanate, and

(b) a dicarboxylic acid, said product having at least two hydroxyl groups; said first members repeatedly alternating with the second members in the condensation product, one of said members containing not less than 5 carbon atoms directly linked with one another.

3,199,943

PROCESS FOR LOWERING THE SWELLING IN WATER OF VISCOSE CELLULOSE BY CYANOETHYLATION IN THE PRESENCE OF SPECIFIC ALKALI METAL SALTS

Pieter Paulusma, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware

No Drawing. Filed Oct. 3, 1962, Ser. No. 228,025

Claims priority, application Netherlands, Oct. 9, 1961, 270,070

9 Claims. (Cl. 8—116.2)

1. A process for lowering the degree of swelling in water of a dry viscose regenerated cellulose product comprising the steps of treating said product with an aqueous solution of an alkali metal hydroxide having a maximum normality of 0.70 for a sufficient period of time to effect cyanoethylation of the product upon subsequent treatment with acrylonitrile, said solution having present therein in addition to said alkali metal hydroxide a small amount of at least one salt of an alkali metal hydroxide and an acid derived from one of the first five anions of the lyotropic series of Hofmeister, treating the alkali impregnated product with acrylonitrile for a sufficient period of time to cyanoethylate the product and to reduce the degree of swelling of the product upon contact with water, and thereafter drying the resulting product.

3,199,944

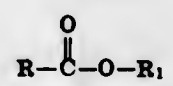
PROTECTIVE FILM TO PREVENT EVAPORATION

Joseph Gabor, Hammond, Ind., and Herman E. Ries, Jr., Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Sept. 10, 1962, Ser. No. 223,291

28 Claims. (Cl. 21—60.5)

1. A method for retarding evaporation of water which method comprises applying to an aqueous surface capable of evaporation an ester of a fatty alcohol having the formula:



wherein R is selected from the group consisting of hydrogen, methyl and ethyl groups, and R_1 is an alkyl group containing from about 10 to about 36 carbon atoms.

3,199,945

GREASE BANDAGE STRUCTURE

Robert E. Stutz, Memphis, Tenn., assignor to Chapman Chemical Company, Memphis, Tenn., a corporation of Illinois

Filed July 24, 1961, Ser. No. 126,123

5 Claims. (Cl. 21—62)



1. In a wood pole preservative bandage including,

an outer sheet of pliable grease resistant material,

a layer of food preservative material arranged on said sheet and spaced from the edges thereof,

said outer sheet and said layer of preservative material being folded intermediate the ends of said outer sheet forming a doubled edge and the outer sheet forming upper and lower sheet portions with the preservative material forming upper and lower preservative layers,

the ends and side edges of said outer sheet being sealed together to form a seam with a space existing between the seam and the edges of said preservative layers,

upper and lower separator sheets of porous separator material between said preservative layers for permitting separation of said layers,

said upper sheet being severable along a severance line between the seam and said edges of the wood preservative layers so that the sheet may be unfolded together with the layers of wood preservative and the unfolded bandage may be placed against a wood surface,

and an attachment strip means in said space secured to the upper outer sheet between said severance line and the preservative material and extending from the edge of the upper separator sheet in said space so that said strip means will lift the upper separator sheet as the upper outer sheet portion is raised after being severed along said severance line.

3,199,946

REMOVAL OF HYDROGEN SULFIDE FROM HYDROCARBON FUEL GASES

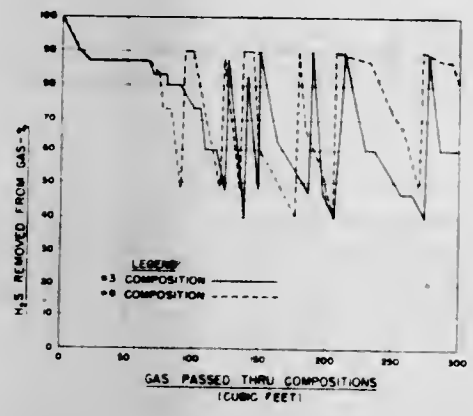
Robert K. Fujita, Honolulu, and Howard D. Hole, Kailua, Hawaii, assignors to Honolulu Gas Company, a corporation of Hawaii

Filed July 23, 1963, Ser. No. 297,058

13 Claims. (Cl. 23—3)

1. A method of removing hydrogen sulfide from hydrocarbon fuel gas which comprises the steps of forming an

admixture of finely-divided iron metal, an alkaline salt selected from the group consisting of alkali metal carbonates, alkali metal bicarbonates and alkali metal hydroxides, and from about 10% to about 75% by weight



of water based on the total weight of said admixture, contacting said fuel gas with said admixture and exposing said admixture to oxygen, said method being carried out at ambient temperatures.

3,199,947

METHOD OF PURIFYING REFRACTORY SULFIDES

Charles d'A. Hunt, Orinda, and Hugh R. Smith, Jr., Piedmont, Calif., assignors to Temescal Metallurgical Corporation, Richmond, Calif., a corporation of California

No Drawing. Filed Dec. 8, 1959, Ser. No. 858,019
3 Claims. (Cl. 23—14.5)

1. A method of purifying a refractory metal monosulfide selected from the lanthanide and actinide series containing minor amounts of oxide and oxysulfide impurities, which method comprises heating a monosulfide of a metal selected from the group consisting of the lanthanide and actinide series in the absence of any reactive material at a reduced pressure of not more than one micron of mercury and at a temperature sufficient to form a molten bath of the monosulfide at said pressure and to vaporize oxide and oxysulfide impurities from the monosulfide but insufficient to vaporize the monosulfide, continuously removing the vaporized oxides and oxysulfides from the region of the molten monosulfide, and recovering the monosulfide in a highly purified form, whereby a purified monosulfide is provided which is substantially impervious to chemical attack by molten metal.

3,199,948

PROCESSING OF KAINITIC MINERALS

Alberto Scarfì and Emanuele Gugliotta, Milan, Italy, assignors to Sincat Soc. Industriale Catanese S.p.A., Palermo, Italy

No Drawing. Filed June 19, 1962, Ser. No. 203,438
Claims priority, application Italy, June 28, 1961, 665,329
5 Claims. (Cl. 23—38)

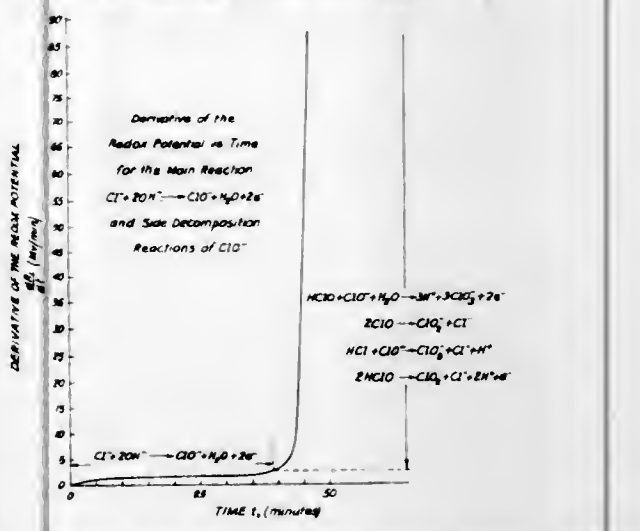
1. A method of processing crystalline kainitic minerals to extract potassium sulphate and potassium chloride therefrom, comprising the steps of heating said minerals in the absence of externally supplied water to a temperature between substantially 130° C. and 190° C. to release a minor fraction of the water of crystallization from the partially dehydrated minerals; and thereafter treating said minerals with an aqueous reaction medium; and recovering from the reaction products of said minerals and said medium, the said potassium sulphate and potassium chloride.

3,199,949

PROCESS CONTROL FOR HYPOCHLORITE PRODUCTION

Francois Clerbois, Uccle-Brussels, and Pol Antoine, Jemeppe-sur-Sambre, Belgium, assignors to Solvay & Cie, Brussels, Belgium

Filed July 10, 1962, Ser. No. 208,817
10 Claims. (Cl. 23—86)



1. In a process for the production of sodium hypochlorite from a solution of caustic soda and a current of gaseous chlorine in a chlorinator having inlet and discharge conduits wherein the concentrations and amounts of the mixture of said sodium hypochlorite, caustic soda and gaseous chlorine vary with time and said amounts of caustic soda and gaseous chlorine are regulated to maintain a slight alkalinity to prevent decomposition of said sodium hypochlorite, said regulation being performed by measurements of the redox potential of said mixture, the improvement comprising measuring said redox potential in at least one of said chlorinator and said inlet and discharge conduits, converting said redox potential into an impulse corresponding to the first derivative of said redox potential relative to time and regulating by said impulse the addition of at least one of said caustic soda and chlorine, said addition being made in the direction of maintaining substantially constant said first derivative of said redox potential.

3,199,950

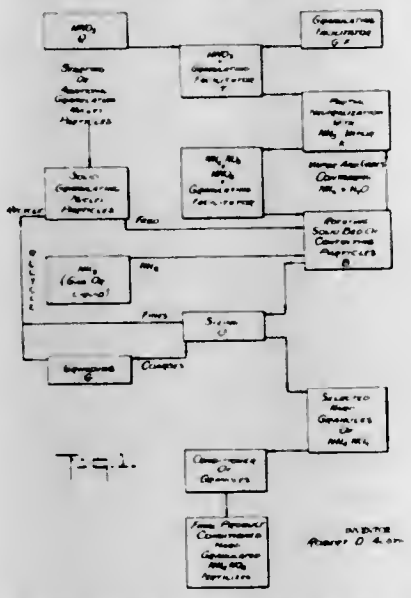
PROCESS OF PRODUCING HARD, GRANULATED AMMONIUM NITRATE

Robert D. Austin, Tampa, Fla., assignor, by mesne assignments, to Tennessee Corporation, New York, N.Y., a corporation of Delaware

Filed July 27, 1962, Ser. No. 212,828
5 Claims. (Cl. 23—103)

1. An improved industrial process for manufacturing rounded, hard, stable ammonium nitrate in a direct, one-stage operation which only requires relatively simple equipment and a plant having a low capital cost which comprises establishing an elongated rolling bed for contacting particles of hard, granulated ammonium nitrate having an inlet at one end and an outlet at the opposite end; spraying nitric acid having a concentration of about 52% to about 58% over particles in a part of said bed adjacent to the inlet to cover surfaces of contacting particles; diffusing ammonia vapor from a bottom region of said elongated, rolling bed underneath said sprayed particles to enter into a reaction with nitric acid on said covered surfaces to form hard, granulated ammonium nitrate; controlling said diffused ammonia vapor to an amount in excess of that required by stoichiometric proportions to react with nitric acid present on said covered surfaces; conducting said reaction in the presence of a granulating facilitator capable of facilitating and effecting the granulation of said hard grandulated ammonium nitrate, said granulating facilitator comprising an agent selected from the group consisting of boric acid, hydro-

chloric acid, and phosphoric acid; controlling the temperature in said elongated bed from about 212° F. to about 250° F. to maintain a hot bed capable of vaporizing vapors and gases including water vapor and unused excess ammonia; conducting hot gas from said inlet over the top of said elongated, rolling bed to said outlet to remove vapors and gases containing water vapor and unused, excess ammonia; passing said removed vapors and gases containing water vapor and unused, excess ammonia in contact with nitric acid to form partially neutralized nitric acid in an aqueous solution for use in the aforesaid spraying operation; continuing rotation of said elongated bed to roll particles over and over to round the



same and to move them from said inlet to said outlet whereby the heat of reaction is utilized for vaporizing water and drying said granulated nitrate without employing super-atmospheric pressure, preheating nitric acid, and operating at high temperatures which tend to cause hazards, especially under industrial operating conditions for the production of commercial product and whereby rounded, hard, granulated ammonium nitrate is produced in a direct, one-stage operation; withdrawing a portion of rounded, hard, granulated ammonium nitrate being discharged from said outlet as finished product; and recycling the remainder to said elongated, rolling bed and through the aforesaid operations.

3,199,951

METHOD OF PREPARING CYANOGEN

William L. Fierce, Walter J. Sandner, and Roger L. Weichman, all of Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Dec. 4, 1961, Ser. No. 156,920
8 Claims. (Cl. 23—151)

1. A method of preparing cyanogen which consists of reacting HCN with NOCl at a temperature of 300°–1000° C. in the presence of an oxidation catalyst containing at least one compound selected from the group consisting of oxides and salts of strong acids of metals of Groups I and IIA of the Periodic Table.

3,199,952

PROCESS FOR THE PRODUCTION OF HIGH STRENGTH, HIGH PURITY HYDROFLUORIC ACID

Domenico Zanon and Claudio Sperandio, both of Milan, Italy, assignors, by mesne assignments, to Edison, Milan, Italy, a corporation of Italy

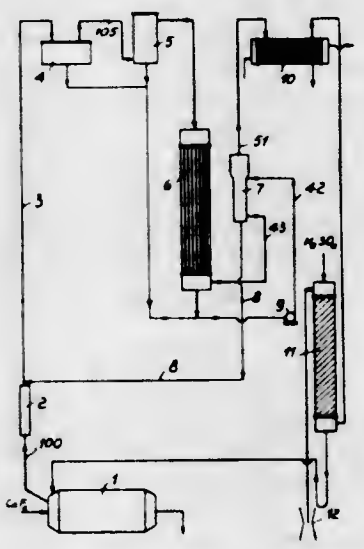
Filed July 11, 1961, Ser. No. 123,208
Claims priority, application Italy, July 21, 1960, 632,844
6 Claims. (Cl. 23—153)

1. A process for the production of high-strength high-purity hydrofluoric acid which comprises the steps of:

(a) reacting fluorite with a mixture of concentrated sulphuric acid and sulphur trioxide under anhydrous conditions to produce a gaseous reaction product containing solid impurities, hydrogen fluoride and high-boiling impurity components including water and sulphuric acid;

(b) conveying the resulting gaseous reaction product into a condensing zone containing a liquid of high-boiling components, consisting essentially of about 20 to 40 weight-percent of sulphuric acid, from about 20 to 40 weight-percent of water and from about 20 to 60 weight-percent of hydrogen fluoride;

(c) passing the gaseous reaction product over the surface of said liquid to scrub said solid impurities from said gaseous product and to effect absorption of the sulphuric acid and water contained in said gaseous product by said liquid;



(d) passing the gaseous product as scrubbed in step (c) over a catalyst to convert hydrogen sulfide and sulphur dioxide impurities contained in said gaseous product to water and solid sulphur and separating the solid sulphur thus formed and produce a gaseous effluent;

(e) cooling the effluent of step (d) to a temperature below 45° C. to condense residual high-boiling impurities, the resulting gaseous product contains fluosulphonic acid;

(f) collecting the condensate liquid resulting from steps (c), (d) and (e);

(g) washing the gaseous product of step (e) with the mixture of liquids resulting from step (f) to eliminate fluosulphonic acid from the gaseous product, thereby producing a gas rich in hydrogen fluoride; and

(h) liquefying the hydrogen fluoride in the gas of step (g) by cooling it below a temperature of 20° C. and collecting the liquid hydrofluoric acid.

3,199,953

PROCESS FOR PRODUCTION OF ANHYDROUS HYDROGEN BROMIDE FROM LITHIUM BROMIDE

Shigeto Suzuki, San Francisco, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

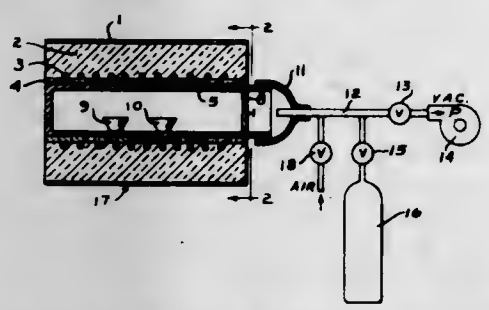
No Drawing. Filed Nov. 22, 1963, Ser. No. 325,771
7 Claims. (Cl. 23—154)

1. Process for the production of anhydrous hydrogen bromide which comprises heating a solution consisting essentially of substantially anhydrous lithium bromide in an organic carboxylic acid, said heating being at a temperature in the range from about 150–350° C. and recovering the resulting evolved hydrogen bromide gas.

3,199,954
METHOD OF MANUFACTURING FIBERS CONTAINING SILICON CRYSTALS

Wallace W. Pultz, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed May 31, 1962, Ser. No. 198,829
10 Claims. (Cl. 23—223.5)

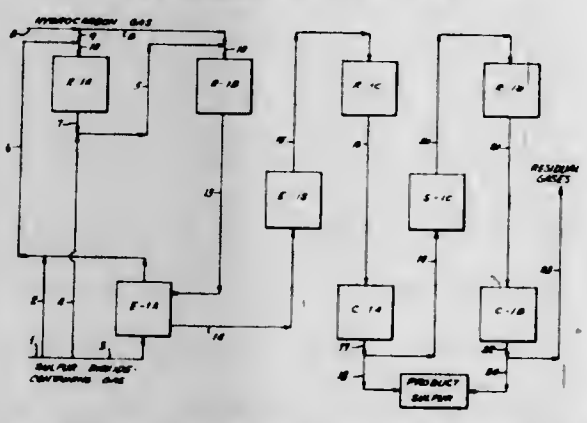


1. A method of manufacturing fibers containing silicon crystals comprising the steps of producing SiO vapor and B_2O_3 vapor in a reaction chamber, evacuating said reaction chamber to an absolute pressure of not more than about 100 microns Hg, thereafter bringing said SiO vapor into contact with said B_2O_3 vapor at about 1000°–1200° C. by introducing a non-oxidizing gas at 10–60 mm. Hg, and maintaining said contact for a time sufficient to cause the formation of fibers through a reaction between the vapors of SiO and B_2O_3, this reaction taking place in the temperature area where disproportionation of SiO normally occurs.

3,199,955
PROCESS OF REDUCING SULPHUR DIOXIDE TO ELEMENTAL SULPHUR

James R. West, South Hempstead, N.Y., and Edward H. Conroy, New Gulf, Tex., assignors to Texas Gulf Sulphur Company, New York, N.Y., a corporation of Texas

Filed Aug. 20, 1962, Ser. No. 218,025
6 Claims. (Cl. 23—226)

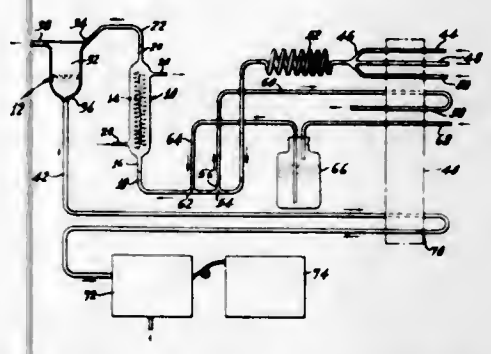


1. The process of reducing sulphur dioxide to sulphur comprising reacting sulphur dioxide with a gaseous hydrocarbon in the presence of a catalyst selected from the group consisting of activated alumina, bauxite, calcium sulphide and quartz to produce elemental sulphur and a gaseous mixture comprising hydrogen sulphide, carbonyl sulphide, carbon disulphide and sulphur dioxide with a mol ratio of sulphur compounds other than sulphur dioxide to sulphur dioxide of about 2:1 and during said reaction maintaining the temperature below 1000° C., cooling said gases to about 390° C. and contacting them with a catalyst to thereby react the carbonyl sulphide and carbon disulphide with sulphur dioxide to produce additional sulphur, thereafter cooling to about 125° C. to condense the free sulphur and separating the same to leave hydrogen sulphide and sulphide dioxide in approximately a 2:1 mol ratio, thereafter heating the remaining gas in the presence of a catalyst to from 200 to 275° C. to react the remaining hydrogen sulphide and sulphur dioxide and thereafter cooling to about 125° C. to condense the sulphur and separating the same.

3,199,956
COCURRENT PACKED HELICAL COIL EXTRACTOR

Andres Ferrari, Scarsdale, N.Y., assignor to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York

Filed Oct. 18, 1962, Ser. No. 231,540
6 Claims. (Cl. 23—267)

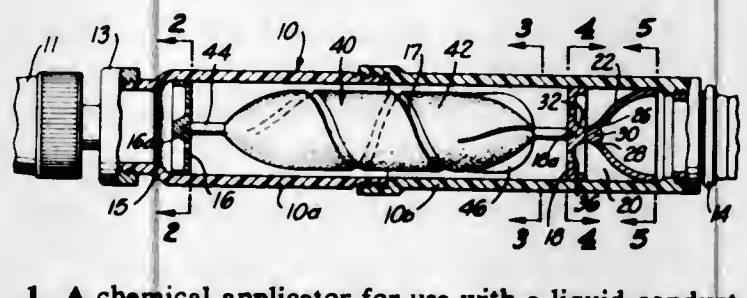


1. Solvent extracting apparatus, comprising a helical coil of tubing providing a liquid passage and having an inlet and an outlet for the flow of liquid through said passage, and a plurality of separate members positioned in said passage in the path of flow of the liquid and providing liquid impingement contact surfaces for bringing the various portions of the liquid into intimate contact with each other, said coil of tubing having a constricted opening providing an inlet for the liquid and having another constricted opening, longitudinally spaced from said first mentioned constricted opening, and providing an outlet for the liquid, said members being disposed in said passage between said constricted openings, and said coil of tubing having convolutions downstream of said constricted opening providing said outlet for the liquid, said convolutions having no members therein.

3,199,957
CHEMICAL APPLICATOR

Lee E. Vivion, 1143 Gladys St., Long Beach, Calif.

Filed Apr. 25, 1963, Ser. No. 275,623
22 Claims. (Cl. 23—269)



1. A chemical applicator for use with a liquid conducting line, said applicator comprising:

a hollow cylindrical housing with means at its opposite ends for removably connecting said housing to the liquid conducting line; and

an elongated chemical dispersing member rotatably supported at its opposite ends within the cylindrical housing and cooperating therewith to define an uninterrupted annular flow passage about and co-extensive with said member.

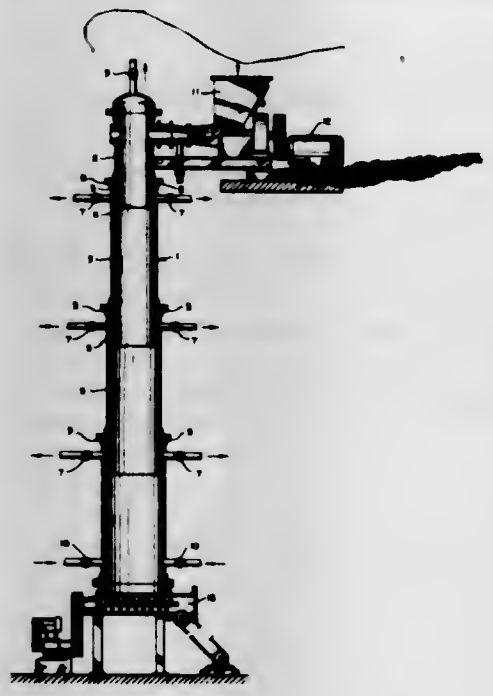
3,199,958
TELESCOPING TOWER FOR FURFURAL PRODUCTION

Carl Gunnar Carisson Skogh, Stackvagen 20B, Sollentuna, Sweden

Filed Dec. 11, 1959, Ser. No. 859,008
Claims priority, application Sweden, Dec. 17, 1958, 11,714/58; Dec. 18, 1959, 10,821/59
2 Claims. (Cl. 23—283)

1. Apparatus for the continuous production and recovery of furfural from furfural-yielding solid material

by water vapor treatment at elevated temperature and pressure, comprising a substantially vertically disposed reaction vessel of circular cross section throughout its length having cross sectional areas increasing stepwise from top to bottom, said reaction vessel being bounded by top and bottom closures and therebetween by telescopically overlapping collapsible and movable side wall sections forming at each zone of overlap between two such sections a peripheral annular cavity bounded laterally by telescopically overlapping, non-contiguous portions of said wall sections and upwardly by closure means while opening downwardly into the interior of said reaction vessel,



a material inlet near the top and a material outlet near the bottom of the reaction vessel, means for continuously feeding fresh furfural-yielding solid material into the reaction vessel through said material inlet, means for continuously discharging spent solid material from said reaction vessel through said material outlet, a vapor outlet communicating with the interior of said reaction vessel adjacent said material inlet, and vapor outlet means communicating with said peripheral annular cavities for promptly withdrawing from each zone of the apparatus the vapors containing furfural substantially immediately after formation thereof.

3,199,959

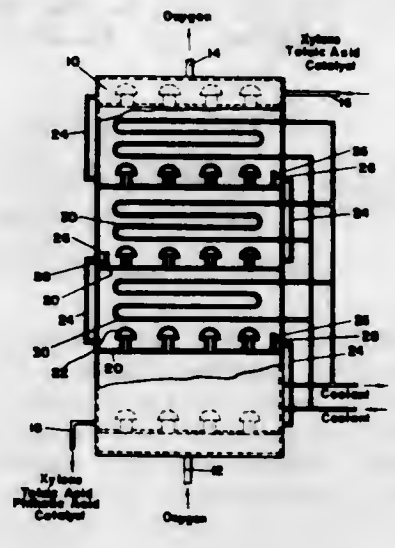
REACTOR FOR PREPARATION OF CARBOXYLIC AROMATIC ACIDS

James F. Dempsey, Claymont, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Original application Mar. 4, 1958, Ser. No. 719,079, now Patent No. 3,077,497, dated Feb. 12, 1963. Divided and this application Oct. 24, 1962, Ser. No. 238,820

3 Claims. (Cl. 23—283)

1. A reactor for the preparation of carboxylic aromatic acids which comprises a reactor shell, an oxygen inlet conduit in the lower portion of said shell, an oxygen outlet conduit in the upper portion of said shell, a plurality of vertically spaced apart bubble trays between said inlet and said outlet, means for admitting a charge liquid to the uppermost of said bubble trays, means including a downpipe for conducting said liquid charge from each of said trays to the tray immediately therebelow, means for removing said liquid, together with reaction products, from the lowermost tray, and heat exchange means for removing heat from vapors rising from a lower tray to an upper tray, said heat exchange means being positioned beneath said upper tray and above the



upper end of the downpipe for conducting liquid charge from said lower tray to the tray immediately therebelow.

3,199,960

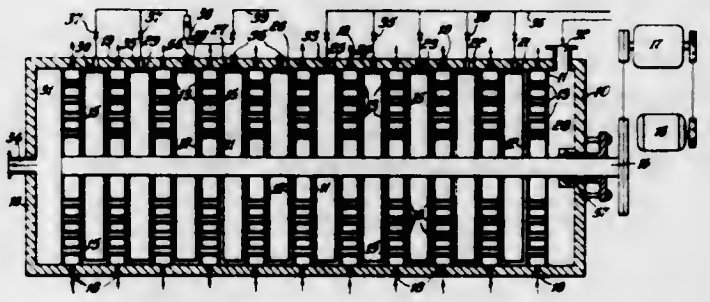
CHEMICAL APPARATUS FOR LARGE MASS FLOW RATES

Austen Edgar Sowerby, Howgate, Whitehaven, Cumberland, England, assignor, by mesne assignments, to Marchon Products Limited, Whitehaven, Cumberland, England, a British company

Filed Apr. 24, 1962, Ser. No. 189,746

Claims priority, application Great Britain, Apr. 25, 1961, 14,906/61

3 Claims. (Cl. 23—285)

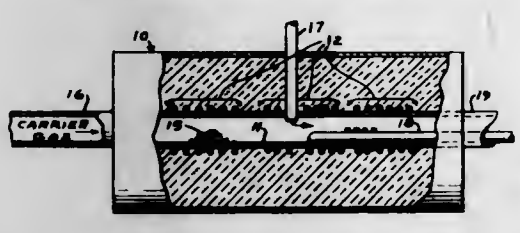


1. Chemical apparatus adapted for large mass flow rates which comprises a reaction vessel; means for introducing a liquid reactant into said vessel at one end thereof, a series of hollow baffle plates arranged transverse to the length of the vessel and situated at a number of positions along the length of the vessel, each said baffle plate having a plurality of apertures extending in the longitudinal direction of the vessel for the flow of liquid therethrough whereby there are formed a series of interconnecting reaction chambers, each said baffle plate being provided with an inlet and outlet to the hollow space thereof for the passage therethrough of a heat-exchange fluid; separate fluid circuits for supplying the said heat-exchange fluid to the several hollow baffle plates whereby the temperatures of said baffle plates can be controlled independently of each other; separate inlet means for feeding a gaseous reactant into at least some of the said reaction chambers and agitator means provided in at least some reaction chambers, said reaction mixture flowing freely, without the formation of substantial pressure gradients therein, through the reaction vessel.

3,199,961
GROWTH OF CADMIUM OXIDE SINGLE CRYSTALS

Thomas C. MacAvoy and James A. Marley, Jr., Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed May 23, 1962, Ser. No. 197,091
3 Claims. (Cl. 23—294)

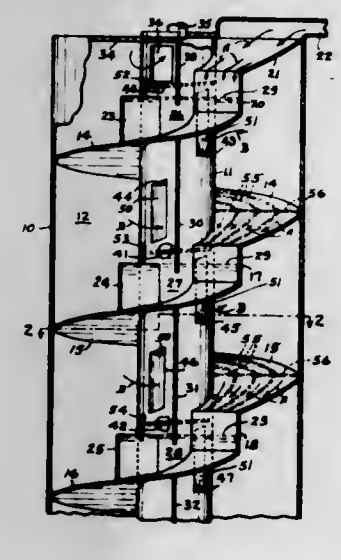


1. The method of producing single crystals of cadmium oxide which comprises the steps of heating a quantity of cadmium oxide to its sublimation temperature to convert said cadmium oxide to a vapor, passing a carrier gas comprising helium over said quantity of cadmium oxide, carrying said vapor in said carrier gas to a growth site having a temperature within the range 800° C.–1260° C., whereby to deposit said vapor on said growth site in the form of at least one single crystal.

3,199,962
METHOD OF COUNTERCURRENT CONTACTING OF IMMISCIBLE FLUIDS

Robert K. E. Whitaker, 14 Saddington St., Turramurra, New South Wales, Australia

Filed Mar. 7, 1960, Ser. No. 13,210
4 Claims. (Cl. 23—310)

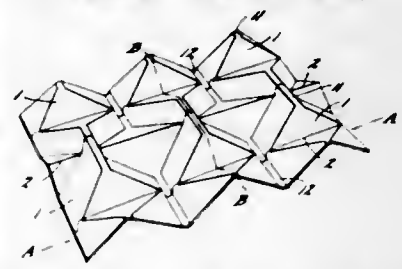


1. The method of counter-current contacting of two immiscible fluids of different density, including a liquid and a vapor, for the purposes of accomplishing mass transfer between the phases, comprising, causing a heavy liquid to freely, openly flow over a substantial portion of the width of a helical path while circling a vertical tower of an outer and an inner tubular shell; dividing said helical path into superimposed mixing and extracting compartments by forming a dam by step and weir in said helical path; dividing the area above said helical path by interposing transversely and vertically a sealing plate with its bottom edge dipping into the dam of liquid; causing the lighter fluid to flow upwardly countercurrently under pressure in open contact periodically with said liquid at a velocity well within the range of turbulence to form a moisture laden fluid; providing for passing said moisture laden fluid from the mixing compartment into the inner shell; subjecting said moisture laden fluid to a baffling treatment to extract liquid from said fluid and then passing the fluid back into the mixing chamber to flow into the next mixing chamber above for repetition of the cycle of entering and exiting the inner shell.

3,199,963
CORRUGATED SHEET FORMED MATERIAL

Bo Gunnar Bengtsson, Vaucressont, Paris, France, assignor to Oivind Lorentzen, Oslo, Norway

Filed Nov. 21, 1962, Ser. No. 239,197
Claims priority, application Norway, Nov. 23, 1961, 142,285
3 Claims. (Cl. 29—183)



1. A corrugated sheet made from a flattened sheet of deformable material having three sets of corrugations therein, the corrugations of each set being substantially parallel, the corrugations of the first set extending alternately in opposite directions from the mean plane of said material with wave crests equi-distant from the mean plane of said material, said second and third sets of corrugations being parallel to each other and at an angle with respect to said first set of corrugations, the corrugations of said second and third sets being spaced from each other and extending alternately inwardly from said wave crests in said first set of corrugations on opposite sides of said mean plane respectively, the distance of the wave crests of said second and third sets of corrugations from said mean plane being less than the distance of the wave crests of said first set of corrugations from the mean plane, all of said corrugations being formed without elongation of said material, whereby when said sheet is subjected to tensile and compression forces along its mean plane the angles of said corrugations will vary without altering the peripheral dimensions of said corrugated sheet.

3,199,964
MOTOR FUEL COMPOSITION

Alfred Arkell and George W. Eckert, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 25, 1963, Ser. No. 275,538
11 Claims. (Cl. 44—69)

1. A motor fuel comprising hydrocarbons in the gasoline boiling range and an effective anti-knock amount of a salt of selenic acid and of a nitrogen-containing compound selected from the group consisting of:

(*a*) $H_2SeO_4 \cdot (RNR'R'')_x$

in which R represents a hydrocarbyl radical having from 3 to 24 carbon atoms, R′ and R″ each represent a radical selected from the group consisting of hydrogen and a hydrocarbyl radical having from 1 to 18 carbon atoms and *x* is an integer from 1 to 2, and

(*b*) $H_2SeO_4 \cdot (RN{=}CHR''')_x$

in which R is a hydrocarbyl radical having from 3 to 24 carbon atoms, R‴ represents a radical selected from the group consisting of hydrogen and an alkyl radical having from 1 to 18 carbon atoms and *x* is an integer from 1 to 2.

3,199,965
LIQUID HYDROCARBONS

Harry J. Andress, Jr., Pitman, and Paul Y. C. Gee, Woodbury, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York

No Drawing. Filed June 25, 1964, Ser. No. 378,026
13 Claims. (Cl. 44—71)

1. A liquid hydrocarbon, normally having a tendency to form sediment during storage and being free of any

added iron-containing material, containing a stabilizing amount of a condensation reaction product of citric acid and a tertiary-alkyl primary amine having from about 6 to about 30 carbon atoms with a tertiary alkyl group attached to a nitrogen atom.

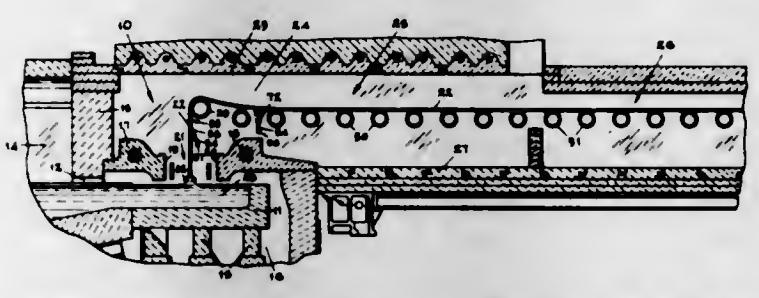
ERRATUM

For Class 51—309 see:
Patent No. 3,199,254

3,199,966
METHOD AND APPARATUS FOR TREATING SHEET GLASS

Thomas B. O'Connell, Toledo, Richard R. Snow, Perrysburg, and Norman K. Gladieux, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed July 31, 1961, Ser. No. 128,066
8 Claims. (Cl. 65—26)



1. In apparatus for improving the quality of sheet glass, means for drawing a continuous ribbon of glass from a bath of molten glass, at least one rotatable roll positioned to engage the glass ribbon while it is in a highly heated softened condition, and means for directing a gas toward a surface of the glass ribbon to form a film thereon, said gas directing means including a tubular member extending transversely of the glass ribbon and provided with a series of spaced openings, a source of gas connected to said tubular member, and means for controlling the flow of gas through said tubular member, said film being transferred from the glass ribbon to the roll in response to rotation thereof whereby a protective coating is formed on said roll.

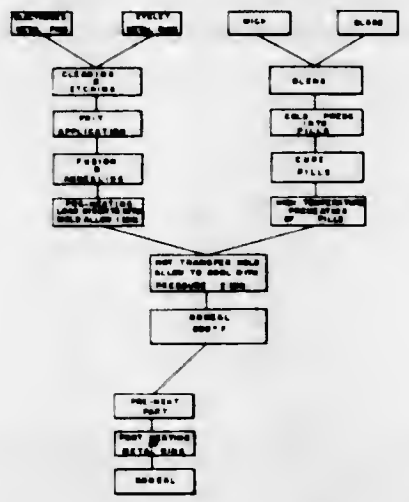
6. A method of improving the quality of sheet glass wherein a continuous ribbon of glass is drawn upwardly from a bath of molten glass and moved over and in contact with a supporting roll while in a highly heated softened condition, comprising the steps of directing sulphur trioxide gas toward a surface of the glass ribbon in advance of said supporting roll, said sulphur trioxide gas reacting with the surface of the glass ribbon to form a transferable film of sodium sulphate thereon, and transferring said film from the ribbon to the supporting roll in response to the movement of said sheet over and in contact with said roll to thereby form a protective coating on said roll.

3,199,967
METHOD OF PRODUCING HERMETIC SEAL

David M. Pixley, South Duxbury, Mass., assignor to Haveg Industries, Inc., a wholly owned subsidiary of Hercules Powder Company, New Castle, Del., a corporation of Delaware

Filed Aug. 17, 1960, Ser. No. 50,231
3 Claims. (Cl. 65—50)

1. A method of improving the bond of a glass-mica insulating composition to a metal insert comprising prebeading the metal insert with a fused glass composition which will bond to both the metal and to the glass-mica composition, molding an article from the prebeaded metal insert and the glass-mica composition at 3 to 10 tons/sq. in. at a temperature of 600–800° F., annealing the molded article at atmospheric pressure at a temperature of 600–800° F., and post heating the metal insert at a temperature of 1100° to 1500° F. to refuse the

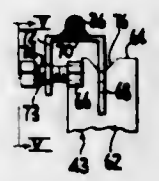


glass at the metal insert while avoiding substantial post-heating of the glass-mica portion of the molded article.

3,199,968
GLASS SHEET BENDING APPARATUS

Harold E. McKelvey, Cheswick, Pa., assignor to Pittsburgh Plate Glass Company, a corporation of Pennsylvania

Filed Aug. 14, 1959, Ser. No. 833,778
9 Claims. (Cl. 65—291)



1. Apparatus for bending glass sheets comprising
a main mold member,
an end mold member, and
a pivotal connection between said main mold member and said end mold member located along an axis of pivoting and comprising
an inverted channel member secured to one of said mold members, said inverted channel member having a notch and an aperture spaced from one another in alignment along said axis of pivoting,
a knife-edge member connected to the other said mold member and cooperating with said notch in said channel member to provide said pivotal connection,
and means for securing said knife-edge member to said inverted channel member comprising
a securing element attached to said knife-edge member in alignment with said aperture in said channel member and
a cooperating securing element extending loosely through said aperture along said axis of pivoting and attached to said securing element attached to said knife-edge member.

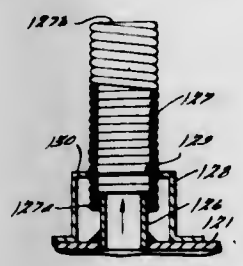
3,199,969
GLASS TEMPERING NOZZLE

Raymond Johnston, Southfield, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Dec. 20, 1961, Ser. No. 160,757
1 Claim. (Cl. 65—348)

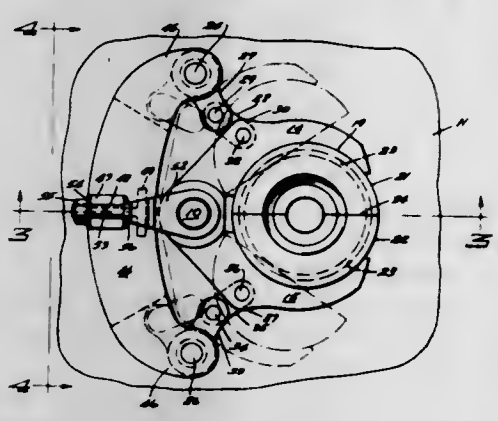
Apparatus for treating heated glass sheets or plates with jet sprays of a fluid cooling medium applied to a surface of the sheets or plates comprising a conveyor mecha-

nism to move said sheets or plates along a predetermined path, a pressurized cooling fluid manifold having a plurality of spaced, nozzle tubes projecting outwardly from the manifold towards said sheets or plates, and a closed coil of resilient material telescopically arranged around and forming an outwardly directed tubular extension on



each nozzle tube, said resilient tube extensions being adjustably connected around the associated nozzle tubes by means of a supporting cup mounted on said manifold and arranged concentrically about said coiled extension tube, said cup having a threaded connection to the coiled exterior surface of the extension tube to provide for relative axial movement therebetween.

3,199,970
MOUNTING FOR BLANK MOLDS
Dale H. Dierksheide, Perrysburg, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Feb. 1, 1963, Ser. No. 255,541
6 Claims. (Cl. 65—360)

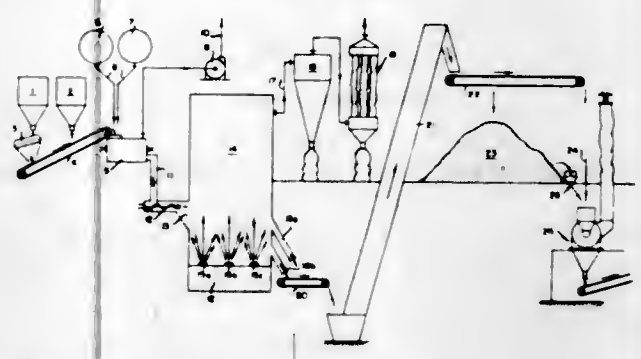


1. A glass forming mold assembly comprising a frame, a center pivot post on said frame, mold arms pivotally supported on said post, means supported by said frame and connected to said arms for pivoting them toward and away from each other at one side of said post which includes a pair of parallel operating shafts spaced from said post and linkages fastened to said shafts for movement therewith and connected to said mold arms, and means connected to said post and said mold arm pivoting means applying a predetermined load force between said post and said pivot shafts, thereby preloading the assembly to prevent deflection thereof by forces exerted in moving the mold arms toward each other on said one side of post.

3,199,971
METHOD OF ACCELERATING PLANT GROWTH
Gisen Shimazaki, 76 2-chome Tanabehigashino-cho, Higashisumiyoshi-ku, Osaka, Japan
No Drawing. Filed Mar. 1, 1963, Ser. No. 262,209
Claims priority, application Japan, Mar. 17, 1962, 37/10,769
6 Claims. (Cl. 71—2.3)

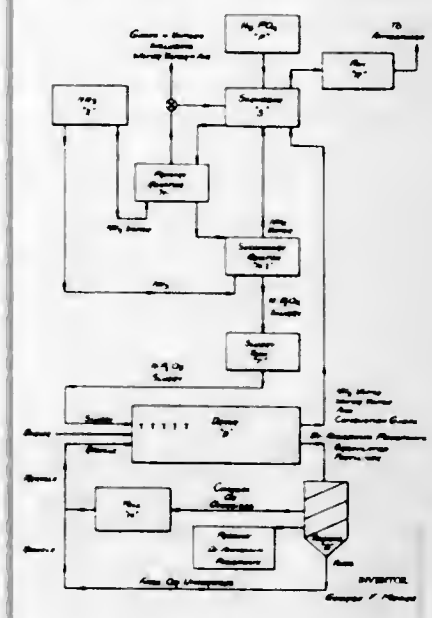
1. Method of accelerating the growth of plants which comprises applying to said plants a plant growth accelerating amount of a compound selected from the group consisting of nitroguaiacol and the water soluble salt of nitroguaiacol.

3,199,972
PRODUCTION OF MICROPULVERIZED PHOSPHATE FERTILIZER
Ruediger Lothar von Reppert, Wiesbaden, Germany, assignor to Chemische Werke Albert, Wiesbaden, Biebrich, Germany, a corporation of Germany
Filed July 25, 1961, Ser. No. 126,530
5 Claims. (Cl. 71—37)



1. A method of producing a micropulverized phosphate fertilizer having a high content of citric acid soluble P_2O_5 and having sufficient citrate and water soluble P_2O_5 to exert a starting effect on plant growth, comprising adding to a granular raw phosphate having a particle size less than 1 mm. a mineral acid in a quantity of at least 12 and at most 50 molar percent of the quantity theoretically required for a full mineral acid conversion of the raw phosphate to superphosphate, subjecting the resulting mass of partially reacted raw phosphate in a mixing and reaction zone to a whirling and slinging action until the reaction between the acid and the phosphate has predominantly taken place, cooling and drying the resulting reaction product, and micropulverizing the dried and cooled product so that at least about 90% will pass a 1,600 mesh/cm.^{2} sieve and up to 100% will pass a 10,000 mesh/cm.^{2} sieve.

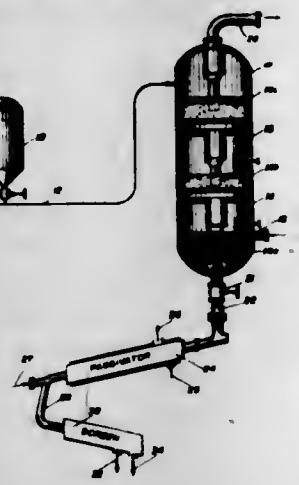
3,199,973
MULTI-STAGE PROCESS OF PRODUCING DI-AMMONIUM PHOSPHATE
George F. Moore, Tampa, Fla., assignor, by mesne assignments, to Tennessee Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 5, 1962, Ser. No. 171,169
5 Claims. (Cl. 71—43)



1. An improved multi-stage accretion process of producing dried rounded solid particles coated with accretions of di-ammonium phosphate granulated fertilizer with a high ratio of $N:P_2O_5$ higher than 1:3 and with the value of pH increasing from one stage to another up to at least as high as about 6.9 to about 8.35 which comprises reacting ammonia and weak phosphoric-acid-containing material, con-

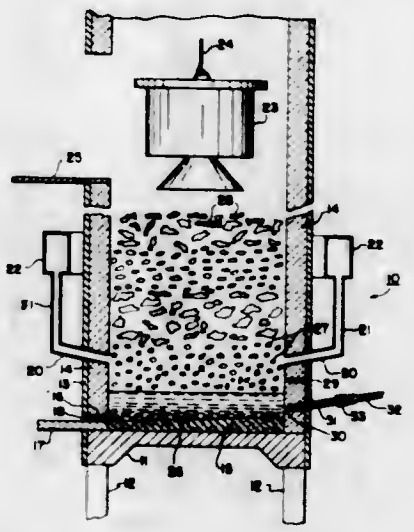
taining as low as about 28% to about 35% P_2O_5 in a first stage of operation in an amount sufficient to obtain a pH of about 6.3 to about 6.4 to produce a liquid mass containing a substantial amount of di-ammonium phosphate, flowing said liquid mass to a second stage of operation; subjecting said mass to further treatment with sufficient ammonia in said second stage to raise the pH of the liquid mass in the second stage to at least about 6.9 and up to at least as high as about 8.35 to produce di-ammonium phosphate with an $N:P_2O_5$ ratio in a slurry higher than 1:3; supplying said ammonia in an excessive amount to provide an excess of 75% to 150% of ammonia over the stoichiometric amount required in said second stage of operation to produce di-ammonium phosphate in a slurry; exhausting vapors and gases including unused excess ammonia from said second stage; scrubbing said vapors and gases including said excess ammonia with weak phosphoric acid containing about 28% to about 35% P_2O_5 to absorb said ammonia and to provide weak phosphoric-acid-containing material containing about 28% to about 35% P_2O_5 for the first stage of operation; transferring said di-ammonium phosphate slurry produced in said second stage containing a high ratio of $N:P_2O_5$ of at least 1:3 and distributing said slurry over an elongated bed of rolling particles of granulated di-ammonium phosphate having an $N:P_2O_5$ ratio of at least 1:3 at a temperature not exceeding about 210° F. to produce dried rounded solid di-ammonium phosphate particles coated with accretions of di-ammonium phosphate; and recovering said dried particles as a finished product constituted of rounded granulated particles of di-ammonium phosphate having a $N:P_2O_5$ ratio higher than 1:3.

3,199,974
FLUIDIZED IRON ORE REDUCTION PROCESS FOR PRODUCTION OF IRON POWDER
Clarence A. Johnson and William Volk, both of Princeton, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Filed May 25, 1964, Ser. No. 371,167
3 Claims. (Cl. 75—.5)



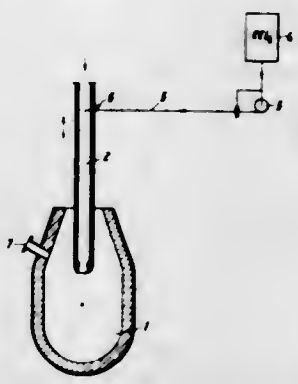
1. A method for the production of iron powder for powder metallurgy which powder will have a volume-weight ratio less than 2.5 and of a size all passing through a 100 mesh screen and from 50–80% passing through a 325 mesh screen, which comprises feeding an iron oxide normally of a size all of which will pass through a 20 mesh screen and at least about 25% of which passes through a 325 mesh screen, passing a hydrogen gas through the reaction zone at a velocity to fluidize the ore, maintaining a temperature in the reaction zone in the order of 700–1100° F., maintaining a superatmospheric pressure in the reaction zone in the range of 150 to 650 p.s.i.g., removing the reduced iron when the reduction is at least 90% complete and the iron is pyrophoric, and screening a fine fraction of a size all of which will pass a 325 mesh screen from the remaining material having a size all of which passes a 20 mesh screen and from 0–30% passing through a 100 mesh screen.

3,199,975
DESULFURIZATION OF IRON
Richard K. Matuschkovitz, Chicago, Ill., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 30, 1962, Ser. No. 234,020
3 Claims. (Cl. 75—43)



1. Method of desulfurizing iron which comprises injecting eight to ten pounds of powdered calcium carbide per pound of sulfur removed from the iron intermittently into molten iron below the surface thereof in a continuous stream of inert gas through a series of peripheral ports in the well of a cupola while said molten iron is in the well of said cupola.

3,199,976
MANUFACTURE OF STEEL
August Dammer, Viersen, and Wilhelm Breuing, Bochum, Germany, assignors to Rheinstahl Huttenwerke AG., Essen, Germany, a German corporation
Filed June 17, 1964, Ser. No. 375,746
Claims priority, application Germany, Dec. 1, 1960, R 29,203; June 26, 1963, R 35,512
12 Claims. (Cl. 75—59)

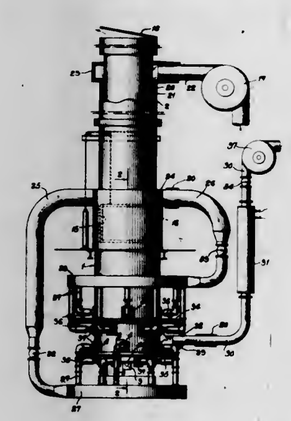


1. Process for reducing the hydrogen content of steel melts, which comprises maintaining a bath of molten steel with slag covering the surface thereof and blowing a stream of oxygen and .5 to 7% by volume, based on said oxygen, of a member selected from the group consisting of lower completely chlorinated alkanes, lower completely fluorochlorinated alkanes, and mixtures thereof, against the slag with a velocity sufficient to cause intermixing of the slag and the upper portion of the bath for a period of time sufficient to substantially reduce the hydrogen content of the melt.

3,199,977
METHOD AND APPARATUS FOR MELTING COPPER

Albert J. Phillips, Plainfield, and Richard Baier, New Brunswick, N.J., assignors to American Smelting and Refining Company, New York, N.Y., a corporation of New Jersey

Filed June 22, 1962, Ser. No. 204,413
21 Claims. (Cl. 75—76)



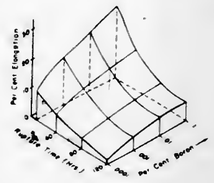
1. In a method for producing molten copper having a desired oxygen content in which copper is passed downwardly in a vertical furnace through a reducing atmosphere maintained in the furnace by passing hot products of combustion upwardly through the furnace, the improvement which comprises passing molten copper downwardly through said furnace while injecting into the furnace at least one stream for supplying hot products of combustion to the furnace, each of such injected streams consisting essentially of the hot products of combustion obtained by uniting fuel with an oxygen containing gas in amounts to provide insufficient oxygen in the injected stream to completely burn the fuel contained therein, maintaining in each injected stream the difference between the average total oxygen content intended for the stream and the highest total oxygen content found in at least a preponderant proportion of the area of a plane perpendicular to the path of the stream at a value below a selected value prior to injecting the stream into the furnace, said selected value being less than 4.21 total oxygen, igniting each injected stream prior to injecting it into the furnace, and controlling the combustion of the oxygen in each injected stream to provide at least a minor degree of combustion of the oxygen in the injected stream before the latter has travelled into the furnace more than about six inches from the furnace wall.

3,199,978
HIGH-STRENGTH, PRECIPITATION HARDENING AUSTENITIC ALLOYS

Jack T. Brown, Monroeville, Albert W. Hoppe, Canonsburg, and Donald W. Gunther, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 31, 1963, Ser. No. 261,925
12 Claims. (Cl. 75—128)

1. A precipitation hardenable austenitic alloy having a high rupture strength at temperatures of from 1100° F. to 1300° F. and being notch insensitive, consisting essentially of from 24% to 28% by weight of nickel, from 10% to 18% chromium, up to 2.0% manganese, up to 1% silicon, from 1.25% to 3.5% molybdenum, from 2.2% to 2.8% titanium, less than 0.1% carbon, up to 0.5% vanadium, and from 0.005% to about 0.05% boron, up to 0.4% aluminum, and the balance being iron, the



boron functioning to improve the properties of the alloy on precipitation hardening treatment by optimally distributing the hardening precipitate therein.

3,199,979
ALUMINUM BASE CASTING ALLOYS AND METHOD

Wayne Martin, Fort Wayne, Ind., assignor to William F. Jobbins, Incorporated, Aurora, Ill., a corporation of Illinois

No Drawing. Filed Oct. 27, 1961, Ser. No. 148,051
8 Claims. (Cl. 75—148)

1. An aluminum base casting alloy consisting essentially of at least three percent silicon and including calcium introduced as elemental calcium in an amount greater than .002% but less than .02%, at least one of the rare earth metals in an amount greater than .002% but less than .02%, and the balance aluminum.

3,199,980
TITANIUM ALLOYS

Harold Brooks, Farnborough, Anthony Reginald George Brown, Farnham, Kenneth Stanley Jepson, Ash Vale, and Gerald Ivor Lewis, Farnborough, England, assignors to National Research Development Corporation, London, England

No Drawing. Filed Aug. 29, 1962, Ser. No. 220,157
Claims priority, application Great Britain, Sept. 4, 1961, 31,678/61
3 Claims. (Cl. 75—175.5)

1. A quaternary alloy consisting essentially of, by weight, from 1 to 7% aluminum, 0.5 to 2% boron, 0.1 to 1.2% carbon and the balance titanium, said alloy having a titanium-aluminum α solid solution matrix with the boron and carbon in the form of a precipitated dispersed phase within said matrix.

3,199,981
LIGHT SENSITIVE LAYERS

Oskar Süs and Erwin Lind, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

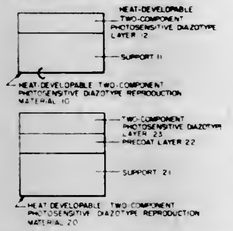
No Drawing. Filed July 19, 1960, Ser. No. 43,720
Claims priority, application Germany, July 29, 1959, K 38,316
30 Claims. (Cl. 96—33)

1. A presensitized printing plate comprising a base material having a thin, uniform coating thereon comprising a compound prepared by reacting an aromatic amino diazonium salt with a high molecular weight condensation product selected from the group consisting of a condensation product of a sulfonated aromatic hydoxy compound and formaldehyde and a condensation product of an aryl sulfonic acid, an aromatic hydroxyl compound and formaldehyde.

3,199,982
DIAZOTYPE REPRODUCTION MATERIAL

Thomas T. Kashiwabara, Fort Lee, N.J., assignor to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey

Filed Mar. 19, 1963, Ser. No. 266,332
20 Claims. (Cl. 96—49)



1. A heat-developable diazo-type material, which comprises:

a support resistant to the scorching effects of heat at the conditions of thermal development; and

a photosensitive diazonium compound, a coupler therefor, and a heat-activatable developing agent coated on said support, said agent having the general formula:

$$R_1NHR_2$$

where R_1 and R_2 are members selected from one of the groups consisting of:

group A in which R_1 is a member selected from the group consisting of: alkyl, thiazolyl, pyridyl, guanyl, and triazinyl, and R_2 is a member selected from the group consisting of hydrogen, methyl, and guanyl; and

group B in which R_1 and R_2 are members of the same heterocyclic ring.

2. A method for making a diazo reproduction of an image, which comprises the steps of:

exposing a diazo sheet to imagewise actinic radiation, said sheet comprising a support resistant to the scorching effects of heat at the conditions of thermal development, and a photosensitive diazonium compound, a coupler therefor, and a heat-activatable developing agent coated on said support, said agent having the general formula:

$$R_1NHR_2$$

where R_1 and R_2 are members selected from one of the groups consisting of:

group A in which R_1 is a member selected from the group consisting of alkyl, thiazolyl, pyridyl, guanyl, and triazinyl, and R_2 is selected from the group consisting of hydrogen, methyl, and guanyl; and

group B where R_1 and R_2 are members of the same heterocyclic ring; and

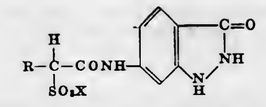
heating said sheet at a temperature between the activation point of said agent and the scorching point of said support to form a dye image on said sheet.

3,199,983
3-INDAZOLONE COLOR COUPLERS

Günther Koepke, Leverkusen, Willibald Pelz, Opladen, and Hans Schellenberger, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 22, 1962, Ser. No. 167,929
Claims priority, application Germany, Feb. 1, 1961, A 36,629
9 Claims. (Cl. 96—55)

4. A light-sensitive silver halide emulsion containing a color coupler of the following general formula



wherein R stands for an alkyl radical having from 12 to 18 carbon atoms, said coupler being capable of forming a colored image upon reaction with the oxidation product of said primary amine developer, and X is a cation selected from the group consisting of hydrogen, alkali metals, alkaline-earth metals, ammonium, and alkyl-substituted ammonium radicals the alkyl radicals of which contain between 1 and 4 carbon atoms.

3,199,984
METHOD OF PREPARING CHOCOLATE COATINGS

Otto G. Jensen, Tarrytown, N.Y., Anthony J. Shukis, Glen Rock, N.J., and James E. Bagan, Yonkers, N.Y., assignors to National Biscuit Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,851
4 Claims. (Cl. 99—23)

1. In the art of enrobing an edible food with a chocolate type coating wherein a hard butter is combined with a cocoa-containing material which is a member selected from the group consisting of cocoa, and mixtures of cocoa with chocolate liquor containing up to 5% of chocolate liquor, and an emulsifier, sugar, skim milk powder, salt, and flavor are added, the improvement which comprises (1) hydrogenating a lauric acid-free oil which is a member selected from the group consisting of corn oil, cottonseed oil, olive oil, palm oil, peanut oil, rice bran oil, soybean oil and sunflower oil, to a hard butter of melting point of 105°–114° F., (2) then adding said emulsifier, cocoa and chocolate liquor, sugar, skim milk powder, salt, and flavor, said hard butter being present in proportion of 26 to 38%, said cocoa being present in proportion between 5 and 21%, said sugar being present between 37 and 60%, salt between 0.1 and 0.3%, said emulsifier being present between 0.25 and 1.5%, and said flavor between 0.1 and 0.2%.

3,199,985
MILK POWDER AND MANUFACTURING PROCESS

Jean-Jacques Mourey, Lausanne, Vaud, Switzerland, assignor to Afico S.A., Lausanne, Switzerland, a corporation of Switzerland

No Drawing. Filed Nov. 13, 1962, Ser. No. 237,300
Claims priority, application Switzerland, Nov. 15, 1961, 13,238/61
15 Claims. (Cl. 99—56)

1. A method for the manufacture of a milk powder containing fat and having a good instant miscibility in water at a temperature lying between 20 and 40° C., which comprises the steps of pasteurizing a member of the group consisting of whole milk and partially skimmed milk, concentrating, homogenizing, spray-drying and, after this latter operation, coating at least in part substantially all of the powder particles with a substance comprising at least the milk fat fraction which is liquid at 16–18° C.

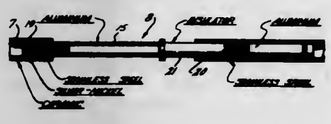
3,199,986
METHOD OF RESISTANCE HEATING RAW MEAT EMULSION BY THE USE OF A SILVER-NICKEL ELECTRODE

George D. Mylchreest, Hartford, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Dec. 8, 1961, Ser. No. 157,942
1 Claim. (Cl. 99—109)

The method of resistance heating raw meat emulsion comprising discharging high voltage current from a con-

tamination resistant sintered silver-nickel compact having arcing avoidant characteristics in which the silver content



is from 5 to 15 percent, the nickel content is from 85 to 95 percent, and which have a porosity from 5 to 15 percent, into raw meat emulsion abutted thereagainst.

3,199,987
PROCESS FOR RENDERING FATTY MATERIALS
John E. Thompson, P.O. Box 2023, Chicago, Ill.
Filed Apr. 27, 1961, Ser. No. 106,018
7 Claims. (Cl. 99—118)

1. A process for the simultaneous rendering of animal fat containing tissue and oil bearing seeds which comprises; adding ground oil bearing seeds to unrendered fat and rendering the mixture by heat to yield easily separated dry rendered tankage, and a mixed shortening stock containing from 1 to 8% oil, and separating the dry rendered tankage from the mixed shortening stock.

3,199,988
PROCESS FOR MAKING A WHIPPABLE COMPOSITION
Robert F. Kozlik and James L. Swanson, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
No Drawing. Filed June 20, 1962, Ser. No. 203,735
6 Claims. (Cl. 99—139)

1. A process of making a dry whippable composition for use in the preparation of dessert toppings and icings from sugar, emulsifier, shortening and a proteinaceous material which comprises (1) impact milling a mixture of at least the sugar and emulsifier and then (2) intensively blending the resulting product with any remaining proteinaceous material and the shortening so that substantially all of the impact milled particles of said product are smeared with the shortening to produce the dry whippable composition without further treatment.

3,199,989
CORROSION INHIBITOR AND METHOD OF USING THE SAME
Stanley J. Buckman, 3943 N. Lakewood Drive, Memphis 8, Tenn.; John D. Pera, 4136 Sequoia Road, Memphis 17, Tenn.; and William P. Purcell, 3066 Kenneth, Memphis 8, Tenn.
No Drawing. Filed July 16, 1962, Ser. No. 210,240
19 Claims. (Cl. 106—14)

1. A corrosion inhibiting composition comprising 20 to 80 parts of an alkali metal salt of 2-mercaptobenzothiazole and 20 to 80 parts of an N,N-dimethylamide of a straight chain carboxylic acid characterized in that said acid contains 18 carbon atoms and at least one carbon to carbon double bond.

15. A process for the production of paper in which an aqueous fluid containing cellulosic pulp and other papermaking ingredients is circulated in contact with a Fourdrinier wire cloth composed of strands of copper containing alloys that are normally subject to mechanical wear and corrosion, whereby the useful life of such wire may be increased, which comprises adding to aqueous fluids with which the said wire cloth comes into contact a mixture comprising 20 to 80 parts of an alkali metal salt of 2-mercaptobenzothiazole and 20 to 80 parts of an N,N-dimethylamide of a straight chain carboxylic acid characterized in that said acid contains 18 carbon atoms and at least one carbon to carbon double bond in an amount sufficient to provide a concentration of said corrosion inhibiting composition in said aqueous medium of at least 0.5 part per million.

3,199,990
FUNGUS RESISTANT PAINTS
Wilbur S. Taylor, Norwalk, Conn., assignor to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 19, 1961, Ser. No. 146,339
5 Claims. (Cl. 106—15)

1. A fungus resistant paint comprising pigment, film-forming base, volatile solvent and from about 0.2% to about 2.5%, by weight of the paint, of trans-1,2-bis(n-propylsulfonyl) ethylene.

3,199,991
BLACK NEWS INK AND PROCESS FOR ITS MANUFACTURE
William T. Schelling, Orinda, William C. Parle, Berkeley, Donald H. Cook, San Rafael, and Archibald M. Erskine, Berkeley, Calif., assignors to The California Ink Company, Inc., San Francisco, Calif., a corporation of Delaware
Filed Dec. 4, 1961, Ser. No. 156,755
15 Claims. (Cl. 106—32)

1. The method of preparing a water-in-oil emulsion ink which comprises colloidally dispersing carbon black in water in the presence of a tannin dispersing agent; and emulsifying with extreme hydraulic turbulence said dispersion of carbon black in water with an oil-additive mixture comprising mineral oil, an oil soluble emulsifying agent, an oil soluble amine transfer agent to assist transfer of the carbon black from the water to said oil-additive mixture, and an asphalt stabilizing agent thereby transferring the carbon black from the water phase into the oil phase.

12. A water-in-oil emulsion ink which consists essentially of a dispersed phase of substantially carbon-free water globules; and a continuous oil phase; said oil phase containing mineral oil; an oil soluble water-in-oil emulsifying agent having a straight carbon chain of from about 8 to 18 carbon atoms selected from the group consisting of carboxylic, sulfonic, and phosphoric acid salts, carboxylic, sulfonic, and phosphoric acid esters, and mixtures of said salts and esters; an oil soluble amine transfer agent selected from the group consisting of amines from pine resin acids, long chain amines containing an alkyl group having from 8 to 18 carbon atoms, and mixtures of said amines; an oil soluble asphalt stabilizing agent; and carbon black dispersed in said oil phase.

3,199,992
CERAMIC BUILDING UNITS
Roy B. Moffitt, Raleigh, N.C., assignor, by mesne assignments, to Royall B. Moffitt, Pleasant Garden, N.C., and Harrison E. McCandlish, Arlington, Va.
No Drawing. Filed July 13, 1961, Ser. No. 123,611
15 Claims. (Cl. 106—39)

1. A composition of matter for producing ceramic building units consisting essentially of approximately 20–50 percent by volume of a non-plastic ceramic bonding phase aggregate, 50–80 percent by volume of non-plastic ceramic refractory aggregate having a pyrometric cone equivalent of about 8 to 19 cones above that of the bonding phase aggregate, dry strength binder in an amount sufficient to impart handling strength to said composition, and water in the range of 6.6 to 17.7% by volume, said amount of water being sufficient to permit dispersion of said dry strength binder and said aggregates into a substantially homogeneous combination said bonding and refractory phase aggregates each having a particle size of essentially 100% —7 Tyler Standard mesh.

3,199,993
SINTERED BODIES BEING RESISTANT TO HEAT, OXIDATION AND WEAR
Nils Gustav Schrewelius, Hallstahammar, Sweden, assignor to Aktiebolaget Kanthal, Hallstahammar, Sweden
No Drawing. Filed Mar. 12, 1959, Ser. No. 798,856
Claims priority, application Sweden, Mar. 13, 1958, 2,459/58
4 Claims. (Cl. 106—55)

1. A sintered body resistant to heat, oxidation and wear, said body consisting of 20–98% by weight of silicon boride and 2–80% of a binder, said silicon boride having the composition SiB_x where x ranges between 2.5 and 14, and the binder being a member of the group consisting of boron oxide and silicon oxide.

3,199,994
REFRACTORY STRUCTURE AND SHAPES THEREFOR
Ben Davies, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 18, 1963, Ser. No. 259,461
8 Claims. (Cl. 106—55)

4. That method of fabricating refractory shapes from size graded, tempered, nonplastic refractory brickmaking batches which comprises the steps of, fabricating a size graded nonplastic refractory brickmaking batch, from 25 to 50%, by weight, of said batch passing a 28 mesh screen, from 50 to 95%, by weight, of the batch which passes a 28 mesh screen also passing a 325 mesh screen, the average particle diameter of that fraction of the total batch which passes a 65 mesh screen, by number, being less than 9 microns, the total amount of the batch passing a 325 mesh screen amounting to between 13 and 30%, by weight, substantially all the remainder of the batch being on the order of about —4 +28 mesh, mixing said batch with an aqueous tempering agent in a weight ratio of about $\frac{2}{10}$ to $\frac{4}{10}$ pound of water per 100 cubic inches of impact pressed brick made from the batch, subjecting said batch to impact pressing to form self-sustaining bodies.

3,199,995
HYDRATION PREVENTION
Donald F. King, Pittsburgh, and George R. Henry, Bethel Park, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 10, 1963, Ser. No. 271,891
4 Claims. (Cl. 106—58)

1. In a size graded refractory batch mixture of dry refractory particles in which 10 to 40% thereof is dead burned magnesite, the improvement which consists of the following to promote resistance to hydration and increased strength:

(A) said batch including,
- (a) from 1 to 5% of a sodium silicate which is no more alkaline than one having one mole of Na_2O and three moles of SiO_2,
- (b) from 0.1 to 5% of finely divided elemental sulfur,
- (c) a dispersant soluble in aqueous tempering media in a quantity sufficient to insure uniform distribution of ingredients through a tempered batch with a minimum of aqueous tempering fluid,

(B) said 10 to 40% of magnesite being ball mill fines.

3,199,996
POROUS MATERIAL
Florent H. Bailly, Arcadia, Calif., assignor to Variperm Company, Los Angeles, Calif., a corporation of California
No Drawing. Filed Dec. 14, 1962, Ser. No. 244,555
2 Claims. (Cl. 106—86)

1. The method of making a porous matrix comprising forming a slurry with water, an oil-coated rock salt aggregate, and a cementitious material, there being one to four volumes of aggregate for each volume of cementitious material, permitting the slurry to set to a solid mass, and thereafter leaching out soluble said aggregate with a material selected from the group consisting of moist steam and hot water to form the porous matrix.

3,199,997
PROCESS FOR PRODUCING CALCINED PRODUCTS FROM BY-PRODUCT GYPSUM
Elmer S. Johnson, deceased, late of Arlington Heights, Ill., by Lucille G. Johnson, executrix, Arlington Heights, Ill., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Nov. 13, 1962, Ser. No. 237,788
3 Claims. (Cl. 106—110)

1. A process of preparing a calcined gypsum product which comprises adding calcium hydroxide to by-product gypsum from acid manufacture, the calcium hydroxide being employed in an amount sufficient to provide a pH in the by-product gypsum above 7, calcining said by-product gypsum while maintaining therein a pH above 7 and then treating the calcined gypsum product with aluminum sulfate to provide a final pH therein not above 7.

3,199,998
PROCESS FOR THE PREPARATION OF EMULSIONS
Carl Boresch and Mathieu Quaedvlieg, Leverkusen, and Walter Wunder, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Nov. 14, 1961, Ser. No. 152,148
Claims priority, application Germany, Nov. 16, 1960, F 32,564; Nov. 8, 1961, F 35,313
4 Claims. (Cl. 106—271)

1. As a new composition of matter, an emulsion prepared by dissolving a compound A in the substance to be emulsified and a compound B in the substance which will form the homogeneous phase of the emulsion and subsequently forming a dispersion from the aforesaid materials, compound A being a member selected from the group consisting of saturated and unsaturated higher fatty acids, montanic acid esters containing free carboxyl groups, and N-acyl-sarcosine, and compound B being a member selected from the group consisting of formamide, dimethyl formamide, acetamide, dimethyl acetamide, methyl carbamate and urea, compounds A and B having the ability to form adducts at the boundary surface of the dispersed phase of the resultant emulsion and being present in a ratio of at least one mol of B per mol of A.

3,199,999
PIGMENT OF TITANIUM HAVING TITANIUM OXIDE COATING; ELECTROLYTIC METHOD OF MAKING PIGMENT; AND REFLECTOR AND PAINT CONTAINING SAME
William J. Greening, Jr., Long Beach, and Norman E. Clegg, Hawthorne, Calif., assignors to Hi-Shear Corporation, Torrance, Calif., a corporation of California
Filed Mar. 23, 1961, Ser. No. 97,919
7 Claims. (Cl. 106—287)

4. A coloring agent for supplying color to paint comprising loose powder particles of a metal selected from

the group consisting of titanium and titanium alloys of a particle size of the order of about 5 microns, said particles possessing a thin uniform coating of titanium oxide of a selected, chemically resistant color, the titanium oxide being formed as a coating on the body of metal, the titanium therein being derived from said body.

5. A colored reflector comprising a base, a transparent matrix, and a multiplicity of loose powder particles dispersed therein and composed of a metal selected from the group consisting of titanium and titanium alloys, said titanium particles possessing a thin uniform surface coating of titanium oxide of a selected characteristic, chemically resistant color, the titanium oxide being formed as a coating on the body of metal, the titanium therein being derived from said body.

7. A paint comprising a paint vehicle and, dispersed in said vehicle as a coloring agent therefor, a loose and uncompacted powder of metal selected from the group consisting of titanium and titanium alloys of a particle size of the order of about 5 microns, the particles of said powder possessing a thin uniform titanium oxide coating of a selected characteristic, chemically resistant color, the titanium oxide being formed as a coating on the body of metal, the titanium therein being derived from said body.

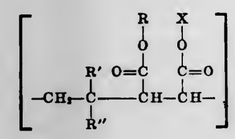
3,200,000

DISPERSANTS FOR ORGANIC PIGMENTS IN AN ORGANIC MEDIUM

Charles R. Williams, Longmeadow, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

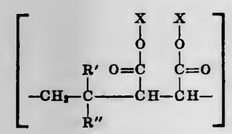
No Drawing. Filed June 4, 1964, Ser. No. 372,699
5 Claims. (Cl. 106—309)

1. In a process for preparing dispersions of insoluble organic pigments in a liquid organic medium; the improvement which comprises incorporating in the liquid organic medium a tertiary alkyl ammonium salt of an alkyl ester of an olefin-maleic anhydride copolymer in the amount of 0.1–7.0 weight percent based on the weight of the organic pigment dispersed therein; said tertiary alkyl ammonium salt of an alkyl ester of an olefin-maleic anhydride copolymer having a weight average molecular weight of up to about 10,000 and having in its structure recurring groups of the formulae:



(A)

and



(B)

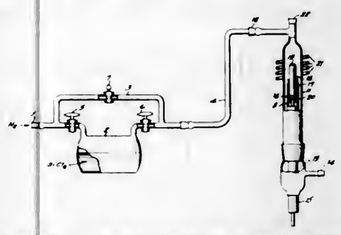
with the groups of Formula A constituting 50–100% of the total of groups (A) and (B); wherein R is an alkyl radical having 3–18 carbon atoms; R′ is selected from the group consisting of hydrogen, methyl, and ethyl; R″ is selected from the group consisting of hydrogen and methyl, providing that when R′ is ethyl, R″ is hydrogen; and X is a tertiary alkyl ammonium ion in which each alkyl moiety contains 2–6 carbon atoms.

3,200,001

METHOD FOR PRODUCING EXTREMELY PLANAR SEMICONDUCTOR SURFACES

Hans Merkel and Siegfried Leibenzeder, both of Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Apr. 19, 1962, Ser. No. 188,701
Claims priority, application Germany, Apr. 22, 1961, S 73,615
12 Claims. (Cl. 117—4)



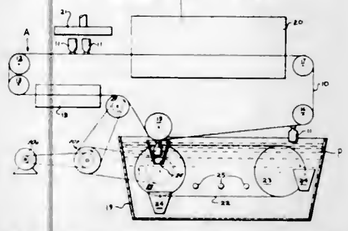
2. The method of producing planar semiconductor surfaces by precipitation of semiconductor material from the gaseous phase upon a monocrystalline carrier, which comprises cutting a pulled semiconductor crystal into carrier plates perpendicular to the direction of crystal pulling; grinding, polishing and etching at least one cut surface of said carrier plates with an etching liquid comprising an aqueous solution of hydrofluoric acid, nitric acid and a wetting agent, and then precipitating the same semiconductor material as the semiconductor crystal upon said etched surface.

3,200,002

METHOD AND APPARATUS FOR DIPPING GLASS ARTICLES IN LIQUID PLASTIC

Kenneth G. Lusher, Perrysburg, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed June 14, 1962, Ser. No. 202,473
5 Claims. (Cl. 117—54)



1. The method of applying plastic coating to an article comprising the steps of heating said article, dipping said heated article into a body of relatively cooler liquified plastic material, moving said article through said bath of plastic material while maintaining the portion of liquified plastic material in the vicinity of said article in a quiescent condition relative thereto, and maintaining communication between said quiescent plastic material and said body of plastic material to thereby retard heating of said quiescent plastic material.

3,200,003

PROCESS FOR IMPREGNATING WOOD WITH PENTACHLOROPHENOL AND COMPOSITION THEREFOR

Ralph H. Escher, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Jan. 11, 1962, Ser. No. 165,559
14 Claims. (Cl. 117—59)

1. In a process for the impregnation of wood, the steps comprising enclosing the wood in a hermetically sealable treating cylinder; evacuating air from the cylinder after sealing thereof; equalizing the pressure between said cylinder and a pressure storage tank containing a solution of a liquefied aliphatic hydrocarbon selected from the class consisting of propane, n-butane, isobutane, n-pentane, isopentane, and mixtures thereof, and containing pentachlorophenol in combination with at least about two percent based on said solution of a cosolvent, differing in its molecular structure from said liquefied aliphatic hydrocarbon, having less than 10% water solubility, greater than 25% solubility for the pentachlorophenol and a solubility in said aliphatic hydrocarbon, whereby said solution contains at least 2% pentachlorophenol, and thereafter introducing the aliphatic hydrocarbon and cosolvent having the pentachlorophenol in the



cosolvent from the storage tank into the cylinder until it is substantially full; heating the solution and thereby raising the vapor pressure and maintaining the raised pressure on the solution until the wood is impregnated with said solution; after the wood is impregnated, removing the solution from the cylinder to a storage tank and thereafter evacuating residual gases from the treating cylinder and wood therein, condensing the vapors and storing the condensate in the storage hold tank; ejecting residual vapors to the atmosphere from and creating vacuum in the cylinder with the wood still therein, and thereafter flushing the cylinder with the wood therein with inert gas before discontinuing the ejecting action; discontinuing the ejecting and breaking the vacuum in the cylinder with inert gas and thereafter unsealing the cylinder and removing the wood therefrom.

3,200,004

PROCESS FOR THE AFTER-TREATMENT OF PHOSPHATE COATINGS

Willy Herbst, Hofheim, Taunus, Fritz Rochlitz, Bad Soden, Taunus, and Herbert Vilcsek, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 28, 1962, Ser. No. 220,047
Claims priority, application Germany, Aug. 31, 1961, F 34,821
2 Claims. (Cl. 117—69)

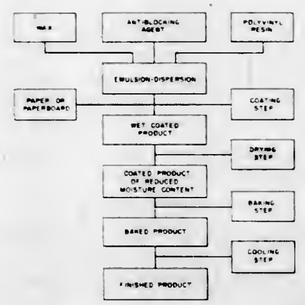
1. A process for improving the corrosion protection of phosphatized metal surfaces, which process comprises after-treating said phosphatized metal surfaces with a solution containing from about 0.008 percent to about 2 percent by weight of an alkene phosphonic acid having 2 to 3 carbon atoms in at least one solvent selected from the group consisting of water and aliphatic alcohols having 1 to 4 carbon atoms, and then drying the treated surface.

3,200,005

PAPER PRODUCTS COATED WITH VINYL RESIN AND WAX

Gerald C. Bauer, Portage Township, Kalamazoo County, Mich., assignor to Cellu-Kote, Inc., Schoolcraft, Mich., a corporation of Michigan

Filed May 28, 1962, Ser. No. 198,073
10 Claims. (Cl. 117—76)



1. A process for the coating of a base material comprising the steps of (1) coating the base material with an aqueous emulsion-dispersion of (a) a resin selected from the group consisting of polymers formed from monomers containing a vinyl group and copolymers formed predominantly from monomers containing a vinyl group, said vinyl monomers including a chloroethylene having from one to two chlorine atoms on only one of its carbon atoms, (b) wax having a melting point of at least about 150 degrees Fahrenheit, and (c) a polysiloxane antiblocking agent which is wax compatible and polyvinyl resin incompatible, (2) subjecting the coated product to a drying step at a temperature and for a period of time sufficient to remove at least some and up to about one-half the moisture in the coated product and draw the wax and antiblocking agent to the surface of the coating without fusing of the polyvinyl resin layer as an integral film to the surface of the base material, (3) substantially immediately subjecting the thus-coated product of reduced moisture content to a baking step at an increased temperature and for a period of time sufficient to fuse the polyvinyl resin as an integral film to the surface of the base material and further reduce the moisture content of the thus-coated product to not greater than about ten percent, whereby two films are formed on the surface of the product, an outer film of wax and antiblocking agent and an inner film of polyvinyl resin, and (4) cooling the thus-coated product to set the coating on the surface thereof.

3,200,006

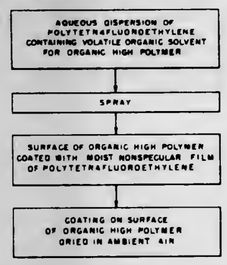
METHOD FOR COATING HIGH POLYMERS WITH POLYTETRAFLUOROETHYLENE

Vincent G. FitzSimmons, McLean, Va., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 31, 1961, Ser. No. 135,380
4 Claims. (Cl. 117—104)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A method of coating a surface of a solid synthetic organic high polymer with a thin adherent film of polytetrafluoroethylene which comprises spraying the surface with an aqueous dispersion of polytetrafluoroethylene containing a volatile organic solvent for the high polymer under conditions which result in spray-coating the surface with a small amount of a volatile organic solvent for the high polymer which is sufficient to cause the surface to become tacky and with a water-moist, non-spec-

ular, thin film of polytetrafluoroethylene of not over 0.2 mils thickness and drying the film in the ambient air



whereby an inherently low friction coating is directly obtained on the high polymer surface.

3,200,007
METHOD FOR MAKING A MAGNETIC RECORDING MEDIUM

Dervin L. Flowers, Redwood City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

No Drawing. Filed Oct. 24, 1962, Ser. No. 232,853
1 Claim. (Cl. 117—138.8)

The process of making a magnetic recording medium comprising precipitating and encapsulating metallic cobalt to form finely dispersed cobalt particles in a polymer matrix by reacting a cobalt carbonyl solution with a polymer mixture made by reacting together from 10 to 95% by weight of a member selected from the group consisting of

propyl
isopropyl and
butylmethacrylate, and
mixtures thereof,

from 1 to 25% by weight of a compound of the formula

$$R_1-C=CH_2$$
$$\quad\quad|$$
$$\quad COOR_2$$

where

R_1 is selected from the group consisting of H and CH_3

and

$$R_2=H(CH_2)_{n-x}-\underset{\displaystyle OH}{\overset{\displaystyle (CH_2)_x}{\overset{|}{C}}}-H$$

n being chosen from 1 to 10 and $x=0$ to n; and from 0.01 to 10% by weight of a member selected from the group consisting of

N-vinyl-2-pyrrolidone and
2-methyl-5-vinyl pyridine;

reacting the metal-containing polymer thus produced with a member selected from the group consisting of 2,4-toluene diisocyanate, hexamethylene diisocyanate and 3,3'-dimethyl diphenyl methane-4,4'-diisocyanate to produce a material containing about 75% cobalt and applying the same to a plastic backing member.

3,200,008
RESIN IMPREGNATED PAPERS

Rosemarie Holtschmidt and Ulrich Holtschmidt, both of Essen-Heisingen, Germany, assignors to Th. Goldschmidt A.-G., Essen, Germany

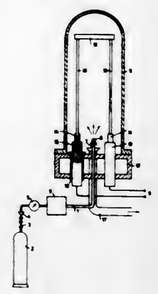
No Drawing. Filed Mar. 23, 1962, Ser. No. 182,114
13 Claims. (Cl. 117—155)

12. A process of preparing curable resin impregnated paper films, which comprises impregnating paper witth about 2 to 50% by weight, calculated on the weight of the paper, of an aminoplast condensation resin selected from the group consisting of urea formaldehyde condensation resins and melamine formaldehyde condensation resins, thereafter drying the impregnated product until an incompletely condensed product has been obtained and the major portion of the volatile components of the resin has escaped, then further impregnating the dried product with partially polymerized diallyl phthalate in an amount sufficient to fill the pores of the paper and to form a surface layer on the paper product, and thereafter further polymerizing and drying the product to a non-sticky incompletely cured state.

3,200,009
METHOD OF PRODUCING HYPERPURE SILICON

Konrad Reuschel, Pretzfeld, and Arno Kersting, Lutzelsdorf, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Jan. 10, 1962, Ser. No. 165,455
Claims priority, application Germany, Jan. 14, 1961, S 72,060
2 Claims. (Cl. 117—201)

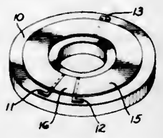


1. A process for producing a silicon body by reaction of a gaseous mixture of hydrogen and a gaseous compound of silicon in a reaction chamber, comprising heating a silicon core body of approximately the same purity as the silicon to be precipitated to glowing temperature, the heated body effecting the reaction, introducing said gaseous mixture, at a velocity of at least 100 m./sec. and below 200 m./sec. into the reaction chamber to produce a high degree of turbulence whereby the gas mixture flows longitudinally along said core body to effect efficient reaction into silicon and uniformly thicken said core body.

3,200,010
ELECTRICAL RESISTANCE ELEMENT

Thomas M. Place, Sr., Newport Beach, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Dec. 11, 1961, Ser. No. 158,317
3 Claims. (Cl. 117—212)



1. A resistance element comprising an electrically nonconductive base having:

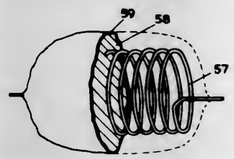
a cermet resistance film fired thereon and having a gap therein;

and a nonconductive film fired thereon in said gap and contacting said resistance film at opposite edges of said gap, said nonconductive film in said gap comprising the cermet resistance material of said resistance film with up to a few percent by weight of an additive selected from the group consisting of tin oxide, zirconium silicate, magnesium oxide, antimony oxide or ground fired steatite to render said cermet material nonconductive.

3,200,011
ELECTRICALLY HEATABLE FILAMENTS

Alan Richard Baker, Sheffield, England, assignor to National Research Development Corporation, London, England, a British corporation

Original application Feb. 3, 1959, Ser. No. 790,935, now Patent No. 3,092,799, dated June 4, 1963. Divided and this application July 23, 1962, Ser. No. 211,802
3 Claims. (Cl. 117—217)

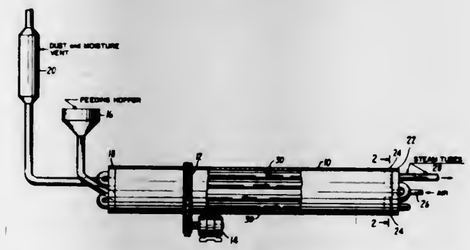


1. The method of making an electrically heatable device for the detection of combustible gas in air by the utilisation of the change of electrical resistance of an electric heating filament, including firstly the step of coating the filament with a refractory material, secondly the step of adding to the refractory material a catalyst, thirdly the step of adding to the exterior of the filament a further coating of refractory material, and finally the step of heating the device to cause some of the catalyst to diffuse through said further coating to the outer surface thereof.

3,200,012
CONTINUOUS PROCESS FOR DEXTRINIZATION OF PARTICULATE STARCH

Julian A. Hay, Gary, Ind., assignor to American Maize-Products Company, a corporation of Maine

Filed Feb. 8, 1962, Ser. No. 171,969
7 Claims. (Cl. 127—38)

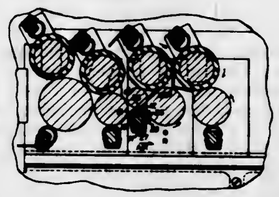


1. A method of continuously dextrinizing starch which comprises the steps of mixing a dextrinization catalyst with starch which is in dry particulate form, introducing the catalyzed starch particles into one end of a zone of dextrinization which is disposed lengthwise in substantially horizontal position, said dextrinization zone having a plurality of heated surfaces therein spaced apart from each other and extending from said one end to the opposite end of said zone along lines substantially parallel to the length thereof, continuously moving the catalyzed starch particles through said dextrinization zone toward said opposite end thereof and simultaneously rotating said heating surfaces in cylindrical paths sweeping through and around the direction of travel of catalyzed starch particles, thereby causing a rolling and tumbling contact of the starch particles with said heated surfaces and rapidly raising the temperature of the starch particles to dextrinization temperatures and collecting the dextrinized starch as it discharges from said opposite end of said zone of dextrinization.

3,200,013
MULTIPLE ROLL CLEARING

Alfred C. Morrow, Lowell, and Ira L. Smith, Gastonia, N.C., assignors to Pneumafil Corporation, Charlotte, N.C., a corporation of Delaware

Filed Aug. 22, 1963, Ser. No. 303,884
9 Claims. (Cl. 134—6)

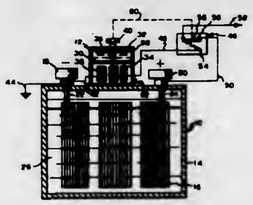


1. Means for simultaneously clearing foreign matter from two relatively moving surfaces moving about separate axes of rotation, said means comprising: elongated wiping means contacting the relatively moving surfaces; supporting means fixedly retaining one end of said wiping means with respect to said axes of rotation, while permitting the other end to move freely; and resilient urging means pressing against a portion of said wiping means to bring same against said surfaces.

3,200,014
AUXILIARY BATTERY ARRANGEMENT

Alan King Roberts, 2 Parkway Drive, Roslyn Heights, N.Y.

Filed Feb. 14, 1962, Ser. No. 173,234
5 Claims. (Cl. 136—181)



1. In combination: first and second batteries, said first battery comprising a casing, an electrolyte in said casing, electrodes immersed in said electrolyte, and exterior terminals on said casing and coupled to said electrodes; said second battery comprising a casing, a frangible member in the latter said casing dividing the same into separate chambers, an electrolyte in one of said separate chambers, electrodes in the other of said separate chambers, coupling means to couple the latter said electrodes to said exterior terminals, and control means to break said frangible member to activate said second battery; said coupling means including a switch between said second battery electrodes and one of said terminals, said combination further including an output line, said switch being adapted for selectively switching the output line between said one

terminal and said second battery electrodes, said control means being coupled to said switch for simultaneously actuating the same and breaking said frangible member.

3,200,015
PROCESS FOR COATING HIGH TEMPERATURE ALLOYS

Urban E. Kuntz, East Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,663
19 Claims. (Cl. 148—6.3)

1. A method for producing a thin, adherent, nonporous, oxidation and corrosion resistant pyrolytic silicon nitride coating on a base metal that is a member selected from the group consisting of nickel base refractory alloys, cobalt base refractory alloys, and columbium base alloys, which comprises contacting a hot surface of the base metal at a temperature within a first range of between about 875° and 1150° C. with a gaseous mixture comprising metal halide and nitrogen, said metal halide being capable of reacting with nitrogen within the first temperature range to form a solid metal nitride deposit upon said hot surface, and then contacting the hot surface at a temperature within a second range of between 875° and 1200° C. with a gaseous mixture comprising silicon halide and ammonia, said silicon halide being capable of reacting with ammonia to deposit additional silicon nitride on said hot surface; the temperature of contact being controlled within both the first and the second temperature ranges such that the silicon nitride formed adheres to the hot surface during contact of each of said gaseous mixtures with the hot surface.

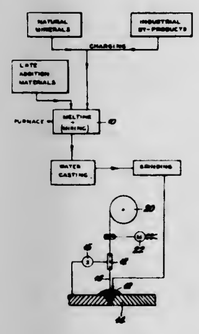
13. The method of claim 1 wherein the base metal is a member selected from the group consisting of nickel and cobalt base refractory alloys, and wherein the hot surface of the alloy contacted with the mixture of metal halide and nitrogen contains an oxide film.

14. The method of claim 13 wherein the oxide film is formed on said hot surface by contacting the hot surface with air prior to subjecting it to the mixture of metal halide and nitrogen.

3,200,016
SUBMERGED-MELT WELDING COMPOSITION

William B. Sharav, Short Hills, Kenneth W. Rimer, Newark, and Thomas L. Coless, Maplewood, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed Jan. 22, 1964, Ser. No. 339,523
5 Claims. (Cl. 148—26)



1. Fused flux composition for welding mild and low alloy steels by the submerged-melt welding process, which composition is composed by chemical analysis of

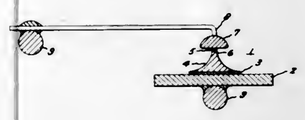
Ingredient:	Percent
MnO	9–12
Al_2O_3	6–10
MgO	20–24
SiO_2	46–54
CaF_2	3–5
Fe-Si	0.7–2.0
Na_2SiO_3	0.5 max.

such composition being made directly from unrefined and industrial waste material in combination with a late furnace addition composed of an unfused mixture of powdered FeSi and CaF_2 to provide a metal deoxidizer.

3,200,017
GALLIUM ARSENIDE SEMICONDUCTOR DEVICES

Erik M. Pell, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Sept. 26, 1960, Ser. No. 58,501
2 Claims. (Cl. 148—33)

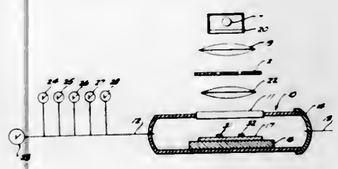


1. A semiconductor tunnel diode device comprising: a body of gallium arsenide having a P-N junction space charge region therein less than 200 angstrom units wide, the excess donor and acceptor impurity concentration on either side of said P-N junction being greater than 10^{18} atoms per cubic centimeter and the concentration of copper impurity in said device being no greater than about 10^{12} atoms per cubic centimeter.

3,200,018
CONTROLLED EPITAXIAL CRYSTAL GROWTH BY FOCUSING ELECTROMAGNETIC RADIATION

Jack J. Grossman, Costa Mesa, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Jan. 29, 1962, Ser. No. 169,204
8 Claims. (Cl. 148—175)



1. A method of vapor depositing an epitaxial layer of a material on a substrate, which comprises:
establishing a vapor atmosphere of the material to be deposited adjacent the substrate, maintaining the temperature of said substrate less than the temperature sufficient to effect epitaxial vapor deposition; and focusing electromagnetic radiation on a localized area of the substrate in an effective amount to sustain epitaxial vapor deposition within said localized area.

3,200,019
METHOD FOR MAKING A SEMICONDUCTOR DEVICE

Joseph H. Scott, Jr., Newark, and John Olmstead, Somerville, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Jan. 19, 1962, Ser. No. 167,341
9 Claims. (Cl. 148—188)

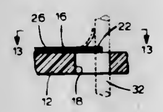


1. The method of fabricating a semiconductor device, comprising the steps of:
preparing a semiconductive body;
vaporizing a mixture consisting of an organic siloxane compound and a volatile substance capable of modifying the conductivity type of said semiconductive body;
heating said semiconductive body in the mixed vapors of said siloxane compound and said conductivity modifier to a temperature below the melting point of said semiconductive body but above the temperature at which said siloxane compound decomposes to deposit on the surface of said body a coating consisting of silicon oxide containing said conductivity modifier; and,
heating said coated semiconductive body to diffuse said modifier from said coating into that portion only of said body immediately beneath said coating.

3,200,020
METHOD OF MAKING A WELDABLE PRINTED CIRCUIT

George F. Schroeder, Pines Lake, Wayne Township, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Dec. 23, 1963, Ser. No. 332,481
1 Claim. (Cl. 156—3)



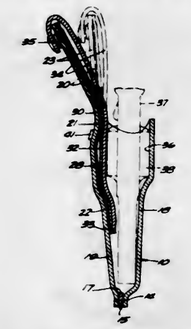
A method of manufacturing a weldable printed circuit board comprising the sequential steps of:
providing apertures in an insulating sheet located opposite the terminals of a desired circuit layout,
bonding a metal sheet to one side of the insulating sheet,
filling the apertures with an acid-resist material from the other side of the insulating sheet,
removing the unwanted portions of the metal sheet by an etching process,
to provide a printed circuit board having conductor strips with weldable integral tabs overlying the board apertures at the circuit terminals.

3,200,021
METHOD OF MAKING A REVOLVER HOLSTER

Earl J. Clark, Los Angeles, Calif., assignor to Bucheimer-Clark Leather Goods Corp., Los Angeles, Calif., a corporation of California

Original application Sept. 10, 1962, Ser. No. 222,415. Divided and this application Sept. 28, 1964, Ser. No. 399,755
10 Claims. (Cl. 156—93)

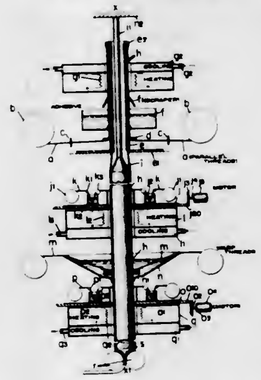
1. The method of fabricating a holster for a gun, which comprises the steps of: preforming a sheet of pliable material into a substantially flat body member having a projecting extension; superimposing a liner member of pliable material and an underlying stiffener member of rigid material on said body member, with portions of said liner and stiffener members substantially conforming in shape to said extension, and other portions thereof extending over the adjacent portion of the body member, said other portion of the stiffener member being preformed with a recessed cavity portion opening towards said liner member; securing marginal portions of said extension to corresponding marginal portions of said liner member outwardly of the adjacent margins of said stiffener member; superimposing a belt hanger member on said liner member, said belt hanger member having portions substantially conforming to the portions of the liner member; securing marginal portions of said belt hanger member and corresponding marginal portions of said liner member to the body member outwardly of the adjacent margins of the stiffener member; folding said body member and securing superimposed opposite side edges of said body member to form outer and inner walls of a tubular structure for receiving the gun endwise into its upper end; deforming overlying portions of said liner and belt hanger members into said cavity of the stiffener member; and then forming a cavity in said outer wall opposite said cavity in said stiffener member.



3,200,022
METHOD AND MEANS FOR MANUFACTURING TUBULAR FLUID TIGHT HOSES

Oscar Matton, Bacouel par Saleux (Somme), France

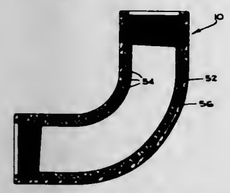
Filed Dec. 7, 1960, Ser. No. 74,433
Claims priority, application France, Dec. 10, 1959, 812,635, Patent 1,253,255
3 Claims. (Cl. 156—169)



1. A method of making a tubular hose, comprising the steps of laying a plurality of parallel threads as gener-

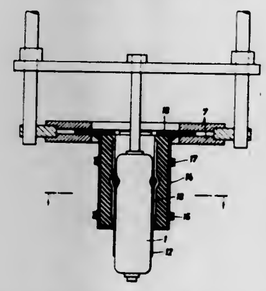
atrices of a cylinder with said threads lying parallel to the axis of said cylinder, coating said threads with an adhesive medium, heating said coated threads for solidifying said adhesive medium, turning said coated threads inside out after solidification of said adhesive medium so that said coated threads form the interior of said hose, winding a plurality of threads spirally around the exterior of said parallel threads when turned inside out, coating said spirally wound threads with an adhesive medium, and heating said spirally wound and coated threads for solidifying said last named adhesive medium thereon.

3,200,023
METHOD OF MAKING A REINFORCED PLASTIC PIPE FITTING
William H. Cilker, Los Gatos, Calif., assignor to FMC Corporation, a corporation of Delaware
Filed May 9, 1961, Ser. No. 108,847
1 Claim. (Cl. 156—172)



The method of producing a reinforced plastic pipe fitting completely free of voids comprising the steps of mixing radom length glass reinforcing fibers in random orientation with uncured resin in a liquid state; injecting the resulting liquid mixture into a substantially closed mold under a pressure sufficient to eliminate substantially all voids to form a pipe fitting body having the desired wall thickness, flow passage and connecting means; curing the body to a gelled condition; impregnating a continuous fiber strand with resin; wrapping the strand circumferentially around the gelled body to dispose the strand in intimate contact with the body and cause resin on the strand to combine with the resin of said body, and completing the curing of the wrapped fitting body to consolidate the reinforcing fibers and the body.

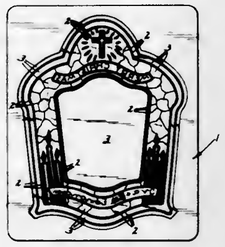
3,200,024
METHOD AND APPARATUS FOR MAKING ROLLED-UP ANNULAR BODIES
Kurt Leibiger, Kreis Harburg, Germany, assignor to Asbest- und Gummiwerke Martin Merkel K.G., Hamburg-Wilhelmsburg, Germany
Filed Oct. 2, 1962, Ser. No. 227,838
Claims priority, application Germany, Dec. 1, 1961, A 38,913
14 Claims. (Cl. 156—184)



1. A method of producing rolled-up annular bodies which comprises placing a cylindrical body to be rolled on an elastic mandrel, then drawing said mandrel through a hollow sleeve having an elastic face on the inside thereof, said body frictionally engaging said elastic face, whereby said body is rolled up during said drawing.

3. Apparatus for producing rolled-up annular bodies comprising an elastic mandrel adapted to hold a body to be rolled up, an elastic sleeve in which said mandrel is fitted for longitudinal movement therethrough, the outer face of said mandrel being close to the inner face of said sleeve so that said faces frictionally engage said body, and slidably mounted means for relatively moving said mandrel and sleeve to roll up said body.

3,200,025
EMBOSSING PROCESS
William S. Edmondson, 4100 Abbott Ave. S., Minneapolis, Minn.
Filed Apr. 12, 1962, Ser. No. 187,105
1 Claim. (Cl. 156—209)



The process of embossing flexible sheet material to create the impression of antiquity, said process consisting of the steps of

(a) providing an embossing die having design-forming ribs with flat surfaces between said ribs,
(b) forming an impression sheet by applying fluid adhesive between a ply of relatively thin metal foil and a ply of paper backing material which permits sliding movement between the plies and
(c) finally forcing said impression sheet with the layer of metal foil in direct engagement with said embossing die by applying pressure by a generally flat compressible pad element having a working face at least as great as that of said die and while said adhesive is in a semi-plastic state.

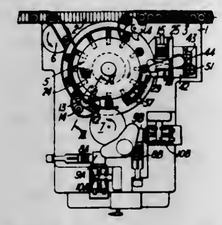
3,200,026
METHOD OF PRODUCING A SHELL ROOF STRUCTURE
Arthur T. Brown, 726 N. Country Club Road, Tucson, Ariz.
Filed Apr. 21, 1960, Ser. No. 23,669
4 Claims. (Cl. 156—292)



1. In the production of a hyperbolic paraboloid type structure for roofs and the like, the improved method of construction comprising

(a) superposing two substantially flat sheets uniformly corrugated throughout their dimensions defined by two pairs of opposite parallel terminal side edges on each sheet, the corrugations defining each of said uniformly corrugated sheets being straight and parallel to the respective one pair of said side edges and extending continuously between the side edges of the respective other of said pairs, and positioning said sheets with their respective corrugations mutually facing and extending at right angles to each other,
(b) rotating opposite edges of each of said pairs of each of said superposed sheets in opposite directions to form a hyperbolic paraboloid type shape while maintaining the side edges of said sheets straight and the corrugations in mutually facing relation, and
(c) substantially filling the space between said sheets with a cellular adhesive filling material and holding said sheets in said hyperbolic paraboloid shape while said filling material sets and becomes substantially rigid to form a series of locking projections running crosswise of the corrugations of each sheet and adhering to substantially all of the adjacent surfaces of said sheets, thereby to distribute roof deforming stresses throughout the roof structure.

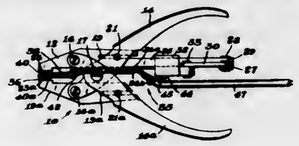
3,200,027
APPARATUS FOR APPLYING BODY AND NECK LABELS TO BOTTLES
Derek H. Fairest, Sheffield, England, assignor to Morgan Fairest Limited
Filed Oct. 9, 1962, Ser. No. 229,381
Claims priority, application Great Britain, Oct. 11, 1961, 36,420/61
2 Claims. (Cl. 156—449)



1. A bottle-labelling machine of the type in which body labels are presented to a spaced succession of bottles by a rotary delivery drum to which the labels are held, gummed side out, by suction openings in the drum, the drum serving to roll the bottles along a concentric pressure member for complete application of the labels to take place by rolling them from the drum onto the bottles, provided with a rotatable feed member of the type bearing a number of uniformly-spaced downwardly-directed presser heads round its periphery for clamping bottles supplied to a support track, and characterized by the presser heads and the support track passing close to the periphery of the delivery drum at the peripheral speed of the delivery drum, and by means for presenting a neck label across the path of each bottle in advance of the position at which the bottle encounters the delivery drum, with the gummed side of the label facing the oncoming bottle, means for wiping the neck labels to the bottles before they encounter the delivery drum, and means for releasing the presser heads from the bottles immediately before each bottle encounters the delivery drum, and also characterized in that the presser heads are non-notatable with respect to their own axes.

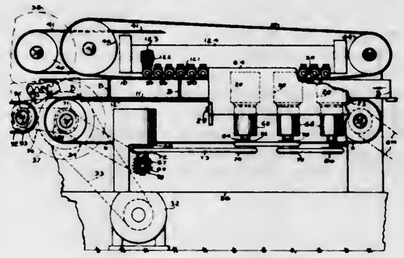
3,200,028
HAND TOOL FOR SEALING THERMOPLASTIC SURFACED MEMBERS
Douglas S. Chisholm, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 6, 1961, Ser. No. 143,357
3 Claims. (Cl. 156—499)

1. A heat sealing tool comprising a pair of generally opposed handles adapted to be clasped in one hand, said handles in operative engagement with a pair of jaws, said jaws adapted to clamp between them at least two layers of thermoplastic faced material, a generally flat heating member retractively disposed between said jaws, and in cooperative combination with a heat source and heating



member retracting means, the handle portions are so constructed and arranged so as to move said jaws into engagement and subsequent movement of said handles in the jaw engaging direction restricts said heating means.

3,200,029
MACHINE FOR EDGE GILDING BOOKS
Grosvenor M. Cross, West Concord, Mass., assignor to The Colonial Press, Inc., Clinton, Mass., a corporation of Massachusetts
Filed Apr. 6, 1961, Ser. No. 101,203
6 Claims. (Cl. 156—540)



1. A book coating apparatus comprising a power operated conveyor for progressively and continuously moving a set of books serially with like faces of the book leaf edges similarly arranged, a strip of transfer film having a layer of heat softenable coating composition removably secured thereon, said film being in contact with said book faces and movable at the rate of the books, a heater adjacent to the film for softening and transferring the composition progressively to the adjacent book faces, a pressure device which progressively compacts each book adjacent to said face prior to the application of a coating thereto and maintains the book compacted as it moves past the heater after which the pressure is released, and pressure means opposite to said heater which progressively presses the book laterally towards the heater and holds it in close association with the film and heater to insure transfer of the composition to the book face.

3,200,030
METHOD OF PATCHING WOOD VENEER AND MANUFACTURING VENEER-PAPER LAMINATES
Katashi Oita, Seattle, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
No Drawing. Filed Aug. 22, 1961, Ser. No. 133,025
9 Claims. (Cl. 161—113)

5. A wood veneer-paper laminate having a wood veneer-core sheet in which the voids in said core sheet are filled with a thermoplastic patching composition comprising from 45–60% of a cork-rich coniferous bark fraction, from 5–8% of a tall oil derivative, and from 22–50% of a pine wood pitch resin.

3,200,031
AMINO-ORGANOSILICON COMPOUNDS AND REACTION PRODUCTS THEREOF WITH EPOXIDES AS BONDING AGENTS IN COMPOSITE ARTICLES AND PROCESS FOR PRODUCING SUCH COMPOSITE ARTICLES

Robert C. Rittenhouse, Kenmore, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 27, 1959, Ser. No. 816,035
10 Claims. (Cl. 161—206)

1. A process for adhesively bonding:

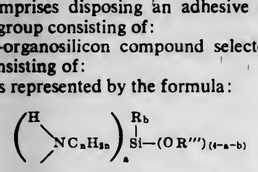
(I) a first member having a cured silicone rubber surface, said cured silicone rubber having been produced by curing a linear siloxane gum having an average of about two organic substituents on each silicon atom, which organic substituents are selected from the group consisting of the methyl, vinyl, phenyl, beta-cyanoethyl and ethyl groups, to

(II) a second member having a surface composed of a member selected from the group consisting of metal, synthetic organic fabric selected from the group consisting of (a) nylon cloth, (b) rayon cloth, (c) woven ethylene glycol-terephthalate polyester fibers, and (d) woven vinyl chloride-acrylonitrile copolymer fibers, cured silicone rubber, said cured silicone rubber having been produced by curing a linear siloxane gum having an average of about two organic substituents on each silicon atom, which organic substituents are selected from the group consisting of the methyl, vinyl, phenyl, beta-cyanoethyl and ethyl groups, and polyethylene terephthalate films,

which process comprises disposing an adhesive material selected from the group consisting of:

(A) an amino-organosilicon compound selected from the group consisting of:

(1) silanes represented by the formula:

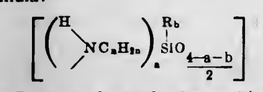


wherein R''' is an alkyl group, R is a monovalent hydrocarbon group, n is an integer having a value from 3 to 9 inclusive, a is an integer having a value from 1 to 3 inclusive, b is an integer having a value from 0 to 2 inclusive, the sum of $a+b$ is not greater than 3, the



group is attached to a carbon atom which is at least two carbon atoms removed from the silicon atom and the free valence of the nitrogen atom is attached to a member selected from the group consisting of hydrogen, the aminoalkyl groups and the monovalent hydrocarbon groups; and

(2) siloxanes comprising groups represented by the formula:



wherein R, n, a, b, $a+b$, the position of the



group and the group attached to the free valence of nitrogen are as defined above; and

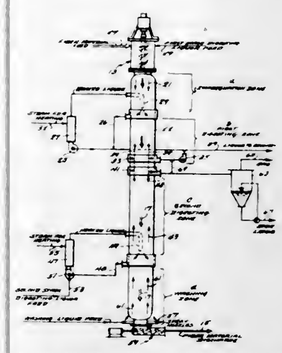
(B) a curable reaction product of said amino-organosilicon compound and an epoxy compound,

between and in adhesive contact with said surface of said members; and heating said adhesive material to a temperature of at least 125° C.

3,200,032
CONTINUOUS PROCESS FOR DIGESTING CELLULOSIC MATERIAL

Johan C. F. C. Richter, Alpes-Maritimes, France, and Ole J. Richter, Karlstad, Sweden, assignors to Aktiebolaget Kamyr, Karlstad, Sweden, a company of Sweden

Filed Dec. 17, 1962, Ser. No. 245,202
Claims priority, application Japan, Dec. 23, 1961, 36/46,936
5 Claims. (Cl. 162—19)



1. In a continuous process for digesting cellulosic fibrous material including the step of: continuously charging cellulosic fibrous material into one end of an elongated digester; impregnating the cellulosic fibrous material with digesting liquor adjacent said one end of the digester; digesting the impregnated material by treating the material with heated digesting liquor while passing it through the central portion of the digester; washing the material adjacent the other end of the digester; and discharging the digested material from said other end of the digester; the improvement which comprises conducting the digesting step in two stages by digesting the cellulosic fibrous material in a first digesting zone in the central portion of the digester with heated digesting liquor flowing through the first digesting zone concurrently with the cellulosic fibrous material; digesting the cellulosic fibrous material in a second digesting zone in the central portion of the digester with a different digesting liquor flowing through the second digesting zone countercurrently with the cellulosic fibrous material; separtely straining off the respective spent digesting liquors from the two digesting zones in an intermediate zone therebetween, the straining being conducted simultaneously and continuously in closely spaced separating areas within the intermediate zone; washing the digested cellulosic fibrous material following the second digesting step with wash liquid flowing countercurrently with the cellulosic fibrous material, the wash liquid being strained off together with second stage digesting liquor; and thereafter discharging the cellulosic fibrous material.

3,200,033
METHOD OF MAKING PAPER AND NON-WOVEN FABRIC FROM SYNTHETIC FIBERS

Rolf Grossteinbeck, Frankfurt am Main, Walter Schulze, Osnabruck, Winfried Willicks, Hofheim, Taunus, and Herfried Mindermann and Gert Tepel, Frankfurt am Main, Germany, assignors to Battelle-Institut E.V., Frankfurt am Main, Germany

Filed Nov. 1, 1962, Ser. No. 234,673
Claims priority, application Germany, Nov. 2, 1961, G 33,481; Jan. 18, 1962, G 34,052; Apr. 27, 1962, G 34,836; July 7, 1962, G 35,413
10 Claims. (Cl. 162—146)

1. A method of preparing an unwoven web material consisting to at least 50 percent of synthetic fibers, the balance being natural fibers, said method comprising treating the fibers with a water insoluble lubricant material forming in the liquid state a removable film on said fibers, and with a latent adhesive composition comprising essentially a polyurethane forming mixture of a polyester having at least one free hydroxyl group and a polyisocyanate whose isocyanate groups are blocked by a member of the group consisting of alcohols and phenols but are reactive at a temperature of about 100° C., both said material and adhesive composition having a melting point not higher than 120° C. and said latent adhesive composition having a melting point higher than said lubricant material, being solid at room temperatures and being immiscible with said lubricant material in the liquid state, passing an aqueous slurry of the fibers with said lubricant material and latent adhesive composition through a paper machine to form a sheet, said lubricant material and latent adhesive composition being added in a total amount of 30 to 50 percent by weight, based on the weight of the dry fibers, subjecting the fibers in said machine to a temperature sufficient to melt and activate said latent adhesive composition, said molten composition collecting as droplets on the film of the lubricant material formed on the fibers at the crossing points of the fibers, and finally curing said composition to a solid binder bonding the fibers at said crossing points.



9. An unwoven web consisting at least of 50 percent of synthetic fibers, the balance being natural fibers, the fibers being joined at their crossing points only by a cured polyurethane and being otherwise substantially disconnected and free of coating.

3,200,034
METHOD OF DESTROYING BACTERIA EMPLOYING CHLORINATED ALKYLBENZENES

Clarence W. Huffman, Glenview, Ill., assignor to International Minerals & Chemical Corporation, a corporation of New York

No Drawing. Filed Feb. 12, 1962, Ser. No. 172,749
7 Claims. (Cl. 167—30)

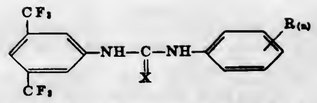
1. The method of controlling bacterial growth which comprises contacting bacteria with a bactericidal amount of a chlorinated hydrocarbon prepared by chlorinating an aromatic mixture consisting essentially of alkylbenzenes having 9 to 11 carbon atoms per molecule, at least 80% of said alkylbenzenes having 9 to 10 carbon atoms per molecule and at least 20% of said alkylbenzenes being n-propylbenzene.

3,200,035
TREATMENT OF SYNTHETIC PRODUCTS, ESPECIALLY SYNTHETIC FIBERS

Henry Martin and Andreas Ruperti, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed June 4, 1962, Ser. No. 199,660
8 Claims. (Cl. 167—38.6)

1. A process for treating a member selected from the group consisting of a synthetic plastic mass and a synthetic fibrous material for imparting thereto antibacterial and antimycotic properties, wherein there is applied to said products an antibacterial and antimycotic amount of a compound of the formula



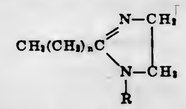
in which R represents a member selected from the group consisting of halogen, lower alkyl, alkoxy, $-CF_3$, $-SO_2NH_2$, $-NO_2$, $-CN$, $-SCN$, $-COOR'$, $-SO_3R'$, $-COR'$ and $-SR'$, in which R' stands for lower alkyl, n represents a whole number of at most 3 and X represents a member selected from the group consisting of oxygen and sulfur.

3,200,036
OILED DUST CLOTH COMPOSITION

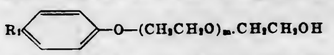
Joseph Greenblatt, Oreland, Pa., assignor to Talb Industries, Inc., Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 17, 1962, Ser. No. 217,548
5 Claims. (Cl. 167—38.6)

1. A self-emulsifying, self-exhausting germicidal oil composition for treatment of cellulosic wiping fabrics comprising a non-volatile naphthenic mineral oil in admixture with a minor quantity of emulsifier and ortho phenyl phenol, said emulsifier being essentially composed of a mixture of a normally liquid imidazoline compound and a non-ionic surfactant; said imidazoline compound being of the formula



wherein R is a member of the group consisting of alkyl and hydroxy alkyl of up to 6 carbon atoms and n is 9 to 18; and said non-ionic surfactant being of the formula



wherein R_1 is an alkyl group of up to 10 carbon atoms containing at least one neopentyl structure and m is 2 to 5; said emulsifier being present in an amount of 2 to 3% by volume of said naphthenic oil, and the o-phenyl phenol constituting at least 0.025% by weight of the germicidal oil composition.

3,200,037
TOPIC ANGIOTONIC COMPOSITIONS

Paul M. Curtay and Adrienne M. Curtay, born Boelens, both of 116 Blvd. Pereire, Paris, France

Filed Jan. 22, 1962, Ser. No. 167,659
Claims priority, application France, Feb. 10, 1961, 852,248; Sept. 30, 1961, 874,664
2 Claims. (Cl. 167—62)



1. A composition for improving in depth predominantly venous or venoylmphatic circulatory troubles in limbs, which comprises from 2.5 to 6 percent by weight of menthol, 2 to 4 percent by weight of camphor, 20 to 30 percent by weight of 90 percent by volume ethyl alcohol, 2 to 6 percent by weight of chloroform, 2 to 5 percent by weight of benzoin tincture, 10 to 15 percent by weight of hamamelis liquid extract and 61.5 to 34 percent by weight of glycerol.

3,200,038

TOPICAL ANTI-RHEUMATIC COMPOSITIONS COMPRISING TETRAHYDROFURFURYL 3-PYRIDYLACETATE

Vitangelo D'Amato, Milan, Italy, assignor to Lepetit S.p.A., Milan, Italy, an Italian body corporate

No Drawing. Filed Nov. 13, 1962, Ser. No. 237,371
Claims priority, application Great Britain, Nov. 23, 1961, 41,940/61
4 Claims. (Cl. 167—65)

1. A composition for combating rheumatism, which comprises as the active ingredient from about 1 to about 5 percent of tetrahydrofurfuryl 3-pyridylacetate together with a non-toxic diluent.

3,200,039

NON-GRANULATED TABLETS WITH 20% SORBITOL IN A PARTICLE SIZE OF FROM ABOUT 100μ TO ABOUT 2000μ

Herbert Thompson, Jr., Amityville, N.Y., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 28, 1962, Ser. No. 197,863
6 Claims. (Cl. 167—82)

1. A process of preparing tablets of powdered therapeutic materials comprising the steps of forming a uniform non-granulated mixture of powdered therapuetic material with not less than about 20% by weight of sorbitol having a particle size of from about 100μ to about 2000μ and compressing the non-granulated mixture thus obtained into tablets.

3,200,040

HAIR DYE COMPRISING DIAMINOPYRIDINES

Fritz-Walter Lange, Hamburg-Grossflottbek, Germany, assignor to Hans Schwarzkopf, Hamburg-Altona, Germany, a company of Germany

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,051
Claims priority, application Germany, Mar. 22, 1961, Sch 29,426; Mar. 30, 1962, Sch 31,224
8 Claims. (Cl. 167—88)

1. A composition of matter suitable for use in the oxidative dyeing of hair which comprises a carrier material adapted for application to human hair having distributed therethrough an alkalizing agent and at least one diaminopyridine selected from the group consisting of 2,6-diaminopyridine, 2,3-diaminopyridine, 4-methoxy-2,6-diaminopyridine, 4-ethoxy-2,6-diaminopyridine, 4-methyl-2,6-diaminopyridine, 4-hydroxy-2,6-diaminopyridine, 3-hydroxy-2,6-diaminopyridine, 3-hydroxy-4-methyl-2,6-diaminopyridine, 3-hydroxy-4-methoxy-2,6-diaminopyridine, 6-hydroxy-4-methyl-2,3-diaminopyridine, 6-methoxy-2,3-diaminopyridine, 6-ethoxy-2,3-diaminopyridine, 2,5-diaminopyridine, 2-dimethylamino-5-aminopyridine, 2-methylamino-5-aminopyridine, 2-diethylamino - 5 - aminopyridine, 2-ethylamino-5-aminopyridine, 2-amino-5-dimethylaminopyridine, 2-amino-5-methylaminopyridine, 2-methylamino-5-methylaminopyridine, 5,5'-diamino-bis(2-pyridil)amine and hydrochlorides thereof.

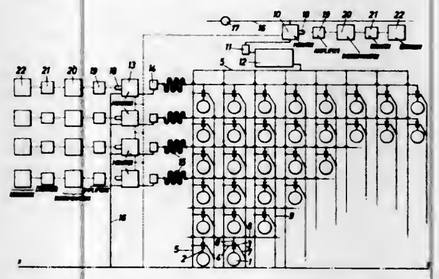
3,200,041

METHOD AND APPARATUS FOR REACTOR LEAK DETECTION

Leonard George Raife, Streatley, and Francis Thomas William Paget, Orford, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Apr. 29, 1960, Ser. No. 25,715
Claims priority, application Great Britain, Jan. 20, 1959, 2,088/59
7 Claims. (Cl. 176—19)

1. Apparatus for testing for the presence of a damaged fuel cartridge in a nuclear reactor having a plurality of fuel channels forming a matrix, said apparatus comprising coolant sampling pipes for continuously taking two samples of coolant from each of said fuel channels in the reactor, said pipes being coupled with a cross-matrix of sampling ducts connected to said fuel channels for identifying gas issuing from any channel by its co-ordinates in the matrix, delay means connected to said sampling pipes, and monitors connected to said sampling ducts via said delay means, said delay means causing retardation of flow so that the time taken in passage from the entry of sampling coolant in said pipes to the monitors is such that the principal active solid constituent in the coolant in the monitors emitting beta particles with energies greater than 3 mev. is rubidium-88.



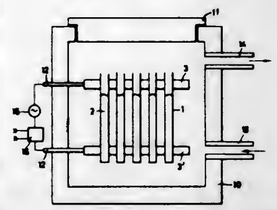
3. The method of testing for the presence of a leaking fuel cartridge in a nuclear reactor, said method comprising the steps of taking a sample of fluid coolant which has passed over said fuel cartridge, and thereby possibly become radioactive and contaminated with unstable gaseous fission products transmitting said sample to a monitoring point with a retarded flow having a time delay of a magnitude such that in said sample at the monitoring point the principal solid daughter product derived from the unstable gaseous fission products is rubidium 88, causing said rubidium to be deposited on a surface at said monitoring point and monitoring said surface to detect beta particles and gamma rays of energies greater than 3 mev.

3,200,042

METHOD FOR OPERATING FUEL ELEMENTS OF AN ATOMIC REACTOR AND FOR MANUFACTURING SUCH ELEMENTS

Harry N. Schludi, Munich, Germany (125 Elouera Road, Cronulla, New South Wales, Australia)

Filed Mar. 29, 1961, Ser. No. 99,121
Claims priority, application Germany, Apr. 14, 1960, Sch 27,744
2 Claims. (Cl. 176—21)



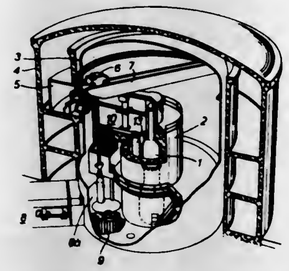
1. In a method of operating a reactor employing a fuel element constituted by a canning containing fissionable material and operating at a predetermined temperature, the steps of feeding preheated fissionable material into said canning at a temperature substantially equal to the operating temperature of the fissionable material and controllably heating the canning in said reactor from a source external thereof to maintain the temperature of the fuel element substantially constant and at said operating temperature for all magnitudes of power output of the reactor, sufficient heat being furnished to the fuel element from the external source to prevent phase change of the fissionable material.

3,200,043

PLANT FOR REMOTE HANDLING OF NUCLEAR FUEL ELEMENTS

Gianfranco Franco, Bournemouth, and George Edward Lockett, Norman Kinkead, and Viggo Henning Sorensen, Dorset, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed June 13, 1961, Ser. No. 141,556
Claims priority, application Great Britain, June 24, 1960, 22,312/60
3 Claims. (Cl. 176—30)



1. A nuclear reactor installation comprising: a pressure vessel housing a nuclear reactor; a single access port in said pressure vessel for loading and unloading fuel elements into the pressure vessel; an inner containment structure for containing said reactor pressure vessel and providing a loading bay and a transfer chamber for fuel elements; an outer containment structure; an access passage extending through said inner and outer containment structures and communicating the exterior of the outer containment with said loading bay within said inner containment; a plurality of vertically extending passages communicating with said transfer chamber at a number of aligned locations along the floor of said chamber; said locations comprising a canning cell, an irradiated fuel element storage facility and said loading bay; a track within the chamber extending over the aligned locations and said access port; a transfer flask mounted for movement on said track; means retained by said transfer flask for lowering and raising a fuel element into and out of said flask; and a further vertical passage communicating the irradiated fuel element storage facility with the loading bay, whereby said single access passage communicates via said loading bay with both the loading and unloading routes for fuel elements.

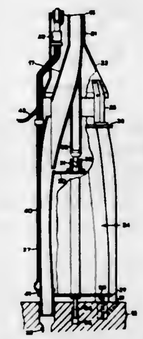
3,200,044

CHARGING SYSTEM FOR NUCLEAR REACTOR

Everett Long, Whetstone, England, assignor to The English Electric Company Limited, London, England, a British company

Filed Jan. 29, 1962, Ser. No. 169,401
Claims priority, application Great Britain, Feb. 1, 1961, 3,793/61
8 Claims. (Cl. 176—30)

1. In a nuclear reactor including a pressure vessel, a reactor core within the pressure vessel and containing fuel channels having their axes parallel to one another, and means defining a substantially cylindrical access duct through the pressure vessel between the outside and inside thereof and having its central axis parallel with the extended axes of the fuel channels; a charging apparatus in the pressure vessel comprising bearing means in said access duct, said bearing means being displaced radially from the central axis of the access duct, a rigid charge chute mounted in said bearing means to rotate about an axis of rotation displaced radially from said central axis, means defining an opening at the end of the charge chute nearer the reactor core at a fixed radius from the said axis of rotation, and an assembly of fixed guide tubes over said reactor core, the end of each guide tube nearer the reactor core being aligned with a fuel channel and the other ends of the guide tubes being positioned to cooperate successively with said opening on rotation of the charge chute.

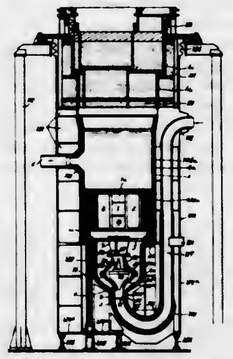


3,200,045

LIQUID COOLED NUCLEAR REACTOR WITH IMPROVED FLOW DISTRIBUTION MEANS

Georges Vendryes, Gif-sur-Yvette, and Jacques Duport, Grenoble, Isere, France, assignors to Commissariat à l'Energie Atomique, Paris, France

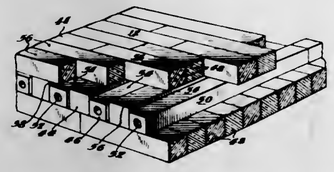
Filed Dec. 26, 1961, Ser. No. 162,182
Claims priority, application France, Mar. 10, 1961, 855,306, 855,308
6 Claims. (Cl. 176—40)



1. A nuclear reactor, comprising: a liquid-tight tank; an inlet pipe connected to said tank for supplying a liquid coolant thereto; an outlet pipe connected to said tank for withdrawing coolant therefrom; a first plurality of elongated bodies centrally mounted within said tank and containing fissile material therein, each of said elongated bodies being provided with passage means for the flow of liquid coolant therethrough; a second plurality of elongated bodies mounted within said tank in radially outward relation with respect to said first plurality of elongated bodies and each being provided with passage means for the flow of liquid coolant therethrough; flow restrictor means mounted in the paths of flow through at least some of said passage means; annular baffle means

mounted in the path of flow through said inlet pipe at a point upstream of said first and second plurality of elongated bodies for dividing the flow of liquid coolant from said inlet pipe into two separate coaxial inner and outer liquid flow paths and for directing the respective paths divided thereby into the passages of the first and second elongated bodies, respectively; and throttling means positioned in one of said divided flow paths to control the relative rate of flow between said inner and outer flow paths.

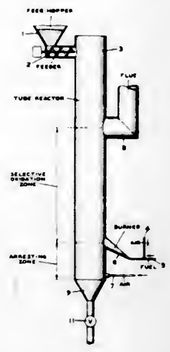
3,200,046
NEUTRONIC REACTOR STRUCTURE
John T. Carleton, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 21, 1950, Ser. No. 157,287
2 Claims. (Cl. 176—41)



1. A neutronic reactor, comprising first and second sets of horizontal layers of graphite blocks laid one on top of another, the layers of the first set alternating with the layers of the second set, all the blocks of the first set being nonperforated and of the same cross-sectional dimensions and extending in the same direction, each block of each layer of the first set being in contact with the two blocks of the same layer on opposite sides of the said each block, all the blocks of the second set extending in same direction as one another and transversely to the blocks of the first set, each layer of the second set comprising nonperforated blocks and perforated blocks alternating with one another, all the nonperforated blocks of the second set being of the same cross-sectional dimensions as the blocks of the first set, all the perforated blocks housing material fissionable by neutrons of thermal energy and being of smaller cross-sectional dimensions than the nonperforated blocks, wherein each perforated block is spaced from a nonperforated block in the layer directly above and from one of the two nonperforated blocks of the same layer as the said perforated block and on opposite sides thereof.

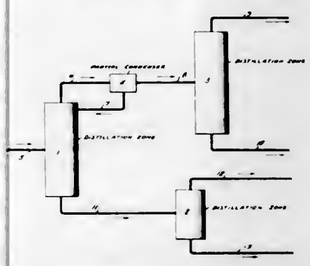
3,200,047
METHOD OF REMOVING DUST FROM REACTIVE SOLID PARTICLES
Bruce E. Kurtz, Solvay, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed May 17, 1962, Ser. No. 195,537
4 Claims. (Cl. 202—31)

1. A method for the removal of fine particles from larger particles of combustible material containing the same which comprises introducing said mixture of combustible particles into the top of a vertical elongated reaction zone, passing said mixture in dispersed form downwardly by force of gravity through the vertical elongated reaction zone, introducing hot combustion gases into said vertical elongated reaction zone in direct contact with and countercurrent to the particles of combustible material dropping down through the vertical elongated reaction zone to raise the temperature of the finer particles to the kindling temperature but maintain the temperature of the larger particles of combustible material below the kindling temperature, introducing oxygen into said vertical elongated reaction zone countercurrent to and in direct contact with the particles to effect selective oxidation of the finer particles at their kindling temperature to convert the finer products into gaseous products without causing any material oxidation of the larger particles, discharging the combustion gases and the gaseous products from the vertical elongated reaction zone,



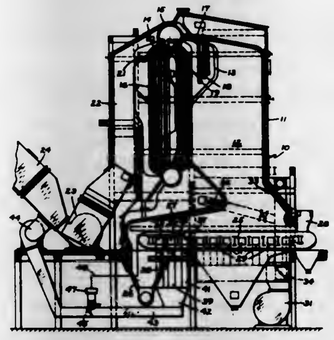
introducing said oxygen into said vertical elongated reaction zone at a point below the introduction of said hot combustion gases to cool the particles of combustible material after being subjected to selective oxidation, and discharging the cooled combustible particles from the vertical elongated reaction zone.

3,200,048
METHOD OF PURIFYING MONOCHLORO COMPOUNDS
Donald H. Briggeman, Niagara Falls, and Leland J. Lutz and Charles J. Smith, Jr., Grand Island, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed May 18, 1954, Ser. No. 430,522
5 Claims. (Cl. 202—40)



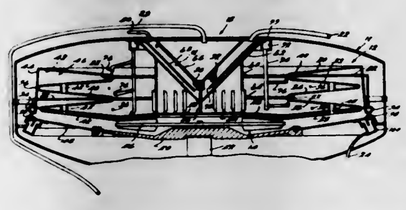
1. A method for the recovery of a compound of the formula (Cl)(R'O)P(O)(R'') from a mixture which consists essentially of the aforementioned compound, carbon dioxide, phosgene and RCl which comprises introducing said mixture into a first distillation zone operated at subatmospheric pressure, removing carbon dioxide, phosgene and a minor proportion of the RCl present in the feed as overhead and removing RCl and (Cl)(R'O)P(O)(R'') as bottoms; passing the overhead from the first distillation zone into a partial condenser and returning liquid condensed therein as reflux to the first distillation zone; and flashing the bottoms from the first distillation zone in a second distillation zone and removing RCl as overhead and (Cl)(R'O)P(O)(R'') as bottoms; R, R' and R'' being alkyl radicals.

3,200,049
COKING STOKER
Earle C. Miller, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 588, Jan. 5, 1960. This application July 17, 1962, Ser. No. 211,944
2 Claims. (Cl. 202—117)



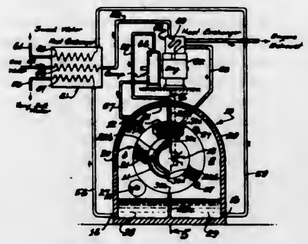
1. A coking stoker, comprising a furnace having a combustion chamber with an outlet at the upper end, a traveling grate underlying the chamber at the lower end and having an arch overlying the discharge end, a heat-absorbing apparatus associated with the furnace and having an inlet connected to the outlet of the chamber to receive hot products of combustion therefrom, the heat-absorbing apparatus having an outlet to discharge the said products of combustion at a lower temperature, vertical walls defining air compartments located under a substantial portion of the grate, a gas compartment located under the discharge end of the grate, a duct connecting the outlet of the heat-absorbing apparatus to the gas compartment, a fan in the duct for introducing partially-cooled products of combustion through the grate and through the coke, a thermocouple located adjacent the discharge end of the grate, and means located in the duct for control by the thermocouple for regulating the amount of products of combustion so introduced.

3,200,050
THERMAL COMPRESSION STILLS
Walter H. Hogan, Wayland, Mass., and Kenneth C. D. Hickman, Rochester, N.Y., assignors, by mesne assignments, to Aquastills Incorporated, Rochester, N.Y., a corporation of New York
Filed Apr. 14, 1960, Ser. No. 22,237
8 Claims. (Cl. 202—176)



1. In a thermal compression still for evaporating and condensing distillable liquid and having a phase separation barrier and heat exchanger structure of high thermal conductivity providing an evaporating surface on one side and a condensing surface on the opposite side, a degasser for the distilland including a rotatable member, means for supplying distilland onto said rotatable member, means for rotating said rotatable member so as to distribute the distilland thereon and to discharge the distilland therefrom, means for supplying the degassed distilland from said degasser to the evaporating surface, means for passing steam evolved in the still in contact with the distilland while the same is on said rotatable member, and means for withdrawing gas from said degasser.

3,200,051
ROTARY EVAPORATOR-CONDENSER APPARATUS FOR THIN FILM DISTILLATION
David H. Silvern, North Hollywood, Calif. (207 Carolina, Olean, N.Y.)
Filed Sept. 14, 1961, Ser. No. 138,026
9 Claims. (Cl. 202—236)



1. A rotary evaporator-condenser apparatus comprising, in combination: a sealed housing; a cylindrical tubular rotor rotatably mounted within said housing for rotation about its longitudinal axis, said rotor comprising a series of spaced annular fins disposed in coaxial alignment and defining a plurality of radially extending openings between adjacent fins; partitioning means within said housing extending longitudinally therethrough, said partitioning means being contiguous with the exterior cylindrical surface of said rotor along two spaced-apart longitudinally extending lines on the exterior surface of said rotor and with the interior cylindrical surface of said rotor along two spaced-apart longitudinally extending lines on the interior cylindrical surface of said rotor, the contiguity between said partitioning means and the exterior surfaces of said rotor providing an effective pressure seal therebetween while still permitting rotation of said rotor, said partitioning means longitudinally dividing said housing into first and second chambers wth semi-tubular portions of said rotor extending into both of said chambers; drive coupling means extending into said housing, said drive coupling means being adapted upon coupling to a source of driving power to rotate said rotor at a predetermined speed; first header means extending into said first chamber of said housing within the central opening of said tubular rotor for injecting a liquid distilland into the radially extending openings in said rotor; a first outlet extending into said housing and communicating with the upper portion of said first chamber for the removal of vaporized distilland from said first chamber; a second outlet extending into said housing and communicating with the lowermost portion of said first chamber for the removal of liquid distilland from said first chamber; second header means extending into said second chamber of said housing within the central opening of said tubular rotor for injecting vaporized distilland into the radially extending openings in said rotor; a third outlet extending into said housing and communicating with the lowermost portion of said second chamber for the removal of liquid condensate from said second chamber; means for heating said distilland; means for conducting said distilland from said heater to said first header means; and, vapor compression means connected between said first outlet and said second header.

3,200,052
METHOD OF AND APPARATUS FOR PLATING LOOM DROP WIRES

Samuel L. Huffman and Richard J. Irwin, Greenville, S.C., assignors to Carolina Plating & Stamping Company, Greenville, S.C., a corporation of South Carolina

Filed Apr. 18, 1961, Ser. No. 103,799
2 Claims. (Cl. 204—23)



1. In a method of plating loom drop wires, said drop wires being thin delicate sheet metal elements having slots and being approximately five inches long and ⅜ of an inch wide, confining a multiplicity of said drop wires to be plated within a long slender substantially horizontal perforated plating barrel, said plating barrel having an internal diameter of less than five inches and an axial length of approximately ten times said internal diameter, whereby the drop wires are restrained from end-over-end movement and tangling within the barrel, and imparting rotation to the barrel while the same is submerged in a plating bath to tumble and plate the drop wires.

3,200,053
ELECTROLYTIC REDUCTION PROCEDURE FOR THE PRODUCTION OF DIOLS

William Lassiter Yost, Long Valley, N.J., assignor to Ciba Corporation, a corporation of Delaware

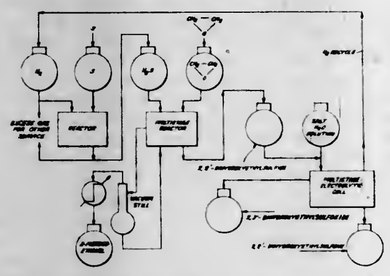
No Drawing. Filed Dec. 11, 1961, Ser. No. 158,580
14 Claims. (Cl. 204—75)

1. Process for the preparation of diols from ketones, which comprises subjecting the ketone starting material to electrolytic reduction in a one-chamber electrolysis cell, using as the electrolyte vehicle the mixture of a non-reducible, water-miscible organic solvent, water and an ionizable metal salt of an organic carboxylic acid and a current density of from about 0.01 amp./cm.^{2} to about 0.1 amp./cm.^{2}.

3,200,054
ELECTROLYTIC OXIDATION OF WATER-SOLUBLE THIOETHERS

John A. Pursley, 2 E. Water St., Lock Haven, Pa.

Filed Apr. 13, 1962, Ser. No. 187,236
15 Claims. (Cl. 204—79)



2. A process for the production of an organic sulfone which comprises subjecting an aqueous solution of a water-soluble organic thioether containing an electrolyte in an amount between about 0.1% by weight of the solution and the saturation point of the electrolyte in the solution, to direct current electrolysis at a temperature between about −5° C. and about 150° C. and a voltage between about 2 and 6 volts thereby converting said aqueous solution of a water-soluble organic thioether to an aqueous solution of the corresponding water-soluble organic sulfone.

3,200,055
PROCESS FOR THE ELECTROLYTIC PRODUCTION OF HYPERPURE ZINC

Giovanni Scacciati, Venice, Italy, assignor to Montevecchio Società Italiana del Piombo e dello Zinco, Milan, Italy, a corporation of Italy

Filed June 30, 1961, Ser. No. 121,246
Claims priority, application Italy, July 5, 1960, 11,872/60
3 Claims. (Cl. 204—114)

1. A process for preparing hyperpure zinc containing less than 5 p.p.m. of lead, by electrolysis of a zinc sulfate solution containing manganous ions, which comprises using an anode consisting of an insoluble lead-containing sheet, said lead sheet being surrounded by a compact diaphragm coated with manganese dioxide and having between said lead sheet and said diaphragm an anolyte containing about 250–280 g./l. free H_2SO_4, said manganese coating being formed by said electrolysis.

3,200,056
STABILIZED POLYETHYLENE

Herbert M. Bond, Maplewood, and Jun Tomita, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Feb. 13, 1959, Ser. No. 792,980
16 Claims. (Cl. 204—154)

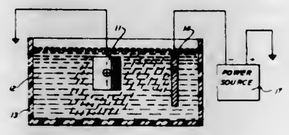
1. A polyethylene product electrically non-conductive and useful as electrical insulation, comprising polyethylene blended with a combination of ingredients for inhibiting the thermal degradation of said polyethylene, said product being non-flowing at 150° C. and highly resistant to degradation at elevated temperatures, retaining toughness, elasticity, and tensile strength even after being subjected to 150° C. for one week, and said product being formed by blending at least 70% by weight of polyethylene with up to 30% by weight of a combination of ingredients for inhibiting the thermal degradation of polyethylene and subjecting the blend to between approximately 2 and 40 megareps of high energy ionizing irradiation having an energy level between about 100,000 and 20 million electron volts, said combination of ingredients for inhibiting the thermal degradation of polyethylene including an organic chlorinated material, up to 10% by weight of antimony trioxide, an amine-type antioxidant, and carbon black.

3,200,057
ELECTROPHORETIC COATING PROCESS

Gilbert L. Burnside, Oak Park, and George E. F. Brewer, Wolverine Lake, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 27, 1960, Ser. No. 78,684
4 Claims. (Cl. 204—181)

1. In a method of applying a coating to a conducting surface of an article comprising the steps of causing the surface of said article to contact an aqueous bath having organic film-forming material dispersed therein, said article serving as a first electrode, causing a second electrode to contact said aqueous bath, and causing a direct electric current to flow between said first and second electrodes and through said aqueous bath at an electrical potential substantially above the value at which the electrolysis of water occurs until a coating of said film-forming material is electrically deposited upon said article from said aqueous bath, the step of causing the direction of flow of the direct electric current between said article and said bath to be reversed for a time sufficient to remove from the surface of said electrically deposited coating film-forming



material from said bath that has not been electrically deposited.

3,200,058
CYCLICAL CURRENT REVERSAL FOR AN ELECTROPHORETIC DEPOSITION

Thomas H. Oster, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Aug. 23, 1961, Ser. No. 133,441
5 Claims. (Cl. 204—181)

1. In a method of applying a coating to a conducting surface of an article comprising the steps of causing the surface of said article to contact an aqueous bath having organic film-forming material dispersed therein, said article serving as a first electrode, causing a second electrode to contact said aqueous bath, and causing a direct electric current to flow between said first and second electrodes and through said aqueous bath at an electric potential substantially above the value at which the electrolysis of water occurs until a coating of said film-forming material is electrically deposited upon said article from said aqueous bath, the improvement which comprises causing the direction of flow of said direct current between said first and second electrodes to be reversed after a significant period of time for a predetermined and significant period of time, and repeating the reversal while said article is in contact with said aqueous bath.

3,200,059
POLYMER PURIFICATION

William C. Mills, Pasadena, Tex., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 29, 1961, Ser. No. 143,996
5 Claims. (Cl. 204—186)

2. A process for the purification of high molecular weight alpha olefin polymers, said alpha olefin having from 2 to 6 carbon atoms, which comprises:

(1) forming an emulsion of

(a) an inert normally liquid hydrocarbon solvent having a zero dipole moment containing dissolved therein a high molecular weight alpha-olefin polymer, said alpha-olefin having 2 to 6 carbon atoms, and catalyst residue, said catalyst being selected from the group consisting of (1) chromium oxide supported on at least one material selected from the group consisting of a silica, alumina, zirconia, and thoria and (2) a transition heavy metal halide and an aluminum alkyl; and

(b) from about 0.1 to about 20 volume percent, based on said polymer solution (a) of a polar liquid having a dipole moment greater than zero, being immiscible with said polymer solution (a) and having a different density than said polymer solution (a), said polar liquid forming a discontinuous phase in said polymer solution (a); and

(2) subjecting said emulsion to the action of an electric field resulting from an applied potential difference of between about 1 and 50 kilovolts per inch linear distance between electrodes, at a temperature of between about 235 and 350° F. and a pressure of between about 40 and 450 p.s.i.g. whereby

(a) at least a portion of said catalyst residue is associated with said discontinuous polar liquid phase, and

(b) at least a portion of said discontinuous polar liquid phase coalesces; and

(3) separating said coalesced polar liquid phase and associated catalyst residue from said polymer solution.

3,200,060
DECOLORIZING PETROLEUM WAX

Arthur T. Polishuk, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

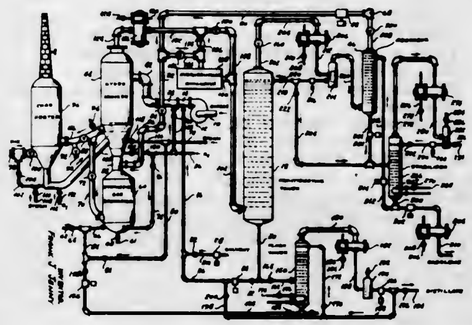
No Drawing. Filed June 30, 1960, Ser. No. 39,792
6 Claims. (Cl. 208—24)

1. Process for decolorizing petroleum wax which consists essentially of (1) admixing petroleum wax containing color bodies with 200–1500 percent of an alkanol solvent having 3 to 6 carbon atoms, (2) subsequently washing the wax-alkanol solution at a temperature above the melting point of the wax with 5 to 250 percent of an aromatic hydrocarbon solvent having 6 to 9 carbon atoms, (3) separating the aromatic-wax alkanol mixture into an upper solvent phase containing liquid decolorized wax and a lower phase containing color bodies, and (4) recovering decolorized wax from the upper phase in a yield of at least 95%.

3,200,061
METHOD FOR HYDROCRACKING HIGH MOLECULAR WEIGHT HYDROCARBONS

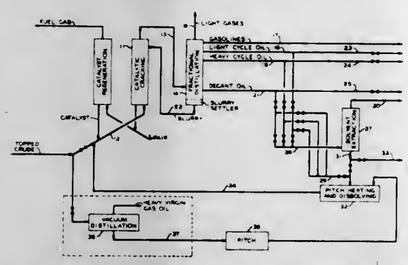
Frank J. Jenny, 460 W. 24th St., New York 11, N.Y.

Filed May 19, 1960, Ser. No. 30,725
2 Claims. (Cl. 208—58)



1. In a process for the conversion of hydrocarbons wherein a hydrocarbon is subjected to cracking in a cracking zone in the presence of a substantial flow of a free hydrogen containing gas, the improvement of upgrading hydrocracked fractions which comprises withdrawing hydrocarbon vapors and hydrogen from said cracking zone, subjecting said hydrocarbon vapors and hydrogen to reaction in a hydrogenation zone at effective hydrogenation temperatures and pressures and in the presence of a hydrogenation catalyst, separating the products of hydrogenation into vapor and liquid fractions, and recovering a hydrogenated liquid hydrocarbon.

3,200,062
PITCH RECOVERY AND ITS UTILIZATION IN A CRACKING PROCESS
Gene W. Britton, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 30, 1962, Ser. No. 191,161
7 Claims. (Cl. 208—87)



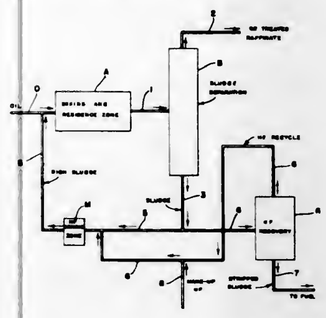
1. A process for reclaiming and cracking petroleum pitch, which comprises:
dissolving a pitch obtained by a vacuum distillation of a West Texas topped crude, said pitch having the following properties—
Specific gravity, 60° F./60° F., in the range of 1.002 to 1.135
Penetration, 5 sec., 100 gm., 77° F., in the range of 0–10
Softening point, ring and ball, ° F., in the range 180–260
in an aromatic extract oil obtained by solvent extraction of an oil obtained from said catalytic cracking, said extract oil having the following characteristics—
A.P.I. gravity, 60° F./60° F., in the range of 7.1 to 20
B.M.C.I. in the range of 60 to 99
50% Point, ° F., in the range of 550 to 725; and
charging the resulting solution to a mobile catalyst topped crude cracking step.

3,200,063
HYDROCRACKING PROCESS WITH A CATALYST COMPOSITE COMPRISING SILVER OR COPPER ADMIXED WITH A GROUP VIB METAL ON AN ACID ACTING REFRACTORY OXIDE BASE
William B. Wilson, Pleasant Hill, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 25, 1962, Ser. No. 233,130
26 Claims. (Cl. 208—111)

2. A method of hydrocracking a hydrocarbon oil boiling in the range from about 350° F. to 950° F. which comprises contacting said oil in the presence of hydrogen under hydrocracking conditions with a catalyst comprising from about 0.1% to 20% by weight of a first metal selected from the group consisting of copper and silver and about 0.1% to 20% by weight of a metal of Group VIB intimately associated with a silica-alumina, said catalyst being prepared by incorporating at least the first metal into a hydrogel of the silica-alumina.

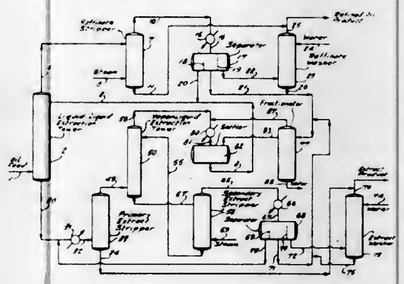
3,200,064
REFINING OF GAS OIL WITH HYDROGEN FLUORIDE ENRICHED SLUDGE
Harley F. Hardman, Lyndhurst, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 3, 1962, Ser. No. 214,549
1 Claim. (Cl. 208—280)

A continuous process for improving the quality of gas oil as catalytic stock which comprises the steps of
(1) treating a gas oil with a sludge which has been enriched with hydrogen fluoride to provide a hydrogen fluoride content within the range of 10–20 wt. percent, said sludge having been generated by treating a gas oil with hydrogen fluoride,
(2) allowing sufficient time for hydrogen fluoride transfer to the gas oil with a concomitant reduction of hydrogen fluoride in the sludge, to a level within the range of 7–14 wt. percent and at least 1 wt. percent less than the enriched sludge,



(3) separating the raffinate containing hydrogen fluoride from the sludge.
(4) heating a portion of the sludge to recover hydrogen fluoride and a stripped sludge,
(5) enriching another portion of the sludge separated in step 3 with the recovered hydrogen fluoride of step 4 and recycling the enriched sludge to step 1.

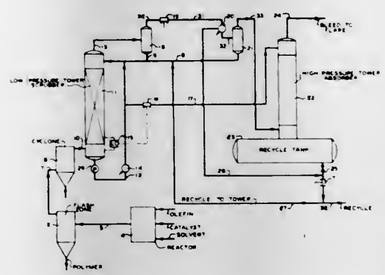
3,200,065
HYDROCARBON TREATMENT PROCESS
Gregory I. Cottington, Groves, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed July 18, 1961, Ser. No. 124,949
10 Claims. (Cl. 208—321)



1. In the solvent refining of a feed hydrocarbon oil containing at least a small portion of constituents coboiling with a liquid solvent wherein said feed hydrocarbon is contacted with said solvent in a liquid-liquid extraction zone forming separate primary extract and raffinate phases, the improvement which comprises vaporizing at least a portion of said primary extract phase forming a vapor comprising solvent and co-boiling hydrocarbon oil, contacting said vapor with liquid comprising a relatively high boiling hydrocarbon oil consisting of hydrocarbons having true boiling points at least 100° F. above the boiling range of said solvent in a vapor-liquid extraction zone, withdrawing solvent vapors free of coboiling hydrocarbons as overhead vapor from said vapor-liquid extraction zone, condensing said overhead vapor forming a purified solvent stream for recycle to said solvent refining step, and withdrawing secondary extract

comprising said relatively high boiling hydrocarbon oil and said co-boiling hydrocarbon oil from said vapor-liquid extraction zone.

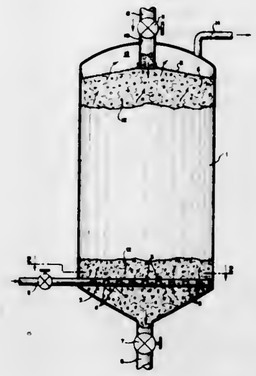
3,200,066
RECOVERY OF HYDROCARBON DILUENT FROM A FLASH GAS
Jack S. Scoggin, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 22, 1962, Ser. No. 167,673
4 Claims. (Cl. 208—342)



1. A method for recovering hydrocarbon diluent from a polymerization effluent containing same which comprises flashing said polymerization effluent in a flash zone, passing vapors therefrom to a low pressure wash zone maintained at about 18 p.s.i.a. at 50° F., condensing a portion of said vapors in said low pressure wash zone, removing said condensed vapors from a first end of said zone, chilling said removed condensed vapors to about 15° F., returning a portion of the chilled condensed vapors to a second end of said zone, passing the uncondensed vapors to a knock-out zone so as to remove liquid entrained therein, compressing the liquid-free vapors to about 80 p.s.i.a., cooling the compressed vapors, removing any additional liquid from the cooled, compressed vapors, passing same as feed to a high pressure absorption zone maintained at about 75 p.s.i.a., removing a portion of the chilled condensed vapors from said low pressure wash zone, compressing the chilled removed portion to about the pressure being maintained in said high pressure absorption zone, introducing the compressed, chilled liquid as absorbent in said high pressure zone, condensing a portion of the feed to said high pressure zone, recovering condensed liquid from said high pressure zone, removing and flaring uncondensed vapors from said high pressure zone and subsequently returning the recovered liquid to the polymerization system.

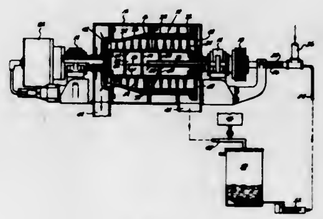
3,200,067
CONTINUOUS LIQUID-SOLID CONTACT PROCESS
Joseph A. Levendusky, Bayonne, N.J., assignor to Union Tank Car Company, Chicago, Ill.
Filed Oct. 30, 1962, Ser. No. 234,122
7 Claims. (Cl. 210—24)

1. In the process of treating a liquid comprising:
(A) confining a bed of liquid treating particles so that said bed is motionless,
(B) passing an untreated liquid through said motionless bed at a predetermined flow rate,
(C) recovering all liquid that has passed through said motionless bed so as to provide a constant volume of treated liquid, and then
(D) after sufficient liquid has passed through said motionless bed to render the treating action of said particles less effective, moving said bed during intermittent periods so as to replace the most exhausted particles thereof with fresh particles, a quantity of said untreated liquid moving with said most exhausted particles so as to bypass said bed,
the improved method of continuously providing said constant volume of treated liquid comprising the step of:



automatically increasing the volume of untreated liquid introduced into said bed during said intermittent periods by an amount equal to said quantity moving with said most exhausted particles so that said constant volume of treated liquid continues to be recovered.

3,200,068
RECOVERING FINES IN A MECHANICAL DEHYDRATOR
James Jonakin and Robert P. Heusel, Simsbury, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 27, 1962, Ser. No. 247,709
1 Claim. (Cl. 210—54)



A method of recovering fines from the effluent of a centrifuge dividing a coal slurry into a partially dewatered coal layer in the centrifuge and an effluent containing water and coal fines, comprising, the steps of forming materially larger particle units of the fines in said effluent by passing said effluent including said fines through a flocculator and flocculating said fines into enlarged flocs of fines, feeding a slurry of said enlarged flocs and water onto the layer of partially dewatered coal in said centrifuge

and utilizing said coal layer as a screen and filter, screening said enlarged flocs by said coal layer and filtering the water from said slurry of enlarged flocs through said layer.

3,200,069
METHOD FOR REMOVING BRANCHED CHAIN ALKYLARYLSULFONATES FROM WATER

Hugh R. Eisenhauer, Kingston, Ontario, Canada, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 29, 1963, Ser. No. 269,189
Claims priority, application Great Britain, Jan. 2, 1963, 323
6 Claims. (Cl. 210—63)

1. The method of removing a branched chain alkylbenzenesulfonate contaminant from water comprising treating water contaminated with a branched chain alkylbenzenesulfonate with 1 to 25 moles of hydrogen peroxide per mole of said contaminant at a pH of 3 to 6 and in the presence of 4 to 20 moles of ferrous ion per mole of said contaminant.

3,200,070
DRILLING MUD COMPOSITIONS AND CEMENT SLURRIES CONTAINING WATER SOLUBLE SULFITED LIGNIN-PHENOLIC COMPLEXES

Franklin W. Herrick, Shelton, Wash., assignor to Rayonier Incorporated, Shelton, Wash., a corporation of Delaware

Original application Apr. 15, 1959, Ser. No. 806,545, now Patent No. 3,095,392, dated June 25, 1963. Divided and this application Aug. 8, 1962, Ser. No. 215,566
2 Claims. (Cl. 252—8.5)

1. A drilling mud composition consisting essentially of an aqueous dispersion of an hydratable clay containing from 1 to 10 pounds per barrel, dry weight, of a water-soluble, polymeric, sulfited lignin-phenol aldehyde complex as a fluid loss control agent, said complex being formed by the controlled condensation at an elevated temperature to the point of incipient water-insolubility of 100 parts of a water-soluble sulfited lignin with from 19 to 38 parts of a water-soluble polymethylolphenol having a mole ratio of formaldehyde to phenol in the range of 2.0 to 3.0 and condensed to a polymer ranging from the monomer to the pentamer with the major portion being dimers to trimers.

3,200,071
COMPOSITION AND PROCESS FOR INHIBITING CORROSION OF FERROUS METAL

Verner L. Stromberg, Webster Groves, Mo., assignor to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 1, 1961, Ser. No. 149,161
6 Claims. (Cl. 252—8.55)

1. A corrosion inhibiting composition consisting essentially of a hydroxyaliphatic imidazoline, a cyclobexyl amine and naphthalene sulfonic acid, the molar ratio of said imidazoline to said amine to said sulfonic acid being 1:2:2.

3,200,072
EXTREME PRESSURE LUBRICANT CONTAINING ALKYD RESINS DERIVED FROM COMPLEX ACIDS

Louis A. Joo and John B. Braunwarth, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,204
8 Claims. (Cl. 252—37.2)

5. An extreme pressure lubricant composition consisting essentially of

(a) a major portion of a mineral lubricating oil,

(b) about 2.0 to 20% by wt. of sulfurized-phosphorized fatty material sufficient to enhance the extreme pressure properties of said oil,

(c) a naphthenate salt of a polyvalent metal of the group consisting of cobalt, iron, copper, zinc, lead, manganese, chromium, calcium and zirconium in a metal concentration of about 0.0001 to 0.0010 percent by weight and

(d) about 0.3 to about 3.0 percent by weight of an oil soluble alkyd resin reaction product prepared under esterification conditions of

(1) mixed mono-, di- and polycarboxylic acids prepared from solvent extracts obtained in the solvent refining of mineral lubricating oils using a solvent selective for aromatic compounds, by reaction of said solvent extracts with an alkali metal to form the alkali metal adduct, carbonation of said adduct to form the corresponding alkali metal salt of a carboxylic acid and acidification of said salt to form the free acid, said carboxylic acid being thus characterized by having complex, polynuclear, aromatic, alkylaromatic and heterocyclic nuclei predominating in carbon and hydrogen, containing about 2.0 to 4.5% by weight of combined sulfur and also containing oxygen and nitrogen, having an average molecular weight of about 320 to 600, and having about 1.7 to 3.5 average number of aromatic rings per mean aromatic molecule,

(2) a polyol having 3 to 20 carbon atoms to the molecule and 3 to 7 hydroxyl groups to the molecule, and

(3) an unsaturated fatty acid having 12 to 26 carbon atoms per molecule.

3,200,073
AGENTS TO IMPROVE YIELDS OF HYDROXY STEARATE GREASES

Dean W. Criddle, Pleasant Hill, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,218
11 Claims. (Cl. 252—40.5)

1. A grease composition comprising an oil of lubricating viscosity in major amount, a metal soap of 12-hydroxystearic acid, wherein said metal is selected from the group consisting of the metals of Groups I and II of Mendeléeff's Periodic Table, in an amount to thicken said oil to the consistency of a grease, and from 0.1% to 10% by weight of a dicarboxylic acid selected from the group consisting of azelaic acid and sebacic acid.

3,200,074
LUBRICATING COMPOSITIONS CONTAINING BORATE ESTER-AMINE COMPLEXES

Edwin C. Knowles, Poughkeepsie, N.Y., and Edward L. Kay, Akron, Ohio, assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 20, 1963, Ser. No. 281,824
14 Claims. (Cl. 252—49.6)

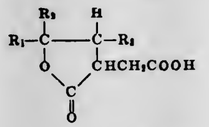
1. A lubricating composition comprising a lubricating oil in major proportion and about 0.1–10.0 percent by weight based on the weight of the composition of a complex of a borate ester and an aliphatic amine in a mol ratio of 10:1 to 1:1, respectively, said aliphatic amine being selected from the class consisting of alkyl monoamines containing from 6 to 26 aliphatic carbon atoms per molecule and said borate ester being a compound of the class represented by the formula: $B(OR)_3$, wherein R is selected from the class consisting of hydrocarbon groups and halogen substituted hydrocarbon groups, said groups having from 1 to 18 carbon atoms.

3,200,075
LACTONE AMIDES IN LUBRICATING OILS

Donald J. Anderson, San Anselmo, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Feb. 19, 1963, Ser. No. 259,720
6 Claims. (Cl. 252—51.5)

1. A lubricating oil composition comprising a major proportion of an oil of lubricating viscosity, and from 0.1% to 30% by weight of an amide of an alkylbutyrolactone-α-acetic acid of the formula:



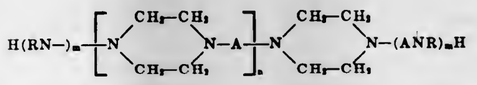
wherein R_1, R_2, and R_3 are selected from the group consisting of hydrogen and alkyl radicals having from 1 to 300 carbon atoms, with the total combined number of carbon atoms in R_1, R_2 and R_3 being at least 10 and the amine of said amide is of not more than 20 carbon atoms and of not more than 11 nitrogen atoms and is selected from the group consisting of ethylene diamine and polyethylene polyamines.

3,200,076
POLYPIPERAZINYL SUCCINIMIDES IN LUBRICATING OILS

Robert G. Anderson and Lewis R. Honnen, Novato, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Mar. 28, 1963, Ser. No. 268,599
6 Claims. (Cl. 252—51.5)

1. The product of the process which comprises reacting alkenyl succinic acid compounds selected from the class consisting of alkenyl succinic acids, alkenyl succinic anhydrides, alkenyl succinic halides and lower alkyl esters of alkenyl succinic acids, in which the alkenyl group contains from 30 to 400 carbon atoms with polypiperazinyl alkylenes having the formula:



in which R is selected from the class consisting of hydrogen or lower alkyl, A is selected from the class consisting of alkylene, hydroxyalkylene and ketoalkylene radicals containing from 2 to 4 carbon atoms, m is selected from the class of 0 and 1 and n is an integer from 1 to 5 to form at least one member of the group consisting of alkenyl succinimide and alkenyl succinamide of said polypiperazine.

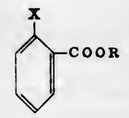
2. A lubricant composition comprising a major proportion of an oil of lubricating viscosity and a minor proportion sufficient to enhance the detergent characteristics of the product of claim 1.

3,200,077
FLUOROALKYL BENZOATE DIELECTRIC COMPOSITIONS

Werner Victor Cohen, Glen Farms, Md., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Oct. 16, 1959, Ser. No. 846,783, now Patent 3,108,131. Divided and this application Nov. 24, 1961, Ser. No. 154,849
2 Claims. (Cl. 252—65)

1. A dielectric composition consisting essentially of (1) a dielectric material represented by the formula



wherein X is selected from the group consisting of bromine, chlorine, fluorine, acetyl, propionyl, and benzoyl substituents, said benzoyl substituent being selected from the group consisting of benzoyl and benzoyl substituted with a substituent selected from the group consisting of methyl, chlorine, bromine and fluorine; R is a polyfluoroalkyl group having the formula $—CH_2(CF_2)_nY$ wherein Y is selected from the group consisting of hydrogen and fluorine and n is an integer within the range of 1 to 5, said dielectric material having a dielectric constant of at least 10, and, (2) a chlorinated aromatic hydrocarbon selected from the group consisting of a chlorinated monocyclic aromatic hydrocarbon and a chlorinated dicyclic aromatic hydrocarbon, said chlorinated aromatic hydrocarbon having 3 to 5 substituent chlorine atoms in the respective ring structures, said benzoate ester component constituting not less than 10% and up to 75% by weight of said composition.

3,200,078
DETERGENT COMPOSITION, NON-CORROSIVE TO METAL SURFACES

John B. Braunwarth, Robert C. Kimble, and Louis A. Joo, all of Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,202
6 Claims. (Cl. 252—137)

1. A detergent composition normally tending in aerated aqueous solution to corrode metals consisting essentially of a water-soluble mixed aryl sulfonate detergent, a water-soluble metal polyphosphate and as the sole corrosion inhibiting agent about 0.01 to about 10% by weight of nitrogen-containing mixed mono-, di-, and poly-carboxylic acids derived from solvent extracts obtained in the solvent extraction of mineral lubricating oils using a solvent selective for aromatic compounds, said acids being prepared by reaction of said solvent extracts with nitrogen dioxide at a weight ratio of nitrogen dioxide to solvent extracts of about 0.4/1 to 0.8/1 and a temperature of about 100° to 200° C. for at least about 2 hours and characterized by having a molecular weight of about 346 to 728 and an average of about 1.7 to 3.5 aromatic rings per mean aromatic molecule.

3,200,079
DETERGENT COMPOSITION NON-CORROSIVE TO METAL SURFACES

Louis A. Joo, Crystal Lake, Walter E. Kramer, Niles, and Robert C. Kimble, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Oct. 6, 1961, Ser. No. 143,313
10 Claims. (Cl. 252—161)

1. A detergent composition, non-corrosive to metal surfaces in contact therewith in the presence of air, consisting essentially of a major portion of a water-soluble detergent and emu sifying compound and as the sole corrosion-inhibiting component a minor but corrosion-inhibiting amount of a compound of the formula

$$R(COOA)_n$$

wherein R represents the complex, polynuclear, aromatic and heterocyclic nucleus derived from solvent extracts obtained in the solvent extraction of mineral lubricating oils, characterized by having a molecular weight of about 300 to 750, containing about 0.5 to about 4.5 weight percent of combined sulfur and having an average of about 1.7 to about 3.5 aromatic rings per mean aro-

matic molecule, A is at least one substituent of the group consisting of hydrogen and a hydrogen equivalent of a metal, and *n* has a value of 1 to 5.

3,200,080

DEFOAMER BAR FOR SUCTION SCRUBBER

Frank A. Martin, Akron, and Milo E. Bixler and Clair W. Studer, North Canton, Ohio, assignors to The Hoover Company, North Canton, Ohio, a corporation of Ohio

Filed Apr. 19, 1960, Ser. No. 23,237
6 Claims. (Cl. 252—358)

1. A solid water erodible defoamant cake for use in an air stream carrying a liquid having a tendancy to foam comprising, a liquid defoaming agent, a solid emulsifier for said defoaming agent, a solid water soluble wax-like carrier and a solid non-soluble retardant, said defoaming agent and said emulsifier being dispersed throughout said carrier with the latter in continuous phase and the former in discontinuous phase, said defoaming agent comprising from 20 to 40% by weight of said cake, said emulsifier comprising a polyethylene glycol distearate and constituting from 10 to 65% by weight of said cake, said carrier comprising a polyethylene glycol and constituting from 5 to 70% of said cake and said retarding agent comprising a non-soluble polyethylene wax and constituting from 0 to 20% by weight of said cake in which said defoamant is a liquid silicone, in which the molecular weight of the emulsifier is 1540, and in which the average molecular weight of the carrier is 20,000.

3,200,081

MIXED ANTIMONY OXIDE-MANGANESE OXIDE OXIDATION CATALYST

James L. Callahan, Bedford, Ohio, and Berthold Gertisser, New York, N.Y., assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,684
7 Claims. (Cl. 252—443)

1. A catalyst composition consisting essentially of an active catalytic oxide complex of antimony and manganese as an essential catalytic ingredient, the Sb:Mn atomic ratio being within the range from about 1:50 to about 99:1, said complex being formed by heating the mixed oxides of antimony and manganese in the presence of oxygen at an elevated temperature above 500° F. but below their melting point for a time sufficient to form said active catalytic oxide complex of antimony and manganese.

3,200,082

METAL LOADING OF MOLECULAR SIEVES

Donald W. Breck, Tonawanda, and Stanley W. Bukata, Buffalo, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 24, 1958, Ser. No. 762,952
8 Claims. (Cl. 252—455)

1. A process for preparing an elemental metal-containing rigid three-dimensional crystalline metal aluminosilicate zeolite of the molecular sieve type which comprises intimately contacting a rigid three-dimensional crystalline metal aluminosilicate zeolite of the molecular sieve type capable of adsorbing benzene internally with an aqueous solution of a metal-amine complex cation wherein the metal is selected from the group consisting of copper, silver, gold, chromium, zinc, cadmium, lead, tin, iron, cobalt, nickel, ruthenium, rhodium, palladium, osmium, iridium and platinum whereby ion-exchange occurs between said complex cations and the exchangeable cations of said crystalline metal aluminosilicate zeolite; drying said ion-exchanged crystalline metal aluminosilicate zeolite; dehydrating said dried, ion-exchanged crystalline metal aluminosilicate zeolite in an inert atmosphere; and reducing the complex cations in said dehydrated crystalline metal aluminosilicate zeolite to the elemental whereby said elemental metal is retained in the inner adsorption region of said crystalline metal aluminosilicate zeolite.

3,200,083

ZEOLITIC MOLECULAR SIEVES CONTAINING A PLATINUM GROUP METAL IN THE INNER ADSORPTION REGION

Robert M. Milton, White Plains, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 24, 1958, Ser. No. 762,961
10 Claims. (Cl. 252—455)

1. As a new composition of matter, a dehydrated rigid three-dimensional crystalline metal alumino-silicate zeolite of the molecular sieve type containing at least one elemental metal selected from the group consisting of ruthenium, rhodium, palladium, osmium, iridium and platinum in the inner adsorption region of said crystalline metal aluminosilicate zeolite, said crystalline metal aluminosilicate zeolite being characterized as being capable of adsorbing benzene internally.

3,200,084

MIXED ANTIMONY OXIDE-CERIUM OXIDE OXIDATION CATALYSTS

James L. Callahan, Bedford, Ohio, and Berthold Gertisser, New York, N.Y., assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,717
6 Claims. (Cl. 252—462)

1. A catalyst composition consisting essentially of oxides of antimony and cerium as essential catalytic ingredients, the Sb:Ce atomic ratio being within the range from about 1:50 to about 99:1; the antimony and cerium each being in a valence oxidation state of at least three, resulting from heating of the mixed oxides in the presence of oxygen at an elevated temperature above 500° F. but below their melting point.

3,200,085

RADIATION BARRIER MATERIAL AND METHOD OF MAKING THE SAME

Richard J. Guglielmo, Cresskill, N.J., assignor to Arthur L. Barber, Jr., Alpine, N.J.

Filed Mar. 2, 1959, Ser. No. 796,516
14 Claims. (Cl. 252—478)

1. The method of making a radiation barrier which comprises: preparing a relatively viscous resin dispersion from finely divided resin particles substantially uniformly distributed in a liquid dispersant and sufficient gelling agent to impart thixotropic characteristics thereto with an initial apparent viscosity when at a state of rest at least 20% higher than the viscosity when subjected to shear so that it can suspend a relatively higher proportion of the hereinafter mentioned heavy metal particles but which apparent viscosity decreases by at least 20% when the dispersion is subjected to shear so that it can be readily formed into various articles, mixing heavy metal particles therewith to form a uniform suspension of the heavy metal particles in the dispersion with the heavy metal particles constituting at least 85% by weight of the resulting suspension, forming the resulting suspension into an article of the desired configuration, and curing the resin despersion in the article thus formed to provide a barrier material with heavy metal particles substantially uniformly distributed in the resin binder.

ERRATUM

For Class 260—2 see:
Patent No. 3,200,412

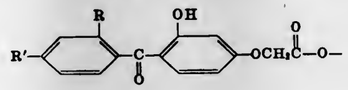
3,200,086

ULTRAVIOLET LIGHT STABILIZED POLYMERIC MATERIALS HAVING A BENZOPHENONE CHEMICALLY INCORPORATED THEREIN

Ralph A. Coleman, Middlesex, N.J., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Aug. 21, 1961, Ser. No. 132,582
4 Claims. (Cl. 260—2)

1. A polymeric material selected from the group consisting of light-stabilized polyester, epoxy and polyurethane resins characterized by the presence of pendant chemically bound ester moieties of the formula:



wherein R is a member selected from the group consisting of hydrogen and hydroxyl and R′ is a member selected from the group consisting of hydrogen and carboxymethoxy, said moieties constituting about 0.1% to 10.0% by weight of said polymeric material.

3,200,087

POLYMERIZATION OF CARBODIIMIDES TO SOLID POLYMERS

Gene C. Robinson, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 27, 1962, Ser. No. 190,834
13 Claims. (Cl. 260—2)

1. A process for the preparation of a solid carbodiimide polymer characterized by contacting a polymerizable carbodiimide monomer of the formula

$$R—N=C=N—R'$$

wherein R and R′ are hydrocarbon radicals selected from the group consisting of alkyl, alkenyl and aryl radicals containing up to about 12 carbon atoms, with an organometallic polymerization catalyst at a temperature in the range of from about 0° to about 120° C. sufficient to form said polymer but insufficient to effect substantial thermal degradation thereof, said catalyst being a hydrocarbon compound of a metal of Groups I–A through III–A of the Periodic Chart of the Elements as set forth in "Handbook of Chemistry" by Lange, 6th edition, 1946, pp. 58–59, wherein each hydrocarbon radical contains from 1 to about 12 carbon atoms.

3,200,088

POLYMERIZATION OF ALKYLENIMINES

William F. Tousignant and Carl Moore, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 30, 1962, Ser. No. 220,547
5 Claims. (Cl. 260—2)

1. A method for preparing polyalkylenimines which comprises mixing together at a temperature of 0° to 75° C.:

(A) an alkylenimine selected from the group consisting of ethylenimine, propylenimine, 1,2-butylenimine, 2,3-butylenimine, isobutylenimine, trimethylenimine and hexamethylenimine;

(B) from about 1 to 5 weight percent, based on alkylenimine employed, of a polyhalogenated alkane selected from the group consisting of chloroform and a compound having the formula

$$C_nX_{2n+2}$$

where X represents a member of the group consisting of fluorine, chlorine, bromine and mixtures thereof and *n* is an integer from 1 to 2 inclusive; and

(C) a metallic species of the group consisting of elemental and ionic forms of metals of Periodic Table Groups VIII and IB, said species being present at a concentration of at least about 5 p.p.m. metal based on the alkylenimine employed, for a time sufficient to effect substantial polymerization of said alkylenimine.

3,200,089

CROSS-LINKED, RIGID, CELLULAR MATERIALS AND PROCESS FOR THEIR OBTENTION

Yvan Landler, Sceaux, and Pierre Lebel, Rueil-Malmaison, France, assignors, by mesne assignments, to Pneumatiques Caoutchouc Manufacture et Plastiques Kleber Colombes, also known as Kleber Colombes

No Drawing. Filed Nov. 21, 1961, Ser. No. 154,075
Claims priority, application France, Nov. 21, 1960, 844,706
17 Claims. (Cl. 260—2.5)

1. In a process for preparing rigid cellular products which comprises mixing polyvinylchloride, a polyisocyanate, and a blowing agent which decomposes under the action of heat, heating the resultant mixture in a mold under pressure, cooling the mold under pressure, removing the product thus produced from the mold, and heating the product in the presence of a compound selected from the group consisting of water and water vapor, the improvement which consists in incorporating in said mixture at least one vinylidenic monomer polymerizable by a radical reaction, and an ethylenically unsaturated carboxylic acid anhydride polymerizable with said monomer.

3,200,090

STABILIZATION OF OXYMETHYLENE POLYMERS WITH PROTEINS

Thomas J. Dolce and Donald E. Hudgin, Summit, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 9, 1959, Ser. No. 838,832
16 Claims. (Cl. 260—6)

1. A polymer composition comprising an admixture of a normally solid, water-insoluble, moldable oxymethylene polymer and a stabilizing amount of up to 10% of a protein, said oxymethylene polymer containing oxyalkylene groups having more than one carbon atom and containing from 60 to 99.6 mol percent of oxymethylene groups.

13. The method of stabilizing a normally solid, water-insoluble, moldable oxymethylene polymer containing oxymethylene groups and oxyalkylene groups containing more than one carbon atom and containing from 60 to 99.6 mol percent of oxymethylene groups which comprises intimately admixing therewith up to 10% by weight of a protein.

3,200,091

REMOISTENABLE ADHESIVE COMPOSITIONS AND METHOD FOR MAKING THE SAME

William W. Soderlund, Berkeley Heights, N.J., and Carl D. Marotta, Southampton, Pa., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 14, 1962, Ser. No. 179,785
10 Claims. (Cl. 260—8)

1. A remoistenable adhesive composition comprising a suspension of discrete particles of a remoistenable adhe-

sive material in a solution of a water-insoluble polymer dissolved in a solvent mixture, said solvent mixture comprising a primary solvent and a secondary solvent, said primary solvent effecting the swelling of the particles of said polymer and said secondary solvent effecting the solution of the swollen polymer particles, said remoistenable adhesive material bearing soluble in water and insoluble in said solution of the water-insoluble polymer, said remoistenable adhesive material being selected from the group consisting of carbohydrates, animal glue and water-activatible casein; and said water-insoluble polymer being in the form of an aqueous emulsion and being selected from the group consisting of polyvinyl acetate; polyvinyl butyral; copolymers of ethyl acrylate and methyl methacrylate; and, terpolymers of methyl methacrylate, ethyl acrylate and methacrylic acid; wherein said polymers have an intrinsic viscosity ranging from 0.6 to 1.8, said polymers being selected from the group consisting of polyvinyl acetate; polyvinyl butyral; copolymers of ethyl acrylate and methyl methacrylate; and terpolymers of methyl methacrylate, ethyl acrylate and methacrylic acid.

3,200,092

PROCESS FOR PRODUCING SMALL PARTICLES OF NITROCELLULOSE

Richard C. Bergman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 15, 1962, Ser. No. 194,989
4 Claims. (Cl. 260—17)

1. A process for producing small particle nitrocellulose which comprises mixing nitrocellulose, a nitrocellulose solvent, said solvent being less than about 5% soluble in water, an emulsifying agent selected from the group consisting of anionic and non-ionic emulsifying agents and mixtures thereof, and neutralized polyacrylic acid crosslinked with allyl sucrose, distilling off the solvent-water azeotrope while continuing agitation of the mixture, and separating the small particles of nitrocellulose from the liquid present.

3,200,093

WAX-CHLORINATED ETHYLENE POLYMER OR ETHYLENE-VINYL CHLORIDE COPOLYMER COMPOSITIONS

Richard W. Sauer, Haddonfield, N.J., and Ralph L. Rogers, Norwood, Pa., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 2, 1961, Ser. No. 114,327
3 Claims. (Cl. 260—28.5)

1. A composition consisting essentially of a hydrocarbon wax and from 0.5 weight percent to 70 weight percent based on the weight of the total composition of a copolymer of ethylene with vinyl chloride, said copolymer containing from 2 weight percent to 25 weight percent chlorine.

3,200,094

REMOISTENABLE ADHESIVE COMPOSITIONS AND METHOD FOR MAKING THE SAME

William W. Sederlund, Berkeley Heights, N.J., and Carl D. Marotta, Southampton, Pa., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 14, 1962, Ser. No. 179,784
5 Claims. (Cl. 260—29.6)

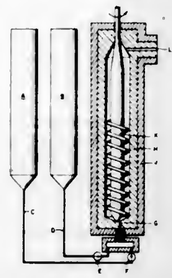
1. A remoistenable adhesive composition comprising a suspension of discrete particles of a remoistenable adhesive material in a solution of a water-insoluble polyvinyl alcohol binder which contains from 85% to 40% of acetate groups and which is dissolved in a volatile solvent, said remoistenable adhesive material being selected from the group consisting of carbohydrates, animal glue and water activatable casein which are soluble in water and insoluble in said volatile solvent.

3,200,095

METHOD FOR THE CONTINUOUS RAPID POLYMERIZATION OF 6-CAPROLACTAM AND SIMILAR MONOMERS WITH SIMULTANEOUS EXTRUSION OF THE FORMED POLYMER

Otto Wichterle, 2 Vaclavkova, Prague 6, Czechoslovakia; Jan Sebenda, 53 Bubenska, Prague 7, Czechoslovakia; and Jaroslav Kralíček, 12 Taboritska, Prague 11, Czechoslovakia

Filed Dec. 15, 1959, Ser. No. 859,761
5 Claims. (Cl. 260—78)



1. In a continuous method of simultaneously polymerizing lactams and extruding the thus-formed polymerization product into shape-retaining articles of desired shape, the steps of continuously introducing under pressure into a closed reaction vessel maintained at an elevated temperature of between 180 and 280° C. and having an extrusion opening 6-caprolactam and an alkali metal salt of caprolactam plus N-acetyl caprolactam as a polymerization accelerator so as to completely fill said vessel and to polymerize said lactam in said heated reaction vessel into a polymer adapted to be extruded at the elevated temperature prevailing within said closed heated reaction vessel and adapted to solidify upon cooling below said elevated temperature and moving the thus under pressure introduced reaction mixture by means arranged within said vessel towards said extrusion opening so as to cause by said pressure applied during introduction and said moving by said means within said reaction vessel the formed molten polymer to be extruded through said extrusion opening from said reaction vessel into extruded polymer articles having the desired shape, the duration of presence of said polymerizable 6-caprolactam and said accelerator in said reaction vessel and thereby the duration of possible reaction and polymerization of the same in said reaction vessel and the speed of extrusion depending upon the pressure applied during introduction of the 6-caprolactam and of the polymerization accelerator into said closed heated reaction vessel and upon said moving by said means in said reaction vessel; and cooling said extruded polymer articles below said elevated temperature so as to solidify the same in said desired shape thereof.

3,200,096

CATALYTIC POLYMERIZATION OF TRIOXANE

Donald E. Hudgin, Summit, and Frank M. Berardinelli, South Orange, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 718,124, Feb. 28, 1958. This application Nov. 8, 1960, Ser. No. 67,918
4 Claims. (Cl. 260—67)

1. A process for preparing tough, high molecular weight oxymethylene polymers which comprises polymerizing

trioxane in the presence of a diluent by an addition of polymerization process in a substantially anhydrous reaction zone, wherein said trioxane is in contact with a catalytic amount of a preformed coordinate complex of boron fluoride with water, said complex being present in an amount such that the boron fluoride content is from about 0.001 to about 1.0 weight percent based on the weight of trioxane.

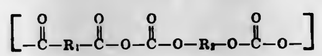
3,200,097

POLYANHYDRIDES

Thomas B. Windholz, Westfield, N.J., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 25, 1959, Ser. No. 815,257
10 Claims. (Cl. 260—75)

4. A method of preparing a polymeric mixed anhydride of a dicarboxylic acid and a bis-carbonic ester, said polymeric mixed anhydride consisting essentially of at least six successively recurring units of the formula



wherein R_1 and R_2 are divalent organic radicals and R_3 has an aliphatic carbon atom at each of its divalent ends, which comprises bringing into reactive contact (1) a salt of a dicarboxylic acid and (2) a bis-chloroformate of a diol, these reactants being present in substantially stoichiometric proportions, and recovering said polymeric mixed anhydride.

3,200,098

POLYMERIZATION OF ACRYLAMIDE MONOMER IN THE PRESENCE OF FREE AMMONIA AND THE RESULTING POLYACRYLAMIDE PRODUCT

Mayer B. Goren, Denver, Colo., assignor to Kerr-McGee Oil Industries, Inc., a corporation of Delaware

No Drawing. Filed Feb. 28, 1961, Ser. No. 92,157
21 Claims. (Cl. 260—80.3)

1. A polymerization process comprising reacting an alkaline aqueous reaction mixture containing initially not more than about 15% by weight of acrylamide monomer in the presence of a free radical catalyst and a water soluble substance providing 1×10^{-2} to 3×10^{-1} mol of free ammonia per mol of acrylamide monomer initially present to produce a water swellable and dispersible polymerization product.

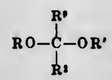
3,200,099

THERMOSETTING COMPOSITIONS COMPRISING METHYLENE DIETHERS AND POLYMERS OF HYDROXY-CONTAINING ESTERS

Sheldon N. Lewis, Willow Grove, and Dominic R. Falgiatore, Philadelphia, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed June 10, 1963, Ser. No. 286,465
13 Claims. (Cl. 260—80.5)

1. A composition comprising a methylene diether of the formula



in which

R^0 is selected from the group consisting of H and (C_1–C_{10})-hydrocarbon radicals,

R^2 is selected from the group consisting of H and (C_1–C_{10})-hydrocarbon radicals, and

R and R' are selected individually from the group consisting of cyclohexyl, alkyl groups having 1 to 8 carbon atoms and aralkyl groups having 7 to 10 carbon atoms, and a linear water insoluble copolymer of monoethylenically unsaturated molecules consisting of 2 to 50 mol precent of a hydroxyl-containing ester of an α,β-monoethylenically unsaturated acid and from 98 to 50 mole percent of at least one monoethylenically unsaturated monomer copolymerizable with said hydroxyl containing ester, the amount of diether being at least an amount stiochiometrically equivalent to the hydoxyl content of a copolymer containing 2 mol percent of hydroxyl-containing units.

3,200,100

PROCESS FOR THE PRODUCTION OF ACRYLONITRILE POLYMERS

Ingofroh Demnstedt, Cologne-Buchforst, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Sept. 7, 1960, Ser. No. 54,363
Claims priority, application Germany, Sept. 11, 1959, F 29,367
9 Claims. (Cl. 260—85.5)

1. In a process wherein acrylonitrile is polymerized at a pH below 7 in an aqueous dispersion containing a free radical-forming polymerization catalyst, 0.00001 to 0.1% by weight of monomer of a salt of a divalent metal selected from the group consisting of iron and copper, and a sufficient amount of a complex former to form a complex with said salt, the improvement which comprises conducting the aforesaid polymerization in the presence of 0.5 to 20% by weight of monomer of a water-soluble colorless aluminum salt and 0.5 to 10% by weight of of monomer of a latex of a sulfonic acid group-containing copolymer of an acrylic monomer, and recovering from the aqueous dispersion of the polymerized acrylonitrile.

3,200,101

LOW TEMPERATURE COPOLYMERIZATION

William R. Richard, Jr., and John D. Calfee, Dayton, and Lowell E. Erbaugh, Vandalia, Ohio, assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 30, 1960, Ser. No. 79,501
4 Claims. (Cl. 260—88.2)

3. The method of preparing ethylene/propylene interpolymer which comprises polymerizing ethylene and propylene with triethyl boron in the presence of oxygen catalyst.

3,200,102

PROCESS FOR THE PRODUCTION OF HYDROLYZED ACRYLONITRILE POLYMERS

Helmut Kleiner, Cologne-Stammheim, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Aug. 14, 1962, Ser. No. 216,719
Claims priority, application Germany, Sept. 6, 1961, F 34,867
2 Claims. (Cl. 260—88.7)

1. A process for the production of a hydrolyzed polymer of acrylonitrile which comprises heating to a temperature of about 180–220° C. over a period of 4 to 6 hours a polymer of acrylonitrile which contains at least 60% by weight of polymerized acrylonitrile, said polymer of acrylonitrile being dispersed in water in a ratio of water to polymer of between 10:1 and 1:1, and recovering a hydrolyzed polymer of acrylonitrile containing carbonamide groups and carboxylic acid groups in the form of their ammonium salts in a ratio of about 1:1.

3,200,103

VINYL POLYMERIZATION PROCESS USING A CATALYST OF ALUMINUM ALKYL COMPOUND, OXYGEN AND PEROXIDIZED VINYL MONOMER

Rajendra N. Chadha, Silver Spring, Md., assignor to W. R. Grace & Co., a corporation of Connecticut

Filed Jan. 8, 1963, Ser. No. 250,121
36 Claims. (Cl. 260—89.1)

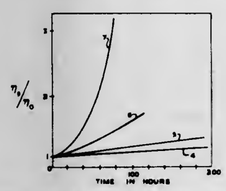
1. A composition of matter comprising (A) a nongaseous vinyl monomer, (B) an alkyl aluminum compound containing from 1 to about 36 carbon atoms, (C) from 0 to about 5% by weight of a free radical initiating azo compound, and (D) a peroxidized vinyl monomer containing a plurality of the groups —R—O—O—, wherein R is the residue of a nongaseous vinyl monomer, with the peroxidic oxygen group (—O—O—) being present in amounts of at least about 0.05% by weight; all percentages being based on the total weight of the vinyl monomers present in the composition.

3,200,104

METHOD OF MAKING FULLY HYDROLYZED POLYVINYL ALCOHOL PRODUCTS

Kiyokazu Imai, Kurashiki, Unpei Maeda, Sozya, and Masakazu Matsumoto, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., a corporation of Japan

Filed Dec. 15, 1960, Ser. No. 75,948
Claims priority, application Japan, Dec. 15, 1959, 34/39,236
4 Claims. (Cl. 260—91.3)



1. A process for preparing a polyvinyl ester homopolymer which is convertible by saponification to fully hydrolyzed polyvinyl alcohol which forms substantially non-gelling aqueous solutions which comprises,

preparing said polyvinyl ester homopolymer by the homopolymerization of a vinyl ester monomer having the formula CH_2=CHOCOR, wherein R is a hydrocarbon radical selected from the group consisting of lower alkyl radicals and aryl radicals,

said homopolymerization being conducted at a temperature of about 0° C. to about 100° C. and in the presence of a free radical polymerization catalyst and in the presence of a substantially anhydrous liquid reaction medium in which said vinyl ester monomer is soluble and consisting essentially of acetic anhydride,

said acetic anhydride being present in an amount of about 15 to about 85 parts by weight per 100 parts by weight of the combined vinyl ester monomer and acetic anhydride.

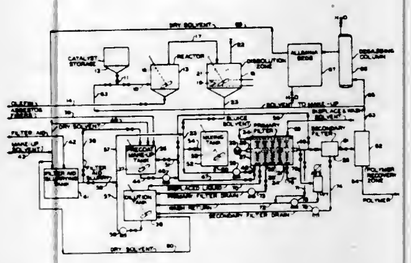
3,200,105

FILTER AID CONDITIONING

Franklin T. Barber, Bartlesville, Okla., and Robert G. Wallace, Pasadena, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 8, 1960, Ser. No. 47,975
8 Claims. (Cl. 260—94.9)

1. In a method for removing solids from a solution of a normally solid olefin palymer in a solvent which comprises introducing said solution containing suspended solids into a first filter zone; passing said solution through filter medium disposed within said first filter zone, said filter medium being coated with filter aid being selected from the group consisting of asbestos, diatomaceous earth, perlite, activated carbon, and colloidal clays, as a precoat material; and withdrawing said solution substantially free of said solids from said first filter zone; the improvement which comprises preparing said precoat material from hydrocarbon slurry of filter aid, said filter aid having a water content ranging between 210–300 p.p.m. and



said hydrocarbon solvent being selected from the group consisting of paraffin hydrocarbons having from 3 to 12 carbon atoms per molecule, and naphthenic hydrocarbons having from 5 to 6 carbon atoms in a naphthenic ring and from 0 to 2 methyl groups as the only substituents on said ring, and having a water content ranging between 1–5 p.p.m. and the ratio of said filter aid to said hydrocarbon solvent is such that said resulting slurry has a water content below 40 p.p.m.

3,200,106

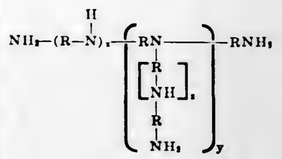
DERIVATIVES OF BRANCHED POLYALKYLENEPOLYAMINES

Woodrow J. Dickson, Monterey Park, and Fred W. Jenkins, Los Angeles, Calif., assignors to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 4, 1960, Ser. No. 47,386
16 Claims. (Cl. 260—97.5)

1. A compound selected from the group consisting of

(1) an acylated derivative of a polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the formula

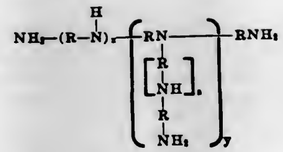


wherein
R is an alkylene group having at least two carbon atoms,
x is an integer of 4 to 24,
y is an integer of 1 to 6, and
z is an integer of 0–6,
formed by reacting said polyalkylenepolyamine with a compound selected from the group consisting of

(i) a carboxylic acid having 7–39 carbon atoms and

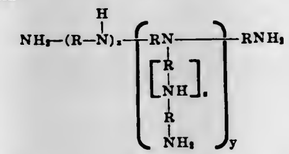
(ii) a precursor of said carboxylic acid capable of forming said acid in said reaction,

(2) an oxyalkylated derivative of a polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the formula



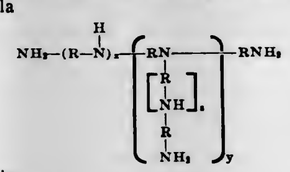
wherein
R is an alkylene group having at least two carbon atoms,
x is an integer of 4 to 24,
y is an integer of 1 to 6, and
z is an integer of 0–6,
formed by reacting said polyalkylenepolyamine with an alkylene oxide having at least 2 carbon atoms,

(3) an alkylated derivative of a polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the formula



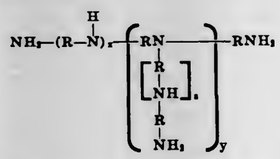
wherein
R is an alkylene group having at least two carbon atoms,
x is an integer of 4 to 24,
y is an integer of 1 to 6, and
z is an integer of 0–6,
formed by reacting said polyalkylenepolyamine with an alkylating agent having 1 to 30 carbon atoms,

(4) an olefinated derivative of a polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the formula



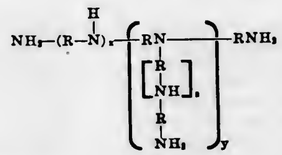
wherein
R is an alkylene group having at least two carbon atoms,
x is an integer of 4 to 24,
y is an integer of 1 to 6, and
z is an integer of 0–6,
formed by reacting said polyalkylenepolyamine with an olefinating agent having at least 2 carbon atoms,

(5) a carbonylated derivative of a polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the formula



wherein
R is an alkylene group having at least two carbon atoms,
x is an integer of 4 to 24,
y is an integer of 1 to 6, and
z is an integer of 0–6,
formed by reacting said polyalkylenepolyamine with a carbonyl compound, and

(6) a derivative of a polyalkylenepolyamine containing at least three primary amino groups and at least one tertiary amino group and having the formula



wherein
R is an alkylene group having at least two carbon atoms,
x is an integer of 4 to 24,
y is an integer of 1 to 6, and
z is an integer of 0–6,
formed by reacting said polyalkylenepolyamine first with one of said foregoing reactants to form a polyalkylene polyamine derivative and then reacting said so-formed derivative with at least another of said foregoing reactants.

3,200,107

PROCESS FOR PREPARING ACYLATED AMINE-CS_2 COMPOSITIONS AND PRODUCTS

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed June 12, 1961, Ser. No. 116,289
17 Claims. (Cl. 260—132)

1. A process for preparing sulfur- and nitrogen-containing compositions which comprises reacting, at a temperature above about 80° C. and below the decomposition temperature, 1.0 mole of an alkylene amine having up to about 8 carbon atoms in the alkylene radical with at least about 0.5 equivalent of carbon disulfide and at least about 1 equivalent of a hydrocarbon-substituted dicarboxylic acid having at least about 12 aliphatic carbon atoms in the hydrocarbon radical, the total number of nitrogen radicals in said alkylene amine being at least as great as the total number of equivalents of carbon disulfide and said dicarboxylic acid, and removing the water formed by the reaction.

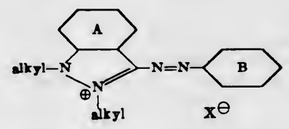
3,200,108

BASIC AZO DYES DERIVED FROM INDAZOLE

Gilbert Victor Henri Kremer, Ermont, and Robert Frederic Michel Sureau, Enghien-les-Bains, France, assignors to Manufactures de Produits Chimique du Nord Etablissements Kuhlmann, Paris, France

No Drawing. Filed Oct. 30, 1962, Ser. No. 234,234
Claims priority, application France, Nov. 3, 1961, 877,864
3 Claims. (Cl. 260—157)

1. Dyes having the general formula:



in which $X^{\ominus}$ is a monovalent anion, the benzene nucleus A is substituted by a member selected from the group con-

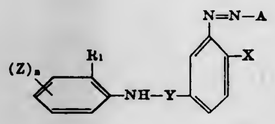
sisting of hydrogen atoms, nitro and lower alkyl groups and the benzene nucleus B is substituted by a member selected from the group consisting of hydrogen, and chlorine atoms, lower alkyl, lower alkoxy and acetaylamino groups.

3,200,109
WATER-INSOLUBLE MONOAZO-DYESTUFFS

Joachim Ribka, Offenbach (Main), Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 29, 1962, Ser. No. 220,147
Claims priority, application Germany, Aug. 30, 1961, F 34,813
6 Claims. (Cl. 260—203)

1. A water-insoluble monoazo-dyestuff of the formula



wherein X represents a member selected from the group consisting of hydrogen, chlorine, methyl, methoxy, ethoxy, carbomethoxy and carboethoxy, Y represents a member selected from the group consisting of CO and SO_2, R_1 represents a member selected from the group consisting of hydrogen, chlorine, methyl and methoxy, Z is bound onto the benzene radical in a position selected from the group consisting of meta- and para- to the —NH— group and represents a member selected from the group consisting of carboxylic acid amide, carboxylic acid monoalkylamide, sulfonic acid amide, sulfonic acid monoalkylamide and alkoylamino, *n* stands for one of the numbers 1 and 2 and A represents the radical of a coupling component selected from the group consisting of a 2,3-hydroxynaphthoic acid arylamide of the benzene, naphthalene and diphenyl oxide series, an acetoacetic acid arylamide of the benzene series, 1-phenyl-3-methyl-5-pyrazolone and 1-p-tolyl-3-methyl-5-pyrazolone.

3,200,110
PROCESS FOR THE PREPARATION OF LAMINARIN SULFATES

Ronald Arthur Gollin, Robert Michaelis, Dennis Walker, and Stewart Sanders Adams, all of Nottingham, England, assignors to Boots Pure Drug Company Limited, Nottingham, England, a British company

No Drawing. Filed Dec. 13, 1960, Ser. No. 75,480
Claims priority, application Great Britain, Dec. 24, 1959, 43,906/59
7 Claims. (Cl. 260—210)

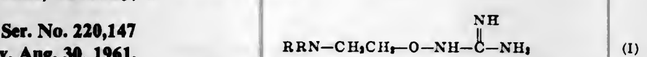
1. A process for the preparation of laminarin sulfate with a degree of polymerization between 9 and 20 and containing between 0.9 and 2.0 sulphate groups per monosaccharide residue and the sodium salt of which has an antilipaemic to anticoagulant ratio of not less than 5 which comprises sulphating laminarin having a molecular weight in the range of 1500–3000 dissolved in a dialkyl amide of the formula $RCON(R')_2$, wherein R is selected from the group consisting of hydrogen and methyl and R' is selected from the group consisting of methyl and ethyl, with sulphur trioxide in a liquid reaction mixture essentially consisting of such laminarin, dialkyl amide and sulphur trioxide at a temperature below 22° C.

3,200,111
CERTAIN 1-(2-TERTIARY AMINOETHOXY)GUANIDINES AND THEIR PREPARATION

Leo A. Paquette, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Aug. 27, 1963, Ser. No. 304,974
6 Claims. (Cl. 260—239)

1. A compound selected from the group consisting of the free base and acid addition salt forms of a compound of the formula:



(I)

wherein RRN— is selected from the group consisting of diloweralkylamino and the heterocyclic moieties, aziridinyl, azetidinyl, pyrrolidinyl, piperidino, hexahydroazepinyl, heptamethylenimino, octamethylenimino, morpholino, and thiamorpholino, each of said heterocyclic moieties having attached as substituents on carbon atoms thereof zero to 3 loweralkyls, inclusive.

6. The method of making compounds of claim 1 which comprises reacting 2-methyl-2-thiopseudourea with a compound of the formula:

$$RRN—CH_2CH_2—O—NH_2$$

wherein RRN— is as given in claim 1.

3,200,112
PROCESS FOR THE PREPARATION OF CAPROLACTAM

Werner Muench, Cesano Maderno, Giuseppe Messina, Limbiate, and Mario Taverna, Milan, Italy, and Luigi Notarbartolo, deceased, late of Milan, Italy, by Enza Pascalino, administratrix, Milan, Italy, and Paola Notarbartolo, heiress, Milan, Italy, assignors to Snia Viscosa Societa Nazionale Industria Applicazioni, Milan, Italy, a company of Italy

Filed Nov. 5, 1962, Ser. No. 235,572
Claims priority, application Italy, Nov. 9, 1961, 20,186/61, Patent 661,532
18 Claims. (Cl. 260—239.3)

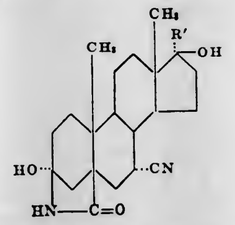
1. A process for producing caprolactam by nitrosation of a cyclohexyl compound having a tertiary carbon atom and selected from the group consisting of hexahydrobenzoic acid and the functional derivatives of said acid, in the presence of cyclohexane and of a nitrosation agent comprising nitrosylsulfuric acid and oleum and having a composition defined by a molar ratio of NO:total SO_3 from 1:3 to 1:5 and a molar ratio of total SO_3:free SO_3 from 1:0.1 to 1:0.2, wherein a reaction mixture including a solution of said cyclohexyl compound and the nitrosation agent is continuously fed into reactor means at room pressure, is vigorously agitated therein to cause an exothermic nitrosation reaction to be maintained therein, causing cyclohexane to distill under reflux into said reactor means whereby the reaction temperature is levelled to substantially the boiling point of cyclohexane, continuously withdrawing from said reactor means reaction products including caprolactam, sulfuric acid and unreacted cyclohexyl compound in cyclohexane, decanting said withdrawn reaction products to separate cyclohexane therefrom, subjecting the remaining products to extract caprolactam therefrom, adding the further remaining products including the unreacted cyclohexyl compound and fresh cyclohexyl compound to said nitrosation agent to obtain said solution, and continuously feeding said obtained solution into said reactor means to continuously maintain the said nitrosation reaction at strictly controlled temperature in the neighborhood of the boiling point of cyclohexane upon continuously maintaining the said distillation under reflux of cyclohexane in said reactor means.

3,200,113
7-CYANO STEROIDS AND DERIVATIVES THEREOF

Robert G. Christiansen, Schodack, N.Y., and William S. Johnson, Portola Valley, Calif., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 9, 1963, Ser. No. 250,243
30 Claims. (Cl. 260—239.5)

26. A member of the group consisting of compounds of the formula



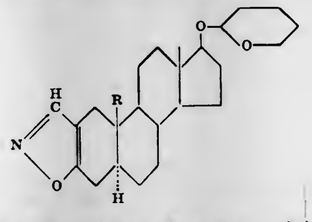
wherein R' is selected from the group consisting of hydrogen and lower-alkyl; and lower-carboxylic acid esters thereof derived from carboxylic acids having from one to ten carbon atoms.

3,200,114
17-TETRAHYDROPYRANYL ETHERS OF (3,2-c)-PYRAZOLE AND (2,3-d)-ISOXAZOLE DERIVATIVES OF THE ANDROSTANE AND 19-NORANDROSTANE SERIES

Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,120
Claims priority, application Mexico, Feb. 28, 1963, 71,076
6 Claims. (Cl. 260—239.55)

1. A compound represented by the formula:



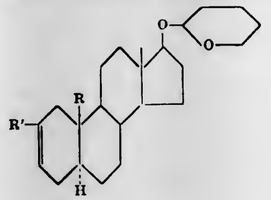
wherein R is selected from the group consisting of hydrogen and methyl.

3,200,115
17-TETRAHYDROPYRANYL ETHERS OF 3-DESOXY- AND 19-NOR-3-DESOXY-Δ^2-ANDROSTENES

Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Nov. 18, 1963, Ser. No. 324,254
Claims priority, application Mexico, Jan. 3, 1963, 70,368
5 Claims. (Cl. 260—239.55)

1. A compound represented by the formula:



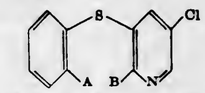
wherein R is selected from the group consisting of hydrogen and methyl and R' is selected from the group consisting of methyl and cyano.

3,200,116
PROCESS FOR THE PRODUCTION OF AZAPHENOTHIAZINES CARRYING A SUBSTITUENT ON THE PYRIDINE NUCLEUS

Albert Gross and Kurt Thiele, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,535
Claims priority, application Germany, Oct. 3, 1961, D 37,175
4 Claims. (Cl. 260—243)

1. Process for the production of 2-chloro-4-azaphenothiazine which comprises heating a compound of the formula:



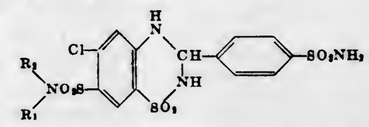
wherein one of A and B is $—NH_2$ and the other is selected from the group consisting of $—NH_2$ and —OH in the presence of a cleaving agent selected from the group consisting of finely divided zinc and acid condensing agents at a temperature between about 150° C. and 310° C.

3,200,117
DERIVATIVES OF 1,2,4-BENZOTHIADIAZINE-7-SULFONAMIDE-1,1-DIOXIDE

Moses Wolf Goldberg, Upper Montclair, N.J., Marcel Müller, Reinach, Basel-Land, Switzerland, and Hanns Hanina Lehr, Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 3, 1962, Ser. No. 227,992
6 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of compounds of the formula:



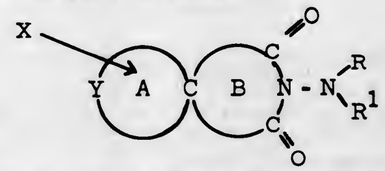
and pharmaceutically acceptable salts thereof; wherein R_1 is selected from the group consisting of hydrogen and lower alkyl; and R_2 is selected from the group consisting of lower alkoxy and carboxy-lower alkoxy.

3,200,118
SPIROCYCLIC HYDRAZINE IMIDES

Charles H. Grogan, Falls Church, Va., and Leonard M. Rice, Baltimore, Md., assignors to The Geschickter Fund for Medical Research, Washington, D.C., a corporation of New York

No Drawing. Filed Oct. 31, 1961, Ser. No. 148,862
6 Claims. (Cl. 260—247.2)

1 A compound of the formula



wherein A is selected from the group consisting of mono and polycyclic rings of at least five ring atoms, said ring atoms other than Y being carbon; Y is selected from the

group consisting of C, O and S; X is at least one of the group consisting of hydrogen, lower alkyl, lower alkenyl, lower alkoxy, cycloalkyl of up to 6 ring atoms and monocarbocyclic aryl; B is a saturated ring of 5–6 atoms whose ring atoms other than the nitrogen atom are carbon atoms; and R and R^1 are selected from the group consisting of lower alkyl, lower alkenyl, cycloalkyl of up to 6 ring atoms and monocarbocyclic aryl of up to 10 carbon atoms, and, together with the nitrogen atom to which they are attached, form a member selected from the group consisting of morpholino, pyrrolidino, piperidino and piperazino.

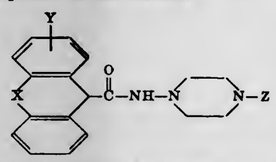
5. 2-morpholino-2-azaspiro(4.4)nonane-1,3-dione.

3,200,119
ISOCYANURATE COMPOUNDS
Thomas R. Hopkins, Shawnee Mission, Kans., assignor, by mesne assignment, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed May 10, 1961, Ser. No. 109,018
2 Claims. (Cl. 260—248)

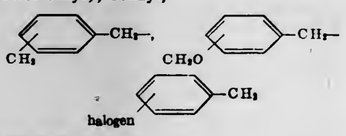
1. Diallylmono(beta-hydroxyethyl) isocyanurate.
2. Monoallyldi(beta-hydroxyethyl) isocyanurate.

3,200,120
HYDRAZIDES OF 4-SUBSTITUTED 1-AMINOPIPERAZINES
Calvin H. Lovell, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Aug. 5, 1964, Ser. No. 387,765
11 Claims. (Cl. 260—268)

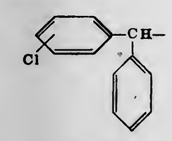
1. A compound of the formula



wherein X is selected from the group consisting of a bond connecting the two aromatic rings, alkylene of less than three carbon atoms, and an element of periodic group VI of an atomic weight less than 40; Y is selected from the group consisting of hydrogen and chlorine; and Z is selected from the group consisting of lower alkyl, hydroxy(lower alkyl), benzyl,

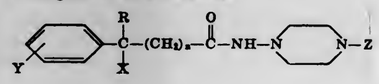


benzhydryl, and

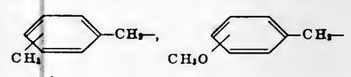


3,200,121
DISUBSTITUTED-ALKANOYL HYDRAZIDES OF 1-AMINOPIPERAZINES
Calvin H. Lovell, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Aug. 5, 1964, Ser. No. 387,805
10 Claims. (Cl. 260—268)

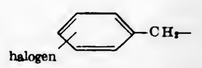
1. A compound of the formula



wherein n is a whole number between 0 and 1 inclusive; R is selected from the group consisting of hydrogen and lower alkyl; Y is selected from the group consisting of hydrogen and chlorine; X is selected from the group consisting of cyclopentyl, cyclohexyl, phenyl, benzyl, and benzhydryl; and Z is selected from the group consisting of lower alkyl, hydroxy (lower alkyl), benzyl,



and



3,200,122
PROCESS FOR THE PREPARATION OF 2:9-DIMETHYL-QUINACRIDINE-7:14-DIONE
Henri Streiff, Birsfelden, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Oct. 7, 1963, Ser. No. 314,491
Claims priority, application Switzerland, Oct. 9, 1962, 11,810/62; Aug. 30, 1963, 10,798/63
6 Claims. (Cl. 260—279)

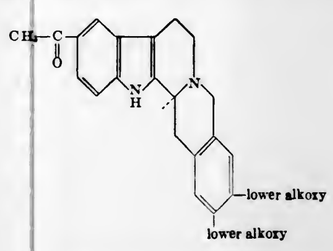
1. A process for the preparation of 2:9-dimethylquinacridine-7:14-dione, wherein sulfuric acid of at least 70% strength which also may contain free SO_3 is allowed to act on 2:5-di-(para-toluidino)-terephthalic acid, to effect cyclisation and sulfonation, and the sulfonic acid groups that have been introduced are split off with sulfuric acid of 70 to 92% strength at a temperature between 100 and 180° C. by heating without the application of superatmospheric pressure.

3,200,123
IMIDAZOQUINOLINES
Alfred Richardson, Jr., Reading, Ohio, Edward Delbert Amstutz, Bethlehem, Pa., and Geraldine Lynch Krueger, Cincinnati, Ohio, assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 26, 1962, Ser. No. 169,109
5 Claims. (Cl. 260—288)

1. 2-methoxy-5,6-dihydroimidazo[ij]quinoline.

3,200,124
10-ACETYL-17,18-DILOWER ALKOXY-SUBSTITUTED - 15,16,17,18,19,20 - HEXADEHYDROYOHIMBANES AND PROCESS FOR THEIR PRODUCTION
John Shavel, Jr., Mendham, Maximilian von Strandtmann, Rockaway, and Chester Puchalski, Morristown, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Aug. 19, 1963, Ser. No. 303,125
2 Claims. (Cl. 260—288)

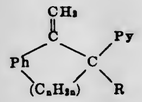
1. A member selected from the group consisting of a compound of the formula:



and a nontoxic pharmaceutically acceptable acid addition salt thereof.

3,200,125
1-ALKYLIDENE-BENZ[b]CYCLOALKANES
William Laszlo Bencze, New Providence, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 25, 1962, Ser. No. 205,082
5 Claims. (Cl. 260—290)

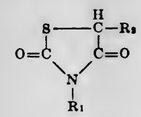
1. A member selected from the group consisting of a compound of the formula:



in which Ph stands for a member selected from the group consisting of 1,2-phenylene, lower alkyl-1,2-phenylene, hydroxy-1,2-phenylene, lower alkoxy-1,2-phenylene, halogeno-1,2-phenylene, nitro-1,2-phenylene and amino-1,2-phenylene, Py is pyridyl, R stands for lower alkyl, and the group of the formula $—(C_nH_{2n})—$, in which the letter n stands for a whole number from one to seven, is alkylene and separates the 1,2-phenylene Ph group from the carbon atom carrying the pyridyl group Py and the lower alkyl group R by one to three carbon atoms, acid addition salts thereof, the N-oxide thereof, acid addition salts of the N-oxide thereof and lower alkyl quaternary ammonium salts thereof.

3,200,126
3-ALKYL-5-AMINO-2,4-THIAZOLIDINEDIONES
Gerhard Satzinger, Memmingen, Allgau, Germany, assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed May 31, 1963, Ser. No. 284,356
2 Claims. (Cl. 260—293.4)

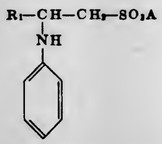
1. A compound of the formula:



wherein R_1 is a member selected from the group consisting of hydrogen and lower alkyl and R_2 is a member selected from the group consisting of piperidino, pyrrolidino and morpholino.

3,200,127
2-AMINO-1 SULFONIC ACIDS
Donald L. Klass, Barrington, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
No Drawing. Filed Oct. 24, 1960, Ser. No. 64,316
8 Claims. (Cl. 260—294.8)

1. Surfactants of the formula



where R is an alkyl radical of 6 to 20 carbon atoms and A is a cation of the group consisting of hydrogen, alkali metal, alkaline earth metal, ammonia, anilino, iron, methyl ammonium, ethyl ammonium and propyl ammonium.

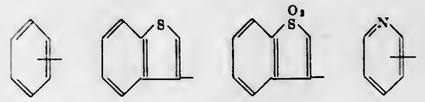
5. 2-(1-pyridine)-dodecane 1-sulfonic acid.

3,200,128
5-CYCLO-UNSATURATE-3-TRIFLUOROMETHYL-PYRAZOLES
Hans A. Wagner, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed June 6, 1962, Ser. No. 200,318
5 Claims. (Cl. 260—296)

1. A compound of the formula

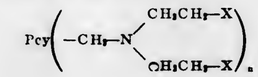


wherein R represents a member of the class consisting of radicals having the formulas



3,200,129
COPPER PHTHALOCYANINE DYESTUFFS
David Irwin Randall, New Vernon, and Wilhelm Schmidt-Nickels, Little York, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 7, 1962, Ser. No. 242,897
5 Claims. (Cl. 260—314.5)

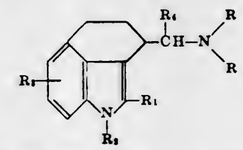
1. A compound of the formula



wherein Pcy represents copper phthalocyanine, X is selected from the group consisting of phosphato and (m-sulfo-)benzenesulfonyloxy, and n has an average value of 1 to 4.

3,200,130
DERIVATIVES OF 1,3,4,5-TETRAHYDRO-BENZ[cd]INDOLES
Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Aug. 27, 1963, Ser. No. 304,944
18 Claims. (Cl. 260—319)

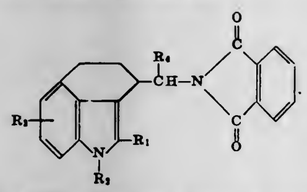
1. A compound of the formula:



(I)

wherein R is selected from the group consisting of hydrogen and loweralkyl; R_1 is selected from the group consisting of hydrogen, alkyl of from 1 to 4 carbon atoms, inclusive, phenyl, hydroxyphenyl, alkoxyphenyl wherein alkoxy is of not more than 4 carbon atoms, and halophenyl; R_2 is selected from the group consisting of hydrogen, benzyl and halobenzyl which can be substituted with alkyl or alkoxy of from 1 to 4 carbon atoms, inclusive, and alkyl of from 1 to 4 carbon atoms, inclusive; R_3 is selected from zero to three members of the group consisting of hydroxy, benzyloxy, alkyl of not more than 4 carbon atoms, halogen, and alkoxy of not more than 4 carbon atoms; and R_4 is selected from the group consisting of hydrogen and alkyl of not more than 4 carbon atoms.

14. A compound of the formula:



(VI)

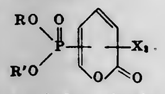
wherein R_4 is alkyl of not more than 4 carbon atoms and R_1, R_2, and R_3 are as given in claim 1.

3,200,131
HALOGENATED PHOSPHINOPYRANONES

Sheldon B. Greenbaum, Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Jan. 3, 1962, Ser. No. 164,188
9 Claims. (Cl. 260—343.5)

1. A compound of the formula:



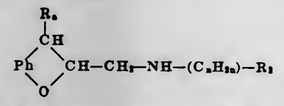
wherein R and R′ are independently selected from the group consisting of alkyl, aryl, alkaryl, alkenyl, cycloalkyl and haloalkyl, said substituents containing from 1 to 18 carbon atoms; and X is a halogen.

3,200,132
AMINOMETHYL-BENZOFURANS

Lincoln Harvey Werner, Summit, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 8, 1962, Ser. No. 215,530
11 Claims. (Cl. 260—346.2)

1. A member selected from the group consisting of a compound of the formula



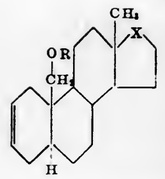
in which R_a is a member selected from the group consisting of hydrogen and lower alkyl, Ph represents a member selected from the group consisting of 1,2-phenylene, lower alkyl-1,2-phenylene, hydroxy-1,2-phenylene, lower alkoxy-1,2-phenylene, halogeno-1,2-phenylene, trifluoromethyl - 1,2 - phenylene, mercapto - 1,2 - phenylene, lower alkyl-mercapto-1,2-phenylene, nitro-1,2-phenylene, N,N-di-lower alkyl-amino-1,2-phenylene, N-lower alkanoyl-amino-1,2-phenylene, and lower alkanoyl-1,2-phenylene, the letter *n* stands for a whole number from one to seven, and R_2 stands for a member selected from the group consisting of cycloalkyl having from 5 to 8 ring carbon atoms, cycloalkenyl having from 5 to 8 ring carbon atoms, phenyl, (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl, (trifluoromethyl)-phenyl, (nitro)-phenyl, (amino)-phenyl, pyridyl, thienyl and furyl, and an acid addition salt thereof.

3,200,133
17-OXYGENATED ANDROST-2-EN-19-OLS AND ESTERS THEREOF

Raymond E. Counsell, Skokie, and Paul D. Klimstra, Northbrook, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 12, 1963, Ser. No. 308,341
13 Claims. (Cl. 260—397.4)

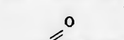
1. A compound of the formula



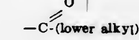
wherein X is a radical selected from the group consisting of carbonyl and



Z being a member of the class consisting of hydrogen and a lower aliphatic hydrocarbon radical, Y being hydrogen when Z is a lower aliphatic hydrocarbon radical, Y being a member of the class consisting of hydrogen and



radicals when Z is hydrogen, and R is selected from the group consisting of hydrogen and



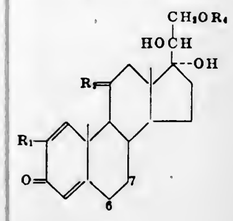
radicals.

3,200,134
$\Delta^{1,4}$-3,20-DIKETO-17α,20,21-TRIHYDROXY PREGNADIENES

Stefan Antoni Szpilfogel and Max Salomon de Winter, Oss, Netherlands, assignors to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Original application Mar. 8, 1957, Ser. No. 644,741. Divided and this application Aug. 10, 1964, Ser. No. 388,683
Claims priority, application Netherlands, Mar. 20, 1956, 205,581
3 Claims. (Cl. 260—397.45)

1. A compound of the formula:



wherein R_1 is selected from the group consisting of hydrogen and methyl, R_2 is =O, R_4 is selected from the group consisting of hydrogen and acyl containing from 1 to 10 carbon atoms, and the bond between the carbon atoms 6 and 7 is selected from the group consisting of a saturated linkage and a double bond.

3,200,135
COPPER, CADMIUM, AND ZINC SALTS OF HALO-2,2′ - DIHYDROXYDIPHENYL SULFIDES AND SULFOXIDES

Royal A. Cutler, Sand Lake, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

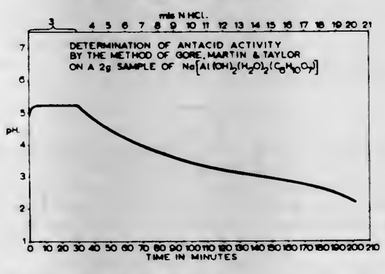
No Drawing. Filed July 29, 1959, Ser. No. 830,195
15 Claims. (Cl. 260—429)

1. A copper salt of a tetrachloro-2,2′-dihydroxydiphenyl sulfide.

3,200,136
METAL CHELATES OF ALPHA-HYDROXY-CARBOXYLIC ACIDS AND THEIR PREPARATION

Frederick Grossmith, Pinner, Middlesex, England, assignor to Beecham Research Laboratories Limited, Brentford, Middlesex, England

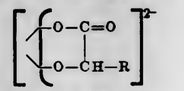
Filed July 9, 1963, Ser. No. 293,763
21 Claims. (Cl. 260—439)



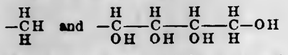
1. A chelate of the formula:

$$M_x[M'_y(AO)_z(OH)_{1x+y(m-2z)}(H_2O)_v]_n$$

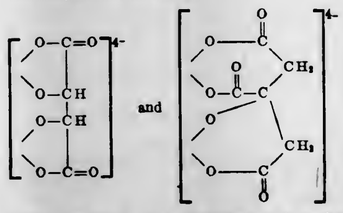
wherein M is selected from the group consisting of magnesium, aluminum, iron, sodium, potassium and the ammonium radical, M′ is selected from the group consisting of magnesium, aluminum and iron, AO is selected from the group consisting of the bidentate ions formed from the monocarboxylic α-hydroxy acids of the formula:



in which R is one of the groups



and the tetradentate ions formed from tartaric and citric acids of the respective formulae:



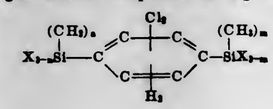
x is an integer from 1 to 5 inclusive, *y* is unity for bidentate ions and 2 for tetradentate ions, *z* is an integer from 1 to 4 inclusive, *n* is 2 for bidentate ions when the valency of M is greater than 1 and is unity in all other cases, *l* is the valency of M divided by *n*, *m* is the valency of M′ and *v* is an integer from 0 to 6 inclusive with the proviso that when M and M′ are the same metal then *z* is not less than *y*.

3,200,137
CHLORINATED BIS(SILYL)BENZENES

George M. Omietanski, Tonawanda, and Wallace G. Reid, Grand Island, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 29, 1961, Ser. No. 141,623
3 Claims. (Cl. 260—448.2)

1. An organosilicon compound having the formula



wherein X is a member of the class consisting of halogen, hydroxy, alkoxy and acyloxy, *m* is an integer of from 0 to 2 and *n* is an integer of from 0 to 2.

3,200,138
MESYLOXYACETIC ACID AND ACID CHLORIDE

Heinz M. Wuest, Upper Montclair, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Apr. 9, 1962, Ser. No. 185,826
2 Claims. (Cl. 260—456)

1. Mesyloxyacetic acid.
2. Mesyloxyacetyl chloride.

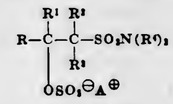
3,200,139
β-SULFATOSULFONAMIDES

Donald L. Klass, Barrington, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

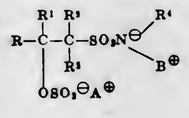
No Drawing. Filed Dec. 22, 1960, Ser. No. 77,528
21 Claims. (Cl. 260—458)

1. β-sulfatosulfonamide of the group consisting of

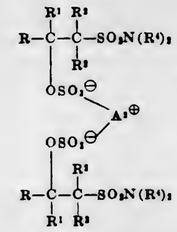
(I)



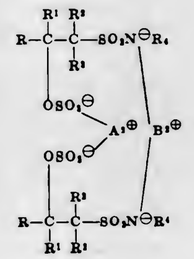
(II)



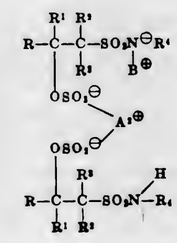
(III)



(IV)

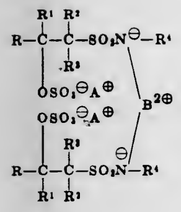


(V)



and

(VI)



wherein each formula R is C_4 to C_{20} alkyl, R^1, R^2, R^3 and R^4 are substituents of the group consisting of hydrogen, C_1 to C_{20} alkyl, phenyl, naphthyl, anthryl, paramethyl phenyl, phenylethyl, phenylpropyl, cyclopentyl, cyclohexyl, benzyl, tolyl, thienyl, furyl, furfuryl, morpholino and tetrahydrofurfuryl, A is at least one member of the group consisting of $NH_4^{\oplus}$, $NH_3R^{4\oplus}$, $NH_2(R^4)_2^{\oplus}$, $NH(R_4)_3^{\oplus}$, alkali metal and alkaline earth metal, and B is a member of the group consisting of alkali metal and alkaline earth metal.

3,200,140

MANUFACTURE OF SULPHATED FATTY ALCOHOLS AND SULPHONATED ALKYL PHENYLS

Austen Edgar Sowerby, Howgate, Whitehaven, Cumberland, England, assignor, by mesne assignments, to Marchon Products Limited, Whitehaven, Cumberland, England, a British company

Filed Apr. 24, 1962, Ser. No. 189,745
Claims priority, application Great Britain, Apr. 25, 1961, 14,906/61; Jan. 25, 1962, 2,836/62
24 Claims. (Cl. 260—459)

1. A method of sulphating and sulphonating respectively a detergent raw material selected from the group consisting of saturated fatty alcohols and mononuclear alkaryl hydrocarbons which comprises continuously flowing a liquid mass containing said material through a reaction vessel partitioned to have at least two interconnecting reaction zones established in the flow path of the liquid, introducing into each of said zones a gaseous mixture of sulphur trioxide and a diluent which is inert and gaseous at the conditions of the reaction, said zones being controlled at a temperature just above the melting point of the reactants in the respective zones whereby the liquid flows freely through the zones, and intimately mixing said gas mixture with said liquid to react said sulphur trioxide and said material, said gas mixture being introduced into said liquid such that the molecular ratio of sulphur trioxide to said material is substantially less than 1 in the first of said zones and greater than 1 in the latter of said zones, the volume of said gas mixture being at least four hundred times the volume of said liquid in the reactor, the mean gas-liquid residence time in said latter zone being less than about 1 second, and thereafter terminating said reaction.

3,200,141

PROCESS FOR THE MANUFACTURE OF ACRYLONITRILE

Ernest C. Milberger, Maple Heights, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed May 27, 1963, Ser. No. 283,617
3 Claims. (Cl. 260—465.3)

1. A catalytic process for the continuous manufacture of acrylonitrile which can be carried out for long periods of time without any apparent loss of catalyst activity and without any apparent decline in the production of acrylonitrile consisting of the steps of continuously reacting a gaseous mixture comprising propylene, ammonia and oxygen in the presence of a catalyst selected from the group consisting of bismuth, tin and antimony salts of phosphomolybdic and molybdic acids, bismuth phosphotungstate and cobalt molybdate at an elevated temperature; continuously maintaining the activity of said catalyst by continuously measuring the oxygen content of the effluent from said reaction and continuously adjusting the relative proportion of oxygen introduced into said reaction in accordance with said oxygen measurements so as to maintain the oxygen content of the reaction effluent at least 0.1 mole percent and not over 7 mole percent.

3,200,142

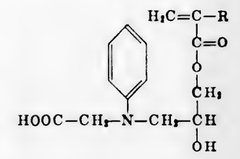
SURFACE-ACTIVE COMONOMER AND METHOD OF PREPARATION

Rafael L. Bowen, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare

No Drawing. Filed Feb. 1, 1963, Ser. No. 263,373
4 Claims. (Cl. 260—486)

1. The method of preparation of a surface active comonomer which comprises admixing in the presence of an aqueous solvent, equimolar quantities of the sodium salt of N-phenyl glycine and a compound selected from the group consisting of glycidyl methacrylate and glycidyl acrylate, subjecting said admixture, with stirring to a temperature between 23° C. to 30° C. for 2.5 hours, and separating the precipitate from the mother liquor by acidification to a pH of approximately 4.

3. The products of the following formula:



where R is selected from the class consisting of CH_3 and H.

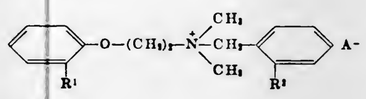
3,200,143

QUATERNARY AMMONIUM COMPOUNDS

Frederick Charles Copp, London, England, assignor to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York

No Drawing. Filed Nov. 10, 1959, Ser. No. 851,941
Claims priority, application Great Britain, Jan. 24, 1957, 2,595/57; Feb. 13, 1959, 5,154/59, 5,155/59
5 Claims. (Cl. 260—501)

1. A quarternary ammonium salt of the general formula:



wherein R^1 is a radical selected from the class consisting of the methyl and nitro radicals, chlorine, bromine and hydrogen, and R^2 is a radical selected from the class consisting of the methyl radical, fluorine, chlorine, bromine and hydrogen, and A^- is an anion equivalent of a therapeutically acceptable acid selected from the class consisting of embonic, naphthalene-1-sulphonic, naphthalene-2-sulphonic and 2-hydroxy-3-naphthoic acids.

3,200,144

NITRIC ACID OXIDATION OF OCTENE TO SUBERIC ACID IN THE PRESENCE OF A VANADIUM AND MANGANESE CATALYST

Pierre Baumgartner, Asnieres, and Pierre Duhaut, Le Vesinet, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, Seine-et-Oise, France

No Drawing. Filed Feb. 27, 1962, Ser. No. 176,117
Claims priority, application France, Feb. 28, 1961, 854,311
3 Claims. (Cl. 260—533)

1. A process for manufacturing suberic acid comprising the step of contacting a nitric acid aqueous solution and cyclooctene in the presence of a catalytic composition consisting essentially of a mixture of a catalytic quantity of a vanadium compound selected from the group consisting of vanadium oxide, ammonium metavanadate and alkali metal metavanadate, and a catalytic quantity of a manganese compound selected from the group consisting of manganous oxide, manganous nitrate, manganous chloride and manganous acetate, wherein the temperature of said nitric acid aqueous solution and cyclooctene is from 50° C.–150° C., the acid concentration of said nitric acid aqueous solution is from 20–80% by weight, and the ratio of said manganese compound to said vanadium compound is 0.01 to 100% by weight.

3,200,145

MANUFACTURE OF METHYL DICHLORO-PHOSPHINE OXIDE

Leland J. Lutz and Charles J. Smith, Jr., Niagara Falls, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Mar. 22, 1954, Ser. No. 417,962
2 Claims. (Cl. 260—543)

1. A process for the production of methyl dichlorophosphine oxide by chlorination of pyro mix, comprising a mixture of methyl methane phosphinate, di(methyl phosphonic acid) and pyrophosphoric acid, which comprises reacting the pyro mix in liquid phase with phosgene for a period of time sufficient to effect substantial conversion of the pyro mix to methyl dichlorophosphine oxide while the pyro mix is in admixture with methyl dichlorophosphine oxide not produced in the reaction in a weight amount exceeding the weight of the pyro mix.

3,200,146

TETRAHALOETHYLSULFENYL HALIDE

Edward D. Weil, Lewiston, Emil J. Geering, Grand Island, and Keith J. Smith, Lockport, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Oct. 29, 1962, Ser. No. 233,874
4 Claims. (Cl. 260—543)

1. A compound having the formula C_2HX_4SX where X is a halogen selected from the group consisting of chlorine and bromine.

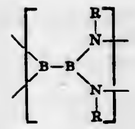
3,200,147

POLYMERIC ORGANOBORON COMPOUNDS AND METHOD OF MAKING SAME

Robert J. Brotherton, Fullerton, Lowell L. Petterson, Whittier, and Allen L. McCloskey, Orange, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Mar. 22, 1962, Ser. No. 181,790
6 Claims. (Cl. 260—551)

1. Polymeric organoboron compounds consisting essentially of the recurring structural unit



where R is selected from the group consisting of primary and secondary alkyl radicals of from 1 to 6 carbon atoms, said compounds being viscous liquid polymers and being thermally stable at temperatures up to about 400° C.

3,200,148

UREA SYNTHESIS PROCESS

Lucien H. Cook, Port Washington, and Ivo Mavrovic, New York, N.Y., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 29, 1962, Ser. No. 220,339
4 Claims. (Cl. 260—555)

1. Urea synthesis process with total recycle of unconverted process components which comprises compressing input streams of ammonia and carbon dioxide to urea synthesis pressure in the range of 2000 p.s.i.g. to 6000 p.s.i.g., combining said input streams with a gaseous recycle stream whereby said recycle stream is quenched and a combined urea synthesis stream is formed at a temperature in the range of 350° F. to 500° F., cooling said combined stream in heat exchange with liquid water to a temperature in the range of 300° F. to 400° F., whereby said water is converted to steam and a portion of said combined stream is converted to urea, heating the resulting stream at reduced pressure to decompose ammonium carbamate, removing off-gas comprising unconverted ammonia and carbon dioxide together with water vapor, recovering a final process stream comprising product aqueous urea solution, compressing said off-gas in substantially adiabatic compression means to urea synthesis pressure in the range of 2000 p.s.i.g. to 6000 p.s.i.g. whereby said stream is heated to a temperature in the range of 600° F. to 1000° F., and recycling the compressed stream to urea synthesis as said gaseous recycle stream.

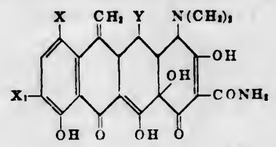
3,200,149

α-6-DEOXYTETRACYCLINE DERIVATIVES AND PROCESS

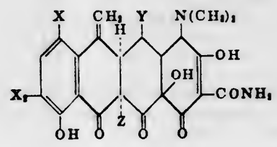
Robert K. Blackwood, Gales Ferry, Hans H. Reinhard, Lyme, John J. Beereboom, Waterford, and Charles R. Stephens, Jr., Niantic, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 5, 1961, Ser. No. 106,146
21 Claims. (Cl. 260—559)

1. The process which comprises introducing hydrogen into a reaction inert solvent medium containing a catalytic amount of a noble metal catalyst and a tetracycline compound selected from the group consisting of



and



acid addition salts thereof and polyvalent metal salt complexes thereof wherein:

Y is selected from the group consisting of hydrogen and hydroxyl;

X is selected from the group consisting of hydrogen, chloro, iodo and bromo;

X_1 is selected from the group consisting of hydrogen, amino and lower alkanoylamino;

X_2 is selected from the group consisting of hydrogen and nitro; and

Z is selected from the group consisting of chloro and fluoro;

and maintaining hydrogen in contact with said reaction mixture at a temperature of from about 0–60° and at a pressure of from about atmospheric to 2,000 p.s.i. until reaction of from one mol to 6 mols of hydrogen per mol of said tetracycline compound occurs.

9. A compound selected from the group consisting of α - 6 - deoxy-5-oxytetracycline, α-6-deoxy-7-substituted-5-oxytetracycline, α-6-deoxy-9-substituted-5-oxytetracycline, α - 6 - deoxy-11a-chloro-5-oxytetracycline, α-6-deoxy-11a-fluoro-5-oxytetracycline, α-6-deoxy-7,11a-dichloro-5-oxytetracycline, α-6-deoxy-7-chloro-11a-fluoro-5-oxytetracycline, the corresponding 5-desoxy compounds, the acid addition salts thereof, and the pharmaceutically acceptable metal salts thereof, each substituent of said 7 and 9 substituted compounds being selected from the group consisting of chloro, nitro, amino and lower alkanolylamino.

3,200,150

PROCESS FOR THE PREPARATION OF AMIDES

John D. Pollard and Edward F. Orwoll, Baltimore, Md., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 2, 1962, Ser. No. 191,715
5 Claims. (Cl. 260—562)

1. A process for the preparation of an aromatic amide which comprises reacting 1 mole of an aromatic amine of the group consisting of aniline, chloroaniline, dichloroaniline, and chloromethylaniline with 0.35–0.6 mole of phosphorous trichloride in an inert solvent for the aromatic amide product at a temperature in the range from room temperature to the reflux temperature of the reaction medium, and reacting the resulting reaction product with 0.9–1.2 moles of a monobasic aliphatic carboxylic acid at a temperature in the range from moderate heating to the reflux temperature of the reaction medium thereby completely driving off hydrogen chloride.

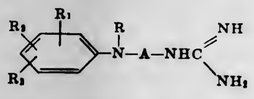
3,200,151

ARYLAMINOALKYL GUANIDINES

Robert Geoffrey William Spickett, Harpenden, Graham John Durant, Welwyn Garden City, and Patrick Michael Guy Bavin, Letchworth, England, assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 7, 1962, Ser. No. 171,594
Claims priority, application Great Britain, Feb. 15, 1961, 5,709/61
4 Claims. (Cl. 260—564)

1. A chemical compound of the class consisting of a free base and its addition salts with pharmaceutically acceptable acids, said free base having the formula:



in which:

A is an alkylene chain of 2 to 4 carbon atoms having at least 2 carbon atoms separating the nitrogen atoms to which it is attached;

R is a member selected from the group consisting of hydrogen and lower alkyl; and

R_1, R_2 and R_3 are memebrs selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, fluorine, chlorine and bromine.

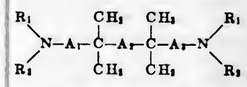
3,200,152

α,α'-DI-(SUBSTITUTED AND UNSUBSTITUTED AMINO PHENYL)α,α,α' - TETRA ALKYL - p-XYLENE

Heinrich Ruppert, Krefeld-Bockum, and Hermann Schnell, Krefeld-Urdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 18, 1962, Ser. No. 245,373
Claims priority, application Germany, Dec. 22, 1961, F 35,623
4 Claims. (Cl. 260—570)

1. Aromatic amino compounds of the formula:



wherein R_1 and R_2 are substituents selected from the group consisting of hydrogen, saturated alkyl having up to 6 carbon atoms and cyclohexyl, A_1 and A_3 are bivalent aromatic nuclei selected from the group consisting of o-phenylene. p-phenylene and substituted derivatives thereof wherein the substituents are selected from the group consisting of monochloro, dichloro, monobromo, dibromo, monoamino, monocyclohexyl, mono saturated alkyl having up to 6 carbon atoms and di saturated alkyl having up to 6 carbon atoms and A_2 is a bivalent aromatic nucleus selected from the group consisting of m-phenylene and p-phenylene.

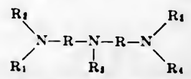
3,200,153

HYDROXY HYDROCARBON N-SUBSTITUTED DIALKYLENE TRIAMINES

Willard H. Kirkpatrick, Sugar Land, and Virgil L. Seale, Houston, Tex., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 26, 1962, Ser. No. 182,615
1 Claim. (Cl. 260—570.6)

A compound having the formula



wherein R is a lower alkylene radical of 2–6 carbons, one of R_1, R_2, R_3, R_4 and R_5 is 2-hydroxypropyl, another of R_1, R_2, R_3, R_4 and R_5 is a member selected from the group consisting of 2-phenyl-2-hydroxyethyl, mono-secondary-hydroxyhexyl, 2-hydroxy-2,4,4-trimethylpentyl-1, 3-hydroxy-2,4,4-trimethylpentyl-2, and hydroxy-triisobutylenyl, and the remainder of R_1, R_2, R_3, R_4 and R_5 independently are selected from the group consisting of said member, hydrogen, and 2-hydroxypropyl.

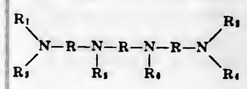
3,200,154

MONO-SECONDARY-HYDROXY HYDROCARBON N-SUBSTITUTED TRIALKYLENE TETRAMINES

Willard H. Kirkpatrick, Sugar Land, and Virgil L. Seale, Houston, Tex., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 26, 1962, Ser. No. 182,616
12 Claims. (Cl. 260—570.6)

1. Compounds having the formula:



wherein R is a lower alkylene radical of 3–6 carbons, R_1, R_2, R_3, R_4, R_5 and R_6 are selected from the group consisting of hydrogen, 2-hydroxypropyl, mono-secondary-hydroxyalkyl having 4–12 carbons, phenyl mono-secondary-hydroxyethyl, and mono-secondary-hydroxy butenyl, at least one of R_1, R_2, R_3, R_4, R_5 and R_6 being a 2-hydroxypropyl group and at least one other of R_1, R_2, R_3, R_4, R_5 and R_6 being a member selected from the group consisting of said mono-secondary-hydroxyalkyl having 4-12 carbons, said phenyl mono-secondary-hydroxyethyl, and said mono-secondary-hydroxy butenyl.

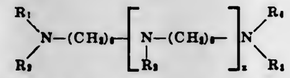
3,200,155

COMPLETELY N-HYDROXYALKYLATED AND COMPLETELY N - POLYOXYALKYLATED POLYHEXAMETHYLENE POLYAMINES

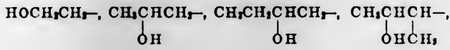
Willard H. Kirkpatrick, Sugar Land, and Virgil L. Seale and Robert E. Law, Houston, Tex., assignors to Nalco Chemical Company, a corporation of Delaware

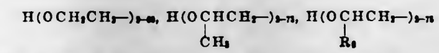
No Drawing. Filed Mar. 9, 1961, Ser. No. 94,443
8 Claims. (Cl. 260—584)

1. A N-substituted polyhexamethylene polyamine having the formula



wherein R_1, R_2, R_3, R_4, and R_5 are selected from the group consisting of only one of





wherein R_6 is hydrogen in at least one occurrence and methyl in the remainder of occurrences, and x is a small integer from 1 to 2.

3,200,156

α,α,α',α'-TETRAALKOXY-α,α'-DIALKYL-PEROXY-p-XYLENES

Seymour J. Lapporte, Berkeley, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed June 15, 1961, Ser. No. 117,297
2 Claims. (Cl. 260—610)

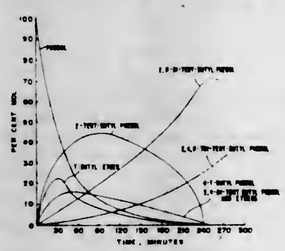
1. An α,α,α',α'-tetraalkoxy-α,α'-dialkylperoxy-p-xylene.

3,200,157

ALKYLATION PROCESS

Vernon W. Buls, Alamo, and Albert B. Hall, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed May 22, 1961, Ser. No. 111,648
12 Claims. (Cl. 260—624)



1. The process for selectively alkylating a phenol which comprises mixing a phenol having a replaceable hydrogen atom on the ring carbon atom para to the hydroxyl group and on at least one of the ring carbon atoms ortho to the hydroxyl group, from about 2 to about 5 moles of olefin having up to 10 carbon atoms per mole of phenol; from about 0.001 mole to about 0.20 mode of aluminum trihalide per mole of phenol, and from about 0.0006 to about 0.01 mole of water per mole of phenol; heating the resulting mixture comprising essentially said phenol, said olefin, said aluminum trihalide and said water at a temperature of from about 100° C. to about 200° C. and a pressure from about 100 p.s.i.g. to about 5000 p.s.i.g., and separating ortho-alkylated phenol from the reaction mixture.

3,200,158

BIS-(PERFLUOROALKYL) NITROXIDE

William D. Blackley, Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,467
8 Claims. (Cl. 260—647)

1. A paramagnetic compound of the formula:

$$(R_f)_2NO\cdot$$

where R_f is a perfluoro alkyl radical of from 1 to 12 carbons.

3,200,159

VAPOR PHASE HYDROFLUORINATION OF ALPHA-CHLOROSTYRENE

John A. Sedlak, Stamford, George C. Gleckler, Springdale, and Ken Matsuda, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 25, 1963, Ser. No. 254,000
4 Claims. (Cl. 260—651)

1. A process for preparing α,α-difluoroethylbenzene comprising heating at a temperature between about 100° and 200° C. in the vapor phase α-chlorostyrene and hydrogen fluoride while in contact with a catalyst comprising mercuric oxide on activated charcoal, wherein the mol ratio of hydrogen fluoride to α-chlorostyrene is between about 2:1 and 8:1, respectively.

3,200,160

PRODUCTION OF VINYL FLUORIDE

Dario Sianesi and Giuseppe Nelli, Milan, Italy, assignors to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed June 10, 1963, Ser. No. 286,524
Claims priority, application Italy, June 13, 1962, 12,013/62
6 Claims. (Cl. 260—653.5)

1. A method for the production of vinyl fluoride comprising pyrolytically dehydrochlorinating 1-chloro-1-fluoroethane in the gaseous state under a partial pressure of 1-chloro-1-fluoroethane of from about 5 to 500 mm. Hg.

3,200,161

ISOMERIZATION OF DICYCLIC NAPHTHENES CONTAINING 12 CARBON ATOMS

George Suld, Springfield, and Archibald P. Stuart, Media, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed July 31, 1962, Ser. No. 213,671
16 Claims. (Cl. 260—666)

1. Method of preparing 2,6-dimethyldecahydronaphthalene comprising subjecting a dicyclic naphthene containing 12 carbon atoms, other than 2,6-dimethyldecahydronaphthalene, to a temperature in the range of −10° C. to −60° C. in the presence of a catalyst, said catalyst comprising HF, a promoter selected from the group consisting of BF_3 and SbF_5, and an initiator containing not more than 5 carbon atoms selected from the group con-

sisting of olefins, alcohols, ethers, and alkyl halides, whereby isomerization occurs, continuing said isomerization beyond a time at which 2,6-dimethyldecahydroaphthalene precipitates from the reaction mixture, and separating said 2,6-dimethyldecahydronaphthalene precipitate from the reaction mixture.

3,200,162

PROCESS FOR THE ISOMERIZATION OF XYLENES

Masakazu Kawai, Sakai-shi, Japan, assignor to Maruzen Oil Company, Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Oct. 22, 1962, Ser. No. 232,284
Claims priority, application Japan, Oct. 30, 1961, 36/39,116
9 Claims. (Cl. 260—668)

1. A process for the isomerization of xylenes which comprises contacting a xylene mixture containing at least one of three xylene isomers in less than its equilibrium concentration in the presence of 0.01 to 0.15 mol of water per mol of the raw xylene mixture with a silica-alumina type catalyst which is previously heat-treated at a temperature of 500° to 700° C. in the presence of steam for 5 to 30 hours.

3,200,163

ALKYLATION-TRANSALKYLATION PROCESS

Ellsworth R. Fenske, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Mar. 12, 1962, Ser. No. 178,936
9 Claims. (Cl. 260—671)

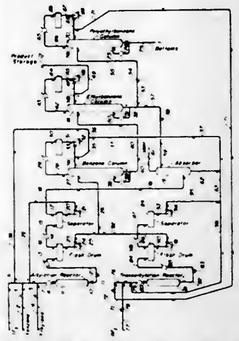
1. An improved process for the production of an aromatic compound which comprises alkylating an alkylatable aromatic compound with an olefin-acting compound in the presence of a catalytic amount of boron trifluoride in an alkylation reaction zone containing a boron trifluoride-modified substantially anhydrous inorganic oxide, commingling the effluent of said alkylation zone with effluent from a transalkylation reaction zone as hereinafter set forth, passing the thus commingled effluents to a separation zone and therein separating unreacted aromatic compound containing boron compound impurities, desired monoalkylated aromatic compound, higher molecular weight polyalkylated aromatic compound and boron trifluoride, stripping from said unreacted aromatic compound boron compounds having a fluorine to boron mol ratio of at least 3.0, then contacting the stripped unreacted aromatic compound with a substantially anhydrous inorganic oxide to remove therefrom boron compound impurities having a fluorine to boron mol ratio of less than 3.0, thereafter recycling a portion of said unreacted aromatic compound to the alkylation zone, removing desired monalkylated aromatic compound as product from the process, passing said polyalkylated aromatic compound in admixture with boron trifluoride and another portion of said unreacted aromatic compound free of boron compound impurities to a transalkylation zone containing boron trifluoride-modified substantially anhydrous inorganic oxide and therein reacting the polyalkylated aromatic compound with unreacted aromatic compound, and recycling the effluent therefrom to said commingling step as aforesaid.

3,200,164

ALKYLATION-TRANSALKYLATION PROCESS

Curtis F. Gerald, San Luis Obispo, Calif., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Sept. 8, 1964, Ser. No. 396,469
19 Claims. (Cl. 260—671)



1. A process for the production of an alkylaromatic compound which comprises alklating an alkylatable aromatic compound with an olefin-acting compound in the presence of a catalytic amount of boron trifluoride in an alkylation reaction zone containing a boron trifluoride-modified substantially anhydrous inorganic oxide, flashing the effluent from said alkylation zone by pressure reduction and then separating the same into a gas phase and a gas-free liquid phase, commingling said gas-free liquid phase with a gas-free liquid phase from a transalkylation zone as hereinafter set forth, fractionating the resultant gas-free liquid phase mixture and separating therefrom unreacted aromatic compound, desired monoalkylated aromatic compound, and higher molecular weight polyalkylated aromatic compound, recycling at least a portion of said unreacted aromatic compound to the alkylation zone, removing desired monoalkylated aromatic compound as product from the process, passing said polyalkylated aromatic compound in admixture with alkylatable aromatic compound and boron trifluoride to a transalkylation zone containing boron trifluoride-modified substantially anhydrous inorganic oxide and therein reacting the polyalkylated aromatic compound with the alkylatable aromatic compound, flashing the effluent from said transalkylation zone by pressure reduction and then separating the same into a gas phase and a gas-free liquid phase, and passing the last-named gas-free liquid phase to said commingling step as aforesaid.

3,200,165

RECOVERY OF AROMATIC AND OLEFINIC HYDROCARBONS

Karl-Heinz Eisenlohr, Buchschlag, Kreis Offenbach (Main), and Hans Wirth, Trostberg, Upper Bavaria, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Filed July 5, 1962, Ser. No. 207,515
Claims priority, application Germany, July 8, 1961, M 49,611
6 Claims. (Cl. 260—674)

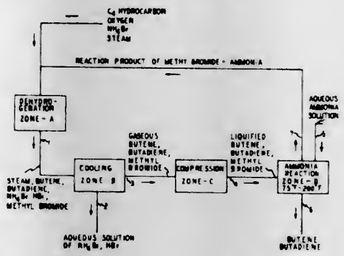
1. In an extraction process for preparing a very pure aromatic hydrocarbon fraction from a hydrocarbon mixture containing a large proportion of poly-unsaturated hydrocarbons, the steps comprising in combination subjecting the mixture to selective hydrogenation at a temperature below 100° C. in the presence of a noble metal catalyst and hydrogen under mild hydrogenation conditions to yield a mixture consisting of mono-olefins and aromatics and thereafter extracting the aromatics by contacting the resulting mixture with a selective solvent consisting essentially of a major proportion of N-methyl pyrrolidone and a minor proportion of water, removing said selective solvent with said aromatics dissolved therein and recovering the aromatics to yield an aromatic hydrocarbon fraction which is at least 99.8% pure.

3,200,166

PURIFICATION OF UNSATURATED PRODUCT

Richard F. Bojanowski, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

Filed Mar. 13, 1962, Ser. No. 179,483
6 Claims. (Cl. 260—681.5)



1. A process for the removal of bromine compounds from a gaseous mixture comprising ethylenically unsaturated organic compounds and steam, the said mixture being contaminated with inorganic bromine and methyl bromide, which comprises (1) cooling the gaseous mixture to condense an aqueous phase containing inorganic bromine, (2) separating the condensed aqueous phase containing inorganic bromine, (3) liquifying the remaining gaseous mixture of methyl bromide and ethylenically unsaturated organic compounds, (4) contacting the liquified mixture of methyl bromide and ethylenically unsaturated organic compounds at a temperature within the range of about 75° F. to about 200° F. with ammonia in an amount of at least 20 mols of ammonia per mol of methyl bromide, and (5) separating the reaction product of the methyl bromide with ammonia from the ethylenically unsaturated organic compounds.

3,200,167

PROCESS FOR THE REMOVAL OF ACETYLENIC HYDROCARBONS BY SELECTIVE CATALYST HYDROGENATION

Manfred Reich, Recklinghausen, Germany, assignor to Chemische Werke Huls, A.G., Marl, Kreis Recklinghausen, Germany

No Drawing. Filed July 2, 1962, Ser. No. 207,006
Claims priority, application Germany, July 6, 1961, C 24,543
14 Claims. (Cl. 260—681.5)

1. A mixed catalyst composition consisting essentially of, in parts by weight, as active components, 5–50 parts metallic copper, per 0.1–50 parts based on the metallic portion, of a compound of a metal, the oxide of which being unreducible with hydrogen to the metal at temperatures below 600° C., said compound being selected from the group consisting of oxides, hydro-oxides and, carbonates of a metal selected from the group consisting of lithium, sodium, potassium, rubidium, cesium, beryllium, magnesium, calcium, strontium, and barium.

3,200,168

OLEFIN HYDROGENATION WITH BORANE ALUMINUM ALCOHOLATE CATALYST

Janos Kollonitsch, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 3, 1963, Ser. No. 270,167
9 Claims. (Cl. 260—683.9)

1. A method for preparing alkanes by catalytic hydrogenation of alkenes which comprises treating alkenes having up to 30 carbon atoms with hydrogen in the presence of a borane aluminum alcoholate catalyst having the formula

$$AlH_3(BH_3)_3 \cdot 3Al(OR)_3$$

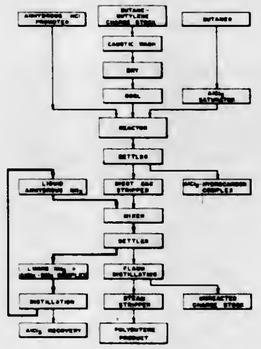
wherein each R is selected from the group consisting of alkyl, aralkyl and cycloalkyl radicals having up to 30 carbon atoms.

3,200,169

ALUMINUM CHLORIDE CATALYZED POLYMERIZATION PROCESS

Gus Nichols, Whiting, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Feb. 21, 1962, Ser. No. 175,874
4 Claims. (Cl. 260—683.15)



1. In a process wherein normally gaseous olefins selected from the class consisting of propylenes, butylenes, and mixtures thereof are polymerized with an aluminum chloride catalyst to form a reaction mixture comprising olefin polymer in admixture with aluminum chloride-hydrocarbon complex, and wherein at least a portion of said reaction mixture is treated with anhydrous ammonia to form a separable aluminum chloride-ammonia complex, the improvement comprising commingling said portion with sufficient excess liquid anhydrous ammonia to dissolve said aluminum chloride-ammonia complex, and thereafter separating the resulting complex-free hydrocarbon phase from an immiscible liquid ammonia phase containing the dissolved aluminum chloride-ammonia complex.

3,200,170

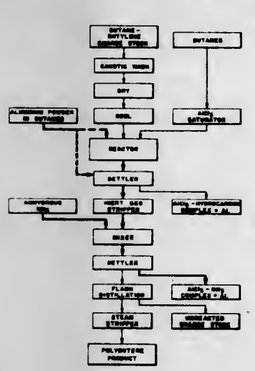
ALUMINUM CHLORIDE CATALYZED POLYMERIZATION PROCESS

Gus Nichols, Whiting, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Feb. 21, 1962, Ser. No. 175,875
10 Claims. (Cl. 260—683.15)

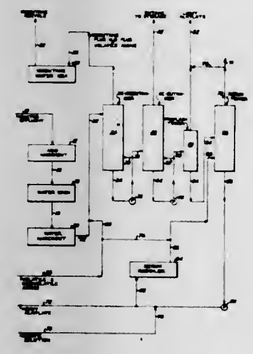
1. In a process wherein normally gaseous olefins selected from the class consisting of propylenes, butylenes, and mixtures thereof are polymerized with an aluminum chloride catalyst to form a reaction mixture comprising olefin polymer in admixture with aluminum chloride-hydrocarbon complex, and wherein at least a portion of said reaction mixture is treated with anhydrous ammonia to form a separable solid-like aluminum chloride-ammonia com-

plex, the improvement comprising effecting separation of said aluminum chloride-ammonia complex in the presence



of a material selected from the group consisting of powdered aluminum metal and powdered zinc metal.

3,200,171
NEUTRAL ESTER STABILIZATION
Charles O. Petty and Robert S. Kung, Tyler, Tex., assignors to La Gloria Oil and Gas Company, Houston, Tex., a corporation of Delaware
Filed Mar. 13, 1962, Ser. No. 179,435
4 Claims. (Cl. 260—683.62)



1. Process of stabilizing olefine alkylate against decomposition of neutral esters therein, comprising adding to the olefine alkylate a small quantity of a non-volatile amine, at least one of the organic groups attached to the amino nitrogen being a tertiary alkyl group, said amine having from 12 to 22 carbon atoms and being thermally stable and having a normal boiling point above 350° F.

3,200,172
MOULDING COMPOSITIONS COMPRISING EPOXIDIZED NOVOLAK, NOVOLAK AND AMINE
Alfred Renner, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland
No Drawing. Filed Nov. 18, 1959, Ser. No. 853,692
Claims priority, application Switzerland, Dec. 18, 1958, 67,477
5 Claims. (Cl. 260—831)

1. A thermo-setting moulding composition containing (a) a solid polyglycidyl ether of a novolak obtained by condensing under acid conditions one molecular proportion of phenol with more than 0.8 molecular proportion and not exceeding about one molecular proportion of formaldehyde, said novolak being prepared solely from said reagents and completely freed from any unreacted phenol prior to its etherification, (b) a phenol-formaldehyde condensation product obtained by condensation under acid conditions, and (c) a nitrogen base as curing accelerator.

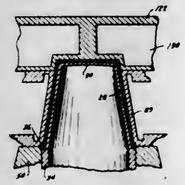
3,200,173
PROCESS FOR PREPARING BLENDS OF POLYPROPYLENE WITH COPOLYMERS OF ETHYLENE AND PROPYLENE
William M. Schilling, West Chester, Pa., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 8, 1960, Ser. No. 7,105
8 Claims. (Cl. 260—878)

1. The process of preparing blends of polypropylene with copolymers of ethylene and propylene which comprises copolymerizing ethylene and propylene by introducing both ethylene and propylene simultaneously into an inert liquid organic diluent in the presence of a catalyst comprising a combination of a compound of a metal selected from the group consisting of metals of Groups IV-B, V-B, VI-B, and VIII of the Periodic Table and manganese, and a hydrocarbon metal compound of a metal selected from the group consisting of alkali metals, alkaline earth metals, and aluminum to form a reaction slurry containing a solid copolymer of 97 to 85 mole percent ethylene and 3 to 15 mole percent propylene, discontinuing the introduction of ethylene, thereafter homopolymerizing propylene in the same diluent in the presence of the already formed copolymer by introducing propylene into the reaction slurry in the presence of said catalyst, each of said copolymerization and homopolymerization steps being conducted for a time sufficient to produce a reaction slurry in which said copolymer comprises about 10 to 60% by weight of the total polymer and in which the total polymer amounts to at least 150 grams per liter of diluent, and separating from the final reaction slurry a blend of stereoregular polypropylene and said copolymer.

3,200,174
COMPOSITIONS CONTAINING BUTYL RUBBER AND OLEFIN COPOLYMER RUBBER
Stephen Adamek and Edward Allan Dudley, Toronto, Ontario, Canada, assignors to Dunlop Rubber Company Limited, County of London, England, a British company
No Drawing. Filed Mar. 18, 1964, Ser. No. 352,962
Claims priority, application Great Britain, June 8, 1959, 19,599/59
15 Claims. (Cl. 260—889)

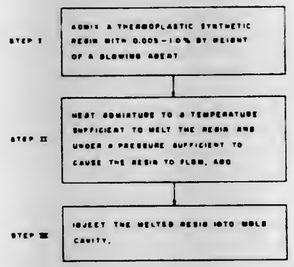
1. A blend of an uncured butyl rubber which is a copolymer of an iso-mono-olefine with less than 5 percent of a conjugated diolefine, with an uncured olefine copolymer rubber which is a copolymer of at least one straight chain mono-olefine with a hydrocarbon containing at least two ethylenic double bonds, in which both rubbers have a degree of unsaturation between 0.75 and 4 percent, the relative proportions of the butyl rubber and the olefine copolymer rubber in the blend being between 70:30 and 40:60, the butyl rubber having a Mooney viscosity (ML-8 at 125° F.) above 65 and the olefine copolymer rubber having a Mooney viscosity (ML-8 at 125° F.) below 40, and the relative proportions of the butyl rubber and olefine copolymer rubber being so correlated with their viscosities that the blend has a Mooney viscosity (ML-8 at 125° F.) of 40-60.

3,200,175
METHOD OF MAKING CUPS
James M. Harrison, Fort Worth, Tex., assignor to Crown Machine & Tool Company, Fort Worth, Tex., a corporation of Texas
Filed June 17, 1960, Ser. No. 36,998
1 Claim. (Cl. 264—53)



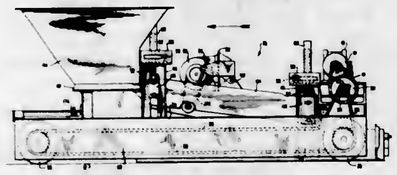
A method of molding a foam plastic article having at least one quite thin wall section from individual prefoamed plastic beads having a given mean diameter, including the steps of defining a molding cavity having the shape of the desired article with a volume and size somewhat greater than the volume and size of the desired article by positioning wall surfaces spaced from each other by a distance substantially greater than the mean diameter of the pre-foamed plastic beads, charging the thus defined somewhat larger cavity with pre-foamed plastic beads, thereafter heating the cavity to an elevated temperature to additionally foam the beads so that they fuse together into a rigid article and, approximately at the same time as the heating step, reducing the volume of the thus defined cavity by moving at least one of the wall surfaces toward the other to a distance substantially less than the mean diameter of the prefoamed plastic beads, and discontinuing this movement of the wall surfaces when the volume and size of the molding cavity has been reduced to the volume and size of the desired article to thereby compress the beads at approximately the same time that they are being formed into the desired article by the heating step.

3,200,176
PROCESS FOR MOLDING THERMOPLASTIC RESIN ARTICLES FREE OF SURFACE DEFECTS
Samuel Baxter, Penhow, England, assignor to Monsanto Chemicals Limited, London, England, a British company
Filed Feb. 27, 1964, Ser. No. 347,701
Claims priority, application Great Britain, July 30, 1959, 26,129/59, Patent 944,611
7 Claims. (Cl. 264—54)



1. A process for preparing a molded thermoplastic synthetic resin article which is essentially free of surface voids and deformities which process comprises intimately admixing a thermoplastic synthetic resin with 0.005-1.0% by weight of a blowing agent based on the weight of the thermoplastic synthetic resin, heating the admixture to a temperature sufficient to melt the resin and under a pressure sufficient to cause the resin to flow and injecting the resin into a mold cavity.

3,200,177
METHOD OF FORMING CONCRETE ARTICLES AND SLIP FORMING MACHINE THEREFOR
David H. Dodd, Gallatin, Tenn., assignor of one-half to Clarence Riegel, Nashville, Tenn.
Filed Apr. 4, 1963, Ser. No. 270,643
26 Claims. (Cl. 264—70)

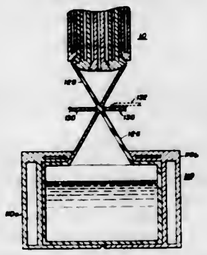


1. A slip forming machine comprising a mold having top and side walls, means for propelling said mold, and means for vibrating the top wall of said mold at its center of percussion with respect to its trailing edge as a neutral axis.

3,200,178
POLYVINYL ALCOHOL SPINNING SOLUTIONS AND FIBERS PRODUCED THEREFROM
Kanji Matsubayashi and Teruo Suda, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Okayama, Japan, a corporation of Japan
No Drawing. Filed Dec. 7, 1961, Ser. No. 157,850
Claims priority, application Japan, Dec. 14, 1960, 35/48,575; Jan. 6, 1961, 36/183
11 Claims. (Cl. 264—78)

1. In the manufacture of polyvinyl alcohol fibers, the steps which comprise preparing an aqueous spinning solution comprising a mixture of polyvinyl alcohol and a water-soluble polyvinyl alcohol derivative produced by the reaction of polyvinyl alcohol and urea, said derivative containing 0.1 to 6% of nitrogen derived from said urea, and the nitrogen content of the total polymer component of said solution being 0.05 to 4.5%, and spinning said solution to form fibers therefrom.

3,200,179
METHOD FOR BLOW-MOLDING PLASTIC CONTAINERS
Kevin E. Moran, Crystal Lake, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
Filed Nov. 30, 1961, Ser. No. 155,918
7 Claims. (Cl. 264—88)



1. In a method of producing hollow articles of a plastic material by introducing pressure into a tube of moldable plastic material having a closed end in a cavity of

a mold to blow said tube into molding contact with said mold, said tube having been extruded from an extruding device substantially adjacent to said mold, the improvement which comprises the sequential steps of:

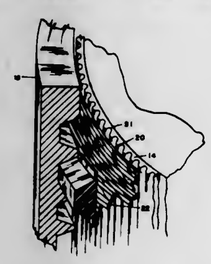
(a) firstly, terminating the extrusion of said tube while said tube, being integrally joined with plastic material in an extruding device adjacent to said mold, is blown into molding contact with said mold;

(b) secondly, resuming the extrusion of said tube while said extruding device and mold are separated to form the uppermost portion of the cylindrical neck on said article;

(c) thirdly, decreasing the cross-sectional area of said formed cylindrical neck at a point remote from said article to form a conical neck on said article; and

(d) fourthly, severing the article with the conical neck from the remainder of said tube.

3,200,180
METHOD OF CASTING ARTICLES FROM LIQUID ELASTOMERS
Paul E. Russ, Englewood, Wilbur Stavast, Denver, and William M. Haines, Englewood, Colo., assignors to The Gates Rubber Company, Denver, Colo., a corporation of Colorado
Filed Feb. 15, 1962, Ser. No. 173,504
14 Claims. (Cl. 264—102)



1. A method for casting an article of manufacture from a viscous liquid elastomeric material comprising the steps of: positioning a mold mandrel portion concentrically within a mold shell portion thereby forming a cavity between said mandrel portion and said shell portion and defining the contour of the article to be cast; applying a vacuum to the cavity formed between said mandrel and shell to exhaust gases from said cavity; simultaneously spinning the assembled mold around an axis of rotation of the mold; introducing a polymerizable liquid elastomeric material into the spinning mold while maintaining the vacuum; completely filling the cavity and preventing the formation of any occluded voids or bubbles by continuing to maintain the spinning and vacuum until the filling of said mold is complete; polymerizing the resultant product to form a unitary structure.

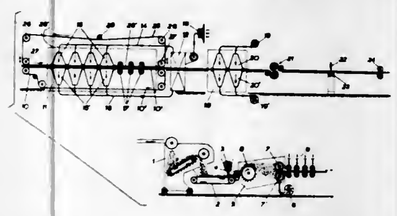
3,200,181
METHOD OF AND MEANS FOR MANUFACTURING PADDING AND INSULATING MATERIALS COMPRISING FIBRES
Bernard Rudloff, Marckolsheim, Bas-Rhin, France
Filed May 18, 1962, Ser. No. 195,872
Claims priority, application France, May 29, 1961, 7,158/61; Jan. 15, 1962, 7,320/62, Patent 1,291,938
7 Claims. (Cl. 264—109)

1. A method of manufacturing padding and insulating material from textile fibres comprising the steps of

adding powdered synthetic resins to a single layer of textile fibres to form a single sheet,

subjecting said sheet to a current of hot air passing through and across said sheet in order to effect melting and distribution of said resins on the opposite surfaces of and throughout said sheet,

subjecting said sheet thereafter to rolling in order to cause the agglomeration of said fibres,



exposing said sheet to a current of moist cooled air, and

passing said sheet over a heated calender to obtain a smooth compact surface.

3,200,182
PRODUCTION OF A STRESS-FREE POLYCARBONATE SHAPED ARTICLE
Wilhelm Hechelhammer, Krefeld-Bockum, and Hugo Strelb, Krefeld-Urdingen, Germany (both % Farbenfabriken Bayer A.G., Krefeld-Urdingen, Germany)
No Drawing. Filed Jan. 4, 1962, Ser. No. 164,394
Claims priority, application Germany, Jan. 7, 1961, F 32,919
4 Claims. (Cl. 264—235)

4. A method for making a substantially stress-free high molecular weight thermoplastic polycarbonate shaped article which comprises shaping the polycarbonate which is at a temperature of at least about 220° C. in an atmosphere having a temperature of from about 70° C. to about 120° C., maintaining the shaped article at a temperature of from about 70° C. to about 120° C. until the polycarbonate has substantially completely solidified and thereafter bringing the completely solidified shaped article into surroundings having a temperature of from about 300° C. to about 1200° C. for about 1 to about 60 seconds so that substantially no melting of the polycarbonate occurs.

3,200,183
STRETCHING PROCESS
Peter Markey and John Francis Lloyd Roberts, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Aug. 23, 1962, Ser. No. 218,871
Claims priority, application Great Britain, Oct. 5, 1961, 35,894/61, Patent 957,079
2 Claims. (Cl. 264—290)

1. A drawing process for melt spun filaments made from a polymer of metaxylylene diamine and adipic acid where the melt spun filaments are drawn while passing through a heating zone in which the filaments are drawn to at least 3 times their original length, characterized in that the temperature of the heating zone (T_p) is within the range of 2° C. lower than to 5° C. above that calculated from the following equation:

$$T_p° \text{ C.} = 109 - 9.25M$$

where M is the percent moisture content of the spun yarn which is to be drawn and is controlled by conditioning the spun yarn, prior to drawing, in an environment of controlled temperature and relative humidity such that the relative humidity does not exceed that defined by the equation:

$$RH_{(max)} = 118 - 0.55T$$

where $RH_{(max)}$ is the maximum percent relative humidity and T is the ambient temperature of the conditioning environment in degrees Fahrenheit.

3,200,184
PROCESS FOR FORMING HOLLOW ARTICLES
Herbert C. Schulze, 3690 Highland Drive, Carlsbad, Calif.
Filed Nov. 15, 1962, Ser. No. 237,857
11 Claims. (Cl. 264—311)

1. A method of forming a hollow article from a plastic material, that includes:

providing a molding zone defined in part by a tubular surface;

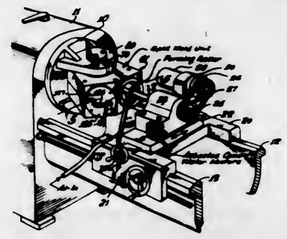
introducing an amount of said plastic material into said molding zone;

rotating said tubular surface about an axis of rotation coinciding with the longitudinal axis of said tubular surface;

inserting a roller into said molding zone, said roller having an axis of rotation parallel with the axis of rotation of said tubular surface;

pressing said roller against said plastic material to compress said plastic material against said tubular surface;

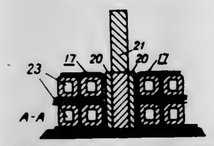
and power-rotating said roller in the same direction as said plastic material while it is being pressed against said plastic material at a surface speed that



exceeds the surface speed of said plastic material at the area of contact between said roller and said plastic material.

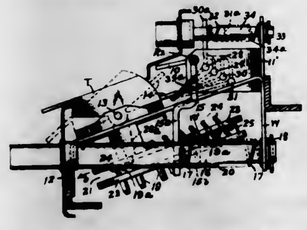
ELECTRICAL

3,200,185
ELECTROMAGNETIC STIRRER
Kåre Folgerö and Gösta Karlsson, Vasteras, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Mar. 19, 1963, Ser. No. 266,247
Claims priority, application Sweden, Mar. 21, 1962, 3,130/62
3 Claims. (Cl. 13—26)



1. Electromagnetic stirrer for metallurgical containers, comprising a stirrer winding comprising coils for electric current having spaces between them, and an iron core on the side of the coils remote from the container, teeth of magnetic material having parts extending from points within said spaces between said coils substantially below a plane through those parts of the coils positioned nearest the container to points outside such spaces and substantially closer to the container then such plane, and spaced from said container to provide an air gap.

3,200,186
ORGAN STOP MECHANISM
Walter J. Anderson, 810 Forest Ave., Elgin, Ill., and Charles W. Welsh, 30 Sparrow Road, Carpentersville, Ill.
Filed Oct. 10, 1960, Ser. No. 61,712
4 Claims. (Cl. 84—1.19)



2. A stop drawing and retiring mechanism comprising, a casing having therein a set of longitudinally spaced apart electric stop switches and a set of vertically tiltable longitudinally spaced apart stop tabs individually manipulatable from exteriorly of the casing and having operative connection between their front and back ends with respective stop switches of said set thereof enabling selectively opening and closing the switches in response to tilting motion of said stop tabs first in one and then in an opposite direction about horizontal supporting axes; means in said casing selectively actuable from exteriorly thereof for imposing a lifting force against the back ends of preassigned stop tabs of said set thereof to tilt the tabs in a direction to concurrently close the stop switches common thereto and draw a combination of stops; and means in the casing selectively actuable from exteriorly thereof to impose a lowering force against the back ends of all stop tabs of said set of tabs whose stop switches are closed at the same instant so as to tilt the tabs in an opposite direction and concurrently open all stop switches of said set thereof and clear the mechanism of all drawn stops, the means for imposing said lifting force against the back ends of preassigned stop tabs comprising, a rocker rod provided with longitudinally spaced apart radially disposed rigid elongated actuators having extremities disposed immediately beneath and freely engaging said back ends of said preassigned tabs.

3,200,187
LINE COVER
Earl L. McMullin, Rutland Township, Barry County, Mich. (R.R. 2, Hastings, Mich.)
Filed May 22, 1963, Ser. No. 282,260
6 Claims. (Cl. 174—5)

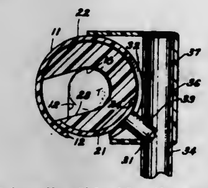
1. A protective cover comprising:

an elongated outer tubular casing of insulating material having an opening through the wall therof extending lengthwise between and through the ends thereof, said casing also having an elongated lateral slot through the side thereof;

an elongated inner closure member of insulating material mounted for arcuate movement within said casing between a first position in which it is disposed away from said opening and a second position in which it extends across and closes off said opening;

an operating pin extending through the slot in the side of said tubular casing and movable along said slot and drivingly connected to said closure member for effecting arcuate movement thereof with respect to said casing;

a mounting structure affixed to said tubular casing on the outside thereof and having wall means defining an opening therethrough which opening extends substantially perpendicularly to the lengthwise extent of the casing;



an elongated handle slideably disposed in said opening in said mounting structure for lengthwise movement and drivingly connected to said operating pin whereby lengthwise movement of said handle moves said operating pin in said slot and thereby moves said inner closure member between said positions.

3,200,188
CATHODE RAY TUBES WITH INSULATED IMPLOSION PROTECTIVE FRAME
Herbert Lange, Ulm (Danube), Johannes Ritter, Herrlingen, and Walter Schaffernicht, Ulm (Danube), Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Mar. 15, 1963, Ser. No. 265,549
Claims priority, application Germany, Mar. 21, 1962, T 21,799; June 19, 1962, T 22,320; Feb. 21, 1963, T 23,420
15 Claims. (Cl. 174—50.51)



1. An implosion protective device for a cathode ray tube having a screen portion and a cone portion joining said screen portion, the juncture of which portions constitutes the region of maximum circumference of the tube, said implosion protective device comprising a rigid metallic frame encompassing the tube in the region of said juncture, a portion of said frame being located in the vicinity of said screen portion of the tube, there being a filler mass interposed between the inner surface of said rigid metallic frame and the outer surface of the tube, and insulation overlying the exposed side of said screen-side frame portion thereby to prevent persons touching said screen-side frame portion from being subjected to a high electrical potential of a chassis to which the tube is connected by means of said frame.

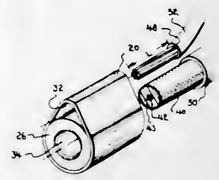
3,200,189
CONDUCTOR BEND RELIEF
Dean W. Flygstad, Roseville, Minn., assignor to The Telex Corporation, Tulsa, Okla., a corporation of Delaware
Filed May 7, 1963, Ser. No. 278,566
4 Claims. (Cl. 174—70)

1. A bend relief for insertion into a multiconductor sheathed cable assembly comprised of a plurality of longitudinally elongated members, each of said members having a substantially triangular cross section and being of small cross section at one end and gradually increasing in cross section along the longitudinal length thereof, said members being interconnected at the ends of largest cross section so that the apex of said triangular cross section extends inwardly thereof and so as to engage and position conductors in a cable so that the conductors are separated by the interconnected ends of said members and the conductors and the interconnected ends of



the members substantially fill the inside of a cable sheath surrounding said interconnected members and said conductors.

3,200,190
DUAL FERRULE CONNECTOR FOR A COAXIAL CABLE HAVING A FLAT BRAID
Edgar W. Forney, Jr., Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed May 9, 1962, Ser. No. 193,503
2 Claims. (Cl. 174—75)



2. In an electrical and mechanical connection for grounding the shielding of coaxial cable, the combination comprising a shielded cable having at least one central conductor surrounded by an insulating sheath of soft plastic material in turn surrounded by a tightly fitted braid of foil-like conductors, a grounding conductor, a ferrule assembly including an inner ductile and conductive ferrule and an outer metal ferrule having the grounding conductor fitted therebetween, the said ferrules being deformed inwardly along the length thereof into a tubular configuration to effect a connection between the cable braid and the grounding conductor, the said inner ferrule having a thickness substantially greater than the cross-sectional area of the grounding conductor, the material of said inner ferrule being substantially softer than the material of the foil-like conductors and being worked along the interior surface thereof into the interstices between the foil-like conductors with a slight radial deformation of said sheath, the said outer ferrule being of a relatively hard malleable material forming a relaxation resistant band holding the inner ferrule in engagement with the said braid and the grounding conductor.

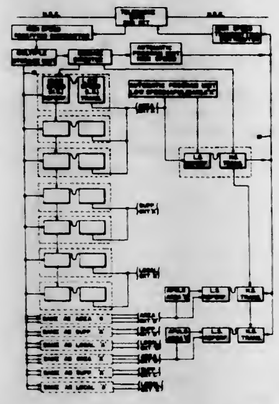
3,200,191
CABLE SPLICE INSULATOR AND CABLE JOINT MADE THEREWITH
Howard W. Davies, Pittsburgh, Pa., and Olav E. Jore, Marion, Ind., assignors, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed May 10, 1962, Ser. No. 193,752
8 Claims. (Cl. 174—88)

1. A flexible cable-splice insulator comprising a strip of electrically insulating material and two transverse insulating webs extending in opposite directions from the opposing edges of said strip, said webs being substantially



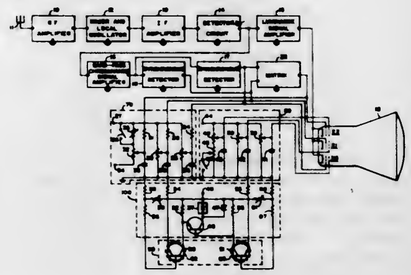
less thick than said strip and forming well-defined dihedral angles therewith.

3,200,192
COMMUNICATION SYSTEM
John F. Auwaerter and Frank D. Biggam, Deerfield, and Walter B. McClelland, Park Ridge, Ill., assignors to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Jan. 15, 1962, Ser. No. 166,098
5 Claims. (Cl. 178—3)



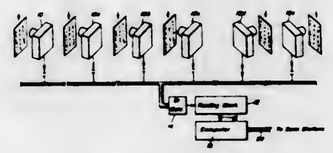
1. In a communication system for relaying messages grouped into distinguishable, sequentially received blocks,
a recording device for recording intelligence signals embodying said messages;
a transmitter for re-transmitting intelligence signals recorded by said recording device;
switch means individually allocated to blocks of different sequential identity and actuatable to initiate operation of said transmitter;
registering means operatively connected one each to said switch means for selectively registering the completion of the recording of the respective blocks by the recording device and for conditioning the corresponding switch means for actuation;
means operatively connected one each to said switch means and selectively responsive to control signals requesting the respective blocks to actuate the corresponding switch means, if conditioned by said registering means, such that a control signal requesting a block initiates operation of the transmitter to re-transmit the requested block if available; and
means connected one each to said switch means and selectively conditionable by the completion of the retransmission of the respective blocks to deactuate the corresponding switch means such that the transmitter after re-transmitting the requested block is caused to discontinue operation, whereby an available later-in-sequence block will not be re-transmitted.

3,200,193
COMPENSATOR FOR COLOR-TELEVISION RECEIVERS FOR CHROMATICITY VARIATIONS IN AMBIENT LIGHT
Albert J. Biggs, Harrow, and George B. Townsend, Little Chalfont, England, assignors to Hazeltine Research, Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 30, 1961, Ser. No. 134,915
Claims priority, application Great Britain, Dec. 8, 1960, 42,298/60
5 Claims. (Cl. 178—5.4)



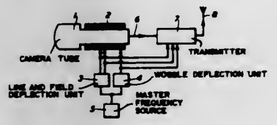
1. A color-television receiver having apparatus to compensate for changes in the ambient light which affect the subjective impression a viewer has of the reproduced image, comprising: an image reproducing device; means for developing a luminance signal and a chrominance signal from a received composite color-television signal and for supplying said signals to said image reproducing device; means for detecting changes in the ambient light falling on said image reproducing device; and means responsive to said detection means for changing a color characteristic of the reproduced image in accordance with the changes in the ambient light to compensate for such changes.

3,200,194
READING MACHINE WITH MULTIPLE INPUTS
Jacob Rabinow, Takoma Park, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed May 22, 1962, Ser. No. 196,773
10 Claims. (Cl. 178—6)



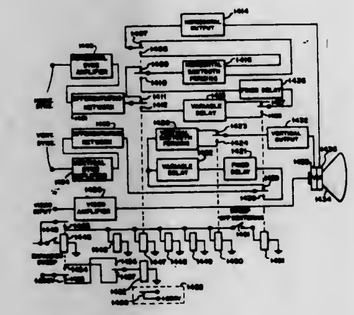
1. In an optical character recognition system, a central character recognition machine, a plurality of optical scanning devices at spaced places remote from said character recognition machine to examine documents at separated locations and provide video signals corresponding to the individual characters on the documents for the central character recognition machine to process, means operatively connected with said devices to transmit the individual character video signals originating at each scanning device to said central machine, and means interconnecting said devices for preventing more than one device from concurrently providing video signals into said machine.

3,200,195
TELEVISION SYSTEMS
Eric Davies, Danbury, and Anthony Norman Heightman, Great Baddow, England, assignors to The Marconi Company Limited, a British company
Filed May 12, 1961, Ser. No. 109,724
Claims priority, application Great Britain, Oct. 26, 1960, 36,743/60
21 Claims. (Cl. 178—6.8)



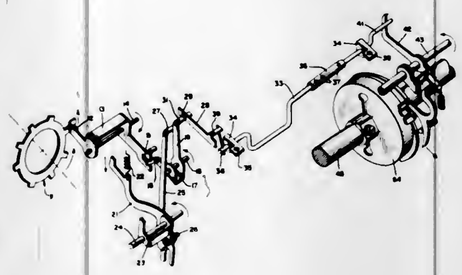
1. A television system comprising: a transmitter having means for transmitting, during any one television field, signals corresponding to separate spaced picture elements, said transmitting means including wobble means for causing the scanning spot to oscillate during each line period excursion between two successive lines in the field so that the transmitted signals correspond alternately to spaced picture elements in the two lines; and a co-operating receiver including means for receiving the transmitted signals, means for reproducing the received signals as separate spaced reproduced picture elements in the television field to which they are appropriate, synthesising means for deriving from successive received signals further signals of varying values dependent upon the varying values of said received signals, and means for reproducing said further signals as further separate spaced reproduced picture elements in the same television field in the spaces between the aforesaid spaced reproduced picture elements.

3,200,196
RADAR BRIGHT DISPLAY SYSTEM
Richard S. Jenkins, Addison, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed May 10, 1962, Ser. No. 193,743
11 Claims. (Cl. 178—6.8)



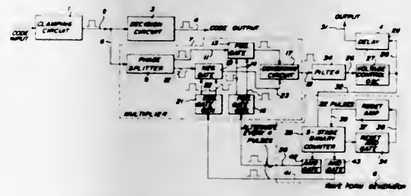
1. A radar bright display system comprising: a source of radar information; radar display means for displaying said radar information; means for coupling said source of radar information to said radar display means; television scanning means for scanning said radar display means to provide a television video signal of said radar information; a source of sync pulses; a display tube having an input, a horizontal deflection coil and a vertical deflection coil; means for coupling said television video signal to said input of said display tube; horizontal deflection circuits for providing a first horizontal sweep waveform having a predetermined amplitude and a second horizontal sweep waveform which reaches said predetermined amplitude in one-half the time required for said first horizontal sweep waveform to reach that amplitude; vertical deflection circuits for providing a first vertical sweep waveform having a predetermined amplitude and a second vertical sweep waveform which reaches twice the amplitude of said first vertical sweep waveform in the same period of time; said horizontal and vertical deflection circuits coupled to said horizontal and vertical deflection coils, respectively, and normally coupled to said source of sync pulses; delay means connectable in the coupling between said source of sync pulses and said horizontal deflection circuit; and means operated to connect said delay means in said last mentioned coupling and for switching said horizontal and vertical deflection circuits to provide said second horizontal and vertical sweep waveforms, whereby a two to one expansion of said video information is displayed by said display tube and the center of said expanded video display is positioned in the center of said display tube.

3,200,197
AUTOMATIC CARRIAGE RETURN AND LINE FEED MECHANISM
James J. Krakusky, Ridgewood, N.Y., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed Mar. 12, 1962, Ser. No. 179,534
6 Claims. (Cl. 178—25)



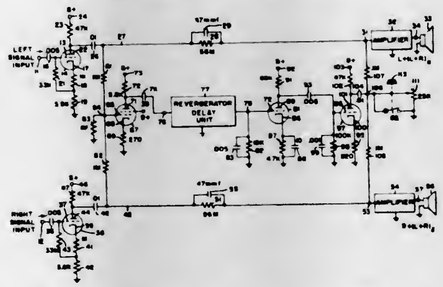
1. In a telegraph printer mechanism comprising a spacing cut-out bail, a carriage return lever and a line feed clutch trip lever, automatic carriage return and line feed means comprising as carriage return means a swingable arm engaging the spacing cut-out bail and located for carriage return lever impingment and movement upon spacing cut-out bail motion, and comprising as line feed means a slidable member having an aperture engaging a movable portion of the spacing cut-out bail and having an engagement tail at one end thereof, a cross shaft for line feed function transmission by shaft rotation, a crosspin at one extremity of said cross shaft located for engagement with said slidable member and operable to rotate said cross shaft upon slidable member motion, and an offset portion comprising a crank at the other end of said cross shaft located for engagement with the line feed clutch trip lever, for actuation thereof upon motion of said slidable member.

3,200,198
SYSTEM FOR EXTRACTING WORD AND BIT SYNCHRONIZATION SIGNALS FROM PCM WAVE FORM
Daniel D. McRae, Melbourne, Fla., assignor to Radiation, Inc., Melbourne, Fla., a corporation of Florida
Filed Nov. 3, 1959, Ser. No. 850,608
5 Claims. (Cl. 178—69.5)



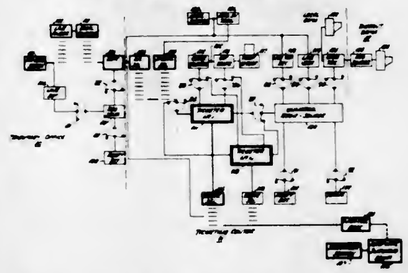
1. In a circuit for synchronizing the frequency and phase of a signal generator in accordance with the reception of specified recurrent pulses of an incoming pulse train, means coupled to receive said incoming pulse train for deriving from each pulse thereof simultaneous pulses of alternate polarity, plural gating means, each of said gating means being effective when energized to pass pulses of either polarity, means for applying only that pulse of said simultaneous pulses of the same polarity as that of the pulse from which it is derived to one of said gating means, means for applying only that pulse of said simultaneous pulses of opposite polarity to that of the pulse from which it is derived to another of said gating means, means coupled to said plural gating means for controlling the output signal frequency of said signal generator in accordance with the amplitude and width of pulses passed by said plural gating means, means coupled to said signal generator for producing synchronizing pulses separated by intervals proportional to the frequency of said output signal, and means coupled to said last named means and to said plural gating means for alternately energizing said one and said another gating means to pass only those portions of said pulses applied to said gating means coincident in time with said synchronizing pulses.

3,200,199
STEREOPHONIC REVERBERATION CIRCUIT
Jens Bang, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Aug. 28, 1961, Ser. No. 134,391
13 Claims. (Cl. 179—1)



1. A reverberation circuit arrangement for a stereophonic system having at least two stereophonic signal channels, comprising a first plurality of impedance members respectively connected between a junction thereof and first signal points in at least two of said signal channels to provide a sum signal at said junction, a sum signal delay circuit connected to said junction and adapted to provide a delayed sum signal at an output thereof, a second plurality of impedance members respectively connected between said output of the delay circuit and second signal points in said signal channels to apply the delayed sum signal thereto, and signal isolating means respectively interposed in said signal channels between said first and second signal points.

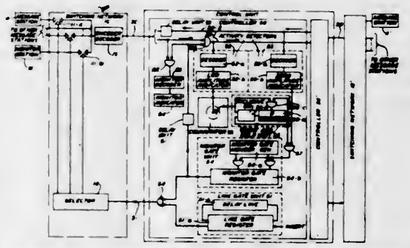
3,200,200
AUTOMATIC TOLL TICKETING SYSTEMS
James M. Blackhall, La Grange, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Aug. 24, 1960, Ser. No. 51,742
16 Claims. (Cl. 179—7.1)



10. A ticketer for use in an automatic toll ticketing telephone system, comprising means for storing the data necessary for the production of a record of a toll call, means in said ticketer to supervise the answer and release of the call, a data recording means for preparing permanent records of said data, means responsive to the release of the call for delivering the stored data from said ticketer to said data recording means, means including at least a register and clock calendar external to said ticketer means for controlling the storage of said data in said ticketer after the answer, and means in said ticketer for attracting said register via a data transfer link when said ticketer is idle.

14. An automatic toll ticketing telephone system comprising a plurality of ticketing means, at least one register means associated with said plurality of ticketing means, means responsive to one of said ticketing means in idle condition for interconnecting said ticketing means and said register, via a data transfer link, and means responsive to initiation of a call for causing said register to store data in said ticketing means and immediately after said storage to disconnect from said ticketing means.

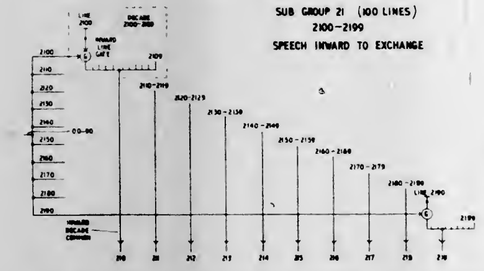
3,200,201
INTERPOLATION SIGNALING
John P. Runyon, Mendham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 29, 1961, Ser. No. 163,287
9 Claims. (Cl. 179—15)



1. Signaling apparatus which comprises a system for transmitting messages in opposed directions of propaga-

tion, means for detecting a preassigned condition of a message propagated in one direction, means for detecting a similar condition of a message propagated in the other direction and means responsive to the coincidence of the detected conditions for transmitting a signal in one of said directions.

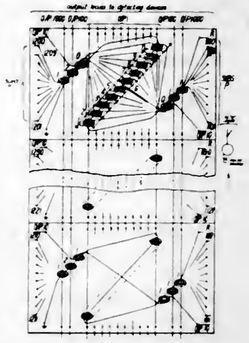
3,200,202
TIME DIVISION MULTIPLEX COMMUNICATION SYSTEMS
Lionel Roy Frank Harris, Kenton, England, assignor to Her Majesty's Postmaster General, London, England
Filed Oct. 23, 1961, Ser. No. 146,916
Claims priority, application Great Britain, Oct. 27, 1960, 37,004/60
16 Claims. (Cl. 179—18)



1. A telecommunication switching system comprising in combination a plurality of blocks of lines, for each block, a time division multiplex bothway communication path, gates interconnecting said path with the lines of said block, a plurality of further time division multiplex bothway communication paths, further gates interconnecting each of said further paths with some at least of the communication paths of said blocks of lines, and, for each further path, storage means interconnected with all said gates for selectively establishing communication from one of said lines via the communication path of the block containing said one line and one of said further paths to another of said lines via the path of the block containing said other line.

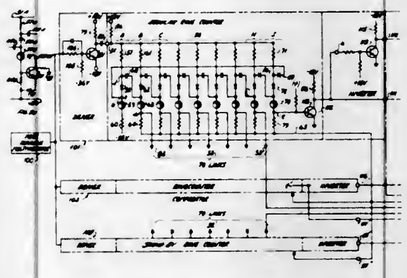
3,200,203
AUTOMATIC IDENTIFICATION SYSTEM
Frederick Harry Bray, Norman Hadlow Martin, and John Malcolm Ridler, all of London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 1, 1961, Ser. No. 156,335
Claims priority, application Great Britain, Dec. 12, 1960, 42,659/60
5 Claims. (Cl. 179—18)

1. An automatic line identification arrangement for identifying subscriber lines comprising a plurality of input terminals, said terminals divided into discrete groups, means for connecting said subscriber lines having common first digits and individual last digits to said terminals of the same discrete groups, memory means for storing multi-digit numbers to indicate a numerical designation corresponding to said line digits, said memory means comprising three banks of bi-stable devices for each two discrete groups, each of said bistable devices individually representing a digit of a decimal number, means for connecting each of the terminals of a first of said groups via all the devices in a first of said banks to a device individual to each of said terminals in a second of said banks, means for connecting each of the terminals of another of said groups via all the devices in a third of said banks to a device individual to each of said terminals of said another of said groups but common to said first group of terminals in said second of said banks, whereby said first bank stores the common first digits of said first group and said third bank stores the common first digits of said other group and said second bank stores the individual



last digits of both said first group and said other group a plurality of output leads and means for serially connecting a separate one of said plurality of output leads through all of said bistable devices representing the same digit.

3,200,204
RING COUNTER AND MARKER
William K. C. Yuan, Bellwood, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Mar. 30, 1962, Ser. No. 183,859
16 Claims. (Cl. 179—18)



11. In a electronic switching telephone system, the combination comprising a plurality of links responsive to time frame pulses for individually enabling a link to extend a switch path through said system, means for providing said time frame pulses comprising at least one ring counter having a plurality of stages with a common input and individual isolated outputs, each of said stages comprising a voltage divider having the series combination of a first resistor, a diode, a PNPN diode and a second resistor, coupling means including a capacitor for coupling a potential point comprising the junction between said first resistor and said diode on the voltage divider of each stage to another potential point comprising the junction between said diode and one side of said PNPN diode on the voltage divider of the next following stage, said coupling means providing a priming path whereby any one of said bistable devices in an "on" condition primes the bistable device in the next following stage, said coupling means including another potential point on each of said voltage dividers for providing output voltages which form said time frame pulses, and means comprising said bistable device for isolating the ring counter output voltages from circuit transients.

3,200,205
SPEECH IMMUNITY VOICE FREQUENCY SIGNALLING SYSTEM
Eberhard Herter, Stuttgart, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 29, 1962, Ser. No. 198,562
Claims priority, application Germany, June 19, 1961, St 17,969
4 Claims. (Cl. 179—84)



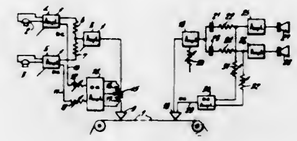
1. In a voice frequency signalling system for selectively transmitting voice frequency signals from a remote station to central equipment over an interconnecting signalling line, means in the said station responsive to the initiation of a call for establishing a direct current path over said line and for transmitting voice frequency signals indicative of any digit of a telephone number over said line, means in the central equipment for storing said signals, means in the said station responsive to ending each said transmission of signals for temporarily interrupting said direct current path, signal evaluating means in said central equipment, and means in said central equipment responsive to said interruption for operating said evaluating means.

3,200,206
CONTROL APPARATUS
Lee D. Johnson, Kailua, Hawaii, assignor to Kentron Hawaii, Limited, Honolulu, Hawaii, a corporation of Hawaii
Filed July 7, 1960, Ser. No. 41,408
3 Claims. (Cl. 179—100.1)



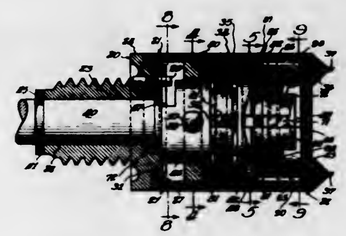
1. Remote control apparatus for use in conjunction with a recording apparatus of the type including recording and reproducing means and associated amplifying means, and an appurtenant controlled device having provision for remote control in response to a predetermined controlling signal; and comprising input and output means, means for providing a controlling signal for remote operation of said device, electronic means interconnecting said input and output means and said controlling signal providing means and including an electronic valve connected in circuit with tuned circuit means having inductance and capacitance means therein, said input means being connected to said tuned circuit electronic valve means free of any intervening electronic valve means, means connecting said tuned circuit means to said output means and including electronic valve means operative as an electronic switch and inductance means coupling said tuned circuit means to said last mentioned electronic valve means, said last mentioned connecting means being substantially devoid of amplification, and feedback means including switch means interconnected with said electronic valve means and said last mentioned inductance means, said switch means effective alternatively to render said electronic means an oscillator and a tuned amplifier.

3,200,207
METHOD AND MEANS FOR RECORDING AND REPRODUCING MAGNETOGRAMS
Erich Rainer, Erlangen, and Christian-Friedrich Wolf and Walter Engel, Nuraberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, and Erlangen, Germany, a corporation of Germany
Filed Dec. 9, 1959, Ser. No. 858,377
Claims priority, application Germany, Dec. 12, 1958, S 60,965
11 Claims. (Cl. 179—100.2)



1. The method of recording and reproducing sound with the aid of a travelling magnetogram carrier, which comprises translating sound in two channels into respective transmitter voltages and recording them magnetically and mutually superimposed on a single sound track of the carrier, additionally magnetizing the carrier by direct-flux signals of reversible polarity in accordance with the magnitude and direction of the difference between said two transmitter voltages; separately transducing from said sound track two receiver voltages and translating them into reproduced sound at separate locations, transducing from the direct-flux magnetization of the carrier a reversible direct voltage, and inversely controlling the volume of reproduced sound at said respective locations in dependence upon said direct voltage.

3,200,208
ROTARY SELECTOR SWITCH CONSTRUCTION WITH ROTOR INTERLOCKING MEANS
Edward J. Mastney, Hinsdale, Ill., assignor to Oak Manufacturing Co., a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,862
21 Claims. (Cl. 200—6)

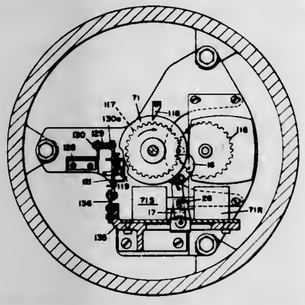


1. A rotary switch comprising: a housing; a body portion, including a stator having electrical contacts, held in said housing; a rotatable member, having a contact arm, extending through said housing into said body portion; means associated with said rotatable member for positioning said body portion with respect to said rotatable member in a fixed spatial relationship wherein said contact arm is held in rotatable contact with said electrical contacts; a shaft extending into said housing; and means coupling said rotatable member to said shaft for rotation therewith and for limited longitudinal movement with respect thereto.

3,200,209
ADJUSTABLE CONTROLLER FOR PREDETERMINED CONTROL-PROGRAMS

Herbert S. Fitzgerald, Philadelphia, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Jan. 5, 1962, Ser. No. 164,582
14 Claims. (Cl. 200—18)



1. A programmer comprising

a plurality of control devices each including a pair of control elements one of which is adapted to be rotatably driven relative to the other,

means for rotatably supporting and driven elements,

driving means for concurrently rotating said driven elements,

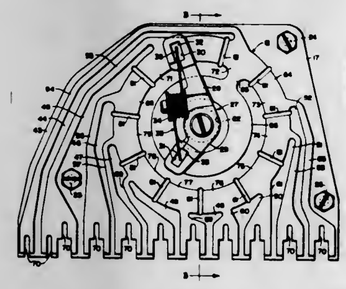
arresting means for said driven elements for bringing them to standstill in set positions each in like angular displacement with respect to its associated control element during continued operation of said driving means, and

means operative during said continued operation of said driving means for controlling said arresting means selectively to release said driven elements for resumption of rotation by said driving means with said driven elements in different angular positions relative to their common set positions, whereby there may be established a selected repetitive control cycle by said control devices.

3,200,210
TELEGRAPH DISTRIBUTOR HAVING RATCHET-LIKE STEPPED CONTACT SEGMENTS AND THE METHOD FOR MAKING SUCH

Kay Alonas, Skokie, Arthur A. Hagstrom, Hoffman Estates, and Bernard J. Sobczak, Bellwood, Ill., assignors to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Filed Dec. 14, 1961, Ser. No. 159,328
6 Claims. (Cl. 200—11)

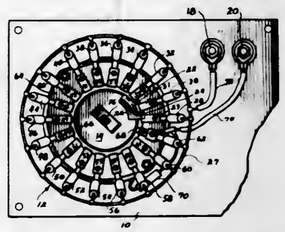


1. A method of manufacturing a printing telegraph distributor which comprises applying a single conductive metallic sheet to a sheet of insulating material, forming said metallic sheet to a predetermined configuration, said configuration including an inner uninterrupted, annular, collector ring portion connected to an outer uninterrupted, annular, portion having a plurality of connector portions formed integrally therewith, perforating slots in the outer, annular portion intermediate the connector portions to cut it into segments, deforming the sheets to bend the metallic sheet and sheet of insulating material out of their normal planes adjacent each of said slots, and mounting a rotary brush assemblage for continuous engagement with the collector ring portion and for sequential engagement with the segment portions formed by perforating the slots in the outer annular portions the brush in the assemblage which engages the segment portions being narrower in its projected direction of rotation than the length of any segment portion and the deformation of the metallic sheet being in a direction such that the brush which engages the segment portions, in being rotated, will drop from a preceding segment portion to a succeeding segment portion.

3,200,211
GEOMETRIC SUBSTITUTION BOXES

Robert T. Corry, P.O. Box 907, New Canaan, Conn.

Filed Apr. 23, 1963, Ser. No. 274,982
3 Claims. (Cl. 200—11)



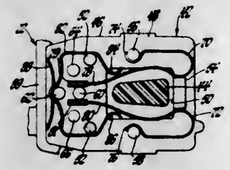
1. A selector switch arrangment for substiution boxes for providing a predetermined plurality of electrical function values successively related in a geometric series A, Ar, Ar^2, . . . Ar^n, where n is a positive integer, and in which the function elements comprise the values of alternate terms in the series, as for example, Ar, Ar^3, Ar^5 . . . , at a pair of output terminals of said switch, comprising a multiposition control switch capable of indexing to a plurality of radially arranged index positions, said switch having a first and second sliding contact in fixed relationship to each other, a plurality of stationary contacts positioned to be engaged by said sliding contacts as said switch is indexed, the number of said plurality of stationary contacts being less than side predetermined plurality, an electrical function element coupled to each of said stationary contacts, said first contact coupling said electrical function elements to said output terminals in primary index positions, said first and second sliding contacts coupling at least two function elements to said output terminals in intermediate index positions, the primary function values being selected from said geometric series, the intermediate function values being the remaining function values and made up from said coupled function elements.

3,200,212
DIRECTIONAL SIGNAL SWITCH WITH FLEXIBLE SWITCH CONTACT STRUCTURE

Edward L. Barcus and David P. Clayton, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 10, 1962, Ser. No. 208,695
11 Claims. (Cl. 200—61.34)

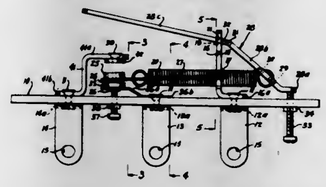
1. A switch comprising a base of insulating material, a plurality of stationary contact members mounted on the base, a first flexible contact mounted on the base in conductive engagement with a first stationary contact member, a second flexible contact mounted on the base, a fixed contact member closely spaced from the second flexible contact, and actuator means movable into engagement with the second flexible contact for moving the second flexible contact into conductive engagement with the first flexible contact and the fixed contact member.



3,200,213
ADJUSTABLE LEVER-ACTUATED OPEN-BLADE SNAP-ACTION ELECTRICAL SWITCH

Frank W. Murphy, Jr., 3131 S. Sheridan, Tulsa, Okla.

Filed July 19, 1963, Ser. No. 296,196
4 Claims. (Cl. 200—67)

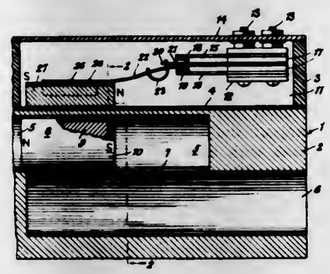


1. A snap switch comprised by a planar base, a rest contact mounted on said base, a bracket mounted on said base, a movable contact carrying member pivotally mounted at its rear end on said bracket and normally positioned at an acute angle with respect to said base, a movable contact on said movable contact carrying member positioned over the rest contact, a lever, plural pivot means carried by said lever selectively engageable with said bracket for varying the effective length of said lever relative to its pivot point and a coiled tension spring having its axis inclined at a lesser acute angle with respect to the base than the movable contact carrying member, one end connected to said member and the other end connected to said lever.

3,200,214
FLOW CONTROL DEVICES

Fred B. Aubert, 130 NW. 11th St., Boca Raton, Fla.

Filed Feb. 19, 1962, Ser. No. 174,008
8 Claims. (Cl. 200—81.9)

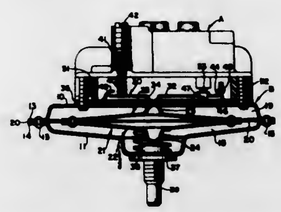


1. A fluid control device comprising, a housing, a fluid inlet passage therein, a fluid outlet passage in communication therewith, a movable valve normally interrupting communication between the passages, said valve being magnetically attractive, a magnet disposed in the housing and arranged alongside of the valve and exerting a magnetic influence on the valve to normally maintain the valve in closing position, the valve being capable of displacement in opposition to the magnetic attraction, to open position by predetermined excess of fluid pressure through the inlet passage and returnable to closed position by said magnetic influence after the excess of fluid pressure ceases, and switching means controlled by movements of the valve.

3,200,215
PRESSURE DIFFERENTIAL SWITCH WITH RANGE BALANCE ADJUSTMENT

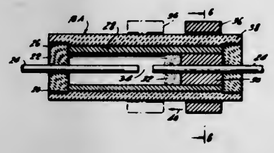
Arthur L. Good, Elkhart, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Apr. 11, 1962, Ser. No. 186,753
2 Claims. (Cl. 200—83)



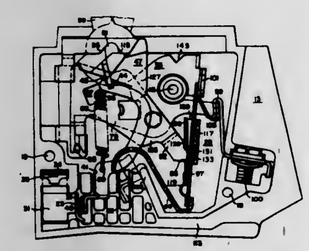
1. A pressure differential control snap switch with a casing, an elongated actuating arm, having upper and lower sides, a thrust button portion on the arm extending below said arm, an operating pin in said switch engaged with said actuating arm during depression and retraction of said pin during operation of said switch, said control including a housing having top and bottom walls, said housing being secured to said casing of said switch, said snap switch being confined in said switch casing, said actuating arm being in constant engagement with said pin, a mounting plate for said arm with a central opening, said plate having an upstanding lug, said arm being pivoted to said lug, a pair of pressure chambers in said housing, one chamber being below the top wall and responsive to static pressure and the other chamber being above the bottom wall and being responsive to variable pressure, a plate diaphragm in said housing, a flexible membrane seal connected to said plate diaphragm and secured between said top and bottom walls of said housing, said flexible membrane seal and said plate diaphragm forming a dividing wall between said chambers, an opening in the top wall of said housing next to said pressure chamber in registry with the said central opening in the mounting plate, a second flexible membrane seal secured between said mounting plate over the exterior of the top wall of said housing, whereby said differential control chambers are isolated from ambient atmospheric pressure around the switch operating pin, said thrust button portion extending below said arm being in contact with the said second membrane seal, a second thrust button carried by said plate diaphragm in opposed alignment with said arm thrust button in contact with each opposite side of said membrane seal, a range spring means engaged with said switch actuating arm, and an oppositely acting spring with respect to said range spring engaged with said plate diaphragm in said variable pressure chamber for maintaining each of said respective opposed thrust buttons with opposed movement-force in constant contact with said second membrane seal.

3,200,216
MAGNETIC PARTICLE SWITCH PROVIDED WITH QUICK DISCONNECT
Aaron D. Deutschman, 90—59 56th Ave., Elmhurst 73, N.Y.
Filed Mar. 1, 1962, Ser. No. 176,707
1 Claim. (Cl. 200—87)



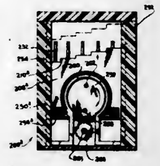
A relay comprising a hollow bobbin closed at both ends thereof, a field coil provided on said bobbin, cooperating leads extending into the hollow interior of said bobbin and defining a gap therebetween, magnetically permeable non-spherical particles provided within said bobbin to bridge said gap in response to the energization of said field coil, and means to positively remove said particles from said gap upon de-energization of said field coil, said leads having only an electric circuit relation with said particles, said particle removing means comprising a single magnetic means provided on said relay and associated with one of said leads, said magnetic means being a single permanent magnet provided within said hollow bobbin interior and providing a magnetic field of lesser intensity than that provided by said field coil, said single magnet straddling said one lead.

3,200,217
CIRCUIT BREAKER WITH THERMAL AND MAGNETIC TRIP MEANS
Earl Bullis, Jr., Fairfield, Conn., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 27, 1962, Ser. No. 182,765
10 Claims. (Cl. 200—88)



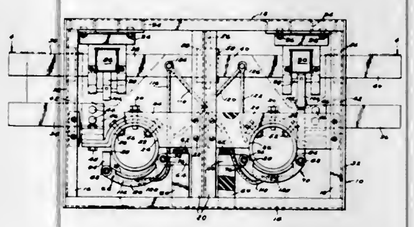
4. A circuit breaker comprising, in combination, a stationary contact and a movable contact cooperating with said stationary contact to open and close a circuit, a latched trip member having a first stop means and a second stop means thereon and being releasable to effect automatic opening of said contacts, a bimetal member, a magnetic core member fixedly supported on said bimetal member, said first stop means positively positioning said bimetal member relative to said trip member, an armature, spring means connecting said armature to said bimetal member, said spring means biasing said armature away from said magnetic core member and into engagement with said second stop means whereby said second stop means positively positions said armature relative to said magnetic core member, said bimetal member bending and moving said armature and spring means in response to an overload current below a predetermined value to effect release of said releasable means, and upon the occurrence of an overload current above said predetermined value, said armature being attracted toward said magnetic core member to effect release of said releasable means.

3,200,218
SAFETY TRAFFIC SIGNAL LIGHTS
Tobias Wagner, 2025 Valentine Ave., Bronx 57, N.Y.
Filed Aug. 16, 1962, Ser. No. 217,356
5 Claims. (Cl. 200—92)



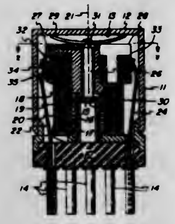
1. In a traffic signal assembly having differently colored lights, switching means for successively turning the lights on and off, comprising a pair of contact plates each having a series of steps at one end, means for reciprocating the plates cyclically, two sets of contact elements, said sets being disposed to contact respective contact plates alternately, the contact elements in each set contacting a contact plate for a different length of time as the plate is reciprocated by the reciprocating means.

3,200,219
ELECTRO-MECHANICAL MEANS FOR REVERSING DIRECT CURRENT
John A. Pollak, Detroit, Mich., assignor to Allied Research Products, Incorporated, Baltimore, Md., a corporation of Maryland
Filed Jan. 21, 1963, Ser. No. 252,959
17 Claims. (Cl. 200—98)



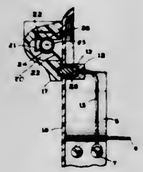
7. An electro-mechanical current reversing unit comprising a support, a pair of electrically conducting tubular members on said support, a first pair of contact shoes pivotally mounted on said support and adapted to pivot into and out of contact one with each of said tubular members, a second pair of contact shoes pivotally mounted on said support and adapted to pivot into and out of engagement one with each of said tubular members, a pair of input terminals connectd one with each of said tubular members, said input terminals being adapted to be connected to a source of direct current, a pair of output terminals, the contact members in one of said pairs being connected to one output terminal and the contact members in the other pair being connected to the other output terminal whereby the alternate closing of said two pairs of contacts reverses the polarity at said output terminals.

3,200,220
COMBINATION ELECTRICAL SOCKET, ELECTROMAGNETIC ACTUATOR AND ON-OFF SWITCH
Leon D. Carr, Bloomfield, Conn., and Willard E. Thompson, Woodbury, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Mar. 28, 1963, Ser. No. 268,661
3 Claims. (Cl. 200—111)



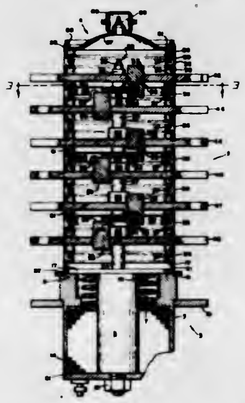
1. A combination electrical socket, electromagnetic actuator and on-off switch including a socket having electrical terminals; an actuator having a magnetizable core mounted on the socket with an opening concentric to an axis, a winding on the core for providing a flux field along the axis electrically connected to two of the socket terminals and an armature fitting the core opening movable between spaced positions along the axis in response to the flux field; an on-off switch having a non-conductive sleeve fixedly mounted on the armature with a side wall arranged in concentric relation to the axis and in encircling relation to the winding, a conductive terminal on a portion of the outer peripheral surface of the side wall of the sleeve, and an elongated brush with spaced ends, one end of which is fixedly mounted on the socket and electrically connected to another socket terminal, and the other end of which contacts the conductive terminal of the sleeve at one of the positions of the armature and contacts a portion of the non-conductive peripheral surface of the side wall of the sleeve at the other of the armature positions; and cam and follower means with respective parts on the brush and sleeve for lifting the end of the brush from the conductive terminal in a direction radial to the axis during movement of the armature.

3,200,221
FUSE DEVICE FOR COVER PLATES OF PLUG-IN ELECTRICAL RECEPTACLES
Albert D. Traher, 6727 SW. 19th St., West Hollywood, Fla.
Filed Dec. 22, 1961, Ser. No. 161,691
3 Claims. (Cl. 200—115.5)



1. An electrical fuse element for application to a face plate for electrical outlet devices, the face plate being formed of a non-conducting material such as plastic, the face plate adjacent one end being provided with a pair of spaced apart openings, plugs disposed within the openings to be flush with a forward side of the plate, each of the plugs having an inner metallic sleeve that is disposed in the plugs inwardly of the outer face of the face plate, the sleeve of one plug having connection with an electrical conductor that is coupled to the hot wire of a conventional electrical circuit, the sleeve of the other plug being connected to a conductor that has connection with a binding post upon one side of the plug device, the opposite side of the plug device being connected to a conventional ground wire of the electrical circuit, a fuse holder of non-conducting material that is formed hollow and open upon its rear side, a pair of yieldable metallic clips fixedly connected in the fuse holder in spaced apart relation to receive a cartridge fuse, each of the clips having an extended leg portion and with each of the leg portions being provided with prongs that extend beyond the open side of the fuse holder, the prongs being spaced apart a distance corresponding to the spacing of the sockets of the face plate and whereby the prongs are fittingly and frictionally engaged into the sleeves of the sockets, the fuse holder when fully engaged with respect to the sockets having a flush contacting engagement with the face plate and a threaded screw adapted to pass through an aperture formed in the fuse holder for threaded opening formed in the face plate whereby to fixedly hold the fuse holder against the face plate when the prongs are fully engaged into the sockets.

3,200,222
ELECTROMAGNETIC HIGH - CURRENT - CARRYING-CAPACITY VACUUM RELAY
Jack S. Hawkins, San Jose, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,343
11 Claims. (Cl. 200—144)



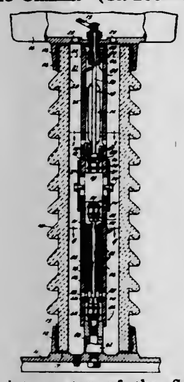
1. A relay comprising an envelope including a tubular intermediate envelope portion arranged about a longitudinal axis and end walls closing opposite ends of the tubular intermediate envelope portion to define therewith an hermetically sealed main chamber, a plurality of axially spaced electrically conductive annular contact flanges arranged on the intermediate envelope portion to divide the main chamber into a plurality of auxiliary contact chambers, a contact assembly including fixed and mobile contact members insulatingly supported on the envelope and enclosed within each auxiliary contact chamber, each mobile contact member movable to make or break an electric circuit through adjacent contact flanges, and actuating means including a stem axially disposed within said main chamber and operatively connected to said mobile contacts and movable to make or break a circuit through adjacent contact flanges.

3,200,223

CIRCUIT BREAKER OF FLUID IMMERSED TYPE HAVING PAIR OF SERIES CONNECTED INTERRUPTERS

Kazuo Henry Date, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Nov. 15, 1962, Ser. No. 237,985
13 Claims. (Cl. 200—150)



1. A circuit interrupter of the fluid immersed type comprising an insulating housing containing a quantity of dielectric fluid, first and second stationary contact means disposed within said housing in spaced apart relation, a contact rod having first and second conductive portions and an intermediate nonconductive portion and being movable longitudinally into and out of a closed position relative to said first and second stationary contact means, said first and second conductive portions being in overlapping engagement with said first and second stationary contact means, respectively, when said contact rod means is in its closed position, said first and second conductive portions and said first and second stationary contact means being operative to provide a series current path when said contact rod means is in its closed position, the degree of overlapping engagement between said second conductive portion and said second stationary contact means being substantially greater than between said first conductive portion and said first stationary contact means so that said second stationary contact means will remain in engagement with said second conductive portion until said first conductive portion has separated a substantial distance from said first stationary contact means.

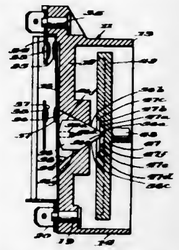
3,200,224

QUICK-ACTING PERIODIC SWITCH

Joseph W. Lux, Waterbury, Conn., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Aug. 31, 1962, Ser. No. 220,648
10 Claims. (Cl. 200—153)

1. A quick-acting switch, comprising
a support containing a plate with a through opening;
a cam on one side of said support adjacent said opening;
a cam follower arranged in said opening for pivotal movement relative to said plate;
means defining a pivot axis for said follower, said follower and said pivot axis being shiftable in a direction generally normal to the support;
a resilient carrier on the other side of said support biasing said follower into engagement with said cam, said cam being operable to place said follower alternately in a first position relative to said support in which the follower is oriented with its longitudinal axis normal to the support, and in a second position displaced from said first position in the direction of said carrier and with an orientation in which the follower axis is inclined at an acute angle to a plane normal to the support;



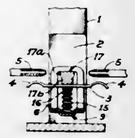
a movable contact secured to said carrier;
and a stationary contact connected with said support for opposite states of engagement with said movable contact when said follower is in said first and second positions, respectively.

3,200,225

ARTICULATED RECIPROCATING CONTACT STRUCTURE

Winfred R. Lemke, Mequon, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed June 3, 1963, Ser. No. 285,456
8 Claims. (Cl. 200—166)



1. A bridging contact comprising a support having passage extending therethrough which is open at both ends, a plurality of separate contact bridge elements extending through the passage in side by side relation in a row which extends transversely of the passage, said elements being movable in the passage bodily in opposite directions along a predetermined path which is transverse to the length of the passage and to said row, fulcrum means carried by the support in said passage, said elements each being engaged between its ends with the fulcrum means for rocking in opposite directions relative to each other and to the support independently of each other about the fulcrum means, each in a rocking path parallel to a plane which extends endwise of the passage and parallel to said predetermined path, each element having contact portions at its opposite ends, respectively, all of said contact portions facing in one direction endwise of said predetermined path, a spring in the passage common to all of the elements and operatively interposed between the support and the elements and resiliently urging all of the elements in said one direction along said predetermined path and into engagement with the fulcrum means and yieldably holding them against the fulcrum means, in relatively rocked positions in their rocking paths wherein the elements are parallel to each other.

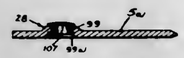
3,200,226

ELECTRICAL CONTACT MEMBER HAVING A RAISED CUP SHAPED WORK-HARDENED AREA

John R. Cooley, Morrison, Ill., assignor to General Electric Company, a corporation of New York

Filed Jan. 2, 1963, Ser. No. 249,043
4 Claims. (Cl. 200—166)

4. An electrical contact member comprising a supporting strip having a cup shaped work-hardened area, said cup shaped area having a raised platform extending above one face of said supporting strip and a recessed bottom extending upwardly from the opposite face of said supporting strip, an aperture formed through said raised platform to said recessed bottom, and a contact button in intimate mechanical and electrical engagement with



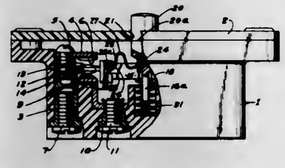
said strip, said contact button including a head engaging said platform and closing said aperture and a shank section extending through said aperture, said shank section having its outer surface in intimate engagement with the wall of said aperture and a flanged outer end in secure engagement with the side of said strip opposite said head in an area surrounding said aperture.

3,200,227

CARRIER FRAME FOR MOVABLE CONTACT AND COMBINATION THEREOF WITH SNAP ACTING SWITCH

Walter C. Karch, Milwaukee, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Original application Sept. 29, 1960, Ser. No. 59,363, now Patent No. 3,017,471, dated Jan. 16, 1962. Divided and this application Sept. 22, 1961, Ser. No. 139,971
6 Claims. (Cl. 200—168)



2. A carrier for a movable contact of a switch and which is to be operated with a snap action by a leaf spring, said carrier comprising a frame having elongated end frame members each with means for connecting the spring thereto, said means on each member comprising at least one pair of shoulders adapted for engaging one face of a leaf spring at its outer end to prevent its displacement of said end of the spring flatwise relative to the frame toward one face of the frame and at least one cooperating shoulder adapted for engaging the other face of the leaf spring at said outer end to prevent displacement of said outer end of the spring flatwise toward the other face of the frame, the shoulders of said pair terminating, endwise of said associated frame member, inwardly and transversely of the frame in spaced relation to the longitudinal mid-portion of the associated frame member, whereby a straight passage between the shoulders of said pair is provided, and said one cooperating shoulder terminating endwise of the associated frame member so that its ends are nearer to the longitudinal mid-portion of the associated frame member than are the lateral limits of the passage.

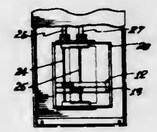
3,200,228

DUAL SWITCH UNIT

Ross E. Locher, South Pasadena, Calif., assignor to Zimco Electrical Products, Los Angeles, Calif., a corporation of California

Original application Sept. 22, 1959, Ser. No. 841,497, now Patent No. 3,114,023, dated Dec. 10, 1963. Divided and this application Jan. 28, 1963, Ser. No. 254,187
1 Claim. (Cl. 200—168)

A switch unit for mounting in a single space of a distribution panel having two hot lines to provide independent outputs from each line, said switch unit including two electrical switches, each mounted in an insulating case, with said cases joined in side-by-side relation to form said unit, each of said switches having:
a fixed contact;
a moving contact for engagement with said fixed contact to close the circuit through the switch;
means for moving said moving contact into and out of engagement with said fixed contact;
a pair of bus clip housings symmetrically positioned in the case with respect to said fixed contact; and



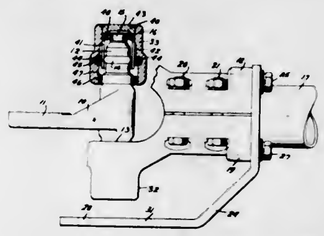
a fixed contact conductor carrying said fixed contact adjacent one end and having a U-shaped bus clip adjacent the other end positionable in either of said housings for engaging a bus of said distribution panel when said switch unit is mounted in said panel, with the bus clip of one switch of said unit in one housing and the bus clip of the other switch of said unit in the other housing providing a predetermined and fixed phasing for the two switch outputs relative to the two hot lines.

3,200,229

SEALED HINGE FOR ELECTRICAL SWITCH

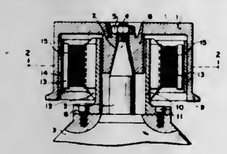
Joseph A. Turgeon, Toronto, Ontario, Canada, assignor, by mesne assignments, to I-T-E Circuit Breaker (Canada) Ltd., Port Credit, Ontario, Canada

Filed Apr. 30, 1962, Ser. No. 191,194
10 Claims. (Cl. 200—170)



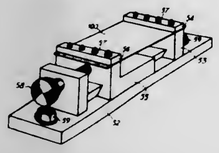
1. A hinge for pivotally connecting an elongated contact blade to a stationary conductive support structure; said hinge including a first and second clamp terminating in a first and second open housing respectively; said stationary conductive support structure including a first and second extending portion; said first and second extending portions supported within said first and second housings respectively; means electrically connecting said first and second housings to said first and second extending portions; said means including first and second contact support structures for maintaining high pressure circumferential engagement with said first and second housing extensions, respectively; a first and second bearing; said first and second bearings mechanically connected between said first and second extending portions and said first and second housings at respective locations axially displaced from the location of said circumferential contact engagement.

3,200,230
APPARATUS FOR THE HEATING OF TRAVELLING THREAD OR TAPE-SHAPED PRODUCTS ON A TRANSPORT ROLLER
Andre B. de la Bretonière, Oosterbeek, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 249,852
Claims priority, application Netherlands, Jan. 12, 1962, 273,488
8 Claims. (Cl. 219—10.49)



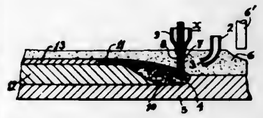
1. Improved heating apparatus for a driven transport roller having a material-supporting casing, comprising a plurality of electromagnets positioned within and spaced from said casing, said electromagnets being positioned so that at least a portion of the magnetic flux from the electromagnets passes within a conductive part of said casing for heating said roller, means connecting said electromagnets electrically, means for supplying polyphase current successively to said electromagnets to produce a rotating magnetic flux, and regulator means to vary the frequency of said current to control the amount of heat supplied to said roller independently of the rotary speed thereof.

3,200,231
SPARK-EROSION MACHINE TOOL FOR DRILLING VERY SMALL HOLES THROUGH THIN METAL SHEETS
Jean N. Bejat, 4 Rue Antoine Petit, Fontenay-aux-Roses, France
Filed Dec. 13, 1961, Ser. No. 159,107
Claims priority, application France, Dec. 15, 1960, 847,029
3 Claims. (Cl. 219—69)



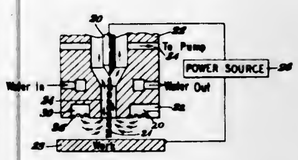
1. An electro-erosion machine for producing minute apertures comprising a reservoir of dielectric fluid; an anodic workpiece immersed in said dielectric fluid; a cathodic tool adjacent said workpiece; said cathodic tool including a plurality of planar sheets in spaced juxtaposition to one another; each of said sheets including a continuous upper portion and a discontinuous lower portion defined by a plurality of discrete depending teeth integral with said upper portion; spacer elements interposed in the spaces between said sheets; and mounting means clamping said sheets and spacer elements in assembeld relationship with said spacer elements extending only between the upper portions of said sheets; said sheets being immersed in said dielectric fluid with said depending teeth being spaced opposite said workpiece whereby operation of said machine creates electrical discharge between said workpiece and said sheets to burn rows of minute apertures in said workpiece; the longitudinal distance between adjacent apertures in a row being determined by the spacing between adjacent teeth on the sheet opposite that row and the transverse distance between adjacent rows of apertures being determined by the thickness of the spacer elements between corresponding adjacent sheets; and the length and width of each individual aperture being determined respectively by the length of the associated individual tooth and the thickness of the sheet from which that tooth depends.

3,200,232
PROCESS AND APPARATUS FOR ELECTRIC FUSION WELDING
Francois Georges Danhier, Uccle-Brussels, Belgium, assignor to La Soudure Electrique Autogene, S.A., Brussels, Belgium, a corporation of Belgium
Filed June 11, 1963, Ser. No. 287,111
55 Claims. (Cl. 219—73)



1. A process of welding metals, which comprises maintaining an electric current between at least one metallic electrode and the work to be welded to cause the creation of a weld molten pool, covering said pool with a non-basic liquid slag by melting non-basic slag forming materials over the pool, and feeding to the pool at least one tubular metallic electrode which contains materials which form by fusion a basic slag, said tubular metallic electrode supplying basic slag forming materials in a proportion which is so small that the resultant slag produced by mixing the basic slag forming materials with the non-basic slag remains non-basic.

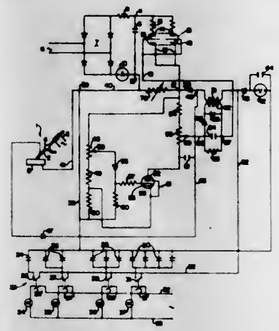
3,200,233
METHOD FOR GENERATING AN ARC
John E. Anderson, Indianapolis, Ind., assignor to Union Carbide Corporation, a corporation of New York
Filed Feb. 4, 1963, Ser. No. 256,082
6 Claims. (Cl. 219—74)



1. Process for treating a workpiece which comprises directing an arc from at least one electrode to said work; passing gas generally in a direction from the work to the electrode to affect restriction of the arc at the work.

3,200,234
ELECTRIC PERCUSSION-WELDING OF SURFACE LAYERS
Thomas J. Crawford, Gaylord, Mich., assignor to Union Carbide Corporation, a corporation of New York
Filed Mar. 29, 1962, Ser. No. 183,665
4 Claims. (Cl. 219—76)

3. In electrical spark discharge apparatus for percussion welding and the like, including a pair of electrodes one of which is formed by the workpiece, a capacitance adapted to receive a working charge and to discharge the same through said electrodes for creation of the spark therebetween, a charging circuit for delivering said work charge to said capacitance and a discharge circuit connecting said capacitance to said electrodes and including inductance and a nonlinear resistance device, said device exhibiting low resistance at the voltage level during the early portion of the discharge cycle, such that the circuit is oscillatory in said early portion, and considerably increased resistance at the lower voltages in the last portion of the cycle sufficient to render the discharge circuit non-oscillatory before completion of the cycle, thereby to



dampen the circuit in the last portion of the cycle and preclude a pulse of reverse polarity between the electrodes following the main discharge, means for blocking recharging of the capacitance for a predetermined interval following completion of said main discharge cycle, and means for limiting the charge received by the capacitance to a predetemined adjustable value.

3,200,235
HEAVY DUTY SPOT WELDING APPARATUS AND METHOD
William A. Faust, Delavan, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed June 19, 1963, Ser. No. 289,055
5 Claims. (Cl. 219—127)



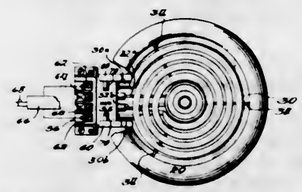
1. In heavy duty spot welding apparatus adapted to establish a burn-through spot weld in a pair of overlapped heavy gauge plates, comprising,
(a) means to support an electrode in alignment with the position to be spot welded for a selected time period,
(b) means establishing a shielding gas passageway about said electrode for directing a shielding gas concentrically and axially about the electrode, and
(c) a nozzle encircling the arc tip portion of the electrode and being spaced from the work a predetermined distance to allow relatively unimpeded gas flow from the arc, said gas flow being selected to prevent damaging concentration of heat within the spot weld region.

3,200,236
RADIANT HEATER CONSTRUCTION
Robert C. Geyer, 603 Summerdale, Glen Ellyn, Ill.
Filed Jan. 29, 1964, Ser. No. 340,959
5 Claims. (Cl. 219—213)



1. A radiant heater construction included in a ceiling comprising: a pair of extruded elongated support strips spaced from each other and fixed to the ceiling, each of said support strips having an elongated curved electrically insulating cable holding portion having a generally U-shaped cross-section, each of said portions having a plurality of slots extending through one arm of the respective V-shaped section and a portion of the respective bottom of the U, and a substantially flat base being formed integral with the other arm of the U and extending in a direction opposite to the other support strip; an electrical heating cable extending between the support strips in a serpentine fashion with a loop at each cable holding portion, and plaster covering the cable and the support strips to hold the cable in position and to form a smooth surface for the ceiling.

3,200,237
HEATING UNIT
Leroy C. Hanson, Elmhurst, Ill., assignor to Ferro Corporation, a corporation of Ohio
Filed Feb. 6, 1963, Ser. No. 256,661
3 Claims. (Cl. 219—451)



1. In a stove: two electrical heating units having similar terminal arrangements and each constructed for use with a different voltage, each unit having a plug-in receptacle and a supporting bracket therefor for receiving said terminals, a terminal block carried by the terminals of one of said units, said terminal block being provided with a groove and a downwardly turned lip on the supporting bracket of the plug-in receptacle for cooperation with said groove, said lip blocking or permitting passage of the terminal block depending upon the position of the groove in said terminal block.

3,200,238
RESISTOR CIRCUIT
Joel Korn, Backnang, Wurttemberg, Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed May 10, 1962, Ser. No. 193,792
Claims priority, application Germany, May 10, 1961, T 20,142
8 Claims. (Cl. 219—504)

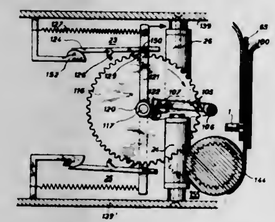
1. In a circuit arrangement for reducing the time constant of indirectly heated temperature-responsive resistors,

the heating current of which is regulated in step-wise manner by means of an electronic digital setting device, for use in connection with the level control in multi-channel carrier-frequency communication systems, the improvement comprising two time-controlled switches, said setting device including a control circuit for actuating said switches simultaneously with the setting device, in such



a manner, that upon a step-wise increase in the heating current, one switch causes a substantial additional increase in the heating current for a short time and that, upon a step-wise reduction in the heating current, the other switch causes a substantial additional reduction in the heating current for a short time.

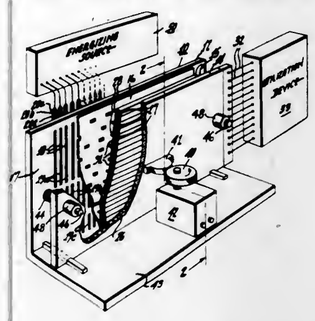
3,200,239
MANUAL AND RECORD OPERATED ACCOUNTING MACHINE
Georges Maxime Pierre Vieillard, Paris, France, assignor to Machines Automatiques Modernes (Societe a Responsabilite Limitee), Paris, France
Filed May 11, 1960, Ser. No. 28,365
Claims priority, application France, Sept. 16, 1954, 672,290, Patent 1,114,901
5 Claims. (Cl. 235—61.9)



1. In an accounting machine, the combination of a sheet advancing path, means for advancing a sheet in either one of two opposite directions along said path, means located along said path for either reading or writing magnetic recordings on a sheet advanced along said path, means for controlling said advancing means for advancing a sheet in a predetermined one of said directions, and means associated with said controlling means for controlling said reading and writing means for writing while said controlling means controls said advancing means for advancing a sheet in said predetermined direction.

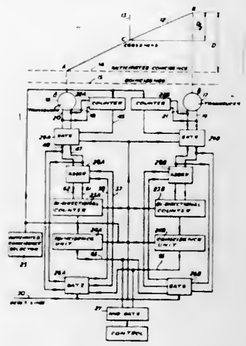
3,200,240
PERFORATED RECORD MEMBER SENSING APPARATUS
John P. Hammel, San Jose, Calif., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 7, 1960, Ser. No. 74,311
1 Claim. (Cl. 235—61.11)

Apparatus for sensing perforations in a record member having an array of rows and columns of perforations comprising a pair of parallel plates, one of said plates having columns of electrically conductive strips affixed to one surface thereof, the other of said plates having rows of resilient, electrical conductors affixed to one of its surfaces in predetermined relation to said strips, one surface of each of said resilient conductors being formed with a plurality of protrusions, each said protrusion on each said conductor being aligned with a different one of said columns of conductive strips, each of said protrusions being rod-like and extending in a direction perpendicular to said one plate, each of said protrusions also having dimensions perpendicular to its length less than the corresponding dimensions of said perforations, guide means for aligning a perforated record member between said plates, means for moving said conductors in a rectilinear



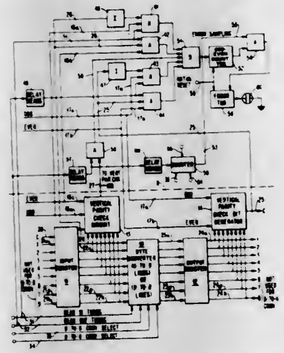
manner towards said one plate to force said protrusions into contact with said strips through related ones of the perforations in said record member, and means connected to said strips and said resilient conductors to sense said perforations when a voltage is applied across said resilient conductors and strips.

3,200,241
CONTROLLING OR DETECTING APPARATUS
James Arthur Harrison, Brimington Common, Chesterfield, England, assignor to Davy and United Engineering Company, Sheffield, England
Filed June 4, 1962, Ser. No. 199,894
Claims priority, application Great Britain, June 2, 1961, 19,963/61
8 Claims. (Cl. 235—92)



1. Apparatus for controlling or detecting the position of a movable member which is adapted to move along a prescribed path but which is liable to tilt comprising separate detectors capable of emitting signals respectively when points on the two sides of the member reach a given position and including means for applying such a signal when emitted by each detector to the other detector to modify the operation of that other detector so that if the member is tilted the first detector to emit the signal causes the other detector to emit a signal not at the given position but at a position between the given position and the position of the other detector when the first detector emits the signal.

3,200,242
BYTE-CONVERTER ERROR-CHECK CIRCUIT
John K. Crawford and Chester M. Pietras, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 31, 1961, Ser. No. 99,927
12 Claims. (Cl. 235—153)



10. A check circuit for a byte converter receiving input bytes with a first plurality of bits, and providing output bytes with a second plurality of bits, said check circuit for a byte converter comprising: a vertical-redundancy check circuit operable with even or odd parity input check bits receiving said input bytes, and a vertical-redundancy check bit generator receiving said output bytes and providing an output check bit of even or odd parity for each output byte, means for selecting even or odd parity operation for said check circuit, means for selecting even or odd parity operation for said generator, first, second, third, snd fourth AND gates, a summation trigger circuit, means connecting an input of said summation trigger circuit to outputs of said first, second, third and fourth AND gates, first inverter means providing said first AND gate with inverted input check bits, said input check bits being applied non-inverted to an input of said second AND gate, second inverter means providing said third AND gate with inverted generator check bits, said generator check bits being applied non-inverted to an input of said fourth AND gate, means for sampling an output of said summation trigger circuit between cycles of operation of said byte converter to determine an error in said byte converter, and means for enabling two of said AND gates in response to said parity selecting means.

3,200,243
CENTERLINE GUIDE LIGHT (AIRCRAFT CARRIER)
Thomas J. McDevitt, Glenolden, and William J. Biebel, Media, Pa.
Filed Mar. 13, 1963, Ser. No. 264,990
1 Claim. (Cl. 240—1.2)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A lighting unit for an aircraft landing surface said lighting unit comprising:

(a) a frustro-conical housing secured at its base to the aircraft landing surface, said housing having a first aperture that extends through the body of the housing along an axis parallel to its base, said housing also having a second aperture that extends perpendicularly from the medial point of the first aperture through the lateral surface of the housing along an axis parallel to the base of the housing;

(b) a cartridge removably secured in the first aperture in the housing, said cartidge having a transverse cut-out portion which is aligned with the second aperture when the cartridge occupies its secured position in the housing;

(c) a U-shaped lamp holding device including a base and a pair of upright legs of an electrically insulating material positioned in the cut out portion of the cartridge;

(d) an electrical lamp having a pair of electrical terminals respectively embedded in opposite legs of the lamp holding device;

(e) a transparent window which encloses the electrical lamp within the lamp holding device;



(f) a pair of electrical contacts positioned in the base of the lamp holding device such that a portion of each contact protrudes therefrom;

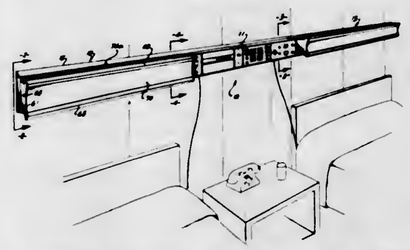
(g) means electrically connecting the terminals of the electrical lamp to the electrical contacts in the lamp holding device;

(h) an electrical insulator plug disposed in the base of the housing opposite each electrical contact in the lamp holding device when the cartridge occupies its secured position in the housing;

(i) an electrical contact mounted in each plug so as to engage juxtaposed contacts in the lamp holding device when the cartridge occupies its secured position in the housing;

(j) and an electrical power supply cable which extends upwardly through the landing surface and is connected to the contacts in the housing.

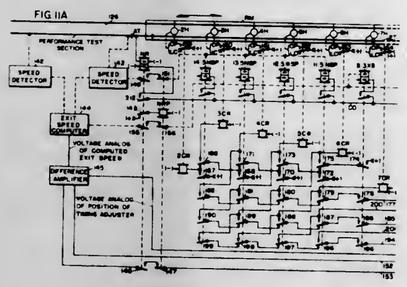
3,200,244
HOSPITAL LUMINAIRE
Ronald K. Meyer, 25 Janes St., Mill Valley, Calif.
Filed Feb. 19, 1963, Ser. No. 259,641
8 Claims. (Cl. 240—73)



1. A hospital luminaire comprising: a generally U-shaped base panel including upper and lower rail sections interconnected by a wall plate; a first pair of vertically aligned electrical plugs mounted to said wall plate; a plug-in fluorescent light mounting frame having upper and lower sides extending rearwardly from a front plate, said sides being received within the upper and lower rail sections of the base panel; a second pair of vertically aligned electrical plugs mounted to the rear side of said front plate and respectively complemental

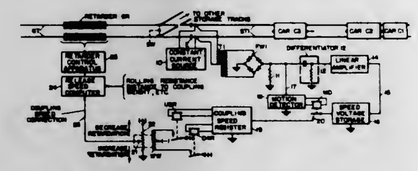
to said first pair of plugs; two pairs of complementary fluorescent tube holders mounted to the front side of said front plate, respective holders of one pair disposed vertically above the other pair of holders; electrical wiring connections between each pair of tube holders and one of said second pair of plugs; a light cover having edges complementary to edges of said base panel for enclosing said plug-in light mounting frame; and a light partition disposed between the two pairs of fluorescent tube holders, said partition extending from the front side of the front plate to the rear side of said light cover.

3,200,245
AUTOMATIC CAR RETARDER CONTROL SYSTEM
Ned C. L. Brown, Scottsville, N.Y., assignor to General Signal Corporation, a corporation of New York
Filed Sept. 17, 1958, Ser. No. 761,533
10 Claims. (Cl. 246—182)



1. A car retarder control system comprising a retarder in a stretch of track having a plurality of shoe beams disposed end to end along both sides of a track rail, an independent operating unit at each point where ends of said shoe beams are adjoining selectively operable to closed and open positions for actuating the associated shoe beams to braking and nonbraking positions respectively, computing means for computing the amount of retardation required for each car in accordance with the performance of the car in approaching the retarder, adjustable timing means for each of several of the operating units for governing the duration of closure of the associated operating unit for the passage of each car, and circuit means for adjusting said timing means in accordance with the condition of said computing means.

3,200,246
CAR RETARDER CONTROL SYSTEM
Lyle Brockman, Rochester, N.Y., assignor to General Signal Corporation, a corporation of New York
Filed Jan. 23, 1962, Ser. No. 168,057
12 Claims. (Cl. 246—182)



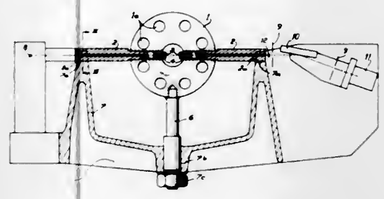
3. In a car retarder control system for a railway classification yard having a car retarder for adjusting the speed at which the cars being classified couple on their assigned storage tracks, the combination of,

(a) registering means for registering the speed of a first car on its assigned storage track,

(b) detecting means for detecting when said first car reached its coupling point, and

(c) means responsive to said registering means and said detecting means for controlling said car retarder in accordance with the speed of said car at said coupling point.

3,200,247
APPARATUS FOR THE X-RAY ABSORPTION ANALYSIS OF SULPHUR GAS
Jean Sahores, Pau, France, assignor to Societe Nationale des Petroles d'Aquitaine, Paris, France, a French company
Filed Sept. 30, 1963, Ser. No. 312,486
Claims priority, application France, Oct. 5, 1962, 911,366
3 Claims. (Cl. 250—43.5)

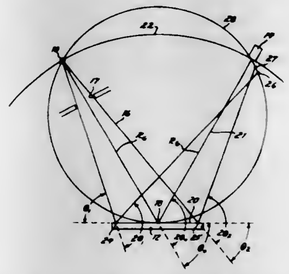


1. An X-ray sulphurimeter for the determination of the sulphur content of crude gas containing liquid phase and issuing at high pressure in the neighborhood of 1000 kg./cm.², and at relatively high temperature in the neighborhood of 150° C., from a well exploitation line, comprising: a collar arranged to be located between two normal flanges of the well exploitation line and having a gas outlet aperture formed therein corresponding in size and configuration to the passage in said well line and to be aligned therewith, a pair of tubular members each having an axial bore extending completely therethrough and passing through said collar in gas-tight fashion and disposed on a common axis perpendicular to the axis of said aperture and on either side thereof, each of said tubular members at the end adjacent the gas outlet aperture of the collar being obturated by a beryllium pellet, with said ends of the tubular members overlapping the internal wall of the collar, the other end of each tubular member being formed with a lateral trued positioning bearing surface, and said collar being provided with a U-shaped frame having an X-ray tube mounted on one of the limbs thereof and a collimation assembly, a monochromator crystal and a radiation counter mounted on the other limb thereof, said frame having two machined bearing surfaces arranged to cooperate respectively with the two trued bearing surfaces of the tubular members such that when the collar and frame are arranged in assembled relationship, the X-ray source, the two tubular members and the collimation assembly are disposed on a common axis.

3,200,248
APPARATUS FOR USE AS A GONIOMETER AND DIFFRACTOMETER
Robert E. Ogilvie, Lexington, Mass., assignor to Advanced Metals Research Corporation, a corporation of Delaware
Filed Aug. 7, 1962, Ser. No. 215,362
26 Claims. (Cl. 250—51.5)

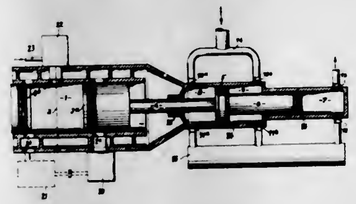
1. A goniometer having a source of divergent rays, a detector, means for mounting a diffracting element in a certain geometrical relation to said source and detector, means to rotate said detector and said diffracting element

mounting means in unison at a predetermined ratio about an axis, and means for continuously bending said diffraction element in accordance with said rotation, said bending means including adjustable means for selectively



changing the bending of said element to be in accordance with different functions of the angle of said rotation, which functions correspond respectively to operation as a diffractometer and a spectrometer, whereby the goniometer is selectively and alternatively operable as a diffractometer or a spectrometer.

3,200,249
MULTI-STAGE FREE-PISTON COMPRESSOR
Hermann Jänicke, 10 Ahornstrasse, Lochham, near Munich, Germany
Filed Jan. 11, 1963, Ser. No. 250,857
Claims priority, application Germany, Jan. 15, 1962, J 21,168
4 Claims. (Cl. 230—56)



1. A two-stage free-piston compressor for compressing gas supplied thereto under an admission pressure which may vary, including:

a reciprocable free-piston assembly comprised of:

an engine cylinder;

left and right-hand engine pistons slidable within said engine cylinder;

means for supplying gaseous fuel for driving the compressor to said engine cylinder;

each of said engine pistons being coupled to:

a first compressor stage comprising a first double-faced piston for compressing gas on both sides thereof;

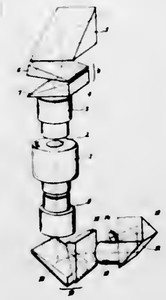
and a second compressor stage comprising a second piston;

means for feeding said gas being supplied thereto under pressure which may vary to said first compressor stage;

means for coupling the output of both sides of said first compressor stage to said second compressor stage;

the piston area of both faces of said first piston each being greater than the piston area of said second piston causing the gas compressed therein to exert a resultant force on said piston areas for effecting compression of said gaseous fuel in the engine cylinder, and simultaneously for effecting the induction stroke of said second compressor stage.

3,200,250
OBSERVATION INSTRUMENT WITH IMAGE CONVERTER TUBE AND PRISM ANAMORPHOSERS
Albert Bouwers, The Hague, Netherlands, assignor to N.V. Optische Industrie de Oude Delft, Delft, Netherlands
Filed Oct. 20, 1960, Ser. No. 63,898
Claims priority, application Netherlands, Oct. 22, 1959, 244,603
7 Claims. (Cl. 250—77)

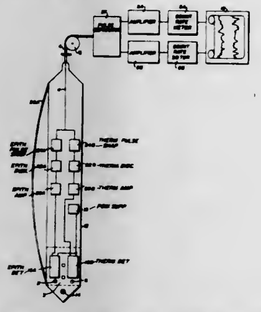


3. An optical observing instrument comprising an image converter having a photocathode and a fluorescent screen, a first optical system having an optical axis for projecting an image of a scene to be observed onto said photocathode, said first optical system including an objective lens and a first prism anamorphoser in stationary relation to said photocathode to compress the image on said photocathode in one fixed meridian plane, and a second optical system having an optical axis for observing the fluorescent image formed by said image converter on said fluorescent screen, said second optical system including a second prism anamorphoser in stationary relation to said fluorescent screen disposed so as to have an anamorphosing effect opposing that of said first prism anamorphoser in the same fixed meridian plane whereby said fluorescent image is decompressed, said first and second prism anamorphosers each exhibiting significant variations in anamorphotic magnification according to the inclination of incident pencils to the respective optical axes, the variations in anamorphotic magnification of said first prism anamorphoser being in a substantial degree compensated by the variations in anamorphotic magnification of said second anamorphoser.

3,200,251
APPARATUS FOR NEUTRON-NEUTRON WELL LOGGING
Arthur H. Youmans, Houston, Tex., assignor to Well Surveys, Inc., a corporation of Delaware
Filed July 7, 1961, Ser. No. 122,538
9 Claims. (Cl. 250—83.1)

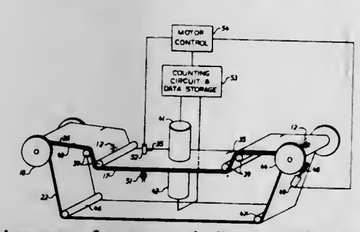
1. Apparatus for investigating subsurface substances surrounding a borehole, said apparatus comprising a source of fast neutrons suspended in said borehole, detecting means responsively producing electrical signals functionally related to incident thermal neutrons and spaced a pre-selected distance in said borehole from said source, means for selectively exposing said detecting means preferentially to neutrons thermalized in said surrounding substances and preferentially to neutrons thermalized in sub-

stances within said borehole, and means for comparatively recording said signals corelatively with an indication of



borehole depth and with an indication of the exposure selected.

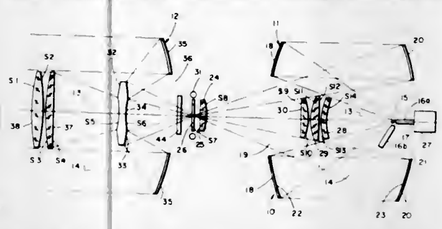
3,200,252
MEASUREMENT OF RADIOACTIVITY ON PAPER CHROMATOGRAMS
Vivian Moses, Berkeley, Calif., and Knud Karl Lonberg-Holm, Bronxville, N.Y., assignors of thirty percent to Eckhoff and Slick
Filed July 9, 1962, Ser. No. 208,478
6 Claims. (Cl. 250—83.3)



1. Apparatus for automatically measuring the radioactivity of a plurality of paper chromatogram segments comprising, in combination, a pair of parallel rotatable spools spaced apart and carrying a thin film strip which has said chromatogram segments mounted thereon at spaced intervals therealong and which is wound on said spools together with a like strip of relatively high strength backing material, a first set of guide rollers disposed between said spools for directing said thin film strip therebetween, a second set of guide rollers spaced apart from the first set thereof for directing said backing strip between said spools along a path spaced apart and parallel to that of said thin film, a pair of adjacent radiation counters disposed one on each side of said thin film strip, drive means operatively coupled to said spools, and control means stopping said spool drive means as each of said chromatogram segments moves between said radiation counters and starting said drive means after said counters have measured the radioactivity of each of said segments for a pre-determined interval.

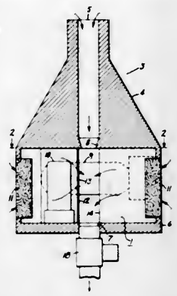
3,200,253
SYSTEM FOR OBTAINING PARALLEL RADIANT ENERGY RAYS OF UNIFORM ILLUMINATION AND UNIFORM ENERGY DISTRIBUTION
George Geier, Teaneck, N.J., assignor to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey
Filed June 18, 1962, Ser. No. 203,021
14 Claims. (Cl. 250—85)

1. A solar simulator, comprising a radiant energy source, a first reflector having an aperture and disposed in front of and in alignment with said radiant energy source with its reflecting surface disposed toward said radiant energy source, a second reflector disposed behind said radiant energy source and in alignment with said first reflector and having its reflecting surface disposed toward said reflecting surface of said first reflector, whereby radiant energy emanating from said radiant energy source impinging upon said first reflector is reflected to impinge upon said second reflector without crossing the optical axis from which it is reflected through said aperture in



said first reflector forming an image of said radiant energy source at the focal plane of said reflectors, means disposed in front of said radiant energy source for preventing radiant energy rays from passing directly from said radiant energy source through said aperture, and collimating means disposed in the path of the radiant energy after said radiant energy has passed said focal plane to provide collimated uniform energy distribution over the illuminated region.

3,200,254
PHOTOSENSITIVE DETECTOR FOR AIRBORNE PARTICLES
Frank W. Van Luik, Jr., Schenectady, and George F. Skala, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
Filed Mar. 19, 1962, Ser. No. 180,569
5 Claims. (Cl. 250—218)



1. An instrument for effecting instantaneous and continuous measurements of low concentration air-borne fluorescent particles comprising,
an inlet passage comprising a long tube adapted for introducing an air sample flow of low concentration air-borne fluorescent particles into the instrument and for decreasing any ambient light within said instrument,
an enclosed dark chamber, the lower portion of said long tube projecting into said dark chamber,
irradiating means disposed adjacent the air sample flow and adapted to effect fluorescence of the particles,
means disposed within said dark chamber and adjacent the flow of fluorescent particles for detecting the presence of said fluorescent particles,
means coupled to the detecting means for instantaneously and continuously measuring the concentration of the fluorescent particles,

air filter means disposed within opposing walls of said dark chamber on at least two sides of said detecting means to permit a flow of clean air into the dark chamber to prevent deposition of fluorescent particles on the detecting means and walls of the dark chamber,
and a blower coupled to an outlet in the bottom of said instrument for effecting the air sample flow and clean air flow through said instrument and for exhausting both flows to the atmosphere.

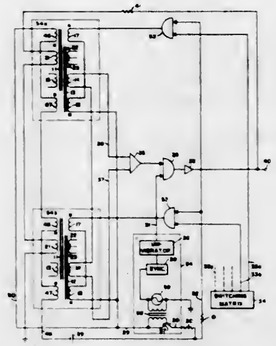
3,200,255
OCEAN WAVE ELECTRIC GENERATOR
Yoshio Masuda, Tokyo, Japan, assignor of one-half to Ichiro Kanda, Kawaguchi, Saitamaken, Japan
Filed Jan. 24, 1961, Ser. No. 84,555
Claims priority, application Japan, Feb. 10, 1960, 35/4,274; Oct. 14, 1960, 35/41,199
15 Claims. (Cl. 290—42)



1. An ocean wave machine comprising, in combination, a buoyant structure adapted to float on the water of the ocean; at least one air pump chamber positioned in said buoyant structure and having at least one opening for flow of air therethrough, said air pump chamber communicating with the water of the ocean in a region below said opening so that upon the formation of waves said water will rise and fall in said air pump chamber and act in the manner of a plunger causing flow of air through said opening; a pneumatic prime mover supported on said buoyant structure; means connecting said pneumatic prime mover to said opening of said air pump chamber so that said pneumatic prime mover will be actuated by said flow of air; and means supported on said buoyant structure and connected to be actuated by said prime mover, whereby energy transmitted by said ocean waves to air in said pump chamber will be utilized to operate said last-mentioned means.

3,200,256
MAGNETIC COMMUTATION METHODS AND SYSTEMS THEREFOR
David C. Kalbfell, P.O. Box 10764, San Diego, Calif.
Filed Mar. 25, 1960, Ser. No. 17,554
11 Claims. (Cl. 307—88)

1. A commutating system comprising a family of linear magnetic amplifiers each having a pair of cores formed of magnetic material having high maximum differential permeability, each said amplifier having input, output, and feedback windings on both of said cores, each said amplifier having a pair of oppositely polarized bias windings disposed respectively on said pair of cores, each said amplifier having a pair of oppositely polarzied carrier windings disposed respectively on said pair of cores, a common output terminal connected to the output winding of each of said amplifiers, means including the bias windings of each of said amplifiers and statically biasing the same in the region of saturation of said core material at one end of the B-H loop, means for sequentially counterbiasing the static bias and supplying carrier current to the carrier windings of each amplifier each in successive order and with amplitude sufficient to periodically sweep said core material into saturation at the other end of the B-H loop, gate means connected to said output terminal and operable at the sweep frequency of said carrier cur-



rent, and means connecting said gate means to said feedback windings.

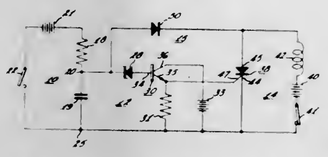
3,200,257
TUNNEL DIODE SWITCHING CIRCUIT
Ivars G. Akmenkalns, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 30, 1960, Ser. No. 18,690
5 Claims. (Cl. 307—88.5)



1. A high speed switching circuit comprising
a composite device including
a conductive path having a tunnel diode and having a pair of end terminals, wherein the minimum absolute value of negative resistance between the terminals exceeds the absolute value of the positive resistance between the terminals,
a resistor having a first terminal connected to one terminal of the path and having a second terminal,
a source of operating potential having one terminal connected to the other terminal of the path and having another terminal connected to the second terminal of the resistor forward biasing the diode to permit stable operation at least in its high voltage region, and
a transistor having base and emitter electrodes and a collector electrode connected directly to the one terminal of the path to provide a family of tunnel diode type characteristic curves at the collector electrode which shift in the increasing and decreasing current direction as a function of increasing and decreasing current in the base electrode, which family of curves defines high and low voltage, positive resistance regions of composite device operation separated by a negative resistance region,
said resistor and source defining a fixed load line which intersects, at one point only, the characteristic curve defined by composite device when the transistor is in its nonconductive state; and
means for increasing and decreasing the base current in the transistor to predetermined levels;

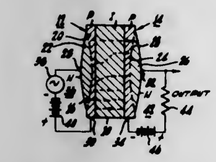
said transistor responsive to said means for operating the composite device in its low and high voltage regions when the base current is increased and decreased respectively.

3,200,258
TIME DELAY STATIC SWITCH WITH IMPEDANCE MATCHING AND RAPID RESET MEANS
John T. Carroll, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 15, 1961, Ser. No. 117,361
1 Claim. (Cl. 307—88.5)



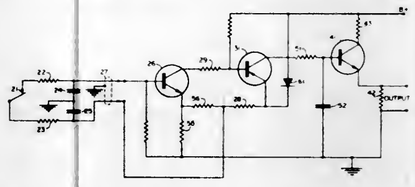
A time delay relay for closing a circuit a selected period after a source of power is connected in the circuit, comprising, a semiconductor controlled rectifier having a cathode terminal, an anode terminal, and a gate terminal, means for connecting said cathode and anode terminals in the circuit to provide a potential across said cathode and said anode terminals, a capacitor and a resistor connected to form a timing circuit responsive to the potential across said cathode and anode terminals, a transistor having base, emitter and collector terminals; said collector terminal being connected to a source of current, a resistor connected in circuit with said emitter terminal and coupled to said gate and cathode terminals to turn on said controlled rectifier when said transistor turns on; means including a voltage breakdown device connecting said emitter and base terminals across said capacitor to turn on said transistor at a preselected capacitor voltage; and means including a diode connecting said capacitor across said anode and cathode terminals to discharge said capacitor when said controlled rectifier conducts.

3,200,259
SOLID STATE ELECTRICAL DEVICES UTILIZING PHONON PROPAGATION
Rubin Braunstein, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 1, 1961, Ser. No. 128,516
7 Claims. (Cl. 307—88.5)



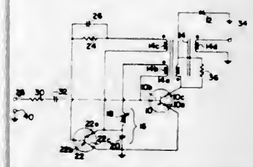
1. A solid state device comprising a body of semiconductive material having a region which supports the propagation of phonons, a tunnel junction in operative relation with said body, means for operating said junction to emit phonons into said region of said body, and means also in operative relation with said region of said body for detecting said phonons which propagate into said region, said region which supports the propagation of phonons having a long mean free path for said emitted phonons so that said emitted phonons are propagated through said region.

3,200,260
HIGH CURRENT LEVEL INTERRUPTER MEANS
Bert Fisk, Washington, D.C., and Morton Fischman, Silver Spring, and Theodore J. Rauen, Suitland, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 29, 1961, Ser. No. 134,786
3 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



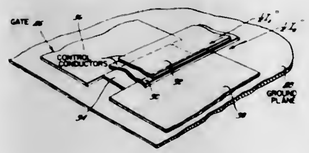
1. A keyer circuit for producing an output signal of a much greater current level than a current to be interrupted comprising:
low current interrupter means,
first and second radiation suppressing and shaping means directly connected to said interrupter means with the shortest possible connection,
a bias source,
a first transistor having a base, emitter and collector, with said base coupled to said first radiation suppressing and shaping means, said emitter coupled to ground, and said collector coupled to said bias source,
a second transistor having a base, emitter and collector, with said base coupled to said collector of said first transistor, said emitter coupled to the emitter of said first transistor,
biasing means coupling said emitters of said first and second transistors together and to said interrupter means through said second radiation suppressing and shaping means,
a diode coupled between the base and emitter of said second transistor, and
an emitter follower output transistor having a base, emitter and collector, with the collector coupled to a bias source, said emitter being resistively coupled to ground and said base coupled to the collector of said second transistor.

3,200,261
BLOCKING OSCILLATOR
Martin Fischman, Wantagh, and William Geller, Plainview, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Nov. 21, 1961, Ser. No. 153,948
7 Claims. (Cl. 307—88.5)



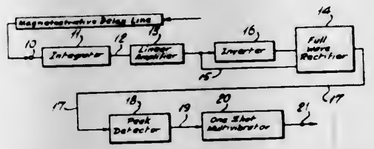
1. A blocking oscillator for generating voltage pulses comprising
(a) first and second transistors, each of said transistors having first, second, and third electrodes,
(b) a series resonant circuit including a capacitor, said series resonant circuit having a resonant frequency which determines the duration of said voltage pulse,
(c) a transformer having at least first, second, and third windings, the first winding of said transformer being coupled between the first and third electrodes of said first transistor, the second winding of said transformer being coupled in series with said resonant circuit between the first and second electrodes of said first transistor, and said third winding being coupled between the first and second electrodes of said second transistor, and
(d) means coupling the first and third electrodes of said second transistor across said capacitor.

3,200,262
THIN-FILM CRYOTRON UTILIZING ONLY MAGNETIC-FIELD LINES-OF-FORCE THAT LIE IN PLANE PARALLEL TO GATE CONDUCTOR PLANE
Albert E. Slade, Cochituate, and John L. Miles, Belmont, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass.
Filed Feb. 8, 1962, Ser. No. 171,888
7 Claims. (Cl. 307—88.5)



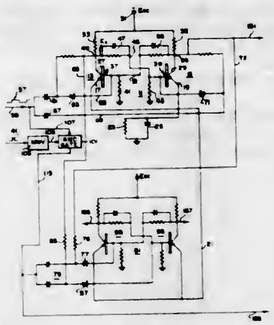
1. A cryotron comprising in combination
tionary support member disposed concentrically about said
a quench portion, and
(B) control conductor means
(1) developing a magnetic field when it carries current,
(2) disposed to quench the superconductivity of said quench portion with said magnetic field, and
(3) so further disposed that when said gate conductor is superconductive, the magnetic field adjacent said quench portion and developed by current in said conductor means is substantially free of lines of force normal to said quench portion.

3,200,263
NRZ SIGNAL DETECTOR
George E. Zenzefilis, Huntington, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Apr. 26, 1962, Ser. No. 190,496
6 Claims. (Cl. 307—88.5)



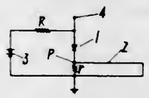
1. A system for converting NRZ code signals from a magnetostrictive source into unidirectional signals of constant amplitude, comprising,
a magnetostrictive source, an integrator circuit including connection means to receive input signals from said magnetostrictive source,
amplifier circuit means connected to amplify signals from said integrator circuit, and
circuit means connected to receive the output from said amplifier circuit means to provide full wave rectification of the amplified signals.

3,200,264
RANDOM SELECTOR
Murray W. Lindenthal, Somerset, N.J., and Richard C. Tagler and Joseph A. Bourget, Baltimore, Md., assignors to Martin Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed May 3, 1962, Ser. No. 192,116
4 Claims. (Cl. 307—88.5)



1. A count memorizing apparatus comprising: an electrical counter circuit adapted to assume a plurality of electrical conditions in response to a clock signal,
said circuit having an input means for receiving a clock signal;
an electrical memory circuit capable of assuming a plurality of electrical conditions corresponding to said conditions to said counter circuit;
means for receiving a random memorize pulse;
coincidence means connected to said clock signal input means and said memorize pulse input means for providing an output pulse at a time other than the time during which said counter is changing electrical condition; and
means controlled by the electrical condition of said counter circuit for applying an output of said coincidence means to said memory circuit so as to cause said memory circuit to assume an electrical condition corresponding to the electrical condition of said counter circuit.

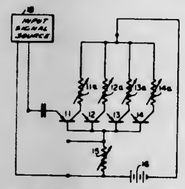
3,200,265
PULSE GENERATOR
Jin-Ichi Nagumo, Minatoku, Tokyo, Shigeharu Yamada, Kokubunji-machi, Tokyo, and Kaoru Yamanaka, Fuchu, Tokyo, Japan, assignors to Nippon Telegraph and Telephone Public Corporation, Chiyoda-ku, Tokyo, Japan, a corporation of Japan
Filed May 22, 1962, Ser. No. 196,233
Claims priority, application Japan, June 27, 1961, 36/22,411
3 Claims. (Cl. 307—88.5)



1. A pulse generator providing quantized pulses responsive to a trigger waveform comprising in combination, a nonlinear negative resistance element, a short circuited delay line with a predetermined delay time, a termination resistance connected to said delay line, a current source, and a load resistance coupling said source to said nonlinear element and said termination resistance in series circuit, wherein said load resistance has a value providing a load line operating the nonlinear element at a single normally stable operation point, and means providing a trigger pulse of variable length greater than

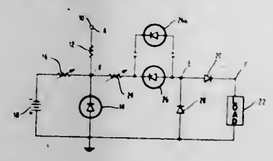
four times the predetermined delay time to the nonlinear element to generate at least one reflection in said delay line during the presence of the trigger pulse to thereby produce quantized pulses of time periods which are multiples of four times the predetermined delay time.

3,200,266
MULTISTABLE CIRCUIT EMPLOYING PLURALITY OF PARALLEL-CONNECTED SEMICONDUCTOR DEVICES EACH HAVING MORE THAN ONE PN JUNCTION
George Abraham, 3107 Westover Drive SE., Washington, D.C.
Filed Mar. 22, 1963, Ser. No. 267,372
7 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



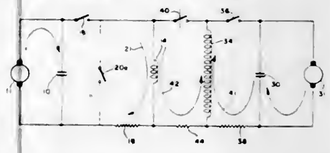
1. A multistable semiconductor circuit, comprising:
a plurality of semiconductor devices each having more than one PN junction;
conductive means connecting each of said semiconductor devices in parallel with each other, each semiconductor device in combination with said conductive means forming a branch of the parallel connection;
output load means;
bias means coupling said output load means to the parallel connected plurality of semiconductor devices to form a current conductive loop with each of said semiconductor devices;
said bias means reverse biasing at least one of said PN junctions in each semiconductor device so that each device is caused to generate an open-circuit stable negative resistance characteristic;
each of the branches in said parallel connection of semiconductor devices having a different resistive impedance, the resistive impedances of the branches being in such relation that a composite voltage-current characteristic is formed by the open-circuit stable negative resistance characteristics generated by each of said semiconductor devices.

3,200,267
PULSE GENERATOR AND SHAPER EMPLOYING TWO CHARGE-STORAGE DIODES
Jack Saul Cubert, Willow Grove, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 4, 1963, Ser. No. 270,578
6 Claims. (Cl. 307—88.5)



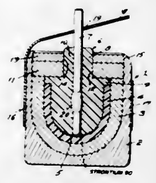
1. A pulse shaping circuit comprising, first and second diodes exhibiting charge storing characteristics, bias means connected to said first and second diodes to produce forward current therein in order to cause the storage of charge in said first and second diodes, input signal supplying means connected to said first and second diodes for producing reverse current therein until the charge stored therein is removed, means connected between said first and second diodes so that said diodes conduct reverse current at different times, and output means connected to said diodes.

3,200,268
HIGH CURRENT GENERATOR ARRANGEMENT
Erich S. Weibel, Pully, Vaud, Switzerland, assignor to The Aerospace Corporation, Los Angeles, Calif., a corporation of California
Filed Nov. 20, 1961, Ser. No. 154,395
6 Claims. (Cl. 307—104)



1. A high current step generator arrangement useful for establishing and maintaining pinch effect in load devices such as a plasma containing device, comprising: a load inductor arranged to induce rapidly rising flux in a load device; first means for inducing a load current flow of the order of thousands of amperes in said load inductor during a rise time of the order of one microsecond or less; an auxiliary inductor having substantially more inductance than said load inductor; second means for inducing in said auxiliary inductor an energizing current flow similar in magnitude to said load current flow; and means for coupling said auxiliary inductor and said load inductor in a series circuit loop at the instant when both of said current flows are substantially equal and when said load current flow first reaches its maximum value, said coupling means being arranged to establish said series circuit loop with both said load current flow and said energizing current flow flowing in the same direction therearound whereby the inductance of both of said inductors will maintain said load current flow.

3,200,269
SELF CHARGING NUCLEAR BATTERY
Melvin M. Goldstein, Yonkers, and Harry C. Lieb, Rockville Centre, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Jan. 31, 1961, Ser. No. 86,268
2 Claims. (Cl. 310—3)



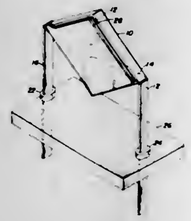
1. A power source comprising a housing assembly, said housing assembly comprising a cup shaped member, a cup shaped insert in said cup shaped member, a cup shaped member of synthetic resinous type material positioned in said insert, an electron emitter in the bottom of said member of synthetic resinous type material and a plug assembly in said housing assembly, said plug assembly comprising a centrally disposed pin having a thickened portion thereon, said pin adapted to contact said emitter, a highly thermoplastic body molded about said pin and positioned in said member of synthetic resinous type material, an insert surrounded by said housing assembly, a cap on said insert and a shorting clip detachably mounted on said housing assembly and releasably engaging said pin.

3,200,270
ELECTROMECHANICAL DRIVING SYSTEM FOR TIME-PIECE GEARING
Gerhard Vosseler, Rosieres, Switzerland (Steinentorstrasse 25, Basel, Switzerland)
Filed Dec. 21, 1962, Ser. No. 246,563
Claims priority, application Switzerland, Jan. 5, 1962, 114/62
2 Claims. (Cl. 310—8.5)



1. Apparatus for driving a timepiece having a drive ratchet wheel said apparatus comprising, an electromechanical oscillator comprising at least one crystal for establishing a time base, a pawl comprising on undulatable thin rod having a free end and an opposite end portion fastened to said crystal driven undulatingly by said crystal to a bent condition and an extended condition, said free end being disposed to engage said drive ratchet wheel on the periphery thereof and drive said ratchet wheel by undulations of said thin rod and subsequent extensions thereof.

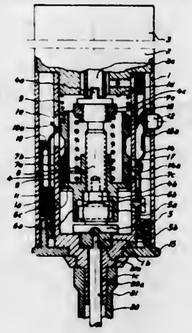
3,200,271
BOLOMETER
Robert M. Haines, Crystal Lake, Ill., assignor to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
Filed July 23, 1962, Ser. No. 211,659
9 Claims. (Cl. 310—8.9)



1. A bolometer comprising a wafer-like piezoelectric crystal having two parallel faces, said crystal faces having different coefficients of linear thermal expansion in different directions at least a major portion of one of said faces being covered with an adherent coating of a metal having a coefficient of linear thermal expansion at least twice the minimum linear coefficient of thermal expansion of said crystal face, said coating being further characterized by a specific heat of less than about 0.1, and a coefficient of absorption of light of not less than about 0.5, and electrode means operatively connected to each of said parallel faces of the crystal.

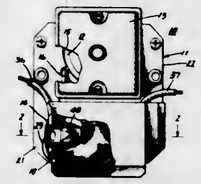
3,200,272
ELECTROMOTIVE DRIVE OVERLOAD ARRANGEMENT
Adam Wagner, Garbenheim, Kreis Wetzlar, Germany, assignor to Christian Dunker, Prazisions-Kleinstmotoren - Gesellschaft, Bonndorf, Black Forest, Germany
Filed Dec. 18, 1961, Ser. No. 160,137
8 Claims. (Cl. 310—68)

1. A hand tool comprising a casing, an electric motor in said casing, an electric circuit connecting said motor with a source of electrical energy, driving means including an overload clutch driven by said electric motor, tool attachment means driven by said driving means, a cylindrical shell axially movable in said casing, an overload switch governing said motor circuit and normally in circuit closing position, there being means on said shell for placing said overload switch in circuit opening position upon axial movement of said shell and lock means also thereon, an on-off switch governing said motor circuit and normally in a circuit opening position, locking means



engageable with said shell lock means and biased by said on-off switch into a disengaged position, means on said overload clutch for axially moving said shell when a predetermined torque is encountered by said driving means so that said overload switch is placed in circuit opening position and said shell is locked in position by said locking means, said locking means being disengaged from said shell lock means when said on-off switch is released and returned to its circuit opening position whereby said shell is returned to its initial position.

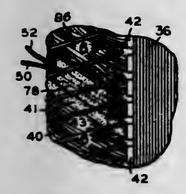
3,200,273
COIL ASSEMBLY ESPECIALLY SUITABLE FOR USE IN DYNAMOELECTRIC MACHINES
Stanley L. Lindt and Clarence W. Woods, Jr., Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York
Filed Nov. 1, 1962, Ser. No. 234,713
4 Claims. (Cl. 310—68)



1. An electric coil assembly for service where enclosed electric components are desired, comprising a magnetic core, a coil formed of a number of turns of metallic wire having an adherent coating of insulating material mounted on said core and insulated therefrom, fusible means electrically connected to one end of the wire, a pair of insulated lead conductors with one of the conductors being electrically conected to the other wire end of said coil and the second conductor electrically joined to the other wire end, said fusible means being insulated from the coil and the three electrical connections being in spaced relation with one another and with said coil, and an imperforate covering of protective material formed directly over and bonded to the outer surface to enclose completely said coil, fusible means, and electri-

cal connections, said covering being effective to resist melting at internal hot spot winding temperatures high enough to initiate deterioration of said wire coating which in turn causes surges in the winding current to break said fusible means for disconnecting the winding from the power source whereby in the event of initial deterioration of said wire coating and the resulting breaking of said fusible means, said fusible means is contained within said covering and a complete failure of the machine occurs before said covering is affected thereby insuring a fail-safe winding arrangement.

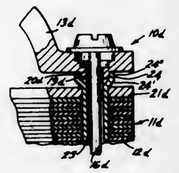
3,200,274
THERMAL PROTECTION MEANS FOR AN ELECTRIC MOTOR
Robert F. Munier, O'Fallon, Ill., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Mar. 14, 1963, Ser. No. 265,103
5 Claims. (Cl. 310—68)



1. In an electric motor including a stator having a magnetic core member and a stator winding on the core member with a plurality of coils having end turns extending beyond the opposite ends of the core member, end coil insulating means disposed between end turns of different coils, means for supplying power to said stator winding for effecting energization of said motor, and thermal protective means including thermal responsive switch means for interrupting the supply of power to said stator winding when said switch means senses a predetermined temperature, said switch means being disposed adjacent to end turns of said winding with one side thereof facing said insulating means and responsive to heat emanating from said winding when the motor is energized, the combination therewith comprising heat radiation barrier means of insulating material extending over a substantial portion of the opposite side of said switch means and portions of a selected number of the end turns adjacent said switch means to limit the heat emanating from said portions of said selected number of end turns to the atmosphere and increase the transfer of heat emanating from said portions of said selected number of end turns to said switch means to promote rapid response of said switch means to changes in temperature of said stator winding.

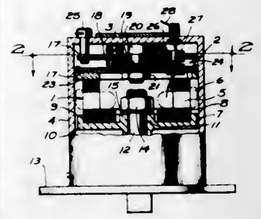
3,200,275
ELECTRIC MOTOR HOUSINGS
Nils Kauri Lindgren, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 19, 1961, Ser. No. 83,814
Claims priority, application Sweden, Jan. 20, 1960, 541/60
2 Claims. (Cl. 310—90)

1. In an electric motor having a stator body and a bearing support member at each end of the stator body for rotatably mounting a rotor shaft, the stator body having opposing end walls and comprising a stack of plates, the stator body having openings which extend axially between the opposing end walls thereof and are defined by aligned apertures in the plates, the combination of hollow tubular spacers extending through the openings and having axially extending end zones projecting beyond the end walls of the stator body, the end zones of the spacer tubes projecting beyond one end wall of the stator body including first and second axially extending sections, the first end zone sections having walls which flare outward from a first internal diameter immediately adjacent to the one end wall of the stator body to a second larger internal diameter at regions axially removed from the one end wall, the second end zone sections extending from the last-mentioned regions to the extreme ends of the spacer tubes and having walls substantially parallel to the axes of the openings, whereby the internal diameters of the second end zone sections are substantially uniform throughout their lengths and at the second larger inter-



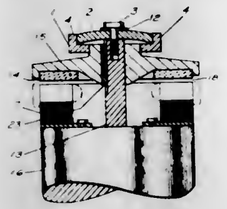
nal diameter, the bearing support member at the one end wall of the stator body having an inner wall surface which faces the one end wall and is substantially parallel thereto and axially spaced therefrom, the last-mentioned bearing support member having studs which are distributed about the inner wall surface thereof and are integral therewith and extend axially therefrom, the second end zone sections of the spacer tubes defining cylindrical-shaped recesses, the recesses snugly receiving the studs, and the extreme ends of the second end zone sections of the spacer tubes having end surfaces which abut the inner wall surface of the bearing support member at regions disposed about the studs.

3,200,276
TEMPERATURE COMPENSATING MOUNTING FOR DYNAMOS
William Kober, Fairport, N.Y., assignor, by mesne assignments, to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 13, 1962, Ser. No. 179,424
6 Claims. (Cl. 310—191)



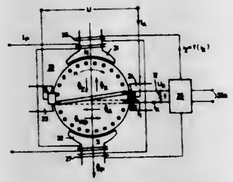
4. In a dynamo having a stator structure, and a rotor structure mounted for rotation relative to said stator structure about an axis, a temperature compensating assembly mounting one of said structures for movement relative to the other thereof along said axis comprising, a pair of bimetallic disks arranged for thermal deflection in opposite directions relative to each other lengthwise of said axis, a ring concentric with said disks and interposed therebetween, means holding said disks against said ring during normal deflection of said disks, said ring bearing against said disks intermediate the centers and the peripheries thereof, and support means connected to one of said disks, the other of said disks being connected to said one structure for moving the same along said axis relative to said other structure upon thermal deflection of said disks.

3,200,277
TEMPERATURE COMPENSATING MOUNTING FOR DYNAMOS
William Kober, Fairport, N.Y., assignor, by mesne assignments, to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Nov. 27, 1961, Ser. No. 155,094
16 Claims. (Cl. 310—209)



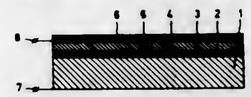
1. A temperature compensating mounting assembly for dynamo rotors and stators comprising a body part having opposed shoulder portions, and a beam part engaging said shoulder portions and sprung therebetween, said parts having different coefficients of thermal expansion, means for connecting one of said parts to a dynamo rotor or stator for movement therewith, and means for connecting the other of said parts to a portion of a dynamo held against such movement.

3,200,278
MEASURING AND CONTROLLING DYNAMO-ELECTRIC MACHINE COMMUTATION
Erich Krestel, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Aug. 8, 1961, Ser. No. 130,021
Claims priority, application Germany, Aug. 12, 1960, S 69,901; Nov. 15, 1960, S 71,267
6 Claims. (Cl. 310—225)



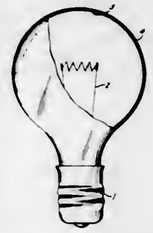
6. With an electric machine having main field poles, compensating windings on said poles, rotor windings, a commutator with segments to which said rotor windings are connected, and contact brushes engaging said commutator, the combination of a device for measuring the brush short-circuit current comprising a brush body having two mutually insulated conductor members engaging the commutator when in operation and being spaced from each other at the respective points of engagement a minimum distance equal to the peripheral width of the commutator segments, a resistor connected between said two conductor members and having a voltage drop proportional to the brush short-circuit current, and measuring means having an amplifier connected with said resistor to be controlled by said voltage drop, said amplifier having an output circuit connected with said compensating windings for exciting them in proportion to said voltage drop to compensate the flux of the rotor winding being commutated.

3,200,279
ELECTROLUMINESCENT ELEMENT EMPLOYING CHROME IRON PLATES
Willem Westerveld, Louis Marius Nijland, and Henri Hubert Janssens, all of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 1, 1961, Ser. No. 86,485
Claims priority, application Netherlands, Feb. 4, 1960, 248,090
10 Claims. (Cl. 313—108)



1. An electroluminescent element comprising a layer of glass-enamel in which the electroluminescent material is embedded and which is provided, on one side, with a metal carrier and, on its other side, with a conductive layer which is permeable to the radiation emitted by the electroluminescent layer upon applying a potential between the carrier and the conductive layer, characterized in that the surface layer of the metal carrier consists of a metal which can give rise to an oxide layer which is coherent in itself and satisfactorily adherent to the metal, said metal being selected from the group consisting of Zr, Ti, Ta, Al and Cr.

3,200,280
DECORATIVE LIGHT SOURCE
Marcus Thau and Frances Krasnow Thau, New York, N.Y. (both % Universal Coatings Inc., 10 Ave. C, Newark 5, N.J.)
Filed Dec. 13, 1960, Ser. No. 75,554
5 Claims. (Cl. 313—110)



1. A decorative electric light bulb comprising a light transmitting rigid envelope; a substantially transparent coating of wrinkle textured organic material of uniform composition on said envelope, said coating having an outer surface formed with a plurality of spaced integral ridges, said ridges being elongated in substantially parallel alignment; and a light source within said envelope.

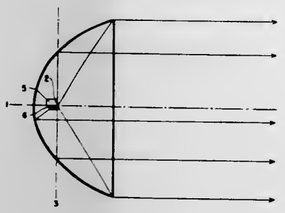
3,200,281
TWO-FILAMENT INCANDESCENT LAMP FOR NON-DAZZLING HIGH AND LOW BEAMS IN AUTOMOBILE HEADLIGHTS
Rolf Mickley, 8/III Elisabethstrasse, Munich, Germany
Filed Oct. 8, 1962, Ser. No. 228,928
Claims priority, application Germany, Oct. 9, 1961, M 51,258
1 Claim. (Cl. 313—111)

In a non-dazzling incandescent lamp comprising two incandescent lamp filaments for high and down beams and a paraboloid reflector, the improved anti-dazzling construction comprising

as a high beam illuminating means, a coiled filament of U-shaped configuration with the arms of the "U" extending rearwardly with respect to the opening of said paraboloid reflector,

said coiled filament of U-shaped configuration being positioned in the horizontal plane of the optical axis of said paraboloid reflector with the outer limits of the arm-connecting portion of the U-shaped filament extending only slightly beyond the focal point of said paraboloid reflector,

a low beam illuminating means comprising a coiled filament of straight configuration



said coiled filament of straight configuration positioned in the horizontal plane of the optical axis of said paraboloid reflector and extending between the arms and to the rear of the central portion of said filament of U-shaped configuration,

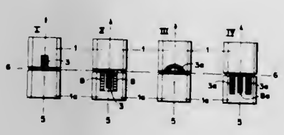
and a single anti-dazzle shield extending over that portion of said filaments back of the focal point of said reflector.

3,200,282

INCANDESCENT HEADLIGHT LAMP HAVING CRITICALLY POSITIONED FILAMENTS

Rolf Mickley, 8 Elisabethstrasse, Munich, Germany

Filed July 5, 1962, Ser. No. 207,678
Claims priority, application Germany, July 21, 1961, M 51,264
3 Claims. (Cl. 313—114)



1. In a two filament headlight lamp of the type having a high beam filament and a low or down beam filament and a parabolic reflector,

a high beam filament extending substantially along the axis of said parabolic reflector through the focal point with portions thereof extending in front of the focal point and portions extending to the rear of the focal point,

a first shielding means extending over that portion of the high beam filament which extends to the rear of the focal point,

a second shielding means extending below that portion of the high beam filament which extends in front of the focal point,

the outer end of the first shielding means and the inner end of the second shielding means being slightly spaced axially with respect to the axis of said parabolic reflector whereby light beams from the high beam filament projecting at right angles to the focal point of said reflector pass directly to said parabolic reflector,

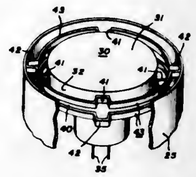
said low beam filament being positioned substantially entirely below the first shielding means.

3,200,283

RUGGEDIZED CATHODE MOUNT

Robert E. Manfredi, Rolling Hills, Calif., Paul Koskos, Maplewood, N.J., and John W. Ammenheuser, Elsmere, N.Y., assignors to General Electric Company, a corporation of New York

Filed May 26, 1961, Ser. No. 112,992
13 Claims. (Cl. 313—269)



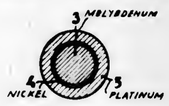
1. A cathode assembly comprising a conductive support sleeve, an emitter coaxially disposed in said sleeve and radially spaced therefrom, at least one conductive strap surrounding said emitter and interpositioned between said emitter and said sleeve, said strap including diametrically opposed protruding sections secured only to said sleeve and sections intermediate said protruding sections secured only to said emitter.

3,200,284

PLATINUM COATED MOLYBDENUM GRID HAVING AN INTERMEDIATE LAYER OF NICKEL

Martinus Antonius Maria Bakker and Johannes Christiaan Duran, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 26, 1961, Ser. No. 112,816
Claims priority, application Netherlands, July 26, 1960, 254,219
2 Claims. (Cl. 313—348)



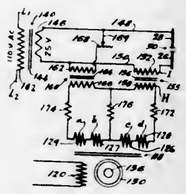
1. A grid for an electric discharge tube comprising a base of molybdenum, an outer layer of platinum, and an intermediate layer of a metal selected from the group consisting of iron, cobalt, and nickel firmly bonding said platinum layer to said base, said intermediate layer having a thickness less than half that of the platinum layer.

3,200,285

MOTOR CONTROL

Casper Kasparian, Toledo, Ohio, assignor to The Strong Electric Corporation, Toledo, Ohio, a corporation of Delaware

Filed Aug. 31, 1961, Ser. No. 135,371
15 Claims. (Cl. 314—68)



1. Control means of the character disclosed for maintaining predetermined current flow in a main circuit which is subject to current variations including, in combination, movable means arranged whereby the relative position of the said means influences current flow in the main circuit,

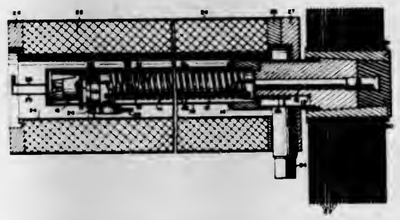
a reversible motor having a movable armature, said movable armature having operative connection with said movable means, said motor embodying shaded pole means for effecting movement of said armature in either direction, control circuit means intercalated with the shaded pole means inductively coupled with the main circuit establishing electromotive forces in said control circuit means, said control circuit means being responsive to current variations in said main circuit establishing varying electromotive forces in the control circuit means effective to move the armature in a direction actuating the movable means to control current flow in the main circuit.

3,200,286

TRAVELING WAVE AMPLIFIER TUBE HAVING NOVEL STOP-BAND MEANS TO PREVENT BACKWARD WAVE OSCILLATIONS

William L. Rorden, Nevada City, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Dec. 30, 1960, Ser. No. 79,893
10 Claims. (Cl. 315—3.5)



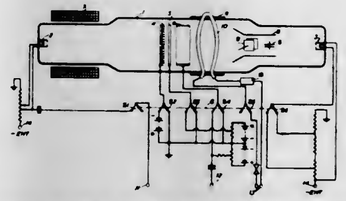
7. In a traveling wave amplifier device wherein energy is exchanged between an electron beam and the field of a radio frequency wave, apparatus for propagating the radio frequency wave comprising a slow-wave helical conductor, said slow-wave helical conductor having discrete areas of non-uniform cross section at uniform intervals along the helical conductor to provide a stop band for backward wave oscillations, the spacing between said discrete areas of non-uniform cross section being substantially equal to one-half wave length of the backward wave oscillation frequency.

3,200,287

SIGNAL STORING CATHODE RAY TUBE ARRANGEMENTS

Donald Leopold Plaistowe, Chelmsford, Essex, England, assignor to The Marconi Company Limited, a British company

Filed Feb. 20, 1963, Ser. No. 259,814
Claims priority, application Great Britain, Mar. 12, 1962, 9,331/62
5 Claims. (Cl. 315—12)



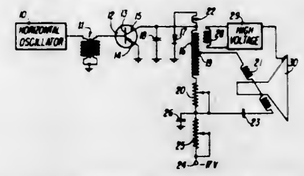
1. A signal storing cathode ray tube arrangement comprising in combination a signal storing cathode ray tube having a target adapted to store signals in the form of electrical charges, an ultra-violet light source operable at will and arranged when operated to irradiate said target with light to expunge charges stored by said target, and means effectively shielding said target from light and radiant heat from sources other than said light source.

3,200,288

TRANSISTOR DEFLECTION SYSTEM WITH LINEARIZING CIRCUIT

De Loss J. Tanner, Bensenville, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Feb. 26, 1963, Ser. No. 261,060
9 Claims. (Cl. 315—27)



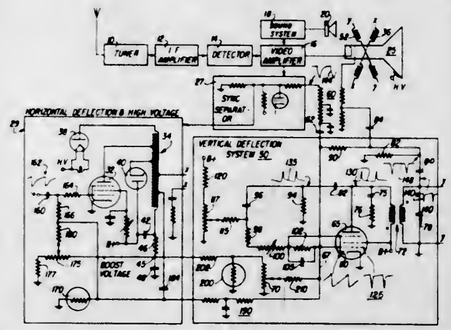
1. A generator system for providing current for the horizontal deflection coils of a cathode ray tube used in television apparatus including in combination, oscillator means for providing pulses recurring at the horizontal deflection frequency, a transistor having base, emitter and collector electrodes, means coupling said base and emitter electrodes to said oscillator, direct current potential supply means, a choke coil having first and second terminals and an intermediate tap, a resistor having first and second terminals with said first terminal thereof connected to said second terminal of said coil, means connecting the deflection coils between said tap on said choke coil and said second terminal of said resistor, and circuit means connecting said potential supply means between said collector and emitter electrodes of said transistor, said circuit means providing a path for direct current flow through said coil and said resistor and extending from said first terminal of said coil to said second terminal of said resistor, said transistor being rendered conductive by said pulses applied thereto from said oscillator means to apply a current wave of sawtooth form through the deflection coils.

3,200,289

VERTICAL DEFLECTION CIRCUIT

Don A. Kramer, Rolling Meadows, and Richard A. Kraft, Palatine, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Continuation of application Ser. No. 162, Jan. 4, 1960. This application Apr. 12, 1963, Ser. No. 272,804
15 Claims. (Cl. 315—27)



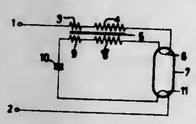
1. In a television receiver, the vertical deflection system for generating sawtooth signals having trace and retrace portions, including in combination, an operational ampli-

fier circuit having a single electron valve with input and output electrodes, an output circuit coupled to said output electrode, a passive degenerative resistor-capacitor wave forming network coupled from said output and input electrode circuit to said operative at the frequency of the trace portions of the signals to release stored energy and causing increased conduction of said electron valve, a passive regenerative network coupled between said output circuit and said input electrode and operative at the frequency of the retrace portions of the signals, impedance means exclusive of said control electrode for isolating said regenerative network and said waveforming network, and switch means operative during the retrace portions of the signals for conducting current to said passive wave forming network to restore energy thereto and form a self-oscillating system.

3,200,290
BALLAST DEVICE AND CIRCUIT FOR GAS DISCHARGE LAMPS

Jozef Cornelis Moerkens, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 12, 1961, Ser. No. 102,578
Claims priority, application Netherlands, May 25, 1960, 251,986
9 Claims. (Cl. 315—99)



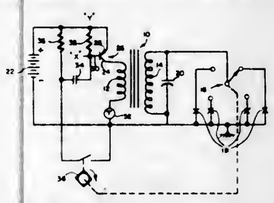
8. A ballast device for a gas discharge tube having first and second electrodes and supplied by a source of alternating current comprising, in series circuit arrangement, a choke coil having a main coil and an auxiliary coil, said main coil being serially connected between one terminal of said alternating current source and said first electrode, a capacitor connected in series with said auxiliary winding, said series combination of capacitor and auxiliary winding being connected across said tube in series with said first and second electrodes, said second electrode being connected to the other terminal of said alternating current source, said choke coil further comprising a magnetic core of predetermined volume on which said main and auxiliary coils are disposed in inductive coupling arrangement, each of said coils comprising first and second serially connected coil elements, the first coil element of each of said main and auxiliary coils occupying a common portion of said core and being closely coupled to counteract one another, and the second coil element of each of said main and auxiliary coils being arranged on separate portions of said core on either side of said common portion, yoke means disposed about said windings and having a plurality of laminations, each of said laminations being disposed substantially at right angles to the plane formed by the longitudinal axes of said core and of the respective lamination, and container means of predetermined volume housing said choke coil.

3,200,291
IGNITION SYSTEM

Le Roy E. Diiger, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed Jan. 23, 1961, Ser. No. 84,292
20 Claims. (Cl. 315—205)

1. An ignition system for an internal combustion engine having a number of spark plugs comprising, a low inductance transformer having a primary winding and a secondary winding, a unidirectional voltage power supply, a transistor having its emitter connected to the positive terminal of the power supply and its collector to one end of the primary winding, the other end of the primary winding being connected to the negative terminal of the power supply, differentiating circuit means connected across the power supply and without any impedance component interposed directly to the base of the transistor to



provide an initially high bias current to the base of the transistor which decreases exponentially, and voltage distribution means connected to the secondary winding to distribute the voltage induced in the secondary winding by the current flow in the primary winding to the spark plugs.

3,200,292
SLIP-LASTED CONDUCTIVE SHOE AND METHOD OF MAKING IT

Jack Meltzer, 544 N. Laurel Ave., Hollywood 48, Calif.

Filed Apr. 10, 1962, Ser. No. 186,426
9 Claims. (Cl. 317—2)

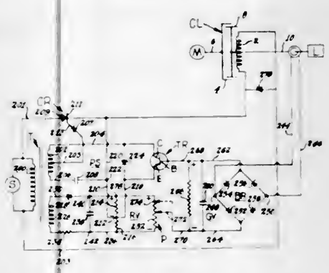


7. A slip-lasted conductive shoe comprising an upper having a lower edge, a socklining stitched marginally to said lower edge, a midsole having a medial slit, a midsole wrapper stitched to said lower edge of the upper and embracing the edges of the midsole, a conductive outer sole underlying the midsole, a conductive strip extending through said slit and having an upper part and a lower part, the lower part lying between the midsole and the outer sole and in direct contact with the latter, and an opening in said socklining for exposing the upper part of said strip on the upper face of the stocklining.

3,200,293
ELECTRICAL CONTROL FOR ELECTRO-MAGNETIC COUPLING

Joseph N. Urbanik, 3122 14th Ave., Kenosha, Wis.

Filed May 1, 1961, Ser. No. 106,649
2 Claims. (Cl. 317—5)

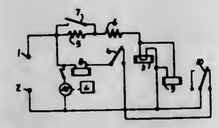


1. A speed regulating control for an electrical coupling apparatus having a rotating shaft and a direct-current field coil for varying the speed of the shaft, said control comprising terminals for connecting to a source of alternating-current, a solid state controlled rectifier having an anode, a cathode and a gate, said alternating-current source terminals being series connected to said field coil and said anode and cathode, gate circuit means connected between said gate and cathode, said gate circuit means comprising means for producing alternating-current gate signals including a phase shift circuit of the resistance-reactance type including a resistance, and a composite potential source including a resistance, the phase shift circuit and the composite potential source having a portion of their resistance in common whereby variations in output of the composite potential source produce variations in potential difference in said common resistance, said composite potential source comprising means for supplying a unidirectional reference voltage to a portion of the resistance of the composite potential source, and a transistor having an emitter, a collector and a base, the collector and the base being connected across the resistance of the composite potential source, a shaft speed-responsive unidirectional voltage source, the speed-responsive voltage source and the reference voltage source being connected in series opposition between the base and the emitter of the transistor, whereby variations in magnitude of the speed-responsive source introduce variations in magnitude of transistor current and in magnitude of direct-current component of voltage in the composite voltage source to introduce a speed-responsive component of direct voltage in the cathode gate circuit of the controlled rectifier, thereby controlling activation of said rectifier and resultant energization of said field coil.

3,200,294
PROTECTION SYSTEM FOR A DRIVING MOTOR

Erik Andersen, Nordborg, Denmark, assignor to Danfoss ved ing. M. Clausen, Nordborg, Denmark, a company of Denmark

Filed Oct. 18, 1961, Ser. No. 173,845
Claims priority, application Germany, Oct. 19, 1960, D 34,560
11 Claims. (Cl. 317—13)



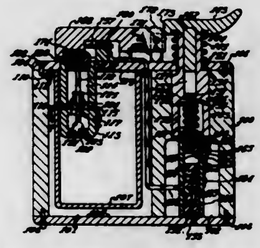
1. A protection system for an electric motor and mechanism driven by said motor, comprising a current supply circuit for energizing said motor, a safety switch for opening said circuit to de-energize the motor, said safety switch having a current-responsive delay link, a circuit supplying current to said delay link, a switch responsive to a malfunction in said driven mechanism and in the circuit of said delay link, said malfunction switch being operable to increase the currrent flow through said delay link and thereby activate said delay link in the event of a malfunction, and an emergency relay having an operating element in the circuit of said delay link and responsive to current flow through the delay link, said relay being connected with said motor energizing circuit to de-energize the motor upon interruption of current through said delay link.

3,200,295
MANUALLY OPERABLE PIEZOELECTRIC LIGHTERS

Wiley H. Owens, Bloomington, and Asbjorn M. Severson, Minneapolis, Minn., assignors to Honeywell Inc., a corporation of Delaware

Filed Dec. 26, 1962, Ser. No. 247,200
11 Claims. (Cl. 317—83)

1. A lighter comprising: a body member; burner means; means for retaining lighter fuel and for supplying the fuel to said burner means; piezoelectric means mounted on said body member and electrically insulated therefrom; a pair of electrodes electrically connected to said piezoelectric means; means forming a spark gap at said burner means, one side of said spark gap being electrically connected to one of said electrodes and the other side of said spark gap being electrically connected to the other of said electrodes; striking means mounted on said body member and movable toward and away from said piezoelectric means, said striking means being adapted to impart a blow to said piezoelectric means to cause a change in the mechanical stress therein resulting in a

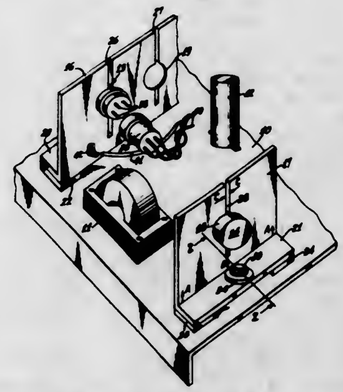


potential difference between said electrodes to cause a spark across said spark gap; spring means acting on said striking means and biasing said striking means toward said piezoelectric means; manually actuated means for sequentially stressing said spring means to store energy therein with said striking means in a position spaced away from said piezoelectric means, and then releasing said striking means, said spring means then being effective to drive said striking means and cause it to impart a blow to said piezoelectric means and the resulting spark across said spark gap being effective to ignite the fuel at said burner means.

3,200,296
COMBINED MOUNTING-BRACKET AND HEAT-SINK

John H. Bruestle, Metuchen, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Oct. 26, 1962, Ser. No. 233,328
12 Claims. (Cl. 317—100)



1. A chassis structure for mounting transistors and like heat-sensitive devices, comprising in combination:
a mounting plate having a free outer edge and a fixed inner edge with a flange therealong,
means providing an opening in the plate for receiving and holding one of said devices therein with a relatively close fit,

said plate being provided with a relatively narrow elongated slot extending from said free edge through said opening substantially at a right angle to the fixed edge of said plate to permit the opening to close and clamp said device in place, and

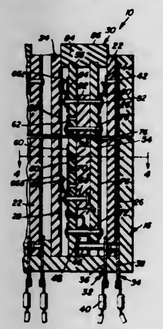
means connected with said flange at spaced points thereon for applying a force to said fixed edge to produce a deforming pressure through said flange to the plate in the plane thereof and in a direction tending to close the slot and increase the clamping pressure on the device in the opening.

3,200,297

CONTROL UNIT HAVING REMOVABLE AND INTERCHANGEABLE PROGRAMMING INSERTS

Charles H. Gibson, Scarsdale, N.Y., assignor to Randac Systems, Inc., Troy, N.Y., a corporation of Delaware

Filed May 18, 1962, Ser. No. 195,713
9 Claims. (Cl. 317—101)



1. An information storage device comprising a pair of non-conductive plate members disposed in parallel spaced relation to each other, a plurality of parallel spaced conductors printed on at least one of said plate members confronting the other plate member, a plurality of replaceable insert assemblies disposed between said pair of plate members, each insert assembly including spaced pressure-contact means projecting into contact with selected parallel conductors upon insertion between said plate members, a series of spaced conductor terminals adjacent the edge portions of each of said plate members, the printed conductors on one plate member being connected to the terminals adjacent its edge portion, means to establish an electrical connection between the series of terminals of the other plate member and said pressure-contact means when said assemblies are inserted, and means to establish unidirectional current paths between selected terminals on said one plate member and a terminal on the other plate member.

3,200,298

MULTILAYER CERAMIC CIRCUITRY

Domenick J. Garibotti, Longmeadow, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed May 27, 1963, Ser. No. 283,506
1 Claim. (Cl. 317—101)

An electronic multilayer subassembly comprising:

a pair of ceramic wafers, each having inner and outer surfaces,

a first layer of insulating material disposed between said wafers contacting the inner ceramic surfaces of said wafers,

the outer ceramic surfaces opposite the inner surfaces being exposed,

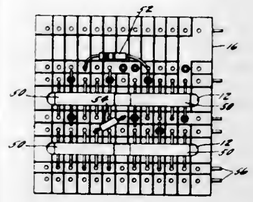
where at least one of said exposed surfaces has a groove therein,

conductive means providing vertical conductive feed through said wafers and insulating layer,

conductive terminal pads located on the inner and exposed surfaces in electrical contact with said conductive feed throughs,

discrete conductive paths on said inner and exposed surfaces interconnecting selected ones of said terminal pads,

means on at least one of the inner surfaces forming passive electrical components and conductor paths selectively interconnecting the components and the terminal pads on said one inner surface,



a plurality of electronic devices affixed to the exposed surfaces within said groove,

said affixed devices having leads closely adjacent the exposed surface and electrically connected to selected ones of the discrete conductive paths,

said ceramic wafers further having horizontal conductive feed throughs spaced along at least one edge of the wafers and extending inwardly therefrom interconnecting selected ones of said vertical feed throughs with said one edge,

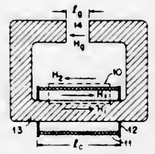
conductive pins connected within said horizontal feed throughs and extending beyond the edge of the wafer for interconnecting the multilayer assembly into an electronic instrument.

3,200,299

SUPERCONDUCTING ELECTROMAGNET

Stanley H. Autler, Cambridge, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed Oct. 4, 1960, Ser. No. 60,392
3 Claims. (Cl. 317—123)



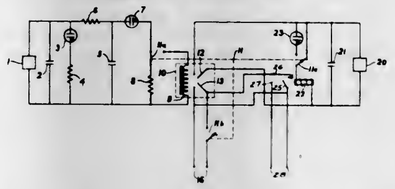
1. A superconducting electromagnet comprising a coil wound with wire having superconducting properties at low temperature, a ferromagnetic core passing through said coil, said core having an air gap external to said coil, the length of said coil exceeding the length of said gap, means for maintaining said coil at a temperature level at which superconductivity is obtained, a source of direct current, means for energizing said coil from said source, and means to control the amplitude of current flow through said coil whereby the magnetic field of said coil is held below a critical strength at which superconductivity is quenched while the magnetic field strength across said air gap exceeds said critical value.

3,200,300

TIMING CIRCUITRY INCORPORATING RADIOACTIVE BATTERIES

Stanley Wallack, Jackson Heights, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Filed Nov. 9, 1955, Ser. No. 545,953
9 Claims. (Cl. 317—141)



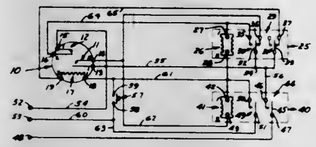
1. Control apparatus comprising a voltage-regulated power supply including a radioactive battery, an impulse counter having at least a pair of contacts in which one of said contacts is actuated in response to each energizing pulse applied to the counter and the other of said contacts is actuated in response to a predetermined number of energizing pulses applied to said counter, a relay actuating a contact, a timing network including a serially-connected resistor and capacitor shunting the output of said power supply and a gas tube connected to the junction connection for said resistor and capacitor, a second power supply including a radioactive battery and a capacitor shunting said battery, an actuating switch having a first switch section operable to connect the output of said timing network at said gas tube to said counter thereby applying a sequence of timed pulses to said counter and a second switch section operable to connect said relay to the output of said second power supply, said first counter contact shunting the output of said second power supply during each closure thereby preventing the build-up and application of an operate potential to said relay so long as said counter is periodically actuated, a pair of conductors connected to said second contact for effecting programming in response to a count of said predetermined number, and a third pair of output conductors connected to said relay contact for effecting fail safe programming in response to an interruption in the periodic actuation of said first contact.

3,200,301

TIMED CYCLE CIRCUIT

Reed J. Husband, 650 Carroll Way, Pasadena, Calif.

Filed May 11, 1962, Ser. No. 194,103
8 Claims. (Cl. 317—141)



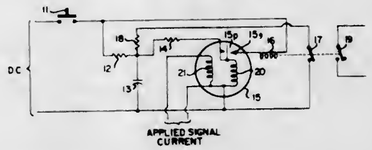
1. A timed cycle circuit comprising: a first and a second delay switch means, each having a first and a second terminal; actuator means for said delay switch means having a first and a second terminal; a first relay comprising a first coil having a first and a second terminal, and selector switch means actuable by energizing said first coil, said selector switch means including a common terminal, a contactor in continuous connection with the common terminal, and a first relay latching terminal, a second relay power terminal, and a heater power terminal, the contactor being selectively switchable between contact with the first relay latch terminal in one condition of the coil, and contact with the second relay power terminal and the heater power terminal in another condition of the coil; a second relay comprising a second coil having a first and a second terminal, and control switch means actuable by energizing said second coil, said control switch means including output power control means and second coil latching means; and a starter switch having a first and a second terminal adapted to be connected to complete a circuit therethrough; said first and second delay switch means being adapted for sequential actuation in that order by the actuator means, whereby to establish the duration of the cycle; an input terminal and a return terminal; conductive connections between one of said last-named terminals and the actuator means, the control switch means, the second and first terminals of the first and second coils, respectively; the starter switch being disposed between the selected one of said input and return terminals and the actuator means, the second coil latching means being conductively connected to the first coil in parallel connection with the starter switch; the other of said input and return terminals being connected to the first terminals of both delay switch means, and to the common terminal of the selector switch means; the second terminal of the second delay switch means being conductively connected to the first terminal of the first coil and to the first relay latching terminal; the second terminal of the first delay switch means being conductively connected to the second relay power terminal and to the second terminal of the second coil; the other terminal of the actuator means being conductively connected to the heater power terminal; said control switch means being adapted to interconnect an input and an output connection while the second coil is in the condition wherein the second coil latching means controls the second coil; and whereby closing the starter switch energizes the actuator means, causes the second coil to assume one of its conditions and causes the second coil latching means to latch said second coil in said condition, and causes the control switch means to pass power to the output connection, subsequent actuation of the first delay switch means providing a second circuit for said second coil, subsequent actuation of the second delay switch means causing the first coil to change its condition, thereby deactuating the actuator means, enabling the delay switch means to return to their previous condition, latching the first coil, and unlatching the second coil, thereby opening the control switch means, and opening the latching circuit of the first coil.

3,200,302

SIGNAL PROGRAMMED TIME DELAY

Glenn F. Krebs, Bratenahl, and George J. Crowdes, Chesterland, Ohio, assignors, by mesne assignments, to API Instruments Company, Chesterland, Ohio, a corporation of Ohio

Filed Dec. 19, 1962, Ser. No. 245,905
4 Claims. (Cl. 317—141)



1. In time delay apparatus of the type having time delay adjustable electrically, the combination of,

a relatively constant D.C. voltage supply,

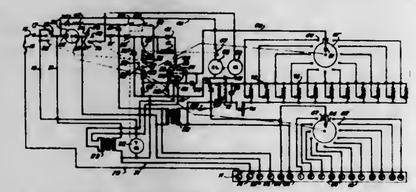
a first controlling circuit comprising a switch, a series charging resistor, and a shunt capacitor all arranged with respect to said supply so that the switch determines time delay cycle starting time, the resistor limits flow of current from supply to capacitor and the capacitor receives a charge through the resistor,

a second, separate, and externally energized controlling circuit,

threshold conduction means connected and arranged to complete a circuit responsive to the cumulative effect of any and all of (1) said first controlling circuit before threshold conduction has occurred, (2) said second controlling circuit before threshold conduction has secured, and (3) a threshold,

and switching means connected in the circuit completed by the threshold conduction means, said switching means being interconnected to discharge said capacitor and to provide an output signal at the end of a time delay determined by the first mentioned switch and resistor-capacitor circuit, the second controlling circuit, and the particular threshold.

3,200,303
TIMING CONTROL UNITS
James T. Maxwell, Dallas, Tex., assignor to Telsco Industries, Dallas, Tex., a corporation of Texas
Filed Oct. 9, 1961, Ser. No. 143,670
3 Claims. (Cl. 317—142)



1. A timing control unit including a gas-filled tube having an anode and a cathode and a biasing grid, the tube being characterized by having a predetermined firing potential subject to variation by variation of a biasing potential on the tube grid, a first step switch having a plurality of stations, means for supplying electric power to the first step switch for sequential delivery to the stations thereof, a second step switch having a plurality of stations, means for delivering to the stations of the second step switch biasing potentials individually adjustable as to each station of the second step switch and as to the magnitude of the biasing potential delivered to each station of the second step switch, means for placing the biasing potentials of the stations of the second step switch on the tube grid, a potentiometer having a positive end and a negative end and a contact movable between the positive and negative ends, the contact being connected to the tube cathode, means for moving the potentiometer contact at a constant speed from the positive end of the potentiometer toward the negative end thereof to drive the tube cathode more negative until the tube fires whereby the biasing potential placed on the tube grid from the stations of the second step switch determines the time required at each station for the tube to fire and hence the time electric power is supplied to the stations of the first step switch, and means responsive to the firing of the tube to advance both step switches and terminate current flow through the tube.

3,200,304
TOUCH CONTROL CIRCUIT
Carl E. Atkins, Great Notch, and Robert L. Ziolkowski, South Plainfield, N.J., assignors to Tung-Sol Electric Inc., a corporation of Delaware
Filed Apr. 25, 1962, Ser. No. 190,063
16 Claims. (Cl. 317—146)

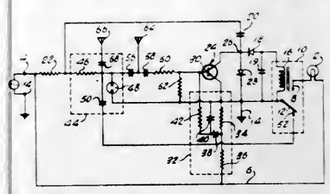
1. A touch responsive circuit for connecting and disconnecting a load to a source of electrical energy comprising:

(a) a semiconductive switching means having a gating terminal;

(b) a low frequency source of oscillatory energy coupled to the gating terminal of said semiconductive switching means to keep the semiconductive switching means in one of its two operating states;

(c) a first tourch responsive means coupled to said source of oscillatory energy which when touched suppresses the application of oscillatory energy to the gating terminal of the semiconductor switching means to switch the semiconductive switching means to the other of its operating states;

(d) a relay coupled to the semiconductive switching means for coupling and uncoupling the load to the source of electrical energy as a function of the operating state of the semiconductive switching means, said relay having contacts which open and close as

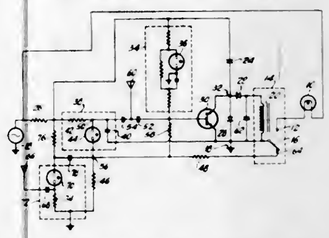


a function of said operating state of the semiconductive switching means;

(e) means including contacts of the relay for preventing the semiconductor switching means from being switched back to the first of its operating states after touch is removed from the first touch responsive means; and

(f) a second touch responsive means coupled to said source of oscillatory energy which when touched while the semiconductive switching means is in the second of its operating states increases the magnitude of the oscillating energy supplied by the low frequency source of oscillatory energy to said semiconductive switching means to switch said semiconductive switching means back to the first of its operating states.

3,200,305
TOUCH RESPONSIVE CIRCUIT
Carl E. Atkins, Great Notch, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed Sept. 7, 1962, Ser. No. 222,045
9 Claims. (Cl. 317—146)



1. A touch responsive circuit for controlling the supply of excitation from an A.C. line to a load comprising:

(a) a relay which controls the supply of current from the line to the load;

(b) a capacitative ballast circuit in series between the A.C. line and the coil of the relay to supply the relay with excitation;

(c) a rectifying means coupled across the coil to shunt current past the coil during the half cycles of one polarity of the supplied excitation;

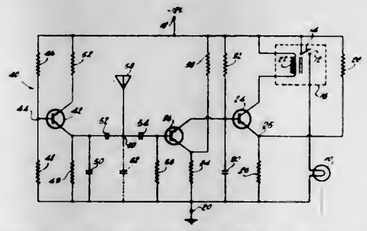
(d) a semiconductive switching device with a base, an emitter, and a collector terminal that is coupled across the coil through its emitter and collector terminals;

(e) a bias supply coupled to the base of the semiconductor keeping the semiconductor non-conducting and thereby permitting current to flow through the coil on the half cycles of opposite polarity of the supplied excitation;

(f) pulse means coupled to the base of the semiconductor switching device supplying pulses to the base of the semiconductor device to trigger the device and shunt current past the coil during the half cycles of opposite polarity; and

(g) touch responsive means coupled to the pulse means for controlling the supply of pulses to the base of the semiconductor device whereby the semiconductor device may be either rendered conducting or non-conducting by selectively touching the touch responsive means.

3,200,306
TOUCH RESPONSIVE CIRCUIT
Carl E. Atkins, Great Notch, and Robert L. Ziolkowski, South Plainfield, N.J., assignors to Tung-Sol Electric Inc., a corporation of Delaware
Filed Sept. 12, 1963, Ser. No. 308,505
6 Claims. (Cl. 317—146)



1. A touch responsive circuit which operates on a source of D.C. potential comprising:

(a) a capacitor;

(b) a charging circuit coupling said capacitor to the source of D.C. potential for charging said capacitor to a first level of D.C. potential;

(c) a semiconductor switching device coupled across the capacitor to discharge said capacitor to a second level of D.C. potential when said semiconductor switching device is conductive;

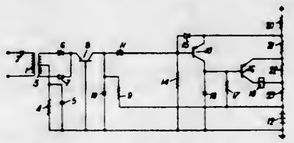
(d) an oscillator coupled to said semiconductor switching device to provide pulses to render said semiconductor switching device conductive;

(e) touch responsive means coupled to said oscillator to suppress the magnitude of the pulses supplied to the oscillator when the touch responsive means is touched to render the semiconductor switching device non-conductive; and

(f) circuit controlling means responsive to the level of potential across said capacitor.

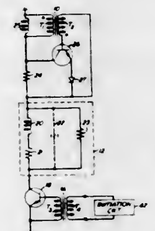
3,200,307
ALTERNATING CURRENT SIGNAL RECEIVER
Stephane Marcel Clement Victor Simon and Marcel Corneel Boeve, Antwerp, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 11, 1962, Ser. No. 201,699
Claims priority, application Belgium, June 15, 1961, 40,732, Patent 605,013
9 Claims. (Cl. 317—147)

1. An alternating current signal receiver comprising an input circuit having a capacitor and a primary winding tuned to the frequency of said alternating current, a secondary winding inductively coupled to the primary winding, the mid-point of said secondary winding being connected to one end of a resistance in parallel with a capacitor ground being connected to the other end of said parallel circuit, means comprising a pair of diodes for coupling the two ends of said secondary winding to a control electrode of an electronic switching device, the



time constant of the circuit formed by said resistance and said capacitor being equal to or greater than the damping time of any transient oscillations which are induced in said secondary winding when said alternating current terminates.

3,200,308
CURRENT PULSE GENERATOR EXHIBITING FAST RISE TIME
James D. Mazgy, Belmar, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 2, 1962, Ser. No. 206,567
4 Claims. (Cl. 317—148.5)

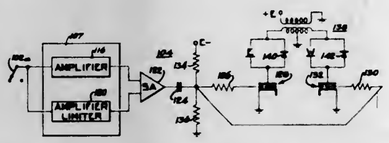


2. In combination, a series circuit comprising inductance and resistance, a source of potential, a first transistor adapted to be a switch between said source and said series circuit, a second transistor having base, emitter and a collector electrodes, said emitter and collector electrodes being connected across a portion of said ressitance to short out said portion of said resistance when said transistor is saturated, and means for forward biasing said base and emitter elctrodes in substantial proportion to the rate of increase of current of one polarity in said inductance, said transistor becoming unsaturated for a value of rising current between said collector and emitter electrodes that is limited by the forward bias of said base and emitter electrodes, said portions of said resistance being proportionoed to stabilize the current in said inductance at said value of current at which said transistor becomes unsaturated.

3,200,309
BI-DIRECTIONAL RELAY CIRCUIT USED IN A MULTIPLE CHART COURSE TRACING SYSTEM
Ralph L. Samson, Wyckoff, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Original application Aug. 27, 1959, Ser. No. 836,527, now Patent No. 3,036,303, dated May 22, 1962. Divided and this application Feb. 6, 1962, Ser. No. 176,842
4 Claims. (Cl. 317—155.5)

1. A bi-directional relay comprising a pair of electron amplifying devices each having a control terminal and a pair of output circuit terminals; means for applying direct bias and sinusoidal alternating signal potentials to each of said control terminals; an output circuit connected to each of said output circuit terminal pairs; means for applying sinusoidal alternating energizing potential

to each of said output circuits, the energizing and signal potentials associated with one of said amplifying devices having a phase relation that is opposite to that of the energizing and signal potentials associated with the other, whereby in the absence of application of alternating signal potential said devices and associated output circuits are in a first significant state of current conduction, and whereby when the signal applied to the control terminal of one of said electron amplifying devices is of one phase and of predetermined threshold magnitude said one

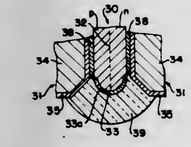


device is placed in an opposite state of current conduction, and when applied to the control terminal of the other device and of opposite phase and of predetermined threshold magnitude the other device is placed in said opposite state of current conduction, one of said two states being conduction of uni-directional current flow through the respective output circuit during half cycle periods of the respective energizing potential and the other of said two states being a non-conducting state; and means sensing the states of conduction of said devices.

3,200,310
GLASS ENCAPSULATED SEMICONDUCTOR DEVICE

Justice N. Carman, Gloucester, Mass., assignor to Carman Laboratories, Inc., a corporation of Massachusetts

Filed Sept. 22, 1959, Ser. No. 841,513
16 Claims. (Cl. 317—234)



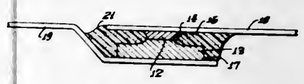
2. A semiconductor device comprising a siliconiferous crystal laterally bounded by a circumferential edge, said crystal having at least one n-p junction terminating at said edge and having faces on opposite sides of said junction for the attachment of leads, a conductive wholly metallic lead projecting from each of said faces, a wholly metallic bonding layer disposed between each lead and the adjacent crystal face and being the sole means securing the lead to the crystal face, the circumferential edge of the crystal having its surface oxidized, said bonding layer being fusible only at temperatures above 700° C., and a protective envelope of glass which is fusible below the melting temperature of said bonding layer surrounding the crystal and fused into direct contact with the oxidized edge of the crystal and with the leads.

3,200,311
LOW CAPACITANCE SEMICONDUCTOR DEVICES

John H. Thomas, Canoga Park, and Wayne F. Schnepple, Los Angeles, Calif., assignors to Pacific Semiconductors, Inc., Lawndale, Calif., a corporation of Delaware

Filed Apr. 3, 1961, Ser. No. 100,427
7 Claims. (Cl. 317—234)

1. A low junction capacitance semiconductor device comprising: a semiconductor crystal body having first and second contact surfaces at opposite sides thereof, said body defining a first diffused region of one conductivity type extending a predetermined distance inwardly from said first contact surface and a second diffused region of the other conductivity type extending inwardly from said second contact surface to said first region, the boundary between said first and said second regions defining a graded diffused PN junction, said first and said second regions being tapered inwardly from said contact surfaces so that the

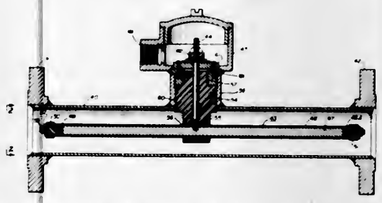


cross-sectional area of said PN junction is substantially less than the cross-sectional area of each of said contact surfaces; a first ribbon shaped electrical lead element bonded in ohmic contact with the entirety of said first contact surface of said crystal body; and, a second ribbon shaped electrical lead element bonded in ohmic contact with the entirety of said second contact surface of said crystal body.

3,200,312
CAPACITANCE PROBE FOR FLUIDS

Bill R. Callahan, Tulsa, Okla., assignor to National Tank Company, Tulsa, Okla., a corporation of Nevada

Filed Aug. 24, 1961, Ser. No. 133,732
3 Claims. (Cl. 317—246)



1. A capacitance measuring element including,
a tubular metallic casing adapted to be incorporated into a conduit as a section of the conduit through which all material passes to have its capacitance measured, the casing functioning as a first of the two active elements of the capacitance element,
a cylindrical metallic rod mounted to extend parallel the axis of the tubular casing and function as the second of the two active elements of the capacitance element,
a nipple mounted on the external wall of the casing and over a hole in the casing wall,
a metallic stud connector extending through the nipple and hole in the casing to make electrical contact with the rod,
means in the nipple to insulate the stud from the nipple and seal the hole to prevent escape of material from the casing,
and a sheath of electrically insulating material about the rod to protect the rod from contact with the material passing through the casing.

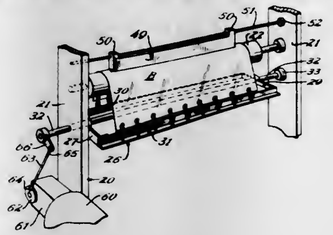
3,200,313
APPARATUS FOR ELECTROSTATICALLY TREATING EXTRUDED POLYETHYLENE FILM AND THE LIKE

Iver L. Nelson, Minneapolis, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota

Filed Feb. 21, 1962, Ser. No. 174,846
6 Claims. (Cl. 317—262)

1. An apparatus for treating an extruded thermoplastic film the apparatus including a metal roller, a blanket of dielectric material partially wrapped about said roller, means for moving said blanket tangentially of said roller

first in one direction and then in the other, means for directing the film to be treated over the roller and dielectric blanket, an electrode supported parallel to, and slightly spaced from, the portion of the sheet over which

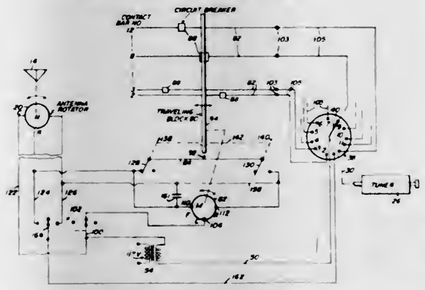


the film is directed, and a current generator connected between said electrode and said roller for creating a corona discharge between the electrode and the dielectric blanket.

3,200,314
TUNER ANTENNA CONTROL

Maurice Benton Iroler, Fancy Gap, Va.

Filed May 3, 1963, Ser. No. 277,837
11 Claims. (Cl. 318—33)

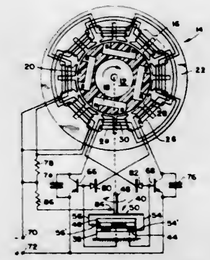


1. Apparatus for automatically controlling the rotational position of a receiver's antenna, which is rotatable by a reversible rotator, in accordance with which one of N predetermined selectable stations is selected by said receiver, comprising:
N contact bars insulatively extending lengthwise substantially coextensively,
means for selectively energizing said bars automatically in respective correspondence to the said N stations selectable by said receiver,
contact means movable in either direction along the length of said N bars for making disconnectable electrical contact therewith,
reversible moving means for moving said contact means as aforesaid,
reversing means electrically coupled to said contact means and operable when the contact means has reached either of two points separated a given distance corresponding to a predetermined angle of rotation of said antenna for reversing the moving direction of said contact moving means,
N disconnect means lengthwise positionable of said N bars respectively at predetermined points for the respective N stations for breaking electrical contact between said reversing means and any energized one of the said contact bars when the contact means moves adjacent the respective disconnect means,
means coupled to the output of said reversing means for reversibly rotating said antenna rotator within the limits of said angle in the corresponding direction and to the corresponding extent as the contact means does until it is disconnected as aforesaid from the energized bar corresponding to a selected station,
a receiver adapted for both VHF and UHF operation,
switch means for manually controlling the direction of said reversible rotator, and
means in said selectively energizing means for selectively energizing said switch means only during UHF operation of said receiver, said N contact bars being selectively energized as aforesaid during VHF operation of said receiver.

3,200,315
ELECTRIC MOTOR SYSTEM

Harold W. Thompson, Pasadena, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 11, 1961, Ser. No. 137,445
3 Claims. (Cl. 318—138)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A self-starting motor system comprising, in combination: an electrical motor including a rotor and a stator having poles defined therein, said rotor poles being magnetized in fixed sense; two separately-energizable series of driving coils for reversible magnetic polarization of the stator poles; each said stator pole being bifurcated to present a pair of circumferentially-spaced pole faces; a D.C.-energized oscillator circuit for providing driving currents in said two series of coils at the frequency of oscillator operation, said oscillator circuit including said two series of coils, and said oscillator energizing said two series of driving coils alternately to reverse the magnetic polarization of said stator poles; and circuit means, including a centrifugal switch device driven by said rotor, operative only during a motor-start period, for sequentially applying starting currents to said two series of coils, said device switching application of starting current from one of said two series of coils to the other of said two series of coils at instants when a rotor pole is positioned substantially midway between a pair of spaced pole faces of a stator pole.

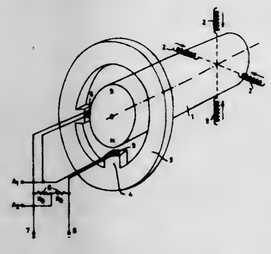
3,200,316
ELECTRONICALLY COMMUTATED DIRECT-CURRENT MOTOR

Walter Engel, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed May 9, 1963, Ser. No. 279,079
Claims priority, application Germany, May 11, 1962, S 79,401
7 Claims. (Cl. 318—138)

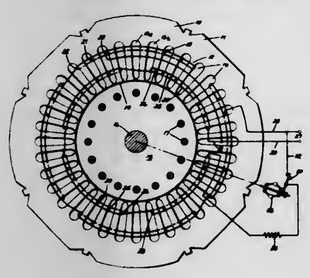
1. An electronically commutated D.-C. motor system comprising magnetized rotor means, stator means including a plurality of windings angularly displaced around said rotor for inductively interlinking with said rotor, two magnetic-field responsive resistance means each having resistance increasing slowly for flux increases at lower flux values and increasing steeply for flux increases at

more intense flux values, said magnetic-field responsive resistance means being displaced from each other around the rotor and subjected to varying flux as the rotor turns in such a manner that when the rotor flux is greatest the resistance of said resistance means will vary steeply with changes of flux and so that when the rotor flux is minimum the resistance will vary slowly for changes in flux,



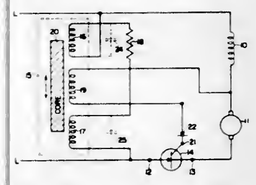
two magnetically-independent resistance means connecting to said magnetic-field responsive resistance means for forming a bridge, direct voltage means for energizing said bridge, output means on said bridge having an alternating output in response to rotation of said rotor, and control means connecting said output means to said windings for commutating them.

3,200,317
STATOR WINDING ARRANGEMENT IN A SINGLE PHASE INDUCTION TYPE MOTOR
Allen A. Brammerlo, Sycamore, Ill., assignor to General Electric Company, a corporation of New York
Filed May 15, 1962, Ser. No. 196,846
9 Claims. (Cl. 318—220)



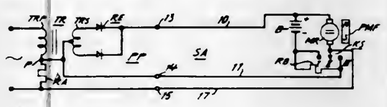
1. In an induction type motor, a magnetic stator core member having a plurality of slots, a main field winding arranged in said slots to form a predetermined number of primary running poles, a starting winding arranged in said slots to form a predetermined number of primary starting poles displaced in space from said primary running poles, each of said primary poles comprising a plurality of coils formed of preselected numbers of turns of wire, the number of turns of wire per primary pole coil progressively increasing from the innermost coil to the outermost coil for each pole of one of said windings, and the innermost coil of each of said primary poles of the other of said windings having at least as many turns of wire as the outermost coil thereof, the number of wire turns in the individual coils of the respective poles providing third and fifth harmonics of the space mmf. under each of the primary running poles in additive relation with the corresponding harmonics of the space mmf. under each of the primary starting poles to produce a high torque for starting the motor.

3,200,318
SPEED-REGULATING CONTROL SYSTEM FOR SERIES COMMUTATOR MOTORS
John R. Nilson, Mountainside, N.J., assignor to The Singer Company, Elizabeth, N.J., a corporation of New Jersey
Filed July 5, 1961, Ser. No. 121,994
1 Claim. (Cl. 318—246)



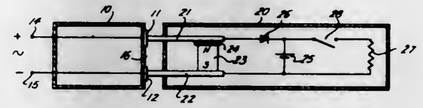
A speed-regulating system for an electric motor having series-connected field and armature windings adapted to be fed from an alternating current supply voltage, a solid state controlled rectifier having an anode, a cathode and a gate, said anode and cathode being connected in series circuit relation with the field and armature windings, a differential transformer having primary windings connected to the supply voltage in mutual series opposition, a secondary winding inductively coupled to said primary windings for deriving a reference voltage, circuit means for impressing said reference voltage in series with the armature winding and the cathode and gate of the rectifier, and means for varying the magnetic coupling between said primary and secondary windings to adjust the reference voltage in phase and magnitude.

3,200,319
ELECTRICAL POWER AND CONTROL MECHANISM FOR ELECTRICAL APPLIANCES
Robert J. Tolmie, Fairfield, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 29, 1962, Ser. No. 169,685
5 Claims. (Cl. 320—2)



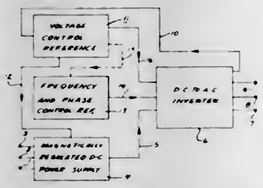
4. Electrical power and control mechanism for an electrical appliance comprising; a driving motor having two motor terminals; a rechargeable battery having a positive and a negative terminal; a power pack consisting of transformer means having a secondary and a primary winding, a resistor of predetermined ohmic value connected in series with said primary winding, said secondary winding being connected at its midpoint to the junction point of said resistor and said primary winding, and full wave rectifying means connected to said secondary winding for providing unidirectional power at a predetermined magnitude under conditions where said primary winding is connected through said resistor to an alternating source of power; and electric circuit connecting means selectively operable to a first certain condition connecting said driving motor across said battery for energization therefrom for rotation in a predetermined direction, to a second certain condition connecting said battery to said power pack for charging of said battery, said electric circuit connecting means also being operable to a third certain condition connecting said driving motor to said power pack, shorting said resistor in said primary winding circuit for energizing said driving motor at a predetermined increased magnitude of unidirectional power for rotation in said predetermined direction, and connecting said battery for electrically isolating said battery from said motor.

3,200,320
CHARGING MEANS WITH MAGNETIC CONTACTS FOR BATTERY OPERATED APPLIANCES
Henry Rogers Mallory, Greenwich, Conn., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Nov. 13, 1962, Ser. No. 237,274
8 Claims. (Cl. 320—2)



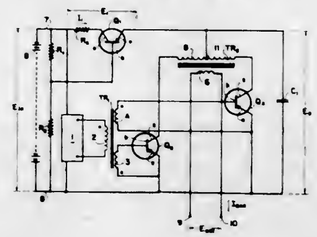
5. A rechargeable battery device comprising, in combination, a casing, a rechargeable battery having terminals of opposed polarity in said casing, a pair of spaced pole shoes respectively connected to said terminals in said casing and having their ends extending therefrom, means for establishing a magnetic field between said pole shoes while maintaining them electrically disconnected from each other, at least one unidirectional conductor interposed between said pole shoes and said battery, a load circuit for said battery, and switching means for connecting said load circuit to said battery and for disconnecting it therefrom.

3,200,321
CONVERTER SYSTEM
Allen B. Rosenstein, West Los Angeles, Calif. (314 S. Rockingham Ave., Los Angeles, Calif.)
Filed Aug. 31, 1960, Ser. No. 53,125
8 Claims. (Cl. 321—3)



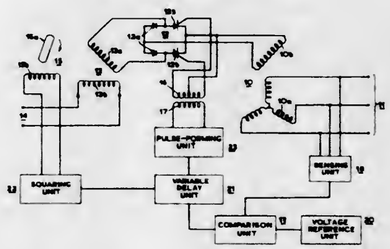
3. A converter system for converting unregulated A.-C. input power to frequency-regulated and amplitude-regulated polyphase output power comprising, a magnetic-amplifier regulated D.-C. power supply connected to said A.-C. power input power for providing regulated direct current from said unregulated A.-C. input power, cyclically switched inverter means having a pair of input terminals connected to the output of said D.-C. power supply and a plurality of output terminals from which is provided polyphase alternating current from said regulated direct current, a source of fixed frequency pulses connected with said inverter means for controlling the switching rate of said inverter means and thereby regulate the frequency of the polyphase alternating current from said inverter means, rectifier means connected to said output terminals for deriving a D.-C. control voltage from one phase of said alternating current output from said inverter means, and means connecting said D.-C. control voltage to said magnetic-amplifier regulated D.-C. power supply for controlling the amplitude of the direct current from said magnetic-amplifier D.-C. power supply and thereby regulate the amplitude of said polyphase A.-C. output power at said output terminals.

3,200,322
TRANSISTOR SWITCHING CIRCUIT
Earl C. Rhyne, Jr., East Pepperell, and John S. Costino, South Acton, Mass., assignors to The Warren Manufacturing Company, Inc., Littleton, Mass., a corporation of Massachusetts
Filed July 21, 1961, Ser. No. 125,863
14 Claims. (Cl. 321—18)



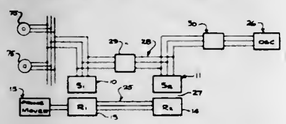
11. A transistor switching circuit comprising direct-voltage source means having two terminals; saturable transformer means having a primary winding coupled to one of said terminals and a secondary winding; switching transistor means connecting the primary winding of said saturable transformer means to the other of said terminals; control means coupled to said switching transistor means for alternately biasing said transistor means on and off to induce an alternating current in the secondary winding of said saturable transformer means; and capacitor means connected across the arrangement of said saturable transformer means and said switching transistor means for limiting voltage excursions across said primary winding whereby the voltage at said secondary winding is regulated.

3,200,323
APPARATUS FOR GENERATING ALTERNATING CURRENT
Kenneth Milford Faulkes, Bradford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Nov. 6, 1961, Ser. No. 150,394
Claims priority, application Great Britain, Nov. 11, 1960, 38,754/60
3 Claims. (Cl. 322—28)



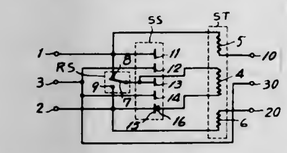
1. Apparatus for generating A.C. including, in combination, an A.C. generator having a stationary A.C. output winding and a rotating D.C. exciting winding, an A.C. exciter having stationary exciting means and a rotating A.C. output winding, controlled rectifier means supplied from the rotating output winding and connected to supply the rotating D.C. exciting winding with direct current, the two rotating windings and the controlled rectifier means being mounted on a common shaft, and transfer means for inductively transferring control signals from the stationary part of the machine to the controlled rectifier means whereby to control the firing angle of the controlled rectifier means.

3,200,324
ROTATING ELECTRICAL MACHINE WITH MULTIPLE ROTORS IN PAIRED RELATION
Dudley W. Wagner, 220 Grandview, Laguna Beach, Calif.
Filed Feb. 29, 1960, Ser. No. 11,641
13 Claims. (Cl. 322—32)



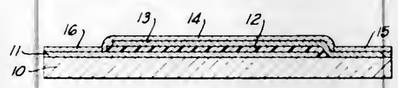
4. In rotary equipment for generating electrical current, power and exciter stators, a rotor assembly including multiple rotor portions one for each stator, shaft means mounting the rotor portions to rotate simultaneously in electromagnetic energy transferring relation with the stators, the rotor portions being electrically interconnected in paired relation to transfer directly alternating current from a rotor portion for the exciter stator to a rotor portion for the power stator, means for withdrawing electrical current from the power stator during transfer of electromagnetic energy from the exciter stator to the rotor for the exciter stator in response to rotational input to the rotor assembly, said stators being electrically connected, and other means to supply external current to only one of said stators.

3,200,325
TAP CHANGING VOLTAGE REGULATOR FOR SINGLE PHASE THREE-WIRE SYSTEM
Shuzo Takeda, Yodogawa-ku, Osaka, Japan, assignor to Osaka Transformer Co., Ltd., Osaka, Osaka Prefecture, Japan
Filed July 10, 1962, Ser. No. 208,836
4 Claims. (Cl. 323—43.5)



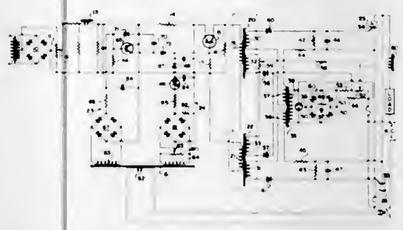
1. A tap changing voltage regulator for a single phase three-wire system comprising, in combination, first and second input line terminals and a neutral line terminal, a selector switch having first, second, third, fourth and fifth contacts, a series transformer having first and second secondary coils and a primary coil, each of said secondary coils having an input conductor and an output terminal, first and second input conductors associated with said primary coil, a reversing switch having first, second and third terminals and a movable contact selectively interconnecting said third terminal to said first or said second reversing switch terminal, conductors interconnecting said first input line terminal with said first reversing switch terminal, said first selector switch contact and the input conductor of said first secondary coil, conductors interconnecting said second input line terminal with said second reversing switch terminal, said fifth selector switch contact and the input conductor of said second secondary coil, a third output terminal, conductors interconnecting said neutral line terminal to said second and fourth selector switch contacts and said third output terminal, a conductor interconnecting said reversing switch third terminal with said selector switch third contact, said primary coil first input conductor being connected with said reversing switch third terminal, said selector switch including movable contact means connected to said primary coil second input conductor selectively connecting said primary coil second input conductor with at least one of said first, second, fourth or fifth selector switch contacts.

3,200,326
RESISTANCE-CAPACITANCE DEVICE EMPLOYING CONDUCTIVE AND NON CONDUCTIVE IRIDIZED OXIDE FILMS
Nathan Pritikin, Santa Barbara, and Bernard Feldman, Ventura, Calif., assignors to Intellux Inc., Santa Barbara, Calif., a corporation of California
Filed Mar. 27, 1961, Ser. No. 98,548
3 Claims. (Cl. 323—74)



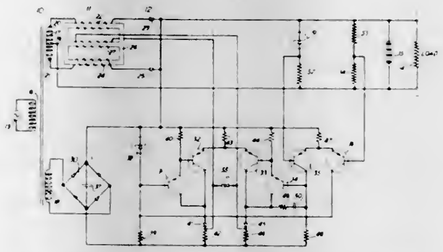
3. A nonpolarized capacitor comprising a plurality of layers of film on a substrate, the layers including in sequence:
a conducting iridized metal oxide film;
a metallic film;
a nonconducting iridized metal oxide film dielectric;
a second metallic film;
a second conducting iridized metal oxide film; and a continuous glass film.

3,200,327
THEATER LIGHTING CONTROL APPARATUS
Joseph W. Fleming, Allendale, N.J., assignor to Electronic Dimmer Corporation, New York, N.Y., a corporation of New York
Filed Feb. 17, 1961, Ser. No. 89,956
6 Claims. (Cl. 323—89)



6. A controlled rectifier system for variably controlling the application of an alternating voltage to a load by a variable D.-C. control voltage comprising: power input terminals provided to receive A.-C. voltage from a supply source, power output terminals provided to deliver A.-C. voltage to a load, a solid state controlled rectifier having a cathode, an anode and a gate control electrode, a magnetic amplifier including a saturable magnetic core having at least a gate winding connected to the input and output terminals and having a control winding, circuit means connected in series with said gate winding adapted to apply an A.-C. control voltage between the cathode and the control-electrode of said controlled rectifier, means for connecting the anode and cathode terminals of said rectifier between an A.-C. input terminal and an A.-C. output terminal, a D.-C. voltage supply including manually operable means for varying the output voltage of said supply to produce a D.-C. control voltage, current control means connecting the D.-C. control voltage of said supply to said control winding, first load-current-feedback control means connected to said current control means operable when said load current reaches a predetermined maximum value to reduce the D.-C. current flow through said current control means to said control winding and thereby limit the current flow through said controlled rectifier and load to said predetermined maximum value, second load-current feedback control means connected to said current control means including current limiting means provided to restrict the D.-C. current flow through said current control means to said control winding to a predetermined maximum value when the load current is small, said limiting means being responsive to load current feedback and being disabled when the load current exceeds a predetermined minimum value thereby permitting the load current to be controlled between predetermined minimum and maximum values by the adjustment of said manually operable means.

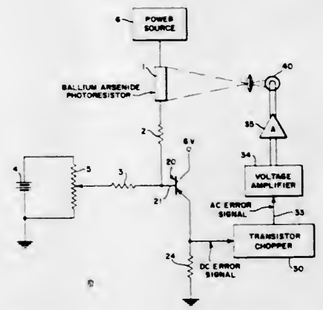
3,200,328
CURRENT SUPPLY APPARATUS
Lowell J. Green, Columbus, Ohio, assignor to North Electric Company, Galion, Ohio, a corporation of Ohio
Filed Jan. 30, 1962, Ser. No. 169,824
9 Claims. (Cl. 323—89)



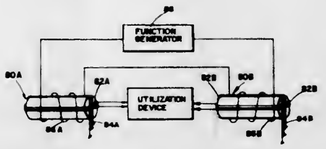
1. In combination, a saturable reactor having an impedance winding and a control winding to which current may be supplied to control the impedance of said impedance winding, a first and a second transistor each having a plurality of electrodes comprising an emitter, a collector and a base, a first and a second resistor, a first current path comprising in series the emitter-collector path of said first transistor and said first resistor, a second current path in parallel with said first current path comprising in series the emitter-collector path of said second transistor and said second resistor, each of said parallel current paths having a terminal intermediate its end terminals, means for connecting the terminals of said control winding to said intermediate terminals respectively, means for connecting said parallel current paths to a source of direct current, means for controlling the emitter-base current of said first transistor to thereby control its emitter-collector current, and means responsive to the emitter-collector current of said first transistor to control the emitter-base current of said second transistor and thereby control the emitter-collector current of said second transistor.

3,200,329
CONSTANT CURRENT CIRCUIT USING GALLIUM ARSENIDE DEVICES
Robert W. Haisty, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application Mar. 29, 1961, Ser. No. 99,259. Divided and this application Sept. 18, 1963, Ser. No. 314,832
1 Claim. (Cl. 323—94)

A circuit for providing a constant current through a load comprising a load resistance, a gallium arsenide photoresistor in series with said load, means for applying a voltage to develop a current through said load resistor, means to apply an opposing current source to exactly equal the current flowing through said load, means to detect a change in current flowing through said load resistor, means to create an error signal responsive to said last named means, and varying light means responsive to said error signal, said varying light means arranged to vary the intensity of light falling on said gallium arsenide photoresistor according to the intensity of said error signal.



3,200,330
NAVIGATION DEVICE
Wilbur L. Zingery, Long Beach, Calif., assignor to North American Aviation, Inc.
Filed June 7, 1962, Ser. No. 200,773
4 Claims. (Cl. 324—.5)



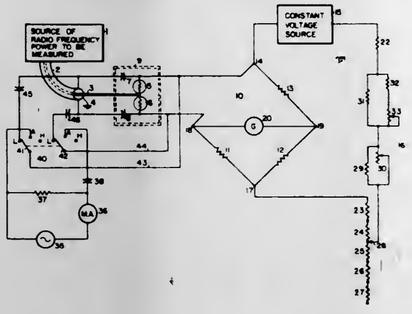
1. Apparatus for detecting changes in the heading of a vehicle, comprising in combination:
a first and a second similar sample of material capable of exhibiting a magnetic characteristic when polarized;
means for polarizing said samples of material to produce a first and a second magnetic characteristic having the same reference orientation;
means for causing said first magnetic characteristic to precess in one direction;
means for causing said second magnetic characteristic to precess in the opposite direction;
first pickup means for normally producing an output signal at a time when said first magnetic characteristic has a given relation to said reference orientation;
second pickup means for normally producing an output signal at a time when said second magnetic characteristic has a given relation to said reference orientation; and
means for causing the orientation of both said pickup means to change when said vehicle changes its heading so that said first pickup means produces a signal before said first magnetic characteristic has a given relation to said reference orientation while the other pickup means produces a signal after said second magnetic characteristic has a given relation to said reference orientation.

3,200,331

RF BOLOMETER BRIDGE MEASURING CIRCUIT USING SUBSTITUTIONAL BRIDGE BALANCE METHOD

Robert E. Bloom, Sepulveda, and Robert J. Fleischer, Los Angeles, Calif., assignors to Stoddart Aircraft Radio Co., Inc., Los Angeles, Calif., a corporation of California

Filed Aug. 1, 1961, Ser. No. 128,540
8 Claims. (Cl. 324—106)



2. A bridge circuit for measuring radio frequency electrical power comprising

a twin bolometer having one central and two extremity connections and a mounting having a central conductor, the central connection of said twin bolometer connected to said central conductor,

said mounting having only plural capacitor plates in capacitative relation to said mounting and connected to each extremity connection of said twin bolometer within said mounting,

a bridge circuit including said twin bolometer in one arm thereof,

means including a constant voltage source to null said bridge with said radio frequency electrical power applied to said twin bolometer, means including said constant voltage source and an audio frequency source of adjustable amplitude to substitutionally null said bridge with audio frequency electrical power directly applied across only said twin bolometer and with said constant voltage source having the same null relation to said bridge as when said radio frequency electrical power was applied to said twin bolometer, means to measure the adjusted said amplitude of the output of said audio frequency source,

an additional pair of capacitors having low capacitative reactance at low radio frequencies and switching means connected across said plural capacitor plates and to said additional pair of capacitors to connect said plates and said capacitors in parallel only when said low radio frequencies of electrical power are applied to said twin bolometer.

3,200,332

D.C. METER WITH PERMANENT MAGNET ROTOR AND UNITARY TERMINAL AND FIELD CONDUCTOR MEANS

William E. Pfeffer, Perkasie, Pa., assignor to Lester R. Vold, Paul W. Mood, and William E. Pfeffer, copartners, trading under the name of Electro-Mechanical Instrument Co., Perkasie, Pa.

Filed Aug. 6, 1962, Ser. No. 214,981
7 Claims. (Cl. 324—146)

1. An electric meter comprising:

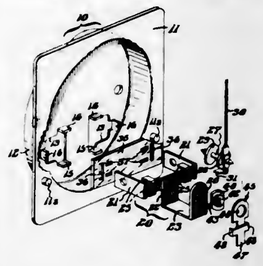
a hollow cup-like casing with spaced openings in the bottom wall thereof,

a unitary stator member fashioned from a profiled blank of electrically conductive non-ferrous metal, said stator having

(a) a transverse portion within said casing forming one-fourth of a turn of a coil disposed in proximity to said bottom wall of said casing,

(b) two terminal portions integral with and supported solely from said transverse portion and extending downwardly of said casing through said spaced openings from the opposite end portions of said transverse portion,

(c) a resilient U-shaped bracket portion integral with and supported solely from said transverse portion extending directly away from said wall and having an arm spaced from said transverse



portion to provide between said transverse portion and said arm an arbor-receiving space,

bearing means, one in said arm and one in said transverse portion,

an arbor-assembly rotatably supported by and between said bearing means, said arbor-assembly including a permanent magnet disc disposed adjacent said transverse portion for developing a torque on said arbor-assembly upon flow of current through said transverse portion, and a pointer hand-mounted on said arbor-assembly, and

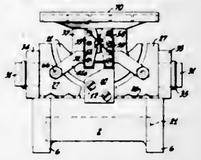
means for securing to and supporting within said casing said stator member with said transverse portion in proximity to said bottom wall of said casing.

3,200,333

ELECTROMAGNETIC POSITION INDICATOR UTILIZING PLURAL ECCENTRICALLY PIVOTED COILS

Jerome W. Gootherts, Redwood City, Calif., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed June 22, 1961, Ser. No. 118,868
2 Claims. (Cl. 324—150)



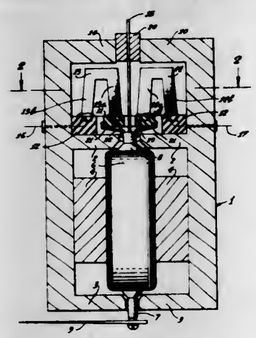
1. A position detector comprising: an H-shaped non-magnetic frame having depending parallel legs and an upstanding crosspiece; a magnet member disposed between the legs of said frame and secured thereto; a pair of upstanding spaced, opposed, co-planar pole pieces supported by said frame over the north and south poles of said magnet, said pole pieces being on opposite sides of said crosspiece; the upper surfaces of said pole pieces being of arcuate configuration; an armature core mounted on and transversely to said crosspiece between said pole pieces in coplanar and spaced relation to said pole pieces, the adjacent surfaces of said pole pieces and said armature defining and annular air gap therebetween; first and second non-magnetic brackets mounted on said crosspiece on opposite sides of said armature core; a non-magnetic platform disposed between said brackets and above said armature core, said platform having depending legs embracing but spaced from said armature core; first and second pairs of opposed flexure pivot assemblies mounting said platform to said first and second brackets respectively for rotation of said platform about the axis of said annular air gap; first and second armature coils mounted on the legs of said platform and circumscribing said armature core with positive clearance, said first armature coil having a portion thereof disposed in said annular air gap adjacent one of said pole pieces and said second armature coil having a portion thereof disposed in said annular air gap adjacent the other of said pole pieces, said first and second armature coils being connected in series, said platform being rotable about said axis in response to energization of said armature coils; first and second pole piece coils mounted one each on each of said pole pieces with the axis of said pole piece coils being disposed in the plane of said pole pieces and armature core, said pole piece coils being electrically connected in series.

3,200,334

MOVING COIL METER WITH SYMMETRICALLY DISPOSED RADIALLY AND AXIALLY EXTENDING COIL LEADS

Hans-Jörg Metzger, Furtwangen, Black Forest, Germany, assignor to Fritz Hellige & Co., G.m.b.H., Freiburg, Germany

Filed Dec. 12, 1960, Ser. No. 75,430
Claims priority, application Germany, Dec. 11, 1959, H 38,120
14 Claims. (Cl. 324—154)



1. A moving coil meter comprising a relatively rigid frame, a moving coil having at least one winding supported within the frame for motion with respect thereto about an axis, and a plurality of current leads for establishing electrical connection to the winding of said coil, said current leads being symmetrically disposed about the axis of said coil, and having their ends afixed to said frame and said coil, each of said leads including two interconnected legs extending substantially parallel to the axis of rotation of said coil.

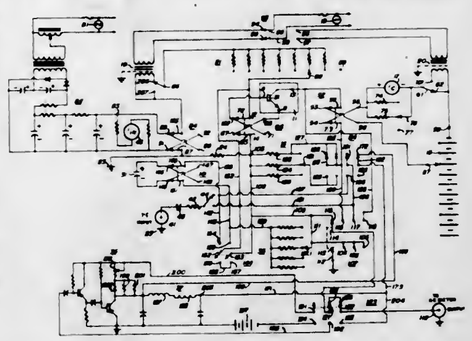
3,200,335

APPARATUS FOR ENABLING THE H_i, H_f, H_o, AND H_r CHARACTERISTICS OF TRANSISTORS TO BE DERIVED

Alexander B. Bereskin, 452 Riddle Road, Cincinnati 20, Ohio

Filed Feb. 7, 1961, Ser. No. 87,676
12 Claims. (Cl. 324—158)

1. Apparatus for enabling the h_i, h_f, h_o and h_r characteristics of a tested transistor to be derived, said transistor having emitter, base and collector electrodes, comprising a first resistor connected between a first terminal and said collector electrode, a first source of D.C. electrode biasing voltage connected to said collector electrode for energization thereof, a second resistor connected between a common terminal and a second terminal, a second source of D.C. electrode biasing voltage connected to said second terminal, means for selectively connecting the transistor emitter or base electrode to said first terminal while connecting the other one of said base or emitter electrodes of said transistor to said second terminal, a source of A.C. voltage, means for connecting said A.C. voltage source selectively in series circuit with said first or second resistor, said A.C. voltage source



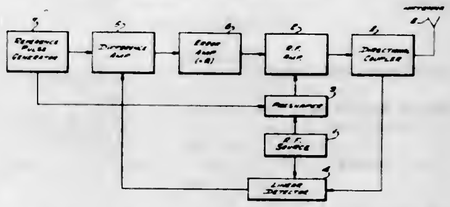
when connected in series with said first resistor being connected between said first terminal and said collector electrode, and when connected in series with said second resistor being connected between said common terminal and said second terminal, a third resistor connected between said first and common terminals, means for selectively short-circuiting said third resistor, and switch means selectively connected: across each of said resistors, to said terminals, and to said collector electrode; for enabling derivation of signals having amplitudes proportional to the voltages: across the respective resistors, between said first and second terminals with said third resistor short-circuited, and between said collector electrode and said first terminal with said third resistor short-circuited.

3,200,336

MODULATION WAVEFORM CONTROL CIRCUIT

Agis Valakos, Flushing, and Arnold Rosen, Wantagh, N.Y., assignors to Maxson Electronics Corporation, New York, N.Y., a corporation of New York

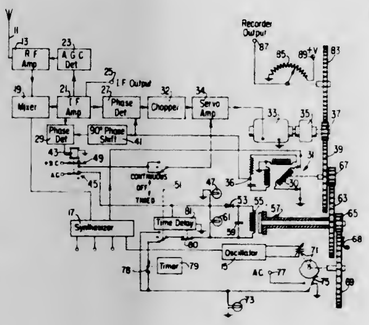
Filed Feb. 27, 1961, Ser. No. 91,851
5 Claims. (Cl. 325—144)



2. A device for controlling the modulation waveform of a radio frequency carrier, comprising a source of modulated radio waves, a single amplifier channel series connected with said source, an antenna, means coupling the output of said amplifier channel to said antenna, envelope detector means connected to said coupling means and said source, means for generating a reference

voltage, comparison means coupled to said reference voltage generating means and said detector means for producing a voltage proportional to the difference between said reference voltage and the envelope of said modulated radio waves, and means coupling the output of said comparison means to the input of said amplifier channel whereby the signal from said comparison means is operable to control the gain of said amplifier channel.

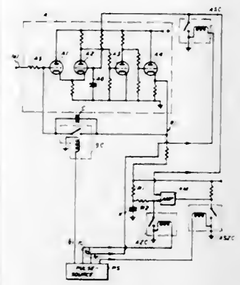
3,200,337
FREQUENCY STANDARD
Roy A. Richardson, Skokie, Orville M. Eness, Norridge, and Wayne W. White, Hillside, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 15, 1962, Ser. No. 230,398
6 Claims. (Cl. 325—420)



1. A VLF receiver frequency standard unit having a locally generated output signal maintained on standard frequency according to the frequency of a received signal standard, including in combination, phase tracking means for resolving the phase of the locally generated signal to maintain such signal in a given phase relationship with the received signal standard, automatic frequency control means mechanically driven by said phase tracking means for varying the frequency of the locally generated signal to bring the same into accord with the frequency of the received signal standard, clutch means coupling said phase tracking means to said automatic frequency control means for rendering the latter inoperative at predetermined times to prevent defects in the received signal from influencing the frequency of the locally generated signal, and detector means controlling said clutch means to disengage same when the locally generated signal is out of the given phase relationship with the received signal by a predetermined amount.

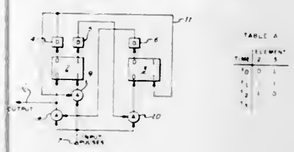
3,200,338
AUTOMATIC CORRECTION ARRANGEMENTS FOR PERIODIC INTEGRATORS
Alfred Brian Edwin Ellis, Widford, England, assignor to The Marconi Company Limited, a British company
Filed July 17, 1961, Ser. No. 124,494
Claims priority, application Great Britain, Aug. 10, 1960, 27,758/60
6 Claims. (Cl. 328—35)

1. A periodic integrator including an amplifier, means for applying a periodic pulsed waveform to the input of said amplifier; means in said amplifier for transforming each input pulse into a saw-tooth output wave of amplitude dependent on the input pulse amplitude; periodically actuated clamp means between the output and the input of said amplifier, said clamp means being actuated at the input pulse frequency but having the duration of each period of "opening" longer than the duration of an input pulse so that the clamp is open during each input pulse and also during part of the space between two successive input pulses; means for periodically sampling the amplifier output at the input pulse frequency during



periods each of which occurs during the part of a space between successive input pulses when said clamp means are open; and means for applying control signals derived by said sampling to a point in said amplifier to correct for drift of slope.

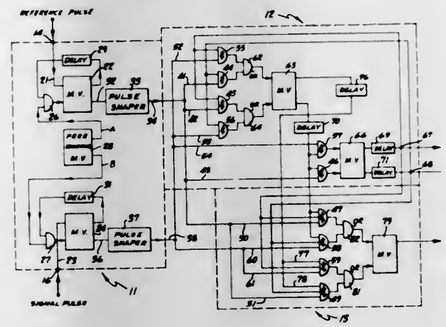
3,200,339
BINARY PULSE COUNTER FOR RADICES 2^x+1 WHERE X IS ANY INTEGER
Howard M. Gorlin, Flushing, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Dec. 12, 1961, Ser. No. 158,659
3 Claims. (Cl. 328—46)



1. Digital apparatus comprising
a plurality of bistable elements, each element having reset and set input terminals and first and second output terminals whereby each element produces a first output signal at said first output terminal when said reset terminal is pulsed and a second output signal at said second output terminal when said set terminal is pulsed,
a source of pulses,
gating means connected to said source for directing the flow of said pulses to all but one of said input terminals of a particular one of said bistable elements,
circuit means connected to all but one of said output terminals of said particular one of said bistable elements for applying said output signals to said gating means for the actuation thereof in accordance with an n-valued binary cyclic code truth table where $n=2^{m-1}+2$ and m represents the number of said bistable elements, one of the columns of said truth table consisting of $n-2$ consecutive binary ones and two binary zeros, said one of said columns corresponding to said particular one of said bistable elements having the singular input terminal receiving no pulses,

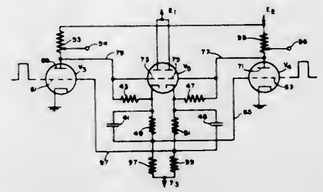
and means for applying to said one of said input terminals of said particular one of said bistable elements an output signal from another of said bistable elements.

3,200,340
SYNCHRONIZATION MONITOR
Peter F. Dunne, San Francisco, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Nov. 29, 1962, Ser. No. 240,954
5 Claims. (Cl. 328—63)



1. A counter circuit for monitoring the synchronization of signal information with respect to reference information, comprising:
an input circuit having a reference pulse input terminal and a signal pulse input terminal for receiving respectively reference pulse information and signal pulse information, and first and second output terminals, said input circuit forming signal output pulses at a first of said output terminals in response to signal information supplied to said signal pulse input terminal and reference output pulses at the second of said output terminals in response to reference information supplied to said reference pulse input terminal, said reference output pulses and signal output pulses being alternately produced at said first and second output terminals of said input circuit when said signal information is synchronized with said reference information; and
a detecting circuit electrically connected to said first and said second output terminals of said input circuit for receiving the reference output pulses and signal output pulses formed by said input circuit; said detecting circuit including a first control means having first and second input terminals coupled to said first and second output terminals respectively, said first control means having a third output terminal and normally alternating between two modes of conduction in response to output pulses produced alternately on said first and second output terminals and producing output pulses on said third output terminal; and
a second control means having third and fourth input terminals coupled to said first and second output terminals respectively, said second control means having a fourth output terminal coupled to said first and second input terminals of said first control means, said second control means having two modes of conduction but being normally maintained in a single mode of conduction so that said first control means is caused to alternately shift between the two conductive modes by alternate output pulses from said input circuit along with the output from said second control means when in said normal mode of conduction.

3,200,341
CAPACITOR CHARGING AND DISCHARGING DEVICE
Matthew J. Relis, Fair Lawn, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 12, 1960, Ser. No. 75,273
4 Claims. (Cl. 328—200)

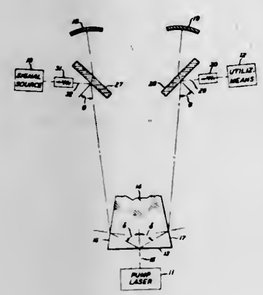


1. A flip-flop circuit comprising first, second, third and fourth signal translating devices, said third signal translating device being connected to be rendered conductive or nonconductive by said first signal translating device when said first signal translating device is nonconductive or conductive, respectively, said fourth signal translating device being connected to be rendered conductive or nonconductive by said second signal translating device when said second signal translating device is nonconductive or conductive, respectively, input means causing said first and second signal translating devices to be rendered conductive, a first capacitor chargeable through said third signal translating device when said third signal translating device is conducting, a second capacitor chargeable through said fourth signal translating device when said fourth signal translating device is conducting, first circuit means forming a path for said first capacitor to discharge through said first signal translating device when said first signal translating device is conducting, second circuit means forming a path for said second capacitor to discharge through said second signal translating device when said second signal translating device is conducting, third circuit means connecting said first capacitor to said second signal translating device to render said second signal translating device nonconductive when said first capacitor discharges through said first signal translating device, and fourth circuit means connecting said second capacitor to said first signal translating device to render said first signal translating device nonconductive when said second capacitor discharges through said second signal translating device.

3,200,342
OPTICAL FREQUENCY PARAMETRIC AMPLIFIER AND OSCILLATOR
Lynden U. Kibler, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 30, 1963, Ser. No. 305,582
5 Claims. (Cl. 330—4.5)

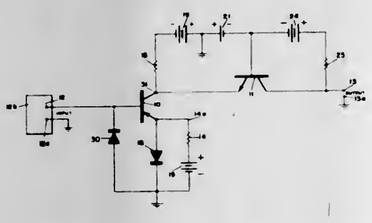
3. Apparatus for the parametric generation of light comprising a laser source of pumping light of frequency ω_p, a confocal cavity resonant at a frequency ω less than the frequency of said pumping light, material exhibiting a significant absorption band edge shift in response to the application of an external electric field, said material being formed into a prismatic wedge having a base positioned in the vicinity of the focus of said cavity, said base being totally internally reflecting for energy reflected

along the cavity axis from the cavity extremities, means for applying said pumping light to said wedge in the vi-



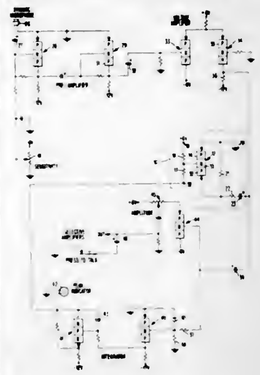
cinity of said focus, and means for deriving from said cavity for utilization a wave at the frequency ω.

3,200,343
D.C. AMPLIFIER HAVING FAST RECOVERY CHARACTERISTICS
Richard A. Skinner, Philadelphia, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 29, 1961, Ser. No. 163,232
11 Claims. (Cl. 330—17)



7. A transistor amplifier comprising
an input circuit connected between the base of an input transistor and reference potential,
a constant current circuit connected between said reference potential and the emitter of said input transistor,
said circuit including in series a source of voltage and a resistor to limit the maximum emitter current of said input transistor for a selected maximum conductivity thereof to values below saturation of said input transistor,
a diode connected between said emitter and said reference potential and poled to provide a conductive path from said emitter to ground for all values of conductivity below said selected maximum value and becoming substantially nonconductive for said selected maximum value of conductivity, the collector of said transistor being coupled to the output of said amplifier,
means connected between said collector and said reference potential for
(1) maintaining at high frequencies the collector of said input transistor at a low impedance with respect to said reference potential and
(2) producing a minimum capacitance between said collector and its base, thereby to minimize high-frequency feedback to said input circuit.

3,200,344
DYNAMIC COMPRESSION CIRCUIT WITH CONTROLLED CLIPPING
Genung L. Clapper, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 21, 1961, Ser. No. 161,088
2 Claims. (Cl. 330—24)

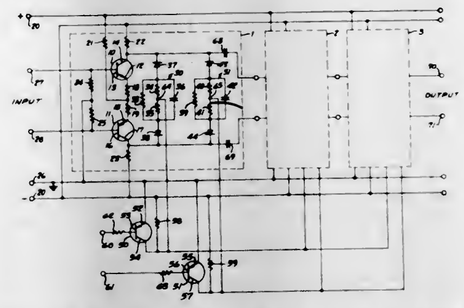


1. An amplifier circuit for compressing an audio frequency wave including in combination a pre-amplifier circuit comprising a pair of capacitor coupled grounded emitter transistors operating in class A amplification, a voltage amplifier circuit comprising first and second transistors each having base, emitter and collector electrodes, means for coupling the output from said preamplifier circuit to the base electrode of the first transistor of said voltage amplifier circuit, circuit means connecting the emitters of said first and second transistors of said voltage amplifier circuit together and to a voltage supply and connecting the collector of said first transistor to a voltage source whereby current flow in said first transistor operates to control current flow to the emitter of said second transistor and said second transistor operates as a grounded base voltage amplifier with constant current characteristics, means coupled to the collector output of said second transistor, said means including a transistor biased to conduction in response to predetermined variations in output of said amplifier to provide an output, circuit means for integrating and amplifying the output from said last-mentioned means to generate a compression voltage, impedance means connected between the collector of said second transistor and a reference potential operable in response to an applied signal to provide a varying impedance, a resistor connected from the collector of said second transistor to a reference potential, means for coupling said compression voltage to said impedance means whereby the load of said voltage amplifier circuit is determined and the gain of said amplifier controlled and bias means for said impedance means for controlling said impedance means to provide a nominal impedance in the collector circuit of said second transistor.

3,200,345
SELECTIVE VARIABLE GAIN AND BANDWIDTH AMPLIFIER
Ralph R. Lackenbach, Menlo Park, Vernon R. Natwick, Saratoga, and Miroslav Swyryd, Palo Alto, Calif., assignors to Ampex Corporation, Redwood, Calif., a corporation of California
Filed Sept. 17, 1962, Ser. No. 223,916
3 Claims. (Cl. 330—29)

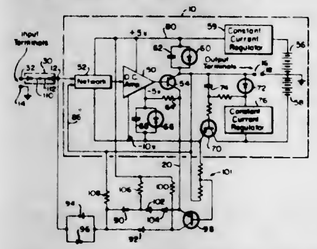
3. A selectable gain and bandwidth amplifier circuit comprising a pair of differential connected amplifying transistors, each of said transistors having an emitter

electrode, a base electrode, and a collector electrode, a plurality of gain and bandwidth determining networks each including a pair of series connected resistors having a common junction therebetween, pairs of diodes respectively coupling said networks in cascade between the collector electrodes of said transistors, said diodes having like polarity terminals connected to said collector



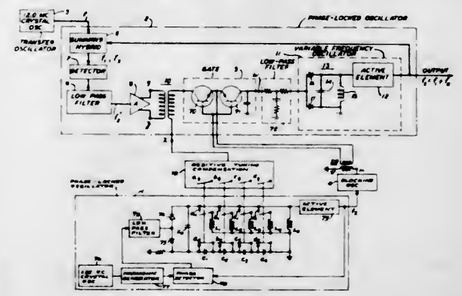
electrodes and opposite like polarity terminals connected to the ends of said resistors remote from said junctions, and a plurality of switching transistor means respectively coupled to said common junctures of said pairs of resistors for selectively applying first and second potentials thereto respectively in forward and reverse biasing relation to said diodes connected to said pairs of resistors.

3,200,346
OVERLOAD PROTECTION CIRCUIT FOR HIGH IMPEDANCE AMPLIFIERS
Frink Mansfield Young, Boston, Mass., assignor to Adage, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 21, 1962, Ser. No. 218,334
8 Claims. (Cl. 330—110)



1. An overload protection and limiter circuit for an electrical signal amplifier having a high input impedance, said amplifier including a pair of input terminals, a pair of output terminals, a first of said input and a first of said output terminals being connected in common, and a lead connected to said amplifier providing a signal indicating the condition of loading of said amplifier, said lead being connected to a point in said amplifier other than the second output terminal thereof, said point being isolated from said second output terminal, said circuit comprising, in combination, a current source, a switch including means responsive to the signal on said lead for operating said switch, first means connecting said current source between the first output terminal of said amplifier and a first terminal of said switch, second means connecting said first terminal of said switch to said overload signal lead, third means connecting a second terminal of said switch to the second of said amplifier input terminals, and fourth means connecting an impedance in series between the second of said input terminals and a terminal to which the signal said amplifier is to amplify is applied.

3,200,347
FREQUENCY CONTROL FOR MULTIFREQUENCY PHASE LOCK GENERATORS
William Kaminski, West Portal, and Herbert A. Schneider, Millington, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 29, 1961, Ser. No. 163,347
4 Claims. (Cl. 331—16)

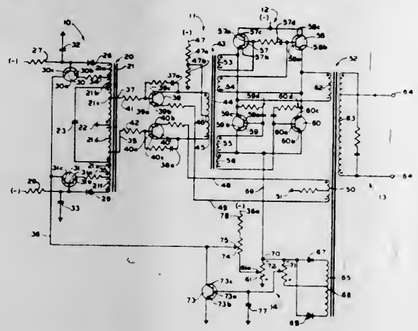


2. In combination, a first variable frequency source, means for selecting a frequency for the output of said source, a second variable frequency source having a frequency tuning element permitting variation of said second source over a frequency range equal to the frequency range of said first source in response to applied signals, said second source to be operated at a frequency related to the frequency of the output of said first source, a first source of control signals the output of which is regulated by said selecting means, the output of said first source of control signals being of such value as to bias said tuning element near said related frequency, a second source of control signals comprising phase comparing means for obtaining the phase difference between the outputs of said first and second variable frequency sources and producing an output which is dependent upon said phase difference, the output of said second source of control signals being of such value as to bias said tuning element to lock the phase of the output of said second variable frequency source onto said related frequency, and means for applying the outputs from said sources of control signals to said frequency tuning element such that the effects of said control signals upon the frequency of said variable frequency source are additive.

3,200,348
FREQUENCY GENERATOR HAVING CONTROL CIRCUITS FOR AMPLITUDE REGULATION AND OVERLOAD PROTECTION
Neil A. Kammiller, North Olmsted, and Stephen L. Merkel, Cleveland, Ohio, assignors to Lorain Products Corporation, a corporation of Ohio
Filed Mar. 21, 1962, Ser. No. 181,362
11 Claims. (Cl. 331—62)

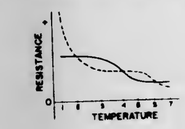
6. In a frequency generator, an oscillator, an output transformer having a primary and secondary windings and an amplifier, a load being connected across one of said secondary windings, means for connecting said oscillator across the primary winding of said output transformer through said amplifier, a control circuit, said control circuit including output voltage responsive means and load current responsive means, unilateral conducting means connected between another of said secondary windings and said output voltage responsive means to supply a voltage thereto, means for connecting said load current responsive means in series with the current path in said amplifier, means for connecting said voltage responsive means and said load current responsive means in voltage

opposing relationship to produce a difference voltage in said control circuit, switch means, means for connecting said switch means to said oscillator to energize and de-energize the same in accordance with the conducting condition of said switch means, means for connecting said



control circuit to said switch means to vary the conducting condition thereof in accordance with change in load current and change in output voltage whereby the oscillator is de-energized when the impedance of said load falls below a predetermined value.

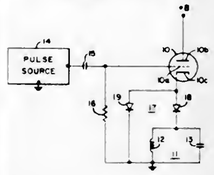
3,200,349
CRYSTAL CONTROLLED OSCILLATOR WITH TEMPERATURE COMPENSATION
Richard H. Bangert, Davenport, Iowa, assignor to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware
Filed Feb. 5, 1963, Ser. No. 256,284
1 Claim. (Cl. 331—116)



A temperature compensated, crystal controlled electric oscillator comprising:

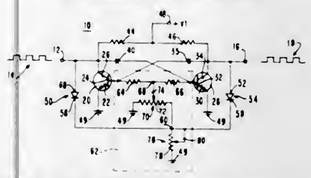
(a) a piezoelectric crystal;
(b) a semiconductor junction the impedance of which is variable with the magnitude of unidirectional voltage applied thereacross;
(c) a transistor;
(d) a blocking capacitor;
(e) an oscillatory circuit including the series circuit combination of said crystal, said semiconductor junction, said blocking capacitor and one junction of said transistor arranged such that said semiconductor junction is connected intermediate said crystal and said blocking capacitor;
(f) an electric bridge comprising four legs defining two sets of bridge diagonals and in which at least two legs of said bridge comprise the parallel combination of a substantially fixed resistor and one whose resistance varies with temperature and in which one of said two legs further comprises an additional resistor whose resistance varies with temperature connected in series circuit with said parallel combination;
(g) means for connecting one set of diagonals to a source of unidirectional electrical power; and
(h) means for connecting the other set of diagonals across said semiconductor junction.

3,200,350
RINGING CIRCUIT WITH MEANS PREVENTING DAMPED OSCILLATIONS
Paul K. Sharp, Beech Grove, Ind., assignor to Hazeltine Research, Inc., a corporation of Illinois
Filed Sept. 15, 1961, Ser. No. 138,341
3 Claims. (Cl. 331—166)



1. A ringing circuit comprising: an initially conductive electronic valve having an input electrode and a pair of output electrodes; a resonant circuit responsive to current flow through said electronic valve; means for applying a pulse of predetermined duration to said input electrode for altering the conductivity of said electronic valve for said predetermined duration during which full cycle oscillations are produced in said resonant circuit; and means including a first diode connected between said resonant circuit and one of said output electrodes, the other of which is coupled to a source of unidirectional potential, and a second diode connected between said one output electrode and ground potential for short circuiting said resonant circuit after the expiration of said predetermined duration, thereby discontinuing said full cycle oscillations.

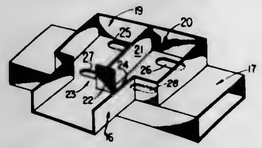
3,200,351
PULSE TRAIN PRODUCING APPARATUS
Melvin F. Ritchey, Columbus, Miss., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 3, 1961, Ser. No. 121,617
4 Claims. (Cl. 332—14)



1. Variable pulse train producing apparatus comprising: a pulse train output section and a pulse train characteristic control section therefor; said pulse train output section including first and second current conductable means with first and second settable conduction conditions therein, and current-in and current-out terminals therefor, said first and second current conductable means having first and second pulse output terminals and first and second current condition control means respectively, means for providing first and second direct potential level sources connected respectively to said current-in and said current-out terminals, first and second relaxation time network means having respective relaxation-times connected respectively between said first current-in terminal and said second control means and between said second current-in terminal and said first control means; said pulse characteristic control section including a pulse train amplitude characteristic control portion and a pulse train timing characteristic control portion; a first selectively adjustable voltage source; said amplitude control portion including an OR circuit connected to said current-in terminals establishing a common junction at a voltage level intermediate said first voltage level source and said second voltage level source, said common junction being connected

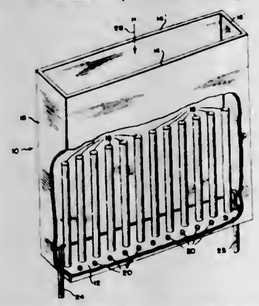
to said second voltage level source via the first adjustable voltage source; said timing characteristic control portion including a second adjustable voltage source connected between said OR circuit common junction and said relaxation-time network means; whereby variation of the voltage across said first adjustable voltage source controls said pulse amplitude characteristic and variation of the voltage across said second adjustable voltage source controls said timing characteristic.

3,200,352
WAVEGUIDE DIRECTIONAL FILTER EMPLOYING QUARTER-WAVE SPACED PARALLEL TUNED CAVITIES
Chu-Quon Lee, Maywood, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed May 11, 1962, Ser. No. 193,980
5 Claims. (Cl. 333—10)



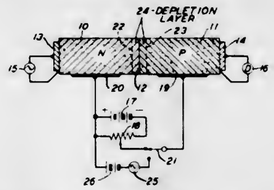
1. A device for directionally coupling a signal wave of a predetermined frequency into a conducting waveguide of rectangular cross section including in combination, filter means forming first and second tuned cavities having a common wall therebetween, means connecting said filter means to a large dimension side of the waveguide, said waveguide having apertures therein coupling each of said cavities to the waveguide, and input means coupled to said first and second tuned cavities for applying the signal wave thereto, said cavities being coupled in parallel whereby the signal wave is applied to each of said cavities at the same input phase, each of said cavities being tuned to a frequency related to the predetermined frequency of the signal wave whereby the respective signal wave portions coupled into the waveguide from said cavities have different phases with respect to each other, said cavities being tuned and said aperture being positioned so that said signal wave portions coupled into the waveguide from said first and second cavities cancel in one direction and reinforce in the other direction.

3,200,353
MICROWAVE STRUCTURE UTILIZING FERRITE COUPLING MEANS
Seymour Okwit, Plainview, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Feb. 14, 1962, Ser. No. 173,188
3 Claims. (Cl. 333—24.1)



1. A microwave slow-wave structure which comprises (a) a plurality of parallel resonant elements aligned in an array and adapted to transmit RF signal energy within a predetermined frequency range when coupling is provided therebetween,
(b) signal input and output means coupled to the array,
(c) a body of ferrite material positioned laterally of the space between each pair of resonant elements in a region of substantially circular polarization and relatively high intensity of the RF magnetic field to provide coupling of the resonant elements for RF transmission in one direction but substantially no coupling for RF transmission in the opposite direction,
(d) said ferrite bodies having a peak in the permeability characteristic thereof in the presence therein of an RF magnetic field and a D.C. magnetic field of corresponding strength,
(e) and means for applying a D.C. magnetic field to the ferrite bodies predetermined to produce a permeability peak at an RF frequency within said predetermined range and thereby coupling of the respective pairs of resonant elements,
(f) the coupling between the resonant elements within said RF range being small in the absence of the D.C. magnetic field.

3,200,354
ULTRASONIC WAVE TRANSMISSION DEVICE UTILIZING SEMICONDUCTOR PIEZOELECTRIC MATERIAL TO PROVIDE SELECTABLE VELOCITY OF TRANSMISSION
Donald L. White, Mendham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 17, 1961, Ser. No. 153,088
10 Claims. (Cl. 333—30)

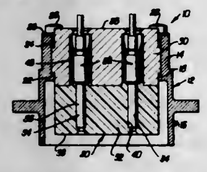


1. In combination, an ultrasonic wave transmission medium having at least a portion of its length formed of semiconductive material having piezoelectric properties when in high resistivity form but having sufficient mobile charge carriers to have low resistivity, means including means for applying a bias potential to said material for depleting a portion of said material of said charge carriers to increase the resistivity of said portion to a value for which a significant piezoelectric field can be supported in said portion thereby increasing the velocity of propagation of said ultrasonic waves through said portion, and means for applying ultrasonic waves to said medium directed therein through said portion and for utilizing said waves after being modified in velocity as a result of propagation through said portion.

3,200,355
ELECTRICAL CONNECTOR HAVING RF FILTER
Theodore E. Dahlen, La Puente, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Nov. 24, 1961, Ser. No. 154,807
6 Claims. (Cl. 333—79)

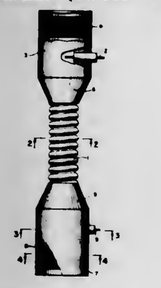
1. An electrical connector and filter assembly comprising a body member having a conductive outer portion and having a bore extending therethrough, a contact terminal

slidably mounted in said bore and adapted to be separably connected to a mating terminal in a second body, an electrically conducting capacitor member mounted on said contact terminal in encircling relationship to a portion thereof, electrically insulated therefrom and having a surface spaced from an opposed surface of said terminal to define a capacitor gap therewith, inductor means composed of ferromagnetic material mounted on said terminal



in encircling relationship to a portion thereof, electrically conducting spring means supported on one of said members and releasably engaging the other member to releasably lock said terminal in said bore, said spring means conductively engaging said capacitor member and being electrically connected to said conductive outer portion of said body member whereby upon release of said spring means said terminal, capacitor member and inductor means may be removed as a filter unit from said body.

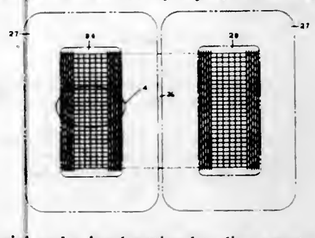
3,200,356
FLEXIBLE CORRUGATED-WALL ELLIPTICAL-CROSS-SECTION WAVEGUIDE USEFUL FOR PROPAGATING ONLY ONE POLARIZATION OF FUNDAMENTAL MODE
Erich Schüttlöffel and Wolfgang Krank, Backnang, Wurttemberg, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed July 2, 1962, Ser. No. 206,814
Claims priority, application Germany, June 30, 1961, T 20,366
15 Claims. (Cl. 333—95)



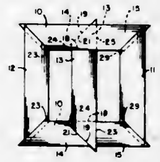
15. In a waveguide device for transmitting linearly polarized plane electromagnetic waves of very high frequency with low loss especially for the transmission of broad frequency bands, the improvement comprising a hollow line having an elliptical cross section and being corrugated so that it is capable of being wound onto a drum, and coupling and decoupling means connected at the ends of said line and disposed at right angles with the major axis of the elliptical cross section of said line.

3,200,357
TRANSFORMER COIL CONSTRUCTION
Willy Olsen, Howard D. Tindall, and William M. Pahel, Lynchburg, Va., assignors to H. K. Porter Company, Inc., Lynchburg, Va., a corporation of Delaware
Filed Aug. 23, 1962, Ser. No. 219,817
1 Claim. (Cl. 336—205)

A rigid, unitary, multiple winding electrical coil structure having substantially straight and parallel side legs and a central window for use in inductive devices, comprising in combination, a plurality of concentric internested annular windings radially disposed directly one upon the other with no intervening void spaces, the innermost and outermost radially positioned ones of said plurality of windings each including radially disposed spirally wound unitary layers of electrically continuous foil conductor interleaved by layers of electrical insulating material and a hard setting bonding agent, said interleaved layers of conductor and insulating material being rigidly set in position and bonded together by said bonding agent, at least one of the windings disposed between the said innermost and outermost radially positioned windings including radially disposed layers of conductor wire separated only by intervening layers of electrical insulating material.

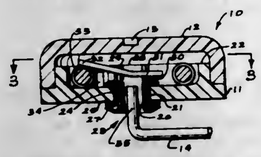


3,200,358
LAMINATED TRANSFORMER CORE
Edward A. Neydli, Watertown, Wis., assignor to Basic Products Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed June 2, 1961, Ser. No. 114,395
2 Claims. (Cl. 336—217)



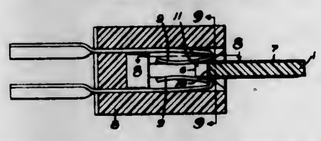
1. In a magnetic core construction of stacked laminae comprising a plurality of identical laminations oppositely arranged relative to each other, each lamination comprising spaced parallel end legs, each end leg having mitered ends; a one-element cross leg for each lamination being mitered at each end thereof, each cross leg mitered end mating with a corresponding mitered end of each of said end legs; a center leg having one square end abutting the one-element cross leg and the other end mitered; and a two-element cross leg completing said lamination, one of the elements of said two-element cross leg having both ends mitered to abut corresponding mitered ends on one of said end legs and said center leg, and the other element having one square end abutting with said center leg and the other end mitered to abut with a corresponding mitered end of the other of said end legs, said two-element cross leg being offset outwardly in the plane of its lamination away from said one-element cross leg so that all the mitered ends of said two-element cross leg are offset from the respective abutting mitered ends of said end legs and said center leg, the offset mitered end of said other element of said two-element cross leg forming a notch at the inner extremity of the abutting mitered leg of an end leg, one offset mitered end of said one-element of said two-element cross leg forming a notch at the inner extremity of the abutting mitered end of an end leg and the other offset mitered end of said one-element forming a notch at the inner extremity thereof adjacent said center leg, said laminations being turned relative to each other so that the mitered end of the center leg of one lamination and the notch formed adjacent thereto rests on a one-element cross leg of the next adjacent lamination.

3,200,359
VARIABLE RESISTOR
Warren D. Hulbert, Hacienda Heights, Calif., assignor to Spectrol Electronics Corporation, San Gabriel, Calif., a corporation of Delaware
Filed Sept. 12, 1962, Ser. No. 223,230
6 Claims. (Cl. 338—152)



1. A variable resistor comprising: an electrically nonconductive base member defining an opening therethrough at substantially the center thereof; a resistance element mounted upon on side of said base member; electrically conductive means extending through said opening in supporting engagement with said base member and including a relatively rigid electrical lead affixed rigidly thereto, said lead being the only mounting support for said resistor, said base and said electrically conductive means being relatively rotatable; a flexible electrical lead connected to said resistance element and adapted to permit said relative rotation; and elecrically conductive wiper means rigidly electrically connected to and affixed to said electrically condutive means and disposed on said one side of said base member for wiping contact with said resistance element during said relative rotational movement.

3,200,360
CONTACT-CAMMING PRINTED CIRCUIT BOARD
Robert D. McKiel, Reading, Mass., assignor to United-Carr Incorporated, a corporation of Delaware
Filed June 20, 1962, Ser. No. 203,955
1 Claim. (Cl. 339—17)



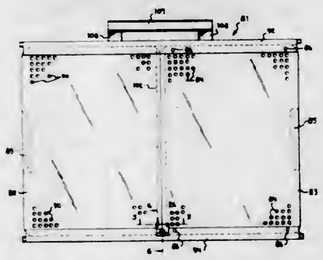
A circuit board connector device comprising in combination, a circuit board-receiving socket and a circuit board having an engagement edge adapted to engage said socket, said engagement edge including a series of projections having terminal ends extending therefrom, each of said projections being spaced from the other to provide a notch, and each of said projections having side walls tapering toward said terminal ends, each of said side walls lying in a plane which is in angular relation with the plane of said circuit board, and circuit conductors formed on said board, some of said conductors extending at least up to said notches, and said socket including electrical connections having spring fingers, said spring fingers having a width greater than the root of said notches and less than the distance between the terminal ends of said projections and said electrical connections indexed to engage said notches, whereby said spring fingers engage said side walls and cammed away from contact with said conductors until said spring fingers are in overlapping relation to said conductors when said board is pressed into engagement with said socket.

3,200,361
PRINTED CIRCUIT BOARD CONNECTOR ASSEMBLY
Leon Schwartz and Jacob Mueller, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 20, 1962, Ser. No. 211,366
7 Claims. (Cl. 339—17)



2. In a mounting assembly for a printed circuit board,
a peripheral wall having a plurality of sections,
said wall sections connected together in order to surround the component-bearing portion of a printed circuit board,
at least one of said wall sections having a plurality of apertures therein,
said apertures being arranged in a predetermined pattern to effect a coded arrangement,
a connector assembly, and
a code bar connected to said connector assembly,
said code bar including a plurality of projections which mate with said apertures when said connector and a circuit board are engaged.

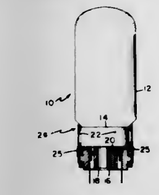
3,200,362
ELECTRICAL CONTACT PANEL ASSEMBLY
John G. Hatfield, Camp Hill, and Robert G. Trump, Hershey, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Dec. 5, 1962, Ser. No. 242,391
3 Claims. (Cl. 339—18)



1. An improved panel assembly of the type utilized with plugboard devices adapted to program electrical circuit connections including in combination, a first panel of a hard insulating material and of a thickness relative to its length to form a rigid structure, a matrix of apertures disposed transverse to the major plane thereof adapted to receive contact pin assemblies interconnected to form common portions of a plurality of computer programs and at least a second panel of a hard insulating material and of a thickness relative to its length to form a rigid structure, a matrix of apertures disposed transverse to the major plane thereof adapted to receive pin assemblies interconnected to form distinct portions of the said plurality of computer programs; means comprised of relatively rigid metallic beam members fixedly secured to said first panel forming a unitary assembly therewith, at least two of said beam members being disposed in

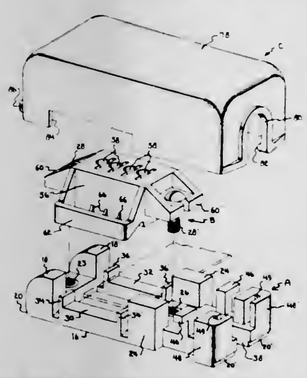
spaced parallel relationship and including interior channels as an integral portion adapted to slidably receive and secure said second panel in a planar relationship relative to said first panel, and means engaging a portion of at least one of said beam members adapted to engage and lock said second panel within said channels.

3,200,363
LAMP POSITIONER
William H. Morgan, Jr., Beverly, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Continuation of application Ser. No. 553,367, Dec. 15, 1955. This application Mar. 4, 1963, Ser. No. 262,660
5 Claims. (Cl. 339—93)



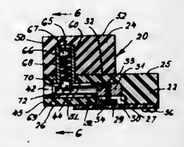
3. In combination with a socket for receiving a lamp having a base of generally cylindrical periphery mounted thereon, said base having rounded protuberances spaced from the outer end thereof at substantially equal angular intervals, a lamp orienting device comprising: spring means fixed to said socket for resiliently engaging each of said protuberances and urging said base toward said socket; additional spring means also fixed to said socket for exerting only radial pressures on the generally cylindrical periphery of said base between said protuberances only and from a plurality of directions.

3,200,364
ELECTRICAL CONNECTOR ASSEMBLY FOR INSULATED TAPE CABLE
Edgar W. Forney, Jr., Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 4, 1963, Ser. No. 306,523
7 Claims. (Cl. 339—99)



1. An electrical connector comprising a base member having a recessed section disposed therein for receiving insulated cable means having conductive means therein, said recessed section having side wall means, said cable means being adapted to be disposed in said recessed section and along said side wall means, clamping means adapted to be secured on said base member to secure said cable means therebetween and including a section for disposition within said recessed section, conductive element means in said clamping means in register with the conductive means in said cable means and including insulation-scraping means extending outwardly from said section of said clamping means, and securing means for securing said clamping means to said base member to secure said cable means thereto with said section of said clamping means disposed in said recessed section, said conductive means extending in the direction of movement of the section into the recessed section and the securing action between said base member and clamping means moving said insulation-scraping means along said cable means disposed against said side wall means to scrape insulation therefrom and make connection with said conductive means.

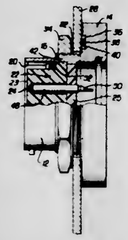
3,200,365
SAFETY BALL SOCKET CONNECTOR FOR ELECTRIC PLUGS
Joseph S. Carpinone, 218 W. 35th St., New York, N.Y.
Filed Oct. 28, 1963, Ser. No. 319,363
8 Claims. (Cl. 339—103)



1. An electrical connector for a plug having a pair of prongs, comprising a rectangular body portion having a pair of parallel first bores extending inwardly from one end of said body portion, a pair of cylindrical hollow contact members axially disposed in said bores and having axial passages for receiving said prongs respectively, said body portion having a recess at the other end thereof, said contact members having ends thereof disposed in and exposed at said recess, said body portion having a first lateral hole communicating with said recess for passing wires into the recess to connect with said ends of the contact members, each of said contact members having a lateral hole therein between its opposite ends, said body portion having a pair of other lateral holes respectively aligned axially with the lateral holes in the contact members and communicating therewith, a rectanguar block, screws extending through said body portion and block to hold the block against one side of said body portion, a clamp for a cable shield engaged by said screws at one side of said block, said clamp having clamp fingers for engaging said cable shield aligned with the first lateral hole for passing wires from said shield into said recess, said block having a pair of blind bores respectively axially aligned and registering with said other lateral holes, a compressed coil spring in each of said blind bores extending into one of said other lateral holes, a ball at one end of each spring engaged by the spring and pressed into one lateral hole in a contact member, said balls projecting into the passages in said contact members, whereby the springs contract and the balls are retracted when the prongs of the plug are inserted into said contact members while the spring hold the balls under pressure to keep the prongs pressed laterally into contact with the contact members.

3,200,366
REUSABLE PERIPHERAL SEAL JOINT
Ross M. Stuart, Tempe, Ariz., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed July 17, 1963, Ser. No. 295,653
14 Claims. (Cl. 339—130)

1. A joint member for attaching to another member to form a sealed joint which comprises a pair of concentric annular lips projecting from a surface of said joint member, each lip having a forward extremity, the lips being inclined towards each other so that their forward extremities are closer together than their bases; means for attaching the two members to be joined and for forcing the two members together so as to deflect the lips closer together by abutting contact of the forward extremities of said lips of the joint member against the other member,



said forward lip extremities being close enough together when deflected to be able to pinch the abutted surface of the other member between them so as to form a seal between the joint member and the other member; and said joint member including stop means for limiting movement of the lips toward said other member and towards each other as the two members are forced together.

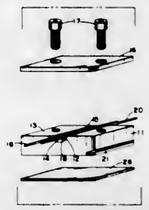
3,200,367
MATING ELECTRICAL PIN AND SOCKET CONTACTS AND INSULATOR THEREFOR
John Philip Blanchenot, Agincourt, Ontario, Canada, assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Mar. 7, 1963, Ser. No. 263,477
21 Claims. (Cl. 339—198)



1. An electrical connection which comprises an elongated socket contact member having front and rear ends, said socket member having a forward mating portion comprising a pair of elongated sections separated by a forwardly opening, longitudinally arranged slot, said sections being resiliently spreadable and at least one of said sections having a forwardly opening, longitudinally arranged groove therein communicating with said slot, and a pin contact member including a generally flat mating portion having a bulge projecting outwardly from a side thereof, said mating portion of the pin member being resiliently frictionally engageable in said mating portion of the socket member with said bulge engaged in said groove in said one socket section and with the opposite side of said mating portion of the pin member engaged against the side of the slot on the other said socket section.

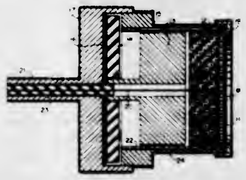
3,200,368
SUPERCONDUCTIVE CONNECTOR
Zdenek J. J. Stekly, Topsfield, and Ethan D. Hoag, Watertown, Mass., assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Apr. 5, 1963, Ser. No. 270,925
5 Claims. (Cl. 339—265)

3. A connector for superconductive wires comprising:
(a) a generally rectangular, electrically conductive and non-superconducting main body member having a first flat surface and an elongated recess in said first flat surface;
(b) first and second portions of at least one superconductive wire having predetermined diameters;
(c) superconductive material embedded in said recess and having a second flat surface, said second flat surface having an elongated groove adapted to receive said first and second portions, said groove



having a width greater than the largest diameter of said portions and a depth requiring that a part of one of said portions projects slightly above and along the length of said second surface when both said portions are disposed in said groove and;
(d) means for exerting pressure on said portions in the direction of said second surface when said portions are disposed in said groove.

3,200,369
MINIATURE UNDERWATER SOUND TRANSDUCER
Werner G. Neubauer, 417 S. Abingdon St., Arlington 4, Va., and Raymond L. Steinberger, 1200 Janneys Lane, Alexandria, Va.
Filed June 29, 1961, Ser. No. 120,798
8 Claims. (Cl. 340—10)
(Granted under Title 35, U.S. Code (1952), sec. 266)

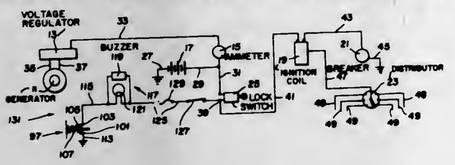


1. A miniature sound transducer comprising, a hollow tubular housing having open front and rear ends, a rigid sealing cap substantially covering said rear end, a crystal motor positioned within said housing at said front end, a sheet of highly ductile metal foil extending across said front end in contact with the front of said crystal motor, a ring cap surrounding the front end of said housing and spaced therefrom less than the thickness of said sheet, said sheet being cold worked between said ring cap and housing.

3,200,370
WARNING DEVICE TO INDICATE AN UNFASTENED SEAT BELT
George L. Rush, 5008 Acorn Drive, Memphis, Tenn.
Filed Apr. 16, 1962, Ser. No. 187,601
4 Claims. (Cl. 340—52)

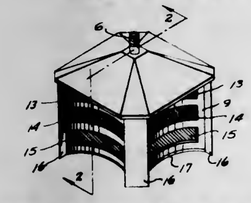
2. In a vehicle of the type provided with a sealt belt including fastening means for fastening and unfastening said seat belt, and an ignition system including an ignition lock-switch positionable from an off position into an on position; safety means for indicating an unfastened condition of said seat belt after said lock-switch has been positioned to an on position comprising an auxiliary circuit means including a signal means operable between an inactive condition and an active condition in which

a positive alarm is provided, said auxiliary circuit means being coupled to said ignition system for establishing a first path for electricity from said ignition system and being energizable when said seat belt is unfastened responsive to the positioning of said lock-switch to said on position to activate said signal means, said auxiliary circuit additionally including normally closed switch means in series with said signal means, said switch means



being actuated to an open position responsive to fastening of said seat belt, and said signal means being deactivated responsive to actuation of said switch means to an open position, said ignition system including circuit means for establishing a path of electricity separate from said first path to normally activate said ignition system of the vehicle when said ignition lock-switch is in said on postion and regardless of the position of said switch means.

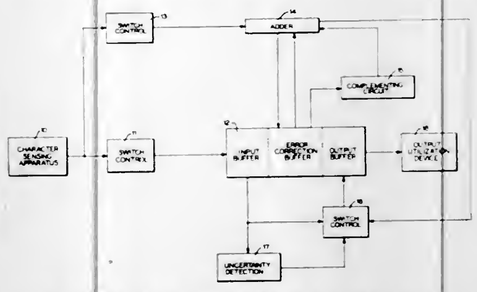
3,200,371
TRAFFIC SIGNAL LIGHTS
Stephen H. Olsen, 466 Ballston Road, Scotia, N.Y.
Filed July 9, 1962, Ser. No. 208,291
1 Claim. (Cl. 340—84)



A traffic signal light comprising a supporting plate, a hood mounted above one face of said plate, a hub fixedly connected to said plate face and extending through said hood, a plurality of corner plates fixedly mounted on the other face of said supporting plate and each having a V-end recess, a plurality of side plates each having a concave-cross-sectional configuration and having one edge abutting said supporting plate with each corner of said edge positioned in one of said corner plate V-end recesses; each of said side plates having a plurality of superposed parallel elongated slots extending laterally of its side plate, a plurality of colored elongated rectangular and longitudinally curved lens fixedly mounted on said side plates with each lens completely extending across one of said side plate slots, a plurality of corner posts each extending perpendicular from one of said corner plates and a bottom plate fixedly connected to the other edge of and extending between said side plates.

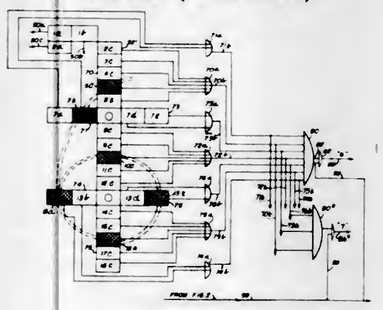
3,200,372
ERROR DETECTION AND CORRECTION SYSTEM
Arthur Hamburgen, Belmont, Mass., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 26, 1960, Ser. No. 45,499
21 Claims. (Cl. 340—146.1)

6. In a data processing system in which data is represented by data items arranged in groups, each of said items having a preassigned decimal numerical value, and each of said groups having associated therewith a check item having a decimal numerical value determined by the units order sum of the numerical values of the data items in the corresponding group, and in which system an uncertainty of any item in a group is designated by an uncertainty indication substituted for the uncertain item, means for correcting an uncertainty occurring in any one of said groups comprising, in combination, storage means for receiving and storing in sequence decimal numerical values of the items in said groups and uncertainty indications in each of said groups, adding means connected to said storage means for adding the successive numerical values for each item in a group and for supplying the computed units order sum digit for each of said groups



to said storage means, complement generating means connected to said adding means for generating the 10's complement of said computed unit order sum digit, means connected to said complement generating means and said adding means for supplying the 10's complement values to said adding means concurrently with the check item numerical value for the associated group, and means connected to said adding means and said storage means for substituting the output of said adding means, following the addition of the 10's complement value to the check digit values, in said storage means in lieu of any uncertainty indication, when the output of the adding means is other than zero.

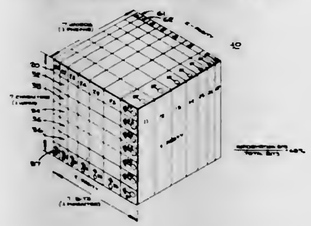
3,200,373
HANDWRITTEN CHARACTER READER
Jacob Rabinow, Takoma Park, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 22, 1960, Ser. No. 71,094
3 Claims. (Cl. 340—146.3)



1. An optical character reading machine to identify handwritten characters on a surface where at least some of the characters have a tail or fluorish which makes the size of the character larger than the average for which the machine is designed, and where there is a constraint mark and a location mark on an area of the surface adjacent to one of said characters, said marks being in a predetermined geometrical position relative to each other,

said reading machine having an optical scanner providing outputs pertaining to said character and said location mark, a register responsive to said scanner outputs for storing information concerning said character and said location mark, decision means connected to predetermined portions of said register, and means responsive to the position of the stored information pertaining to said location mark to shift all of the stored information to a predetermined position in said register at which the information concerning the character matches said decision means at its connection with said memory so that the shifting of the stored information is independent of the position of the character-information in the register, thereby enabling the tail or flourish to be neglected in the shifting procedure.

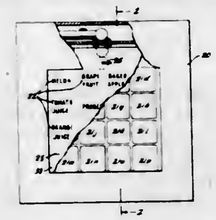
3,200,374
MULTI-DIMENSION PARITY CHECK SYSTEM
Arthur H. Ballard, Arlington, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Mar. 27, 1962, Ser. No. 182,829
15 Claims. (Cl. 340—146.1)



15. A system for parity coding characters represented by P parallel bits comprising means responsive to said P bits for converting them into P serial bits; P bi-stable elements, each being responsive to a respective one of said P bits; means for coupling signals in said P elements in parallel to said means for converting after Q characters have been applied in sequence to said converting means, said Q characters being a word; $P \times Q$ second bi-stable elements; means for simultaneously coupling the P bits in each character to a separate one of said second bi-stable elements, said last named means sequentially coupling the P bits of said Q characters to said $P \times Q$ second bi-stable elements during each word and sequentially coupling said Q characters to said $P \times Q$ second bi-stable elements for R words, said R words being a phrase; and means activated after R words have been applied in sequence to said converting means for coupling signals in P elements of said $P \times Q$ elements in parallel to said means for converting, said last named means sequentially coupling the signals of said second elements to said means for converting.

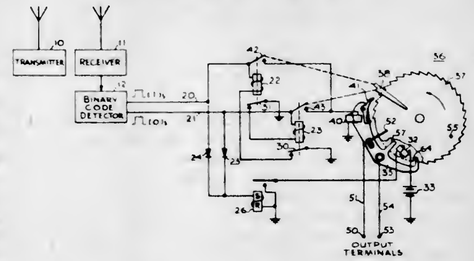
3,200,375
KEYBOARD FOR CONTROLLING SIGNAL GENERATOR HAVING MEANS FOR CHANGING KEY DESIGNATIONS
Samuel G. Lutz, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Sept. 5, 1961, Ser. No. 135,935
10 Claims. (Cl. 340—147)

1. A message generator comprising:
first means having a plurality of keys providing different coded output signals in response to operation of different ones of said keys;
second means associated with said keys for providing changeable visual key designations in response to applied electrical signals;
and third means coupled to said first and second means for providing said electrical signals to said second means in response to said output signals from said first means, said third means initially providing a signal to said second means in response to the initial operation of one of said keys corresponding to a selected sequence to change said key designations to



the first group of designations in said selected sequence, said third means applying subsequent signals to said second means to change said key designations to successive groups of designations in said selected sequence as said keys are successively operated.

3,200,376
BINARY SIGNALLING DEVICE INCLUDING A CODE WHEEL AND END-OF-CODE-SEQUENCE DETECTION
Allan R. Ogilvie, Hillsborough, Calif., assignor to Secode Corporation, San Francisco, Calif.
Filed May 16, 1960, Ser. No. 29,369
15 Claims. (Cl. 340—164)

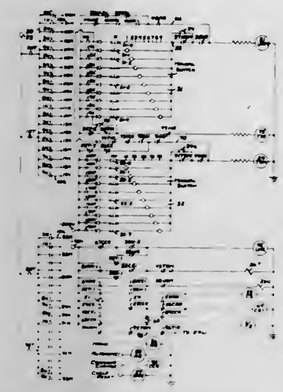


1. Binary code receiving apparatus comprising a source of binary coded information, a first relay connected to the source and operable by binary "1" signals, a second relay connected to the source and operable by binary "0" signals, a code wheel including discrete sectors positionable with respect to the first and second relays to physically prevent the operation of one of the relays, means responsive to the operation of said relays for sequentially advancing the code wheel to the next discrete sector, means responsive to both the binary "1" and "0" signals for maintaining the advancing means operative during receipt of a continuous sequence of binary coded signals and responsive to the absence of a continuous sequence of binary coded signals from the source for returning the code wheel to an initial position relative to the relays at the end of each continuous sequence and means responsive to the displacement of the code wheel for identifying a particular binary coded signal from said source.

15. A binary code transmitter including the combination of a pulse train source, a code wheel comprising a plurality of discrete sectors including a first region having a physical configuration representing one binary value and a second region having a physical configuration representing the opposite binary value, means responsive to the pulses from the source for incrementally rotating the code wheel, relay means connected for operation by pulses from the source, the discrete por-

tions of the code wheel being operative to selectively prevent the operation of one of the relay means dependent upon the binary value, and an output circuit coupled to the relay means for establishing an electrical condition responsive to a selected sequence of binary values represented on the code wheel.

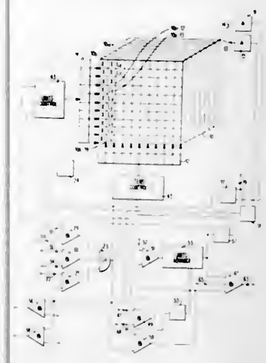
3,200,377
CIRCUIT SELECTOR SYSTEM EMPLOYING PLURAL STEPPING SWITCHES
William J. Frank, Jr., Chagrin Falls, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 22, 1961, Ser. No. 97,517
15 Claims. (Cl. 340—168)



1. In a selecting system of the stepping type, a stepping device having a plurality of positions and operable to step through said positions in a predetermined sequence, control means for said stepping device including a control element energizable to effect repeated stepping of said device until said control element is de-energized, first circuit means for selectively energizing said control element including means responsive to the stepping of said device to a predetermined one of said positions for de-energizing said control element, second circuit means selectively energizable to effect energization of said control element and incuding means responsive to the operation of said device upon each energization of said control element to render said second circuit means ineffective to energize said control element and thereby limit the operation of said device to one step in response to each energization of said second circuit means, and means for selectively effecting operation of said stepping device under the control of a selected one of said first and second circuit means, said first circuit means including means for selecting said predetermined position.

3,200,378
DATA INPUT/OUTPUT DEVICE
Robert W. King, Endicott, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 28, 1960, Ser. No. 78,895
4 Claims. (Cl. 340—172.5)

1. A data input/output apparatus comprising a data storage device for storing a plurality of characters each at a unique coordinate position, each said coordinate position including a plurality of bistable elements indicative of the data contained at said position and a control bistable element indicative of the presence of data at that position, output means common to all said coordinate positions to detect a data character and the presence of data when a coordinate position is sensed, a units address ring having a plurality of stages operable successively to supply a plurality of individual outputs, means for connecting each individual output of said units address ring as a coordinate of said storage device, a group address ring having a plurality of stages and operable successively in response to the operation of all stages in said units ring to provide an output successively for each stage, means for connecting each individual output of said group address ring as a coordinate of said storage device, means for combining said outputs of said units and group rings at each coordinate position of data storage whereby simultaneous outputs from the units ring and group ring sense each coordinate position, by

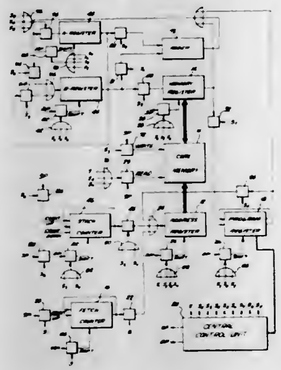


the output of a unique combination of stages of said rings, means for setting a given stage in said units ring to provide an output therefrom, means for enabling said group ring whereby an output is taken from successive stages whereby a character position in successive groups of character positions is sensed, means connected to said output means and responsive to the presence of a bit in said control element, output indicative that a data character is absent to enable said units address register to selectively address the character positions in said group, and means connected to said output means and responsive to an indication of the absence of a data character by said control element in the next successive position for generating a signal indicative of the first unfilled character position.

3,200,379
DIGITAL COMPUTER
Paul D. King, Pasadena, and Robert S. Barton, Altadena, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 23, 1961, Ser. No. 84,156
6 Claims. (Cl. 340—172.5)

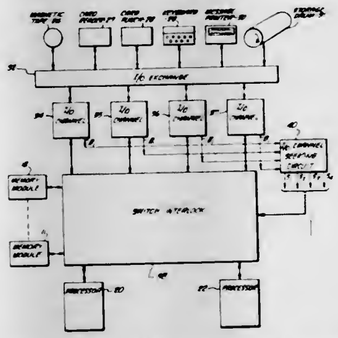
1. A computing apparatus comprising first storing means for simultaneously storing temporarily an indefinite number of digitally coded operand words in addressable storage locations, the first storing means including means for transferring words from the addressable storage locations to an output and from an input to the addressable storage locations, first and second registers for storing two operand words, an arithemetic unit for performing arithmetic operations on the operand words stored in the two registers and storing the result in the first register, means for transferring operand words from the second register to the input of the first storing means and to the second register from the output of the first storing means, automatic addressing means associated with the first storing means and controlled by the transferring means the automatic addressing means assigning

storage locations to successive words transferred to the storage locations from the input of the first storing means in a fixed predetermined sequence and assigning storage locations to successive words to be transferred to the output of the first storing means from the storage locations in the reverse sequence, whereby the last word to be transferred in is always the first word to be transferred out, means for transferring operand words from the first register to the second register, second storing means for stor-



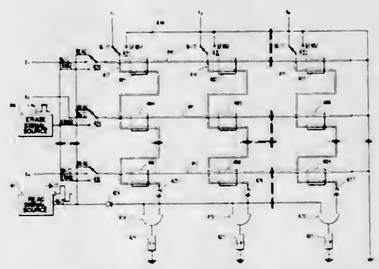
ing a plurality of operand words, means for initiating a transfer of a selected operand word from the second storing means to the first register including means for automatically initiating transfer of the contents of the first register to the second register and the contents of the second register to the first storing means, and means for initiating an arithmetic operation including means for automatically initiating transfer of a word from the first storing means to the second register at the completion of the arithmetic operation.

3,200,380
DATA PROCESSING SYSTEM
Duncan N. MacDonald, Arcadia, Calif., Edward Glaser, Newtown Square, Pa., and Fred W. Bauer and John J. Dowling, Altadena, Douglas T. Kielty, Monrovia, and Paul D. King, Pasadena, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 16, 1961, Ser. No. 89,866
4 Claims. (Cl. 340—172.5)



1. In a computing system including at least one memory module for storing digital signals for processing and program signals for controlling the processing thereof, at least one digital data processor for processing the digital signals under the control of said program signals and a switch interlock means connected to said memory module and said digital data processor for controlling the transfer of signals to and from said memory module, the improvement comprising the combination of a plurality of input-output channel means coupled to said switch interlock means for transferring signals to and from said memory module, each of said input-output channel means including output circuit means for indicating whether the channel means is in use, seeking circuit means coupled to each of said output circuit means for determining whether the corresponding channel means is in use and coupled to said switch interlock means for providing a corresponding indication thereto and thereby cause said switch interlock means to selectively couple a channel means which is not in use to said memory module, a plurality of input-output units including at least a rotatable magnetic storage drum, a punched card reader, a card punch, a keyboard, and a message printer, said channel means including an input-output control circuit within each channel means adapted for operatively controlling any one of said input-output units from the corresponding channel means, and input-output exchange means connected for coupling any one of said channel means including said input-output control circuit thereof to any one of said input-output units to enable the control of any input-out unit from any channel means and thereby cause the transfer of signals therebetween.

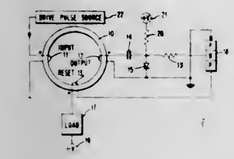
3,200,381
MEMORY SYSTEM UTILIZING THIN MAGNETIC FILMS
Peter Kuttner, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 7, 1961, Ser. No. 129,716
6 Claims. (Cl. 340—174)



5. A memory device comprising, a plurality of thin magnetic films, each of said films having two separate operating conditions, a first operating condition characterized by the films being comprised of a single magnetic domain, a second operating condition characterized by the films being comprised of a plurality of magnetic domains having different magnetization directions and separated by domain walls, first and second pluralities of conductors, said first plurality of conductors forming rows and said second plurality of conductors forming columns in a matrix arrangement, each of said plurality of thin films disposed adjacent to one conductor of each said first and second pluralities of conductors such that two different conductors are disposed adjacent each film, a first plurality of signal supplying means, each of said first plurality of signal supplying means selectively connected to a different one of said first plurality of conductors for selectively supplying signals thereto, a second plurality of signal supplying means, each of said second plurality of signal supplying means selectively connected to a different one of said second plurality

of conductors for selectively supplying signals thereto, each of said first and second pluralities of signal supplying means being capable of supplying first signals which produce magnetic fields adjacent to the associated conductor which fields are individually of such magnitude to move but not to nucleate domain walls in said films, said first signals produced by said first and second pluralities of signal supplying means operative to produce a cumulative magnetic field of such magnitude to nucleate domain walls in a film which is disposed adjacent to two conductors having said first signals supplied thereto coincidentally, said first plurality of signal supplying means being capable of selectively supplying second signals which produce magnetic fields adjacent to the associated conductor which fields are of such magnitude to destroy domain walls in said films, and signal sensing means selectively connected to said plurality of conductors for detecting a changing magnetic field produced by the movement of magnetic domain walls in a magnetic film.

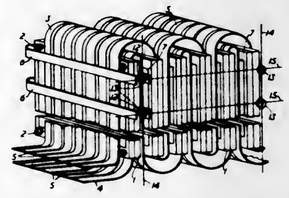
3,200,382
REGENERATIVE SWITCHING CIRCUIT
Donald F. Busch, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 28, 1961, Ser. No. 134,532
5 Claims. (Cl. 340—174)



1. A magnetic switching circuit comprising a transistor; a magnetic core capable of assuming either of two stable states of magnetic remanence, one of which is a reference state, and having an input, an output, and reset windings inductively coupled thereto; an energy storing means connected across said output winding; a bias potential; means electrically connecting said transistor and said bias potential with said energy storing means; a load potential; a load circuit including said transistor, said reset winding, a load and connected with said load potential; and means for applying pulses to said input winding for switching said core from its reference state and thereby supply current to said energy storing means and at the termination of each applied pulse the energy stored in said energy storing means being sufficient to render said transistor conductive with the resulting current flow in the load circuit serving to simultaneously pulse said load and restore said core to its reference state.

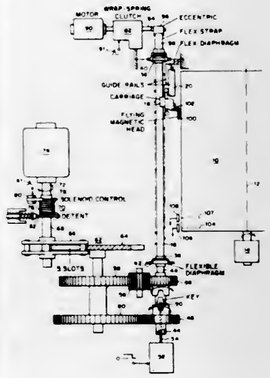
3,200,383
CONDUCTOR FOR A THIN FILM MATRIX EMPLOYING A DRIVING CORE CONNECTED BY RESISTANCE WIRE
John Bernard James, Stevenage, England, assignor to International Computers and Tabulators Limited, London, England
Filed Sept. 7, 1961, Ser. No. 136,462
Claims priority, application Great Britain, Sept. 23, 1960, 32,751/60
4 Claims. (Cl. 340—174)

1. An information storage device including a thin magnetic information storage film supported on a substrate; a driving conductor forming an elongated open ended loop, the substrate positioned within the loop and one long side of the loop being closely spaced from the magnetic film and magnetically coupled therewith; and means for inducing a driving current in the loop comprising a bistable magnetic switch core supported closely adjacent the open ends of the loop; a coupling between the loop and the switch core consisting of a resistance wire joining the open ends of the loop and threading the switch core; and at least one other conductor threading the



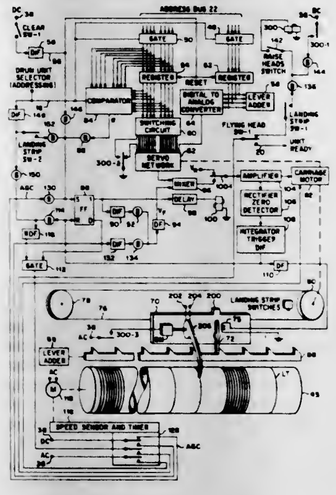
switch core to drive it from one to the other of its stable states.

3,200,384
DETENT SERVO SELECTOR
H. Frazer Welsh, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 18, 1958, Ser. No. 742,811
10 Claims. (Cl. 340—174.1)



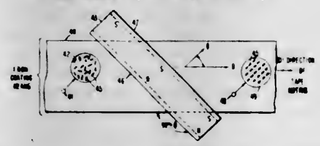
1. A positioning apparatus adapted to accurately position a magnetic transducer head adjacent a preselected track of a magnetizable record medium, the positioning being accomplished in two steps, a rough positioning step and a fine positioning step, said positioning apparatus comprising: movable support means for supporting said transducer head for movement relative to said record medium over a plurality of record tracks thereon, a motor operatively connected to said support means for moving said support means over a plurality of record tracks, signal translating means for energizing the motor in accordance with an incoming signal to select a track of said record medium in accordance with said signal, thereby causing the motor to move said support means to the neighborhood of said selected track and accomplish the rough adjustment, and detent means cooperating with said support means and operative independently of said motor in accordance to said incoming signal to superimpose an additional movement upon said support means after the transducer head has been positioned in the vicinity of the pre-selected track by said motor to thereby accurately position the head in alignment with said preselected track and accomplish the fine adjustment.

3,200,385
MAGNETIC DRUM RECORDER INCLUDING A LANDING TRACK
Herbert Frazer Welsh, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 27, 1960, Ser. No. 24,950
10 Claims. (Cl. 340—174.1)



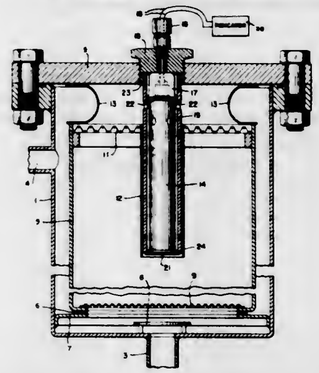
5. A magnetic drum adapted to rotate at a predetermined rate of speed, said drum having circumferential tracks on the surface of said drum, at least one of said tracks containing no information therein, a flying head adapted to be raised and lowered in cooperation with said drum, a motor for rotating said drum, means for detecting the speed of rotation of said drum, sensing means for determining when said head is at one of said no information tracks, and means for lowernig said head when said drum is rotating at said predetermined speed and said head is at one of said no information tracks.

3,200,386
DIGITAL PHASE-DISPLACEMENT REDUCTION COMBINATION
Robert S. Haines, Geoffrey Bate, and John W. Wenner, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 3, 1961, Ser. No. 80,320
3 Claims. (Cl. 340—174.1)



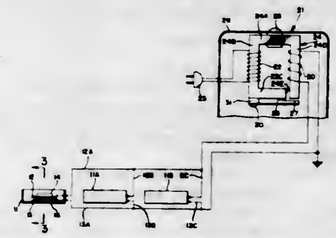
1. Digital phase-displacement reduction means comprising,
a recording or reading device having at least one gap therein,
a flat substrate having one side coated with a magnetic surface oriented with an easy direction of magnetization,
means providing a direction of relative motion between said substrate and said recording or reading device, the easy direction of magnetization being at an angle within the range of 20° to 90° with respect to said direction of relative motion of said recording or reading device,
and said gap being substantially transverse to said direction of relative motion,
whereby low interdigital phase-shift effects are obtained with respect to adjacent data bits read by said gap.

3,200,387
GAS CONTAMINANT SENSING DEVICE
Robert A. Loscher, Philadelphia, Pa., assignor to Selas Corporation of America, a corporation of Pennsylvania
Filed Aug. 11, 1961, Ser. No. 130,847
5 Claims. (Cl. 340—237)



1. Apparatus for separating a contaminant from a gas which comprises a cannister having ends and containing a body of adsorbent of a predetermined depth from a first end, the adsorbent being adapted to adsorb the contaminant from the gas, means to direct gas to be cleaned through the cannister from said first to a second end, a detecting unit extending into said cannister from said second end a portion of said predetermined depth, means forming a path for gas through said unit, means located in said unit responsive to the presence of contaminant in said gas, an indicator, and control means operated by said responsive means for controlling said indicator means.

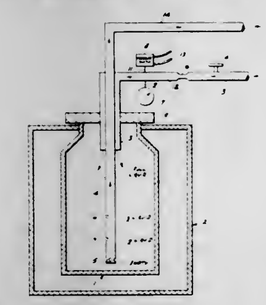
3,200,388
WATER LEAKAGE ALARM SYSTEM
Max R. Uhlig, Granada Hills, Calif., assignor to Weber Aircraft Corporation, Burbank, Calif., a corporation of California
Filed Aug. 12, 1960, Ser. No. 49,328
1 Claim. (Cl. 340—242)



A water leakage alarm system of the character described comprising: a transformer having a primary and a secondary winding, each of said windings being wound on an open magnetic core, said magnetic core having an

air gap therein, a vibratory armature supported on said core adjacent said air gap, and impedance means having its impedance changeable in the presence of water connected to said secondary winding to control magnetization of said core and vibration of said armature, said magnetic core having four legs arranged generally in a rectangular pattern, a resonant housing secured to one of said legs, said air gap being in a leg of said magnetic core which is opposite to said leg to which said housing is secured, said armature being supported on said leg in which said air gap is located, said vibratory armature bridging said air gap and being normally spaced from said air gap with the armature being attracted to said core member when said impedance means is changed in the presence of water to produce a sound which is transmitted through the core structure to said resonant housing which encompasses said core structure and said armature.

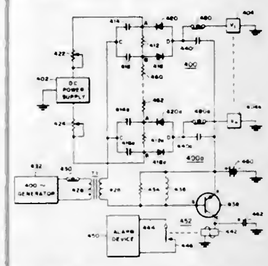
3,200,389
LIQUID LEVEL INDICATOR
Frank A. Damico and Robert T. Norton, Reading, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 20, 1961, Ser. No. 146,584
5 Claims. (Cl. 340—244)



1. Apparatus for discharging liquid from a closed container while simultaneously monitoring the level of the remaining liquid contained therein, which comprises: an outlet line for discharge of said liquid, said outlet line extending into said container to a point above a prescribed minimum liquid level and having at least one orifice formed therein below a prescribed maximum liquid level; means including an inlet line for introducing gas under pressure into said container to discharge the liquid therefrom through said outlet line, the pressure of the gas within a portion of said inlet line remaining essentially constant until the level of the remaining liquid in said container drops below and uncovers said orifice, whereupon a substantial drop of the pressure in said inlet line portion results; and, means coupled to said inlet line portion and responsive to the pressure of the gas flowing therethrough for indicating the uncovering of said orifice.

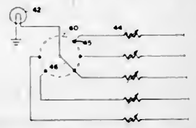
3,200,390
VOLTAGE MONITORING CIRCUIT
John Presper Eckert, Jr., Gladwyne, and Herman Lukoff, Philadelphia, Pa., and Nachum Porath, Tel-Aviv, Israel, assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 20, 1960, Ser. No. 77,156
3 Claims. (Cl. 340—248)

1. A system for checking the output voltage levels of a plurality of voltage sources, said system comprising a regulated voltage source for producing an accurately defined voltage, voltage divider means connected across said regulated voltage source thereby to provide a different reference voltage level at each of the terminals of said voltage divider means, means for comparing the voltage levels at said voltage divider terminals with the output voltage levels of said plurality of voltage sources to be checked, said comparing means including at least two oppositely poled unilateral conductor means each connected to a different one of said voltage divider terminals and having a single common junction therebetween, said single common junction being adapted to receive said output voltage levels to be checked, said unilateral conductor means being normally reverse biased when the voltage level applied to said common junction to be checked falls



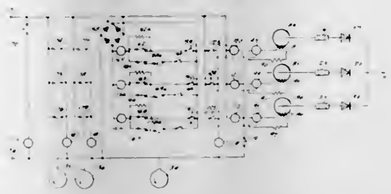
between the voltage levels at the two associated voltage divider terminals, one of said unilateral conductors being forward biased when the voltage level to be checked does not fall between the voltage levels at the two associated voltage divider terminals, an A.C. circuit for supplying relatively high frequency signals, said A.C. circuit coupled in series with said comparing means, said A.C. circuit being disabled when all of said unilateral conductor means are reverse biased and being enabled when any one of said unilateral conductors is forward biased, and indicating means which are rendered operative only when said A.C. circuit is enabled.

3,200,391
TUBE FAILURE INDICATOR
Matthew Jones, Co. "B" USA OGMS, Redstone Arsenal, Ala.
Filed Nov. 15, 1961, Ser. No. 152,690
1 Claim. (Cl. 340—252)
(Granted under Title 35, U.S. Code (1952), sec. 266)



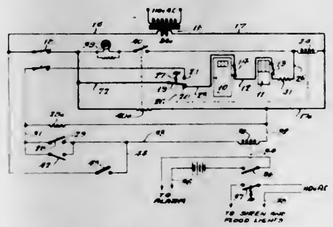
A multistage circuit checker comprising: a plurality of amplification stages, each stage having a tube having an anode and a cathode and a voltage dropping means; a positive potential source; one side of each voltage dropping means being connected to said anodes forming junctions therebetween; another side of each of said voltage dropping means being connected to the positive potential source; network means for connecting said cathodes to a potential source negative with respect to said positive potential source; a plurality of series circuits, each having a variable resistor, a first end of each of said series circuits connected to a junction of a respective one of said stages; a multicontact switch having contacts attached to the other ends of said series circuits; and a signal lamp connected between a switch arm of the multicontact switch and said negative source; and each of said variable resistors being adjusted to a value close to but higher than a value which will allow the signal lamp to light, when placed in circuit by the multicontact switch, during normal operation of the amplification stage, whereby, upon normal current flow in each of said stages the signal lamp will not light, when placed in circuit by the multicontact switch, and upon a lower than normal current flow in one of the stages said signal lamp will light, when placed in circuit by the multicontact switch.

3,200,392
COUNTING CIRCUIT FOR COUNTING CELL FAILURES IN A RECTIFIER SYSTEM
Walter V. Chumakov, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 2, 1960, Ser. No. 73,451
3 Claims. (Cl. 340—253)



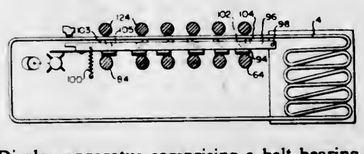
1. In a system having a plurality of interconnected rectifier elements for exchanging energy between an A.-C. system and a D.-C. system; a counting circuit for counting the number of rectifier elements that fail; said counting circuit comprising first means for generating a voltage pulse responsive to failure of any of said rectifier elements, a pulse type relay, and a stepping relay and an indicating means; said first means being operatively connected to operate said pulse type relay responsive to the generation of a voltage pulse; said pulse type relay being operatively connected to said stepping relay to advance said stepping relay one position for each operation of said pulse type relay; said stepping relay being operatively connected to said indicating means to present a count of the number of pulses generated by said voltage generating means.

3,200,393
ELECTRIC BURGLAR ALARM SYSTEM WITH EXIT AND ENTRY DELAY
Emmett J. Worley, 1320 W. Lincoln St., Mount Prospect, Ill.
Filed June 18, 1962, Ser. No. 203,028
5 Claims. (Cl. 340—276)



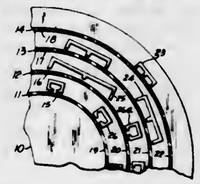
1. An electric burglar alarm system, said system having serially connected detector switches including a detector switch opened and closed under control of opening and closing of an access opening through which entry to and exit from the confines of the premises guarded by said system is available and which is closed except when said opening is open, a source of current, control means totally inaccessible from any location outside the premises guarded by said system including a main switch for stopping and starting flow of current from said source to said detector switch, a lock up switch operable between a first position engaging a first contact and a second position engaging a second contact and biased toward said second position, a first relay, connections between said relay and said main switch to establish a circuit including said detector switch to energize said relay while said detector switch is closed and said main switch is in "on" position, said relay being operative while energized to hold said lock up switch in said first position, time delay means operable in response to energization of said first relay when said relay is initially energized to prevent deenergization of said first relay pending expiration of a first time interval ot predetermined duration notwithstanding opening of said detector switch during such interval, a second relay, connections between said second relay and said second contact of said lock up switch to establish a circuit to energize said second relay upon deenergization of said first relay, time delay means operable to prevent energization of said second relay pending expiration of a second time interval of predetermined duration notwithstanding deenergization of said first relay during said time interval, an electrically operable alarm and a normally open alarm operating switch which closes under control of said second relay when said second relay is energized.

3,200,394
PLURAL BELT DISPLAY UNIT HAVING BALL DETENT CONTROL OF BELT POSITION
Joseph P. Kelley, Belmont, Mass., assignor to Air Technology Corporation, Cambridge, Mass., a corporation of Delaware
Filed July 25, 1962, Ser. No. 212,237
8 Claims. (Cl. 340—324)



1. Display apparatus comprising a belt bearing indicia indicative of desired characters, said belt being provided with a plurality of recesses, distinct groups of said recesses bearing a predetermined spatial relationship to said characters, driving means for said belt, a plurality of ball detents for each of said belts to urge said belts into contact with said driving means, means to raise individual ones of said ball detents into contact with said belt, and means to raise predetermined combinations of said ball detents whereby said belt is driven to a position whereby each of said raised ball detents engages a recess of one of said recess groups thereby displaying the character associated with the corresponding recess group in said belt.

3,200,395
SHAFT DIGITAL POSITION ENCODER
Samuel Goldfarb, Morristown, and Joseph J. Biro, North Haledon, N.J., assignors to General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed June 19, 1961, Ser. No. 118,114
5 Claims. (Cl. 340—347)



2. In an apparatus for representing the angular position of a shaft as a digital quantity, the improvement therein comprising.

a code disc mounted for rotation by a shaft, said disc having thereon a plurality of circular tracks concentrically disposed on said disc, each track being divided into alternately magnetic and non-magnetic segments of equal effective length, the number of segments doubling on each succeeding outward track;

a mounting plate disposed in a plane parallel to and in close proximity to said disc;

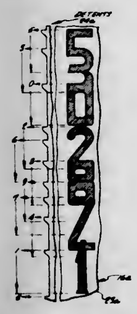
at least one E-bridge pick-off having a center and outer poles mounted on said mounting plate over the outermost track, the spacing between E-bridge poles being such that when the E-bridge center pole is centered over one segment the outer poles are each disposed three-quarters the distance over the length of a segment away from said one segment;

a pair of E-bridge pick-offs including a center and outer poles mounted on said mounting plate over a plurality of tracks inwardly adjacent said outermost track, the center pole of one of each of said pairs leading said one E-bridge center pole and the other center pole of each of said pairs lagging said one E-bridge center pole, said outer poles on each of said E-bridge pairs being similarly spaced three quarters over the length of a segment away from a segment on which said center pole may be centered;

a pair of "C" pick-offs having two poles mounted on said mounting plate over on the innermost tracks, the two poles of one of said "C" pick-offs leading, and, the two poles of the other of said "C" pick-offs lagging said one E-bridge center pole; and,

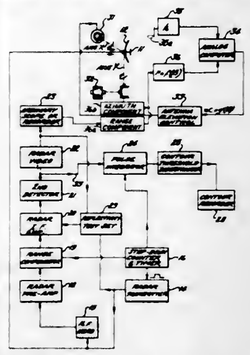
a pair of both E-bridge pick-offs and "C" pick-offs mounted on said mounting plate over the track where the E-bridge pick-offs change to "C" bridge pick-offs, the respective poles of each of said pick-offs leading or lagging said one E-bridge center pole as previously described in this claim.

3,200,396
CHARACTER READ-OUT DEVICE
Carlile R. Stevens, Pasadena, and Hans C. Moritz, Alhambra, Calif., assignors to Royal Industries, Inc., Los Angeles, Calif., a corporation of California
Filed Nov. 2, 1961, Ser. No. 149,620
10 Claims. (Cl. 340—378)



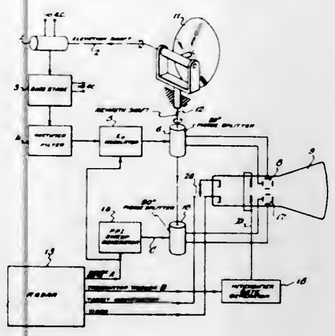
3. A read-out device the combination which comprises a rotatable read-out drum, a plurality of numbers recorded on said drum and characterized whereby portions of numbers having a shape common to an adjacent number are recorded in overlapping relationship to form the corresponding part of said adjacent number, said numbers being arranged in series about the periphery of said drum including thef ollowing numbers in the following order: 5, 3, 0, 2, 6, 8, 9, 7, 4 and 1, a mask having a viewing area of substantially the same size as said numbers and positioned adjacent said drum for displaying only the portion of the drum corresponding to the area for defining a single number, and means for selectively rotating said drum for positioning the portion of the drum corresponding to a single character adjacent said mask to display a character.

3,200,397
CONSTANT HEIGHT ANTENNA SCAN
Ralph J. Donaldson, Jr., Sudbury, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 2, 1963, Ser. No. 270,120
1 Claim. (Cl. 343—7.4)
(Granted under Title 35, U.S. Code (1952), sec. 266)



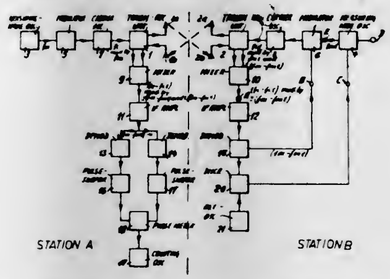
The method of determining the characteristics of a long, relatively narrow weather pattern which includes the step of controlling the elevation angle of an azimuthally scanning antenna in accordance with the range variations observed in the content of the received signal energy returning to said antenna, and which further includes the step of computing desired elevation angle positions in accordance with two informational inputs, one being the selected scan height and the other the selected succession of range measurements corresponding to spaced distances along the line of the weather pattern under investigation.

3,200,398
THREE DIMENSIONAL INDICATOR
Marcus K. Witt, Austin, Tex., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Dec. 16, 1948, Ser. No. 65,557
7 Claims. (Cl. 343—11)



1. In a radar data presentation system, a radar antenna, means to present azimuth, elevation, and range information on a two-dimensional indicator, comprising a cathode ray tube having two independent electron beams, means to apply open-center range-azimuth radial deflection voltages to at least one of said electron beams including a gate voltage generator to provide said open center, and means to apply elevation-azimuth radial deflection voltages to said other electron beam including synchro generator means connected to said radar antenna to correlate said two deflection voltages in azimuth beam whereby two related concentric presentations supplying at least three dimensions are obtained.

3,200,399
DISTANCE MEASURING SYSTEM AND APPARATUS
Othmar Schneider, Urdorf, and Marcel Hoesmann and Gottfried Tschannen, Zurich, Switzerland, assignors to Albiswerk Zurich A.G., Zurich, Switzerland
Filed Aug. 13, 1963, Ser. No. 301,840
Claims priority, application Switzerland, Aug. 15, 1962, 9,770/62
4 Claims. (Cl. 343—12)



1. In a distance measuring system including first and second stations arranged at respective terminal points of the distance to be measured, means at each station for transmitting, to the other station, continuous electromagnetic measuring waves, the two measuring waves differing in frequency, means at each station for receiving the measuring wave transmitted from the other station, means at each station for mixing the measuring wave transmitted therefrom with the measuring wave received thereat from the other station to derive oscillations with difference frequency, means at each station for transmitting the oscillation with difference frequency derived thereat to the other station as a modulating signal, and means at one station operable to determine the phase difference between the oscillation with difference frequency derived thereat and the oscillation with difference frequency received thereat from the other station: the improvement comprising means at one station for comparing the oscillation with frequency difference derived thereat with a fixed frequency to derive an error signal; and means operable to apply said error signal to the electromagnetic measuring wave generating means of said last-named one station to control the latter to maintain a fixed frequency difference between the electromagnetic measuring waves generated at the two stations.

3,200,400
WIDE ANGLE HIGH FREQUENCY REFLECTING DEVICE
Edwin R. Gill, Jr., Millerton, N.Y., assignor to Karl W. Flocks, Washington, D.C.
Filed Aug. 19, 1960, Ser. No. 50,779
4 Claims. (Cl. 343—18)



3. A high frequency reflecting device comprising a sheet of flexible electrical conductor material so shaped as to reflect high frequency waves in the general direction of their source,

a first layer of a flexible plastic material of high dielectric constant covering one surface of said sheet of material,

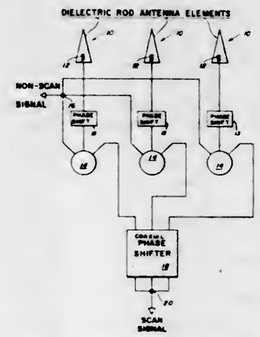
a second layer of a flexible plastic material covering the opposite side of said sheet of material,

metal particles dispersed in said second layer of plastic material,

and a layer of adhesive material on said second layer of plastic material on the side opposite that in contact with said sheet of electrical conductor material,

whereby said sheet of electrical conductor material and said first and second layers of plastic material forming a flexible sheet can be mounted on surfaces of different configuration.

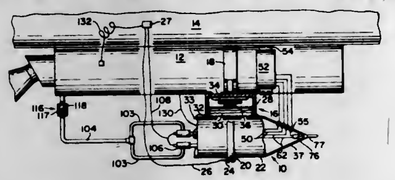
3,200,401
PHASE SCAN ANTENNA SYSTEM
Robert L. Conger, Riverside, Calif., Robert F. Riggs, Charlottesville, Va., and Dale B. Kern, Corona, and Charles E. White, San Bernardino, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 17, 1959, Ser. No. 853,661
3 Claims. (Cl. 343—100)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A multi-probe phase scan antenna system for operation over a large dynamic range comprising three dielectric rod antenna elements spaced equidistantly from each other to form an array thereof, three coaxial magic-T isolating devices, and a coaxial phase shifter, the signal output of each of said antenna elements being connected through respective transmission lines to a respective one of said isolating devices, each of said isolating devices being operable to divide the signal output from its respective antenna element into two parts, one part of said divided signal output from each of said isolating devices being fed through transission lines to a first junction, the output of said first junction being the non-scanning signal from said antenna system, the other part of said divided signal output from each of said isolating devices being fed through transmission lines to respective inputs of said coaxial phase shifter, respective outputs of said coaxial phase shifter being fed to a second junction, the output of said second junction being the scanning signal from said antenna system, said isolating devices also operating to prevent all of said antenna elements from being interconnected and preventing any feedback from said first junction to said second junction, the direction in which the antenna system is looking being changed if desired without mechanically pointing the antenna system by introducing additional phase shift into any of the lines from said antenna elements, whereby said antenna system is depolarized and both scan and

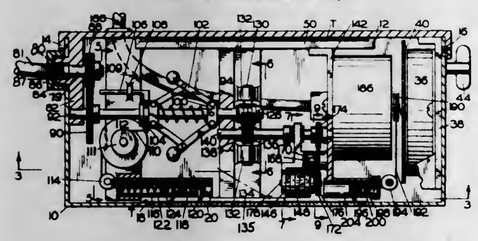
non-scan signals are obtained from the antenna array of elements.

3,200,402
SELF-CONTAINED DATA RECORDER
Dovie L. Coleman, Ventura, and Willy A. Fiedler, Los Altos, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Dec. 14, 1960, Ser. No. 75,892
2 Claims. (Cl. 346—38)
(Granted under Title 35, U.S. Code (1952), sec. 266)



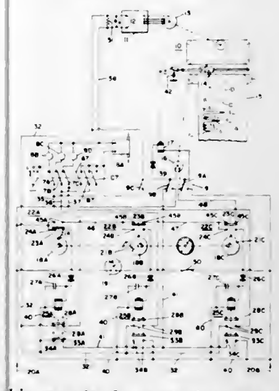
1. A self-contained data recorder for use on a missile vehicle having a fluid motor, said recorder comprising an outer case, a parachute connected to said outer case, releasable means for detachably supporting the case to the missile exterior, said recorder case supporting therein a frame having a longitudinal axis, a recording medium, spool means for movably supporting the recording means on the frame, a D.C. motor for driving said spool means, a D.C. timing motor, a time recording means driven by said motor, a battery pack for supplying power for said motors, a plurality of transducers responsive to vehicle operational forces for which data is to be obtained, said transducers being radially disposed about said longitudinal axis and about said recording medium, each transducer having a mechanically actuated stylus means for engaging the recording medium, one of said transducers being responsive to a fluid motor pressure, conduit means connecting the transducer to the fluid motor, disconnectible means connecting said conduit to the transducer, lanyards connecting said recorder releasable means and said disconnectible means to the motor, whereby a tension on said lanyards will actuate the respective means in a predetermined sequence.

3,200,403
INFORMATION RECORDING DEVICE
Eugene S. Bush, Milwaukie, Oreg., assignor to E. S. Bush & Company, Milwaukie, Oreg., a corporation of Oregon
Filed Nov. 1, 1963, Ser. No. 320,672
5 Claims. (Cl. 346—61)



1. An information recording instrument for a motor of the type adapted to rotate a drive shaft, comprising a housing, a flat strip of elongated tape in said housing, guide means for directing said tape in a selected path, power means driving said tape at a uniform speed in a longitudinal direction, first marking means movable linearly transversely of said tape to apply marking means thereon, rotatable shaft means connected with said marking means and adapted to be driven by the drive shaft of the motor for moving said marking means in recording operating speed conditions of the drive shaft, mileage stamping means in said housing transversely aligned with said first marking means adjacent said tape, drive means on said rotatable shaft means engageable with said mileage stamping means for reciprocating the latter at uniform rotation intervals of the shaft means into stamping engagement with said tape, second marking means movable linearly transversely of said tape to apply markings thereon, and power means connected with said second marking means and adapted to be operated in connection with the motor for moving said second marking means in recording operating conditions of the motor.

3,200,404
MULTI-RECORD GRAPHIC RECORDER
Walter T. Ott, Roslyn, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 23, 1962, Ser. No. 239,452
5 Claims. (Cl. 346—62)



1. A graphic recorder for producing on a chart broken-line record traces whose respective segement lengths identify different variables under measurement comprising

means energizable to drive the chart,

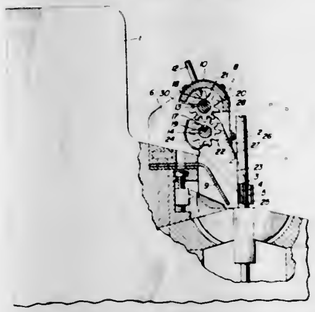
marking means including means energizable to produce line-trace segments of different lengths along said chart in direction of its drive and each in position corresponding with the value of a measured variable, and

programming means for sequentially applying signals representative of the existing magnitudes of the different variables as inputs to the recorder,

said programming means including a plurality of different selectively-operated control means respectively having different delay characteristics and respectively controlling energization of at least one of said energizable means for corresponding different intervals of time so to produce discrete line-trace segments of different lengths respectively identifying the different input variables,

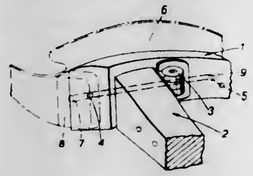
and in which the marking means comprises a single stylus with electromagnetic means energizable for time intervals of different lengths under control of said programming means to effect movement of the stylus into marking relation with the chart, said chart-driving means being energized under control of said programming means during said different intervals for tracing by said stylus on the moving chart of line segments of correspondingly different lengths.

3,200,405
RECORDER
Richard S. Kampf, Costa Mesa, Calif., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 328,879
6 Claims. (Cl. 346—109)



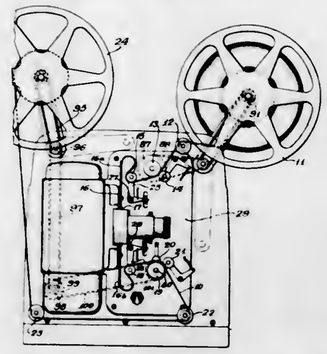
1. In an oscillograph for recording the time-variations of electric phenomena, a source of radiant energy, a recording sheet responsive to said radiant energy to produce a trace thereon, means for moving said sheet at a predetermined speed, a plurality of galvanometers, each having a coil responsive to one of said time-variations, means including a mirror movable with each of said coils and acting to cause said radiant energy to move as a pointer in unison with the movements of said coil and to impinge upon said recording sheet and produce a trace thereon, a pair of handles mounted on said oscillograph for movement thereon, a pair of trains of gears each mounted on said oscillograph for movement in response to movement of one of said handles, and a pair of blankers each mounted for movement on said oscillograph in response to movement of one of said trains of gears and each having an opaque portion adapted to be moved to a first position, in which it is located between said source of radiant energy and one of said mirrors to prevent the passage of radiant energy from said source to said one mirror, and to a second position permitting passage of said radiant energy from said source to said one mirror.

3,200,406
SPECTACLE FRAMES AND INTERCHANGEABLE BROW-PIECES THEREFOR
Ronald Sidney Phillips, 207 Burnt Ash Hill, London SE. 12, England
Filed May 10, 1961, Ser. No. 109,024
Claims priority, application Great Britain, May 11, 1960, 16,704/60
1 Claim. (Cl. 351—52)



A spectacle construction comprising: a lens-supporting frame having an upper rim portion adapted to be secured to the upper edge of a lens; a bow hingedly secured to said frame adjacent one end of said upper rim portion; an elongated brow-piece disposed in front of said upper rim portion and extending lengthwise therealong; said upper rim portion having an elongated cavity therein extending lengthwise thereof, said cavity opening through said one end of said upper rim portion; a base mounted on the rear face of said brow-piece and projecting rearwardly therefrom, said base being disposed adjacent and opposed to said one end of said upper rim portion; an elongated pin secured at one end thereof to said base, the remainder of said pin being free from connection to said brow-piece and extending lengthwise of said brow-piece behind the rear face thereof, said pin extending into and lengthwise along said cavity; and a locking device carried by said pin and disposed in said cavity and releasably securing said pin and thereby said brow-piece to said upper rim portion.

3,200,407
SPEED SYNCHRONIZATION MECHANISM FOR SOUND MOTION PICTURE PROJECTOR
Robert W. Nordin, Skokie, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 20, 1961, Ser. No. 96,772
3 Claims. (Cl. 352—14)

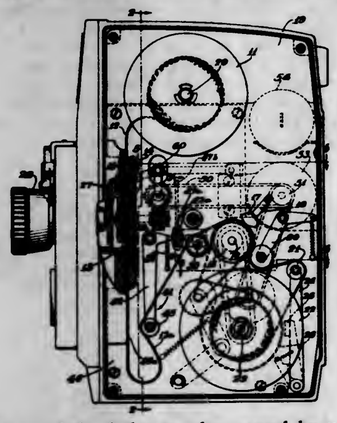


1. In a sound motion picture projector, an aperture plate, shuttle means for intermittently advancing a film along the aperture plate, a sound head, continuous advancing means for advancing the film continuously past the sound head, the portion of film positioned between said aperture plate and continuous advancing means being formed into a free loop, feeler means biased against an exterior side of the loop, drive means adjustable by the feeler means to drive the shuttle means and the continuous advancing means in synchronism, capstan means for feeding film into a second free loop to the aperture plate, second feeler means biased against an exterior side of the second free loop, and drive means adjustable by the second feeler means to drive the capstan means in synchronism with the shuttle means.

3,200,408
SOUND MOTION PICTURE SYNCHRONIZING APPARATUS
Robert W. Nordin, Skokie, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 20, 1961, Ser. No. 96,895
4 Claims. (Cl. 352—14)

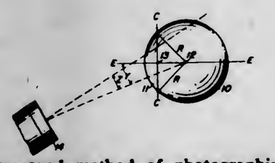
1. In a sound motion picture camera, a mechanism plate, an aperture plate at one side of the mechanism plate, a shuttle for advancing a film intermittently along the aperture plate, a sound drum for advancing the film continuously from the aperture plate, a guide means located adjacent said aperture plate and adapted to support one leg of a free film loop between the aperture plate and sound drum, said loop having two legs and an adjoining curved portion, a feeler member comprising a roller mounted pivotally on the mechanism plate and biased against the exterior of the second leg of said film loop at a point spaced from said curved portion, first

drive means for driving the shutter intermittently, second drive means for driving the sound drum continuously, and speed regulating means responsive to the variations in



the position of the feeler member caused by variations in the size of the loop for synchronizing the first and second drive means.

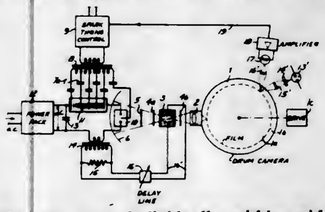
3,200,409
METHOD OF AND APPARATUS FOR MAKING AND PROJECTING STEREOSCOPIC PICTURES EMPLOYING A SPHERICAL MIRROR SEGMENT
James K. Miller, 326 Acacia, Lake Jackson, Tex.
Original application July 17, 1958, Ser. No. 749,158, now Patent No. 3,083,612, dated Apr. 2, 1963. Divided and this application Mar. 13, 1963, Ser. No. 266,136
8 Claims. (Cl. 352—60)



1. An improved method of photographing and projecting stereoscopic, cycloramic motion pictures which comprises simultaneously reflecting an image from a convex mirror into two cameras laterally disposed in front of the convex reflector, angularly disposed thereto and on a different horizontal plane therefrom, and reversing the procedure to project the image through polarizing media to a screen.

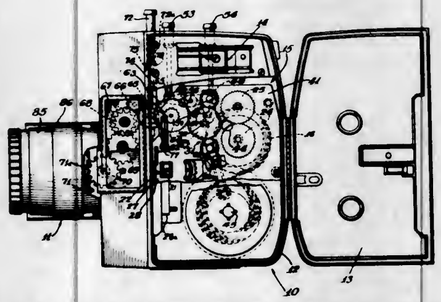
3,200,410
LIGHT CONTROL ARRANGEMENT
Frank Frungel, 400 Suelldorfer Landstr., Hamburg-Rissen, Germany
Filed Oct. 1, 1962, Ser. No. 227,609
Claims priority, application Germany, Oct. 2, 1961, J 20,607
10 Claims. (Cl. 352—84)

1. An arrangement for producing cinematographic pictures with extremely brief exposure times, comprising, in combination, cinematographic camera means including a movable film and operable at a predetermined picture frequency and comprising shutter means causing consecutively the film to be accessible to incoming light through predetermined consecutive time periods, and film transport means for moving the film at a speed corresponding to said predetermined picture frequency; electrically energizable light source means for producing light pulses in direction toward said shutter means at a pulse frequency depending upon application of electric energizing pulses at such frequency to said light source means; and electric circuit means for applying electric current impulses at said frequency to said light source means for energizing the latter and including first control means for causing said



light pulses to occur individually within said predetermined consecutive time periods, respectively, and second control means for causing the original pulse duration of said light pulses to be reduced, before they reach said shutter means, to an effective pulse duration substantially shorter than that of said predetermined consecutive time periods of shutter action.

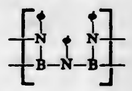
3,200,411
MOTION PICTURE CAMERAS
Malcolm G. Townsley, Park Ridge, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 20, 1961, Ser. No. 153,414
9 Claims. (Cl. 352—140)



1. In a motion picture camera including an exposure aperture, film feeding means for feeding film past the aperture, an adjustable zoom lens and a motor drive, the combination therewith of manually operable control means for the film feeding means, manually operable zooming means operable to connect the zoom lens and the motor drive, and selectively operable means for disabling the drive of the film feeding means so that the zoom lens may be adjusted without feeding film past the aperture.

3,200,412
POLYMERIC ORGANOBORON COMPOUNDS AND PROCESS OF PREPARING SAME
Robert J. Brotherton, Fullerton, Lowell L. Petterson, Whittier, and Allen L. McCloskey, Orange, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
No Drawing. Filed Mar. 26, 1962, Ser. No. 182,619
3 Claims. (Cl. 260—2)

1. Thermoplastic organoboron polymers consisting of the recurring structural unit

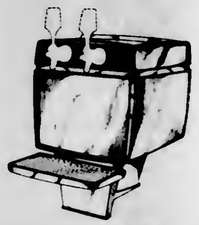


where ϕ is phenyl.

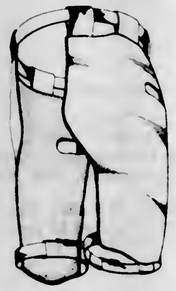
DESIGNS

AUGUST 10, 1965

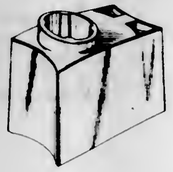
201,860
BEVERAGE DISPENSER OR SIMILAR ARTICLE
James R. Reichow, Edina, Minn., assignor to The Cornelius Company, a corporation of Minnesota
Filed July 10, 1964, Ser. No. 80,804
Term of patent 14 years
(Cl. D2—3)



201,861
PADDED PROTECTOR FOR THE LEGS
Gertrude E. Cummins, 7480 Antelope Road, Citrus Heights, Calif.
Filed July 17, 1964, Ser. No. 80,915
Term of patent 14 years
(Cl. D3—26)



201,862
TOOTHBRUSH RECHARGER OR SIMILAR ARTICLE
Carl N. Johnson, Stratford, and William V. Judson, Westport, Conn., assignors to General Electric Company, a corporation of New York
Filed Oct. 1, 1964, Ser. No. 81,976
Term of patent 14 years
(Cl. D4—3)



201,863
SHOE
Samuel Goldberg, 33 Crooke Ave., Brooklyn, N.Y.
Filed July 20, 1964, Ser. No. 80,924
Term of patent 14 years
(Cl. D7—5)



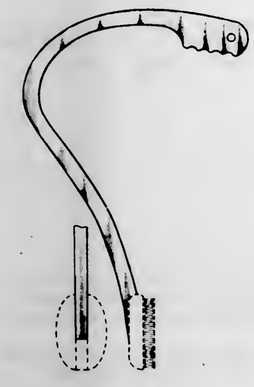
201,864
SHOE SOLE OR SIMILAR ARTICLE
Maurice C. Smith III, Bristol, R.I., assignor to Marbill Company, Providence, R.I., a corporation of Rhode Island
Filed Aug. 20, 1964, Ser. No. 81,369
Term of patent 14 years
(Cl. D7—5)



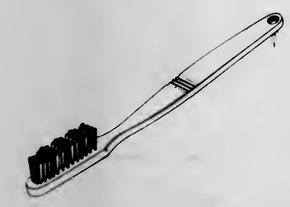
201,865
SHOE SOLE
George H. Bingham, Jr., Westminster, and Otto Olson, Taneytown, Md., assignors to Cambridge Rubber Company, Cambridge, Md., a corporation of Maryland
Filed Nov. 25, 1964, Ser. No. 82,778
Term of patent 14 years
(Cl. D7—5)



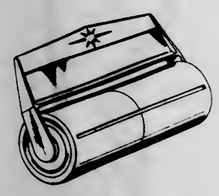
201,866
BACK BRUSH
James Moore, 78 Grove St., Ansonia, Conn.
Filed Aug. 1, 1962, Ser. No. 71,127
Term of patent 14 years
(Cl. D9—2)



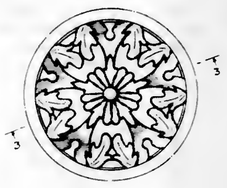
201,867
TOOTHBRUSH
Joel Edward Newman, Northampton, Mass., assignor, by mesne assignments, to Pro-Phy-Lac-Tic Brush Company, Florence, Mass., a corporation of Ohio
Filed Nov. 13, 1963, Ser. No. 77,403
Term of patent 14 years
(Cl. D9—2)



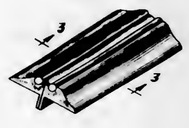
201,868
LINT REMOVER
Erwin Howard Wilbrecht, Shadow Mountain, Fairway Cottages 4A, Palm Desert, Calif.
Filed Feb. 19, 1965, Ser. No. 83,906
Term of patent 14 years
(Cl. D9—2)



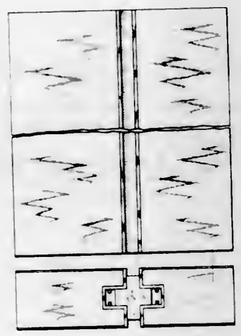
201,869
KNOB FOR DOORS, DRAWERS, AND THE LIKE
Don Heyer, Fullerton, Calif., assignor to Hyer Hardware Mfg. Co., Anaheim, Calif., a corporation of California
Filed Sept. 10, 1963, Ser. No. 76,541
Term of patent 14 years
(Cl. D10—8)



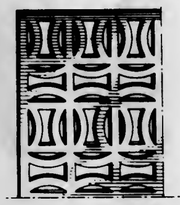
201,870
HINGE
Edward F. Joyce 3rd, 205 Rockaway St., Boonton, N.J.
Filed Nov. 17, 1964, Ser. No. 82,657
Term of patent 14 years
(Cl. D10—9)



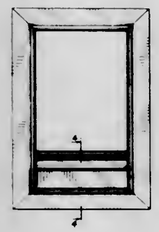
201,871
PARTITION
Arnon Hiller, Kew Gardens, N.Y., assignor to United States Plywood Corporation, New York, N.Y., a corporation of New York
Filed Feb. 18, 1964, Ser. No. 78,680
Term of patent 14 years
(Cl. D13—1)



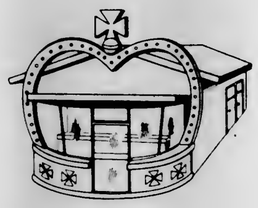
201,872
HARDBOARD GRILLE
John Mezey, Ferds, and Jerome L. Lesser, West Englewood, N.J., assignors to Panelboard Manufacturing Company, Inc., Newark, N.J., a corporation of New Jersey
Filed May 22, 1964, Ser. No. 80,108
Term of patent 14 years
(Cl. D13—1)



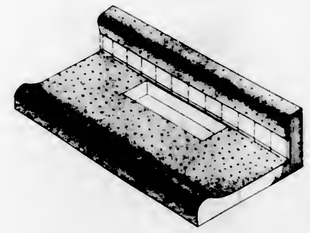
201,873
STORM DOOR FRAME
Rexford J. Damiani, Port Washington, N.Y., assignor to Karey Products Corporation, Plainview, N.Y., a corporation of New York
Filed June 18, 1964, Ser. No. 80,459
Term of patent 14 years
(Cl. D13—1)



201,874
RESTAURANT
Robert G. Wilson, 643 E. Faris Road, Greenville, S.C.
Filed Aug. 3, 1964, Ser. No. 81,146
Term of patent 14 years
(Cl. D13—1)



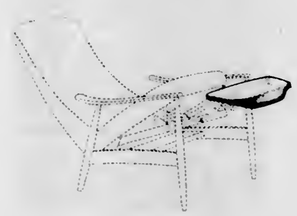
201,875
SWIMMING POOL COPING
Robert Donald Robb, 1942 Marconi Ave., Sacramento, Calif.
Filed Sept. 8, 1964, Ser. No. 81,642
Term of patent 14 years
(Cl. D13—1)



201,876
CHAIR
Roger E. Gasser, Youngstown, Ohio, assignor to Gasser Chair Co. Inc., Youngstown, Ohio, a corporation of Ohio
Filed Jan. 28, 1964, Ser. No. 78,394
Term of patent 14 years
(Cl. D15—1)



201,877
RECLINING CHAIR FOOTREST
Julius Thayer Coggin, High Point, N.C., assignor to Thayer Coggin, Inc., a corporation of North Carolina
Filed Feb. 7, 1964, Ser. No. 78,557
Term of patent 14 years
(Cl. D15—1)



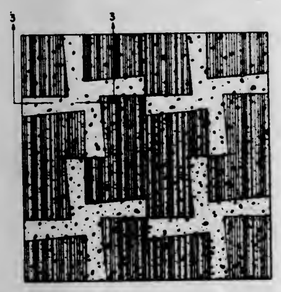
201,878
CHAIR
Warren D. Peterson, Redondo Beach, Calif., assignor to Schlumberger Limited, Houston, Tex., a corporation of the Netherlands Antilles
Filed Mar. 31, 1964, Ser. No. 79,268
Term of patent 14 years
(Cl. D15—1)



201,879
SWIVEL CHAIR
John A. Gale, Wayzata, Minn., assignor to John Gale Company, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 20, 1964, Ser. No. 82,248
Term of patent 14 years
(Cl. D15—1)



201,880
ACOUSTICAL CORRECTION TILE
James R. Radcliffe, Williamsville, N.Y., assignor to National Gypsum Company, Buffalo, N.N.Y., a corporation of Delaware
Filed July 27, 1964, Ser. No. 81,012
Term of patent 14 years
(Cl. D18—2)



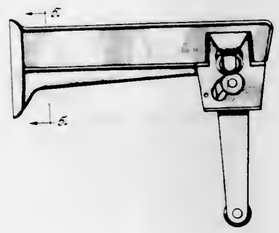
201,881
PANTY GIRDLE
Larry L. Krieger, 2110 Inwood Road, Wilmington, Del.
Filed Jan. 6, 1965, Ser. No. 83,300
Term of patent 14 years
(Cl. D20—2)



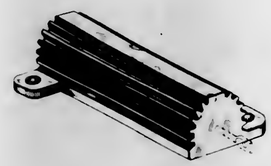
201,882
BRASSIERE
Charles M. Sachs, Fort Lee, N.J., assignor to International Latex Corporation, Dover, Del., a corporation of Delaware
Filed Apr. 3, 1963, Ser. No. 74,280
Term of patent 14 years
(Cl. D20—4)



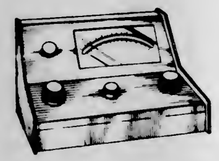
201,883
CAN OPENER
Casimir F. Gruska, Chicago, Ill., assignor to Ekco Products Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 13, 1964, Ser. No. 82,151
Term of patent 14 years
(Cl. D22—2)



201,884
RESISTOR HOUSING OR SIMILAR ARTICLE
Eugene A. Blake and Darwin L. Rakowsky, Columbus, Nebr., assignors to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska
Filed July 3, 1963, Ser. No. 75,651
Term of patent 14 years
(Cl. D26—1)



201,885
ELECTROMETER OR SIMILAR ARTICLE
Joseph M. Pezely, Jr., Big Flats, N.Y., Robert S. Quandt, Levittown, Pa., and John H. Riseman, Cambridge, Mass., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed July 22, 1964, Ser. No. 80,971
Term of patent 14 years
(Cl. D26—1)



201,886
CABINET FOR ELECTRONIC EQUIPMENT
Charles E. Bozarth, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed Feb. 26, 1964, Ser. No. 78,788
Term of patent 14 years
(Cl. D26—5)



201,887
CABINET FOR ELECTRONIC EQUIPMENT
Charles E. Bozarth, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Original design application Feb. 26, 1964, Ser. No. 78,788. Divided and this application Dec. 29, 1964, Ser. No. 83,200
Term of patent 14 years
(Cl. D26—5)



201,888
FLAGPOLE HOLDER
Robert C. Faulhaber, 289 Princeton Ave., Stratford, N.J.
Filed May 13, 1964, Ser. No. 79,967
Term of patent 14 years
(Cl. D29—17)



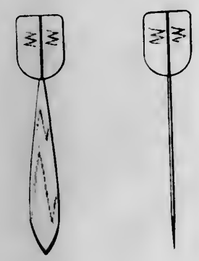
201,889
COMBINED VALET STAND AND SEAT
Roger E. Davis, Traverse City, Mich., assignor to The Setwell Company, Traverse City, Mich., a corporation of Illinois
Filed Dec. 29, 1964, Ser. No. 83,544
Term of patent 14 years
(Cl. D33—8)



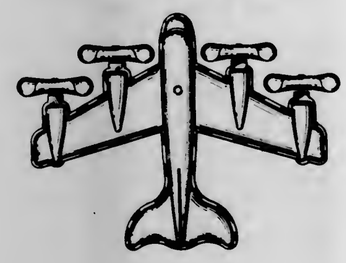
201,890
GOLF TEE
Joseph Dreyfus, 730 Fort Washington Ave., New York, N.Y.
Filed July 13, 1964, Ser. No. 80,843
Term of patent 14 years
(Cl. D34—5)



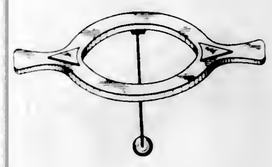
201,891
DART
Richard F. Hirsch, 1012 E. Acacia St., Apt. B, Glendale, Calif.
Filed Feb. 8, 1965, Ser. No. 83,718
Term of patent 14 years
(Cl. D34—5)



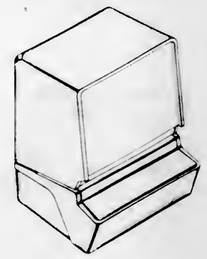
201,892
STICK MOUNTED WINDMILL
Marvin Katz, Brooklyn, N.Y., assignor to Kaye Novelty Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed July 12, 1963, Ser. No. 75,775
Term of patent 14 years
(Cl. D34—15)



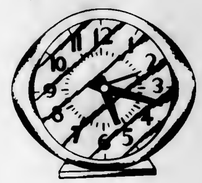
201,893
TETHERED BALL GAME PADDLE
Eugene R. Caporale, 225 Stephen St., North Bellmore, N.Y.
Filed Mar. 23, 1965, Ser. No. 84,408
Term of patent 14 years
(Cl. D34—15)



201,894
TIME CLOCK CASING
George H. Kress, Newark, N.J., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 78,566
Term of patent 14 years
(Cl. D42—7)



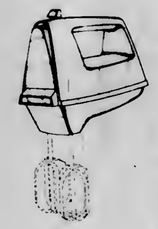
201,895
CLOCK
Ellworth R. Danz, La Salle, Ill., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 19, 1964, Ser. No. 78,701
Term of patent 14 years
(Cl. D42—7)



201,896
FOOD MIXER OR THE LIKE
George H. Frost, Ashland, Ohio, assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 7, 1965, Ser. No. 83,317
Term of patent 14 years
(Cl. D44—1)



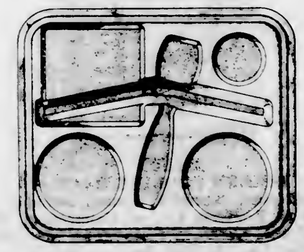
201,897
FOOD MIXER OR THE LIKE
George H. Frost, Ashland, Ohio, assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 7, 1965, Ser. No. 83,318
Term of patent 14 years
(Cl. D44—1)



201,898
HOLDER FOR BREAD OR THE LIKE FOR ATTACHMENT TO DISHES
Joana B. Bernstine, 538 W. 75th St., Los Angeles, Calif.
Filed July 27, 1964, Ser. No. 81,030
Term of patent 14 years
(Cl. D44—10)



201,899
FOOD TRAY
David Hancock, Chippewa Falls, Wis., assignor to Applied Research and Development Corporation, a corporation of Wisconsin
Filed Jan. 5, 1965, Ser. No. 83,281
Term of patent 14 years
(Cl. D44—10)



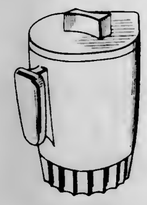
201,900
SERVING TRAY
George Patton, Jr., Barrington, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 84,033
Term of patent 14 years
(Cl. D44—10)



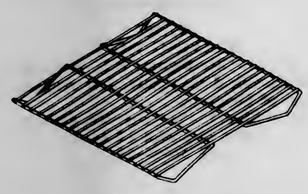
201,901
DISH
Jennie E. Houser, 625 S. Elgin Ave., Tulsa, Okla.
Filed Dec. 6, 1963, Ser. No. 77,699
Term of patent 14 years
(Cl. D44—15)



201,902
INSULATED BEVERAGE SERVER
Gene Martin, 616 Richmond Road, East Meadow, Long Island, N.Y.
Filed Mar. 18, 1965, Ser. No. 84,343
Term of patent 7 years
(Cl. D44—21)



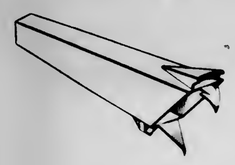
201,903
BAKER'S COOLING RACK
Kurt Christoffersen, Norwich, Conn., assignor to The Artistic Wire Products Co. of Connecticut, Incorporated, Taftville, Conn., a corporation of Connecticut
Filed Jan. 22, 1964, Ser. No. 78,318
Term of patent 14 years
(Cl. D44—29)



201,904
DETACHABLE HANDLE FOR SAUCEPANS OR THE LIKE
Edward D. Levy, Spring Valley, N.Y., assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed June 25, 1964, Ser. No. 80,584
Term of patent 14 years
(Cl. D44—29)



201,905
COMBINED CONTAINER OPENER AND POURING SPOUT
Charles William Schild, Cary, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 8, 1964, Ser. No. 81,646
Term of patent 14 years
(Cl. D44—29)



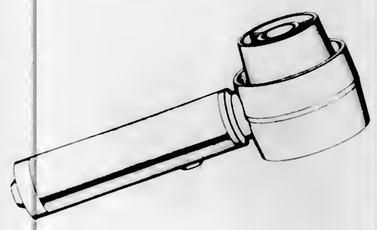
201,906
SPOON
Luigi Di Benedetto, 704 Centinela Ave., Inglewood, Calif.
Filed Nov. 27, 1964, Ser. No. 82,821
Term of patent 14 years
(Cl. D44—29)



201,907
LIGHTING FIXTURE PRISM OR SIMILAR ARTICLE
Carl S. Wellhofer, Glenside, and Julius Friedman, Levittown, Pa. (both % Progress Mfg. Co., Castor Ave. and Tulip St., Philadelphia, Pa.)
Filed June 18, 1964, Ser. No. 80,465
Term of patent 14 years
(Cl. D48—14)



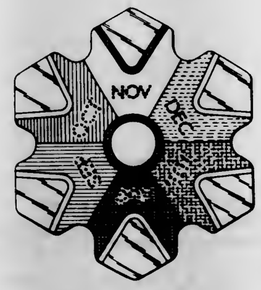
201,908
EXAMINATION LIGHT
Ronald K. Meyer, 25 Janes St., Mill Valley, Calif.
Filed July 2, 1963, Ser. No. 75,634
Term of patent 14 years
(Cl. D48—20)



201,909
LUMINAIRE
Donald W. Harling, Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed May 8, 1964, Ser. No. 79,885
Term of patent 14 years
(Cl. D48—31)



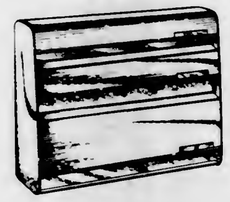
201,910
ROTATABLE INDEX DISK
Lawrence C. Hill, Boston, Mass.
Filed May 12, 1964, Ser. No. 79,947
Term of patent 14 years
(Cl. D52—1)



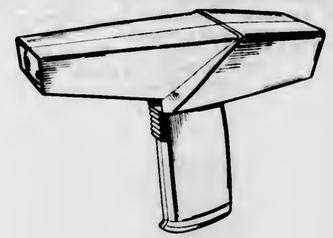
201,911
CUP DISPENSER
John Duncan Wark, Freeport, and Henry Albert Holzwarth, Bayside, N.Y., and Charles Lewis Metzler, Alpine, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 5, 1963, Ser. No. 77,679
Term of patent 14 years
(Cl. D52—2)



201,912
DISPENSER FOR METAL FOIL, WAX PAPER AND PAPER TOWELING
Terry J. Simpkins, Columbus, Ohio, assignor to Lincoln Metal Products Corporation, Brooklyn, N.N.Y.
Filed Oct. 21, 1964, Ser. No. 82,275
Term of patent 14 years
(Cl. D52—3)



201,913
COMBINATION TIMING LIGHT AND TACHOMETER
Eugene B. Raymond, 4041 Grove St., Skokie, Ill.
Filed Dec. 30, 1963, Ser. No. 77,957
Term of patent 14 years
(Cl. D52—6)



201,914
SPACE CONDITION RESPONSIVE INSTRUMENT
Wallace A. Monson, Golden Valley, and Norbert Thomas Wolfe, Minneapolis, Minn., assignors to Honeywell Inc., a corporation of Delaware
Filed Sept. 25, 1963, Ser. No. 76,720
Term of patent 14 years
(Cl. D52—7)



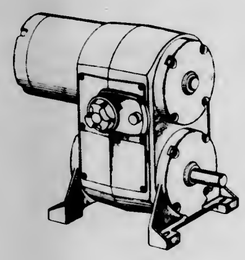
201,915
TOOL FOR CRIMPING ELECTRICAL CONNECTORS OR SIMILAR ARTICLE
Walter Myers Werner, Downingtown, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed May 11, 1964, Ser. No. 79,905
Term of patent 14 years
(Cl. D54—13)



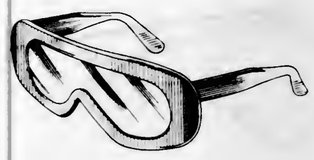
201,916
TORQUE TRANSMITTING COUPLING
George Sabadash, Redondo Beach, Calif., assignor to Helical Products Company, Inc., Hermosa Beach, Calif., a corporation of California
Filed May 10, 1963, Ser. No. 74,846
Term of patent 14 years
(Cl. D55—1)



201,917
VARIABLE RATIO TRANSMISSION OR SIMILAR ARTICLE
Don Heyer, 1019 N. Raymond Ave., Fullerton, Calif.
Filed May 11, 1964, Ser. No. 79,907
Term of patent 14 years
(Cl. D55—1)



201,918
PAIR OF SUNGLASSES
Manuel Nadel, Lido Beach, N.Y., assignor to Comptone Company, Ltd., New York, N.Y., a corporation of New York
Filed Apr. 7, 1964, Ser. No. 79,382
Term of patent 7 years
(Cl. D57—1)



201,919
PAIR OF SUNGLASSES
Jack N. Simpson, Reading, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa.
Filed May 18, 1964, Ser. No. 80,017
Term of patent 14 years
(Cl. D57—1)



201,920
PAIR OF SPECTACLES
Donald J. McCulloch, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 9, 1964, Ser. No. 81,652
Term of patent 14 years
(Cl. D57—1)



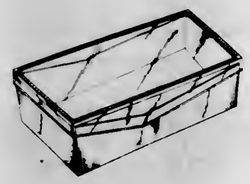
201,921
EYEGLASS FRAME
James J. Harley, Philadelphia, Pa., assignor to Optics International Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 14, 1964, Ser. No. 82,171
Term of patent 14 years
(Cl. D57—1)



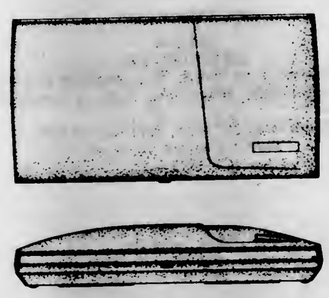
201,922
CARRYING CASE FOR A HAND STAMP
William C. Harris and Kenneth G. Kleuss, both of Racine, Wis., assignors to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Mar. 25, 1964, Ser. No. 79,179
Term of patent 14 years
(Cl. D58—12.6)



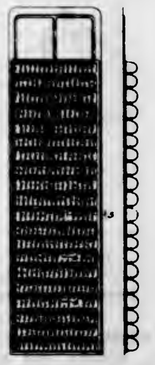
201,923
DISPLAY BOX
Samuel Braun, Rye, N.Y., assignor to B.C.N. Design Products, Inc., Amityville, Long Island, N.Y., a corporation of New York
Filed Nov. 6, 1964, Ser. No. 82,508
Term of patent 14 years
(Cl. D58—12.6)



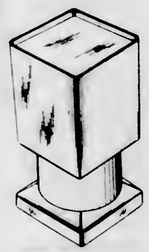
201,924
BOX FOR A DESK SET
Samuel Braun, Rye, N.Y.
(64—20 Admiral Ave., Middle Village 79, N.Y.)
Filed Oct. 31, 1963, Ser. No. 77,231
Term of patent 14 years
(Cl. D58—12.7)



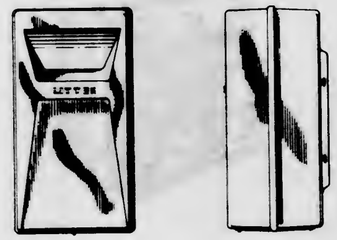
201,925
COMPARTMENTED TRAY
Hugh R. Weiss, Montclair, N.J., assignor to The Pantnote Company, Passaic, N.J., a corporation of New Jersey
Filed Oct. 8, 1964, Ser. No. 82,083
Term of patent 14 years
(Cl. D48—13)



201,926
BEVERAGE CONTAINER
Alfred J. Roach, 144 Neoll St., Levittown, N.Y.
Filed Apr. 28, 1964, Ser. No. 79,719
Term of patent 14 years
(Cl. D58—17)



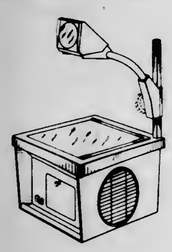
201,927
TRASH RECEPTACLE OR SIMILAR ARTICLE
Don Taylor Dean, Plainview, Tex., assignor to Donjim Enterprises, Inc., Plainview, Tex., a corporation of Texas
Filed May 11, 1964, Ser. No. 79,922
Term of patent 14 years
(Cl. D58—17)



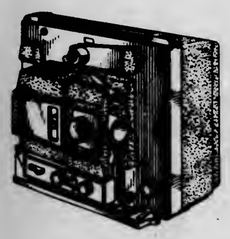
201,928
COLLAPSIBLE TUBE
Christian Theodore Scheindel, Glen Gardner, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed May 22, 1964, Ser. No. 80,105
Term of patent 14 years
(Cl. D58—17)



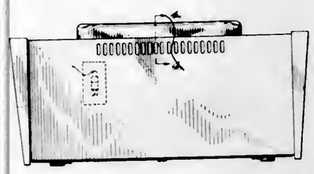
201,929
OVERHEAD PROJECTOR
Henry T. Wilton, Buffalo, and John T. Armbruster, Niagara Falls, N. Y., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Aug. 7, 1964, Ser. No. 81,195
Term of patent 14 years
(Cl. D61—1)



201,930
COMBINED MOTION PICTURE PROJECTOR AND CARRYING CASE
Kenneth D. Collister, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 2, 1964, Ser. No. 82,874
Term of patent 14 years
(Cl. D61—1)



201,931
COMBINATION ASHTRAY, AIR CIRCULATOR AND FILTER
Henry J. Talge, Kansas City, Mo., and Jack E. Briar, Shawnee Mission, Kans., assignors to Songrand Corporation, Kansas City, Mo., a corporation of Missouri
Filed Apr. 29, 1964, Ser. No. 79,732
Term of patent 14 years
(Cl. D62—2)



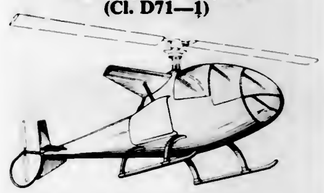
201,932
COMBINATION AIR CIRCULATOR AND FILTER
Henry J. Talge, Kansas City, Mo., and Jack E. Briar, Shawnee Mission, Kans., assignors to Songrand Corporation, Kansas City, Mo., a corporation of Missouri
Filed Apr. 29, 1964, Ser. No. 79,738
Term of patent 14 years
(Cl. D62—2)



201,933
VENTILATOR PANEL FOR BUILDINGS
Donald H. Ruggles, 2819 S. Sheridan, Tulsa 29, Okla.
Filed Nov. 23, 1964, Ser. No. 82,921
Term of patent 14 years
(Cl. D62—4)



201,934
HELICOPTER
Luell M. Graham, Fort Worth, Tex., assignor to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware
Filed Mar. 20, 1964, Ser. No. 79,098
Term of patent 14 years
(Cl. D71—1)



201,935
SUSPENSION FOLDER
Robert Kelley, Ogdensburg, N.Y., assignor to Natser Corporation, doing business as Acco Products, Ogdensburg, N.Y., a corporation of Nevada
Filed Aug. 6, 1964, Ser. No. 81,187
Term of patent 14 years
(Cl. D74—2)



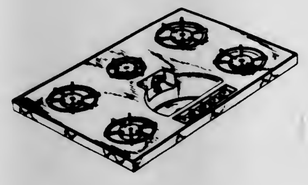
201,936
HANGER
Nathan Charak, 225 W. 34th St., New York, N.Y.
Filed July 31, 1964, Ser. No. 81,087
Term of patent 14 years
(Cl. D80—8)



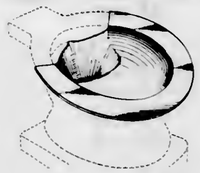
201,937
COMBINED BARBECUE AND SMOKER
Richard B. Johnson, 1310 W. 15th St., Long Beach, Calif.
Filed Aug. 3, 1964, Ser. No. 81,139
Term of patent 14 years
(Cl. D81—10)



201,938
COMBINATION STOVE AND SINK
Mike Tecton, 1634 NW. 6th St., Oklahoma City, Okla.
Filed June 24, 1964, Ser. No. 80,572
Term of patent 14 years
(Cl. D81—25)



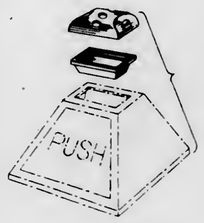
201,939
SPECIMEN COLLECTOR
Inez B. Weller and William H. Weller, both of 1660 Long St., Santa Clara, Calif.
Filed Mar. 9, 1964, Ser. No. 78,919
Term of patent 14 years
(Cl. D83—1)



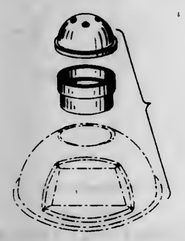
201,940
PARENTERAL SOLUTION BAG OR SIMILAR DEVICE
David Bellamy, Jr., Glenview, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 83,168
Term of patent 14 years
(Cl. D83—1)



201,941
COMBINED CIGARETTE SNUFFER AND ASH-RECEIVING RECEPTACLE FOR PUBLIC TRASH CANS
Edwin B. Feldman, Atlanta, Ga., assignor to Service Engineering Associates, Inc., Atlanta, Ga., a corporation of Georgia
Filed Mar. 4, 1964, Ser. No. 78,862
Term of patent 14 years
(Cl. D85—2)



201,942
COMBINED CIGARETTE SNUFFER AND ASH-RECEIVING RECEPTACLE FOR PUBLIC TRASH CANS
Edwin B. Feldman, Atlanta, Ga., assignor to Service Engineering Associates, Inc., Atlanta, Ga., a corporation of Georgia
Filed Mar. 4, 1964, Ser. No. 78,863
Term of patent 14 years
(Cl. D85—2)



201,943
PIPE HOLDER
Richard L. Kasper, 1123 Chalet Ave., New Carlisle, Ohio
Filed Sept. 16, 1964, Ser. No. 81,747
Term of patent 14 years
(Cl. D85—8)



201,944
FINGERNAIL FILE
Norbert Leopoldi, 4180 Marine Drive, Chicago, Ill.
Filed Mar. 10, 1965, Ser. No. 84,179
Term of patent 14 years
(Cl. D86—10)



201,945
TABLE CLOTH
Thomas William Binns, Huntingdon Valley, Pa., assignor to Quaker Lace Company, Philadelphia, Pa.
Filed Sept. 23, 1964, Ser. No. 81,844
Term of patent 14 years
(Cl. D92—26)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 10TH DAY OF AUGUST, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Concut, Inc.: *See*—
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Crompton & Knowles Corp.: *See*—
Stroop, John H. Re. 25,839.
Drus, Walter S.: *See*—
Morris, George V., Roschke, Drus, and Miller. Re. 25,837.
Ellers, Carl G., and E. M. Roschke, to Zenith Radio Corp. Subscription television system. Re. 25,836, 8–10–65, Cl. 178—5.1.
Gaertner, Van R.: *See*—
Schisla, Robert M., and Gaertner. Re. 25,835.
Gelser, John R., and R. F. Reed, to Sarkes Tarsian, Inc. Adjustable inductance unit. Re. 25,834, 8–10–65, Cl. 336—20.
Goodrich, Hunter C., to Radio Corp. of America. Color television image reproduction. Re. 25,833, 8–10–65, Cl. 178—5.4.
Hatcher, Cecil W., to Concut, Inc. Concrete bump cutter. Re. 25,838, 8–10–65, Cl. 299—39.
Miller, Bertrand J.: *See*—
Morris, George V., Roschke, Drus, and Miller. Re. Re. 25,837.
Monsanto Co.: *See*—
Schisla, Robert M., and Gaertner. Re. 25,835.
Morris, George V., E. M. Roschke, W. S. Drus, and B. J. Miller, to Zenith Radio Corp. Subscription television system. Re. 25,837, 8–10–65, Cl. 178—5.1.
Radio Corp. of America: *See*—
Goodrich, Hunter C. Re. 25,833.
Reed, Richard F.: *See*—
Gelser, John R., and Reed. Re. 25,834.
Roschke, Erwin M.: *See*—
Ellers, Carl G., and Roschke. Re. 25,836.
Morris, George V., Roschke, Drus, and Miller. Re. 25,837
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Stroop, John H., to Crompton & Knowles Corp. Feed mechanism for strip package machine. Re. 25,839, 8–10–65, Cl. 53—180.
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Scheindel, Christian T. 201,928.
Schild, Charles W. 201,905.
Wark, John D., Holsworth, and Metsler. 201,911.
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Armbruster, John T.: *See*—
Wilton, Henry T., and Armbruster. 201,929.
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B.C.N. Design Products, Inc.: *See*—
Braun, Samuel. 201,923.
Bausch & Lomb Inc.: *See*—
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Bingham, George H., Jr., and O. Olson, to Cambridge Rubber Co. Shoe sole. 201,865, 8–10–65, Cl. D7—5.
Binns, Thomas W., to Quaker Lace Co. Tablecloth. 201,945, 8–10–65, Cl. D92—26.
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Bozarth, Charles E., to General Electric Co. Cabinet for electronic equipment. 201,886, 8–10–65, Cl. D26—5.
Bozarth, Charles E., to General Electric Co. Cabinet for electronic equipment. 201,887, 8–10–65, Cl. D26—5.
Braun, Samuel, to B.C.N. Design Products, Inc. Display box. 201,923, 8–10–65, Cl. D58—12.6.
Braun, Samuel. Box for a desk set. 201,924, 8–10–65, Cl. D58—12.7.
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Caporale, Eugene R. Tethered ball game paddle. 201,893, 8–10–65, Cl. D34—15.
Charak, Nathan. Hanger. 201,936, 8–10–65, Cl. D80—8.
Christoffersen, Kurt, to The Artistic Wire Products Co. of Connecticut, Inc. Baker's cooling rack. 201,903, 8–10–65, Cl. D44—29.
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Dana, Ellworth R., to General Time Corp. Clock. 201,895, 8–10–65, Cl. D42—7.
Davis, Roger E., to The Setwell Co. Combined valet stand and seat. 201,889, 8–10–65, Cl. D33—8.
Dean, Don T., to Donjim Enterprises, Inc. Trash receptacle or similar article. 201,927, 8–10–65, Cl. D58—17.
Di Benedetto, Luigi. Spoon. 201,906, 8–10–65, Cl. D44—29.
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Feldman, Edwin B., to Service Engineering Associates, Inc. Combined cigarette snuffer and ash-receiving receptacle for public trash cans. 201,942, 8–10–65, Cl. D85—2.
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Frost, George H., to Sunbeam Corp. Food mixer or the like. 201,897, 8–10–65, Cl. D44—1.
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Gale, John A., to John Gale Co. Swivel chair. 201,879, 8–10–65, Cl. D15—1.

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Gasser, Roger E., to Gasser Chair Co., Inc. Chair. 201,876, 8–10–65, Cl. D15—1.
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Bosarth, Charles E. 201,886.
Bosarth, Charles E. 201,887.
Johnson, Carl N., and Judson. 201,862.
General Time Corp.: *See*—
Dana, Ellworth R. 201,895.
Kress, George H. 201,894.
Goldberg, Samuel. Shoe. 201,863, 8–10–65, Cl. D7—5.
Graham, Luell M., to Bell Aerospace Corp. Helicopter. 201,934, 8–10–65, Cl. D71—1.
Gruska, Casimir F., to Ekco Products Co. Can opener. 201,883, 8–10–65, Cl. D22—2.
Hancock, David, to Applied Research and Development Corp. Food tray. 201,890, 8–10–65, Cl. D44—10.
Harley, James J., to Optics International Corp. Eyeglass frame. 201,921, 8–10–65, Cl. D57—1.
Harling, Donald W., to McGraw-Edison Co. Luminaire. 201,909, 8–10–65, Cl. D48—31.
Harris, William C., and K. G. Klema, to S. C. Johnson & Son, Inc. Carrying case for a hand stamp. 201,922, 8–10–65, Cl. D68—12.6.
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Sabadash, George. 201,916.
Heyer, Don, to Hyer Hardware Mfg. Co. Knob for doors, drawers, and the like. 201,869, 8–10–65, Cl. D10—8.
Heyer, Don. Variable ratio transmission or similar article. 201,917, 8–10–65, Cl. D55—1.
Hill, Lawrence C. Rotatable index disk. 201,910, 8–10–65, Cl. D52—1.
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Monson, Wallace A., and Wolfe. 201,914.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 10TH DAY OF AUGUST, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Forney, Edgar W., Jr. 3,200,190.
Forney, Edgar W., Jr. 3,200,364.
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Anderson, Gerald R., and S. H. Creed, to FMC Corp. Fruit stemming, coring and splitting machine. 3,199,558, 8–10–65, Cl. 146—52.
Anderson, Herbert R., to Tri-Wall Containers, Inc. Corrugated carton having crush-relieved flaps. 3,199,763, 8–10–65, Cl. 229—37.
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Anderson, Walter J., and C. W. Welsh. Organ stop mechanism. 3,200,186, 8–10–65, Cl. 84—1.19.
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Andress, Harry J., Jr., and P. Y. C. Gee, to Socony Mobil Oil Co., Inc. Liquid hydrocarbons. 3,199,965, 8–10–65, Cl. 44—71.
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Ståe, Oskar, and Lind. 3,199,981.
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Bilder, Erich, and G. Uhlig, to Deutsch Gold- und Silber-Scheideanstalt vormals Roessler. Apparatus for coating one surface of a strip by a fluid bed sintering procedure. 3,199,491, 8–10–65, Cl. 118—68.
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Baer, Peter E., to Dixon Valve & Coupling Co. Balanced hydraulic valve assembly. 3,199,535, 8–10–65, Cl. 137—596.
Baer, Peter E., to Dixon Valve & Coupling Co. Pipe slip joint with dual fluid pressure balancing means and buffer means. 3,199,900, 8–10–65, Cl. 285—302.
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Vouk, Kenneth L. 3,199,938.
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Baker, Jacob G. Vibratory conveyor. 3,199,664, 8–10–65, Cl. 198—220.
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Kammerer, Archer W., Jr. 3,199,599.
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Bartel, Walter A., and D. L. Martens, to Weldon Inc. Farm tractor bulldozer. 3,199,236, 8–10–65, Cl. 37—144.
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Lowe, Nicholas, and Bartolomeo. 3,199,515.
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Battelle-Institut E.V.: *See*—
Grossteinbeck, Rolf, Schulze, Willicks, Mindermann, and Tepel. 3,200,033.
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Bauer, Gerald C., to Cellu-Kote, Inc. Paper roducts coated with vinyl resin and wax. 3,200,005, 8–10–65, Cl. 117—76.
Baumanns, Herbert, and F. Schmitz. Oil heating appliance. 3,199,568, 8–10–65, Cl. 158—71.
Baumgartner, Pierre, and P. Duhaut, to Institut Francais du Petrole des Carburants et Lubrifiants. Nitric acid oxidation of octene to suberic acid in the presence of a vanadium and manganese catalyst. 3,200,144, 8–10–65, Cl. 260—533.
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Becker, Otto, and G. Jeschke, to Gebr. Becker G.m.b.H. Multicell machine operating as a combination pressure-vacuum generator. 3,199,771, 8–10–65, Cl. 230—47.
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Nordin, Robert W. 3,200,408.
Townsley, Malcolm G. 3,200,411.
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Masgy, James D. 3,200,308.
Runyon, John P. 3,200,201.
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Bellows, Foy E. Table-easel combination. 3,199,825, 8–10–65, Cl. 248—397.
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Bendix Corp., The: *See*—
Abocsky, Robert I. 3,199,779.
Bangert, Richard H. 3,200,349.
Bengtsson, Bo G., to O. Lorentzen. Corrugated sheet formed material. 3,199,963, 8–10–65, Cl. 29—183.
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Bennett, Marvin D. and R. D. 3,199,795.
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Hudgin, Donald E., and Berardinelli. 3,200,096.
Bereskin, Alexander B. Apparatus for enabling the H_1, H_2, H_3, and H_7 characteristics of transistors to be derived. 3,200,335, 8–10–65, Cl. 324—158.
Berger, Alexandre, and R. A. M. Toesca. Combination of a free turbine with a plurality of gas generators. 3,199,-292, 8–10–65, Cl. 60—39.16.
Berger, Noach. Powder dispensing device. 3,199,743, 8–10–65, Cl. 222—193.
Bergman, Richard C., to E. I. du Pont de Nemours and Co. Process for producing small particles of nitrocellulose. 3,200,092, 8–10–65, Cl. 260—17.
Bergquist, Ralph J. W. Device for leveling and setting to grade elevations, floor duct boxes and the like. 3,199,209, 8–10–65, Cl. 33—207.
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Bernstein, David S.: *See*—
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Bertin, Jean H., and E. Dubois, to Société Bertin & Cie. Device for clearing wide roads or runways covered with snow and ice. 3,199,506, 8–10–65, Cl. 126—271.2.
Bertschinger, Jakob. Gas-operated, manually cocked shooting device. 3,199,501, 8–10–65, Cl. 124—11.
Bescher, Ralph H., to Koppers Co., Inc. Method of pre-seasoning green or partially seasoned wood. 3,199,211, 8–10–65, Cl. 34—9.5.
Bescher, Ralph H., to Koppers Co., Inc. Process for impregnating wood with pentachlorophenol and composition therefor. 3,200,003, 8–10–65, Cl. 117—59.
Bessler, Alfred, H. Rabe, H. Dobbelstein, and H. von Ey, to Alfred Teves Maschinen-und Armaturenfabrik K.G. Spot type disk brake. 3,199,635, 8–10–65, Cl. 188—73.
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Bigley, Clifford C., S. H. Cottrell, E. C. Fossom, and R. B. Singer, to Minneapolis-Moline, Inc. Lift truck fork operating control mechanism. 3,199,700, 8–10–65, Cl. 214—674.
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Birch, Clifford W., to Birch Bros., Inc. Chain cutter for web materials. 3,199,393, 8–10–65, Cl. 83—563.
Bird, Robert H., 50% to W. W. Herron. Stop motion for cotton card. 3,199,151, 8–10–65, Cl. 19—.25.
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Biro, Joseph J.: *See*—
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Bishop, W. A., Jr.: *See*—
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Blackhall, James M., to International Telephone and Telegraph Corp. Automatic toll ticketing systems. 3,200,-200, 8–10–65, Cl. 179—7.1.
Blackley, William D., to Texaco Inc. Bis-(perfluoroalkyl) nitroxide. 3 200,158, 8–10–65, Cl. 260—647.
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Laudenslager, Harry B., Jr. 3,199,190.
Blackwood, Robert K., H. H. Reinhard, J. J. Beereboom, and C. R. Stephens, Jr., to Chas. Pfizer & Co., Inc. 6-6-deoxytetracycline derivatives and process. 3,200,149, 8–10–65, Cl. 260—559.
Blanchenot, John P., to International Telephone and Telegraph Corp. Mating electrical pin and socket contacts and insulator therefor. 3,200,367, 8–10–65, Cl. 339—198.
Blankemeyer, William J. Brake alarm. 3,199,681, 8–10–65, Cl. 188—1.
Blasing, John J. Golf club head including liquid mercury in rotatable turntable. 3,199,874, 8–10–65, Cl. 273—170.
Blattry, Hans, to Paul Forkardt, K.G. Multiple jaw chuck. 3,199,880, 8–10–65, Cl. 279—121.
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Bochan, John, and J. W. Toma, to General Electric Co. Centrifugal type clutch with mass varying means. 3,199,649, 8–10–65, Cl. 192—105.
Bodendorf, Warren J., and D. I-J Wang, to Union Carbide Corp. Thermal insulation. 3,199,714, 8–10–65, Cl. 220—9.
Bodine, Albert G., Jr. Sonic wave system for planting utility poles in the ground. 3,199,614, 8–10–65, Cl. 175—19.
Boeing Co., The: *See*—
Funk, Jack N., and Horsnell. 3,199,368.
Roper, Alan T. 3,199 818.
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Johansson, Frits A., Helmerson, Mokvist, and Norro. 3,199,170.
Bond, Herbert M., and J. Tomita, to Minnesota Mining and Mfg. Co. Stabilized polyethylene. 3,200,056, 8–10–65, Cl. 204—154.
Boniface, George B.: *See*—
Stanton, Arthur J., Anderson, and Boniface. 3,199,145.
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Golbs, Ronald A., Michaelis, Walker, and Adams. 3,190,-110.
Bopp, Cecil W., to The Greater Iowa Corp. Overload safety device for material handling mechanism. 3,199,685, 8–10–65, Cl. 212—39.
Boresch, Carl M. Quaedvlieg, and W. Wunder, to Farbenfabriken Bayer Aktiengesellschaft. Process for the preparation of emulsions. 3,199,998, 8–10–65, Cl. 106—271.
Borger, Jack W., to Pullman Inc. Pneumatic or gravity discharge hopper arrangement. 3,199,925, 8–10–65, Cl. 302—52.
Borg-Warner Corp.: *See*—
Rollinger, Charles N., and Sunderland. 3,199,802.
Borneman, Don: *See*—
Treadaway, Herbert E. 3,199,778.
Boroday, Peter, and W. G. Crary, to General Motors Corp. Wheel cover. 3,199,921, 8–10–65, Cl. 301—37.
Borsody, Benjamin F. Nail anchoring device. 3,199,897, 8–10–65, Cl. 85—23.
Bosch, Robert, G.m.B.H.: *See*—
Moller, Heins. 3,199,500.
Boser, Ronald J., and E. L. Weschler. Automatic needle positioner for sewing machines. 3,199,479, 8–10–65, Cl. 112—219.
Bosma, Thomas, Jr. Ventilation system. 3,199,433, 8–10–65, Cl. 98—43.
Bossart, Clayton J.: *See*—
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Holmes, Marion B., and Bossert. 3,199,334.
Holmes, Marion B., and Bossert. 3,199,335.
Boulet, Auguste E. Radiant gas burner. 3,199,572, 8–10–65, Cl. 158—116.
Bourcier de Carbon, Christian-Marie-Lucien-Louis. Floating valves for shock absorbers. 3,199,636, 8–10–65, Cl. 188—96.
Bourget, Joseph A.: *See*—
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Romanowski, Albert F. 3,199,727.
Bouwers, Albert, to Optische Industrie de Oude Delft, N.V. Observation instrument with image converter tube and prism anamorphoseers. 3,200,250, 8–10–65, Cl. 250—77.
Bowen, Rafael L., to United States of America, Department of Health, Education, and Welfare. Surface-active comonomer and method of preparation. 3,200,142, 8–10–65, Cl. 260—486.
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Headrick, Richard T. 3,200,993.
Boyd, John L., and R. O. Perry, to Sinclair Research, Inc. Method for polymerizing resin-forming materials and use in subterranean areas. 3,199,589, 8–10–65, Cl. 166—33.
Boynton, Ira D.: *See*—
Hall, Archie C., Carlisle, Boynton, and Fulton. 3,199,-551.
Boys, Godfrey F., ½ to Henry Boys & Son Ltd. Vehicle spring suspensions. 3,199,892, 8–10–65, Cl. 280—104.5.
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Boys, Godfrey F. 3,199,892.
Bradlee Charles R., to Trexton Inc. Lifter mechanism. 3 199,356, 8–10–65, Cl. 74—53.
Bradley, Harvey, to Mansaver Industries, Inc. Grapple and control therefor. 3,199,910, 8–10–65, Cl. 294—68.
Bradley, Rex L. Adjustable test tube racks. 3,199,684, 8–10–65, Cl. 211—74.

Bragg, Herbert E., R. D. Whitmore, A. E. Alden, and F. D. Leslie, to Twentieth Century Fox Film Corp. Method and apparatus for automatically and repetitively making copies of preselected portions of motion picture films. 3,199,404, 8–10–65, Cl. 88—24.

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Brammerlo, Allen A., to General Electric Co. Stator winding arrangement in a single phase induction type motor. 3,200,317, 8–10–65, Cl. 318—220.

Brandeis, Harold, to Continental Glass Co. Tablet dispensing device. 3,199,668, 8–10–65. Cl. 206—42.

Brandi, Otto H. Apparatus for supplying conditioned air at a predetermined over-pressure to a room from a corridor. 3,199,432, 8–10–65, Cl. 98—33.

Brandon, James C., Jr., T. H. Frank, Jr., and R. H. Rahiser, to Magnetics, Inc. Method for encasing magnetic cores. 3,199,177, 8–10–65, Cl. 29—155.56.

Brase, George. Pipe nipple wrench with torque booster. 3,199,384, 8–10–65, Cl. 81—57.

Brauer, Anders, R. Pehrson, to Svenska Flaktfabriken, Aktiebolaget. Arrangement in a device for threading a web of material by means of a so-called pilot. 3,199,219, 8–10–65, Cl. 34—120.

Brauer, George M., J. L. Harper, and R. L. Jeckel. Automatic animal feeder. 3,199,731, 8–10–65, Cl. 222—56.

Brauer, Hans, to Kieserling, Th., & Albrecht. Tube drawing process. 3,199,332, 8–10–65, Cl. 72—271.

Braun, Adolph, and A. Skrapits, to Bronx Locksmiths, Inc. Locking latch device for automobile. 3,199,322, 8–10–65, Cl. 70—240.

Braun, Leonard A., E. J. Longyear Co. Underground wire line core barrel apparatus. 3,199,907, 8–10–65, Cl. 294—86.29.

Braunstein, Rubin, to Radio Corp. of America. Solid state electrical devices utilizing phonon propagation. 3,200,259, 8–10–65, Cl. 307—88.5.

Braunwarth, John B.: *See*—
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Braunwarth, John B., R. C. Kimble, and L. A. Joo, to The Pure Oil Co. Detergent composition, non-corrosive to metal surfaces. 3,200,078, 8–10–65, Cl. 252—137.

Bray, Frederick H., N. H. Martin, and J. M. Ridler, to International Standard Electric Corp. Automatic identification system. 3,200,203, 8–10–65, Cl. 179—18.

Breck, Donald W., and S. W. Bukata, to Union Carbide Corp. Metal loading of molecular sieves. 3,200,082, 8–10–65, Cl. 252—455.

Bredtschneider, Kurt B.: *See*—
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Brewer, George E. F.: *See*—
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Bristol Co., The: *See*—
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Britton, Gene W., to Phillips Petroleum Co. Pitch recovery and its utilization in a cracking process. 3,200,062, 8–10–65, Cl. 208—87.

Broadwin, Samuel M. Apparatus for shell freezing of heat sensitive liquids. 3,199,216, 8–10–65, Cl. 34—92.

Brockett, Halford E., to Continental Can Co., Inc. Three-piece easy opening crown cap closure. 3,199,705, 8–10–65, Cl. 215—46.

Brockman, Lyle, to General Signal Corp. Car retarder control system. 3,200,246, 8–10–65, Cl. 246—182.

Broderna Hedlund, AB: *See*—
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Brooks, Donald H., to International Protected Metals, Inc. Fluidized bed dispenser. 3,199,923, 8–10–65, Cl. 302—29.

Brooks, Harold, A. R. G. Brown, K. S. Jepson, and G. I. Lewis, to National Research Development Corp. Titanium alloys. 3,199,980, 8–10–65, Cl. 75—175.5.

Bross, Helmut K., 50% to Frank T. Johmann. Closure means. 3,199,748, 8–10–65, Cl. 222—517.

Brotherton, Robert J., L. L. Petterson, and A. L. McCloskey, to United States Borax & Chemical Corp. Polymeric organoboron compounds and method of making same. 3,200,147, 8–10–65, Cl. 260—551.

Brotherton, Robert J., L. L. Petterson, and A. L. McCloskey, to United States Borax & Chemical Corp. Polymeric organoboron compounds and process of preparing same. 3,200,412, 8–10–65, Cl. 260—2.

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Brown, Arthur T. Method of producing a shell roof structure. 3,200,026, 8–10–65, Cl. 156—292.

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Cuny, Robert. 3,199,877.

Brown, Curtis L., to Midland-Ross Corp. Power brake mechanism. 3,199,298, 8–10–65, Cl. 60—54.6.

Brown, Edgar A., and G. H. Schacht, to International Business Machines Corp. Hammer with dampening means for high speed printer. 3,199,650, 8–10–65, Cl. 197—18.

Brown, Ernest C., to Wolverine Equipment Co. Apparatus for treating continuous length webs comprising high velocity gas jets. 3,199,224, 8–10–65, Cl. 34—156.

Brown, Jack T., A. W. Hoppe, and D. W. Gunther, to Westinghouse Electric Corp. High-strength, precipitation hardening austenitic alloys. 3,199,978, 8–10–65, Cl. 75—128.

Brown, Meyer M. Display device. 3,199,238, 8–10–65, Cl. 40—62.

Brown, Ned C. L., to General Signal Corp. Automatic car retarder control system. 3,200,245, 8–10–65, Cl. 246—182.

Brown, Silas A., to Buckbee-Mears Co. Photoprinting apparatus. 3,199,430, 8–10–65, Cl. 95—73.

Brubaker, James F., to General Motors Corp. Ice maker of the endless flexible belt type. 3,199,309, 8–10–65, Cl. 62—345.

Bruestle, John H., to Radio Corp. of America. Combined mounting-bracket and heat-sink. 3,200,296, 8–10–65, Cl. 317—100.

Brunswick Corp.: *See*—
Coleman, Kenneth F. 3,199,155.
Gautraud, Michael G., and Albrecht. 3,199,869.

Bryant, Victor J., and R. L. Archibald. Internal broaching machine. 3,199,409, 8–10–65, Cl. 90—96.

Bucciconе, Darlo, to Bucciconi Engineering Co. Inc. Magnetic conveyor. 3,199,654, 8–10–65, Cl. 198—41.

Bucciconi Engineering Co. Inc.: *See*—
Buccicone, Darlo. 3,199,654.

Buchelmer-Clark Leather Goods Corp.: *See*—
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Buckbee-Mears Co.: *See*—
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Buckman, Stanley J., J. D. Pera, and W. P. Purcell. Corrosion inhibitor and method of using the same. 3,199,989, 8–10–65, Cl. 106—14.

Budzyn, Bolesław L.: *See*—
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Bukata, Stanley W.: *See*—
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Bullis, Earl, Jr., to Westinghouse Electric Corp. Circuit breaker with thermal and magnetic trip means. 3,200,217, 8–10–65, Cl. 200—88.

Buls, Vernon W., and A. B. Hall, to Shell Oil Co. Alkylation process. 3,200,157, 8–10–65, Cl. 260—624.

Bultinck, Paul M. Work piece holder for a grinding machine. 3,199,263, 8–10–65, Cl. 51—237.

Burdick, Richard, deceased, by Republic National Bank of Dallas, administrator. Coin-holders. 3,199,666, 8–10–65, Cl. 206—82.

Burklo, Donald C.: *See*—
Edwards, Robert A., and Burklo. 3,199,478.

Burnight, Thomas R. Grain temperature sensing device. 3,199,353, 8–10–65, Cl. 73—352.

Burns, Ronald N., and L. P. Zetye, to General Motors Corp. Battery retainer. 3,199,624, 8–10–65, Cl. 180—68.5.

Burnside, Gilbert L., and G. E. F. Brewer, to Ford Motor Co. Electrophoretic coating process. 3,200,057, 8–10–65, Cl. 204—181.

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MacDonald, Duncan N., Glaser, Bauer, Dowling, Kielty, and King. 3,200,380.
Relis, Matthew J. 3,200,341.

Burroughs Wellcome & Co. (U.S.A.) Inc.: *See*—
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Bush, E. S., & Co.: *See*—
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Bush, Eugene S., to E. S. Bush & Co. Information recording device. 3,200,403, 8–10–65, Cl. 346—61.

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Bush, Vannevar, and J. A. Hastings, to Stewart-Warner Corp. Hydraulic pump or motor. 3,199,460, 8–10–65, Cl. 103—161.

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Cabut, Louis A.: *See*—
Simonnet, Andre A. P., and Cabut. 3,199,941.

Caddoo, William H., to Continental Can Co., Inc. Book cover and machine for making same. 3,199,896, 8–10–65, Cl. 281—29.

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Cahaly, Fox B.: *See*—
Franks, Bobby L., and Cahaly. 3,199,543.

Calamia, Rocco. Pivoted shut-off valve for spray gun. 3,199,832, 8–10–65, Cl. 251—152.

Caldwell, Everette V. Wheel mounting. 3,199,890, 8–10–65, Cl. 280—43.23.

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Califoam Corp. of America: *See*—
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California Ink Co., Inc., The: *See*—
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California Research Corp.: *See*—
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Anderson, Robert G., and Honnen. 3,200,076.
Criddle, Dean W. 3,200,073.
Lapporte, Seymour J. 3,200,156.
Suzuki, Shigeto. 3,199,953.

Calim, Thomas E. Molding apparatus. 3,199,829, 8–10–65, Cl. 249—94.

Callahan, Bill R., to National Tank Co. Capacitance probe for fluids. 3,200,312, 8–10–65, Cl. 317—246.

Callahan, James L., and B. Gertisser, to The Standard Oil Co. Mixed antimony oxide-manganese oxide oxidation catalyst. 3,200,081, 8–10–65, Cl. 252—443.

Callahan, James L., and B. Gertisser, to The Standard Oil Co. Mixed antimony oxide-cerium oxide oxidation catalysts. 3,200,084, 8–10–65, Cl. 252—462.

Callum, Charles L., and D. T. Sorlie, to Daffin Corp. Portable feed grinder and mixer. 3,199,796, 8–10–65, Cl. 241—101.

Caloric Appliance Corp.: *See*—
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Cambi Idraulici Badalini, S.p.A.: *See*—
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Cameron, Allan E. and C. E. Throttle control device. 3,199,365, 8–10–65, Cl. 74—482.

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Cameron, Allan E. and C. E. 3,199,365.

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Cannon Electric Co.: *See*—
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Carleton, James J., and E. J. King, to General Motors Corp. Guide roller assembly. 3,199,930, 8–10–65, Cl. 308—6.

Carleton, John T., to United States of America, Atomic Energy Commission. Neutronic reactor structure. 3,200,046, 8–10–65, Cl. 176—41.

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Carlson, Chester F., to Xerox Corp. Xerographic fusing and drying apparatus. 3,199,223, 8–10–65, Cl. 34—155.

Carman, Justice N., to Carman Laboratories, Inc. Glass encapsulated semiconductor device. 3,200,310, 8–10–65, Cl. 317—234.

Carman Laboratories, Inc.: *See*—
Carman, Justice N. 3,200,310.

Carmmell Laird and Co. (Shipbuilders & Engineers) Ltd.: *See*—
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Carpinone, Joseph S. Safety ball socket connector for electric plugs. 3,200,365, 8–10–65, Cl. 339—103.

Carr, Leon D., and W. E. Thompson, to Sperry Rand Corp. Combination electrical socket, electromagnetic actuator and on-off switch. 3,200,220, 8–10–65, Cl. 200—111.

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Carroll, John T., to Allis-Chalmers Mfg. Co. Time delay static switch with impedance matching and raped reset means. 3,200,258, 8–10–65, Cl. 307—88.5.

Carver, Richard N., R. J. Lohr, and J. Smith, to Lous Marx & Co., Inc. Robot toy and mechanism for actuating the same. 3,199,249, 8–10–65, Cl. 46—247.

Cary, James E., and W. D. Walker, to Sweden Freezer Mfg. Co. Beverage dispensing head. 3,199,738, 8–10–65, Cl. 222—129.2.

Case, J. I., Co.: *See*—
Yeske, Laurel R. 3,199,279.

Casse, Marcel. Machine for pressure dyeing felt blanks and the like. 3,199,752, 8–10–65, Cl. 223—10.

Castelli, Charles, to Johnson & Johnson. Dispenser for adhesive tape. 3,199,394, 8–10–65, Cl. 83—578.

Caston, Thomas C. J. Hook rod and line holder combined. 3,199,243, 8–10–65, Cl. 43—26.

Catlin, Robert T., and R. O. Swain, to Remington Arms Co., Inc. Cartridge-powered impact wrench. 3,199,612, 8–10–65, Cl. 173—93.

Cavanaugh, John J., and B. L. Forbes, to Denab Laboratories Inc. Valved dilating device for hygienic irrigation. 3,199,512, 8–10–65, Cl. 128—244.

Cavanaugh, Robert J.: *See*—
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Cawood, Allen R. H. Tent pegs. 3,199,520, 8–10–65, Cl. 135—15.

Cehlrich, Karl-Heinz, K.-R. Schmidt, H. Zenneck, E. Schaufler, and H.-G. Heitmann, to Siemens-Schuckertwerke Aktiengesellschaft. Particle from gas separators. 3,199,268, 8–10–65, Cl. 55—261.

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Dolce, Thomas J., and Hudgin. 3,200,090.
Hudgin, Donald E., and Berardinelli. 3,200,096.
Livingston, Malcolm R. 3,199,283.
Mills, William C. 3,200,059.
Windholz, Thomas B. 3,200,097.

Cellu-Kote, Inc.: *See*—
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Cesco Container Mfg. Co.: *See*—
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Chadha, Rajendra N., to W. R. Grace & Co. Vinyl polymerization process using a catalyst of aluminum alkyl compound, oxygen and peroxidized vinyl monomer. 3,200,103, 8–10–65, Cl. 260—89.1.

Chaikin, Malcolm, and A. Samson, ½ to Unisearch Ltd., University of New South Wales. Treatment of fibre assemblies with fluids. 3,199,126, 8–10–65, Cl. 8—156.

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Chapin, Richard D. Plant watering device. 3,199,784, 8–10–65, Cl. 239—65.

Chapin, Richard D. Water distributing system. 3,199,791, 8–10–65, Cl. 239—542.

Chapps, Matthew F. Mounting bracket. 3,199,824, 8–10–65, Cl. 248—289.

Charland, George A., to Campbell Soup Co. Multiple test unit tester and method. 3,199,672, 8–10–65, Cl. 209—72.

Charlton, Richard E., Jr., and R. E. Hudson, Jr., to West Point-Pepperell, Inc. Process of manufacturing nonwoven fabrics. 3,199,167, 8–10–65, Cl. 28—72.2.

Cheltenham Auto Controls Ltd.: *See*—
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Chemetron Corp.: *See*—
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Chenoweth, David V., to Baker Oil Tools, Inc. Releasable fluid control apparatus for retrieving subsurface well devices. 3,199,906, 8–10–65, Cl. 294—86.15.

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Chiarenza, Sebastian P. Car upholstery cover. 3,199,916, 8–10–65, Cl. 297—223.

Childs, James H., W. D. Rayle, and J. Grobman, to United States of America, National Aeronautics and Space Administration. Electric propulsion engine test chamber. 3,199,343, 8–10–65, Cl. 73—116.

Chisholm, Douglas S., to The Dow Chemical Co. Hand tool for sealing thermoplastic surfaced members. 3,200,028, 8–10–65, Cl. 156—499.

Chitis, Wolf. Foundation pile. 3,199,301, 8–10–65, Cl. 61—53.6.

Choulngs, Leslie C., to Automotive Products Co, Ltd. Closed loop, spot type, disc brake. 3,199,632, 8–10–65, Cl. 188—73.

Choulngs, Leslie C., to Automotive Products Co. Ltd. Pivotable and slidable closed loop type spot disc brake. 3,199,634, 8–10–65, Cl. 188—73.

Choulngs, Leslie C., to Automotive Products Co. Ltd. Vehicle brakes. 3,199,926, 8–10–65, Cl. 303—2.

Choulngs, Leslie C., to Automotive Products Co. Ltd. Road responsive valve. 3,199,928, 8–10–65, Cl. 303—22.

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Christiansen, Robert G., and W. S. Johnson, to Sterling Drug Inc. 7-cyano steroids and derivatives thereof. 3,200,118, 8–10–65, Cl. 260—239.5.

Chrysler Corp.: *See*—
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Chrysler, Louis, and P. M. Stockton. Self-loading and unloading vehicle. 3,199,696, 8–10–65, Cl. 214—512.

Chumakov, Walter V., to I-T-E Circuit Breaker Co. Counting circuit for counting cell failures in a rectifier system. 3,200,392, 8–10–65, Cl. 340—253.

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Ciampa, Joseph F., and A. Serafini, to Standard Box Spring Co. Border construction for box springs. 3,199,122, 8–10–65, Cl. 5—261.

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Bencze, William L. 3,200,125.
Werner, Lincoln H. 3,200,132.
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Ruoss, Leo, Wetzel, Marx, and Luescher. 3,199,489.
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Clapp, John M., to Ingersoll-Rand Co. Automatic releasing clutch mechanism responsive to torque loads for use in power tools. 3,199,644, 8–10–65, Cl. 192—56.

Clapper, Genung L., to International Business Machines Corp. Dynamic compression circuit with controlled clipping. 3,200,344, 8–10–65. Cl. 330—24.

Clark, Earl J., to Buchelmer-Clark Leather Goods Corp. Method of making a revolver holster. 3,200,021, 8–10–65, Cl. 156—93.

Clark, Harold E., to General Motors Corp. Combined magnetic suspension and transformer. 3,199,932, 8–10–65, Cl. 308—10.

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Clarkson, Robert J., to United States Rubber Co. Texturised continuous filament yarn. 3,199,282, 8–10–65, Cl. 57—140.

Clay-Adams, Inc.: *See*—
Straus, Eric H., and Stafford. 3,199,669.

Clayton Corp. of Delaware, The: *See*—
Hug, Richard C. 3,199,150.

Clayton, David P.: *See*—
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Clerbois, Francois, and P. Antoine, to Solvay & Cie. Process control for hypochlorite production. 3,199,949, 8–10–65, Cl. 23—86.

Cline, Marilynn C.: *See*—
Cunningham, Robert A., Atkinson, and Cline. 3,199,878.

Cline, William H., Jr.: *See*—
Cunningham, Robert A., Atkinson, and Cline. 3,199,878.

Coffing, James E. Attitude indicator. 3,199,207, 8–10–65, Cl. 33—204.

Cohen, Werner V., to E. I. du Pont de Nemours and Co. Fluoroalkyl benzoate dielectric compositions. 3,200,077, 8–10–65, Cl. 252—65.

Coil, Stanley F., to The National Cash Register Co. Coded tag printer using punched tags. 3,199,444, 8–10–65, Cl. 101—45.

Collcraft, Inc.: *See*—
Renakers, John O. 3,199,178.

Coleman, Daniel M.: *See*—
Stroud, John F., and Coleman. 3,199,810.

Coleman, Dovie L., and W. A. Fiedler, to United States of America, Navy. Self-contained data recorder. 3,200,402, 8–10–65, Cl. 346—38.

Coleman, Kenneth F., to Brunswick Corp. Floor seal. 3,199,155, 8–10–65, Cl. 20—68.

Coleman, Ralph A., to American Cyanamid Co. Ultraviolet light stabilized polymeric materials having a benzophenone chemically incorporated therein. 3,200,086, 8–10–65, Cl. 260—2.

Coless, Thomas L.: *See*—
Sharav, William B., Rimer, and Coless. 3,200,016.

Coley, Nelson B., S. M. Phelps, and F. A. Daly, to General Signal Corp. System for marking and indicating the presence of an interface in a pipeline. 3,199,527, 8–10–65, Cl. 137—268.

Colonial Press, Inc., The: *See*—
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Combustion Engineering, Inc.: *See*—
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Commissariat a l'Energie Atomique: *See*—
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Community Industries, Ltd.: *See*—
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Compton, Earl R. Nurse aid table. 3,199,467, 8–10–65, Cl. 108—49.

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Koinis, Frank J., and Cone. 3,199,852.

Cone, Richard E., to Royal McBee Corp. Card notcher. 3,199,889, 8–10–65, Cl. 83—145.

Conescu, Sidney. Box construction. 3,199,760, 8–10–65, Cl. 229—16.

Conger, Robert L., R. F. Riggs, D. B. Kern, and C. E. White, to United States of America, Navy. Phase scan antenna system. 3,200,401, 8–10–65, Cl. 343—100.

Connaughton, Joseph W., to United States of America, Army. Conical vortex injection and combustion device for reaction motors. 3,199,295, 8–10–65, Cl. 60—39.74.

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Oliver, David L., and Herbetko. 3,199,764.

Conroy, Edward H.: *See*—
West, James R., and Conroy. 3,199,955.

Considder, James L. Roofing structure. 3,199,256, 8–10–65, Cl. 52—95.

Container Patent Co., G.m.b.H.: *See*—
Doerpinghaus, Ernst H. 3,199,735.

Continental Can Co., Inc.: *See*—
Brockett, Halford E. 3,199,705.
Caddoo, William H. 3,199,896.

Continental Glass Co.: *See*—
Brandels, Harold. 3,199,668.

Continental Oil Co.: *See*—
Heuer, George J., Jr., Knutson, Cavanaugh, and Bright. 3,199,341.
Kepley, James A. 3,199,591.

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Rabinow, Jacob. 3,200,373.

Cook, Donald H.: *See*—
Schelling, William T., Parle, Cook, and Erskine. 3,199,991.

Cook, Howard F., to Henry C. Harbers. Cargo truck train. 3,199,622, 8–10–65, Cl. 180—14.

Cook, Lucien H., and I. Mavrovic, to Chemical Construction Corp. Urea synthesis process. 3,200,148, 8–10–65, Cl. 260—555.

Cooley, John R., to General Electric Co. Electrical contact member having a raised cup shaped work-hardened area. 3,200,226, 8–10–65, Cl. 200—166.

Coons, Everett A., to Olin Mathieson Chemical Corp. Collapsible container. 3,199,762, 8–10–65, Cl. 229—27.

Copp, Frederick C., to Burroughs Wellcome & Co. (U.S.A.) Inc. Quaternary ammonium compounds. 3,200,143, 8–10–65, Cl. 260—501.

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Cornelius, Richard T., and H. E. Dufresne, to The Cornelius Co. Apparatus for metering and mixing flowable ingredients to continuously supply a predetermined mixture. 3,199,531, 8–10–65, Cl. 137—394.

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Pults, Wallace W. 3,199,954.

Corning, Leon M., R. L. Friedenthal, and R. E. Sarafan, to Advance Chemical Co. Container for toilet bowl cleaning fluid and receptacle for mop. 3,199,739, 8–10–65, Cl. 222—130.

Coroga Co.: *See*—
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Davy, Robert E. 3,199,756.

Corry, Robert T. Geometric substitution boxes. 3,200,211, 8–10–65, Cl. 200—11.

Cottington, Gregory I., to Texaco Inc. Hydrocarbon treatment process. 3,200,065, 8–10–65, Cl. 208—321.

Cottrell, Samuel H.: *See*—
Bigley, Clifford, C., Cottrell, Fossom, and Singer. 3,199,700.

Counsell, Raymond E., and P. D. Klimstra, to G. D. Searle & Co. 17-oxygenated androst-2-en-19-ols and esters thereof. 3,200,133, 8–10–65, Cl. 260—397.4.

Covert, John N., and P. D. Pryor, to Union Special Machine Co. Rotary hook construction. 3,199,480, 8–10–65, Cl. 112—231.

Cramer, Thomas F., to Holley Carburetor Co. Hydraulic speed and temperature governing system. 3,199,522, 8–10–65, Cl. 137—20.

Crane Co.: *See*—
Magos, John P., Bredtschneider, and Englert. 3,199,876.

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Crawford, John K., and C. M. Pietras, to International Business Machines Corp. Byte-converter error-check circuit. 3,200,242, 8–10–65, Cl. 235—153.

Crawford, Thomas J., to Union Carbide Corp. Electric percussion-welding of surface layers. 3,200,234, 8–10–65, Cl. 219—76.

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Criddle, Dean W., to California Research Corp. Agents to improve yields of hydroxy stearate greases. 3,200,073, 8–10–65, Cl. 252—40.5.

Crocker, William G.: *See*—
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Cronberger, Luther C., to The Dow Chemical Co. Well treating method. 3,199,585, 8–10–65, Cl. 166—1.

Cross, Alexander D., to Syntex Corp. 17-tetrahydropyranyl ethers of (3,2-C)-pyrazole and (2,3-d)-isoxazole derivatives of the androstane and 19-norandrostane series. 3,200,114, 8–10–65, Cl. 260—239.55.

Cross, Alexander D., to Syntex Corp. 17-tetrahydropyranyl ethers of 3-desoxy and 19-nor-(3-desoxy-Δ^2-androstenes. 3,200,115, 8–10–65, Cl. 260—239.55.

Cross, Grosvenor M., to The Colonial Press, Inc. Machine for edge gilding books. 3,200,029, 8–10–65, Cl. 156—540.

Croswhite, Howard L., to Ford Motor Co. Infinitely variable hydrostatic transmission system. 3,199,297, 8–10–65, Cl. 60—53.

Crowdes, George J.: *See*—
Krebs, Glenn F., and Crowdes. 3,200,302.

Crowe, Felton V. Automatic bagging apparatus. 3,199,550, 8–10–65, Cl. 141—76.

Crowley Fence Co. Inc.: *See*—
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Crown Zellerbach Canada Ltd.: *See*—
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Cryovac, Inc.: *See*—
Hood, Charles B., Jr., and Pierce. 3,199,583.

Csimma, Sandor, to FMC Corp. Fruit trimmer. 3,199,559, 8–10–65, Cl. 146—81.

Cubert, Jack S., to Sperry Rand Corp. Pulse generator and shaper employing two charge-storage diodes. 3,200,267, 8–10–65, Cl. 307—88.5.

Cullen-Friestedt Co.: *See*—
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Cunningham, Raymond B., to Cunningham & Sons. Pelleting machine having restricted passages. 3,199,465, 8–10–65, Cl. 107—14.

Cunningham, Robert A., G. O. Atkinson, and W. H. Cline, Jr., deceased (by M. C. Cline, independent executrix), to Hughes Tool Co. Seal between a pair of relatively rotatably, radially extending surfaces. 3,199,878, 8–10–65, Cl. 277—88.

Cunningham & Sons: *See*—
Cunningham, Raymond B. 3,199,465.

Cuny, Robert, to Brown, Boveri & Cie, Aktiengesellschaft. Shaft seal for gas-filled electric machines utilising sealing liquid introduced into sealing ring located in annular chamber surrounding shaft. 3,199,877, 8–10–65, Cl. 277—29.

Curtay, Adrienne M.: *See*—
Curtay, Paul M. and A. M. 3,200,037.

Curtay, Paul M. and A. M., born Boelens. Topic angiotonic compositions. 3,200,037, 8–10–65, Cl. 167—62.

Curtis, S. & Son Inc.: *See*—
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Curtiss-Wright Corp.: *See*—
Samson, Ralph L. 3,200 309.

Cutler, Royal A., to Sterling Drug Inc. Copper, cadmium, and zinc salts of halo-2,2'-dihydroxydiphenyl sulfides and sulfoxides. 3,200,135, 8–10–65, Cl. 260—429.

Cutler-Hammer, Inc.: *See*—
Okwit, Seymour. 3,200,353.

Dabelle, Godfrey R., to E. D. Etnyre & Co. Pavement sealer spreader apparatus. 3,199,875, 8–10–65, Cl. 275—14.

Daffin Corp.: *See*—
Callum, Charles L., and Sorlie. 3,199,796.

Dahlen, Theodore E., to International Telephone and Telegraph Corp. Electrical connector having RF filter. 3,200,355, 8–10–65, Cl. 339—79.

D'Amato, Vitagelo, to Lepetit S.p.A. Topical anti-rheumatic compositions comprising tetrahydrofurfuryl 3-pyridylacetate. 3,200,038, 8–10–65, Cl. 167—65.

Damico, Frank A., and R. T. Norton, to Western Electric Co., Inc. Liquid level indicator. 3,200,389, 8–10–65, Cl. 340—244.

Daimler-Benz Aktiengesellschaft: *See*—
Scholtyssek, Wolfgang. 3,199,498.

Daly, Frank A.: *See*—
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Dammer, August, and W. Breuing, to Rheinstahl Huttenwerke AG. Manufacture of steel. 3,199,976, 8–10–65, Cl. 75—59.

Danfoss A/S: *See*—
Roelsgaard, Knud. 3,199,459.

Danfoss ved ing. M. Clausen: *See*—
Andersen, Erik. 3,200,294.

Danhier, Francois G., to La Soudure Electroque Autogene, S.A. Process and apparatus for electric fusion welding. 3,200,232, 8–10–65, Cl. 219—73.

Danly, James C., to Danly Machine Specialties, Inc. Control arrangement for automatic press line. 3,199,439, 8–10–65, Cl. 100—43.

Danly, James C., to Danly Machine Specialties, Inc. Automatic transfer mechanism for press line. 3,199,443, 8–10–65, Cl. 100—207.

Danly Machine Specialties, Inc.: *See*—
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Danly, James C. 3,199,443.

Darby, Robert J., J. F. Nemecek, S. G. Granger, and C. H. Brainerd, to Trans World Airlines, Inc. Automatic aircraft throttle control apparatus. 3,199,811, 8–10–65, Cl. 244—76.

Date, Kazuo H., to McGraw-Edison Co. Circuit breaker of fluid immersed type having pair of series connected interrupters. 3,200,223, 8–10–65, Cl. 200—150.

Davidson, Emil, to Guild Molders, Inc. Closure and sealing assembly for bottles. 3,199,704, 8–10–65, Cl. 215—43.

Davies, Ben, to Harbison-Walker Refractories Co. Refractory structure and shapes therefor. 3,199,994, 8–10–65, Cl. 106—55.

Davies, Eric, and A. N. Heightman, to The Marconi Co. Ltd. Television systems. 3,200,195, 8–10–65, Cl. 178—6.8.

Davies, Howard W., and O. E. Jore, to Anaconda Wire and Cable Co. Cable splice insulator and cable joint made therewith. 3,200,191, 8–10–65, Cl. 174—88.

Davis, John E., to J. Briskin, Inc. Dispenser. 3,199,788, 8–10–65, Cl. 239—310.

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Davy, Robert E., to Coroga Co. Package chain assembly and conveying means. 3,199,756, 8–10–65, Cl. 226—76.

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Dayton, Donald W. Load carrying mechanism for lift trucks. 3,199,699, 8–10–65, Cl. 214—654.

Dean, James C., J. A. Keder, and A. J. Tolomeo, to United Aircraft Corp. Flight control system. 3,199,601, 8–10–65, Cl. 170—135.22.

De Boer, Geert, to Volma, N.V. Cheese mold apparatus. 3,199,195, 8–10–65, Cl. 31—44.

Deflandre, René, to Societe dite: Dorefa Etablissement pour le Development, Recherches et Fabrications Industrielles. Structure of machine tools and the like. 3,199,386, 8–10–65, Cl. 82—32.

Dega, Robert L., to General Motors Corp. Method of machining lip-type seals. 3,199,191, 8–10–65, Cl. 29—529.

De la Bretoniere, Andre B., to American Enka Corp. Apparatus for the heating of travelling thread or tape-shaped products on a transport roller. 3,200,230, 8–10–65, Cl. 219—10.49.

De Lollo, George M. Steering transmission for track laying vehicles. 3,199,376, 8–10–65, Cl. 74—720.5.

De Laval Turbine Inc.: *See*—
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Dempsey, James F., to Sun Oil Co. Reactor for preparation of carboxylic aromatic acids. 3,199,959, 8–10–65, Cl. 23—283.

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Densmore, Neal W., to Joy Mfg. Co. Tool mounting. 3,199,611, 8–10–65, Cl. 173—24.

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De Tullio, Nicola. Album. 3,199,895, 8–10–65, Cl. 281—29.

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Deutschman, Aaron D. Magnetic particle switch provided with quick disconnect. 3,200,216, 8–10–65, Cl. 200—87.

Devenco Inc.: *See*—
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Dew, Bruce J., to Morse Chain Co. Composite plastic gear. 3,199,364, 8–10–65, Cl. 74—460.

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Dickey, Charles N. Resurfacing apparatus. 3,199,423, 8–10–65, Cl. 94—44.

Dickson, Woodrow J., and F. W. Jenkins, to Petrolite Corp. Derivatives of branched polyalkylenepolyamines. 3,200,108, 8–10–65, Cl. 260—97.5.

Di Domenico, Joseph, and F. Mellion, to Jo-Dee Corp. Device for dispensing small articles. 3,199,724, 8–10–65, Cl. 221—257.

Di Domenico, Joseph, and F. Mellion, to Jo-Dee Corp. Can carrier. 3,199,909, 8–10–65, Cl. 294—87.2.

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Dietmann, Albert W., to Arenco Aktiebolag. Machine for filling matches in boxes. 3,199,264, 8–10–65, Cl. 53—200.

Dilger, Le Roy E., to Globe-Union Inc. Ignition system. 3,200,291, 8–10–65, Cl. 315—205.

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Baer, Peter E. 3,199,900.

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Dodd, David H., ½ to C. Riegel. Method of forming concrete articles and slip forming machine therefor. 3,200,177, 8–10–65, Cl. 264—70.

Doerpinghaus, Ernst H., to Container Patent Co., G.m.b.H. Container. 3,199,735, 8–10–65, Cl. 222—92.

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Graswich, Edward. 3,199,683.

Dolce, Thomas J., and D. E. Hudgin, to Celanese Corp. of America. Stabilization of oxymethylene polymers with proteins. 3,200,090, 8–10–65, Cl. 260—6.

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Donaldson, Ralph J., Jr., to United States of America, Air Force. Constant height antenna scan. 3,200,397, 8–10–65, Cl. 343—7.4.

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Dreibach, Dale A. Internal combustion engine having bypass for automatically actuating an auxiliary scavenger piston. 3,199,497, 8–10–65, Cl. 123—66.

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Driscoll, Anthony F. Cam operated closure. 3,199,749, 8–10–65, Cl. 222—520.

Driscoll, Edward P., and H. T. Walther, to General Motors Corp. Weatherstrip fastener installation. 3,199,180, 8–10–65, Cl. 29—208.

Drucker, Kenneth G. Sedimentation rate centrifuge and method determining sedimentation rate. 3,199,775, 8–10–65, Cl. 233—25.

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Duxbury, William H. Attachment to lathe chucks. 3,199,881, 8–10–65, Cl. 279—123.
Dye, Ovid. Lawn care machine. 3,199,278, 8–10–65, Cl. 56—27.
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Ellis, Alfred B. E., to The Marconi Co. Ltd. Automatic correction arrangements for periodic integrators. 3,200,338, 8–10–65, Cl. 328—35.
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Emhart Corp.: *See*—
Mylchreest, George D. 3,199,986.
Emmel, Donald R., A. R. Blackburn, R. E. Steele, and H. H. Dawson, to The Murray Corp. of America. Automatic production of pressed ware from plastic material. 3,199,164, 8–10–65, Cl. 25—2.
Emporium Specialties Co., Inc.: *See*—
McBride, William. 3,199,646.
Enders, Sherwood G., to The Black and Decker Mfg. Co. Driving mechanism for abrading tool. 3,199,251, 8–10–65, Cl. 51—170.
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Engel, Walter: *See*—
Rainer, Erich, Wolf, and Engel. 3,200,207.
Engel, Walter, to Siemens-Schuckertwerke Aktiengesellschaft. Electronically commutated direct-current motor. 3,200,316, 8–10–65, Cl. 318—138.
Engel, Walter, F. Kuhrt, H.-J. Lippmann, and W. Hartel, to Siemens-Schuckertwerke Aktiengesellschaft. Position sensing devices, particularly in hoisting and conveying systems. 3,199,630, 8–10–65, Cl. 187—29.
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Magoe, John P., Bredtschneider, and Englert. 3,199,876.
English Electric Co. Ltd., The: *See*—
Faulkes, Kenneth M. 3,200,823.
Long, Everett. 3,200,044.
Erbaugh, Lowell E.: *See*—
Richard, William R., Jr., Calfee, and Erbaugh. 3,200,101.
Erdmann, Hans, and H. Wursel, to Waldes Kohinoor, Inc. Retaining ring application and a retaining ring and an assembling and disassembling fixture for use therewith. 3,199,181, 8–10–65, Cl. 29—229.
Erickson, Howard L., to The Dole Valve Co. Sanitizing measuring valve for fluid dispenser. 3,199,747, 8–10–65, Cl. 222—453.
Eriksson, Ernst A., to H. J. Atkinson, dba Sudbury Laboratories. Rust preventing capsule. 3,199,665, 8–10–65, Cl. 206—.3.
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FMC Corp.: *See*—
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Cilker, William H. 3,200,023.
Csimma, Sander. 3,199,559.
Faccou, Armand L. 3,199,898.
Flint, Alan G. 3,199,673.
Oldenkamp, Henry A., and Small. 3,199,217.
Pollard, John D., and Orwoll. 3,200,150.
Vadas, Leslie. 3,199,561.
Faccou, Armand L., to FMC Corp. Swivel pipe joint assembly. 3,199,898, 8–10–65, Cl. 285—41.
Fagaly, Robert W. Ladder construction. 3,199,628, 8–10–65, Cl. 182—200.
Fagaly, Robert W. Ladder construction. 3,199,629, 8–10–65, Cl. 182—200.
Fairest, Derek H., to Morgan Fairest Ltd. Apparatus for applying body and neck labels to bottles. 3,200,027, 8–10–65, Cl. 156—449.
Fairest, Morgan, Ltd.: *See*—
Fairest, Derek H. 3,200,027.
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Kleiner, Helmut. 3,200,102.
Kuth, Robert, and von Brachel. 3,199,942.
Ruppert, Heinrich, and Schnell. 3,200,152.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucis & Bruning: *See*—
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Ribka, Joachim. 3,200,109.
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Farr, Richard S., to Farr Co. Dust and liquid detector. 3,199,488, 8–10–65, Cl. 116—114.
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Faulkes, Kenneth M., to The English Electric Co. Ltd. Apparatus for generating alternating current. 3,200,323, 8–10–65, Cl. 322—28.
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Rasmussen, Harvey J. and H. R., Fisher, and Moskal. 3,199,436.
Fisk, Bert, M. Fischman, and T. J. Rauen, to United States of America, Navy. High current level interrupter means. 3,200,260, 8–10–65, Cl. 307—88.5.
Fitzgerald, Herbert S., and Leeds and Northrup Co. Adjustable controller for predetermined control-programs. 3,200,209, 8–10–65, Cl. 200—18.
Fitzsimmons, Vincent G., to United States of America, Navy. Method for coating high polymers with polytetrafluoroethylene. 3,200,000, 8–10–65, Cl. 117—104.
Flachbarth, Charles T., to Walker Bros. Adapter for access units of underfloor ducts. 3,199,713, 8–10–65, Cl. 220—3.7.
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Folkman, Bern D., to Pharmaseal Laboratories. Sampling container. 3,199,707, 8–10–65, Cl. 215—99.
Fontaine, John G. Retracting device for automobile seat belts. 3,199,804, 8–10–65, Cl. 242—67.1.
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Forman, Sol, and S. Sloyer, to Forman Family, Inc. Food or beverage carrier and server. 3,199,720, 8–10–65, Cl. 220—103.
Forney, Edgar W., Jr., to AMP Inc. Dual ferrule connector for a coaxial cable having a flat braid. 3,200,190, 8–10–65, Cl. 174—75.
Forney, Edgar W., Jr., to AMP Inc. Electrical connector assembly for insulated tape cable. 3,200,364, 8–10–65, Cl. 339—99.
Forrest, Robert E. Windshield wiper protector. 3,199,563, 8–10–65, Cl. 150—52.
Forster, Walter R., to Westinghouse Air Brake Co. Valve device. 3,199,540, 8–10–65, Cl. 137—625.69.
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Fountain-Barber, Martin, to Dowty Mining Equipment Ltd. Fluid-responsive relief valve. 3,199,533, 8–10–65, Cl. 137—543.13.
Foure, Claude D., to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Fluidized particle heat exchange. 3,199,212, 8–10–65, Cl. 34—10.
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Fox, Ray. Soil-soaker hold-down. 3,199,817, 8–10–65, Cl. 248—87.
Fracassi, Albert L. Hose reel. 3,199,529, 8–10–65, Cl. 137—355.26.
Franco, Gianfranco, G. E. Lockett, N. Kinkead, and V. H. Sorensen, to United Kingdom Atomic Energy Authority. Plant for remote handling of nuclear fuel elements. 3,200,043, 8–10–65, Cl. 176—30.
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Franks, Bobby L., and F. B. Cahaly. Back box leather latch for looms. 3,199,543, 8–10–65, Cl. 139—183.
Frazel, Wilbur H., to The New York Air Brake Co. Belt gravimetric feeder zeroing device. 3,199,655, 8–10–65, Cl. 198—53.
Frederiksen, Jordan W., Sr. Fishing lure. 3,199,244, 8–10–65, Cl. 43—42.1.
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Freeman, Quilla H. Double runner ice skate having resiliently mounted foot plate. 3,199,883, 8–10–65, Cl. 280—11.14.
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Fried, George, to American Machine & Foundry Co. Ball and pin handling mechanism including a resilient pin deflector. 3,199,870, 8–10–65, Cl. 273—43.
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Frishman, Daniel, to Reid-Meredith, Inc. Process of making long haired pile fabric and making artificial hairpieces therefor. 3,199,516, 8–10–65, Cl. 132—5.
Frohbieter, Edwin H., to Whirlpool Corp. Ice maker powered by supply water pressure. 3,199,305, 8–10–65, Cl. 62—135.
Fronczek, Laurens H., to Inland Steel Co. Container handle construction. 3,199,719, 8–10–65, Cl. 220—94.
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Früngel, Frank. Light control arrangement. 3,200,410, 8–10–65, Cl. 352—84.
Fujii, Shokichi. Pipe coupling. 3,199,899, 8–10–65, Cl. 285—201.
Fujita, Robert K., and H. D. Hole, to Honolulu Gas Co. Removal of hydrogen sulfide from hydrocarbon fuel gases. 3,199,946, 8–10–65, Cl. 23—3.
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Lee, Tsun-Yuan. 3,199,850.
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Funk, Jack N., and J. R. Horsnell, to The Boeing Co. Aircraft throttle having adjustable, overpowerable gate. 3,199,368, 8–10–65, Cl. 74—526.
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Garcy Corp.: *See*—
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Gardner, Orville A., to Phillips Petroleum Co. Shot hole loading device. 3,199,399, 8–10–65, Cl. 86—20.
Garibotti, Domenick J., to United Aircraft Corp. Multilayer ceramic circuitry. 3,200,298, 8–10–65, Cl. 317—101.
Garney, Karl A., and G. Lindberg, to Arenco Aktiebolag. Machine for filling collapsible tubes. 3,199,694, 8–10–65, Cl. 214—307.
Garrett Corp., The: *See*—
Kelley, Archibald P., and Tamarin. 3,199,291.
Kober, William. 3,200,276.
Kober, William. 3,200,277.
Garrett, Douglas R., and D. F. Preston, to Parker Hannifin Corp. Ship to ship refueling device. 3,199,553, 8–10–65, Cl. 141—388.
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Gatz, Ray J., and W. E. Beutler, to The Lamson & Sessions Co. Lifting and dumping apparatus. 3,199,697, 8–10–65, Cl. 214—620.
Gauthier, Alfred, G.m.b.H.: *See*—
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Gautraud, Michael G., and A. J. Albrecht, to Brunswick Corp. Variable throw crank drive mechanism for automatic pinsetter. 3,199,869, 8–10–65, Cl. 273—42.
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Weil, Edward D., Geering, and Smith. 3,200,146.
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Geist, Jacob M.: *See*—
Zeitz, Kenneth, Geist, and Laahmet. 3,199,304.
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Manfredi, Robert E., Koskos, and Ammenheuser. 3,200,283.
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Brubaker, James F. 3,199,309.
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Carleton, James J., and King. 3,199,930.
Clark, Harold E. 3,199,932.
Dega, Robert L. 3,199,191.
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General Signal Corp.: *See*—
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George, Philip F. Mop having disposable sheets. 3,199,136, 8–10–65, Cl. 15—231.
Gerald, Curtis F., to Universal Oil Products Co. Alkylation-transalkylation process. 3,200,164, 8–10–65, Cl. 260—671.
Gericke, Erich. Foil clamping devices for clamping printing foils on the cylinder of duplicating machines. 3,199,452, 8–10–65, Cl. 101—415.1.
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Geyer, Robert C. Radiant heater construction. 3,200,236, 8–10–65, Cl. 219—213.
Gibson, Charles H., to Randac Systems, Inc. Control unit having removable and interchangeable programming inserts. 3,200,297, 8–10–65, Cl. 317—101.
Giesemann, Herbert. Spraying apparatus for the production of foamed plastic materials for use as fillers and insulations. 3,199,790, 8–10–65, Cl. 239—428.
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Gillois, Jean, and H. W. Gehlen. Amphibious vehicle. 3,199,486, 8–10–65, Cl. 115—1.
Ginn, Delwin C., to The Linemaster Switch Corp. Crimping tool. 3,199,337, 8–10–65, Cl. 72—416.
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Glasgow, Clarence O. Torque coupling and safety clutch device. 3,199,312, 8–10–65, Cl. 64—11.
Glass, Carl R. Soil tamping device. 3,199,424, 8–10–65, Cl. 94—48.
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Sedlak, John A., Gleckler, and Matsuda. 3,200,159.
Gleeson, Murray A., to Goodman Mfg. Co. Shock absorbing troughing idler assembly for inclining conveyors. 3,199,662, 8–10–65, 198—192.
Glidewell, Herman A. Collapsible shelter frame. 3,199,518, 8–10–65, Cl. 135—4.
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Gold, Samuel, ½ to Aro G. Gabriel. Toy pistol motion-picture projector. 3,199,405, 8–10–65, Cl. 88—28.
Goldberg, Moss W., M. Muller, and H. H. Lehr, to Hoffmann-La Roche Inc. Derivatives of 1,2,4-benzothiadiazine-7-sulfonamide-1,1-dioxide. 3,200 117, 8–10–65, Cl. 260—243.
Goldfarb, Samuel, and J. J. Biro, to General Precision, Inc. Shaft digital position encoder. 3,200,395, 8–10–65, Cl. 340—347.
Goldschmidt, Th., A.-G.: *See*—
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Goldstein, Melvin M., and H. C. Lieb, to United States of America, Army. Self charging nuclear battery. 3,200,269, 8–10–65, Cl. 310—3.
Gollin, Ronald A., R. Michaelis, D. Walker, and S. S. Adams, to Boots Pure Drug Co. Ltd. Process for the preparation of laminarin sulfate. 3,120,110, 8–10–65, Cl. 260—210.
Good, Arthur L., to Robertshaw Controls Co. Pressure differential switch with range balance adjustment. 3,200,215, 8–10–65, Cl. 200—83.
Good, Wayne W., to Harter Corp. Drop-in table for modular furniture. 3,199,470, 8–10–65, Cl. 108—64.
Goodman Mfg. Co.: *See*—
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Smith, Herman E. 3,199,661.
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Gordon, Augustus S. Acrobatic animal. 3,199,247, 8–10–65, Cl. 46—133.
Goren, Mayer B., to Kerr-McGee Oil Industries, Inc. Polymerization of acrylamide monomer in the presence of free ammonia and the resulting polyacrylamide product. 3,200,098, 8–10–65, Cl. 260—80.3.
Gorey, Archie H., to Graflex Inc. Automatic shutter cocking mechanism for camera. 3,199,427, 8–10–65, Cl. 95—53.
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Graber, Carl D., and R. L. Alvarez, to Diebold, Inc. Power filing appliance. 3,199,658, 8–10–65, Cl. 198—137.
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Grable, Lawrence I., G. W., and D. L. 3,199,891.
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Grable, Lawrence I., G. W., and D. L. 3,199,891.
Grable, Lawrence I., G. W., and D. L. Wheelbarrow having a resiliently mounted wheel. 3,199,891, 8–10–65, Cl. 280—47.31.
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Graflex, Inc.: *See*—
Gorey, Archie H. 3,199,427.
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Grant, Richard D., to The R. D. Grant Co. Air mattress. 3,199,124, 8–10–65, Cl. 5—349.
Graswich, Edward, to Dohrmann Hotel Supply Co. Portable and adjustable rack for supporting pans. 3,199,683, 8–10–65, Cl. 211—71.
Gray, Glenn E.: *See*—
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Gray, Homer A. ½ to Apsco Mfg. Corp., and ½ to Air-O-Matic Power Steer Corp. Power steering system. 3,199,414, 8–10–65, Cl. 91—372.
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Greenbaum, Sheldon B., to Hooker Chemical Corp. Halogenated phosphinopyranones. 3,200 131, 8–10–65, Cl. 260—343.5
Greenberg, Robert L., to National Equipment Corp. Apparatus for feeding portions of a mixture of a fluid and solid materials. 3,199,744, 8–10–65, Cl. 222—255.
Greenblatt, Joseph, to Talb Industries, Inc. Oiled dust cloth composition. 3,200,036, 8–10–65, Cl. 167—38.6.
Greening, William J., Jr., and N. E. Clegg, to Hi-Shear Corp. Pigmenting of titanium having titanium oxide coating electrolytic method of making pigment; and reflector and paint containing same. 3,199,999, 8–10–65, Cl. 106—287.
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Grogan, Charles H., and L. M. Rice, to Geschickter Fund for Medical Research. Spirocyclic hydrazine imides. 3,200,118, 8–10–65, Cl. 260—247.2.

Gross, Albert, and K. Thiele, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Process for the production of azaphenothiazines carrying a substituent on the pyridine nucleus. 3,200,116, 8–10–65, Cl. 260—243.
Grossman, Jack J., to Hughes Aircraft Co. Controlled epitaxial crystal growth by focusing electromagnetic radiation. 3,200,018, 8–10–65, Cl. 148—175.
Grossmith, Frederick, to Beecham Research Laboratories Ltd. Metal chelates of alpha-hydroxy-carboxylic acids and their preparation. 3,200,136, 8–10–65, Cl. 260—439.
Grossteinbeck, Rolf, W. Schulze W. Willicks, H. Mindermann, and G. Tepel, to Battelle-Institut E.V. Method of making paper and non-woven fabric from synthetic fibres. 3,200,033, 8–10–65, Cl. 162—146.
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Haines, Robert M., to The Pure Oil Co. Bolometer. 3,200,271, 8–10–65, Cl. 310—8.9.
Haines, Robert S., G. Bate, and J. W. Wenner, to International Business Machines Corp. Digital phase-displacement reduction combination. 3,200,886, 8–10–65, Cl. 340—174.1.
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Halde, Carl N., and A. Pedersen. Aligning apparatus for tile. 3,199,205, 8–10–65, Cl. 33—180.
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Hamilton, Earl F., E. B. Lay, and E. K. Moore, to Hamilton Cosco, Inc. Folding chair. 3,199,915, 8–10–65, Cl. 297—42.
Hammel, John P., to Radio Corp. of America. Perforated record member sensing apparatus. 3,200,240, 8–10–65, Cl. 235—61.11.
Hanchey, John K. Shaving blade conditioner. 3,199,252, 8–10–65, Cl. 51—206.
Handwerker, Gary R., to Midwest Canvas Corp. Insulating article. 3,199,481, 8–10–65, Cl. 112—420.
Haner, Lambert, and H. E. Strebner, to Avtron Mfg., Inc. Flying shear control and sheet number and length indicator. 3,199,391, 8–10–65, Cl. 88—359.
Hanon, Leroy C., to Ferro Corp. Heating unit. 3,200,287, 8–10–65, Cl. 219—451.
Hanson, Carl J. Fireplace stove. 3,199,503, 8–10–65, Cl. 126—25.
Hanson, Newell B., to Hanson Silo Co. Silo unloader. 3,199,690, 8–10–65, Cl. 214—17.
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Harris, Edward P., and C. L. Moorman, to General Motors Corp. Apparatus and article of manufacture. 3,199,182, 8–10–65, Cl. 29—235.
Harris, Edward P., and C. L. Moorman, to General Motors Corp. Elastomeric sealing strip and mounting means assembly procedure. 3,199,184, 8–10–65, Cl. 29—429.
Harris, Lionel R. F., to Her Majesty's Postmaster General. Time division multiplex communication systems. 3,200,202, 8–10–65, Cl. 179—18.
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Harrison, Homer S., to Mechanical Handling Systems, Inc. Live roller conveyor. 3,199,857, 8–10–65, Cl. 198—127.
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Hart, Harold W. Poultry feeder. 3,199,493, 8–10–65, Cl. 119—52.
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Hartel, Walter: *See*—
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Hartenstein, Raymond G., and E. J. Kirchman, to United States of America, National Aeronautics and Space Administration. Accelerometer with F.M. output. 3,199,340, 8–10–65, Cl. 73—88.5.
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Good, Wayne W. 3,199,470
Haslacher, Alfred B., deceased (R. L. Haslacher, administrator), to M. L. Haslacher. Impervious bag and method of making same. 3,199,767, 8–10–65, Cl. 229—60.
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Haslacher, Alfred B. 3,199,767.
Haslacher, Mabel L.: *See*—
Haslacher, Alfred B. 3,199,767.
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Hausberg, Gerhard, to Gottfried Bischoff. Gas scrubber. 3,199,267, 8–10–65, Cl. 55—210.
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Haveg Industries, Inc., a wholly-owned subsidiary of Hercules Powder Co.: *See*—
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Hawkes, Richard B., and T. B. Hawkes, to T. W. & C. B. Sheridan Co. Machine and method for backing books. 3,199,129, 8–10–65, Cl. 11—5.
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Hawkins, Jack S., to Jennings Radio Mfg. Corp. Electromagnetic high-current-carrying-capacity vacuum relay. 3,200,222, 8–10–65, Cl. 200—144.
Hay, Julian A., to American Maize-Products Co. Continuous process for dextrinisation of particulate starch. 3,120,012, 8–10–65, Cl. 127—38.
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Biggs, Albert J., and Townsend. 3,200,193.
Sharp, Paul K. 3,200,350.
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Hein, Lester W. Bag dispenser. 3,199,723, 8–10–65, Cl. 221—47.
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Heller, Herbert, H. J. Thea, C. J. Bossart, A. C. McInnes, and E. M. Becker to Mine Safety Appliance Co. Fluid analysis control. 3,199,338, 8–10–65, Cl. 73—23.1.
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Henderson, James H., and J. J. Taber, to Gulf Research & Development Co. Residual oil recovery process using water containing a surfactant. 3,199,586, 8–10–65, Cl. 166—9.

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Herbetko, Stephen A.: *See*—
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Herbst, Willy, F. Rochlitz, and H. Vilcsek, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the after-treatment of phosphate coatings. 3,200,004, 8–10–65, Cl. 117—69.

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Hereth, Ralph F., to United States of America, Navy. Multifunction control valve apparatus. 3,199,410, 8–10–65, Cl. 91—47.

Herman, Alejandro. Shock absorbers. 3,199,637, 8–10–65, Cl. 188—96.

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Herrington, Fox J., Jr., to General Motors Corp. Control linkage. 3,199,366, 8–10–65, Cl. 74—512.

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Heynen, Max, and K. Wiesemann, to Heyco-Werk Heynen & Co. Clamping arrangements for tools or workpieces. 3,199,859, 8–10–65, Cl. 269—25.

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Hildebrand, Robert. Apparatus for producing and drying veneers. 3,199,555, 8–10–65, Cl. 144—3.

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Hill, Donald A., to Hill Bros. Chemical Co. Container. 3,199,742, 8–10–65, Cl. 222—183.

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Hill, William G. Photographic print basket. 3,199,431, 8–10–65, Cl. 95—100.

Hill, William J., to Morgan Construction Co. Spherical gear type coupling. 3,199,311, 8–10–65, Cl. 64—7.

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Hogan, Walter H., and K. C. C. Hickman, to Aquastills Inc. Thermal compression stills. 3,200,050, 8–10–65, Cl. 202—176.

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Holmes, Marion B., and A. G. Bossert, Jr., deceased (by M. A. Bossert, executrix). Crimping tool. 3,199,334, 8–10–65, Cl. 72—410.

Holmes, Marion B., and A. G. Bossert, Jr., deceased (by M. A. Bossert, administratrix). Crimping tool. 3,199,335, 8–10–65, Cl. 72—410.

Holmstrom, Le Roy E. Line supply device for fishing pole. 3,199,242, 8–10–65, Cl. 43—25.

Holtschmidt, Rosemarie and U., to Th. Goldschmidt A.-G. Resin impregnated papers. 3,200,008, 8–10–65, Cl. 117—155.

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Holtschmidt, Rosemarie and U. 3,200,008.

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Owens, Wiley H., and Severson. 3,200,295.

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Hoshino, Satoshi: *See*—
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Hossmann, Marcel: *See*—
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Huck, William F., and J. F. Ree; said Ree assor. to said Huck, d.b.a. Huck Co. Vibratory machines. 3,199,675, 8–10–65, Cl. 209—332.

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Dolce, Thomas J., and Hudgin. 3,200,090.

Hudgin, Donald E., and F. M. Berardinelli, to Celanese Corp. of America. Catalytic polymerization of trioxane. 3,200,096, 8–10–65, Cl. 260—67.

Hudson, Richard E., Jr.: *See*—
Charlton, Richard E., Jr., and Hudson. 3,199,167.

Huffman, Clarence W., to International Minerals & Chemical Corp. Method of destroying bacteria employing chlorinated alkylbenzenes. 3,200,034, 8–10–65, Cl. 167—30.

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Huffman, Samuel A., deceased (by F. B. Huffman, administratrix), K. M. Haley, and K. R. Judkins, to Reserve Mining Co. Removable pallet cap bar. 3,199,856, 8–10–65, Cl. 266—21.

Huffman, Samuel L., and R. J. Irwin, to Carolina Plating & Stamping Co. Method of and apparatus for plating loom drop wires. 3,200,052, 8–10–65, Cl. 204—23.

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Lutz, Samuel G. 3,200,375.

Hughes, Paul R., to United Aircraft Products Inc. Liquid storage tank. 3,199,718, 8–10–65, Cl. 220—85.

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Hulbert, Warren D., to Spectrol Electronics Corp. Variable resistor. 3,200,359, 8–10–65, Cl. 338—152.

Hultgreen, Odd. Apparatus for drying moving webs. 3,199,222, 8–10–65, Cl. 34—155.

Hunt, Charles d'A., and H. R. Smith, Jr., to Temescal Metallurgical Corp. Method of purifying refractory sulfides. 3,199,947, 8–10–65, Cl. 23—14.5.

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Hunt, Robert W. G., and P. B. Watt, to Eastman Kodak Co. Printing apparatus for color photography. 3,199,402, 8–10–65, Cl. 88—24.

Hunter Douglas International (Quebec) Ltd.: *See*—
Blok, Dirk E. 3,199,260.

Hunter, Lee. Vehicle wheel alignment apparatus. 3,199,208, 8–10–65, Cl. 33—203.18.

Hunter, Milford J. Amphibious vehicle. 3,199,127, 8–10–65, Cl. 9—1.

Hurst, Charles L., to Manufacturers Machine Co. Rim clamp for truck wheels. 3,199,920, 8–10–65, Cl. 301—13.

Hurst, Mowatt M., to S. C. Johnson & Son, Inc. Automobile positioning device. 3,199,783, 8–10–65, Cl. 238—4.

Husband, Reed J. Timed cycle circuit. 3,200,301, 8–10–65, Cl. 317—141.

Hvistendahl, Nels J. Dispenser. 3,199,734, 8–10–65, Cl. 222—83.5.

Hyatt, Frederick, to Bevis Industries, Inc. Tenter clip jaw. 3,199,165, 8–10–65, Cl. 26—62.

Hydraulics, Inc.: *See*—
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Hydrocarbon Research, Inc.: *See*—
Johnson, Clarence A., and Volk. 3,199,974.

I-T-E Circuit Breaker Co.: *See*—
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Poupitch, Ougljesa J. 3,199,908.

Imai, Kiyokazu, U. Maeda, and M. Matsumoto, to Kurashiki Rayon Co., Ltd. Method of making fully hydrolyzed polyvinyl alcohol products. 3,200,104, 8–10–65, Cl. 260—91.3.

Imperial Chemical Industries Ltd.: *See*—
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Intellux Inc.: *See*—
Pritikin, Nathan, and Feldman. 3,200,826.

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International Business Machines Corp.: *See*—
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Brown, Edgar A., and Schacht. 3,199,650.
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Hitchey, Melvin F. 3,200,351.
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International Standard Electric Corp.: *See*—
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Ipsen, Harold N., deceased, The National Bank & Trust Co., executor. Heat treating furnace. 3,199,854, 8–10–65, Cl. 266—5.

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Jacob, Charles E. Method and apparatus for producing fresh water or petroleum from underground reservoir formations and to prevent coning. 3,199,592, 8–10–65, Cl. 166—42.

Jacobs, Alan. Fog-projecting fire extinguisher construction. 3,199,600, 8–10–65, Cl. 169—9.

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Jaffa, Matthew L. and D. 3,199,447–49.

Jaffa, Matthew L. and D. Screen printing method and apparatus. 3,199,447, 8–10–65, Cl. 101—123.

Jaffa, Matthew L. and D. Screen printer in which the squeegee is moved in direction opposite to stencil movement. 3,199,448, 8–10–65, Cl. 101—128.

Jaffa, Matthew L. and D. Method and apparatus for screen printing. 3,199,449, 8–10–65, Cl. 101—129.

Jaffee, Daniel L., to Vitro Corporation of America. Control mechanism. 3,199,482, 8–10–65, Cl. 114—16.

James, James R., to The Martin Sweets Co., Inc. Spray nozzle having a rectangular high velocity gas outlet and low velocity liquid outlets. 3,199,789, 8–10–65, Cl. 239—424.

James, John B., to International Computers and Tabulators Ltd. Conductor for a thin film matrix employing a driving core connected by resistance wire. 3,200,383, 8–10–65, Cl. 340—174.

Jänicke, Hermann. Multi-stage free-piston compressor. 3,200,249, 8–10–65, Cl. 230—56.

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Jenny, Rudolf, to Maschinenfabrik Schweiter AG. Device for decreasing yarn tension. 3,199,806, 8–10–65, Cl. 242—128.

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Jenson, Kenneth S., to Preway, Inc. Vent hood and blower device usable therein. 3,199,435, 8–10–65, Cl. 98—115.

Jentoft, Arthur P., and R. A. Evanko, to H. H. Robertson Co. Building outer wall structure. 3,199,258, 8–10–65, Cl. 52—282.

Jeppsson, Allan, to Svenska Flaktfabriken, Aktiebolaget. Means for connecting thin-walled plane elements. 3,199,901, 8–10–65, Cl. 285—364.

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Di Domenico, Joseph, and Mellion. 3,199,909.

Johansson, Frits A., B. G. Helmerson, N. V. Mokvist, and A. F. Norro, to Bolidens Gruvaktiebolag. Process for the production of start sheets and an apparatus for carrying out the process. 3,199,170, 8–10–65, Cl. 29—33.

Johmann, Frank T.: *See*—
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Johnson, Christopher L.: *See*—
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Johnson, Clarence A., and W. Volk, to Hydrocarbon Research, Inc. Fluidized iron ore reduction process for production of iron powder. 3,199,974, 8–10–65, Cl. 75—5.

Johnson, Duke A. Package and article handling device. 3,199,905, 8–10–65, Cl. 294—22.

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Johnson, Elmer S., deceased; L. G. Johnson, executrix, to United States Gypsum Co. Process for producing calcined products from by-product gypsum. 3,199,997, 8–10–65, Cl. 106—110.

Johnson, Glenn C.: *See*—
Fasig, Stanley M., and Johnson. 3,199,453.

Johnson, Glenn D.: *See*—
Malott, Raymond A., and Johnson. 3,199,613.

Johnson & Johnson: *See*—
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Johnson, Elmer S. 3,199,997.

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Johnson, Waldo O., to Weather-Seal, Inc. Tilt window assembly. 3,199,154, 8–10–65, Cl. 20—42.

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Johnston, Raymond, to Chrysler Corp. Glass tempering nozzle. 3,199,969, 8–10–65, Cl. 65—348.

Jonakin, James, and R. P. Hensel, to Combustion Engineering, Inc. Recovering fines in a mechanical dehydrator. 3,200,068, 8–10–65, Cl. 210—54.

Jones, John A., ½ to G. Barit. Brushes. 3,199,134, 8–10–65, Cl. 15—3.16.

Jones, Matthew. Tube failure indicator. 3,200,391, 8–10–65, Cl. 340—252.

Joo, Louis A.: *See*—
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Joo, Louis A., and J. B. Braunwarth, to The Pure Oil Co. Extreme pressure lubricant containing alkyd resins derived from complex acids. 3,200,072, 8–10–65, Cl. 252—37.2.

Joo, Louis A., W. E. Kramer, and R. C. Kimble, to The Pure Oil Co. Detergent composition non-corrosive to metal surfaces. 3,200,079, 8–10–65, Cl. 252—161.

Jore, Olav E.: *See*—
Davies, Howard W., and Jore. 3,200,191.

Joslow, David L., to Chester Electronic Laboratories Inc. Teaching machine. 3,199,226, 8–10–65, Cl. 35—35.

Jovanovich, Pete. Self clutching captive closure cap unit. 3,199,751, 8–10–65, Cl. 222—543.

Joy Mfg. Co.: *See*—
Baechli, George. 3,199,663.
Densmore, Neal W. 3,199,611.
Hanson, William, Jr., and Gray. 3,199,660.
Wachsmuth, Erich A. 3,199,456.

Jubb, Albert, and C. L. Johnson, to Rolls-Royce Ltd. Gas turbine engine afterburner fuel system. 3,199,290, 8–10–65, Cl. 60—35.6.

Judkins, Kenneth R.: *See*—
Huffman, Samuel A., Haley, and Judkins. 3,199,856.

Juffa, Richard, H. Kruger, R. Michaelis, H.-J. Rehberg, J. Schmal, and H.-H. Schuls, to Farbenfabriken Bayer Aktiengesellschaft. Ejection device. 3,199,740, 8–10–65, Cl. 222—146.

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Edwards, Robert A., and Burklo. 3,199,478.

Kalbfell, David C. Magnetic commutation methods and systems therefor. 3,200,256, 8–10–65, Cl. 307—88.

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Kalthoff, Robert J., and P. H. Ornstein, to O. K. Partnership. Data retrieval apparatus and method. 3,199,674, 8–10–65, Cl. 209—110.

Kaminski, William, and H. A. Schneider, to Bell Telephone Laboratories, Inc. Frequency control for multifrequency phase lock generators. 3,200,347, 8–10–65, Cl. 331—16.

Kamm, Michael L. Blood loss measure. 3,199,507, 8–10–65, Cl. 128—2.

Kammerer, Archer W., Jr., to Bakers Oil Tools, Inc. Scrapers for tubular strings. 3,199,599, 8–10–65, Cl. 166—173.

Kammiller, Neil A., and S. L. Merkel, to Lorain Products Corp. Frequency generator having control circuits for amplitude regulation and overload protection. 3,200,346, 8–10–65, Cl. 331—62.

Kampf, Richard S., to Honeywell Inc. Recorder. 3,200,405, 8–10–65, Cl. 346—109.

Kamyr, Aktiebolaget: *See*—
Richter, Johan C. F. C. and O. J. 3,200,032.

Kanda, Ichiro: *See*—
Masuda, Yoshio. 3,200,255.

Kanthal, Aktiebolaget: *See*—
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Karch, Walter C., to Square D Co. Carrier frame for movable contact and combination thereof with snap acting switch. 3,200,227, 8–10–65, Cl. 200—68.

Karlik, Laddie. Device for dispensing, coating and cutting paper webs. 3,199,490, 8–10–65, Cl. 118—43.

Karlsson, Gosta: *See*—
Folgero, Kare, and Karlsson. 3,200,185.

Karlsson, Gosta, K. Folgero, M. Rydinger, and T. Thelemarck, to Allmanna Svenska Elektriska Aktiebolaget. Gas-cooled electro-magnetic stirrer. 3,199,842, 8–10–65, Cl. 259—1.

Karlstrom, Karl A. S., and K. G. Östberg (deceased, by I. J. C. Allard and E. A. M. Östberg, heirs), said heirs of said Östberg assors. to said Karlstrom. Vibrators particularly intended for dental use. 3,199,360, 8–10–65, Cl. 74—87.

Kashiwabara, Thomas T., to Keuffel & Esser Co. Diazotype reproduction material. 3,199,982, 8–10–65, Cl. 96—49.

Kasparian, Casper, to The Strong Electric Corp. Motor control. 3,200,285, 8–10–65, Cl. 314—68.

Kaul, Arthur A. Left-foot accelerator pedal. 3,199,369, 8–10–65, Cl. 74—562.5.

Kawai, Masakazu, to Maruzen Oil Co. Ltd. Process for the isomerization of xylenes. 3,200,162, 8–10–65, Cl. 260—668.

Kay, Edward L.: *See*—
Knowles, Edwin C., and Kay. 3,200,074.

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Otomo, Masaru. 3,199,638.

Keder, John A., Jr.: *See*—
Dean, James C., Keder, and Tolomeo. 3,199,601.

Kell, Nathaniel B., to General Motors Corp. Rotary internal combustion engine. 3,199,496, 8–10–65, Cl. 123—8.

Keller, Emil, to Luwa A.G. Apparatus such as falling film-evaporators for processing fluid materials or the like, and rotor structure therefor. 3,199,574, 8–10–65, Cl. 159—6.

Keller and Knappich G.m.b.H.: *See*—
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Keller, Emil, to Luwa A.G. Oscillatory rotor blade for treatment of fluent material in thin layers. 3,199,575, 8–10–65, Cl. 159—6.

Kelley, Archibald P., and C. A. Tamarin, to The Garrett Corp. Integrated aircraft engines. 3,199,291, 8–10–65, Cl. 60—35.6.

Kelley Co., Inc.: *See*—
Ramer, Robert C. 3,199,133.

Kelley, Joseph P., to Air Technology Corp. Plural belt display unit having ball detent control of belt position. 3,200,394, 8–10–65, Cl. 340—324.

Kelly, Warner M., to Otis Engineering Corp. Dump boiler. 3,199,597, 8–10–65, Cl. 166—117.

Kenney, Martin, D. S. Scott, and L. A. Wood, to SAS Vending Machine Co. Refrigerated enclosure for making and storing ice products. 3,199,308, 8–10–65, Cl. 62—341.

Kentron Hawaii, Ltd.: *See*—
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Kepley, James A., to Continental Oil Co. Subterranean formation fracturing method and composition. 3,199,591, 8–10–65, Cl. 166—42.

Kern, Dale B.: *See*—
Conger, Robert L., Riggs, and Kern. 3,200,401.

Kerr-McGee Oil Industries, Inc.: *See*—
Goren, Mayer B. 3,200,098.

Kersting, Arwo: *See*—
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Keuffel & Esser Co.: *See*—
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Kashiwabara, Thomas T. 3,199,982.

Kibler, Lynden U., to Bell Telephone Laboratories, Inc. Optical frequency parametric amplifier and oscillator. 3,200,342, 8–10–65, Cl. 330—4.5.

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MacDonald, Duncan N., Glaser, Bauer, Dowling, Kielty, and King. 3,200,380.

Kieserling, Th., & Albrecht: *See*—
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Kilner, George E., and L. McGihon, to Filper Corp. Feeder. 3,199,652, 8–10–65, Cl. 198—34.

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Kimble, Robert C.: *See*—
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King, Donald F., and G. R. Henry, to Harbison-Walker Refractories Co. Hydration prevention. 3,199,996, 8–10–65, Cl. 106—58.

King, Edward J.: *See*—
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King, George J. Phonics teaching device. 3,199,227, 8–10–65, Cl. 35—35.

King, Paul D.: *See*—
MacDonald, Duncan N., Glaser, Bauer, Dowling, Kielty, and King. 3,200,380.

King, Paul D., and R. S. Barton, to Burroughs Corp. Digital computer. 3,200,379, 8–10–65, Cl. 340—172.5.

King, Robert W., to International Business Machines Corp. Data input/output device. 3,200,378, 8–10–65, Cl. 340—172.5.

Kinley, John C.: *See*—
Kinley, Myron M. 3,199,594.

Kinley, John C. Explosive means for tubing perforator and the like. 3,199,267, 8–10–65, Cl. 60—26.1.

Kinley, John C. Wire line shooting tool. 3,199,593, 8–10–65, Cl. 166—64.6.

Kinley, Myron M., to J. C. Kinley. Explosive jar. 3,199,594, 8–10–65, Cl. 166—63.

Kiper, Gerd, to Agfa Aktiengesellschaft. Camera shutter. 3,199,428, 8–10–65, Cl. 95—62.

Kirchman, Edward J.: *See*—
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Kirkpatrick, Willard H., and V. L. Seale, to Nalco Chemical Co. Hydroxy hydrocarbon N-substituted dialkylene triamines. 3,200,153, 8–10–65, Cl. 260—570.6.

Kirkpatrick, Willard H., and V. L. Seale, to Nalco Chemical Co. Mono-secondary-hydroxy hydrocarbon N-substituted trialkylene tetramines. 3,200,154, 8–10–65, Cl. 260—570.6.

Kirkpatrick, Willard H., V. L. Seale, and R. E. Law, to Nalco Chemical Co. Completely N-hydroxyalkylated and completely N-polyoxyalkylated polyhexamethylene polyamines. 3,200,155, 8–10–65, Cl. 260—584.

Kirkpatrick, William J., to Pennsalt Chemicals Corp. Centrifuge. 3,199,681, 8–10–65, Cl. 210—374.

Kirsch, Karl, and S. Uhl, to Keller and Knappich G.m.b.H. Device for laying wire coils. 3,199,807, 8–10–65, Cl. 242—129.

Klass, Donald L., to The Pure Oil Co. 2-amino-1 sulfonic acids. 3,200,127, 8–10–65, Cl. 260—294.8.

Klass, Donald L., to The Pure Oil Co. β-sulfatosulfonamides. 3,200,139, 8–10–65, Cl. 260—458.

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Landler, Yvan, and Lebel. 3,200,089.

Kleeberger, Rudolf, to Kugelfischer Georg Schafer & Co. Device for regulating the delivery of fuel injection pumps. 3,199,499, 8–10–65, Cl. 123—140.

Kleiner, Helmut, to Farbenfabriken Aktiengesellschaft. Process for the production of hydrolyzed acrylonitrile polymers. 3,200,102, 8–10–65, Cl. 260—88.7.

Klimstra, Paul D.: *See*—
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Kneiling, John G., to Devenco Inc. Railroad train, railroad car and control apparatus therefor. 3,199,463, 8–10–65, Cl. 105—1.

Knowles, Edwin C., and E. L. Kay, to Texaco Inc. Lubricating compositions containing borate esteramine complexes. 3,200,074, 8–10–65, Cl. 252—49.6.

Knowles, James, T. R. Stockton, and N. T. General, to Ford Motor Co. Power transmission mechanism. 3,199,377, 8–10–65, Cl. 74—732.

Knutson, Carroll F.: *See*—
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Knutson, Stig E., and R. K. Wallin, to Mölnlycke Aktiebolag Camouflage net. 3,199,547, 8–10–65, Cl. 139—383.

Kober, William, to The Garrett Corp. Temperature compensating mounting for dynamos. 3,200,276, 8–10–65, Cl. 310—191.

Kober, William, to Garrett Corp. Temperature compensating mounting for dynamos. 3,200,277, 8–10–65, Cl. 310—209.

Koblensky, Joseph P. Power window operator. 3,199,858, 8–10–65, Cl. 268—97.

Koch, Carl. Evaluation device for a photoelectric exposure meter. 3,199,776, 8–10–65, Cl. 235—64.7.

Koch, William H., to Crowley Fence Co., Inc. Automatic gravity return bump gates. 3,199,237, 8–10–65, Cl. 39—31.

Kockums Jernverks Aktiebolag: *See*—
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Koepke, Gunther, W. Pels, and H. Schellenberger, to Agfa Aktiengesellschaft. 3-indazolone color couplers. 3,199,983, 8–10–65, Cl. 96—55.

Koffler, Henry. Collapsing device for tubular container. 3,199,737, 8–10–65, Cl. 222—99.

Kohler, Horst, to Ess Josef O.H.G., Allgauer Skibeschlage-Fabrik. Ski boot or shoe stretcher. 3,199,131, 8–10–65, Cl. 12—120.5.

Köhler, Lothar, to Maschinenfabrik Ruti AG, formerly Caspar Honegger. Drive mechanism arranged on an automatic loom for the stripper for the end winding of a weft-bobbin to be inserted into the shuttle. 3,199,545, 8–10–65, Cl. 139—257.

Kohn, Robert, and M. C. Winski, to Northern Indiana Steel Supply Co., Inc. Pay-off reel. 3,199,805, 8–10–65, Cl. 242—78.

Koinis, Frank J., to Midland-Ross Corp. Means for heating blast furnace air. 3,199,849, 8–10–65, Cl. 263—19.

Koinis, Frank J., and C. Cone, to Midland-Ross Corp. Combustion system for soaking pits. 3,199,852, 8–10–65, Cl. 263—36.

Kollonitsch, Janos, to Merck & Co., Inc. Olefin hydrogenation with borane aluminum alcoholate catalyst. 3,200,168, 8–10–65, Cl. 260—683.9.

Komiske, Ted. Composition blanket. 3,199,123, 8–10–65, Cl. 5—325.

Koppehele, Hugo P., to Airsun Corp. Film quenching apparatus. 3,199,148, 8–10–65, Cl. 18—15.

Koppel, Ernst R., to General Precision, Inc. Burner casting for infrared gas burner. 3,199,571, 8–10–65, Cl. 158—114.

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Bescher, Ralph H. 3,200,003.
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Nitchie, Charles D. 3,199,451.
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Korchmar, Don. Attache case. 3,199,643, 8–10–65, Cl. 190—51.

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Korson, Leonard J., to Madison Industries, Inc. Method of manufacturing trepanning head. 3,199,379, 8–10–65, Cl. 76—101.

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Koslik, Robert F., and J. L. Swanson, to General Mills, Inc. Process for making a whippable composition. 3,199,988, 8–10–65, Cl. 99—139.

Kraft, Richard A.: *See*—
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Krakusky, James J., to The Western Union Telegraph Co. Automatic carriage return and line feed mechanism. 3,200,197, 8–10–65, Cl. 178—25.

Kralicek, Jaroslav: *See*—
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Kramer, Don A., and R. A. Kraft, to Motorola, Inc. Vertical deflection circuit. 3,200,289, 8–10–65, Cl. 315—27.

Kramer, Walter E.: *See*—
Joo, Louis A., Kramer, and Kimble. 3,200,079.

Krank, Wolfgang: *See*—
Schüttöffel, Erich, and Krank. 3,200,356.

Krause, Frank R., to Rockwell-Standard Corp. Machine for making single leaf springs and the like. 3,199,827, 8–10–65, Cl. 72—215.

Krause, James N., and W. L. Ahlemeyer, to The Anaconda Aluminum Co. Container. 3,199,421, 8–10–65, Cl. 93—94.

Krebs, Glenn F., and G. J. Crowdes, to API Instruments Co. Signal programmed time relay. 3,200,302, 8–10–65, Cl. 317—141.

Kremer, Gilbert V. H., and R. F. M. Sureau, to Manufactures de Produits Chimique du Nord Etablissements Kuhlmann. Basic azo dyes derived from indasole. 3,200,108, 8–10–65, Cl. 260—157.

Krens, Joseph H. Hub and spoke construction for wire wheels. 3,199,922, 8–10–65, Cl. 301—59.

Krestel, Erich, to Siemens-Schuckertwerke Aktiengesellschaft. Measuring and controlling dynamo-electric machine commutation. 3,200,278, 8–10–65, Cl. 310—225.

Kritzer, Richard W., to Peerless of America, Inc. Fin-type heat exchange unit with non-registering fin edges for frost-inhibiting purposes. 3,199,581, 8–10–65, Cl. 165—67.

Krueger, Geraldine L.: *See*—
Richardson, Alfred, Jr., Amstutz, and Krueger. 3,200,123.

Krüger, Helmut: *See*—
Juffa, Richard, Krüger, Michaelis, Rehberg, Schmahl, and Schuls. 3,199,740.

Kruglinski, Frank A.: *See*—
Miller, Joseph A., and Kruglinski. 3,199,262.

Kudsi, Mohamed B., to United Aircraft Products, Inc. Separator for liquid and gaseous fluids. 3,199,278, 8–10–65, Cl. 55—318.

Kugel, Fritz, to J. M. Voith G.m.b.H. Drive means for plural axles of a vehicle. 3,199,372, 8–10–65, Cl. 74—665.

Kugelfischer Georg Schafer & Co.: *See*—
Kleeberger, Rudolf. 3,199,499.

Kuhlmann, Emil P., to The National Cash Register Co. Cabinet mounting for cash registers, accounting and like machines. 3,199,936, 8–10–65, Cl. 312—208.

Kuhlmann, Etablissements: *See*—
Simonnet, Andre A. P., and Cabut. 3,199,941.

Kuhrt, Friedrich: *See*—
Engel, Walter, Kuhurt, Lippmann, and Hartel. 3,199,630.

Kulick, George. Apparatus for precise administration of parenteral fluids. 3,199,511, 8–10–65, Cl. 128—214.

Kung, Robert S.: *See*—
Petty, Charles O., and Kung. 3,200,171.

Kuno, Isowo, and T. Nimi, to Shin-Mitsubishi Jukoygo Kabushiki Kaisha. Vibration preventing devices for roll stacks. 3,199,442, 8–10–65, Cl. 100—163.

Kuntz, Urban E., to United Aircraft Corp. Process for coating high temperature alloys. 3,200,015, 8–10–65, Cl. 148—6.3.

Kuns, Gerald, and S. E. Stover, to The B. F. Goodrich Co. Tire tread. 3,199,567, 8–10–65, Cl. 152—209.

Küppers, Josef, to Frans Muller Maschinenfabrik. Cylinder-drying machine. 3,199,220, 8–10–65, Cl. 34—121.

Kurashiki Rayon Co., Ltd.: *See*—
Imai, Kiyokasu, Maeda, and Matsumoto. 3,200,104.
Matsubayashi, Kanji, and Suda. 3,200,178.

Kuroi, Hirohiko: *See*—
Nakamura, Tokio, Araki, and Kuroi. 3,199,408.

Kurtz, Bruce E., to Allied Chemical Corp. Method of removing dust from reactive solid particle. 3,200,047, 8–10–65, Cl. 202—31.

Kuth, Robert, and H. von Brachel, to Farberfabriken Bayer Aktiengesellschaft. Divinyl sulfone, diisocyanate, dicarboxylic acid or dihydroxysulfide reaction products with polyethylene ethers in high temperature pad dyeing and printing. 3,199,942, 8–10–65, Cl. 8—55.

Kuttner, Peter, to Sperry Rand Corp. Memory system utilising thin magnetic films. 3,200,381, 8–10–65, Cl. 340—174.

Kuwahara, Yasuharu, and S. Hoshino, to Kowa Co. Ltd. Stabiliser for fundus cameras. 3,199,426, 8–10–65, Cl. 95—11.

La Gloria Oil and Gas Co.: *See*—
Petty, Charles O., and Kung. 3,200,171.

Lafitte, Carl W., and J. A. Haeber, to Shell Oil Co. Secondary control system for underwater wells. 3,199,595, 8–10–65, Cl. 166—66.5.

Laing, Nikolaus, to Laing Vortex, Inc. Method of making bladed rotors for flow machines. 3,199,179, 8–10–65, Cl. 29—156.8.

Laing Vortex, Inc.: *See*—
Laing, Nikolaus. 3,199,179.

Lamson & Sessions Co., The: *See*—
Gatz, Ray J., and Beutler. 3,199,697.

Landbouwwerktuigen-en Manchinefabriek H. Vissers N.V.: *See*—
Vissers, Herbert. 3,199,606.

Landler, Yvan, and P. Lebel, to Pneumatiques Caoutchouc Manufacture et Plastiques Kleber Colombes, also known as Kleber Colombes. Cross-linked, rigid, cellular materials and process for their obteation. 3,200,089, 8–10–65, Cl. 260—2.5.

Lane, John W.: *See*—
Osban, William R., and Lane. 3,199,214.

Lang, Karl, Jr., to Multicup Automation Co., Inc. Process and apparatus for making plural receptacle containers. 3,199,419, 8–10–65, Cl. 93—60.

Lange, Fritz-Walter, to Hans Schwarzkopf. Hair dye comprising diaminopyridines. 3,200,040, 8–10–65, Cl. 167—88.

Lange, Herbert, J. Ritter, and W. Schaffernicht, to Telefunken Patentverwertungs-G.m.b.H. Cathode ray tubes with insulated implosion protective fram. 3,200,188, 8–10–65, Cl. 174—50.51.

La Plante, Jerry C., to Alloys Unlimited Inc. Gold alloy cladding. 3,199,189, 8–10–65, Cl. 29—488.

Lapport, Seymour J., to California Research Corp. α,α,α′,α′-tetraalkoxy-χ,α′-dialkylperoxy-p-xylenes. 3,200,156, 8–10–65, Cl. 260—610.

Largen, William M. Safety for guns. 3,199,240, 8–10–65, Cl. 42—70.

Larsson, Erik R., to Arenco Aktiebolag. Device for cutting a cigar wrapper. 3,199,392, 8–10–65, Cl. 83—512.

Lash, Elliott J., and M. Futter, to Swingline Inc. Tacker and method of securing a follower within a magazine. 3,199,185, 8–10–65, Cl. 29—484.

Lashmet, Peter K.: *See*—
Zeits, Kenneth, Geist, and Lashmet. 3,199,304.

Lassus, August J., Jr.: *See*—
Taylor, Robert B., and Walker. 3,199,728.

Lassus, Elmer L.: *See*—
Taylor, Robert B., and Walker. 3,199,728.

Lassus, William F.: *See*—
Taylor, Robert B., and Walker. 3,199,728.

Latinen, George A.: *See*—
Aykanian, Ardashus A., Hardy, and Latinen. 3,199,147.

Latour, Theodore R., to E. I. du Pont de Nemours and Co. Apparatus for applying a liquid conditioning agent to a thin layer of substantially parallel filaments. 3,199,492, 8–10–65, Cl. 118—123.

Lattner Bros. Machining Co.: *See*—
Napoli, Francis S. 3,199,188.

Laudenslager, Harry B., Jr., to Blackstone Corp. Solder fluxes. 3,199,190, 8–10–65, Cl. 29—495.

Lavino, E. J., and Co.: *See*—
Marsh, Harry A., Jr. 3,199,477.

Law, Robert E.: *See*—
Kirkpatrick, Willard H., Seale, and Law. 3,200,155.

Lay, Ralph B.: *See*—
Hamilton, Earl F., Lay, and Moore. 3,199,915.

Leathem, McKinley B. Proportioning control valve for hydraulic cylinders. 3,199,539, 8–10–65, Cl. 137—625.24.

Leavens, William B. Method of inspecting labels to determine if such have been properly printed and cut. 3,199,450, 8–10–65, Cl. 101—211.

Lebel, Pierre: *See*—
Landler, Yvan, and Lebel. 3,200,089.

Lèbre, Charles J. P. Hand-operated lifting truck. 3,199,692, 8–10–65, Cl. 214—95.

Ledgerwood, Kenneth B., to All Hands, Inc. Spherical compass. 3,199,210, 8–10–65, Cl. 33—228.

Lee, Chu-Quon, to Motorola, Inc. Waveguide directional filter. 3,200,352, 8–10–65, Cl. 333—10.

Lee, Donald R., to S. Curtis & Son Inc. Packaging apparatus. 3,199,263, 8–10–65, Cl. 53—183.

Lee, Shih-Ying, and Y. T. Li. Temperature compensated transducer. 3,199,345, 8–10–65, Cl. 73—141.

Lee, Tsun-Yuan, to Fuller Co. Heat exchange for kilns. 3,199,850, 8–10–65, Cl. 263—32.

Leeds and Northrup Co.: *See*—
Fitzgerald, Herbert S. 3,200,209.
Ott, Walter T. 3,200,404.
Skinner, Richard A. 3,200,343.

Leesona Corp.: *See*—
Tata, Raymond V. 3,199,806.
Verrier, Arthur N. 3,199,546.
Wallack, Stanley. 3,200,300.

Lefevre, George B., to Universal American Corp. Method of making a flanged bearing. 3,199,173, 8–10–65, Cl. 29—149.5.

Lehmann, Herbert G., to Valve Corporation of America. Actuator cap construction for aerosol dispenser. 3,199,741, 8–10–65, Cl. 222—182.

Lehr, Hanna H.: *See*—
Goldberg, Moses W., Muller, and Lehr. 3,200,117.

Leibenseder, Ziegfried: *See*—
Merkel, Hans, and Leibenseder. 3,200,001.

Leibiger, Kurt, to Asbest-und Gummiwerke Martin Merkel K.G. Method and apparatus for making rolled-up annular bodies. 3,200,024, 8–10–65, Cl. 156—184.

Lejohn Sales Ltd.: *See*—
Johnson, Edward A. 3,199,144.

Lemke, Winfred R., to Square D Co. Articulated reciprocating contact structure. 3,200,225, 8–10–65, Cl. 200—166.

Lepetit S.p.A.: *See*—
D'Amato, Vitngelo. 3,200,038.

Leslie, Fred D.: *See*—
Bragg, Herbert E., Whitmore, Alden, and Leslie. 3,199,404.

Le Suer, William M., to The Lubrisol Corp. Process for preparing acylated amines-C8s compositions and products. 3,200,107, 8–10–65, Cl. 260—183.

Leutsinger, Rudolph L. Turbocompressor. 3,199,772, 8–10–65, Cl. 230—116.

Levendusky, Joseph A., to Union Tank Car Co. Continuous liquid-solid contact process. 3,200,067, 8–10–65, Cl. 210—24.

Levy, Maurice M. Apparatus for sorting flat articles. 3,199,688, 8–10–65, Cl. 214—7.

Lewin, Henry: *See*—
Petri, Albert L., and Lewin. 3,199,514.

Lewis, Gerald I.: *See*—
Brooks, Harold, Brown, Jepson, and Lewis. 3,199,980.

Lewis, Sheldon N., and D. E. Falgiatore, to Rohm & Haas Co. Thermosetting compositions comprising methylene diethers and polymers of hydroxy-containing esters. 3,200,099, 8–10–65, Cl. 260—80.5.

Li, Yao T.: *See*—
Lee, Shih-Ying, and Li. 3,199,845.

Libbey-Owens-Ford Glass Co.: *See*—
O'Connell, Thomas B., Snow, and Gladieux. 3,199,966.

Lieb, Harry C.: *See*—
Goldstein, Melvin M., and Lieb. 3,200,269.

Lieb, Nathaniel H., and A. J. Turchi, to Star Dental Manufacturing Co., Inc., also known as Star Dental Manufacturing Company, Inc., and Star Dental Mfg. Co., Inc. Dental handpiece. 3,199,196, 8–10–65, Cl. 32—27.

Liebreich, Oscar P. Automatic control for adjustable steering wheels. 3,199,625, 8–10–65, Cl. 180—77.

Lilliston Implement Co.: *See*—
Whitfield, Carroll J., and Whitesides. 3,199,605.

Lincoln, Robert W. Meat tongs. 3,199,904, 8–10–65, Cl. 294—16.

Lind, Erwin: *See*—
Sils, Oskar, and Lind. 3,199,981.

Lindberg, Georg: *See*—
Garney, Karl A., and Lindberg. 3,199,694.

Lindemann, Robert E., to Harris-Intertype Corp. Sheet delivery mechanism. 3,199,865, 8–10–65, Cl. 271—64.

Lindenthal, Murray W., R. C. Tagler, and J. A. Bourget, to Martin Marietta Corp. Random selector. 3,200,264, 8–10–65, Cl. 307—88.5.

Linder, Paul A., and F. W. Dissmeyer, to A. O. Smith Harvestore Products, Inc. Apparatus for erecting storage structures. 3,199,839, 8–10–65, Cl. 254—89.

Lindgren, Nils K., to Electrolux, Aktiebolaget. Electric motor. 3,200,275, 8–10–65, Cl. 310—90.

Lindsey, L. E. Convertible stringing block assembly. 3,199,840, 8–10–65, Cl. 254—192.

Lindt, Stanley L., and C. W. Woods, Jr., to General Electric Co. Coil assembly especially suitable for use in dynamoelectric machines. 3,200,273, 8–10–65, Cl. 310—68.

Linemaster Switch Corp., The: *See*—
Ginn, Delwin C. 3,199,337.

Lins, Raymond G., and S. J. Lins. Viscous coupler device for model vehicles. 3,199,371, 8–10–65, Cl. 74—664.

Lins, Stanley J.: *See*—
Lins, Raymond G. and S. J. 3,199,371.

Lippmann, Hans-Joachim: *See*—
Engel, Walter, Kuhrt, Lippmann, and Hartel. 3,199,630.

Lipshutz, Melvin I.: *See*—
Snair, S. Edwin, and Lipshutz. 3,199,342.

Lipski, Anthony M., to United Elastic Corp. Gaging of moving elongated bodies. 3,199,339, 8–10–65, Cl. 73—37.7.

Lisbin, Arthur, to New Jersey Bank and Trust Co. Method for forming sink partitions. 3,199,333, 8–10–65, Cl. 72—373.

Little, Arthur D.: *See*—
Slade, Albert E., and Miles. 3,200,262.

Livingston, Malcolm R., to Celanese Corporation of America. Strong slub yarn. 3,199,283, 8–10–65, Cl. 57—144.

Livingstone, Jay G. Cover for extensible spout, releasable as spout is extended. 3,199,750, 8–10–65, Cl. 222—529.

Lloyd, John T., to Lockheed Aircraft Corp. Catalytic combustor type heating devices. 3,199,505, 8–10–65, Cl. 126—95.

Lobik, James L., to Cesco Container Mfg. Co. Apparatus for transferring groups of cartons. 3,199,651, 8–10–65, Cl. 198—24.

Locher, Ross E., to Zinsco Electrical Products. Dual switch unit. 3,200,228, 8–10–65, Cl. 200—168.

Locke, Frank W., to Waldorf Paper Products Co. Mailing folder. 3,199,765, 8–10–65, Cl. 229—40.

Lockett, George E.: *See*—
Franco, Gianfranco, Lockett, Kinkead, and Sorensen. 3,200,043.

Lockheed Aircraft Corp.: *See*—
Lloyd, John Thomas. 3,199,505.
Spoecker, Walter W. 3,199,812.
Stround, John F., and Coleman. 3,199,810.

Lohr, Raymond J.: *See*—
Carver, Richard N., Lohr, and Smith. 3,199,249.

Lonberg-Holm, Knud K.: *See*—
Moses, Vivian, and Lonberg-Holm. 3,200,252.

Long, Everett, to The English Electric Co. Ltd. Charging system for nuclear reactor. 3,200,044, 8–10–65, Cl. 176—80.

Long, Marshall. Anchoring structure for building slabs. 3,199,259, 8–10–65, Cl. 52—288.

Longyear, E. J., Co.: *See*—
Braun, Leonard A. 3,199,907.

Loomis, Glenn L., deceased; J. D. Loomis, executrix, to Jean D. Loomis. Apparatus for testing and repairing well pipes. 3,199,598, 8–10–65, Cl. 166—147.

Loomis, Jean D.: *See*—
Loomis, Glenn L. 3,199,598.

Lorain Products Corp.: *See*—
Kammiller, Neil A., and Merkel. 3,200,348.

Lorentsen, Oivind: *See*—
Bengtsson, Bo G. 3,199,963.

Lorensen, Coby, I. J. Saluka, and F. L. Hill, to the Regents of the University of California. Tomato harvester. 3,199,604, 8–10–65, Cl. 171—27.

Loscher, Robert A., to Selas Corporation of America. Gas contaminant sensing device. 3,200,387, 8–10–65, Cl. 340—237.

Lovell, Calvin H., to G. D. Searle & Co. Hydrazides of 4-substituted 1-aminopiperazines. 3,200,120, 8–10–65, Cl. 260—268.

Lovell, Calvin H., to G. D. Searle & Co. Disubstituted-alkanoyl hydrazides of 1-aminopiperazines. 3,200,121, 8–10–65, Cl. 260—268.

Lowe, Nicholas, and F. T. Bartolomeo, deceased (by J. A. Bartolomeo, executrix). Apparatus for making smoking articles. 3,199,515, 8–10–65, Cl. 131—94.

Lowell, Mahlon A., to Acme Industries, Inc. In-duct fan. 3,199,774, 8–10–65, Cl. 230—117.

Lowes, Edward J., to James Armstrong & Co. Ltd. Washing machines. 3,199,319, 8–10–65, Cl. 68—210.

Lubrizol Corp., The: *See*—
Le Suer, William M. 3,200,107.

Luckenbach, Ralph R., V. R. Natwick, and M. Swyryd, to Anpex Corp. Selective variable gain and bandwidth amplifier. 3,200,345, 8–10–65, Cl. 330—29.

Luescher, Hans: *See*—
Ruoss, Leo, Wetzel, Marx, and Luescher. 3,199,489.

Lukas, Henry F., Jr. Charging apparatus for open hearth furnaces or the like. 3,199,691, 8–10–65, Cl. 214—26.

Lukoff, Herman: *See*—
Eckert, John P., Jr., Lukoff, and Porath. 3,200,390.

Lusher, Kenneth G., to Owens-Illinois Glass Co. Method and apparatus for dipping glass articles in liquid plastic. 3200,002, 8–10–65, Cl. 117—54.

Lutz, Leland J.: *See*—
Briggeman, Donald H., Lutz, and Smith. 3,200,048.

Lutz, Leland J., and C. J. Smith, Jr., to Olin Mathieson Chemical Corp. Manufacture of methyl dichlorophosphine oxide. 3,200,145, 8–10–65, Cl. 260—543.

Lutz, Samuel G., to Hughes Aircraft Co. Keyboard for controlling signal generator having means for changing key designations. 3,200,375, 8–10–65, Cl. 340—147.

Luwa A.G.: *See*—
Keller, Emil. 3,199,574.
Keller, Emil. 3,199,575.

Lux, Joseph W., to Robertshaw-Controls Co. Quick-acting periodic switch. 3,200,224, 8–10–65, Cl. 200—153.

Lyday, Richard W., and C. L. Moorman, to General Motors Corp. Fastener assembly procedure. 3,199,187, 8–10–65, Cl. 29—453.

Lyell, John L. Knurling apparatus. 3,199,325, 8–10–65, Cl. 72—74.

MB Associates: *See*—
Gould, Bert B. 3,199,406.

Macatician, John. Heat transfer gauge. 3,199,352, 8–10–65, Cl. 73—341.

MacAvoy, Thomas C., and J. A. Marley, Jr., to Corning Glass Works. Growth of cadmium oxide single crystals. 3,199,961, 8–10–65, Cl. 23—294.

MacDonald, Duncan N., E. Glaser, F. W. Bauer, J. J. Dowling, D. T. Kielty, and P. D. King, to Burroughs Corp. Data processing system. 3,200,380, 8–10–65, Cl. 340—172.5.

MacGregor, Charles: *See*—
Wadleck, Joseph P., Remner, and MacGregor. 3,199,326.

Machines Automatiques Modernes (Societe a Responsabilite Limitee): *See*—
Vieillard, Georges M. P. 3,200,239.

Mackenzie, Donald H., K. D. McMahan, and J. Cherrybone; said McMahan and Cherrybone assors. to said Mackenzie. Machine for registering a series of transactions. 3,199,445, 8–10–65, Cl. 101—90.

Mackey, Bruce A. Twist drill. 3,199,381, 8–10–65, Cl. 77—70.

MacLeod, Thomas L., and J. J. Tolan, Jr. Optical device for determining the size of a surface object from an aircraft. 3,199,197, 8–10–65, Cl. 33—64.

Madeux, Robert S., to The Bristol Co. Orienting and feeding apparatus. 3,199,722, 8–10–65, Cl. 221—9.

Madison Industries, Inc.: *See*—
Korson, Leonard J. 3,199,379.

Maeda, Unpei: *See*—
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Maerov, Sidney B., and E. B. McCord, to E. I. du Pont de Nemours and Co. Composite polyester yarn of differentially shrinkable continuous filaments. 3,199,281, 8–10–65, Cl. 57—140.

Magnetics, Inc.: *See*—
Brandon, James C., Jr., Frank, and Rahiser. 3,199,177.

Magnuson, Genevieve I.: *See*—
Magnuson, Roy M. 3,199,618.

Magnuson, Robert: *See*—
Magnuson, Roy M. 3,199,618.

Magnuson, Roy M., deceased, by G. I. Magnuson, executrix, ½ to G. I. Magnuson and ¼ to G. I. and R. Magnuson, and L. J. Fox, trustees. Article weighing apparatus and method. 3,199,618, 8–10–65, Cl. 117—1.

Magos, John P., K. B. Bredtschneider, and J. A. Englert, to Crane Co. Stuffing box construction. 3,199,876, 8–10–65, Cl. 277—21.

Mallory, Henry R., to P. R. Mallory & Co., Inc. Charging means wiht magnetic contacts for battery operated appliances. 3,200,320, 8–10–65, Cl. 320—2.

Mallory, P. R., & Co., Inc.: *See*—
Mallory, Henry R. 3,200,320.

Malott, Raymond A., and G. D. Johnson, to Shell Oil Co. Method and apparatus for drilling an underwater well. 3,199,613. 8–10–65, Cl. 175—5.

Manfredi, Robert E., P. Koskos, and J. W. Ammenheuser, to General Electric Co. Ruggedized cathode mount. 3,200,283, 8–10–65, Cl. 313—269.

Mangum, Uvas S. Front wheel drive for motorcycle. 3,199,623. 8–10–65, Cl. 180—31.

Mansaver Industries, Inc.: *See*—
Bradley, Harvey. 3,199,910.

Manufacturers Machine Co.: *See*—
Hurst, Charles L. 3,199,920.

Manufactures de Produits Chimique du Nord Etablissements Kuhlmann: *See*—
Kremer, Gilbert V. H., and Sureau. 3,200,108.

Marchionda, Tony F. Bottle cap with self-opening tab. 3,199,706, 8–10–65, Cl. 215—46.

Marchon Products Ltd.: *See*—
Sowerby, Austen E. 3,199,960.
Sowerby, Austen E. 3,200,140.

Marconi Co. Ltd., The: *See*—
Davies, Eric, and Heightman. 3,200,195.
Ellis, Alfred B. E. 3,200,338.
Plaistowe, Donald L. 3,200,287.

Margetta, Hugh G., to Automotive Products Co. Ltd. Fluid pressure operated servo-devices. 3,199,413, 8–10–65, Cl. 91—372.

Margolis, Isadore. Curved rotor blades. 3,199,603, 8–10–65, Cl. 170—171.

Mark, Clayton, & Co.: *See*—
Oetjens, Robert W. 3,199,528.

Markey, Peter, and J. F. L. Roberts, to Imperial Chemical Industries Ltd. Stretching process. 3,200,183, 8–10–65, Cl. 264—290.

Marley, James A., Jr.: *See*—
MacAvoy, Thomas C., and Marley. 3,199,961.

Marotta, Carl D.: *See*—
Sederlund, William W., and Marotta. 3,200,091.
Sederlund, William W., and Marotta. 3,200,094.

Marsh, Harry A., Jr., to E. J. Lavino and Co. Interlocking brick. 3,199,477, 8–10–65, Cl. 110—99.

Marsh, Julius E. Process for sanding the edge surfaces of lumber. 3,199,255, 8–10–65, Cl. 51—326.

Martens, Donald L.: *See*—
Bartel, Walter A., and Martens. 3,199,286.

Martens, George H. Disc computer for use in pipe bending. 3,199,777, 8–10–65, Cl. 235—78.

Marti, Frederic, to "Industrielle de Precision Marti—I.P.M." Methods of cold extruding metals. 3,199,324, 8–10–65, Cl. 72—42.

Martin, Frank A., M. E. Bixler, and C. W. Studer, to The Hoover Co. Defoamer bar for suction scrubber. 3,200,080, 8–10–65, Cl. 252—358.

Martin, Henry, and A. Ruperti, to Ciba Ltd. Treatment of synthetic products, especially synthetic fibers. 3,200,035, 8–10–65, Cl. 167—38.6.

Martin, Norman H.: *See*—
Bray, Frederick H., Martin, and Ridler. 3,200,203.

Martin-Marietta Corp.: *See*—
Lindenthal, Murray W., Tagler, and Bourget. 3,200,264.

Martin Sweets Co., Inc., The: *See*—
James, James R. 3,199,789.

Martin, Wayne, to William F. Jobbins, Inc. Aluminum base casting alloys and method. 3,199,979, 8–10–65, Cl. 75—148.

Martinkovic, John J.: *See*—
Martinkovic, Paul S. and J. J. 3,199,815.

Martinkovic, Paul S. and J. J. Universal muffler hanger. 3,199,815, 8–10–65, Cl. 248—59.

Marts, Emmett L., to United States of America, National Aeronautics and Space Administration. Externally pressurised fluid bearing. 3,199,931, 8–10–65, Cl. 308—9.

Maruzen Oil Co. Ltd.: *See*—
Kawai, Masakazu. 3,200,162.

Marx, Friedrich: *See*—
Ruoss, Leo, Wetzel, Marx, and Luescher. 3,199,489.

Marx, Louis, & Co., Inc.: *See*—
Carver, Richard N., Lohr, and Smith. 3,199,249.
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Maschinenfabrik Carl Zangs Aktiengesellschaft: *See*—
Nauen, Wilhelm, and Flürmann. 3,199,544.

Maschinenfabrik Ruti AG.: *See*—
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Mastney, Edward J., to Oak Mfg. Co. Rotary selector switch construction with rotor interlocking means. 3,200,208, 8–10–65, Cl. 200—6.

Masuda, Yoshio, ½ to I. Kanda. Ocean wave electric generator. 3,200 255, 8–10–65, Cl. 290—42.

Mathiesen, Nicolaus P. Magnetic card filing device. 3,199,513, 8–10–65, Cl. 129—16.

Matsubayashi, Kanji, and T. Suda, to Kurashiki Rayon Co., Ltd. Polyvinyl alcohol spinning solutions and fibers produced therefrom. 3,200,178, 8–10–65, Cl. 264—78.

Matsuda, Ken: *See*—
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Matton, Oscar. Method and means for manufacturing tubular fluid tight hoses. 3,200,022. 8–10–65, Cl. 156—169.

Mattson, William R., to Sylvania Electric Products Inc. Feeding device. 3,199,803, 8–10–65, Cl. 242—57.

Matuschkovits, Richard K., to Chemetron Corp. Desulfurization of iron. 3,199,975, 8–10–65, Cl. 75—43.

Maurits, Michael. Bite indicator. 3,199,241, 8–10–65, Cl. 43—17.

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Cook, Lucien H., and Mavrovic. 3,200,148.

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Van Schaik, Peter N., and May. 3,199,626.

May, Clifford H., to The Briggs Filtration Co. Coalescing and filtering apparatus. 3,199,676, 8–10–65, Cl. 210—114.

Mazgy, James D., to Bell Telephone Laboratories, Inc. Current pulse generator exhibiting fast rise time. 3,200,308, 8–10–65, Cl. 317—148.5.

McBride, Oscar S., and G. V. Runge; said McBride assor. to Twinwood, Inc. Catch basin excavating machine. 3,199,656, 8–10–65, Cl. 198—88.

McBride, William, to Emporium Specialties Co., Inc. Fluid clutch mid-shaft. 3,199,646, 8–10–65, Cl. 192—85.

McCallister, Robert A., to Foster Wheeler Corp. Heat exchanger control scheme. 3,199,577, 8–10–65, Cl. 165—36.

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McClive, William J. Vehicle hitches and wheel coupling means therefor. 3,199,894, 8–10–65, Cl. 280—483.

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McCullough, Harry E. Corn picker rolls cleaner. 3,199,125, 8–10–65, Cl. 7—14.1.

McDevitt, Thomas J., and W. J. Biebel. Centerline guide light (aircraft carrier). 3,200,243, 8–10–65, Cl. 240—1.2.

McEathron, Gerald R. Power plant safety system. 3,199,523, 8–10–65, Cl. 137—26.

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Kilner, George E., and McGihon. 3,199,652.

McGowan, Kenneth G., to Winkel Machine Co., Inc. Article transfer and stacking device for power-driven conveyors. 3,199,653, 8–10–65, Cl. 198—35.

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McKean, John M., to Alloy Steel and Metals Co. Logging block suspension and line retainer. 3,199,841, 8–10–65, Cl. 254—193.

McKelvey, Harold E., to Pittsburgh Plate Glass Co. Glass sheet bending apparatus. 3,199,968, 8–10–65, Cl. 65—291.

McKelvey, Terry A. Sled. 3,199,887, 8–10–65, Cl. 280—18.

McKiel, Robert D., to United-Carr Inc. Contact-camming printed circuit board. 3,200,360, 8–10–65, Cl. 339—17.

McKnight, Robert J., R. W. Gotham, and C. J. Falcon, to The Rapids Standard Co., Inc. Gate for conveyors. 3,199,140, 8–10–65, Cl. 16—1.

McLean, John O., and W. B. Jenkins, to Reynolds Metals Co. Sliding surface protection. 3,199,929, 8–10–65, Cl. 308—4.

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Mackenzie, Donald H., McMahan, and Cherrybone. 3,199,445.

McMullin, Earl L. Line cover. 3,200,187, 8–10–65, Cl. 174—5.

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Mehrlich, Ferdinand P., and R. R. Haugh, to United States of America, Army. Apparatus for use in freeze dehydration. 3,199,221, 8–10–65, Cl. 34—145.

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Di Domenico, Joseph, and Mellion. 3,199,909.

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Ballard, Arthur H. 3,200,374.

Meltzer, Jack H. Slip-lasted conductive shoe and method of making it. 3,200,292, 8–10–65, Cl. 317—2.

Meltzer, Seymour N. Portable toilet unit. 3,199,120, 8–10–65, Cl. 4—144.

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Meyer, Ronald K. Hospital luminare. 3,200,244, 8–10–65, Cl. 240—73.

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Michaelis, Rudolf: *See*—
Juffa, Richard, Kruger, Michaelis, Rehberg, Schmahl, and Schulz. 3,199,740.

Mickley, Rolf. Two-filament incandescent lamp for non-dazzling high and low beams in automobile headlights. 3,200,281, 8–10–65, Cl. 313—111.

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Miller, Earle C., to Riley Stoker Corp. Coking stoker. 3,200,049, 8–10–65, Cl. 202—117.

Miller, James R. Method of and apparatus for making and projecting stereoscopic pictures employing a spherical mirror segment. 3,200,400, 8–10–65, Cl. 352—60.

Miller, Joseph A., and F. A. Kruglinski, to General Corrugated Machinery Co., Inc. Carton taping machine. 3,199,262, 8–10–65, Cl. 53—66.

Miller, Reuben, to United States Steel Corp. Prefabricated flooring and charging buggy trackway for open hearth furnaces. 3,199,855, 8–10–65, Cl. 266—13.

Miller, Richard A.: *See*—
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Milligan, Frederick H., and C. W. Hoyt, to Crown Zellerbach Canada Ltd. Method of changing the moisture content of wood. 3,199,213, 8–10–65, Cl. 34—13.8.

Mills, William C., to Celanese Corp. of America. Polymer purification. 3,200,059, 8–10–65, Cl. 204—186.

Milton, Robert M., to Union Carbide Corp. Zeolitic molecular sieves containing a platinum group metal in the inner adsorption region. 3,200,083, 8–10–65, Cl. 252—455.

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Mine Safety Appliance Co.: *See*—
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Mitchell, John E., to Robertshaw Controls Co. Locking device. 3,199,937, 8–10–65, Cl. 312—221.

Mitchell, John E., to Robertshaw Controls Co. Magnetically controlled exhalation valve. 3,199,524, 8–10–65, Cl. 137—68.

Mickley, Rolf. Incandescent headlight lamp having critically positioned filaments. 3,200,282, 8–10–65, Cl. 313—115.

Miller, Austin V., H. S. Hunt, and E. L. Thompson, to Middletown Mfg. Co., Inc. Self-return swivel of opposed plate type. 3,199,826, 8–10–65, Cl. 248—417.

Miller, John, to The F. & M. Schaefer Brewing Co. Pallet magazine. 3,199,725, 8–10–65, Cl. 221—290.

Mish, William A., Jr. Tobacco harvester trailer. 3,199,687, 8–10–65 Cl. 214—5.5.

Moberg, Frank. Sheet material cutting apparatus. 3,199,860, 8–10–65, Cl. 269—87.2.

Modesti, James N. Circular wing flying craft. 3,199,809, 8–10–65, Cl. 244—12.

Moerkens, Josef C., to North American Philips Co., Inc. Ballast device and circuit for gas discharge lamps. 3,200,290, 8–10–65, Cl. 315—99.

Moffitt, Roy B., to Royall B. Moffitt, and Harrison E. McCandlish. Ceramic building units. 3,199,992, 8–10–65, Cl. 106—39.

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Moffitt, Roy B. 3,199,992.

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Moller, Heinz, to Robert Bosch, G.m.b.H. Distributor for internal combustion engines and controls therefor. 3,199,500, 8–10–65, Cl. 123—146.5.

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Monsanto Co.: *See*—
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Palmer, Charles E. 3,199,670.
Richard, William R., Jr., Calfee, and Erbaugh. 3,200,101.
Williams, Charles R. 3,200,000.

Montecatini Societa Generale per l'Industria Mineraria e Chimica: *See*—
Sianesi, Dario, and Nelli. 3,200,160.

Montese-Caruso, Guiseppe, and E. Bussi. Watchcase. 3,199,285, 8–10–65, Cl. 58—88.

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Mood, Paul W.: *See*—
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Moody Warren E. Rotary power lawn mower with grass catcher. 3,199,277, 8–10–65, Cl. 56—25.4.

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Tousignant, William F., and Moore. 3,200,068.

Moore, Edwin K.: *See*—
Hamilton, Earl F., Lay, and Moore. 3,199,915.

Moore, Frank N. Projection system. 3,199,403, 8–10–65, Cl. 88—24.

Moore, George F., to Tennessee Corp. Multi-stage process of producing diammonium phosphate. 3,199,973, 8–10–65, Cl. 71—43.

Moore, Ralph W., and O. M. Stoops, to Pangborn Corp. Mixing apparatus. 3,199,844, 8–10–65, Cl. 259—4.

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Harris, Edward P., and Moorman. 3,199,184.
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Morgan Construction Co.: *See*—
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Morgan, William H., Jr., to Sylvania Electric Products Inc. Lamp positioner. 3,200,363, 8–10–65, Cl. 339—93.

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Morrison, Robert O., and L. W. Chundelak, Jr. Package edge protector. 3,199,709, 8–10–65, Cl. 217—69.

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Morse, John F. Resilient torsional coupling. 3,199,315, 8–10–65, Cl. 64—27.

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Moschetta, Joseph and B. Water conservation means in flush-type toilet tanks. 3,199,118, 8–10–65, Cl. 4—67.

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Moyer, Elton S., to General Motors Corp. Master cylinder primary cup anti-extrusion mechanism. 3,199,299, 8–10–65, Cl. 60—54.6.

Moyer, Wayne B., to General Electric Co. Axial flow turbomachine blade with abrasive tip. 3,199,836, 8–10–65, Cl. 253—77.

Mueller, Edward E., D. B. Bartz, M. J. Christensen, and M. C. Mueller, to Whirl-Air-Flow Corp. Apparatus for injecting bulk solids into material contained in a vessel. 3,199,924, 8–10–65, Cl. 302—36.

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Muller, Hans. Sheet depositing machine. 3,199,862, 8–10–65, Cl. 270—54.

Muller, Josef. Sheet-feeding device. 3,199,863, 8–10–65, Cl. 271—26.

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Murphy, Frank W., Jr. Adjustable lever-actuated open-blade snap-action electrical switch. 3,200,213, 8–10–65, Cl. 200—67.

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Mylchreest, George D., to Emhart Corp. Method of resistance heating raw meat emulsion by the use of a silver-nickel electrode. 3,199,986, 8–10–65, Cl. 99—100.

Myler, George W., and R. A. Clark, to Caloric Appliance Corp. Combined adjustable broiler pan assembly and rotisserie. 3,199,438, 8–10–65, Cl. 99—421.

Nagumo, Jin-Ichi, S. Yamada, and K. Yamanaka, to Nippon Telegraph and Telephone Public Corp. Pulse generator. 3,200,265, 8–10–65, Cl. 307—88.5.

Nahas, Joseph A., to United States of America, Navy. Explosively actuated piston driver. 3,199,285, 8–10–65, Cl. 60—26.1.

Nakamura, Tokio, M. Araki, and H. Kuroi, to Howa Sangyo Kabushiki Kaisha. Rack cutter. 3,199,408, 8–10–65, Cl. 90—8.

Nakolan, Andrew P., to General Motors Corp. Retractable seat belt. 3,199,918, 8–10–65, Cl. 297—388.

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Sederlund, William W., and Marotta. 3,200,094.

National Tank Co.: *See*—
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Nauen, Wilhelm, and W. J. Flürmann, to Carl Zangs Maschinenfabrik Aktiengesellschaft. Bobbin supply device for looms. 3,199,544, 8–10–65, Cl. 139—245.

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Nettel, Frederick. Apparatus and method for compound cyclone combustion of coal and other fuels. 3,199,476, 8–10–65, Cl. 110—28.

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Nichols, Gus, to Standard Oil Co. Aluminum chloride catalyzed polymerization process. 3,200,170, 8–10–65, Cl. 260—683.15.

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Nilson, John R., to The Singer Co. Speed-regulating control system for series commutator motors. 3,200,318, 8–10–65, Cl. 318—246.

Nilsson, Bengt E., and E. D. Arvidsson, to Broderna Hedlund, AB. Method of eliminating buckling deformation of beams. 3,199,174, 8–10–65, Cl. 29—155.

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Nordfors, Arthur W. Container holder. 3,199,552, 8–10–65, Cl. 141—313.

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Nordin, Robert W., to Bell & Howell Co. Sound motion picture synchronising apparatus. 3,200,408, 8–10–65, Cl. 352—14.

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Norris, Robert W., Jr. Comminuting and dispersing process and apparatus. 3,199,792, 8–10–65, Cl. 241—30.

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Norty, Vladimir S. Power operated cutter. 3,199,193, 8–10–65, Cl. 30—228.

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Oehlrich, Karl-Heinz, to Siemens-Schuckertwerke Aktiengesellschaft. Apparatus for mixing and separating substances of different mass-inertia. 3,199,270, 8–10–65, Cl. 55—261.

Oehlrich, Karl-Heins, E. Schaufler, K. Schmidt, and H. Zenneck (deceased, by S. Zenneck, sole heir), to Siemens-Schuckertwerke Aktiengesellschaft. Particle-from-gas separators. 3,199,272, 8–10–65, Cl. 55—261.

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Ogilvie, Robert E., to Advanced Metals Research Corp. Apparatus for use as a goniometer and diffractometer. 3,200,248, 8–10–65, Cl. 250—51.5.

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Simonnet, Andre A. P., and L. A. Cabut, to Etablissements Kuhlmann. N-(2 benzothiazoyl)-1,4,5,8 diamino dihydroxy anthraquinones, mixtures and synthesis thereof. 3,199,941, 8–10–65, Cl. 8—25.

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Simpson, Robert F., to The Monarch Rubber Co. Method of making rubber bushings. 3,199,186, 8–10–65, Cl. 29—450.

Sinai, William W. Hygienic dental device. 3,199,510, 8–10–65, Cl. 128—173.

Sincat Soc. Industriale Catanese S.p.A.: *See*—
Scarfi, Alberto, and Gugliotta. 3,199,948.

Sinclair Research, Inc.: *See*—
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Holbert, Don R. 3,199,588.

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Singer, Robert D.: *See*—
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Skala, George F.: *See*—
Van Luik, Frank W., Jr., and Skala. 3,200,254.

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Skinner, Ralph L., Sr., to Skinner Products, Inc. Sealing washer energized by an annular spring element. 3,199,833, 8–10–65, Cl. 251—176.

Skinner, Richard A., to Leeds and Northrup Co. D.C. amplifier having fast recovery characteristics. 3,200,343, 8–10–65, Cl. 330—17.

Skogh, Carl G. C. Telescoping tower for furfural production. 3,199,958, 8–10–65, Cl. 23—283.

Skrapits, Andrew: *See*—
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Slade, Albert E., and J. L. Miles, to A. D. Little. Thin-film cryotron utilizing only magnetic-field lines-of-force that lie in plane parallel to gate conductor plane. 3,200,262, 8–10–65, Cl. 307—88.5.

Sleighter, George E., and J. S. Zabetakis, to Pittsburgh Plate Glass Co. Method and apparatus for optically detecting elongated defects in glass. 3,199,401, 8–10–65, Cl. 88—14.

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Small, Robert F.: *See*—
Oldenkamp, Henry A., and Small. 3,199,217.

Smart, Clyde A. Reciprocating pump. 3,199,457, 8–10–65, Cl. 103—38.

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Smith, A. O., Harvestore Products, Inc.: *See*—
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Smith, Charles J., Jr.: *See*—
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Smith, Charles J., Jr.: *See*—
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Smith, F., & Co. (Whitworth) Ltd.: *See*—
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Smith, Genevieve M., ⅛ to Sacred Heart Hospital. Swinging sling. 3,199,509, 8–10–65, Cl. 128—94.

Smith, Glen A., to General Motors Corp. Counterbalance assembly. 3,199,914, 8–10–65, Cl. 296—106.

Smith, Grover C. Toothpaste dispenser and brush holder. 3,199,736, 8–10–65, Cl. 222—93.

Smith, Herman E., to Goodman Mfg. Co. Troughing roller assemblies. 3,199,661, 8–10–65, Cl. 198—192.

Smith, Hugh R., Jr.: *See*—
Hunt, Charles d'A., and Smith. 3,199,947.

Smith, Ira L.: *See*—
Morrow, Alfred C., and Smith. 3,200,013.

Smith, James E.: *See*—
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Smith, Keith J.: *See*—
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Smith Kline & French Laboratories: *See*—
Spickett, Robert G. W., Durant, and Bavin. 3,200,151.

Smith, Wilta L. Shoe storage rack. 3,199,473, 8–10–65, Cl. 108—159.

Smithe, F. L., Machine Co., Inc.: *See*—
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Smolka, Thomas G., and J. Zelinka, to Wiener Metallwaren- und Schnallenfabrik Sehar-Smolka. Fastening device in safety ski bindings. 3,199,885, 8–10–65, Cl. 280—11.35.

Snair, S. Edwin, and M. I. Lipshutz, 37.5% to said Snair, 37.5% to said Lipshutz, and 25% to E. J. Kalil. Zipper tester. 3,199,342, 8–10–65, Cl. 73—95.

Snapp, Rex J. Door frame profile gauge. 3,199,206, 8–10–65, Cl. 33—194.

Snia Viscosa Societa Nazionale Industria Applicazioni: *See*—
Muench, Werner, Messina, Taverna, and Notarbartolo. 3,200,112.

Snider, Donald S. Rudder and tiller for sailing surfboard. 3,199,485, 8–10–65, Cl. 114—165.

Snow, Richard R.: *See*—
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Sobczak, Bernard J.: *See*—
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Societe Luxembourgeoise de Brevets et de Participations (Lubrepa): *See*—
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Toureille, Daniel C. 3,199,940.

Socony Mobil Oil Co., Inc.: *See*—
Andress, Harry J., Jr., and Gee. 3,199,965.

Soddy, Thomas C., to American Seal-Kap Corp. of Delaware. Well-like structure. 3,199,261, 8–10–65, Cl. 52—615.

Sohr, Hans-Ulrich, and W. Haussmann. Continuous slide fastener. 3,199,162, 8–10–65, Cl. 24—205.13.

Sollenberger, Lester D., to Duncan Parking Meter Corp. Parking meter mechanism. 3,199,321, 8–10–65, Cl. 70—1.5.

Solvay & Cie: *See*—
Clerbois, Francois, and Antoine. 3,199,949.

Sorenson, Walter H. Attachable cigarette case. 3,199,754, 8–10–65, Cl. 224—5.

Sorlie, Donald T.: *See*—
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Soudure Electrique Autogene, S.A., La: *See*—
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Sowerby, Austen E., to Marchon Products Ltd. Chemical apparatus for large mass flow rates. 3,199,960, 8–10–65, Cl. 23—285.

Sowerby, Austen E., to Marchon Products Ltd. Manufacture of sulphated fatty alcohols and sulphonated alkyl phenyls. 3,200,140, 8–10–65, Cl. 260—459.

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Tolmie, Robert J. 3,200,319.
Welsh, H. Frazer. 3,200,384.
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Welsh, Herbert F. 3,200,385.
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Spickett, Robert G. W., G. J. Durant, and P. M. G. Bavin, to Smith Kline & French Laboratories. Arylaminoalkyl guanidines. 3,200,151, 8–10–65, Cl. 260—564.

Spiselman, Joseph W., and D. S. Bernstein, to Floating Floors Inc. Conductive washer. 3,199,257 8–10–65, Cl. 52—241.

Spoecker, Walter W., to Lockheed Aircraft Corp. Lightning protective vapor vent. 3,199,812, 8–10–65, Cl. 244—135.

Sprague, Gordon V., Jr., to United Shoe Machinery Corp. Shoe heating machines. 3,199,130, 8–10–65, Cl. 12—4.1.

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Square D Co.: *See*—
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Lemke, Winfred R. 3,200,225.

Staab, Donald C., to Minneapolis-Moline, Inc. Control valve means for forward and reverse clutches. 3,199,647, 8–10–65, Cl. 192—87.

Stacey, Cecil E. Portable power unit having an angled frame with motor means on one leg thereof. 3,199,235, 8–10–65, Cl. 37—43.

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Standard Oil Co. (Ohio), The: *See*—
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Callahan, James L., and Gertisser. 3,200,084.
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Standard Pressed Steel Co.: *See*—
Green, David S. 3,199,204.
Waeltz, Ronald. 3,199,564.

Stanton, Arthur J., D. F. Anderson, and G. B. Boniface, to United States of America, Navy. Pneumatic motor. 3,199,415. 8–10–65, Cl. 91—399.

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Starkey, Neal E., to General Electric Co. Two shaft gas turbine control system. 3,199,293. 8–10–65, Cl. 60—39.25.

Starp, Franz W. R., to Alfred Gauthier, G.m.b.H. Photograph camera with control interlocks. 3,199,425, 8–10–65, Cl. 95—10.

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Steele, Richard E.: *See*—
Emmel, Donald E., Blackburn, Steele, and Dawson. 3,199,164.

Steinberger, Raymond L.: *See*—
Neubauer, Werner G., and Steinberger. 3,200,369.

Steinbock, Nathan. Shoe construction. 3,199,233, 8–10–65, Cl. 36—24.5.

Stekly, Zdenek J. J., and E. D. Hoag, to Avco Corp. Superconductive connector. 3,200,368, 8–10–65, Cl. 339—265.

Steiniceanu, Jacques D. Foldable ironing board. 3,199,472, 8–10–65, Cl. 108—119.

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Sterling Drug Inc.: *See*—
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Stern, Herman A., to United States of America, Atomic Energy Commission. Phosphor deposition. 3,199,939, 8–10–65, Cl. 316—5.

Stevens, Carlile R., and H. C. Moritz, to Royal Industries, Inc. Character read-out device. 3,200,396, 8–10–65, Cl. 340—378.

Stewart, William A. Method and apparatus for measuring flow. 3,199,846, 8–10–65, Cl. 73—194.

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Bush, Vannevar, and Hastings. 3,199,460.
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Stinger, George W.: *See*—
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Stirling, Leo M. Contra-flow ventilating apparatus. 3,199,773, 8–10–65, Cl. 230—117.

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Stoddard Aircraft Radio Co., Inc.: *See*—
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Stop-Fire Inc.: *See*—
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Nurkiewicz, Ignatius. 3,199,712.

Stoops, Owen M.: *See*—
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Storm, Lynn W. Apparatus for maintaining a vertical well bore while drilling. 3,199,615, 8–10–65, Cl. 175—73.

Story, Thomas, to S. Birkenwald Co. Shelf bracket. 3,199,821, 8–10–65, Cl. 248—242.

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Strachan, Robert, to Robertshaw Controls Co. Spray timer. 3,199,732, 8–10–65, Cl. 222—70.

Straus, Eric H., and A. D. Stafford, to Clay-Adams, Inc. Combination container and rack. 3,199,669, 8–10–65, Cl. 206—44.11.

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Strohmeyer, Charles Jr., to Gilbert Associates, Inc. Devices for improving operating flexibility of steam-electric generating plants. 3,199,494, 8–10–65, Cl. 122—1.

Stromberg, Verner L., to Petrolite Corp. Composition and process for inhibiting corrosion of ferrous metal. 3,200,071, 8–10–65, Cl. 252—8.55.

Stonecipher, Guy A. Bow string sight assembly and method of forming a bow string sight. 3,199,502, 8–10–65, Cl. 124—30.

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Stroud, John F., and D. M. Coleman, to Lockheed Aircraft Corp. Supersonic diffuser. 3,199,810, 8–10–65, Cl. 244—53.

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Suld, George, and A. P. Stuart, to Sun Oil Co. Isomerization of dicyclic naphthenes containing 12 carbon atoms. 3,200,161, 8–10–65, Cl. 260—666.

Sullivan, Charles M. Neatable pallets. 3,199,468, 8–10–65, Cl. 108—53.

Sullivan, Charles M. Pallet structure. 3,199,469, 8–10–65, Cl. 108—53.

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Sullivan, Eugene B., and Routhe. 3,199,318.

Sullivan, Eugene B., and G. E. Routhe, to E. B. Sullivan. Cleaning machine and seal means therefor. 3,199,318, 8–10–65, Cl. 68—140.

Sully, Frank H., to Western Brass Works. Valve. 3,199,831, 8–10–65, Cl. 251—149.6.

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Polishuk, Arthur T. 3,200,060.
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Surletta, Zygmunt M., to American Products Co. Spring clip. 3,199,163, 8–10–65, Cl. 24—265.

Surratt, Dwight F. Golf putter equipped with user-positioned sighting means. 3,199,873, 8–10–65, Cl. 273—163.

Süs, Oskar, and E. Lind, to Azoplate Corp. Light sensitive layers. 3,199,981, 8–10–65, Cl. 96—33.

Susuki, Hisashi, to Louis Marx & Co., Inc. Animated talking toy with built-in recorder. 3,199,248, 8–10–65, Cl. 46—232.

Suzuki, Shigeto, to California Research Corp. Process for production of anhydrous hydrogen bromide from lithium bromide. 3,199,953, 8–10–65, Cl. 23—154.

Svendsen, Gordon D., to Ampex Corp. Tape transport brake system. 3,199,801, 8–10–65, Cl. 242—55.12.

Svendsen, IB H., to Briggs & Stratton Corp. Self-governing carburetor. 3,199,530, 8–10–65, Cl. 137—382.

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Swanson, James L.: *See*—
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Swyryd, Miroslav: *See*—
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Syberts, Hans, to Hombak Maschinenfabrik K.G. Cutter for wood-shaving machine. 3,199,799, 8–10–65, Cl. 241—294.

Sylvania Electric Products Inc.: *See*—
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Morgan, William H., Jr. 3,200,363.

Sylvester, Robert W., and G. W. Stinger. Student teaching device. 3,199,230, 8–10–65, Cl. 35—48.

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Cross, Alexander D. 3,200,115.

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Szpilfogel, Stefan A., and M. S. de Winter, to Organon Inc. $\Delta^{4,6}$-3,20-diketo-17α,20,21-trihydroxy pregnadienes. 3,200,134, 8–10–65, Cl. 260—397.45.

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Takada, Kaneo: *See*—
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Takeda, Shuso, to Osaka Transformer Co., Ltd. Tap changing voltage regulator for single phase three-wire system. 3,200,325. 8–10–65, Cl. 323—43.5.

Talb Industries, Inc.: *See*—
Greenblatt, Joseph. 3,200,036.

Tamarin, Carl A.: *See*—
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Tanner, De Loss J., to Motorola, Inc. Transistor deflection system with linearizing circuit. 3,200,288, 8–10–65, Cl. 315—27.

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Taylor, Lewis F. Golf putter with marble head. 3,199,872, 8–10–65, Cl. 273—80.5.

Taylor, Robert B., and R. G. Walker, to A. J. Lassus, Jr. and E. L. and W. F. Lassus. Control device for liquid dispensers. 3,199,728, 8–10–65, Cl. 222—20.

Taylor, Wilbur S., to R. T. Vanderbilt Co., Inc. Fungus resistant paints. 3,199,990, 8–10–65, Cl. 106—15.

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Tennessee Corp.: *See*—
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Tension Envelope Corp.: *See*—
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Tepel, Gert: *See*—
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Tesser, Jack. Sanitary and disposable receptacle for bedpans. 3,199,119, 8–10–65, Cl. 4—113.

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Thau, Marcus and F. K. Decorative light source. 3,200,280, 8–10–65, Cl. 313—110.

Thedick, John H., to Weyerhaeuser Co. Adjustable board stop for flying saws. 3,199,554, 8–10–65, Cl. 143—47.

Thell, Richard C. R. Machines for treating skins. 3,199,320, 8–10–65, Cl. 69—27.

Thelemarck, Thor: *See*—
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Thompson, Harold W., to United States of America, Navy. Electric motor system. 3,200,315, 8–10–65, Cl. 318—138.

Thompson, Herbert, Jr., to Chas. Pfizer & Co., Inc. Non-granulated tablets with 20% sorbitol in a particle size of from about 100 to about 2000. 3,200,039, 8–10–65, Cl. 167—62.

Thompson, John E. Process for rendering fatty materials. 3,199,987, 8–10–65, Cl. 99—118.

Thompson, Richard G., to Union Tank Car Co. Three-position electromagnetic valve. 3,199,536, 8–10–65, Cl. 137—609.

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Thompson, William J. Support hanger for fish, game and the like. 3,199,820, 8–10–65, Cl. 248—224.

Threlkeld, William H. Valve stem drill jig. 3,199,380, 8–10–65, Cl. 77—62.

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Wogerbauer, Alfred, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Method and apparatus for the continuous manufacture of zigzag-shaped strutting for lattice structures and of lightweight structures comprising such strutting. 3,199,175, 8–10–65, Cl. 29—155.
Wolf, Christian-Friedrich: *See*—
Rainer, Erich, Wolf, and Engel. 3,200,207.
Wolf, Martin L., to The Cessna Aircraft Co. Hydraulic pump or motor. 3,199,461, 8–10–65, Cl. 103—162.
Wolfe, Edgar H., to The Barrett Bindery Co. Easel type display device. 3,199,897, 8–10–65, Cl. 281—33.
Wolverine Equipment Co.: *See*—
Brown, Ernest C. 3,199,224.
Wood, Gar, Industries, Inc.: *See*—
Anderson, Arthur F. 3,199,286.
Wood, George M., to Texaco Inc. Dropable tool for injecting fluid. 3,199,596, 8–10–65, Cl. 166—115.
Wood, Louis A.: *See*—
Kenney, Martin, Scott, and Wood. 3,199,308.
Wood, William H., to General Electric Co. Shock absorbing bearing. 3,199,903, 8–10–65, Cl. 287—100.
Woods, Clarence W., Jr.: *See*—
Lindt, Stanley L., and Woods. 3,200,273.
Worley, Emmett J. Electric burglar alarm system with exit and entry delay. 3,200,393, 8–10–65, Cl. 340—276.
Worthington Corp.: *See*—
Paul, Bruce M. 3,199,306.
Wuest, Heinz M., to Warner-Lambert Pharmaceutical Co. Mesyloxyacetic acid and acid chloride. 3,200,138, 8–10–65, Cl. 260—456.
Wunder, Walter: *See*—
Boresch, Carl, Quaedvlieg, and Wunder. 3,199,998.
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Erdmann, Hans, and Wurzel. 3,199,181.
Xerox Corp.: *See*—
Carlson, Chester F. 3,199,223.
Eichorn, Roger H., and Pease. 3,199,866.
Yake, William H., to Armco Steel Corp. Locking device for building panels and the like. 3,199,641, 8–10–65, Cl. 189—36.
Yamada, Shigeharu: *See*—
Nagumo, Jin-Ichi, Yamada, and Yamanaka. 3,200,265.
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Nagumo, Jin-Ichi, Yamada, and Yamanaka. 3,200,265.
Yeske, Laurel R., to J. I. Case Co. Agricultural implement. 3,199,279, 8–10–65, Cl. 56—305.
Yollin, Hubert D.: *See*—
Jacoby, Walter. 3,199,203.
Yost, William L., to Ciba Corp. Electrolytic reduction procedure for the production of diols. 3,200,053, 8–10–65, Cl. 204—75.
Youmans, Arthur H., to Well Surveys, Inc. Apparatus for neutron-neutron well logging. 3,200,251, 8–10–65, Cl. 250—83.1.
Young, Alan H., and M. B. Sampson, to The S-P Mfg. Corp. Dispersion baffle for air-oil tank. 3,199,417, 8–10–65, Cl. 92—79.

Young, Bill M., to Halliburton Co. Method of consolidating incompetent sands and composition therefor. 3,199,590, 8–10–65, Cl. 166—33.
Young, Frink M., to Adage, Inc. Overload protection circuit for high impedance amplifiers. 3,200,346, 8–10–65, Cl. 330—110.
Young, Robert W., Jr., and T. J. Armstrong, Jr. Musical dispensing container. 3,199 730, 8–10–65, Cl. 222—39.
Yuan, William K. C., to International Telephone and Telegraph Corp. Ring counter and marker. 3,200,204, 8–10–65, Cl. 179—18.
Zabetakis, Joseph S.: *See*—
Sleighter, George E., and Zabetakis. 3,199,401.
Zabinski, Edward F. Interferometric device and method for determining range. 3,199,400, 8–10–65, Cl. 88—1.
Zanon, Domenico, and C. Sperandio, to Edison. Process for the production of high strength, high purity hydrofluoric acid. 3,199,952, 8–10–65, Cl. 23—153.
Zeltz, Kenneth, J. M. Geist, and P. K. Lashmet, to Air Products and Chemicals, Inc. Methods for producing low temperature refrigeration. 3,199,304, 8–10–65, Cl. 62—79.
Zelinka, Johann: *See*—
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Zenith Radio Corp.: *See*—
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Zenzefilis, George E., to Potter Instrument Co., Inc. NRZ signal detector. 3,200,263, 8–10–65, Cl. 307—88.5.
Zero Mfg. Co.: *See*—
Hellmann, Leon, and Temple. 3,199,171.
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Burns, Ronald N., and Zetye. 3,199,624.
Zetye, Walter C., to General Motors Corp. Actuating mechanism. 3,199,367, 8–10–65, Cl. 74—512.
Zimmer, Thomas R.: *See*—
O'Malley, John J., Black, and Zimmer. 3,199,374.
Zingery, Wilbur L., to North American Aviation, Inc. Navigation device. 3,200 330, 8–10–65, Cl. 324—.5.
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	3,199,589	35	3,199,653	69	3,199,709	101	3,199,795	210	3,200,110	65	3,199,871
	3,199,590	41	3,199,654	219– 10.49	3,200,230		3,199,796	239	3,200,111	80.5	3,199,872
42	3,199,591	53	3,199,655	69	3,200,231	117	3,199,797	239.3	3,200,112	163	3,199,873
	3,199,592	88	3,199,656	73	3,200,232	242	3,199,798	239.5	3,200,113	170	3,199,874
54.6	3,199,593	127	3,199,657	74	3,200,233	294	3,199,799	239.55	3,200,114	275– 14	3,199,875
63	3,199,594	137	3,199,658	76	3,200,234	242– 55.12	3,199,800		3,200,115	277– 21	3,199,876
66.5	3,199,595	165	3,199,659	127	3,200,235		3,199,801	243	3,200,116	29	3,199,877
115	3,199,596	192	3,199,660	213	3,200,236	55.13	3,199,802		3,200,117	88	3,199,878
117	3,199,597		3,199,661	451	3,200,237	57	3,199,803	247.2	3,200,118	212	3,199,879
147	3,199,598		3,199,662	504	3,200,238	67.1	3,199,804	248	3,200,119	279– 121	3,199,880
173	3,199,599		3,199,663	220– 1	3,199,710	78	3,199,805	268	3,200,120	123	3,199,881
167– 30	3,200,034	220	3,199,664	3	3,199,711	128	3,199,806		3,200,121	280– 11.13	3,199,882
38.6	3,200,035	200– 6	3,200,208		3,199,712	129	3,199,807	279	3,200,122	11.14	3,199,883
	3,200,036	11	3,200,210	3.7	3,199,713	154	3,199,808	288	3,200,123	11.35	3,199,884
62	3,200,037		3,200,211	9	3,199,714	244– 12	3,199,809		3,200,124		3,199,885
65	3,200,038	18	3,200,209		3,199,715	53	3,199,810	290	3,200,125	11.37	3,199,886
82	3,200,039	61.34	3,200,212	44	3,199,716	76	3,199,811	293.4	3,200,126	18	3,199,887
88	3,200,040	67	3,200,213	82.5	3,199,717	135	3,199,812	294.8	3,200,127		3,199,888
169– 9	3,199,600	81.9	3,200,214	85	3,199,718		3,199,813	296	3,200,128	34	3,199,889
170–135.22	3,199,601	83	3,200,215	94	3,199,719	145	3,199,814	314.5	3,200,129	43.23	3,199,890
159	3,199,602	87	3,200,216	103	3,199,720	246– 182	3,200,245	319	3,200,130	47.31	3,199,891
171	3,199,603	88	3,200,217	221– 9	3,199,722		3,200,246	343.5	3,200,131	47.4	3,199,893
171– 27	3,199,604	92	3,200,218	47	3,199,723	248– 59	3,199,815	346.2	3,200,132	104.5	3,199,892
101	3,199,605	98	3,200,219	257	3,199,724	71	3,199,816	397.4	3,200,133	483	3,199,894
172– 95	3,199,606	111	3,200,220	290	3,199,725	87	3,199,817	397.45	3,200,134	281– 29	3,199,895
111	3,199,607	115.5	3,200,221	222– 1	3,199,726	156	3,199,818	429	3,200,135		3,199,896
234	3,199,608	144	3,200,222	20	3,199,727	188.9	3,199,819	439	3,200,136	33	3,199,897
556	3,199,609	150	3,200,223		3,199,728	224	3,199,820	448.2	3,200,137	285– 41	3,199,898
736	3,199,610	153	3,200,224	26	3,199,729	242	3,199,821	456	3,200,138	231	3,199,899
173– 24	3,199,611	166	3,200,225	39	3,199,730	243	3,199,822	458	3,200,139	302	3,199,900
93	3,199,612		3,200,226	56	3,199,731	265	3,199,823	459	3,200,140	364	3,199,901
174– 5	3,200,187	168	3,200,227	70	3,199,732	289	3,199,824	463	Re.25,835	287– 87	3,199,902
50.51	3,200,188		3,200,228		3,199,733	397	3,199,825	465.3	3,200,141	100	3,199,903
70	3,200,189	170	3,200,229	83.5	3,199,734	417	3,199,826	486	3,200,142	290– 42	3,200,255
75	3,200,190	202– 31	3,200,047	92	3,199,735	249– 41	3,199,827	501	3,200,143	294– 16	3,199,904
88	3,200,191	40	3,200,048	93	3,199,736	46	3,199,828	533	3,200,144	22	3,199,905
175– 5	3,199,613	117	3,200,049	99	3,199,737	94	3,199,829	543	3,200,145	86.15	3,199,906
19	3,199,614	176	3,200,050	129.2	3,199,738	202	3,199,830		3,200,146	86.29	3,199,907
73	3,199,615	236	3,200,051	130	3,199,739	250– 43.5	3,200,247	551	3,200,147	87.2	3,199,908
284	3,199,616	204– 23	3,200,052	146	3,199,740	51.5	3,200,248	555	3,200,148		3,199,909
404	3,199,617	75	3,200,053	182	3,199,741	77	3,200,250	559	3,200,149	88	3,199,910
176– 19	3,200,041	79	3,200,054	183	3,199,742	83.1	3,200,251	562	3,200,150	95	3,199,911
21	3,200,042	114	3,200,055	193	3,199,743	83.3	3,200,252	564	3,200,151	296– 28	3,199,912
30	3,200,043	154	3,200,056	255	3,199,744	85	3,200,253	570	3,200,152	97	3,199,913
	3,200,044	181	3,200,057	324	3,199,745	218	3,200,254	570.6	3,200,153	106	3,199,914
40	3,200,045		3,200,058	396	3,199,746	251–149.6	3,199,831		3,200,154	297– 42	3,199,915
41	3,200,046	186	3,200,059	453	3,199,747	152	3,199,832	584	3,200,155	223	3,199,916
177– 1	3,199,618	206– .5	3,199,665	517	3,199,748	176	3,199,833	610	3,200,156	385	3,199,917
136	3,199,619	.82	3,199,666	520	3,199,749	228	3,199,834	624	3,200,157	388	3,199,918
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5.1	Re.25,836	42	3,199,668	543	3,199,751	252– 8.5	3,200,070	651	3,200,159	300– 21	3,199,919
	Re.25,837	44.11	3,199,669	223– 10	3,199,752	8.55	3,200,071	653.5	3,200,160	301– 13	3,199,920
5.4	Re.25,833	45.34	3,199,670	111	3,199,753	37.2	3,200,072	666	3,200,161	37	3,199,921
	3,200,193	56	3,199,671	224– 5	3,199,754	40.5	3,200,073	668	3,200,162	59	3,199,922
6	3,200,194	208– 24	3,200,060	225– 3	3,199,755	49.6	3,200,074	671	3,200,163	302– 29	3,199,923
6.8	3,200,195	58	3,200,061	226– 76	3,199,756	51.5	3,200,075		3,200,164	36	3,199,924
	3,200,196	87	3,200,062	229– 1.5	3,199,757		3,200,076	674	3,200,165	52	3,199,925
25	3,200,197	111	3,200,063	2.5	3,199,758	65	3,200,077	681.5	3,200,166	303– 2	3,199,926
69.5	3,200,198	280	3,200,064	15	3,199,759	137	3,200,078		3,200,167	21	3,199,927
179– 1	3,200,199	321	3,200,065	16	3,199,760	161	3,200,079	683.15	3,200,169	22	3,199,928
7.1	3,200,200	342	3,200,066	17	3,199,761	358	3,200,080		3,200,170	307– 88	3,200,256
15	3,200,201	209– 72	3,199,672	27	3,199,762	443	3,200,081	683.62	3,200,171	88.5	3,200,257
18	3,200,202	79	3,199,673	37	3,199,763	455	3,200,082	683.9	3,200,168		3,200,258
	3,200,203	110	3,199,674		3,199,764		3,200,083	831	3,200,172		3,200,259
	3,200,204	332	3,199,675	40	3,199,765	462	3,200,084	878	3,200,173		3,200,260
84	3,200,205	210– 24	3,200,067	54	3,199,766	478	3,200,085	889	3,200,174		3,200,261
100.1	3,200,206	54	3,200,068	60	3,199,767	253– 77	3,199,836	261– 3	3,199,846		3,200,262
100.2	3,200,207	63	3,200,069	68	3,199,768	254– 1	3,199,837	35	3,199,847		3,200,263
180– 9.58	3,199,620	114	3,199,676	74	3,199,769	60	3,199,838	263– 19	3,199,848		3,200,264
11	3,199,621	128	3,199,677	230– 27	3,199,770	89	3,199,839		3,199,849		3,200,265
14	3,199,622	169	3,199,678	47	3,199,771	192	3,199,840	32	3,199,850		3,200,266
31	3,199,623	259	3,199,679	56	3,200,249	193	3,199,841	33	3,199,851		3,200,267

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308– 4	3,199,929	314– 68	3,200,285	234	3,200,310	325–144	3,200,336		3,200,361	237	3,200,387
6	3,199,930	315– 3.5	3,200,286		3,200,311	420	3,200,337	18	3,200,362	242	3,200,388
9	3,199,931	12	3,200,287	246	3,200,312	328– 35	3,200,338	93	3,200,363	244	3,200,389
10	3,199,932	27	3,200,288	262	3,200,313	46	3,200,339	99	3,200,364	248	3,200,390
121	3,199,933		3,200,289	318– 33	3,200,314	63	3,200,340	103	3,200,365	252	3,200,391
199	3,199,934	99	3,200,290	138	3,200,315	200	3,200,341	130	3,200,366	253	3,200,392
217	3,199,935	205	3,200,291		3,200,316	330– 4.5	3,200,342	198	3,200,367	276	3,200,393
310– 3	3,200,269	316– 5	3,199,939	220	3,200,317	17	3,200,343	265	3,200,368	324	3,200,394
8.5	3,200,270	317– 2	3,200,292	246	3,200,318	24	3,200,344	340– 10	3,200,369	347	3,200,395
8.9	3,200,271	5	3,200,293	320– 2	3,200,319	29	3,200,345	52	3,200,370	378	3,200,396
68	3,200,272	13	3,200,294		3,200,320	110	3,200,346	84	3,200,371	343– 7.4	3,200,397
	3,200,273	83	3,200,295	321– 3	3,200,321	331– 16	3,200,347	146.1	3,200,372	11	3,200,398
	3,200,274	100	3,200,296	18	3,200,322	62	3,200,348		3,200,374	12	3,200,399
90	3,200,275	101	3,200,297	322– 28	3,200,323	116	3,200,349	146.3	3,200,373	18	3,200,400
191	3,200,276		3,200,298	32	3,200,324	166	3,200,350	147	3,200,375	100	3,200,401
209	3,200,277	123	3,200,299	323– 43.5	3,200,325	332– 14	3,200,351	164	3,200,376	346– 38	3,200,402
225	3,200,278	141	3,200,300	74	3,200,326	333– 10	3,200,352	168	3,200,377	61	3,200,403
312–208	3,199,936		3,200,301	89	3,200,327	24.1	3,200,353	172.5	3,200,378	62	3,200,404
221	3,199,937		3,200,302		3,200,328	30	3,200,354		3,200,379	109	3,200,405
333	3,199,938	142	3,200,303	94	3,200,329	79	3,200,355		3,200,380	351– 52	3,200,406
313–108	3,200,279	146	3,200,304	324– .5	3,200,330	95	3,200,356	174	3,200,381	352– 14	3,200,407
110	3,200,280		3,200,305	106	3,200,331	336– 20	Re.25,834		3,200,382		3,200,408
111	3,200,281		3,200,306	146	3,200,332	205	3,200,357		3,200,383	60	3,200,409
114	3,200,282	147	3,200,307	150	3,200,333	217	3,200,358	174.1	3,200,384	84	3,200,410
269	3,200,283	148.5	3,200,308	154	3,200,334	338–152	3,200,359		3,200,385	140	3,200,411

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D 3– 26	201,861	D15– 1	201,876		201,891		201,905		201,919	4	201,933
D 4– 3	201,862		201,877	15	201,892		201,906		201,920	D71– 1	201,934
D 7– 5	201,863		201,878		201,893	D48– 14	201,907		201,921	D74– 2	201,935
	201,864		201,879	D42– 7	201,894	20	201,908	D58– 12.6	201,922	D80– 8	201,936
	201,865	D18– 2	201,880		201,895	31	201,909		201,923	D81– 10	201,937
D 9– 2	201,866	D20– 2	201,881	D44– 1	201,896	D52– 1	201,910	12.7	201,924	25	201,938
	201,867	4	201,882		201,897	2	201,911	13	201,925	D83– 1	201,939
	201,868	D22– 2	201,883	10	201,898		201,912	17	201,926		201,940
D10– 8	201,869	D26– 1	201,884		201,899	6	201,913		201,927	D85– 2	201,941
9	201,870		201,885		201,900	7	201,914		201,928		201,942
D13– 1	201,871	5	201,886	15	201,901	D54– 13	201,915	D61– 1	201,929	8	201,943
	201,872		201,887	21	201,902	D55– 1	201,916		201,930	D86– 10	201,944
	201,873	D29– 17	201,888	29	201,903		201,917	D62– 2	201,931	D92– 26	201,945
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	3,200,177		3,199,617		3,200,154		3,199,676		3,199,410		3,199,532
	3,200,370		3,199,664		3,200,155		3,199,708		3,199,437		3,199,645
42	3,199,149		3,199,666		3,200,166		3,199,761		3,199,484		3,199,648
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	3,199,518		3,199,878		3,200,329		3,200,118		3,200,070		3,200,235
	3,199,523		3,199,898		3,200,398		3,200,314	48	3,199,133		3,200,258
	3,199,593		3,199,904		3,200,409		3,200,357		3,199,142		3,200,291
	3,199,595		3,199,905	43	3,199,623		3,200,369		3,199,157		3,200,293
	3,199,596		3,199,906	45	3,199,153		3,200,374		3,199,159		3,200,358
	3,199,597		3,200,059		3,199,230	46	3,199,310		3,199,383	50	3,199,946
	3,199,598		3,200,062		3,199,240		3,199,369		3,199,435		3,200,206
	3,199,599		3,200,065								

Design Patents

2	201,886	6	201,862	20	201,910	29	201,928	31	201,924	37	201,907
	201,887		201,866	21	201,889	31	201,863		201,926		201,915
4	201,861		201,903	22	201,860		201,871		201,929		201,919
	201,868	7	201,881		201,879		201,880		201,935		201,921
	201,869	10	201,941		201,914		201,885		201,936		201,945
	201,875		201,942	24	201,931		201,890	32	201,877	38	201,864
	201,878	12	201,883		201,932		201,892	34	201,876		201,900
	201,891		201,895	26	201,884		201,893		201,896	39	201,873
	201,898		201,905	29	201,870		201,902		201,897		201,874
	201,906		201,913		201,872		201,904		201,912	42	201,927
	201,908		201,930		201,882		201,911		201,943		201,934
	201,916		201,940		201,888		201,918	35	201,901	48	201,899
	201,917		201,944		201,894		201,920		201,933		201,909
	201,937	19	201,865		201,925		201,923		201,938		201,922
	201,939	20	201,867								

Plant Patents

31	2,547

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

August 10, 1965 Volume 817 Number 2

TRADEMARKS

NOTICES

Annual Index of Patents

The 1964 edition of the Annual Index of Patents has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $6.75.

Examination

Pursuant to the provisions of Rule 341(c), an examination for persons seeking registration before the United States Patent Office as patent attorneys or agents will be held Tuesday, November 9, 1965.

With the exception of former patent examiners for whom the examination is waived, all persons recognised for practice before the Patent Office in patent cases must, pursuant to the noted rule, pass the examination. Those passing the examination do not thereby qualify for recognition for practice before the Patent Office in trademark cases. Recognition for practice in trademark cases is governed by Rule 2.12 of the Trademark Rules of Practice, which does not require the passing of an examination.

The examination will be given under the supervision of the Civil Service Commission, and may be taken in any of the cities of the country in which the Civil Service Commission regularly conducts examinations. Applications to take the examination must be filed in the Patent Office together with a $15 fee not later than October 5, 1965.

Application blanks may be obtained from the Clerk of the Patent Office Committee on Enrollment, Room 3718, Department of Commerce Building, Washington, D.C., 20231.

EDWIN L. REYNOLDS,
July 14, 1965. *Chairman, Committee on Enrollment.*

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 231,269 (ALCOA), Aluminum Company of America, Ingots of Aluminum and aluminum base alloys; Reg. No. 234,906, same, Aluminum sand mold and permanent mold castings, aluminum billets and ingots, aluminum forgings and extruded shapes, etc.; Reg. No. 234,907 (ALCOA AND DESIGN), same; Reg. No. 235,250 (ALCOA), same, Aluminum cable, steel reinforced aluminum cable, and condenser blades, all for electrical use; Reg. No. 235,251 (ALCOA AND DESIGN), same; Reg. No. 236,617 (ALCOA), same, Metal cable

CONDITION OF TRADEMARK APPLICATIONS AS OF JUNE 30, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	16,698
Date of oldest new application	Jan. 2, 1965
Date of oldest amended application	Jan. 4, 1965

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	1-2-65	1-4-65
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-4-65	1-4-65
Renewals (All Classes)	6-8-65	6-22-65
Sec. 12 (c) Publications (All Classes)	6-16-65	-------

Applications filed during the month of June 1965—2,486

Registrations Issued	389—No. 793,854 to No. 794,242
Renewals Issued	70

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PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

clamps, devices for preventing vibration of electric cables, nonferrous tubing, rivets, and nails; Reg. No. 226,615 (ALCOA AND DESIGN), same; Reg. No. 228,976 (ALCOA), same, Aluminum shingles, corrugated roofing, downspouts, and gutters and flashings; Reg. No. 229,977 (ALCOA AND DESIGN), same, filed Mar. 4, 1965, D.C. Del. (Wilmington), Dec. 2064, *Aluminum Company of America* v. *Alcoa Steel Corporation*.

Reg. No. 246,035 (BRIGHT STAR—BRIGHT STAR BATTERY CO. ETC. AND DESIGN), Bright Star Battery Co., Electric batteries—viz, A and B batteries; Reg. No. 267,941 (DESIGN OF STAR), same, Electric batteries—viz, flashlight batteries, radio and wireless batteries, dry cells, etc.; Reg. No. 268,899 (BRIGHT STAR AND DESIGN), same, Dry cell batteries and flashlight casings; Reg. No. 575,040, same Photoflash battery and bulb tester; Reg. No. 707,991, same, Bright Star Industries, Photoflash batteries and bulb testers; Reg. No. 714,870, same, Dry cell batteries, radio batteries, ignition batteries, lantern batteries, flashlights, flashlight casings, and lanterns, filed Mar. 5, 1965, D.C., E.D. Pa. (Philadelphia), Doc. 37622, *Bright Star Industries, Inc.* v. *J. Kindermen & Sons, Inc. et al.* Same, filed Oct. 29, 1964, D.C., S.D.N.Y., Doc. 64/3817, *Bright Star Industries, Incorporated* v. *Star-Lite Electronics Corp et ano.* Stipulation and order of dismissal without prejudice May 24, 1965.

Reg. No. 247,941. (See Reg. No. 246,035.)

Reg. No. 264,906. (See Reg. No. 231,269.)

Reg. No. 264,907. (See Reg. No. 231,269.)

Reg. No. 265,269. (See Reg. No. 231,269.)

Reg. No. 265,551. (See Reg. No. 231,269.)

Reg. No. 266,617. (See Reg. No. 231,269.)

Reg. No. 266,618. (See Reg. No. 231,269.)

Reg. No. 268,976. (See Reg. No. 231,269.)

Reg. No. 268,977. (See Reg. No. 231,269.)

Reg. No. 268,269. (See Reg. No. 246,035.)

Reg. No. 402,270 (FURACIN), The Norwich Pharmacal Company, Antiseptics and germicides; Reg. No. 441,715, same, Eaton Laboratories, Inc., Antibacterial preparations; 2,490,-008, W. Kimel et al., PROCESS OF NITRATING FURAN DERIVATIVES; 2,538,172, R. B. Raffaud, PROCESS OF MAKING 5-NITRO-2-FURALDEHYDE SEMICARBAZONE; 2,512,268, V. R. Ells, STABILIZED AQUEOUS SOLUTION OF NITROFURAZONE; 2,538,705, G. Swain, PREPARATION OF 5-NITRO-2-FURALDEHYDE SEMICARBAZONE; 2,538,205, J. G. Michels, NITRATING AN N-(2-FURYL) ALKYLIDENE HYDRAZINE COMPOUND; 2,567,130, Gever and O'Keefe, PROCESS FOR THE PREPARATION OF AZOMETHINES OF 5-NITRO-2-FORMYL FURAN WITH HYDRAZINE COMPOUNDS, filed Aug. 17, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C210(1), *The Norwich Pharmacal Company* v. *Performance Products Company*. Final consent judgment; patents and trademarks held valid; defendant enjoined Mar. 1, 1965.

Reg. No. 419,688 (ANNACLAIRS in script), Price Candy Company, Candy, filed Mar. 26, 1965, D.C., W.D. Pa. (Pittsburgh), Doc. 65–325, *Price Candy Company* v. *Cargo's Candy Co., Inc.*

Reg. No. 441,715. (See Reg. No. 402,270.)

Reg. No. 457,269 (DRAMAMINE), G. D. Searle & Co., Dimenhydrinate tablets useful in the prevention and treatment of motion sickness, nausea, and vomiting, and a histamine antagonist, filed Sept. 25, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–941, *G. D. Searle & Co.* v. *Dramamine Pharmaceuticals, Inc.* Consent judgment for injunction Mar. 31, 1965.

Reg. No. 502,459 (FAB AND DESIGN), Colgate-Palmolive-Peet Company, Sudsing cleaner, cleanser and detergent, filed Apr. 3, 1964, D.C., S.D.N.Y., Doc. 64/1048, *Colgate Palmolive Company* v. *North American Chemical Corporation*. Consent judgment; defendant enjoined Mar. 8, 1965.

Reg. No. 508,011 (CSC AND DESIGN), Commercial Solvents Corporation, Acetic acid, acetone, 2-amino-1-butanol, 2-amino-2-ethyl-1, etc., filed Mar. 17, 1965, D.C., N.D. Tex. (Dallas), Doc. 3–904, *Commercial Solvents Corporation* v. *Chemical Solvents Corporation*.

Reg. No. 508,199 (BUFFERIN), Bristol-Myers Company, Antacid asprin, filed Mar. 16, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c890, *Bristol-Myers Co.* v. *Jules Press Pharmacal Co. et al.* Final consent judgment; trademark held valid and infringed; defendants enjoined July 7, 1965.

Reg. No. 575,040. (See Reg. No. 246,035.)

Reg. No. 609,626 (PLAYBOY), HMH Publishing Co., Inc., Monthly magazine; Reg. No. 622,936 (DESIGN OF HEAD OF RABBIT), same; Reg. No. 645,599 (PLAYBOY), same, Cuff links; Reg. No. 659,413, same, Mechanically grooved phonograph records; Reg. No. 661,224 (PLAYBOY'S PLAYMATE OF THE MONTH), same, Feature in the magazine "Playboy," published monthly; Reg. No. 662,606 (DESIGN OF HEAD OF RABBIT), same, Mechanically grooved phonograph records; Reg. No. 670,227, same, Cocktail glasses, filed Apr. 1, 1965, D.C., N.D. Calif. (San Francisco), Doc. 48459, *HMH Publishing Co. et al.* v. *Patrick J. Payandes et al.*

Reg. No. 688,742 (GOLD STRIKES), Farah Manufacturing Company, Inc., Jeans, filed June 26, 1962, D.C., S.D.N.Y., Doc. 63/1902, *Farah Manufacturing Company, Inc.* v. *Cheltenham Gotham, Inc.* Stipulation and order of dismissal Mar. 12, 1965.

Reg. No. 662,115 (EQUANIL), American Home Products Corporation, doing business as Wyeth Laboratories, Division of American Home Products Corporation, Intermuscular blocking agent, filed Mar. 18, 1965, D.C., W.D. Ky. (Owensboro), Doc. 2064, *American Home Products Corporation* v. *Don Peeler Pharmacy*. Final consent judgment; defendant enjoined July 6, 1965.

Reg. No. 667,060 (R AND DESIGN), Regent Cutlery Co., Stainless steel ware for tableware and kitchenware—namely, for knives, forks, spoons, carving sets, etc., filed Mar. 26, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–81, *Regent-Sheffield, Ltd.* v. *Lifetime Cutlery Corp.*

Reg. No. 639,770 (FROSTIE AND DESIGN), The Frostie Company, Root beer and extract for making same; Reg. No. 643,870 (FROSTIE OLD FASHION in script), same, Root beer, and syrups and extracts therefor; Reg. No. 659,894 (FROSTIE OLD FASHION (in script) ROOT BEER ETC. AND DESIGN), same, Root beer and syrups and extracts from which a soft drink having a root beer flavor may be prepared; Reg. No. 662,486 (FROSTIE), same, Root beer and extract for making same; Reg. No. 662,622 (FROSTIE OLD FASHION (in script) ROOT BEER ETC. AND DESIGN), same, Root beer; Reg. No. 673,542 (MR. FROSTIE in script), same; Reg. No. 720,206 (FROSTIE AND DESIGN), same, Soft drinks and flavoring bases for making the same; Reg. No. 722,206, same, Paper drinking cups; Reg. No. 722,606, same, Glass bottles, filed Oct. 15, 1962, D.C. Colo. (Denver), Doc. 8389, *The Frostie Company* v. *Dr. Pepper Company*. Transferred: Nov. 14, 1962, D.C., N.D. Tex. (Dallas), Doc. 3–62–361. Judgment in favor of defendant July 8, 1964. Appealed, C.C.A., 5th Cir., Doc. 21836, *The Frostie Company* v. *Dr. Pepper Company*. Judgment of District Court reversed and remanded Feb. 12, 1965. Judgment for plaintiff; injunction granted June 28, 1965.

Reg. No. 662,670. (See Reg. No. 639,770.)

Reg. No. 662,740 (MATCHBOX SERIES AND DESIGN), J. Kohnstam, Ltd., Toy model vehicles and toy model machines, filed Feb. 20, 1964, D.C., S.D.N.Y., Doc. 64/556, *Leesey Products & Co., Limited* v. *B. Shackman & Co.* Order of discontinuance Mar. 9, 1965.

Reg. No. 645,226. (See Reg. No. 600,018.)

Reg. No. 645,226. (See Reg. No. 600,018.)

Reg. No. 650,594. (See Reg. No. 639,770.)

Reg. No. 652,412. (See Reg. No. 600,018.)

Reg. No. 652,706 (TAFFY'S (in script) OF CALIFORNIA), Taffy Original Designs, Inc., Dresses, tunics, blouses, skirts, sweaters and lingerie—namely, brassieres, slips, panties, nightgowns, pajamas, and robes, filed Mar. 8, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c945, *Taffy Original Designs, Inc.* v. *Taffy's, Inc.*

Reg. No. 658,495. (See Reg. No. 639,770.)

Reg. No. 661,291. (See Reg. No. 600,018.)

Reg. No. 662,655. (See Reg. No. 639,770.)

Reg. No. 675,896. (See Reg. No. 600,018.)

Reg. No. 678,542. (See Reg. No. 639,770.)

Reg. No. 679,907. (See Reg. No. 600,018.)

Reg. No. 686,626 (PRUDENTIAL), The Prudential Insurance Company of America, Services in providing individual and group life and sickness and accident insurance protection and annuities, filed Mar. 9, 1965, D.C. Mass. (Boston), Doc. 65–194–F, *The Prudential Insurance Company of America* v. *Ekco Products Company et al.* Same, filed Mar. 10, 1965, D.C.

Mass. (Boston), Doc. 65–196–S, *The Prudential Insurance Company of America* v. *Prudential Mortgage Company, Inc.*

Reg. No. 707,991. (See Reg. No. 246,035.)

Reg. No. 714,870. (See Reg. No. 246,035.)

Reg. No. 714,701 (McMULLEN AND DESIGN), J. R. McMullen Company, Inc., Women's blouses, women's sweaters, dresses, skirts, women's slacks and shorts, filed Mar. 10, 1965, D.C., S.D.N.Y., Doc. 65/721, *J. R. McMullen Co., Inc.* v. *E. J. Korvette, Inc.* Same, Doc. 65/722, *J. R. McMullen Co., Inc.* v. *Popular Merchandise Co., Inc.*

Reg. No. 720,206. (See Reg. No. 639,770.)

Reg. No. 745,595 (COMMUNITY CLUB AWARDS, ETC. AND DESIGN), Community Club Services, Inc., Promoting the sale of goods and services of others by means of contests in which various groups compete for prizes, the winners being those who turn in the most retail sales slips from participating firms, filed Mar. 22, 1965, D.C., S.D.N.Y., Doc. 65/845, *Community Club Awards, Inc.* v. *Beecee Broadcasting Corp.*

Reg. No. 752,206. (See Reg. No. 639,770.)

Reg. No. 756,654. (See Reg. No. 639,770.)

Reg. No. 762,576 (BOOBY-TRAP), Guild Toys, Inc., Equipment sold as a unit for playing a board or parlor game, filed Mar. 22, 1965, D.C., S.D.N.Y., Doc. 65/847, *Parker Brothers, Inc.* v. *Jilmer Company, Inc.*

Reg. No. 767,273 (DANIEL BOONE), Aladdin Industries, Incorporated, Lunch boxes, lunch kits comprising a carrying case containing thermos bottles, heat insulated receptacles such as thermos bottles and pitchers, filed Mar. 4, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c831, *Aladdin Industries, Inc.* v. *King-Seely Thermos Co.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 177,215. K. V. Alger, d.b.a. K. V. Alger Co., Clovis, Calif. Filed Sept. 18, 1963.

KVA

Class 5—Adhesives

For Dry Wall Adhesives.

Class 12—Construction Materials

For Texturing Compounds for Use on Wall Surfaces To Give the Appearance of Plaster.

First use Jan. 9, 1963.

SN 187,585. Hofford Varnish Co., Inc., Carlstadt, N.J. Filed Feb. 27, 1964.

hofford

Owner of Reg. Nos. 417,802 and 480,847.

Class 4—Abrasives and Polishing Materials

For Waxes for Floors and Other Surfaces—Namely, Paste Wax for Wood Floors and Emulsion Wax for Asphalt and Rubber Tile.

First use Jan. 15, 1956.

Class 16—Protective and Decorative Coatings

For Coating and Finishing Products—Namely, Varnishes for Floors and Other Surfaces, Shellac, Floor Seals, and Floor Lacquer.

First use Jan. 16, 1961; September 1944 as to "Hofford."

Class 52—Detergents and Soaps

For Paint and Varnish Remover.

First use Jan. 15, 1956.

SN 196,560. RoBoCo, Inc., Liberal, Kans. Filed June 26, 1964.

RoBoCo

Class 12—Construction Materials

For Paneling.

First use Mar. 12, 1963.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Combined Vanity Top and Sink, Combined Counter Top and Sink, Tub and Shower Enclosure, and Sink Bowl.

First use Mar. 2, 1963.

Class 32—Furniture and Upholstery

For Chairs, Desk Tops, Vanity Cabinet, and Tables.

First use Feb. 11, 1963.

SN 199,549. Electronic Futures, Inc., North Haven, Conn. Filed Aug. 10, 1964.

efi

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Transmitter and Receiver Apparatus.

Class 36—Musical Instruments and Supplies

For Sound Recording and Reproducing Apparatus.

First use Sept. 7, 1962.

SN 201,515. John H. Breck, Inc., Springfield, Mass. Filed Sept. 9, 1964.

ONCE

Class 51—Cosmetics and Toilet Preparations

For Preparation for the Treatment of Dandruff, Creme Rinse for Making Hair Manageable and Restoring Natural Smoothness, Waveset, and Hairspray.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Aug. 26, 1964.

SN 205,555. American Enka Corporation, Enka, N.C. Filed Nov. 5, 1964.

ENKROME

Owner of Reg. No. 746,782.

Class 1—Raw or Partly Prepared Materials

For Synthetic Staple Fiber.

Class 43—Thread and Yarn

For Yarns.

First use Sept. 4, 1964.

SN 211,599. The Tresler Oil Company, Cincinnati, Ohio. Filed Feb. 8, 1965.

Class 6—Chemicals and Chemical Compositions

For Anti-Freeze.

Class 15—Oils and Greases

For Motor Oil.

First use Nov. 15, 1964.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 174,399. Magnolia Plastics, Inc., Chamblee, Ga. Filed Aug. 5, 1963.

MAGNOLIA PLASTICS, Inc.

Applicant claims no rights to the use of the words "Plastics, Inc." except in connection with the mark as shown.

For Mix-In-Place Plastics, Specifically a Compound and Curing Agent Sold as a One-Part, Two-Part, and Multi-Part Package.

First use Aug. 14, 1957.

SN 180,998. Armstrong Cork Company, Lancaster, Pa. Filed Nov. 13, 1963.

ARMAPOL

For Curable Styrene-Containing Polymer in Solution for Forming Hard Coatings on Surfaces.

First use Nov. 4, 1963.

SN 195,083. Fiberfil, Inc., Evansville, Ind. Filed June 8, 1964.

PROGLAS

For Plastics, Specifically Synthetic Injection Molding Materials in Pellet or Granular Form.

First use May 13, 1964.

SN 195,084. Fiberfil, Inc., Evansville, Ind. Filed June 8, 1964.

PLASLODE

Owner of Reg. No. 747,990.

For Plastics, Specifically Synthetic Injection Molding Materials in Pellet or Granular Form.

First use on or about May 1, 1964.

SN 195,086. Fiberfil, Inc., Evansville, Ind. Filed June 8, 1964.

CARBAGLAS

Owner of Reg. No. 742,798.

For Plastics, Specifically Synthetic Injection Molding Materials in Pellet or Granular Form.

First use on or about Apr. 15, 1964.

SN 204,153. Fiber Glass Industries, Inc., Amsterdam, N.Y. Filed Oct. 16, 1964.

ROVLOK

For Woven Textile Made of Strands of Fiber Glass.

First use Sept. 11, 1964.

SN 205,813. H. V. Hardman Company Incorporated, Belleville, N.J. Filed Nov. 9, 1964.

KALEX

For Elastomeric Compounds for Use as an Adhesive, Sealant and Potting Compound.

First use Oct. 13, 1964.

SN 206,542. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Nov. 19, 1964.

HOOKER

Owner of Reg. Nos. 522,603, 555,557, and others.

For Synthetic Resins and Synthetic Resin Mixtures Containing Filler Materials for General Use in the Industrial Arts.

First use at least as early as December 1924.

SN 212,205. E. B. & A. C. Whiting Company, Burlington, Vt. Filed Feb. 17, 1965.

PROSTAR

For Polypropylene Filament Useful as a Fiber for Filling Brushes.

First use Jan. 22, 1965.

SN 212,403. Fred Rueping Leather Company, Fond du Lac, Wis. Filed Feb. 19, 1965.

YUMA

For Leathers.

First use Oct. 21, 1958.

SN 217,081. Atlantic Company, Atlanta, Ga. Filed Apr. 22, 1965.

For Fragmented Ice.

First use in or about April 1964.

SN 217,589. Armstrong Cork Company, Lancaster, Pa. Filed Apr. 29, 1965.

PEDLON

For Bonded Leather Fibers in the Form of Sheets.

First use Apr. 23, 1965.

SN 218,212. Neville Chemical Company, Pittsburgh, Pa. Filed May 6, 1965.

NEVOXY

For Solid, Synthetic, Copolymers Compatible With Other Synthetic and Natural Resins, Tars and Waxes, and Useful as Extenders Therefor.

First use May 13, 1964.

SN 214,404. The Dow Chemical Company, Midland, Mich. Filed May 10, 1965.

DERAKANE

Owner of Reg. Nos. 697,630, 714,294, and others.
For Synthetic Resins.
First use Apr. 28, 1965.

Class 2—Receptacles

SN 202,260. Delaware Barrel and Drum Company, Inc., Wilmington, Del. Filed Sept. 21, 1964.

DEL-TANGULAR

For Plastic Jugs for Foods, Chemicals, and the Like.
First use Sept. 8, 1964.

SN 216,068. Doaray Products Company, Cleveland, Ohio. Filed Apr. 8, 1965.

FOAMCAN

For Self-Contained Packaging Unit of Expanded Plastic Particularly Useful for Delicate and Fragile Objects.
First use October 1961.

Class 4—Abrasives and Polishing Materials

SN 198,862. Dumont & Dougherty, Inc., Chicago, Ill. Filed May 20, 1964.

GliSun

For Pressurized Cleaning and Polishing Wax for Smooth Metal, Enameled, Ceramic, and Similar Surfaces.
First use on or about Apr. 30, 1964.

SN 202,256. Garry Laboratories, Inc., Buffalo, N.Y. Filed Sept. 21, 1964.

GARRY'S

Owner of Reg. Nos. 604,943, 711,365, and others.
For Single Step Combined Cleaning and Polishing Preparation for Placing New Cars in Condition for Showroom Display or Delivery.
First use Mar. 2, 1959.

SN 204,656. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 28, 1964.

GAYLORD

For Furniture Polish.
First use on or about Apr. 1, 1946.

Class 5—Adhesives

SN 204,654. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 28, 1964.

GAYLORD

Owner of Reg. No. 508,614.
For Liquid Paste, Glue, Gummed and Tape Adhesives for Library Use.
First use on or about Dec. 15, 1906.

Class 6—Chemicals and Chemical Compositions

SN 181,407. Precision Chemicals, Inc., Atlanta, Ga. Filed Nov. 18, 1963.

PRECISION

For Scale and Corrosion Inhibitors for Air Conditioning and Refrigeration Systems, and Algaecides.
First use May 21, 1961.

SN 182,379. United States Rubber Company, New York, N.Y. Filed Dec. 4, 1963.

THIOSTOP

For Polymerisation Short Stops.
First use 1949 or earlier.

SN 182,381. United States Rubber Company, New York, N.Y. Filed Dec. 4, 1963.

ETHAZATE

For Vulcanization Accelerator.
First use 1941.

SN 182,383. United States Rubber Company, New York, N.Y. Filed Dec. 4, 1963.

BUTAZATE

For Vulcanization Accelerator.
First use 1941.

SN 182,384. United States Rubber Company, New York, N.Y. Filed Dec. 4, 1963.

METHAZATE

For Vulcanization Accelerator.
First use 1941.

SN 183,242. Larousse Incorporated, New York, N.Y., assignee of Victor Babbitt, d.b.a. Larousse Chemical Co., New York, N.Y. Filed Dec. 19, 1963.

WIFE SAVERS

For Perfumed Deodorants in Cake and Pad Form for Use in Rooms.
First use Dec. 4, 1963.

SN 196,551. Socony Mobil Oil Company, Inc., New York, N.Y. Filed Apr. 7, 1964.

BACATS

Owner of Reg. No. 668,961.
For Quaternary Ammonium Tablets for Use in Sanitizing, Deodorizing, and Disinfecting Eating and Drinking Utensils, and Food Industry Equipment.
First use Mar. 31, 1949.

SN 196,795. Kem Manufacturing Corporation, Atlanta, Ga. Filed May 19, 1964.

SAFETICIDE

For Insecticide.
First use May 1, 1957.

SN 196,988. W. R. Grace & Co., Cambridge, Mass. Filed June 19, 1964.

AGGRETEX

Owner of Reg. No. 746,121.
For Chemical Powder for Retarding Setting of Concrete and Mortar Surfaces.
First use June 1959.

SN 196,861. Airkem, Inc., New York, N.Y. Filed July 1, 1964.

AIR-O-DIZED

For Odor Control Preparations for Industrial Use.
First use June 12, 1964.

SN 197,902. Pyrofax Gas Corporation, New York, N.Y. Filed July 15, 1964.

For Compressed Propane Gas.
First use on or about Apr. 1, 1963.

SN 198,449. Wright Chemical Corporation, Chicago, Ill. Filed July 23, 1964.

WRICO

For Corrosion Inhibitors, Rust and Scale Inhibitors, Fungicides, and Algaecides.
First use in or about the year of 1955 on corrosion inhibitors and rust and scale inhibitors.

SN 199,510. Tumpil Corporation, New York, N.Y. Filed Aug. 7, 1964.

Temptlaq

For Temperature Indicating Fluid Compositions and Thinning Fluids Used in Connection Therewith.
First use Apr. 15, 1942.

SN 204,734. Woodbury Chemical Company, St. Joseph, Mo. Filed Oct. 28, 1964.

STA-THION

For Agricultural Insecticide Compound.
First use Apr. 6, 1964.

SN 204,735. Woodbury Chemical Company, St. Joseph, Mo. Filed Oct. 28, 1964.

HEPA-THION

For Agricultural Insecticide Compound.
First use May 7, 1964.

SN 205,978. West Chemical Products, Inc., Long Island City, N.Y. Filed Nov. 10, 1964.

ODO-SAN

For Deodorants, Which Also Inhibit the Growth of Bacteria, for Industrial and Institutional Use.
First use Oct. 12, 1964.

SN 206,472. The Procter & Gamble Company, Cincinnati, Ohio. Filed Nov. 18, 1964.

BLIZZARD

For Powdered Bleach.
First use Sept. 1, 1964.

SN 206,869. Madison Throwing Company, Inc., Madison, N.C. Filed Nov. 24, 1964.

FLUROL

For Fluorescent Type Lubricating Oil for Use on Synthetic Yarns Particularly in the Plaiting of Hosiery.
First use on or about Aug. 19, 1964.

SN 207,206. Industrial Molding Corporation, Gardena, Calif. Filed Dec. 2, 1964.

FLY STOP

Applicant makes no claim of exclusive right to the word "Fly" apart from the mark as shown.
For Insecticide—Namely, a Preparation for Killing Flies.
First use Aug. 1, 1963.

SN 207,964. Illinois Bronze Powder & Paint Co., Chicago, Ill. Filed Dec. 11, 1964.

CANDLE MUM

For Liquid Composition for Spraying Upon Flowers To Prevent Shedding of Flower Petals.
First use on or about Sept. 28, 1964.

SN 208,331. Blue Arrow, Inc., Jacksonville, Fla. Filed Dec. 17, 1964.

WHITE ARROW

Owner of Reg. No. 660,721.
For Starch and Bleach.
First use 1957.

SN 209,070. Dow Corning Corporation, Midland, Mich. Filed Dec. 30, 1964.



Owner of Reg. Nos. 570,268, 667,008, and others.
For Silicon; Silicones; Fluorosilicones; Compositions Containing Silicones; Silanes; Silicon Chemicals; Organo-Metallic Compounds; Defoamers; Sterilising, Hydraulic, Damping, Heat Transfer, and Diffusion Pump Fluids; Catalysts; Water Repellent; Plastisol Additives; Surfactants for Use in the Manufacture of Urethanefoam.
First use Sept. 21, 1964.

SN 209,287. Metacomet, Incorporated, Hawthorne, N.J. Filed Jan. 4, 1965.



For Photographic Chemicals.
First use April 1963.

SN 209,888. Weston Chemical Corporation, Newark, N.J. Filed Jan. 13, 1965.



For Industrial Chemicals Containing Phosphorus Compounds—Namely, Triphenyl Phosphite and Phenyl Didecyl Phosphite Sold for Further Manufacturing Use.
First use Dec. 8, 1964.

SN 215,710. Warren L. Crawford, d.b.a. Quality Water, Urbana, Ill. Filed Apr. 5, 1965.

Queen's delight

For Demineralized Water.
First use Mar. 12, 1965.

Class 7 — Cordage

SN 204,655. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Tying Tape and Book Repair Cord for Library Use.
First use on or about Jan. 1, 1915.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 194,053. J.A.F. Corporation, d.b.a. Berns-Martin, Elberton, Ga. Filed May 22, 1964.

BERNS-MARTIN

For Cartridge Belts and Holsters.
First use on or about Sept. 6, 1932.

SN 201,547. Po Sing Firecracker Factory, Hong Kong. Filed Sept. 9, 1964.



For Firecrackers and Fireworks.
First use Jan. 24, 1961; in commerce Jan. 24, 1961.

SN 208,452. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 18, 1964.

PELLETOL

For Blasting Agent.
First use Oct. 28, 1958.

SN 209,328. Zenith Corporation, d.b.a. Zenith Fireworks Corporation, Clinton, Mo. Filed Jan. 4, 1965.

THOR

For Fireworks.
First use Aug. 10, 1964.

Class 11 — Inks and Inking Materials

SN 204,656. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Inks and Ink Pads and Ribbons for Library Use.
First use on or about Dec. 15, 1908.

Class 12 — Construction Materials

SN 171,277. Simpson Timber Company, Seattle, Wash. Filed June 18, 1963.

CLASSÉ

For Mineral Wool Acoustical Tile and Ceiling Board.
First use May 17, 1963.

SN 172,736. The Flintkote Company, New York, N.Y. Filed July 10, 1963.

DVA

For Plastic Coated Asbestos-Cement Siding.
First use Mar. 14, 1960.

SN 181,200. Argra Products Company, St. Paul, Minn. Filed Sept. 6, 1963.

ARGRA TRAZ

For Mixture of Marble Chips, Sand, Cement and a Binder Therefor for Making Terrazzo Floors.
First use July 1, 1962.

SN 182,016. Weatherstrip Specialties Co., Monterey Park, Calif. Filed Nov. 27, 1963.



The drawing is lined for the color blue, but no claim to the color blue is made except as shown. No claim is made to the word "Weatherstrip" except as shown.
For Weatherstripping, Weatherstripping Assemblies, Thresholds, and Sills.
First use Nov. 10, 1959.

SN 188,470. Rusco Industries, Inc., Bedford Heights, Ohio. Filed Mar. 11, 1964.

RUSCO

Owner of Reg. Nos. 608,551, 705,420, and others.
For Storm Windows, Combination Screen and Storm Windows, Prime Windows, Metal Doors, Porch Enclosures, Jalousies, and Awnings of Metal, Particularly Venetian Awnings for Outside Use.
First use Mar. 12, 1937.

SN 189,914. Miele Iron Works, Inc., Union Township, Union County, N.J. Filed Mar. 30, 1964.

Miele-Built

For Cellar Doors, Mortar Boxes, Steel Steps, Division Plates, Lime Boxes, Carpenter Brackets, Septic Tanks, Manhole Steps, Concrete Chutes, Disposal Containers, Curb Champs, Steel Tampers, Steel Pins, Tile and Mortar Board Stands, Form Angles (All of Above Are Steel Products).
First use January 1944.

SN 189,957. The Standard Products Company, Cleveland, Ohio. Filed Mar. 30, 1964.

DRAFTITE

Owner of Reg. No. 406,272.
For Weather Stripping.
First use Sept. 1, 1933.

SN 190,739. Miracle Adhesives Corporation, Bellmore, N.Y. Filed Apr. 9, 1964.

KOLORGRIT

For Viscous Surfacing Composition Containing Aggregates and Rubber for Insulating and Waterproofing Decks and Roofs.
First use April 1963.

SN 190,792. Davis Wire Corporation, Los Angeles, Calif. Filed Apr. 10, 1964.

EDGE-COR

For Corner Reinforcing Lath.
First use Nov. 19, 1963.

SN 194,001. Tri-County Building Supply Co., Chicago, Ill. Filed May 21, 1964.

TRI▲CO

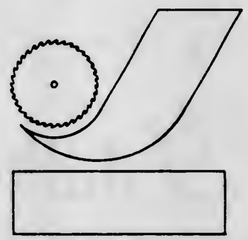
For Mason's Lime.
First use Apr. 1, 1964.

SN 194,121. Basic Incorporated, Cleveland, Ohio. Filed May 26, 1964.

BASISTONE

Owner of Reg. Nos. 291,227, 751,516, and others.
For Mineral Aggregates Such as Dolomitic Limestone or Other Crushed Natural Stone.
First use Apr. 15, 1964.

SN 194,619. Jordan Millwork Company, Sioux Falls, S. Dak. Filed June 1, 1964.



The mark consists of the letter "J" and a circular saw blade, both positioned above a rectangular block.
For Windows, Doors, Permanent Built-In Cabinets, Trim and Moldings, Door Jams, Wall Pockets, Door Frames, Window Frames, Screens, Combination Doors and Windows, Finished Lumber, Plywood, Paneling, and Other Special Order Millwork Products.
First use Jan. 2, 1963.

SN 196,558. Redwood Materials, Inc., Newport Beach, Calif. Filed June 26, 1964.

REDDIWOOD

For Redwood Lumber.
First use July 15, 1963.

SN 196,145. Leo Edens, d.b.a. Leo Edens Building Co., Fort Worth, Tex. Filed July 20, 1964.

LEBCO

For Concrete Wall Panels.
First use August 1962.

SN 199,504. The Standard Products Company, Cleveland, Ohio. Filed Aug. 7, 1964.

StanLock

Owner of Reg. No. 722,751.
For Gaskets of Rubber or Rubber-Like Material for the Mounting of Window Panes, Panels, and the Like.
First use October 1961.

SN 201,088. Mary Carter Paint Co., Tampa, Fla. Filed Sept. 2, 1964.

MARY CARTER

The name "Mary Carter" is fanciful. Owner of Reg. No. 615,094.
For Putty and Caulking Compound.
First use 1962.

SN 201,979. Terox Corporation of America, Chicago, Ill. Filed Sept. 15, 1964.



Owner of Reg. Nos. 626,761, 759,890, and others.
For Plastic Joint Filler for Use With Molded Resin Members Simulating Stone.
First use on or about Oct. 1, 1961.

SN 203,020. Joseph Miorelli and Co., Inc., Hazleton, Pa. Filed Sept. 30, 1964.

JOB JOHNNY

For Prefabricated Wood or Metal House-Like Structures With Chemical Toilets Therein.
First use October 1962.

SN 204,554. Como & LeFleur Concrete Works, Inc., Sulphur, La. Filed Oct. 22, 1964.



The word "Steps" and the representation of the goods are disclaimed apart from the mark as shown.
For Portable Concrete Steps.
First use Aug. 1, 1964.

SN 204,571. Hardply Corporation Ltd., Prince Albert, Saskatchewan, Canada. Filed Oct. 22, 1964.

PASQUIA BIRCH

The word "Birch" is disclaimed apart from the mark as shown.
For Plywood.
First use December 1962.

SN 204,928. Reliable Fence Co., Inc., Norwell, Mass. Filed Oct. 27, 1964.

ETERNA

For Wood Fence Posts.
First use Apr. 27, 1964.

SN 205,730. Simpson Timber Company, Seattle, Wash. Filed Nov. 6, 1964.

ST. MORITZ

For Decorative Ceiling Tile.
First use Oct. 20, 1964.

SN 206,127. Brice Lumber & Wood Preserving Corporation, Archer, Fla. Filed Nov. 13, 1964.

EXCELTEX

For Acoustical Building Panels.
First use June 30, 1964.

SN 206,430. Dor-West, Inc., Seattle, Wash. Filed Nov. 18, 1964.



Owner of Reg. No. 760,495.
For Building Doors, and Operators Therefor.
First use Oct. 1, 1963.

SN 207,467. Ash Grove Lime & Portland Cement Co., Kansas City, Mo. Filed Dec. 4, 1964.

SNOWFLAKE

Owner of Reg. No. 257,000.
For Hydrated Lime for Use in Building Construction.
First use 1908.

SN 211,118. United States Gypsum Company, Chicago, Ill. Filed Feb. 1, 1965.

DURA-THRIFT

Owner of Reg. Nos. 398,680, 651,060, and others.
For Hardboard.
First use Apr. 6, 1961.

SN 211,205. Steel Stone Manufacturing Company, Inc., Allentown, Pa. Filed Feb. 2, 1965.

STRATA-ROCK

For Precast Artificial Stone To Be Used as a Veneer for the Outer Surface of a Building.
First use Apr. 16, 1962.

SN 212,545. Johns-Manville Corporation, New York, N.Y. Filed Feb. 23, 1965.

VINYLCEL

For Foamed Cellular Thermal Insulation.
First use Feb. 10, 1965.

SN 212,581. Potlatch Forests, Inc., Lewiston, Idaho. Filed Feb. 23, 1965.

TUF-DEK

For Lumber Railroad Decking.
First use Jan. 22, 1965.

SN 212,727. Automated Building Components, Inc., Miami, Fla. Filed Feb. 25, 1965.

GANG-NAIL

Owner of Reg. Nos. 666,175 and 730,543.
For Wooden Trusses—Namely, Roof and Floor Trusses, and the Like.
First use July 12, 1963.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 184,089. Muns Sprulawn Systems Corporation, Detroit, Mich. Filed Jan. 6, 1964.



For Lawn Sprinkling Systems Comprising Lawn Sprinkler Heads, Underground Piping and Valves Used in Connection Therewith.
First use Feb. 1, 1963.

SN 191,729. Wear-Ever Aluminum, Inc., New Kensington, Pa. Filed Apr. 21, 1964.

Wear-ever SELECT

Applicant disclaims the word "Select" apart from the mark. Owner of Reg. Nos. 45,726, 754,444, and others.
For Cooking Utensils.
First use Nov. 1, 1963.

SN 199,001. Astropolymer Laboratories, Inc., Wichita, Kans. Filed Aug. 3, 1964.



For Precision Washers Made of Plastic Material.
First use on or about Oct. 15, 1962.

SN 199,002. Astropolymer Laboratories, Inc., Wichita, Kans. Filed Aug. 3, 1964.

ASTROLAB

For Precision Washers Made of Plastic Material.
First use on or about June 15, 1964.

SN 203,517. The National Screw & Manufacturing Company, Cleveland, Ohio. Filed Oct. 7, 1964.

FLEX-HEAD

For Fasteners.
First use during April 1960.

SN 203,569. Can-Tex Industries, Inc., d.b.a. Southwestern Plastic Pipe Division, Mineral Wells, Tex. Filed Oct. 8, 1964.

"ASTRO-LINE"

For Flexible Polyethylene Plastic Pipe Used for Stock and Poultry Watering, Underground Lawn Sprinkler Systems, Waste Disposal, Sub-Irrigation Piping, and Construction Water Lines.
First use Dec. 4, 1963.

SN 204,657. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Hardware and Fixtures for Library Use—Namely, Ring Pulls and Self-Locking Rods for Card File Drawers, Casters, Shelf Pins, Pegboard Display Fixtures, Wire Staples, Adjustable Picture Hangers, and Chair Glides.
First use on or about Jan. 1, 1911.

SN 207,359. Armco Steel Corporation, Middletown, Ohio. Filed Dec. 3, 1964.

SPANGWELD

Owner of Reg. No. 581,654.
For Metal Pipe of All Kinds.
First use on or about Sept. 1, 1951, on drill pipe.

SN 207,883. Grinnell Corporation, Providence, R.I. Filed Dec. 10, 1964.

DUALRANGE

For Diaphragm Valves.
First use Sept. 16, 1964.

SN 207,973. National Manufacturing Company, Inc., Chatham, N.J. Filed Dec. 11, 1964.

For Diaphragmatic Expansion Control Tank, Air Purger, and Relief Valve for Hot Water Heating System.
First use Nov. 16, 1964.

SN 210,427. Federal Screw Works, Detroit, Mich. Filed Jan. 22, 1965.

NYBALNUT

The word "Nut" is disclaimed apart from the mark as shown.
For Combined Nut and Bearing Assembly.
First use Nov. 11, 1964.

SN 211,908. Master Industries, Inc., Philadelphia, Pa. Filed Feb. 12, 1965.

SAV-A-TRAP

For Clean Out Plug.
First use Jan. 22, 1965.

SN 212,382. Manganese Steel Forge Company, Philadelphia, Pa. Filed Feb. 18, 1965.

AUDUBON ARC-LOC-CRIMP

For Wire Cloth in the Piece.
First use on or about Aug. 15, 1929.

SN 212,859. Symmons Engineering Company, Boston, Mass. Filed Feb. 18, 1965.

UNISHOWER

For Prefabricated Modular Group Shower Systems Embodying a Plurality of Shower Heads.
First use in or about September 1962.

SN 212,458. Star Sprinkler Corporation of Florida, Philadelphia, Pa. Filed Feb. 19, 1965.

STAR

For Sprinkler Heads.
First use March 1924.

SN 213,029. Lavergne I. Lounsbury, d.b.a. "Buck" Lounsbury Associates, Chicago, Ill. Filed Mar. 1, 1965.

PATIO QUEEN

For Picnic Table Folding Hardware.
First use on or about May 1, 1961.

SN 213,218. Hydrasearch Co., Inc., Annapolis, Md. Filed Mar. 3, 1965.

DOUBLEJOHN

For Attachment for Water Closet Valve Operating Mechanism.
First use Dec. 28, 1964.

SN 214,323. Cabot Corporation, Boston, Mass. Filed Mar. 17, 1965.

GRE-225

For Glass Fiber Reinforced Epoxy Pipe and Fittings.
First use Feb. 23, 1965.

Class 15 — Oils and Greases

SN 183,591. Humble Oil & Refining Company, Houston, Tex. Filed Dec. 26, 1963.

ACTOL

Owner of Reg. No. 198,782.
For Hydraulic Fluids—Namely, Automatic Transmission Fluids Containing Anti-Corrosive and Anti-Oxidant Chemical Compositions for Use in Industrial and Automotive Applications.
First use June 7, 1963.

SN 185,335. Wilshire Oil Company of California, Los Angeles, Calif. Filed Jan. 24, 1964.

The drawing is lined for blue. Applicant disclaims the words "Half Half" apart from the mark as shown.
For Motor Fuel—Namely, Gasoline.
First use about Aug. 16, 1963.

SN 195,027. Wagner Electric Corporation, St. Louis, Mo. Filed June 5, 1964.

The drawing is lined for red and blue, but the mark is not limited to the colors shown. Owner of Reg. Nos. 699,638, 716,855, and others.
For Brake Lubricant.
First use May 1, 1963.

SN 195,028. Wagner Electric Corporation, St. Louis, Mo. Filed June 5, 1964.

LOCKHEED

Owner of Reg. Nos. 180,945, 727,020, and others.
For Brake Lubricant.
First use May 1, 1963.

SN 202,633. Signal Oil and Gas Company, Los Angeles, Calif. Filed Sept. 24, 1964.

For Carburetor Cleaning Ingredient in Gasoline.
First use Aug. 18, 1964.

SN 202,847. The Pure Oil Company, Palatine, Ill. Filed Sept. 28, 1964.

The drawing is lined for red and blue. Owner of Reg. Nos. 764,947 and 771,788.
For Heating Oil.
First use on or about Sept. 24, 1959.

SN 202,848. The Pure Oil Company, Palatine, Ill. Filed Sept. 28, 1964.

The drawing is lined for the color red. Owner of Reg. Nos. 764,947 and 771,788.
For Heating Oil.
First use on or about Sept. 24, 1959.

SN 207,279. Drew Chemical Corporation, New York, N.Y. Filed Dec. 2, 1964.

MICROMAG

For Fuel Additive for Slag and Corrosion Inhibition.
First use Apr. 3, 1964.

SN 207,649. Pennsoil Company, Oil City, Pa. Filed Dec. 7, 1964.

PENNZ-MIX

Owner of Reg. No. 719,148.
For Gasoline.
First use May 27, 1964.

SN 212,505. Cities Service Oil Company, Tulsa, Okla. Filed Feb. 23, 1965.

CITGO

Owner of Reg. No. 764,548.
For Gasoline.
First use Feb. 4, 1965.

Class 16 — Protective and Decorative Coatings

SN 194,981. Illinois Bronze Powder & Paint Co., Chicago, Ill. Filed June 5, 1964.

ACCENT

For Pressurized Product for Coloring Fresh Cut Flowers and Floral Arrangements.
First use on or about May 8, 1964.

SN 200,834. Davis Paint Company, d.b.a. Cochran Paint Company, Kansas City, Mo. Filed Aug. 28, 1964.

COCHRAN

Owner of Reg. No. 418,922.
For Exterior and Interior Paint, Enamel, Lacquer, Varnish, Shellac, Stain, Linseed Oil, Turpentine, and Paint Thinner.
First use 1919.

SN 204,658. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Book Lacquer, Lacquer Thinner, Shellac, and Liquid Clear Plastic Spray for Library Use.
First use on or about Dec. 15, 1908.

Class 18 — Medicines and Pharmaceutical Preparations

SN 192,433. Schueler & Company, New York, N.Y. Filed Apr. 30, 1964.

SCHUCO

Owner of Reg. No. 577,978.
For Medical and Pharmaceutical Sprays—Namely, Sprays Containing Tyrothricin and Neomycin, Tincture of Benzoin, Methiolate, Burn Spray Containing Tannic Acid, Benzocaine, and Hexachlorophen.
First use November 1956.

SN 212,266. Dermik Pharmacal Co., Inc., Syosset, N.Y. Filed Feb. 19, 1965.

LOROXIDE

For Pharmaceutical Preparation for Topical Application in Acne.
First use Sept. 10, 1964.

Class 19—Vehicles

SN 204,659. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Book Trucks for Library Use.
First use on or about Jan. 1, 1929.

SN 205,804. Russell A. Fay, Scottsdale, Ariz. Filed Nov. 9, 1964.

CAR DIAPER

The word "Car" is disclaimed apart from the mark.
For Oil Drip Shields for the Undercarriage of a Vehicle.
First use July 24, 1964.

SN 208,086. G. W. Ace Lance, d.b.a. Ace-Hi Dual Vision Mirrors, Phoenix, Ariz. Filed Dec. 14, 1964.

ACE-HI

For Dual Vision Rear View Mirror for Motor Vehicles.
First use Jan. 26, 1953.

SN 210,259. John A. Barnett, d.b.a. Barnett Boat Co., Kenosha, Wis. Filed Jan. 21, 1965.



For Sailboats.
First use Mar. 24, 1961.

SN 210,268. Champion Home Builders Co., Dryden, Mich. Filed Jan. 21, 1965.

SEQUOIA

For Mobile Homes and House Trailers.
First use Dec. 9, 1964.

SN 210,299. Globe Rubber Products Corp., Philadelphia, Pa. Filed Jan. 21, 1965.

V·I·P

For Rubber Auto Carpet.
First use July 25, 1963.

Class 20—Linoleum and Oiled Cloth

SN 194,015. American Biltrite Rubber Co., Inc., Trenton, N.J. Filed May 22, 1964.

APPIAN

For Vinyl Flooring.
First use Apr. 8, 1964.

SN 194,018. American Biltrite Rubber Co., Inc., Trenton, N.J. Filed May 22, 1964.

RAVENNA

For Vinyl Flooring.
First use Apr. 8, 1964.

SN 211,337. Armstrong Cork Company, Lancaster, Pa. Filed Feb. 4, 1965.

BISCAY

For Resilient Hard Surface Type Covering for Floors, Walls, and Other Surfaces.
First use Jan. 11, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 182,864. C-Cor Electronics, Inc., State College, Pa., by change of name from Community Engineering Corporation, State College, Pa. Filed Dec. 12, 1963.

C-COR

For Electronic Amplifiers for the Amplification of Audio, Video, and Radio Frequencies; Passive Signal Handling Electrical Devices and Circuits to Handle and Process Electronic Signals of D.C., Audio, Video, and Radio Frequencies, Including: Splitters, Dividers, Mixers, Multiplexers, Multicouplers, Directional Couplers, Isolators, Circulators, Attenuators, Matching Transformers, Baluns, and Filters; Electronic Components Including Tube Sockets and R.F. Inductors, Chokes, and Transformers; Television Distribution Systems; Two-Way Audio Communication Systems for Closed-Circuit Television Systems and Accessories for Television Distribution and Usage; and Wall Bracket Mounts for Television Receivers.
First use Nov. 14, 1963.

SN 185,367. Crimsco, Inc., Kansas City, Mo. Filed Jan. 27, 1964.

THERMA-LINE

For Electric Ovens for Heating Food Warming Discs and the Discs Used in Conjunction Therewith.
First use July 22, 1963.

SN 186,563. The Pure Oil Company, Palatine, Ill. Filed Feb. 12, 1964.

DYNAMHO FLUID

No claim is made to the word "Fluid" apart from the mark as shown.
For Liquid or Semi-Liquid Composition Exhibiting Change in Electrical Properties Such as Conductivity and Resistance in Response to Shear.
First use on or about Feb. 3, 1964.

SN 198,230. Pioneer-Standard Electronics, Inc., Cleveland, Ohio. Filed Apr. 20, 1964.



For Electronic Supplies—Namely, Radios, Television and Audio System Components Including Resistors, Capacitators, Coils, Transformers, Vacuum Tubes and Sockets Therefor, Semi-Conductors, Cartridges and Styli and Hardware for Radios, Television, and Audio Systems.
First use on or about Feb. 10, 1963.

SN 204,660. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Electric Erasers, Electric Styluses, and Electro-Pencils for Library Use.
First use on or about Nov. 1, 1926.

SN 207,826. The Muter Company, Chicago, Ill. Filed Dec. 9, 1964.

JENSEN

Owner of Reg. Nos. 426,072 and 501,769.
For Electronic Amplifier Apparatus and Parts Therefor.
First use Sept. 11, 1964.

SN 208,334. Borg-Warner Corporation, Chicago, Ill. Filed Dec. 17, 1964.

NORGE

Owner of Reg. Nos. 205,970, 744,557, and others.
For Electric Household Garbage Disposers and Parts Thereof for Replacement and Repair.
First use in or prior to March 1962.

SN 208,405. Square D Company, Park Ridge, Ill. Filed Dec. 17, 1964.

Qwik Open

Owner of Reg. No. 650,436.
For Molded-Case Circuit Breakers.
First use on or about Aug. 28, 1958.

SN 208,450. Duro-Test Corporation, North Bergen, N.J. Filed Dec. 18, 1964.

OPTIMA

For Fluorescent Lamps.
First use Oct. 30, 1964.

SN 208,451. Duro-Test Corporation, North Bergen, N.J. Filed Dec. 18, 1964.

MAXIMA

For Fluorescent Lamps.
First use Oct. 30, 1964.

SN 206,889. Classic Floor Care Products Inc., Brooklyn, N.Y. Filed Dec. 28, 1964.

MR.VAC

For Commercial and Industrial Vacuum Cleaners and Parts Thereof.
First use Sept. 11, 1964.

Class 22—Games, Toys, and Sporting Goods

SN 169,896. Gilbert I. Smith, d.b.a. Muscle-Matic Company, St. Petersburg, Fla. Filed May 21, 1963.

The MUSCLE Matic

For Flexible Exercise Articles Attachable to a Person or Animal for Exercise and Muscle Building Action.
First use June 1, 1962.

SN 206,691. Bomark International, Inc., New York, N.Y. Filed Nov. 23, 1964.

Swinger

For Golf Balls.
First use Nov. 12, 1964.

SN 206,692. Bomark International, Inc., New York, N.Y. Filed Nov. 23, 1964.

Tempest 50

For Golf Balls.
First use Nov. 12, 1964.

SN 210,687. Magic Wand Corporation, Charlestown, Mass. Filed Jan. 26, 1965.

MAGIC PRINCESS

For Paper Dolls.
First use on or before Dec. 24, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 185,326. Stoffel Seals Corporation, Tuckahoe, N.Y. Filed Jan. 24, 1964.

STOFFEL

Owner of Reg. Nos. 628,660 and 634,355.
For Hand Tools and Automatic Machines for Attaching Identification Tags to Merchandise, Dies, and Presses.
First use May 1, 1941.

SN 191,105. ALD, Inc., Chicago, Ill. Filed Apr. 16, 1964.

MR. TOP

For Automatic Coin-Operated Car Wash Equipment and Parts Therefor—Namely, Detergent Tanks, Mixing Tanks, Conduit, Spray Guns, and the Like.
First use Jan. 29, 1964.

SN 198,210. Pfaff Sewing Center, Fresno, Calif. Filed July 20, 1964.



The drawing is lined for blue, gold, and brown.
For Sewing Machines.
First use Dec. 1, 1963.

SN 199,207. Jamel Mfg. Co., Inc., New York, N.Y. Filed Aug. 4, 1964.

"DURALON"

For Templates for Pantograph Engraving Machines.
First use July 15, 1964.

SN 199,863. Delano Engineering Co. Inc., Delano, Calif. Filed July 29, 1964.

SPRAYMASTER

For Sprayers, Particularly, Weed, Vineyard, Row Crop, Defoliation, and Orchard Sprayers.
First use about 1960.

SN 203,335. Reid Brothers Company, Inc., Beverly, Mass. Filed Oct. 5, 1964.

REID-ROLLERWAY

Owner of Reg. No. 643,554.
For Surface Grinding Machine.
First use Sept. 14, 1964.

SN 204,206. Tef, Inc., Arlington Heights, Ill. Filed Oct. 16, 1964.

F1C

For Machinery Bearings.
First use Sept. 14, 1964.

SN 204,661. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Sampling, Printing, and Embossing Machines, Staplers, Daters, Paper Trimming and Cutting Machines, Tape Dispensing Machines, Pencil Sharpeners, Book Presses, Sewing Clamps, Librarians' Book Binding and Repair Tools and Implements, and Component Parts Thereof, for Library Use.
First use on or about Dec. 15, 1908.

SN 208,672. Dempster Mill Mfg. Co., Beatrice, Nebr. Filed Dec. 22, 1964.



Applicant disclaims right to use of "Water Systems," apart from the mark as shown. The drawing is lined for the colors green and yellow. Owner of Reg. Nos. 272,868, 549,909, and others.
For Domestic Water Systems, Including Jet Pumps, Submersible Pumps, Reciprocating Pumps, Centrifugal Pumps, Hand Pumps and Cylinders, Pump Jacks, Hydrants, and Pumping Equipment.
First use July 9, 1964.

SN 208,699. S.I.M.M.A. Societa Industrie Metalmeccaniche per Azioni, Milan, Italy. Filed Dec. 22, 1964.

CONDOR

Priority claimed under Sec. 44(d) on Italian application filed July 28, 1964; Reg. No. 167,016, dated Oct. 30, 1964.
For Excavators, Earth-Handling Machines, and Loading Shovels.

SN 208,909. G. W. Galloway Company, Baldwin Park, Calif. Filed Dec. 28, 1964.

TEL-HI-SCOPER

For Extendable Work Platform.
First use Sept. 21, 1964.

SN 211,347. Cincinnati Lathe and Tool Co., Cincinnati, Ohio. Filed Feb. 4, 1965.

CINTIMASTER

Owner of Reg. No. 783,985.
For Milling Machines.
First use Jan. 20, 1965.

SN 212,068. The L. S. Starrett Company, Athol, Mass. Filed Feb. 15, 1965.

Starrett

GREY-FLEX SPECIAL

Owner of Reg. Nos. 88,216, 770,222, and others.
For Hacksaw Blades.
First use not later than Feb. 5, 1965.

SN 212,267. D. W. Zimmerman Mfg., Inc., Toledo, Ohio. Filed Feb. 17, 1965.

ZIM-AIR

For Devices for Suspending Tools or Other Objects During Transportation and Manipulation Thereof.
First use Oct. 6, 1964.

SN 212,343. Moore's Time-Saving Equipment, Inc., Elkhart, Ind. Filed Feb. 18, 1965.

ROLL-A-JET

For Wet Wash Rug Cleaning Machines.
First use on or about Apr. 26, 1963.

SN 212,347. Precision Products, Inc., Cleveland, Ohio. Filed Feb. 18, 1965.

NITRO-DYNE

For Die Cushioning Systems and Parts Therefor.
First use Feb. 2, 1965.

SN 215,345. Magnuson Engineers, Inc., San Jose, Calif. Filed Mar. 30, 1965.

STEMOUT

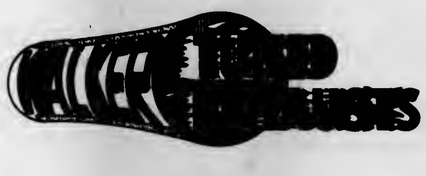
For Food Feeding and Stemming Equipment.
First use Dec. 3, 1954.

SN 215,364. Valdastri, Ltd., Honolulu, Hawaii. Filed Mar. 30, 1965.

VALDA

For Molds for Building Blocks, Tiles, and Bricks, and Molding Machinery.
First use Jan. 4, 1965.

SN 215,367. Walker Manufacturing Company, Racine, Wis. Filed Mar. 30, 1965.



The drawing is lined for the colors red and purple. The word "Exhausts" is disclaimed apart from the mark as shown. Owner of Reg. No. 759,594.
For Exhaust System Parts Including Mufflers, Tail Pipes, Exhaust Pipes, Tail Pipe Spouts, Exhaust Elbows, Extensions, Deflectors, Clamps, Brackets, Hangers, Bushings, Grommets, and Insulators; Cold Chisels and Wrenches.
First use Feb. 18, 1965.

Class 26—Measuring and Scientific Appliances

SN 172,132. Alfred Odenwald, d.b.a. Kontakwerk Ensberg Ing. Alfred Odenwald, Ensberg, Germany. Filed June 20, 1963.



Owner of German Reg. No. 761,555, dated Apr. 17, 1961.
For Thermostats; Temperature-Sensing Semi-Conductor Devices; Temperature-Responsive Switch Contacts and Automatic Temperature Regulators; Heating Regulators and Temperature-Responsive Bimetal Relays; and Temperature-Responsive and Electric Switches.

SN 204,662. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Fine Computer for Library Use.
First use on or about May 1, 1951.

SN 209,211. Voigtlander A.G., Braunschweig, Germany. Filed Dec. 31, 1964.

VITO

Owner of U.S. Reg. Nos. 673,841 and 751,241.
For Cameras, Lenses, Photographic Objectives, and Parts Thereof.
First use 1940; in commerce 1950.

SN 209,212. Voigtlander A.G., Braunschweig, Germany. Filed Dec. 31, 1964.

VITORET

Owner of U.S. Reg. No. 751,241.
For Cameras, Lenses, Photographic Objectives, and Parts Thereof.
First use Mar. 31, 1962; in commerce September 1962.

SN 210,506. Access Corporation, Cincinnati, Ohio. Filed Jan. 25, 1965.

ACCESS

For Data Retrieval Systems and Components Thereof, Including Selector Mechanisms, Keyboard Consoles, and Punched Card Coding Devices.
First use May 5, 1964.

SN 210,578. Joseph O. Masson, d.b.a. Masson & Associates, Wooster, Ohio. Filed Jan. 25, 1965.

DRAFTRONIC

For Draft Beer Control System for Dispensing Draft Beer Electrically, Measuring the Quantity Dispensed, Counting the Number of Glasses Dispensed, and Controlling the Temperature and Carbonation of Said Beer.
First use Dec. 8, 1964.

Class 28 — Jewelry and Precious-Metal Ware

SN 215,910. Waltham Watch Company, Chicago, Ill. Filed Apr. 6, 1965.

RAYS OF GLORY

For Diamond Rings and Diamonds.
First use Mar. 31, 1965.

Class 29 — Brooms, Brushes, and Dusters

SN 204,663. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Brushes for Library Use.
First use on or about Jan. 1, 1911.

Class 32 — Furniture and Upholstery

SN 201,936. Goodman Bros. Manufacturing Co., Philadelphia, Pa. Filed Sept. 15, 1964.

POSITION EASE

For Adjustable Frames for Beds, Chairs, and Similar Articles of Furniture.
First use July 27, 1964.

SN 209,888. Sauder Manufacturing Co., Archbold, Ohio. Filed Jan. 13, 1965.

TWINLIFE

For Church Furniture—Namely, Church Pews and Pew Cushions.
First use Dec. 28, 1964.

SN 212,413. C. B. Hunt Mattress Company, Houston, Tex. Filed Feb. 19, 1965.

GUARD-O-PEDIC

For Mattresses.
First use Jan. 18, 1965.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 206,531. Blu-Surf Thermo Engineering, Inc., Muskegon, Mich. Filed Dec. 21, 1964.

BLU-SURF

For Gas Burner Apparatus.
First use in or about November 1963.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 178,606. Gordy Tire Company, Inc., Atlanta, Ga. Filed Oct. 9, 1963.

GORDY HI-SPEED Star Jet

Applicant disclaims the term "Hi-Speed" apart from the mark as shown. Owner of Reg. No. 587,020.
For Recapped or Retreaded Tires.
First use Sept. 15, 1963.

Class 36 — Musical Instruments and Supplies

SN 194,246. Walter E. Shector, Beverly Hills, Calif. Filed May 25, 1964.



Owner of Reg. No. 733,111.
For Phonograph Records and Taped Recordings.
First use May 20, 1964.

SN 202,382. The Rotographic Corporation, Long Island City, N.Y. Filed Sept. 22, 1964.

LP 'LIFE PRESERVERS'

The letters "LP" are disclaimed apart from the use of the mark as shown.
For Plastic Lined Inner Sleeves for Envelopes Which Hold, or Store, Phonograph Records.
First use Sept. 4, 1964.

SN 204,519. Stenocord Corporation, d.b.a. Stenocord Dictation Systems, Los Angeles, Calif. Filed Oct. 21, 1964.

STENOBELT

For Dictating and Recording Belts for Dictating Machines.
First use Sept. 11, 1964.

SN 204,665. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Phonograph Record Holders, Albums, Covers, and Cases and Music Files and Cases.
First use on or about Jan. 1, 1914.

SN 205,037. Capitol Records, Inc., Los Angeles, Calif. Filed Oct. 29, 1964.

Command Performer

For Portable Phonographs.
First use June 3, 1964.

Class 38 — Prints and Publications

SN 169,768. Howard W. Sams & Co. Inc., Indianapolis, Ind. Filed May 27, 1963.

SYMFACT

For Periodic Feature Article.
First use September 1962.

SN 194,881. Publishers Newspaper Syndicate (joint venture), Chicago, Ill. Filed June 8, 1964.

SPARKY

For Cartoon Strip.
First use Apr. 1, 1964.

SN 197,722. Kahn Communications Corporation, New York, N.Y. Filed July 13, 1964.

FLiP

For Magazine.
First use June 5, 1964.

SN 201,323. Army & Navy Journal, Inc., Washington, D.C. Filed Sept. 1, 1964.

THE JOURNAL OF THE ARMED FORCES

Owner of Reg. Nos. 427,289 and 562,164.
For Magazine.
First use July 4, 1964.

SN 202,710. Publishers Newspaper Syndicate (joint venture), Chicago, Ill. Filed Sept. 25, 1964.

THE WIZARD OF ID

For Cartoons.
First use Aug. 31, 1964.

SN 208,271. The National School Public Relations Association, Washington, D.C. Filed Dec. 16, 1964.



For Newsletters and Handbooks.
First use Nov. 14, 1955.

SN 210,967. W. W. McPhail, Xenia, Ohio. Filed Jan. 15, 1965.

CODEMASTER

For One-Page Technical Publication for Use in the Automobile Insurance Business by Agents and Office Personnel.
First use Jan. 8, 1965.

SN 210,967. Magazines for Industry, Inc., New York, N.Y. Filed Jan. 29, 1965.

INSIDE INDUSTRY

For Monthly Newsletter.
First use Jan. 7, 1965.

SN 210,972. Newsday, Inc., Garden City, N.Y. Filed Jan. 29, 1965.

MCGURK'S MOB

For Series of Cartoons.
First use Jan. 18, 1965.

Class 39 — Clothing

SN 176,416. Aldens Holding Corporation, Chicago, Ill., assignee of Aldens, Inc., Chicago, Ill. Filed Sept. 6, 1963.

BEAU-LYN

For Women's Coats, Suits, Dresses, Jackets, and Dress-and-Jacket Ensembles.
First use May 1, 1963.

SN 182,982. Edward P. Colby, d.b.a. Port O'Call, Pasadena, Calif. Filed Dec. 18, 1963.

PORT O'CALL

For Women's Wear—Namely, Dresses, Coats, Suits, Blouses, Shorts, Pants, Loungewear, Lingerie, Belts, Scarves, Cummerbunds, Ties, and Hats.
First use Oct. 31, 1964.
Subj. to Intf. with SN 179,619.

SN 196,095. Barad Lingerie Company, St. Louis, Mo. Filed June 22, 1964.

FLANNELLA

For Women's Nightgowns.
First use June 11, 1964.

SN 209,480. Bogart Sportswear Mfg. Co., Inc., Fort Worth, Tex. Filed Jan. 7, 1965.

B SHAPE

For Children's, Junior Misses', Misses' and Ladies' Outerwear—Namely, Blouses, Skirts, Dresses, Shirts, Bath Robes, Stretch Pants, and Slacks.
First use Aug. 1, 1963.

SN 209,644. Goodall Sanford Incorporated, Reading, Mass. Filed Jan. 8, 1965.

PALM BEACH

Owner of Reg. Nos. 97,416, 108,511, and 170,138.
For Men's Coats, Raincoats, Walk Shorts, Dress Shirts, Sport Shirts, Bathrobes, and Bathing Trunks; Boys' Coats, Walk Shorts, Dress Shirts, Sport Shirts, Caps, and Bathing Suits; and Ladies' Raincoats, Hats, Bathing Suits, Beach Shifts, Slacks, Walk Shorts, Suits, Dresses, Skirts, Coats, Blazers, Dressing Robes, and Blouses.
First use in or about 1914 on men's and boys' coats.

SN 210,276. Joseph H. Cohen & Sons, Inc., New York, N.Y. Filed Jan. 21, 1965.

THOMAS WOLCOTT

The name "Thomas Wolcott" is fanciful.
For Men's and Boys' Outer Garments—Namely, Coats, Suits, Sport Coats, Jackets, Top Coats, Overcoats, Slacks, Trousers, and Vests.
First use Nov. 11, 1964.

SN 210,416. Bronsini, Ltd., New York, N.Y. Filed Jan. 22, 1965.



Owner of Reg. No. 579,405.
For Men's Neckties, Handkerchiefs, Gloves Made of Leather, Fabric or Combinations Thereof, Undershorts, Pajamas, Socks, Outer Shirts, Sweaters and Blouses, Vests, Scarves, Belts and Braces, Robes, Overcoats and Jackets, Swim Shorts, Dickies, Aprons, Slippers and Shoes.
First use Mar. 1, 1947.

SN 210,741. Cheselle, Inc., New York, N.Y. Filed Jan. 27, 1965.

POP-INS

For Ladies' and Children's Robes and Dresses.
First use Oct. 26, 1964.

SN 210,925. Atlas Shirt Company, Inc., New York, N.Y. Filed Jan. 29, 1965.

RAT FINK

For Shirts.
First use May 1963.

SN 213,737. Zayre Corp., Natick, Mass. Filed Mar. 9, 1965.

YOUTH CREST

For Children's Wear—Namely, Pajamas, Underwear, Gloves, Mittens, Polo Shirts, Dress Shirts, Sports Shirts, Swim Trunks, Cabana Sets, Short Sets, Shorts, Sweaters, Slacks, Slack Sets, Jackets, Raincoats, and Snowsuits.
First use February 1964.

SN 213,777. Jo-Robin Corporation, New York, N.Y. Filed Mar. 10, 1965.

JO-ROBIN

For Blouses.
First use Oct. 28, 1964.

SN 214,504. Lane Bryant, Inc., New York, N.Y. Filed Mar. 19, 1965.

LADY TOURISTER

For Ladies' Outer Wear—Namely, Suits, Dresses, Blouses, Sweaters, Skirts, and Coats.
First use Mar. 4, 1965.

SN 214,655. Don Juan Sportswear, Inc., New York, N.Y. Filed Mar. 22, 1965.

WRINKLE CHASER

For Men's and Boys' Shirts.
First use Feb. 26, 1965.

Class 40—Fancy Goods, Furnishings, and Notions

SN 204,668. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Hand Thimbles and Needles for Repairing and Lacing Books, Magazines, Pamphlets, and the Like for Library Use.
First use on or about Jan. 1, 1928.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 204,669. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Binding and Paste Cloth for Library Use.
First use on or about Jan. 1, 1915.

Class 43—Thread and Yarn

SN 204,670. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 23, 1964.

GAYLORD

For Thread and Laces for Library Use.
First use on or about Jan. 1, 1916.

Class 44—Dental, Medical, and Surgical Appliances

SN 207,589. Gabrielle Contouring Equipment Corporation, Fullerton, Calif. Filed Dec. 7, 1964.

BEAUTY LIFT

For Electronic Muscle Stimulator.
First use Oct. 12, 1964.

Class 45—Soft Drinks and Carbonated Waters

SN 197,553. Franksville, Inc., Chicago, Ill. Filed July 10, 1964.



For Soft Drinks.
First use on or about Aug. 1, 1963.

Class 46—Foods and Ingredients of Foods

SN 128,761. Rockin' Chair Buttery, Inc., New York, N.Y. Filed Sept. 27, 1961.



Applicant disclaims the use of the word "Buttery."
For Sandwiches Including Hamburgers.
First use Sept. 14, 1961.

SN 145,175. El Chico Cafe, Dallas, Tex. Filed May 22, 1962.

EL CHICO

The mark "El Chico" is the Spanish equivalent of the English expression of endearment or nickname "the little one." Owner of Reg. Nos. 629,228 and 629,229.
For Canned Chili Con Carne, Frozen and Canned Tamales, Canned Beans, Frozen and Canned Enchiladas, Canned Enchilada Sauce, Canned Hot Sauce, Canned Taco Filler (With Meat), Canned Menudo (Beef Tripe), Packaged Tortillas, Frozen Tacos, Frozen Mexican Style Dinner Composed of Tamales, Enchilada, Beans, and Mexican Style Rice, and Frozen Enchilada Dinner Composed of Enchiladas, Chili, Beans, and Mexican Style Rice.
First use at least as easly as Jan. 1, 1940.

SN 190,448. Stahmann Farms, Inc., Las Cruces, N. Mex. Filed Apr. 6, 1964.

DEL CERRO

The English translation of the Spanish wording "Del Cerro" is "of the highlands." Owner of Reg. No. 407,907.
For Pecans (Shelled and Unshelled), and Fresh Eggs.
First use December 1946.

SN 195,782. Grain Processing Corporation, Muscatine, Iowa. Filed June 16, 1964.

ENZODEX

For Corn Sugar Primarily Intended for Food Purposes.
First use on or about Apr. 9, 1964.

SN 197,503. Price Candy Company, d.b.a. Price's, Kansas City, Mo. Filed July 9, 1964.

FUDDIE DUDDIES

For Candies.
First use June 16, 1964.

SN 204,357. Cottage Bakery, Inc., Hayward, Calif. Filed Oct. 20, 1964.

BONANZA

For Fresh Bread and Frosen Bread.
First use June 5, 1964.

SN 205,055. The Glidden Company, d.b.a. Durkee Famous Foods, Cleveland, Ohio. Filed Oct. 29, 1964.

DURKEE'S

Owner of Reg. Nos. 80,095 and 547,098.
For Dehydrated Sauces for Meat, Sea Foods and Vegetables; Dehydrated Gravies; Canned Vegetables; Dehydrated Vegetables; Edible Cake Decorations; Food Colors; Flavoring Extracts; Food Flavorings Other Than Spices; Chemical Meat Tenderizers; Flavor Salts; Chemical Substances for Enhancing Flavor, and Animal Fat Containing Shortening.
First use 1931.

SN 206,290. Ramo Inc., d.b.a. Peanut Products Company, Omaha, Nebr. Filed Nov. 16, 1964.

BUSTER

Owner of Reg. Nos. 363,278 and 760,089.
For Cake and Ice Cream Topping of a Nut Meat Nature; Shelled and Unshelled Nuts; and Edible Processed Seeds for Human Use.
First use on or about Jan. 2, 1938.

SN 206,308. Sunrise Home Juices, Inc., Far Rockaway, N.Y. Filed Nov. 16, 1964.



For Bottled Fruit Juice Food Beverages.
First use September 1961.

SN 206,592. Abbott Laboratories, d.b.a. H. C. Moores Company, North Chicago, Ill. Filed Nov. 20, 1964.

PREAM

Owner of Reg. No. 569,186.
For Additive for Beverages and Foods To Enhance Flavor and Modify Color.
First use Jan. 1, 1952.

SN 206,206. State Fair Provision Co. Inc., d.b.a. State Fair Provision Co., Philadelphia, Pa. Filed Nov. 24, 1964.

STATE FAIR

For Cooked Meats in a Frozen or Refrigerated State.
First use on or about May 5, 1960.

SN 209,265. Foremost Dairies, Inc., San Francisco, Calif. Filed Jan. 4, 1965.

HOPSCOTCH

For Ice Cream.
First use Dec. 15, 1964.

SN 210,280. H. W. Kneip, Incorporated, Chicago, Ill. Filed Jan. 21, 1965.

KNEIP

Owner of Reg. No. 662,064.
For Corned Beef; Fresh-Frozen Meats—Namely, Beef, Pork, and Veal, in the form of Steaks, Chops, Ground, Diced, and Sliced Beef Liver; Fresh Pork—Namely, Loins, Spareribs, Boston Butts, Neckbones, Tails, Feet, Skins, Ears, Hearts, Kidneys, Lips, Livers, Snouts, Tongues, and Stomachs.
First use Apr. 23, 1956.

SN 210,264. New England Confectionery Company, Cambridge, Mass. Filed Jan. 21, 1965.

GOLDEN BOY

For Candy Bars.
First use Dec. 31, 1964.

SN 211,128. Ward Foods, Inc., New York, N.Y. Filed Feb. 1, 1965.

SHINDIG

For Bread, Rolls, Doughnuts, Cakes, and Pies.
First use Jan. 22, 1965.

SN 212,006. Blue Ridge Poultry and Egg Company, Incorporated, Edinburg, Va. Filed Feb. 16, 1965.

VALLEY CHEF

Owner of Reg. No. 764,000.
For Fresh and Frozen Poultry and Parts Thereof.
First use Sept. 7, 1961.

SN 212,207. General Foods Corporation, White Plains, N.Y. Filed Mar. 20, 1965.

UNIGEL

For Gelatinized Degermed Yellow Corn Flour.
First use Feb. 11, 1965.

SN 212,460. S. B. Thomas, Inc., Long Island City, N.Y. Filed Mar. 24, 1965.

GLUTOGEN

For Blended Flour and Bread.
First use Feb. 16, 1965.

SN 213,501. Hygrade Food Products Corporation, Detroit, Mich. Filed Apr. 1, 1965.

STADIUM

For Frankfurters.
First use in or about July 1962.

Class 48—Malt Beverages and Liquors

SN 204,170. Kalamazoo Spice Extraction Company, Kalamazoo, Mich. Filed Oct. 16, 1964.

HYDROISOLONE

Owner of Reg. Nos. 783,838 and 790,815.
For Ale or Beer Flavoring Additive.
First use Oct. 8, 1964.

SN 208,859. Sunshine Brewing Co., Reading, Pa. Filed Dec. 24, 1964.

PLAYMATE

For Malt Liquor.
First use Dec. 11, 1964.

Class 50—Merchandise Not Otherwise Classified

SN 195,180. Waco-Porter Corporation, Schiller Park, Ill. Filed June 8, 1964.

SPEEDTOWER

For Adjustable and Movable Platform With Ladder-Like Uprights for Use in Painting and Construction Work.
First use May 18, 1964.

SN 204,671. Gaylord Bros., Inc., Syracuse, N.Y. Filed Oct. 26, 1964.

GAYLORD

For Bulletin Boards, Plastic Display Letters, Name and Sign Holders and Section Label Holders, Personal Name Badges, Mending Kits, and Component Parts Therefor for Library Use.
First use on or about Dec. 15, 1908.

SN 215,362. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Mar. 30, 1965.

CONNIE CON-TACT

Owner of Reg. No. 615,845, and others.
For Adhesive Coated, Paper Backed, Flexible Plastic Sheeting in the Form of a Roll, Sold by the Yard, for Application as a Protective or Decorative Covering.
First use on or about July 22, 1958.

SN 213,419. General Plastics Corporation, Marion, Ind. Filed May 10, 1965.

TRANS-GLO

For Christmas Garlands.
First use Feb. 24, 1965.

SN 216,447. Loco Mfg., Lewis, Iowa. Filed May 10, 1965.

LOCO-LITE

For Outdoor Sign.
First use Jan. 30, 1964.

Class 51—Cosmetics and Toilet Preparations

SN 171,288. Vaill, Inc., Minneapolis, Minn. Filed June 18, 1963.



The drawing is lined for gold, but no claim is made to color as a feature of the mark. Owner of Reg. No. 726,803.
For Suntan Lotion.
First use May 22, 1963.

SN 181,411. Revlon, Inc., New York, N.Y. Filed Nov. 18, 1963.



For Eau de Toilette.
First use Sept. 10, 1959.

SN 192,310. Baldwin, Inc., Westminster, Colo, assignee of Jack Baldwin, Denver, Colo. Filed Dec. 4, 1963.

FIRST MATE

For Toilet Preparations for Men—Namely, Hair Spray, After Shave Lotion, Cologne, Cream Hair Dressing, Deodorant, Shaving Cream, and Shampoo.
First use Nov. 12, 1963.

SN 194,689. The Xtralizer Co., Salt Lake City, Utah. Filed June 1, 1964.

XTRALIZER

For Permanent Waving Lotion, Neutralising Lotion, After Permanent Creme Rinse, and Protein Tonic for Damaged Hair.
First use in or about Feb. 1964.

SN 196,928. Marian Bialac, Inc., New York, N.Y. Filed July 31, 1964.

SONG OF SONGS

For Perfumes.
First use June 15, 1947.

SN 199,554. Gabrieleen Company, Inc., Chicago, Ill. Filed Aug. 10, 1964.

SOPHISTICATED LADY

For Cold Wave Hair Permanent, a Preparation for Use in the Beauty Salon and for Application by Professional Beauticians Only.
First use June 11, 1964.

SN 205,844. Paris Presents, Ltd., Chicago, Ill. Filed Nov. 9, 1964.



The mark comprises a representation of a Roman solider.
Owner of Reg. No. 768,255.
For Cologne for Men.
First use Oct. 9, 1964.

SN 208,224. Avon Products, Inc., New York, N.Y. Filed Dec. 16, 1964.

FASHION AWARD

For Compact Filled With Powder.
First use Dec. 4, 1964.

SN 208,301. American Aloe Corporation, d.b.a. House of Aloe, Skokie, Ill. Filed Dec. 17, 1964.

ARUBA

For Rouge.
First use Dec. 4, 1964.

SN 208,548. Colgate-Palmolive Company, New York, N.Y. Filed Dec. 21, 1964.

GLANCE

Owner of Reg. Nos. 486,059 and 745,955.
For Hair Spray and Wave Set.
First use Nov. 2, 1964.

SN 208,762. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Dec. 23, 1964.

LUSTRON

For Dentifrice.
First use Dec. 9, 1964.

Class 52 — Detergents and Soaps

SN 153,128. School Health Supply Company, Forest Park, Ill. Filed Sept. 13, 1962.

TRAIN-AID

For Medicated Soap.
First use July 1, 1962.

SN 187,804. St. Louis Janitor Supply Co., d.b.a. Navy Brand Manufacturing Company, St. Louis, Mo. Filed Mar. 2, 1964.



Owner of Reg. No. 786,620.
For Soaps for Household and Industrial Usage, Soap Powders, Liquid Soaps, Agents for Cleaning Metal, Porcelain, and Enamel Surfaces and Devices, Dishwashing Compounds, Degreasers, Detergents for Household and Industrial Use, Wax Removers, Sweeping Compounds, Acid Cleaners, Scale Removers, Drain Pipe Solvents, Sludge Removers, and Oil and Grease Absorbents.
First use 1916.

SN 194,698. The Borden Company, New York, N.Y. Filed June 2, 1964.

THERMO-SAN

For Cleaner, Sanitizer, and Deodorant Used Primarily on Dairy Farms and for Food Processing Equipment.
First use Nov. 26, 1947.

SN 198,884. Colgate-Palmolive Company, New York, N.Y. Filed July 30, 1964.

PETALS

Owner of Reg. Nos. 281,528 and 782,192.
For All-Purpose Cleaner, Cleanser and Detergent.
First use May 6, 1964.

SN 201,088. Blue Arrow, Inc., Jacksonville, Fla. Filed Sept. 2, 1964.

BLUE ARROW

For All-Purpose Household Detergent.
First use Nov. 17, 1959.

SN 206,517. Colgate-Palmolive Company, New York, N.Y. Filed Nov. 19, 1964.

BIG LEO

For All-Purpose Cleaner.
First use Oct. 13, 1964.

SN 206,608. Colgate-Palmolive Company, New York, N.Y. Filed Nov. 20, 1964.

ACTIGEN

For Combination of Whitening and Brightening Ingredients Incorporated in Laundry Detergent Compositions.
First use June 4, 1964.

SN 207,482. Fast Chemical Products Corporation, Yonkers, N.Y. Filed Dec. 4, 1964.

SSS-T!

Owner of Reg. Nos. 643,991, 696,981, and 748,791.
For Cleaner for Pots and Pans.
First use Sept. 10, 1964.

SN 209,677. Dorex, Inc., Madison, Wis. Filed Jan. 11, 1965.

BEER CLEAN

The word "Clean" is disclaimed apart from the mark as sought to be registered.
For Cleaning, Disinfecting, and Lime Removing Compound for Use in Cleaning Glassware and Sink Drainboards.
First use Jan. 5, 1959.
Subj. to Intf. with SN 202,777.

SN 214,872. Huntington Laboratories, Inc., Huntington, Ind. Filed Mar. 24, 1965.

G.S.I.

For Surgical Detergent.
First use Jan. 19, 1960.

SN 216,389. Communication Mfg. Co., Huntington Park, Calif. Filed Apr. 13, 1965.

MICROSCRUB

For Material for Cleaning the Contacts of Telephone Switches.
First use on or about Feb. 19, 1965.

SERVICE MARKS

Class 100 — Miscellaneous

SN 129,700. System Development Corporation, Santa Monica, Calif. Filed Oct. 11, 1961.



Owner of Reg. Nos. 727,346 and 727,347.
For Designing and Advising on the Proper Use and Programming of Information Processing Systems To Be Used by Others.
First use on or about Dec. 20, 1957.

SN 178,720. Orchard-Hays & Company, Inc., Arlington, Va. Filed Oct. 10, 1963.

GENESYS

For Programming, Compiling, and Maintaining Computer Applications Systems for Others.
First use Aug. 13, 1963.

SN 180,343. Wetlands for Wildlife, Inc., Milwaukee, Wis. Filed Nov. 1, 1963.

THIRSTY

Owner of Reg. No. 766,077.
For Association Services—Namely, Conducting an Educational Program by Means of News Bulletins, Radio and Television Programs, With a View Toward Raising Funds To Acquire Lands for Wildlife Refuge Which Will Be Transferred to Federal or State Agencies.
First use July 1961.

SN 194,279. Bombay Bicycle Club, Ltd., Highland Park, Ill. Filed Jan. 9, 1964.

BOMBAY BICYCLE CLUB

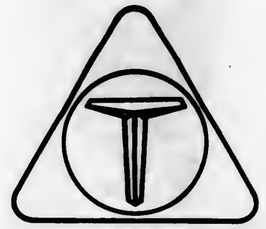
For Services in Connection With an Organization of Persons for the Purposes of Social Intercourse—Namely, Cabaret Services, and Gift Shop Services.
First use April 1962.

SN 192,365. Agway, Inc., Syracuse, N.Y., by merger of Cooperative Grange League Federation Exchange, Inc., Ithaca, N.Y. Filed Apr. 30, 1964.

AGWAY

For Counseling Farmers With Regard to the Proper Operation of Dairy and Poultry Farms and the Raising of Feed Crops in Connection Therewith; and Architectural Design Services for Farmers.
First use on or about Mar. 5, 1964.

SN 198,908. Trainer Industries, Incorporated, New Castle, Del. Filed May 20, 1964.



Owner of Reg. No. 710,865.
For Product Engineering and Development Services, Particularly Relating to Metal Products and More Particularly to Metal Castings.
First use Mar. 20, 1961.

SN 197,277. Franksville, Inc., Chicago, Ill. Filed July 7, 1964.



For Restaurant Services.
First use on or about Aug. 1, 1963.

SN 198,864. Maryland Fried Chicken, Inc., Maitland, Fla. Filed July 22, 1964.



No claim is made to the words "Maryland Fried Chicken" or the representation of the chickens apart from the mark as shown.
For Carry-Out Restaurants.
First use on or about July 14, 1961.

SN 202,885. Raymond F. Schweitzer, d.b.a. Old Angus Beef House Restaurant, Washington, D.C. Filed Sept. 22, 1964.



For Cafe and Restaurant Services.
First use Apr. 1, 1958.

SN 204,768. Central Charge Service, Inc., Washington, D.C. Filed Oct. 26, 1964.



No claim is made to the words "Leasing Service" apart from the mark shown.
For Complete Equipment Leasing Service.
First use Sept. 1, 1962.

SN 205,133. American Junior Bowling Congress, Milwaukee, Wis. Filed Oct. 27, 1964.

AJBC

Owner of Reg. No. 773,992.
For Association Services—Namely, Supervision of Operations of Bowling Teams, Leagues and Tournaments for All Boys and Girls Who Have Not Reached Their 19th Birthday on or Before August 1 of the Current Bowling Year; Assisting Bowling Establishment Proprietors and Officials in Organization Work; and Dissemination of Information Concerning the Game of Bowling.
First use on or about May 16, 1962.

SN 205,194. Optimatic Drilling Services, Inc., Casper, Wyo. Filed Oct. 30, 1964.



No claim to the words "Drilling Services, Inc." is made, apart from the other features of the mark as shown.
For Oil and Gas Well Drilling Services.
First use May 1964.

Class 101 — Advertising and Business

SN 181,217. Davis Advertising Company, Fort Worth, Tex. Filed Nov. 15, 1963.

DACO

For Advertising Service—Namely, Furnishing Customers With Business Gift Items Having the Customers' Advertising Thereon.
First use Feb. 25, 1963.

SN 191,878. New England Advertising, Incorporated, d.b.a. New England Advertising, Newton Highlands, Mass. Filed Apr. 28, 1964.

IMAGINEER

For Suggesting and Procuring Advertising Specialties, Including the Submission and Suggestion of Advertising Copy To Be Used in Connection With Such Specialties To Promote the Sale of a Client's Goods and Services.
First use Feb. 1, 1956.

SN 203,816. Ethel M. McLeod, d.b.a. Stenocall Telephone Secretarial Service, Lubbock, Tex. Filed Oct. 5, 1964.

STENOCALL

For Telephone Answering Service, Secretarial Service, Mail Forwarding Service, and Printing.
First use June 1, 1951.

SN 203,427. Plains Cotton Cooperative Association, Lubbock, Tex. Filed Oct. 6, 1964.



For Aiding of Members of Applicant's Cooperative in the Marketing, Compressing, and Warehousing of Their Cotton.
First use Sept. 1, 1955.

SN 208,969. Charlie See, d.b.a. Charlie See & Associates, Hollywood, Calif. Filed Dec. 28, 1964.

MISS GIRL OF THE YEAR

For Promoting the Sale of Goods and Services of Others Through the Medium of Periodic Beauty Contests.
First use Oct. 16, 1964.

Class 102 — Insurance and Financial

SN 181,078. Society for Savings, Hartford, Conn. Filed Nov. 13, 1963.

A PENNY SAVED IS A PENNY EARNING

For General Banking Services.
First use June 19, 1961.

SN 190,369. Ferguson Personnel, Inc., Chicago, Ill. Filed Apr. 6, 1964.



For Personnel Placement Services in the Insurance Field.
First use January 1940.

SN 199,800. Detroit Insurance Agency, Detroit, Mich. Filed Aug. 13, 1964.



For Insurance Agency Services.
First use Jan. 14, 1964.

SN 203,687. Postal Finance Company, Sioux City, Iowa. Filed Oct. 9, 1964.



Applicant disclaims the wording "Known From Coast to Coast." Owner of Reg. No. 505,512.
For Personal Loans and Installment Financing.
First use Oct. 1, 1964.

Class 103 — Construction and Repair

SN 177,827. Clayton Manufacturing Company, El Monte, Calif. Filed Sept. 19, 1963.



The drawing is lined for red and blue, however no claim is made to color. The words "Round the World" are disclaimed apart from the mark as shown.
For Repair and Maintenance of Steam Generators, Steam Cleaners, Dynamometers, and Similar Goods and the Installation of Parts Necessary in Said Repair and Maintenance Services.
First use Nov. 30, 1961.

SN 179,917. National Garage Builders, Inc., Louisville, Ky. Filed Oct. 28, 1963.

GARAGOLIST

For Designing and Building Garages.
First use Sept. 1, 1962.

SN 193,214. Renewal Service, Inc., Philadelphia, Pa. Filed May 11, 1964.

No registration rights are claimed to the word "Service" or to the word "Renewal" apart from the mark as shown.
For Repairing and Modification of Machine Parts for Others.
First use January 1962.

Class 104 — Communication

SN 188,061. Sterling Information Services, Ltd., New York, N.Y. Filed Mar. 2, 1964.

TeleGuide

For Presentation of Closed Circuit Television Programs.
First use 1960.

SN 190,686. Air Check Services Corporation of America, Chicago, Ill. Filed Apr. 9, 1964.

VIDEOCHEX

For Video Tape Recording for Others of Television Network and Local Programming on Recording Tape.
First use Jan. 10, 1964.

Class 105 — Transportation and Storage

SN 205,816. Mister Lease, Inc., Springfield, Mass. Filed Nov. 2, 1964.

mister lease



The word "Lease" is disclaimed apart from the mark as shown.

For Leasing and Renting of Motor Vehicles.
First use Oct. 6, 1964.

SN 206,730. Hennis Freight Lines, Inc., Winston-Salem, N.C. Filed Nov. 23, 1964.

HENNIS

For Trucking Services Comprising the Hauling of Freight.
First use on or about July 1, 1927.

Class 106 — Material Treatment

SN 162,198. Photo Cullen, Montclair, N.J. Filed Feb. 5, 1963.

VISITEK

For Services in Product Photography, Custom Film Processing, Making Original Slides, Slide Duplication, Rental of Equipment for Photography and Photograph Processing, and Slide and Motion Picture Titling.
First use May 10, 1962.

Class 107 — Education and Entertainment

SN 153,013. Musichorale, Incorporated, Chicago, Ill. Filed Sept. 12, 1962.

Musichorale

For Musical Entertainment Performed by Orchestra and Chorus and Soloists.
First use Nov. 16, 1961.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

793,854. FORONYLON. British Nylon Spinners Limited. MULTIPLE CLASS (Classes 1 and 48). SN 180,066. Pub. 5–25–65. Filed 10–31–63.

793,855. C CAROLITE. J. W. Carroll & Sons. SN 181,459. Pub. 5–25–65. Filed 11–19–63.

793,856. GAMMAPRENE. Reichhold Chemicals, Inc. SN 188,145. Pub. 5–25–65. Filed 3–6–64.

793,857. GANAPOL. General Aniline & Film Corporation. SN 189,574. Pub. 5–25–65. Filed 3–25–64.

793,858. HILUBE. Fiberfil, Inc. SN 189,886. Pub. 5–25–65. Filed 3–30–64.

793,859. PLASFIL. Fiberfil, Inc. SN 189,887. Pub. 5–25–65. Filed 3–30–64.

793,860. URAFIL. Fiberfil, Inc. SN 190,168. Pub. 5–25–65. Filed 4–2–64.

793,861. ETHOFIL. Fiberfil, Inc. SN 190,170. Pub. 5–25–65. Filed 4–2–64.

793,862. VULCO SPONGE. Crown Rubber Company. SN 197,878. Pub. 5–25–65. Filed 7–15–64.

793,863. STELLA. Celanese Corporation of America. SN 201,808. Pub. 5–18–65. Filed 9–14–64.

793,864. STELLASET. Celanese Corporation of America. SN 201,809. Pub. 5–18–65. Filed 9–14–64.

Class 2 — Receptacles

793,865. DIOTITE. The Metal Box Company Limited. SN 105,995. Pub. 7–9–63. Filed 10–7–60.

793,866. UNITED CAN AND DESIGN. Hunt Foods and Industries, Inc., d.b.a. United Can Company. SN 195,948. Pub. 5–25–65. Filed 6–18–64.

793,867. GL AND DESIGN. Glass Laboratories, Inc. SN 200,094. Pub. 5–25–65. Filed 8–18–64.

793,868. OK AND DESIGN. Farwell, Ozmun, Kirk & Co. MULTIPLE CLASS (Classes 2 and 13). SN 205,495. Pub. 5–25–65. Filed 11–4–64.

Class 4 — Abrasives and Polishing Materials

793,869. UBAX. Werner & Mertz, G.m.b.H. MULTIPLE CLASS (Classes 4, 6, and 52). SN 188,489. Pub. 5–25–65. Filed 3–11–64.

793,870. ARMOR-TEC. Todd Chemical Company, Inc., SN 190,765. Pub. 5–25–65. Filed 4–9–64.

793,871. OXFORD AND DESIGN. New Jersey Chemical Company, Inc. SN 204,990. Pub. 5–25–65. Filed 10–28–64.

Class 5 — Adhesives

793,872. BEAKER (DESIGN). Allegheny Steel Corporation. SN 204,538. Pub. 5–25–65. Filed 10–22–64.

Class 6 — Chemicals and Chemical Compositions

793,869. (See Class 4 for this trademark.)

793,873. DUROSPERSE. Berkshire Color & Chemical Co. SN 191,659. Pub. 5–25–65. Filed 4–21–64.

793,874. DUROFAST. Berkshire Color & Chemical Co. SN 191,660. Pub. 5–25–65. Filed 4–21–64.

793,875. DUROSOL. Berkshire Color & Chemical Co. SN 191,661. Pub. 5–25–65. Filed 4–21–64.

793,876. POLYSPERSE. Berkshire Color & Chemical Co. SN 191,662. Pub. 5–25–65. Filed 4–21–64.

793,877. PADISPERSE. Berkshire Color & Chemical Co. SN 191,663. Pub. 5–25–65. Filed 4–21–64.

793,878. DURONYLITE. Berkshire Color & Chemical Co. SN 191,666. Pub. 5–25–65. Filed 4–21–64.

793,879. ARMOSTAT. Armour and Company. SN 192,883. Pub. 5–25–65. Filed 5–7–64.

793,880. MICROSEAL. Microleak-Seal Impregnant, Inc., assignee of Hester H. Voorhoeve, d.b.a. The Microseal Co. SN 195,986. Pub. 5–25–65. Filed 6–18–64.

793,881. MIL-CRETE. Milchem Incorporated. SN 197,606. Pub. 5–25–65. Filed 7–10–64.

793,882. DEPENDABLE AND DESIGN. Mid-West Oil Company. SN 207,512. Pub. 5–25–65. Filed 12–4–64.

Class 8 — Smokers' Articles, Not Including Tobacco Products

793,883. BRONICA. Zensa Bronica Kogyo Kabushiki Kaisha. SN 195,484. Pub. 5–25–65. Filed 6–11–64.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

793,884. STRATABLAST. The Dow Chemical Company. SN 186,706. Pub. 5–25–65. Filed 2–14–64.

Class 10 — Fertilizers

793,885. LAFAYETTE PEAT AND DESIGN. Hyper-Humus Company, d.b.a. Lafayette Peat Co. SN 198,417. Pub. 5–25–65. Filed 7–23–64.

Class 12 — Construction Materials

793,886. STRONG HOLD AND DESIGN. The National Portland Cement Company. SN 185,066. Pub. 7–21–64. Filed 1–21–64.

793,887. TUFF STUFF. Mary Carter Paint Co. SN 201,094. Pub. 5–25–65. Filed 9–2–64.

793,888. PLYWOOD RANCH AND DESIGN. Arrow Plywood Corporation, d.b.a. Plywood Ranch. SN 205,385. Pub. 5–25–65. Filed 11–3–64.

793,889. GRAPHICA. United States Plywood Corporation. SN 205,976. Pub. 5–25–65. Filed 11–10–64.

793,890. FACAD. United States Plywood Corporation. SN 205,977. Pub. 5–25–65. Filed 11–10–64.

793,891. STOP-CHECK. Elmendorf Research Incorporated. SN 206,019. Pub. 5–25–65. Filed 11–12–64.

793,892. RESOLITE. H. H. Robertson Company. SN 206,184. Pub. 5–25–65. Filed 11–13–64.

793,893. STEELSIDE. Lumaside, Inc. SN 206,557. Pub. 5–25–65. Filed 11–19–64.

798,894. CHLOREX. Baltimore Concrete Plank Corporation. SN 206,567. Pub. 5-25-65. Filed 11-20-64.

798,895. LUXAGRAIN. Hunter Douglas International Corporation. SN 206,728. Pub. 5-25-65. Filed 11-23-64.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

798,868. (See Class 2 for this trademark.)

798,896. TENSOL. Norco, Inc. SN 181,491. Pub. 5-25-65. Filed 11-19-63.

798,897. REEL-PIPE. Simplex Wire & Cable Co. SN 198,227. Pub. 5-25-65. Filed 5-11-64.

798,898. THRIFTI-BAKE. Chicago Metallic Manufacturing Company. SN 196,500. Pub. 5-25-65. Filed 6-26-64.

798,899. CHILTON HOUSE. Aluminum Specialty Company. SN 190,463. Pub. 5-25-65. Filed 3-7-64.

798,900. TUFBAM. General Magnaplate Corporation. SN 200,244. Pub. 5-25-65. Filed 8-20-64.

798,901. GROSS-MEET-A-MIX. D & G Valve Mfg. Co., Inc. SN 208,943. Pub. 5-25-65. Filed 10-14-64.

798,902. JET AND DESIGN. Jet Dispenser Corp. SN 204,794. Pub. 4-27-65. Filed 10-26-64.

798,903. UNIVERSAL PARK-A-BIKE AND DESIGN. Michael J. Lacivita. SN 207,501. Pub. 5-25-65. Filed 12-4-64.

798,904. CONTESSA. Hyer Hardware Mfg. Co. SN 207,608. Pub. 5-25-65. Filed 12-7-64.

798,905. BLACK-LOK. Aerospace Nylok Corporation. SN 207,981. Pub. 5-25-65. Filed 12-11-64.

Class 14—Metals and Metal Castings and Forgings

798,906. PFM INC. AND DESIGN. Pre Finish Metals Incorporated. SN 209,586. Pub. 5-25-65. Filed 1-7-65.

798,907. BERYLCO NICKEL 440. The Beryllium Corporation. SN 211,496. Pub. 5-25-65. Filed 2-8-65.

Class 15—Oils and Greases

798,908. LION. Monsanto Company. SN 198,194. Pub. 5-25-65. Filed 5-11-64.

798,909. LION (DESIGN). Monsanto Company. SN 198,195. Pub. 5-25-65. Filed 5-11-64.

798,910. SONOPOLE. Witco Chemical Company, Inc. SN 196,577. Pub. 5-25-65. Filed 6-26-64.

798,911. SWELL SEAL. Malco Products Inc. SN 197,408. Pub. 5-25-65. Filed 7-8-64.

798,912. QUICK BREAK. Wyandotte Chemicals Corporation. SN 206,802. Pub. 5-25-65. Filed 11-23-64.

798,916. DEPENDABLE AND DESIGN. Mid-West Oil Company. SN 207,511. Pub. 5-25-65. Filed 12-4-64.

798,914. DALTON-BASE. Westran Corporation. SN 207,766. Pub. 5-25-65. Filed 12-8-64.

798,915. CORONET. Coronet Lubricants Co. SN 209,770. Pub. 5-25-65. Filed 1-12-65.

798,916. SUL-LUBE. Sulfo, Inc. SN 210,380. Pub. 5-25-65. Filed 1-21-65.

Class 16—Protective and Decorative Coatings

798,917. KEYCOTE. Keystone Lubricating Company. SN 198,369. Pub. 5-25-65. Filed 2-25-63.

798,918. NO-MAR FILM. Paper Converting Corporation, by change of name from Paper Converting and Finishing Company. SN 176,205. Pub. 5-25-65. Filed 8-16-63.

798,919. MULTONA. Bright Beauty, Inc. SN 181,811. Pub. 5-25-65. Filed 11-18-63.

798,920. YELLOW BALLOON AND DESIGN. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co. SN 185,400. Pub. 5-25-65. Filed 1-27-64.

798,921. PROTEXO-COTE. Thermo Cote Inc. SN 190,559. Pub. 5-25-65. Filed 4-7-64.

798,922. THERMO-COTE. Thermo Cote Inc. SN 193,721. Pub. 5-25-65. Filed 5-18-64.

798,923. UNIKOTE. Capitol Paint & Varnish Works, Inc. SN 194,130. Pub. 5-25-65. Filed 5-25-64.

798,924. 14K AND DESIGN. G. & W. H. Corson, Inc. SN 195,516. Pub. 5-25-65. Filed 6-12-64.

798,925. ACOUSTI-PLEX. Flextone Corporation of America. SN 200,027. Pub. 5-25-65. Filed 8-17-64.

798,926. DA-TUF. Davis Paint Company. SN 200,382. Pub. 5-25-65. Filed 8-28-64.

798,927. POLY-DAX. Davis Paint Company. SN 200,383. Pub. 5-25-65. Filed 8-28-64.

Class 17—Tobacco Products

798,928. VAN HOORN ETC. AND DESIGN. Arnold Böninger Tabakfabrik G.m.b.H. & Co. SN 187,065. Pub. 5-25-65. Filed 2-20-64.

798,929. SMOKERS' HAVEN. Smokers' Haven, Inc. SN 191,326. Pub. 5-25-65. Filed 4-16-64.

798,930. INCHKENNETH. Freeman & Gossage, Inc. SN 192,698. Pub. 5-25-65. Filed 5-5-64.

798,931. BEAU NASH. Freeman & Gossage, Inc. SN 192,706. Pub. 5-25-65. Filed 5-5-64.

798,932. HENRY STRAUS' CUSTOM MADE. The Henry Straus Co. SN 195,958. Pub. 5-25-65. Filed 5-21-64.

798,933. CRANT. John Cotton Limited. SN 196,115. Pub. 5-25-65. Filed 6-22-64.

798,934. PALLAS. Cigarette Manufacturing Company "Ethnos," G. A. Keranis, S.A. SN 203,646. Pub. 5-25-65. Filed 10-9-64.

798,935. APOLLO. Casa Blanca Cigar Company, Inc. SN 204,181. Pub. 5-25-65. Filed 10-16-64.

Class 18—Medicines and Pharmaceutical Preparations

798,936. DERMIK. Dermik Pharmacal Co., Inc. SN 180,077. Pub. 5-25-65. Filed 10-30-63.

798,937. MYCRO-SPAN. Michael L. Newman. SN 182,887. Pub. 5-25-65. Filed 12-12-63.

798,938. PEN-DI HYDRO STREP. American Home Products Corporation. SN 192,251. Pub. 5-25-65. Filed 4-29-64.

798,939. FX. 8 in 1 Pet Products, Inc. SN 196,124. Pub. 5-25-65. Filed 6-22-64.

798,940. BREWSTER. Vitafia Corporation. MULTIPLE CLASS (Classes 18 and 46). SN 196,745. Pub. 5-25-65. Filed 6-29-64.

798,941. SMITT'N. Counter-O-Inc. SN 196,850. Pub. 5-25-65. Filed 7-1-64.

798,942. CONCORDIN. Merck & Co., Inc. SN 196,881. Pub. 5-25-65. Filed 7-1-64.

798,943. PROTRIPTIL. Merck & Co., Inc. SN 196,888. Pub. 5-25-65. Filed 7-1-64.

798,944. PREDLON. Vermilye-Bell. SN 203,904. Pub. 5-25-65. Filed 10-13-64.

Class 19—Vehicles

798,945. SCOTSMAN. Clifford B. Tucker. SN 196,176. Pub. 5-25-65. Filed 6-8-64.

798,946. WILD CAT. The Murray Ohio Manufacturing Co. SN 200,874. Pub. 5-25-65. Filed 8-31-64.

798,947. PAK-A-WAY. Pik-Up-Pak Mfg. Co. SN 204,401. Pub. 5-25-65. Filed 10-30-64.

798,948. ATLAS. L. Omar McGinnis, d.b.a. Atlas Sales. SN 204,688. Pub. 5-25-65. Filed 10-23-64.

798,949. THE HOMEMAKER. Greencastle Coach Company, Inc. SN 204,941. Pub. 5-25-65. Filed 10-15-64.

798,950. MGM MAGNUM. MGM Brakes, Inc. SN 209,281. Pub. 5-25-65. Filed 1-4-65.

798,951. MGM SHORTSTOP. MGM Brakes, Inc. SN 209,282. Pub. 5-25-65. Filed 1-4-65.

Class 21—Electrical Apparatus, Machines, and Supplies

798,952. MULTISONS. Macrosonics Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 178,129. Pub. 5-25-65. Filed 10-1-63.

798,953. L & P ETC. AND DESIGN. Light and Power Utilities Corporation. SN 186,862. Pub. 5-25-65. Filed 2-17-64.

798,954. MA AND DESIGN. Microwave Associates, Inc. SN 187,305. Pub. 5-25-65. Filed 2-24-64.

798,955. TPI. Holley Carburetor Company. SN 190,378. Pub. 5-25-65. Filed 4-6-64.

798,956. SHAW-BOX. Dresser Industries, Inc., assignee of Manning, Maxwell & Moore, Incorporated. SN 192,304. Pub. 5-25-65. Filed 4-29-64.

798,957. GRAND CENTRAL. Beamco, Inc. SN 193,619. Pub. 5-25-65. Filed 5-18-64.

798,958. COSMETIC LITE. Duro-Test Corporation. SN 193,944. Pub. 5-25-65. Filed 5-21-64.

798,959. BBV AND DESIGN. Bendix-Balsers Vacuum, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 194,025. Pub. 5-25-65. Filed 5-22-64.

798,960. FIRE BALL. Federal Sign and Signal Corporation. SN 195,390. Pub. 5-25-65. Filed 6-11-64.

798,961. MOSAIC. The Bendix Corporation. SN 197,818. Pub. 5-25-65. Filed 7-14-64.

798,962. DYNACAST. Century Lighting, Inc. SN 197,819. Pub. 5-25-65. Filed 7-14-64.

798,963. WM WIREMOLD. The Wiremold Company. MULTIPLE CLASS (Classes 21 and 24). SN 196,512. Pub. 5-25-65. Filed 7-24-64.

798,964. SPRAYMAT. D. Napier & Son Limited. SN 198,761. Pub. 5-25-65. Filed 7-29-64.

798,965. CORTRAN. Core Manufacturing Company. SN 201,275. Pub. 5-25-65. Filed 9-4-64.

798,966. GRIP-LASTIC. Bryan Tape Company. SN 201,324. Pub. 5-25-65. Filed 9-1-64.

798,967. POWERMAKER. Electron Industries, Inc. SN 201,402. Pub. 5-25-65. Filed 9-8-64.

798,968. PICONICS. Piconics, Incorporated, assignee of Stephen A. Sleaker, d.b.a. Piconics. SN 201,891. Pub. 5-25-65. Filed 9-14-64.

798,969. DOROIDAL. Cambridge Thermionic Corporation. SN 202,061. Pub. 5-25-65. Filed 9-17-64.

Class 22—Games, Toys, and Sporting Goods

798,970. TEEN TILES. The Roalex Company, Inc. SN 185,443. Pub. 5-25-65. Filed 1-27-64.

798,971. TOT'S TILES. The Roalex Company, Inc. SN 185,445. Pub. 5-25-65. Filed 1-27-64.

798,972. AMERICAN RANGER. American Character, Inc. SN 190,774. Pub. 5-25-65. Filed 4-10-64.

798,973. IWO JIMA COMBAT SET. De Luxe Reading Corporation. SN 196,256. Pub. 5-25-65. Filed 6-22-64.

798,974. TANGLE. Selchow & Righter Company. SN 197,262. Pub. 5-25-65. Filed 7-16-64.

798,975. CHILTON HOUSE. Aluminum Specialty Company. SN 190,463. Pub. 5-25-65. Filed 3-7-64.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

798,976. AQUA MAID. Jabsco Pump Company. SN 179,796. Pub. 5-25-65. Filed 10-25-63.

798,977. ARROW HEAD. The Union Fork & Hoe Company. SN 183,848. Pub. 5-25-65. Filed 12-20-63.

798,978. DYNASAW. American Machine & Tool Co. Inc. SN 188,545. Pub. 5-25-65. Filed 12-26-63.

798,979. GENUINE SEAL TESTED AUTOMOTIVE PARTS AND DESIGN. Transportation Parts Co. of New York, Inc. SN 188,967. Pub. 5-25-65. Filed 1-2-64.

798,980. ZIP-TUBES. Zip Tube Systems, Inc., assignee of Ross Cook, Inc. SN 185,446. Pub. 5-25-65. Filed 1-27-64.

798,981. DREAMER. Cutting Tools Inc., assignee of The Custanite Corporation. SN 189,153. Pub. 5-25-65. Filed 3-20-64.

798,982. TRI-MOD. Schoeller-Bleckmann Stahlwerke Aktiengesellschaft. SN 190,308. Pub. 5-25-65. Filed 4-2-64.

798,983. SHAW-BOX. Dresser Industries, Inc., assignee of Manning, Maxwell & Moore, Incorporated. SN 192,305. Pub. 5-25-65. Filed 4-29-64.

798,984. BULLOCK-NATIONAL. National Engineering Company. SN 193,029. Pub. 5-25-65. Filed 5-6-64.

798,985. STOP-CHUTE. Joseph Trouin. SN 195,024. Pub. 5-25-65. Filed 6-5-64.

798,986. RAPID-PRESS AND DESIGN. Greenlee Bros. & Co. SN 195,785. Pub. 5-25-65. Filed 6-16-64.

798,987. WONDER CUTTER. Wonder Products, Inc. SN 197,226. Pub. 5-25-65. Filed 7-6-64.

798,988. DULOY. Brewton Iron Works, Incorporated. SN 196,127. Pub. 5-25-65. Filed 7-30-64.

798,989. CRYSTAL CONE. Rain Jet Corp. SN 199,166. Pub. 6-25-65. Filed 8-3-64.

798,990. DANCING JEWELS. Rain Jet Corp. SN 199,167. Pub. 5-25-65. Filed 8-3-64.

798,991. MISCELLANEOUS DESIGN. Beloit Corporation. SN 200,062. Pub. 5-25-65. Filed 8-18-64.

798,992. SO-THRU. Cap-Roc Inc., by merger and change of name from Rochester Button Company. SN 201,308. Pub. 5-25-65. Filed 9-4-64.

798,993. HYDRAMIC AND DESIGN. W. A. Whitney Manufacturing Company. SN 202,116. Pub. 5-25-65. Filed 9-17-64.

798,994. SERVO-CONTOUR ETC. AND DESIGN. DoAll Company. SN 202,251. Pub. 5-25-65. Filed 9-21-64.

798,995. ROMAN WHEEL. Rome Plow Company. SN 203,120. Pub. 5-25-65. Filed 10-1-64.

798,996. TAVCO AND DESIGN. Tavco, Inc. SN 203,898. Pub. 5-25-65. Filed 10-13-64.

798,997. MAGNUM. The Bruning Company. SN 204,445. Pub. 5-25-65. Filed 10-21-64.

798,998. OK AND DESIGN. Farwell, Ozmun, Kirk & Co. MULTIPLE CLASS (Classes 23, 26, and 50). SN 205,496. Pub. 5-25-65. Filed 11-4-64.

798,999. ZIP-SCRIBE. Chicago Pneumatic Tool Company. SN 205,925. Pub. 5-25-65. Filed 11-10-64.

794,000. "ORSCHELN." Orschein Lever Sales Company. SN 207,143. Pub. 5-25-65. Filed 11-30-64.

794,001. MOORE AND DESIGN. Moore Business Forms, Inc. SN 207,515. Pub. 5-25-65. Filed 12-4-64.

794,002. SNOOPER. Teale & Company. SN 207,563. Pub. 5-25-65. Filed 12-4-64.

794,003. MERCURY. Columbus McKinnon Corporation. SN 207,570. Pub. 5-25-65. Filed 12-7-64.

794,004. SELECTO-SPREADER. Central Engineering Co., Inc. SN 209,584. Pub. 5-25-65. Filed 1-8-65.

794,005. ADJUST-A-LEG. The Caldwell Company, Inc. SN 209,664. Pub. 5-25-65. Filed 1-11-65.

794,006. SPIRAP. AMP Incorporated. SN 209,754. Pub. 5-25-65. Filed 1-12-65.

794,007. GILT-EDGE. Mid-States Distributing Company, Inc. SN 209,794. Pub. 5-25-65. Filed 1-12-65.

794,008. SAFE-FLEX. The L. S. Starrett Company. SN 209,894. Pub. 5-25-65. Filed 1-12-65.

794,009. SPRAY-CATOR. Minnesota Mining and Manufacturing Company. SN 210,829. Pub. 5-25-65. Filed 1-21-65.

Class 24 — Laundry Appliances and Machines

794,010. PLUS AND DESIGN. John B. Delander, d.b.a. Torette Manufacturing Company. SN 177,403. Pub. 5-25-65. Filed 9-20-63.

794,011. SONIC AND DESIGN. Sonic Engineering Corporation. SN 196,992. Pub. 5-25-65. Filed 7-2-64.

794,012. AMETEK. Ametek, Inc. SN 205,027. Pub. 5-25-65. Filed 10-29-64.

794,013. AMETEK AND DESIGN. Ametek, Inc. SN 205,028. Pub. 5-25-65. Filed 10-29-64.

Class 26 — Measuring and Scientific Appliances

798,952. (See Class 21 for this trademark.)

798,959. (See Class 21 for this trademark.)

798,998. (See Class 23 for this trademark.)

794,014. RADAR-EYE. Pinkerton Electro-Security Corporation. SN 166,610. Pub. 5-25-65. Filed 4-8-63.

794,015. RUST. Rust Corporation of America, assignee of General Electronic Laboratories, Inc. SN 177,521. Pub. 5-25-65. Filed 9-26-63.

794,016. MODULEX. A/S Modulex. SN 178,295. Pub. 5-25-65. Filed 10-3-63.

794,017. ROCKWELL. Rockwell Manufacturing Company. SN 179,160. Pub. 5-25-65. Filed 10-16-63.

794,018. PRO-TECH AND DESIGN. Pro-Tech, Inc. SN 189,805. Pub. 5-25-65. Filed 3-27-64.

794,019. MOTOREYE. Benton Product Development Co., Inc. SN 190,286. Pub. 5-25-65. Filed 4-3-64.

794,020. UNIVIS AND DESIGN. Univis, Inc. SN 190,673. Pub. 5-25-65. Filed 4-8-64.

794,021. THERMOFOIL. Minco Products, Inc. SN 191,000. Pub. 5-25-65. Filed 1-20-64.

794,022. MAG-MIKE. Dexter Machine Company. SN 191,140. Pub. 5-25-65. Filed 4-15-64.

794,023. DIGISET. Barber-Colman Company. SN 191,486. Pub. 5-25-65. Filed 4-20-64.

794,024. FILM FLOW. American Processor Corporation. SN 192,544. Pub. 5-25-65. Filed 5-4-64.

794,025. MICRO-LAB. The Lionel Toy Corporation, d.b.a. Lionel-Porter. SN 198,962. Pub. 5-25-65. Filed 7-31-64.

794,026. CAVALIER. Willo-Peer Corp., assignee of W.D.L. Corporation, Inc. SN 199,775. Pub. 5-25-65. Filed 8-12-64.

794,027. CORRELATRON. Goodyear Aerospace Corporation. SN 203,495. Pub. 5-25-65. Filed 10-7-64.

794,028. UNIFLUX. Western Industrial Equipment Co. SN 204,112. Pub. 5-25-65. Filed 10-15-64.

794,029. FAIRSTAR. Fairchild Camera and Instrument Corporation. SN 204,151. Pub. 5-25-65. Filed 10-16-64.

794,030. RAPIDSTAT. Statmaster Corporation. SN 204,806. Pub. 5-25-65. Filed 10-19-64.

Class 27 — Horological Instruments

794,031. TIMEPROOF. The Sessions Clock Co. SN 211,814. Pub. 5-25-65. Filed 2-3-65.

794,032. QUALTEX. Benrus Watch Company, Inc. SN 211,840. Pub. 5-25-65. Filed 2-4-65.

Class 28 — Jewelry and Precious-Metal Ware

794,033. WEBB. David Webb, Inc. SN 191,815. Pub. 5-25-65. Filed 4-22-64.

794,034. DPL. Diplomat Jewelry Manufacturing Corporation. SN 206,706. Pub. 5-25-65. Filed 11-23-64.

794,035. ROMA. Fairdeal Manufacturing Co. SN 211,160. Pub. 5-25-65. Filed 2-2-65.

Class 29 — Brooms, Brushes, and Dusters

794,036. LADY-EZE. Mecanair, Inc. SN 193,889. Pub. 5-25-65. Filed 5-13-64.

794,037. SPIN-RITE AND DESIGN. Finest Lambswool Products Co. SN 205,396. Pub. 5-25-65. Filed 11-3-64.

794,038. AMERICAN AND DESIGN. American Brush Company, Inc. SN 208,425. Pub. 5-25-65. Filed 12-18-64.

Class 30 — Crockery, Earthenware, and Porcelain

794,039. RX AND DESIGN. Owens-Illinois Glass Company. SN 174,430. Pub. 5-25-65. Filed 8-5-63.

Class 31 — Filters and Refrigerators

794,040. MICRO-PURE. Everpure, Inc. SN 172,886. Pub. 12-31-63. Filed 7-12-63.

794,041. ELECTRONIC HOUSEKEEPER. National Electronic Filter Company, Incorporated. SN 197,607. Pub. 5-25-65. Filed 7-10-64.

794,042. MAGIC-MAID THE ELECTRONIC HOUSEKEEPER AND DESIGN. National Electronic Filter Company, Incorporated. SN 197,609. Pub. 5-25-65. Filed 7-10-64.

794,043. NEFCO. National Electronic Filter Company, Incorporated. SN 197,610. Pub. 5-25-65. Filed 7-10-64.

794,044. DURA-LAST. Admiral Corporation. SN 204,730. Pub. 5-25-65. Filed 10-26-64.

794,045. MERMAN. Mermaid, Inc. SN 205,188. Pub. 5-25-65. Filed 10-30-64.

Class 32 — Furniture and Upholstery

794,046. FURNITURE LOFT. Robert Villency, d.b.a. Furniture Loft. SN 188,936. Pub. 5-25-65. Filed 3-17-64.

794,047. YOUNG MARRIED SET. Holland Wire Products, Incorporated. SN 196,381. Pub. 5-25-65. Filed 6-24-64.

794,048. SPRING TONIC. Restonic Corporation. SN 197,909. Pub. 5-25-65. Filed 7-15-64.

794,049. SOUTHBRIDGE. Carolina Wood Turning Company, d.b.a. Cherokee Furniture Company. SN 206,227. Pub. 5-25-65. Filed 11-16-64.

794,050. PLEASANT VALLEY. Carolina Wood Turning Company, d.b.a. Cherokee Furniture Company. SN 206,228. Pub. 5-25-65. Filed 11-16-64.

794,051. COMFORT SEAL. The Englander Company, Inc. SN 206,530. Pub. 5-25-65. Filed 11-19-64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

793,963. (See Class 21 for this trademark.)

794,052. DYNAMIST. Kas Manufacturing Co., Inc. MULTIPLE CLASS (Classes 34 and 44). SN 194,807. Pub. 5-25-65. Filed 6-3-64.

794,053. VIT. Black, Sivalls & Bryson, Inc. SN 200,229. Pub. 5-25-65. Filed 8-20-64.

794,054. STOKERMATIC. The Stokermatic Company. SN 204,203. Pub. 5-25-65. Filed 10-16-64.

794,055. BAR-B-KEWER. Whirlpool Corporation. SN 204,333. Pub. 5-25-65. Filed 10-19-64.

794,056. EMPIRE AND DESIGN. Empire Stove Company. SN 204,778. Pub. 5-25-65. Filed 10-26-64.

794,057. AMETEK. Ametek, Inc. SN 205,026. Pub. 5-25-65. Filed 10-29-64.

794,058. AMETEK AND DESIGN. Ametek, Inc. SN 205,029. Pub. 5-25-65. Filed 10-29-64.

794,059. DUOMATIC. Arcos Corporation. SN 205,033. Pub. 5-25-65. Filed 10-29-64.

794,060. ELECTROSLOPE. Miller Electric Mfg. Co. SN 205,075. Pub. 5-25-65. Filed 10-29-64.

794,061. TRAILBLAZER. Miller Electric Mfg. Co. SN 205,078. Pub. 5-25-65. Filed 10-29-64.

794,062. CONNOISSEUR. Whirlpool Corporation. SN 205,126. Pub. 5-25-65. Filed 10-29-64.

794,063. I AND DESIGN. International Oil Burner Co. SN 206,624. Pub. 5-25-65. Filed 11-20-64.

Class 36 — Musical Instruments and Supplies

794,064. AUTOMATE. J. Herbert Orr Enterprises, Inc. SN 179,157. Pub. 5-25-65. Filed 10-16-63.

794,065. COMMENTATOR SR. Ricoh Industries, U.S.A., Inc. SN 196,905. Pub. 5-25-65. Filed 7-1-64.

794,066. CLARI-TONE. G. Leblanc Corporation. SN 199,581. Pub. 5-25-65. Filed 8-10-64.

Class 37 — Paper and Stationery

794,067. KIM-KRAFT RITE & REPLY. Kim-Kraft, Inc. SN 181,782. Pub. 5-25-65. Filed 11-22-63.

794,068. SAVE RITE. Elm Farm Foods Co. SN 188,090. Pub. 5-25-65. Filed 3-6-64.

794,069. K AND DESIGN. Knowlton Brothers, Inc. SN 194,890. Pub. 5-25-65. Filed 6-4-64.

794,070. IMPERIAL AND DESIGN. The Winterbottom Book Cloth Company Limited. SN 195,747. Pub. 6-25-65. Filed 6-15-64.

794,071. FILMCO AND DESIGN. Filmco Inc. SN 198,266. Pub. 5-25-65. Filed 7-21-64.

794,072. HAMMERMILL WEBFORM. Hammermill Paper Company. SN 198,476. Pub. 5-25-65. Filed 7-24-64.

794,073. TEXVELLUM. East Texas Pulp and Paper Company. SN 205,262. Pub. 5-25-65. Filed 11-2-64.

794,074. UNIFAS. Universal Paper Goods Company, d.b.a. Universal Paper Goods Co. SN 205,474. Pub. 5-25-65. Filed 11-3-64.

Class 38 — Prints and Publications

794,075. GALLERY 12 AND DESIGN. The Dayton Company. SN 188,734. Pub. 5-25-65. Filed 6-16-64.

794,076. QUALITY COURTS. Quality Courts Motels, Inc. SN 193,898. Pub. 5-25-65. Filed 5-20-64.

794,077. GASLIGHT GAZETTE AND DESIGN. Gaslight Club, Inc. SN 194,094. Pub. 5-25-65. Filed 5-8-64.

794,078. GASLIGHT GAZETTE AND DESIGN. Gaslight Club, Inc. SN 194,095. Pub. 5-25-65. Filed 5-19-64.

794,079. A NOVO LAUGH. Novo Card Publishers, Inc. SN 195,135. Pub. 5-25-65. Filed 6-8-64.

794,080. NATIONAL SPIRITUAL ASSEMBLY OF THE BAHA'IS OF THE UNITED STATES. National Spiritual Assembly of the Baha'is of the United States, d.b.a. Baha'i Publishing Trust. SN 197,316. Pub. 5-25-65. Filed 7-7-64.

794,081. HOUSE BEAUTIFUL'S GARDENING AND OUTDOOR LIVING. The Hearst Corporation. SN 197,892. Pub. 5-25-65. Filed 7-8-64.

794,082. THE FAMILY SCENE. Paul J. Stelter, d.b.a. The Stelter Company. SN 197,793. Pub. 5-25-65. Filed 7-13-64.

794,083. NUTRIX. The Greater New York Association of Industrial Nurses, Inc. SN 198,516. Pub. 5-25-65. Filed 7-24-64.

Class 39 — Clothing

794,084. SPORTSWEAR FOR EVERYWEAR. David Crystal, Inc. SN 119,857. Pub. 5-25-65. Filed 5-12-61.

794,085. DIAPER JEANS. Martha Tredway. SN 159,010. Pub. 5-25-65. Filed 12-12-62.

794,086. DAISY FRESH. Dominion Corset Company, Limited. SN 174,353. Pub. 5-25-65. Filed 8-5-63.

794,087. KIYYO. Kiyyo Kasuals, Inc. SN 179,289. Pub. 5-25-65. Filed 10-17-63.

794,088. SOU-WEST. Genesco, Inc. SN 184,620. Pub. 5-25-65. Filed 1-15-64.

794,089. STRETCH-POWERLACE. Figure Flattery Brassiere Company, Inc. SN 188,971. Pub. 5-25-65. Filed 3-18-64.

794,090. HONEY B'S. Dutchess Underwear Corporation. SN 190,795. Pub. 5-25-65. Filed 4-10-64.

794,091. ANGELFLEX. Angelica Uniform Company. SN 196,586. Pub. 5-25-65. Filed 6-29-64.

794,092. ALLTEST. Sheffield Hosiery Mills, Inc. SN 198,671. Pub. 5-25-65. Filed 7-28-64.

794,093. CACTUS CUTS. Eloesser-Heynemann Company. SN 199,461. Pub. 5-25-65. Filed 8-7-64.

794,094. STRETCH QUEEN. Bryant Buying Corp. SN 199,718. Pub. 5-25-65. Filed 8-12-64.

794,095. LOAFLEX. A. E. Nettleton Company. SN 200,275. Pub. 5-25-65. Filed 8-20-64.

794,096. NK. Nelson Knitting Company. SN 200,877. Pub. 5-25-65. Filed 8-21-64.

794,097. DECK-R-DEN. Victor B. Handal & Bro., Inc. SN 201,122. Pub. 5-25-65. Filed 9-2-64.

794,098. HAPPY ENDING. Olga Company. SN 201,140. Pub. 5-25-65. Filed 9-2-64.

794,099. COVERLEIGH. Wells & Coverly, Incorporated. SN 201,903. Pub. 5-25-65. Filed 9-14-64.

794,100. MR. WICKS AND DESIGN. Mr. Wicks, Inc. SN 201,989. Pub. 5-25-65. Filed 9-15-64.

794,101. AMERI-KINS. American Girl Shoe Co. SN 202,211. Pub. 5-25-65. Filed 9-21-64.

794,102. MR. DEE CEE. Washington Manufacturing Company. SN 202,336. Pub. 5–25–65. Filed 9–21–64.

794,106. SILK 'N HONEY. A. Schreter & Sons Co., Inc. SN 202,384. Pub. 5–25–65. Filed 9–22–64.

794,104. CHILDSTYLE. Childstyle Inc. SN 203,159. Pub. 5–25–65. Filed 10–2–64.

794,105. LEESURE LEES. The H. D. Lee Company, Incorporated. SN 203,188. Pub. 5–25–65. Filed 10–2–64.

794,106. SPAND-A-MATIC. Savada Bros., Inc. SN 203,207. Pub. 5–25–65. Filed 10–2–64.

794,107. THOROWEAR. Charles H. Bacon Company, Inc. SN 203,249. Pub. 5–25–65. Filed 10–5–64.

794,108. LEE CLAIRE AND DESIGN. Lee Claire, Inc. SN 203,309. Pub. 5–25–65. Filed 10–5–64.

794,109. DREAMWEIGHTS AND DESIGN. Shuko Shoe Corp. SN 203,436. Pub. 5–25–65. Filed 10–6–64.

794,110. GYM-A-TARD. Educator Sports-Wear Co. SN 203,490. Pub. 5–25–65. Filed 10–7–64.

794,111. JAY-SPAND. F. Jacobson & Sons, Inc. SN 203,504. Pub. 5–25–65. Filed 10–7–64.

794,112. DURATUF. The B. F. Goodrich Company. SN 204,567. Pub. 5–25–65. Filed 10–22–1964.

794,113. PERTEGAZ. Manuel Pertegas Ibanes. SN 205,071. Pub. 5–25–65. Filed 10–29–64.

794,114. SOFTOWNER. Samuels Shoe Company. SN 206,080. Pub. 5–25–65. Filed 11–12–64.

794,115. SEAVEES. The B. F. Goodrich Company. SN 206,211. Pub. 5–25–65. Filed 11–16–64.

794,116. DAFFODIL. Huntington Mfg. Co., Inc. SN 206,852. Pub. 5–25–65. Filed 11–24–64.

794,117. MISS REIGNING BEAUTY. Belk Stores Services, Inc. SN 207,002. Pub. 5–25–65. Filed 11–27–64.

794,118. HUMAN DESIGN. Rhodia Inc. SN 207,152. Pub. 5–25–65. Filed 11–30–64.

794,119. BROOKSTRAVELER. Julius Garfinckel & Co., Incorporated. SN 207,287. Pub. 5–25–65. Filed 12–2–64.

794,120. SIXTIES EAST. Federated Department Stores, Inc. SN 207,881. Pub. 5–25–65. Filed 12–3–64.

794,121. O.T.C. Kayser-Roth Corporation. SN 207,609. Pub. 5–25–65. Filed 12–7–64.

794,122. LOAD & LOCK. Rudin & Roth, Inc. SN 207,908. Pub. 5–25–65. Filed 12–10–64.

794,123. KINGS GATE AND DESIGN. Edwards & Hill, Inc., d.b.a. Lewis & Thos. Salts. SN 208,179. Pub. 5–25–65. Filed 12–15–64.

794,124. CHIXETTES. Chicopee Mills, Inc. SN 208,238. Pub. 5–25–65. Filed 12–16–64.

794,125. MAMMA MIA. Creative Shoes Ltd. SN 212,250. Pub. 5–25–65. Filed 6–16–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

794,126. FABRIFOIL. R. J. Reynolds Tobacco Company. SN 191,077. Pub. 5–25–65. Filed 4–14–64.

794,127. FABRALUM. R. J. Reynolds Tobacco Company. SN 191,078. Pub. 5–25–65. Filed 4–14–64.

794,128. FIBERWOVEN. The Fiberwoven Corporation. SN 197,548. Pub. 5–25–65. Filed 7–10–64.

794,129. CREPE SUPREME. Ascot Textile Corp. SN 198,813. Pub. 4–13–65. Filed 7–30–64.

794,130. LYNSHIRE. Burlington Industries, Inc. SN 198,982. Pub. 5–25–65. Filed 7–31–64.

794,131. COMPUTER COLOR. United Merchants and Manufacturers, Inc. SN 199,328. Pub. 5–25–65. Filed 8–5–64.

794,132. MILITAIRE. Waumbec Mills Incorporated. SN 200,802. Pub. 5–25–65. Filed 8–27–64.

794,133. CASHANOVA. Wain Shiell & Son Limited. SN 204,722. Pub. 5–25–65. Filed 10–23–64.

794,134. WITTRUP CARPET MILLS AND DESIGN. Th. Wittrup, Uldvare- & Taeppefabrik A/S. SN 206,908. Pub. 5–25–65. Filed 11–23–64.

794,135. VERIFORM. Stacy Fabrics Corp. SN 207,243. Pub. 5–25–65. Filed 12–1–64.

794,136. SANILON. Golding Bros. Company, Inc. SN 207,289. Pub. 5–25–65. Filed 12–2–64.

794,137. ABTROQUARTZ. J. P. Stevens & Co., Inc. SN 207,442. Pub. 5–25–65. Filed 12–3–64.

794,138. VIVENDO. J. P. Stevens & Co., Inc. SN 207,443. Pub. 5–25–65. Filed 12–3–64.

794,139. DANCOOL. Dan River Mills, Incorporated. SN 207,478. Pub. 5–25–65. Filed 12–4–64.

794,140. WINTERWEAVE. Dan River Mills, Incorporated. SN 207,479. Pub. 5–25–65. Filed 12–4–64.

794,141. COLORFROST. Dan River Mills, Incorporated. SN 207,480. Pub. 5–25–65. Filed 12–4–64.

794,142. DANPEPPER. Dan River Mills, Incorporated. SN 207,481. Pub. 5–25–65. Filed 12–4–64.

794,143. FUNFIR. Alamac Knitting Mills, Inc. SN 207,934. Pub. 5–25–65. Filed 12–11–64.

794,144. POTS 'N PATTERNS. Cannon Mills Company. SN 208,236. Pub. 5–25–65. Filed 12–16–64.

Class 43 — Thread and Yarn

793,854. (See Class 1 for this trademark.)

794,145. M. R. CHAVANOZ. Moulinage et Retorderie de Chavanos, Societe Anonyme. SN 198,974. Pub. 5–25–65. Filed 7–31–64.

794,146. OSTARA. N.V. Koninklijke Veenendaalsche Sajeten Vijfschachtfabriek Voorheen Weduwe D. S. van Schuppen en Zoon. SN 207,132. Pub. 5–25–65. Filed 11–30–64.

Class 44 — Dental, Medical, and Surgical Appliances

794,052. (See Class 34 for this trademark.)

794,147. SUPERGEL. Harry J. Bosworth Company. SN 193,623. Pub. 5–25–65. Filed 5–18–64.

794,148. AMERICAN WATER MASSAGE AND DESIGN. Jacuzzi Research, Inc. SN 203,401. Pub. 5–25–65. Filed 10–6–64.

794,149. POLYDEK. J. A. Deknatel & Son, Inc. SN 204,055. Pub. 5–25–65. Filed 10–15–64.

794,150. HUMIDETTE. Thomas J. Mahon, Inc. SN 204,582. Pub. 5–25–65. Filed 10–22–64.

794,151. PRI DIE AND DESIGN. Prosthetics Research, Inc. SN 205,610. Pub. 5–25–65. Filed 11–5–64.

Class 45 — Soft Drinks and Carbonated Waters

794,152. SLOPPY JOE. Tropic-Isle Products, Inc. SN 175,450. Pub. 7–7–64. Filed 8–20–63.

794,153. BRACE. Pacific Hawaiian Products Company. SN 190,641. Pub. 5–25–65. Filed 4–8–64.

794,154. FRANKSVILLE. Franksville, Inc. SN 194,793. Pub. 5–25–65. Filed 6–3–64.

794,155. FRANKSVILLE AND DESIGN. Franksville, Inc. SN 195,775. Pub. 5–25–65. Filed 6–16–64.

794,156. INJUN ORANGE (GROTESQUE DESIGN). The Pillsbury Company. SN 196,299. Pub. 5–25–65. Filed 6–23–64.

794,157. FRECKLE FACE STRAWBERRY (GROTESQUE DESIGN). The Pillsbury Company. SN 196,300. Pub. 5–25–65. Filed 6–23–64.

794,158. ROOTIN-TOOTIN RASPBERRY (GROTESQUE DESIGN). The Pillsbury Company. SN 196,306. Pub. 5–25–65. Filed 6–23–64.

794,159. ORANGE JUDY ETC. AND DESIGN. Punch 'N Judy Beverage Co., Inc. SN 197,615. Pub. 5–25–65. Filed 7–10–64.

Class 46 — Foods and Ingredients of Foods

793,940. (See Class 18 for this trademark.)

794,160. LUNA. Naamloose Vennootschap Cacaofabriek "De Zaan," SN 179,915. Pub. 5–25–65. Filed 10–28–63.

794,161. THE INN-COM'PARABLE AND DESIGN. Frederic D. Barton, d.b.a. Hawaiian Garden Resort. SN 181,304. Pub. 5–25–65. Filed 11–18–63.

794,162. BONNIE HUBBARD'S. United Grocers, Ltd. SN 182,847. Pub. 5–25–65. Filed 12–11–63.

794,163. BONNIE HUBBARD'S AND DESIGN. United Grocers, Ltd. SN 182,848. Pub. 5–25–65. Filed 12–11–63.

794,164. FRANKSVILLE. Franksville, Inc. SN 194,794. Pub. 5–25–65. Filed 6–3–64.

794,165. FRANKSVILLE AND DESIGN. Franksville, Inc. SN 195,776. Pub. 5–25–65. Filed 6–16–64.

794,166. THE TEAS THAT CARRY THEIR OWN MESSAGE. Gertrude H. Ford Tea Co., Inc. SN 196,374. Pub. 5–25–65. Filed 6–24–64.

794,167. OLD STYLE. Beatrice Foods Co. SN 196,496. Pub. 5–25–65. Filed 6–26–64.

794,168. NORTH-LITE. White Clover Dairy Company, Inc. SN 196,829. Pub. 5–25–65. Filed 6–30–64.

794,169. NORTH-LITE AND DESIGN. White Clover Dairy Company, Inc. SN 196,830. Pub. 5–25–65. Filed 6–30–64.

794,170. STITCHERY. Pet Milk Company. SN 197,981. Pub. 5–25–65. Filed 7–16–64.

794,171. THE COUNTRY SQUIRE'S. Swift & Company. SN 199,236. Pub. 5–25–65. Filed 8–4–64.

794,172. SHASTA. Stiefvaters', Incorporated, d.b.a. Stiefvaters'. SN 199,507. Pub. 5–25–65. Filed 8–7–64.

794,173. CLOWN FACE (DESIGN). James Candy Company. SN 199,743. Pub. 5–25–65. Filed 8–12–64.

Class 47 — Wines

794,174. ALIANCA. The Westminster Corporation, d.b.a. Diplomat Importers, Ltd. SN 198,303. Pub. 5–25–65. Filed 7–21–64.

Class 49 — Distilled Alcoholic Liquors

794,175. RICARD AND DESIGN. Ricard, Societe Anonyme. SN 194,238. Pub. 5–25–65. Filed 5–25–64.

Class 50 — Merchandise Not Otherwise Classified

793,998. (See Class 28 for this trademark.)

Class 51 — Cosmetics and Toilet Preparations

794,176. OXYDENT. Park & Tilford, d.b.a. Norex Laboratories, assignee of Norex Laboratories, Inc. SN 144,524. Pub. 4–21–64. Filed 5–14–62.

794,177. OXY-DENT. Park & Tilford, d.b.a. Norex Laboratories, assignee of Norex Laboratories, Inc. SN 144,525. Pub. 4–21–64. Filed 5–14–62.

794,178. PHARAOH. Charles M. Burt, d.b.a. Pharoah Cosmetics. SN 182,925. Pub. 5–25–65. Filed 12–13–63.

794,179. COMPLEMENT. Fraternity Mfg. Co., assignee, by mesne assignment, of Jerome Lang. SN 186,728. Pub. 5–25–65. Filed 2–14–64.

794,180. KON-GAY. Marvin E. Kornegay, d.b.a. Kon-Gay Laboratories. MULTIPLE CLASS (Classes 51 and 52). SN 187,586. Pub. 5–25–65. Filed 2–27–64.

794,181. A GOGO. Hattie Carnegie, Inc. SN 199,199. Pub. 5–25–65. Filed 8–4–64.

794,182. BLUE ICE. Helene Curtis Industries, Inc. SN 206,004. Pub. 5–11–65. Filed 11–12–64.

Class 52 — Detergents and Soaps

793,869. (See Class 4 for this trademark.)

794,180. (See Class 51 for this trademark.)

794,183. EASY FLUFF. Le Chien, Inc. SN 184,731. Pub. 5–25–65. Filed 1–16–64.

794,184. BLACK WATCH. Chesebrough-Pond's Inc. SN 196,844. Pub. 5–25–65. Filed 7–1–64.

794,185. OXFORD AND DESIGN. New Jersey Chemical Company, Inc. SN 204,991. Pub. 5–25–65. Filed 10–28–64.

Service Marks

Class 100 — Miscellaneous

794,186. DRUMMERS INN. Dodson Bros. Enterprises. SN 179,520. Pub. 5–25–65. Filed 10–22–63.

794,187. PAR-FORM. Parsons Corporation. SN 181,899. Pub. 5–25–65. Filed 11–18–63.

794,188. MINUTEMAN AND DESIGN. Richard B. Mindlin, d.b.a. Minuteman Beverage Company. SN 186,263. Pub. 5–25–65. Filed 2–7–64.

794,189. CROWN ROOM. Horne's Enterprises, Inc. SN 186,532. Pub. 5–25–65. Filed 2–12–64.

794,190. FRANKSVILLE AND DESIGN. Franksville, Inc. SN 195,777. Pub. 5–25–65. Filed 6–16–64.

794,191. ATLANTIC AERIAL SURVEYS, INC. AND DESIGN. Atlantic Aerial Surveys, Inc. SN 197,258. Pub. 5–25–65. Filed 7–7–64.

Class 101 — Advertising and Business

794,192. GOLD STAR ENTERPRISES AND DESIGN. Ruth T. Ellanson. SN 192,906. Pub. 5–25–65. Filed 5–7–64.

794,193. EAM. EAM Services Corporation. SN 197,100. Pub. 5–25–65. Filed 7–6–64.

794,194. PARADISO. Paradiso, Inc. SN 197,756. Pub. 5–25–65. Filed 7–13–64.

794,195. P AND DESIGN. Paradiso, Inc. SN 197,757. Pub. 5–25–65. Filed 7–13–64.

794,196. NPC. New Process Company. SN 198,864. Pub. 5–25–65. Filed 7–30–64.

Class 102 — Insurance and Financial

794,197. GOLDEN PACKAGES. Insurance Company of North America. SN 186,851. Pub. 5–25–65. Filed 2–17–64.

794,198. INA AND DESIGN. Insurance Company of North America. SN 186,852. Pub. 5-25-65. Filed 2-17-64.

794,199. FIREMAN'S FUND ETC. AND DESIGN. Fireman's Fund Insurance Company, d.b.a. Fireman's Fund American Insurance Companies. SN 193,649. Pub. 5-25-65. Filed 5-18-64.

794,200. F AND DESIGN. Fireman's Fund Insurance Company, d.b.a. Fireman's Fund American Insurance Companies. SN 193,651. Pub. 5-25-65. Filed 5-18-64.

Class 103 — Construction and Repair

794,201. POWERFUL AS THE NATION ETC. AND DESIGN. Continental Motors Corporation. SN 166,069. Pub. 2-23-65. Filed 4-4-63.

794,202. HEEL BAR. The Auto-Soler Company. SN 180,554. Pub. 5-25-65. Filed 11-6-63.

794,203. REPRESENTATION OF A BEAVER. Cities Service Oil Company. SN 197,061. Pub. 5-25-65. Filed 7-6-64.

794,204. EVANS AND DESIGN. Evans Electric Motor Repair Company. SN 197,376. Pub. 5-25-65. Filed 7-8-64.

794,205. PERM-A-WIND. Evans Electric Motor Repair Company. SN 197,377. Pub. 5-25-65. Filed 7-8-64.

794,206. MILITAIRE AND DESIGN. Warren Unlimited, Inc. SN 197,452. Pub. 5-25-65. Filed 7-8-64.

Class 105 — Transportation and Storage

794,207. RENT-A-RAMA AND DESIGN. Rent-A-Rama Auto Rental Agency, Inc. SN 181,802. Pub. 5-25-65. Filed 11-22-63.

Class 106 — Material Treatment

794,208. DELA FLEX. Cold Spring Bleachery. SN 186,896. Pub. 5-25-65. Filed 2-14-64.

Class 107 — Education and Entertainment

794,209. MPATI AND DESIGN. Midwest Program on Airborne Television Instruction, Inc. SN 185,062. Pub. 5-25-65. Filed 1-21-64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

794,211. John Dieckmann & Sons, Inc., Wheeling, W. Va. SN 184,615. Filed P.R. 1-15-64; Am. S.R. 2-25-65.

DIECKMANN'S

Class 1—Raw or Partly Prepared Materials

For Nursery Stock, Greenhouse Stock and Christmas Trees.

Class 100—Miscellaneous

For Tree Planting and Trimming Services and Landscaping Services.

Class 101—Advertising and Business

For Flower and Garden Shop Retail Services.

First use Apr. 2, 1962.

794,240. The Stephan Co., Fort Lauderdale, Fla. SN 192,529. Filed P.R. 5-1-64; Am. S.R. 5-20-65.



The mark consists of parallel horizontal black, gold, and red bars, said bars being of equal width and extending the entire length and width of the label. The drawing is lined to represent the colors gold and red.

Class 51—Cosmetics and Toilet Preparations

For After Shave Lotion, Hair Dressing, Dandruff Remover Hair Lotion, Bay Rum, and Toilet Water.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Jan. 23, 1964.

794,241. Missionary Servants of the Most Holy Trinity, Holy Trinity, Ala. SN 157,716. Filed P.R. 11-21-62; Am. S.R. 5-21-65.

TRINITY MISSIONS

Class 100—Miscellaneous

For Services in Directing Missionary Activities.

Class 107—Education and Entertainment

For Educational Religious Services—Namely, Teaching Religious Doctrines and Training Missionaries.

First use December 1961.

SECTION 2

Class 1 — Raw or Partly Prepared Materials

794,211. See Section 1 (Combined Certificate).

794,210. Garrett County Processing & Packaging Corporation, Accident, Md. SN 180,873. Filed P.R. 11-12-63; Am. S.R. 6-8-65.



For Peat Moss.
First use Aug. 15, 1963.

Class 12 — Construction Materials

794,212. Theodore Efron Mfg. Co., Chicago, Ill. SN 192,379. Filed P.R. 4-30-64; Am. S.R. 5-14-65.

MARBLSHEEN

For Synthetic Material Simulating Marble, for Use in Building Construction and in Furniture.
First use Apr. 20, 1964.

Class 18 — Medicines and Pharmaceutical Preparations

794,213. Nysco Laboratories, Inc., Long Island City, N.Y. SN 180,947. Filed P.R. 11-12-63; Am. S.R. 6-17-65.

pHOAM

For Antibacterial Emollient.
First use Oct. 14, 1963.

794,214. Philip M. Cable, Effingham, Ill. SN 193,933. Filed P.R. 5-21-64; Am. S.R. 6-10-65.

CABLE'S HOOF OINTMENT



For Ointment for Treatment of Horses' Hooves.
First use Apr. 1, 1964.

Class 22 — Games, Toys, and Sporting Goods

794,215. Carlton B. Wilder, Crystal Lake, Ill., assignee of Wilder-Hoekstra, Crystal Lake, Ill. SN 155,765. Filed P.R. 10-23-62; Am. S.R. 3-17-65.

"THE SAVINGS GAME"

For Equipment Sold as a Unit for Playing a Board Game.
First use Oct. 3, 1962.

794,216. Sifo Company, St. Paul, Minn. SN 171,186. Filed P.R. 6-17-63; Am. S.R. 5-24-65.

WHIRLI-MEN TROLLEY

For Pull Toy Comprising a Wheeled Block Supporting Rotated Simulated Figures.
First use Jan. 1, 1960.

794,217. Simon Rosenberg, d.b.a. Rosenberg's Flip-A-Hoop Div., Cleveland, Ohio. SN 180,324. Filed P.R. 11-1-63; Am. S.R. 6-3-65.

FLIP-A-HOOP

For Game Consisting of Plastic Tubes and Plastic Sticks.
First use on or about Oct. 12, 1963.

Class 26 — Measuring and Scientific Appliances

794,218. Eprad, Inc., Toledo, Ohio. SN 193,946. Filed P.R. 5-21-64; Am. S.R. 5-5-65.

CAR-CHEK

For Remote Reading Indicators for Use in Box Office Control Systems.
First use Oct. 31, 1963.

Class 38 — Prints and Publications

794,219. National Association of Metal Finishers, Upper Montclair, N.J. SN 211,329. Filed 2-3-65.

FINISHERS' MANAGEMENT

For Trade Magazine.
First use Jan. 10, 1964.

794,220. Management Incorporated, St. Paul, Minn. SN 158,005. Filed P.R. 11-27-62; Am. S.R. 12-28-64.

Management Systems

For Bulletins Issued From Time to Time Relating to Business and Tax Matters, for Incorporation in a Looseleaf Binder.
First use Feb. 28, 1962.

794,221. Intercollegiate Broadcasting Systems, Inc., Bethlehem, Pa. SN 198,359. Filed P.R. 7-22-64; Am. S.R. 6-9-65.

COLLEGE RADIO

For Periodical Magazine.
First use March 1964.

794,222. Haire Publishing Company, New York, N.Y. SN 200,345. Filed P.R. 8-21-64; Am. S.R. 6-9-65.

FITTING FACTS

For Trade Publication.
First use Mar. 1, 1964.

794,223. Success Motivation Institute, Inc., Waco, Tex. SN 202,868. Filed P.R. 9-28-64; Am. S.R. 6-7-65.

YOUR PERSONAL SUCCESS PLANNER

For Educational and Training Courses Comprising Books, Booklets, and Sound Recordings Pertaining Thereto.
First use at least as early as May 28, 1964.

794,224. Success Motivation Institute, Inc., Waco, Tex. SN 202,869. Filed P.R. 9-28-64; Am. S.R. 6-7-65.

A PROGRAM DESIGNED TO GIVE DIRECTION TO YOUR DREAMS

For Educational and Training Courses Comprising Books, Booklets, and Related Printed Instructional Material, and Sound Recordings Pertaining Thereto.
First use at least as early as May 28, 1964.

794,225. Farm Journal Inc., Philadelphia, Pa. SN 206,153. Filed P.R. 11-13-64; Am. S.R. 6-8-65.

[redacted]

First use Mar. 17, 1962.

794,226. Publishing Industries, Inc., Oklahoma City, Okla. SN 207,421. Filed P.R. 12-3-64; Am. S.R. 5-17-65.

CB MAGAZINE

For Magazine.
First use Feb. 1, 1964.

Class 39 — Clothing

794,227. Hagger Company, Dallas, Tex. SN 188,752. Filed P.R. 3-16-64; Am. S.R. 5-26-65.

"THEY JUST FIT BETTER NATURALLY"

For Men's and Boys' Clothing—Namely, Slacks.
First use on or about Apr. 30, 1960.

Class 45 — Soft Drinks and Carbonated Waters

794,228. Sun Drop Sales Corporation of America, d.b.a. Sun Drop Sales Corp., St. Louis, Mo. SN 174,544. Filed P.R. 8-6-63; Am. S.R. 6-3-65.

REFRESHING AS A CUP OF COFFEE

For Non-Alcoholic Soft Drink Beverages.
First use Apr. 15, 1954.

Class 46 — Foods and Ingredients of Foods

794,229. Otto Monsted A/S, Copenhagen, Denmark. SN 158,297. Filed P.R. 11-30-62; Am. S.R. 6-7-65.



The mark consists of a showing of the container for the goods in the form of a fanciful representation or design of a chef and the registered trademark "Oma." Owner of Reg. No. 659,577.
For Cheese Spreads.
First use July 16, 1962; in commerce July 16, 1962.

794,230. Frozen Institutional Sales Co-Op, Inc., d.b.a. Frozen Institutional Sales Company, San Francisco, Calif. SN 165,590. Filed P.R. 3-28-63; Am. S.R. 11-2-64.

IDAHO SUPREME

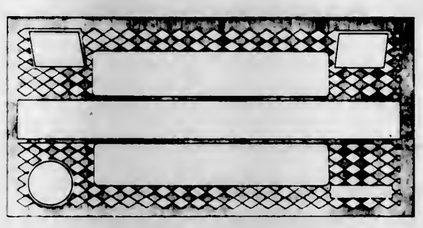
For Frozen Potatoes for Use in Making French Fried Potatoes.
First use Jan. 7, 1963.

794,231. General Foods Corporation, White Plains, N.Y. SN 179,040. Filed P.R. 10-15-63; Am. S.R. 3-26-65.

COCOCOAT

For Cocoa Confectioners Coating.
First use Aug. 28, 1963.

794,232. Cook Quik, Inc., Tampa, Fla. SN 197,092. Filed P.R. 7-6-64; Am. S.R. 6-14-65.



The drawing is lined for red. The mark consists of a label design.
For Frozen Meats.
First use Sept. 15, 1963.

794,233. Allen Products Co., Inc., Allentown, Pa. SN 199,431. Filed P.R. 8-7-64; Am. S.R. 4-19-65.



For Dog Food.
First use Feb. 21, 1964.

Class 49 — Distilled Alcoholic Liquors

794,234. Felton & Son, Incorporated, d.b.a. Santa Cruz Distilling Company of Boston, U.S.A., South Boston, Mass. SN 191,153. Filed P.R. 4-15-64; Am. S.R. 6-16-65.

SANTA CRUZ

For Rum.
First use Jan. 16, 1962.

794,235. Foreign Vintages, Inc., New York, N.Y. SN 195,088. Filed P.R. 6-8-64; Am. S.R. 6-14-65.

CALGARY RARE

For Canadian Whisky.
First use June 1, 1964.

794,236. Departamento de Caldas, Manizales, Colombia. SN 202,560. Filed 9-24-64.



"Ron Viejo de Caldas" is translated as "old rum of Caldas" and "Industria Licorera de Caldas" is translated as "liquor industry of Caldas." Owner of Colombian Reg. No. 56,220, dated Apr. 1, 1964.
For Rum.

Class 50 — Merchandise Not Otherwise Classified

794,237. The V. L. Smithers Manufacturing Company, Kent, Ohio. SN 156,528. Filed P.R. 11-2-62; Am. S.R. 12-7-64.

COMPOTE

For Flower Holders Containing Absorbent Foam Material.
First use on or about June 17, 1959.

Class 51 — Cosmetics and Toilet Preparations

794,240. See Section 1 (Combined Certificate).

794,238. Jacqueline Cochran, Inc., Newark, N.J. SN 165,579. Filed P.R. 3-28-63; Am. S.R. 6-26-65.

"BODY BEAUTIFUL"

For Skin Texture Creams and Body Lotions.
First use Mar. 28, 1940.

794,239. La Velle Laboratories, Inc., Oklahoma City, Okla. SN 183,180. Filed P.R. 12-17-63; Am. S.R. 6-3-65.

LaVelle

For Cosmetics—Namely, Lipstick, Stick Eyeshadow, Cake Mascara, Plastic Eye Pencil, Compact Powder, Cream Rouge, Face Powder, Dusting Powder, Liquid Make Up, Nail Lacquer, Cream Deodorant, Face Cleanser, Face Lotion, Face Cream, Hand Lotion, Cologne, Sun Tan Lotion, Perfume and Men's Cologne, After Shave Lotion, and After Shave Skin Conditioner.
First use Jan. 30, 1963.

Class 52 — Detergents and Soaps

794,240. See Section 1 (Combined Certificate).

Service Marks

Class 100 — Miscellaneous

794,211. See Section 1 (Combined Certificate).
794,241. See Section 1 (Combined Certificate).

Class 101 — Advertising and Business

794,211. See Section 1 (Combined Certificate).

Class 102 — Insurance and Financial

794,242. Basic-Wits Furniture Industries, Inc., Waynesboro, Va. SN 199,346. Filed P.R. 8–6–64; Am. S.R. 6–3–65.

BASICREDIT

For Inventory Financing of Its Furniture Dealers.
First use Apr. 10, 1964.

Class 107 — Education and Entertainment

794,241. See Section 1 (Combined Certificate).

TRADEMARK REGISTRATIONS RENEWED

44,460. OLD NO. 7. Cl. 49. 7–4–05.
44,479. REECE. Cl. 23. 7–4–05.
44,776. ARABOL. Cl. 5. 7–25–05.
45,718. PIANOLA. Cl. 36. 8–29–05.
45,786. SAVE THE BABY AND DESIGN. Cl. 18. 8–29–05.
46,616. THE CLUB. Cl. 49. 9–26–05.
47,077. FLINT PRIMER. Cl. 16. 10–24–05.
47,078. EMERITE. Cl. 16. 10–24–05.
197,912. SIERRA. Cl. 1. 4–28–25.
198,148. ACE SERVESPOON AND DESIGN. Cl. 23. 5–5–25.
199,307. SUPRE-MACY AND DESIGN. Cl. 35. 6–9–25.
199,647. PENNANT AND DESIGN. Cl. 46. 6–16–25.
199,776. ORIGAN. Cl. 51. 6–16–25.
199,787. TRINON. Cl. 14. 6–16–25.
199,845. FLORENTA. Cl. 42. 6–16–25.
199,937. T-SQUARE AND DESIGN. Cl. 46. 6–23–25.
200,052. SILVER SPRAY AND DESIGN. Cl. 45. 6–23–25.
200,324. J. L. HOFFMAN CO. INC. AND DESIGN. Cl. 18. 6–30–25.
200,705. PETITPOINT. Cl. 42. 7–7–25.
200,709. MILLEPOINT. Cl. 42. 7–7–25.
200,710. GROSPOINT. Cl. 42. 7–7–25.
200,934. DRY ICE. Cl. 6. 7–14–25.
201,022. BIT-O-HONEY. Cl. 46. 7–14–25.
201,157. NATIONAL MOTORIST. Cl. 38. 7–21–25.
201,484. HETEX. Cl. 42. 7–28–25.
202,717. 904. Cl. 13. 9–1–25.
202,718. 906. Cl. 13. 9–1–25.
202,719. 994. Cl. 13. 9–1–25.
203,295. PEGGY. Cl. 51. 9–15–25.
203,469. THE MACARONI JOURNAL. Cl. 38. 9–22–25.
204,817. GOLDCRAFT CLOTHES. Cl. 39. 10–27–25.
205,135. TULIP. Cl. 46. 11–3–25.
205,136. GOLDEN ROD. Cl. 46. 11–3–25.
205,137. VIOLET. Cl. 46. 11–3–25.
205,782. VELVA. Cl. 51. 11–17–25.
205,789. PALMOLIVE AND DESIGN. Cl. 51. 11–17–25.
205,940. JOHN ALDEN. Cl. 46. 11–17–25.
206,011. SUPERIOR GRAPHITE PAINT. Cl. 16. 11–24–25.
206,056. GOLDMARK. Cl. 46. 11–24–25.
206,184. KWIKSOLV. Cl. 52. 11–24–25.
206,586. HEPATONE. Cl. 18. 12–8–25.
206,763. DWARF. Cl. 46. 12–8–25.
206,940. SPARKLE. Cl. 45. 12–15–25.
412,274. B.H.4. Cl. 52. 2–27–45.
413,027. ZURIUM. Cl. 4. 4–3–45.
413,321. SPARVEX. Cl. 16. 4–17–45.
413,939. MULBARO. Cl. 23. 5–22–45.
414,009. F.Y.I. Cl. 38. 5–22–45.
414,410. PILLSBURY'S BEST XXXX FEEDS AND DESIGN. Cl. 46. 6–12–45.
414,481. BERLOU. Cl. 6. 6–12–45.
414,545. KEWPEE HOTELS AND DESIGN. Cl. 46. 6–12–45.
414,745. FLOWER MIST. Cl. 51. 6–26–45.
415,047. KELLOGG'S. Cl. 46. 7–10–45.
415,110. DURPLATE. Cl. 26. 7–10–45.
415,492. GREAT STATES. Cl. 23. 8–7–45.
415,890. OLD NICK. Cl. 46. 8–21–45.
415,999. T BRAND AND DESIGN. Cl. 46. 8–21–45.
416,009. VACULATOR. Cl. 21. 8–21–45.
416,010. VACULATOR. Cl. 34. 8–21–45.
416,252. BENADRYL. Cl. 18. 9–4–45.
416,424. SUPREME. Cl. 13. 9–11–45.
416,478. PLASTONE. Cl. 12. 9–18–45.
416,508. DON'T SAY STOCKINGS SAY GOTHAM GOLD STRIPE. Cl. 39. 9–18–45.
416,922. CCC. Cl. 2. 10–2–45.
417,470. VACULATOR. Cl. 13. 10–30–45.
417,471. VACULATOR. Cl. 13. 10–30–45.
417,687. UNITED FOR FREEDOM AND DESIGN. Cl. 38. 11–13–45.
417,866. WHITMAN'S SAMPLER. Cl. 46. 11–20–45.
417,890. JOGS. Cl. 39. 11–20–45.
418,383. NAWLIDE. Cl. 14. 12–18–45.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

717,689. METALFLAKE. Cl. 50. 6–27–61.

Section 8

The following registrations issued June 23, 1959

680,596. METAFOAM. Cl. 1.
680,597. DS AND DESIGN. Cl. 2.
680,599. DURAVAULT. Cl. 2.
680,601. CYMAC SUPER. Cl. 2.
680,608. TEXCEL. Cl. 5.
680,609. R.M.C. PASTE #100. Cl. 5.
680,620. CHEMPAR AND DESIGN. Cl. 6.
680,631. ACRONITE B & B. Cl. 6.
680,635. BLACK MAGIC ETC. AND DESIGN. Cl. 12.
680,638. LITTLE PLUGGER AND DESIGN. Cl. 12.
680,642. TRI-TOP. Cl. 12.
680,645. STARFOLD. Cl. 12.
680,658. RIB LOX. Cl. 13.
680,659. LT AND DESIGN. Cl. 14.
680,660. B-W INGERSOLL PRODUCTS ETC. AND DESIGN. Cl. 14.
680,665. DOUBLE TESTED. Cl. 16.
680,666. VINYL-ART, COLORS AND DESIGN. Cl. 16.
680,667. KOLOR KROME. Cl. 16.
680,676. V AND DESIGN. Cl. 18.
680,678. HEXTRI. Cl. 18.
680,679. DAONIL. Cl. 18.
680,684. DERMATHYN. Cl. 18.
680,688. TRIPAL. Cl. 18.
680,693. PAYTAN. Cl. 18.
680,694. SEADRAGON AND DESIGN. Cl. 19.
680,696. SEASPORT. Cl. 19.
680,697. SEACRUISER. Cl. 19.
680,698. SPORTY. Cl. 19.
680,700. MUTI-CELL. Cl. 19.
680,702. SINK MASTER. Cl. 21.
680,704. BURLINGTON. Cl. 21.
680,705. HARTFORD. Cl. 21.
680,708. FORTNEY FARAWAY. Cl. 21.
680,711. DORBEL MASTER. Cl. 21.
680,713. STALEY. Cl. 21.
680,718. ROLL-A-WORD. Cl. 22.
680,719. JOHNNY ONE-SHOT. Cl. 22.
680,720. "THE 20TH GREEN." Cl. 22.
680,722. TUB PALS. Cl. 22.
680,723. ROLL 'N BOWL AND DESIGN. Cl. 22.
680,725. FIVERS. Cl. 22.

680,726. NAPPIETOYS AND DESIGN. Cl. 22.
680,727. THUNDERBOLT. Cl. 22.
680,728. SPECULATOR. Cl. 22.
680,730. DUAL-JET. Cl. 23.
680,731. AMRAM. Cl. 23.
680,733. ROTO-CHOP. Cl. 23.
680,734. TURBO. Cl. 23.
680,739. FLEXOSTOP. Cl. 23.
680,741. B-W INGERSOLL PRODUCTS ETC. AND DESIGN. Cl. 23.
680,743. LA RUE DRY. Cl. 23.
680,749. KLEEN FLO. Cl. 23.
680,750. BAKE-MATE. Cl. 23.
680,753. INDUCTOMATIC. Cl. 23.
680,754. DUBLE TUFF. Cl. 23.
680,759. MULTI-BAGGER. Cl. 24.
680,763. H-G-B AND DESIGN. Cl. 26.
680,768. DIGIVERTER. Cl. 26.
680,775. UNI-SITE. Cl. 26.
680,776. DIGIDEC. Cl. 26.
680,781. TIEDOTS. Cl. 28.
680,787. B.A.C. FLEXI-TOWER AND DESIGN. Cl. 31.
680,790. "HUSH-A-BOOTH." Cl. 32.
680,791. RELAX-O-MATIC. Cl. 32.
680,794. CONTRAST AND DESIGN. Cl. 32.
680,795. IMPRESSION. Cl. 32.
680,797. BEL-AIR ETC. AND DESIGN. Cl. 34.
680,801. FIRESIDE CHEF. Cl. 34.
680,803. CASCADE. Cl. 34.
680,805. KIKU. Cl. 35.
680,809. EB AND DESIGN OF A LYRE. Cl. 36.
680,811. RID AND DESIGN. Cl. 36.
680,812. OPERA AND DESIGN. Cl. 36.
680,813. EXPLORER. Cl. 36.
680,818. HI-LO. Cl. 36.
680,819. PEPPER. Cl. 36.
680,822. BELEGANTI AND DESIGN. Cl. 39.
680,823. WYATT EARP ORIGINALS. Cl. 39.
680,826. SHEMI-SHIRT. Cl. 39.
680,828. COMFORT AID. Cl. 39.
680,839. CUDDL'TARD. Cl. 39.
680,843. FEMININE FABRIC. Cl. 42.
680,844. VANDYKE. Cl. 42.
680,846. ESQUISEE. Cl. 42.
680,850. TROPIC-GLO. Cl. 42.
680,852. DUOSERT. Cl. 44.
680,856. REFLEC-TAN. Cl. 44.
680,864. GARDEN OF EDEN. Cl. 46.
680,873. SNOW WHITE. Cl. 46.
680,881. DESERT VICTORY. Cl. 46.
680,884. PINK PACIFIC. Cl. 46.
680,888. COCOA FLAVORED KRISPIES. Cl. 46.
680,901. CONFETTI RICE. Cl. 50.
680,903. PROTECT-O-PLASTIC. Cl. 50.
680,904. PUSH BUTTON PORK. Cl. 50.
680,905. PORKLINER. Cl. 50.
680,906. BRACE-FAST. Cl. 50.
680,907. SET-A-TILE. Cl. 50.
680,908. FLY-WIK. Cl. 50.
680,910. HUBERT DE GIVENCHY. Cl. 51.
680,923. YOUR PRIVATE SECRETARY. Cl. 101.
680,924. CAPITAL STOCK COMPANY INSURANCE ETC. AND DESIGN. Cl. 102.
680,925. BIDS FOR KIDS. Cl. 102.
680,926. PARK N WASH AND DESIGN. Cl. 103.
680,929. JAMALIMBO. Cl. 105.
680,931. TRAFFIC COPTER. Cl. 107.
680,932. HIPPITY HOP AND DESIGN. Cl. 107.
680,934. PLUMBING AND DRAINAGE INSTITUTE CERTIFIED AND DESIGN. Cl. A.
680,936. EZY-BROIL AND DESIGN. Cl. 13.
680,940. "IN WALL." Cl. 34.
680,944. BEE-PLUS. Cl. 51.
680,954. SILVER SHAMPOO. Cl. 52.
680,955. BONAT INSTANT-MIX. Cl. 52.

Section 18

699,734. TERMO-BOND. Cl. 19. 6–21–60.
760,483. SNAP-INS. Cl. 2. 11–26–63.
325,949. SCOTTY AND DESIGN. Cl. 4. 7–9–35.
227,352. ALAMAC. Cl. 39. 5–3–27.
254,959. BAR-B-Q. Cl. 46. 4–2–29.
430,941. SWING TIME AND DESIGN. Cl. 22. 4–2–29.
438,140. BELLE MEAD AND DESIGN. Cl. 49. 4–6–48.

INDEX OF REGISTRANTS

AUGUST 10, 1965

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

AMP, Inc., Harrisburg, Pa. 794,006, pub. 5–25–65. Cl. 23.
A/S Modulex, Billund, Jutland, Denmark. 794,016, pub. 5–25–65. Cl. 26.
Ace Hardware Mfg. Corp'n., Philadelphia, to Ace Mfg. Co., Inc., Chalfonte, Pa. 198,148, ren. 8–10–65. Cl. 23.
Ace Mfg. Co., Inc. : *See*—
Ace Hardware Mfg. Corp'n.
Acorn Paint & Chemical Co., Cleveland, Ohio. 680,631, canc. Cl. 6.
Admiral Corp., Chicago, Ill. 794,044, pub. 5–25–65. Cl. 31.
Aeolian American Corp. : *See*—
Aeolian Co., The.
Aeolian Co., The, to Aeolian American Corp., New York, N.Y. 45,718, ren. 8–10–65. Cl. 36.
Aerospace Nylok Corp., Hawthorne, N.J. 793,905, pub. 5–25–65. Cl. 13.
Air Reduction Co., Inc. : *See*—
Dryice Corp. of America.
Allegheny Steel Corp., Bryn Mawr, Pa. 793,872, pub. 5–25–65. Cl. 5.
Allen Products Co., Inc., Allentown, Pa. 794,233. Cl. 46. 5–25–65. Cl. 42.
Almanac Knitting Mills, Inc., New York, N.Y. 794,143, pub.
Aluminum Specialty Co., Manitowoc, Wis. 793,899, pub. 5–25–65. Cl. 13.
Aluminum Specialty Co., Manitowoc, Wis. 793,975, pub. 5–25–65. Cl. 22.
American Brush Co., Inc., Roxbury, Mass. 794,038, pub. 5–25–65. Cl. 29.
American Character, Inc., New York, N.Y. 793,972, pub. 5–25–65. Cl. 22.
American Cyanamid Co., New York, N.Y. 680,601, canc. Cl. 2.
American Cyanamid Co., New York, N.Y. 680,676, canc. Cl. 18.
American Cyanamid Co., New York, N.Y. 680,852, canc. Cl. 44.
American Girl Shoe Co., Boston, Mass. 794,101, pub. 5–25–65. Cl. 39.
American Home Products Corp., New York, N.Y. 793,938, pub. 5–25–65. Cl. 18.
American Machine & Tool Co., Inc., Royersford, Pa. 793,978, pub. 5–25–65. Cl. 23.
American-Marietta Co., Chicago, Ill. 680,731, canc. Cl. 23.
American Processor Corp., Cleveland, Ohio. 794,024, pub. 5–25–65. Cl. 26.
Ametek, Inc., New York, N.Y. 794,012–13, pub. 5–25–65. Cl. 24.
Ametek, Inc., New York, N.Y. 794,057–8, pub. 5–25–65. Cl. 34.
Angelica Uniform Co., St. Louis, Mo. 794,091, pub. 5–25–65. Cl. 39.
Arabol M'f'g Co., The, to The Borden Co., New York, N.Y. 44,776, ren. 8–10–65. Cl. 5.
Arcos Corp., Philadelphia, Pa. 794,059, pub. 5–25–65. Cl. 34.
Arden, Elizabeth, Sales Corp. : *See*—
Lewis, Florence N.
Arden, Elizabeth, Sales Corp., New York, N.Y. 414,745, ren. 8–10–65. Cl. 51.
Armour and Co., Chicago, Ill. 793,879, pub. 5–25–65. Cl. 6.
Arrow Plywood Corp., d.b.a. Plywood Ranch, Belmont, Mass. 793,888, pub. 5–25–65. Cl. 12.
Ascot Textile Corp., New York, N.Y. 794,129, pub. 4–13–65. Cl. 42.
Atlantic Aerial Surveys, Inc., Huntsville, Ala. 794,191, pub. 5–25–65. Cl. 100.
Atlas Sales : *See*—
McGinnis, L. Omar.
Auto-Soler Co., The, Atlanta, Ga. 794,202, pub. 5–25–65. Cl. 103.
Bacon, Charles H., Co., Inc., Lenoir City, Tenn. 794,107, pub. 5–25–65. Cl. 39.
Baha'i Publishing Trust : *See*—
National Spiritual Assembly of The Baha'is of The United States.
Baltimore Aircoil Co., Inc., Baltimore, Md. 680,787, canc. Cl. 31.
Baltimore Concrete Plank Corp., Baltimore, Md. 793,894, pub. 5–25–65. Cl. 12.
Barber-Colman Co., Rockford, Ill. 794,023, pub. 5–25–65. Cl. 26.
Barnett Bros., New York, N.Y. 227,352, canc. Cl. 39.
Barton, Frederic D., Holly, Mich. 794,161, pub. 5–25–65. Cl. 46.
Basic-Witz Furniture Industries, Inc., Waynesboro, Va. 794,242. Cl. 102.
Bayshore Industries, Inc., Elkton, Md. 680,727, canc. Cl. 22.
Beamco, Inc., Mountain View, Calif. 793,957, pub. 5–25–65. Cl. 21.
Beardsley & Piper Co., The, to Pettibone Mulliken Corp., Chicago, Ill. 413,939, ren. 8–10–65. Cl. 23.
Beatrice Foods Co., Chicago, Ill. 794,167, pub. 5–25–65. Cl. 46.
Beaugnier, M., & Cie, Mantes-La-Ville, Seine-et-Oise, France. 680,809, canc. Cl. 36.
Belk Stores Services, Inc., Charlotte, N.C. 794,117, pub. 5–25–65. Cl. 39.
Beloit Corp., Beloit, Wis. 793,991, pub. 5–25–65. Cl. 23.
Bendix-Balzers Vacuum, Inc., Rochester, N.Y. 793,959, pub. 5–25–65. Multiple Class (Classes 21 and 26).
Bendix Corp., The, Holmdel, N.J. 793,961, pub. 5–25–65. Cl. 21.
Benrus Watch Co., Inc., New York, N.Y. 794,082, pub. 5–25–65. Cl. 27.
Benton Product Development Co., Inc., Benton, Pa. 794,019, pub. 5–25–65. Cl. 26.
Berkshire Color & Chemical Co., Reading, Pa. 793,873–6, pub. 5–25–65. Cl. 6.
Berkshire Color & Chemical Co., Reading Pa. 793,877–8, pub. 5–25–65. Cl. 6.
Berlou Mfg. Co. : *See*—
Peterson, Bernhard.
Berrell, Daniel J., Bronx, N.Y. 680,728, canc. Cl. 22.
Beryllium Corp., The, Reading, Pa. 793,907, pub. 5–25–65. Cl. 14.
Black, Sivalls & Bryson, Inc., Kansas City, Mo. 794,053, pub. 5–25–65. Cl. 34.
Blaufus, Hulda M., Chicago, Ill. 680,828, canc. Cl. 39.
Bloch & Guggenheimer, Inc., Long Island City, N.Y. 206,763, ren. 8–10–65. Cl. 46.
Bonat, Samuel, & Bro., Inc., West Paterson, N.J. 680,955, canc. Cl. 52.
Boninger, Arnold, Tabakfabrik G.m.b.H., & Co., Duisburg, Germany. 793,928, pub. 5–25–65. Cl. 17.
Borden Co., The : *See*—
Arabol M'f'g Co., The.
Borg-Warner Corp., Chicago, Ill. 680,660, canc. Cl. 14.
Borg-Warner Corp., Chicago, Ill. 680,741, canc. Cl. 23.
Bosworth, Harry J., Co., Chicago, Ill. 794,147, pub. 5–25–65. Cl. 44.
Bradley, Lawrence R., d.b.a. The Periseal Co., New York, N.Y., to Luminall Paints, Inc., Chicago, Ill. 413,321, ren. 8–10–65. Cl. 16.
Brewton Iron Works, Inc., Brewton, Ala. 793,988, pub. 5–25–65. Cl. 23.
Bright Beauty, Inc., Chicago, Ill. 793,919, pub. 5–25–65. Cl. 16.
British Nylon Spinners Ltd., Pontypool, England. 793,854, pub. 5–25–65. Multiple Class (Classes 1 and 43).
Bruner Corp., Milwaukee, Wis. 416,424, ren. 8–10–65. Cl. 13.
Bruning Co., The, Lincoln, Nebr. 793,997, pub. 5–25–65. Cl. 23.
Bryan Tape Co., St. Petersburg, Fla. 793,966, pub. 5–25–65. Cl. 21.
Bryant Buying Corp., New York, N.Y. 794,094, pub. 5–25–65. Cl. 29.
Burlington Industries, Inc., New York, N.Y. 794,130, pub. 5–25–65. Cl. 42.
Burt, Charles M., d.b.a. Pharaoh Cosmetics, El Segundo, Calif. 794,178, pub. 5–25–65. Cl. 51.
Cable, Philip M., Effingham, Ill. 794,214. Cl. 18.
Caldwell Co., Inc., The, Rockford, Ill. 794,005, pub. 5–25–65. Cl. 23.
California Custom Accessories Mfg. Co. : *See*—
Kraus Accessories Co., The.
Cambridge Thermionic Corp., Cambridge, Mass. 793,969, pub. 5–25–65. Cl. 21.
Cannon Mills Co., Kannapolis, N.C. 794,144, pub. 5–25–65. Cl. 42.
Capitol Paint & Varnish Works, Inc., Chicago, Ill. 793,923, pub. 5–25–65. Cl. 16.
Cap-Roc, Inc., from Rochester Button Co., Rochester, N.Y. 793,992, pub. 5–25–65. Cl. 23.
Carlova, Inc., to Chesebrough-Pond's, Inc., New York, N.Y. 203,295, ren. 8–10–65. Cl. 51.
Carnegie, Hattie, Inc., New York, N.Y. 794,181, pub. 5–25–65. Cl. 51.
Carolina Wood Turning Co., d.b.a. Cherokee Furniture Co., Bryson City, N.C. 794,049-50, pub. 5–25–65. Cl. 32.
Carroll, J. W., & Sons, Gardena, Calif. 793,855, pub. 5–25–65. Cl. 1.
Casa Blanca Cigar Co., Inc., York, Pa. 793,935, pub. 5–25–65. Cl. 17.
Celanese Corp. of America, New York, N.Y. 793,863–4, pub. 5–18–65. Cl. 1.
Central Engineering Co., Inc., Milwaukee, Wis. 794,004, pub. 5–25–65. Cl. 23.
Century Lighting, Inc., New York, N.Y. 793,962, pub. 5–25–65. Cl. 21.
Chadbourn Gotham, Inc. : *See*—
Gotham Hosiery Co., Inc.
Chemical Products Corp., Shrewsbury, Mass. 680,638, canc. Cl. 12.
Chempar Chemical Co., Inc., New York, N.Y. 680,620, canc. Cl. 6.
Cherokee Furniture Co. : *See*—
Carolina Wood Turning Co.
Chesebrough-Pond's, Inc. : *See*—
Carlova, Inc.
Chesbrough-Pond's, Inc., New York, N.Y. 794,184, pub. 5–25–65. Cl. 52.
Chicago Metallic Mfg. Co., Zurich, Ill. 793,898, pub. 5–25–65. Cl. 18.

Chicago Pneumatic Tool Co., New York, N.Y. 793,999, pub. 5–25–65. Cl. 23.
Chicopee Mfg. Corp., Chicopee Falls, Mass. 680,843, canc. Cl. 42.
Chicopee Mills, Inc., New York, N.Y. 794,124, pub. 5–25–65. Cl. 39.
Childstyle Inc., New York, N.Y. 794,104, pub. 5–25–65. Cl. 39.
Cigarette Mfg. Co. "Ethnos" G. A. Keranis, S.A., Piraeus, Greece. 793,934, pub. 5–25–65. Cl. 17.
Cities Service Oil Co., Tulsa, Okla. 794,203, pub. 5–25–65. Cl. 103.
Claire, Lee, Inc., New York, N.Y. 794,108, pub. 5–25–65. Cl. 39.
Clopay Corp., Cincinnati, Ohio. 680,759, canc. Cl. 24.
Clover Leaf Paint & Varnish Corp.: *See*—
Mayer & Loewenstein.
Cochran, Jacqueline, Inc., Newark, N.J. 794,238. Cl. 51.
Gold Laminating Corp., New York, N.Y. 680,903, canc. Cl. 50.
Cold Spring Bleachery, Yardley, Pa. 794,208, pub. 5–25–65. Cl. 106.
Colgate-Palmolive Co.: *See*—
Palmolive Co., The.
Columbus McKinnon Corp., Tonawanda, N.Y. 794,003, pub. 5–25–65. Cl. 23.
Commonwealth Shoe & Leather Co., Inc.: *See*—
Commonwealth Shoe and Leather Co.
Commonwealth Shoe and Leather Co., to Commonwealth Shoe & Leather Co., Inc., Whitman, Mass. 417,890, ren. 8–10–65. Cl. 39.
Connecticut Asbestos Products, Inc., Middletown, Conn. 699,734, canc. Cl. 19.
Continental Can Co., Inc., New York, N.Y. 416,922, ren. 8–10–65. Cl. 2.
Continental Motors Corp., Muskegon, Mich. 794,201, pub. 2–23–65. Cl. 103.
Cook, John H., d.b.a. Forth Worth Mfg. Co., Forth Worth, Tex. 680,599, canc. Cl. 2.
Cook Quik, Inc., Tampa, Fla. 794,232. Cl. 46.
Cook, Ross, Inc.: *See*—
Zip Tube Systems, Inc.
Core Mfg. Co., Washington, Mo. 793,965, pub. 5–25–65. Cl. 21.
Coronet Lubricants Co., Los Angeles, Calif. 793,915, pub. 5–25–65. Cl. 15.
Corson, G. & W. H., Inc., Plymouth Meeting, Pa. 793,924, pub. 5–25–65. Cl. 16.
Cotton, John, Ltd., Edinburgh, Scotland. 793,933, pub. 5–25–65. Cl. 17.
Coty, Inc., Wilmington, Del., and New York, N.Y., to Chas. Pfizer & Co., Inc., New York, N.Y. 199,776, ren. 8–10–65. Cl. 51.
Counter-O-Inc., Chicago, Ill. 793,941, pub. 5–25–65. Cl. 18.
Craddock Furniture Corp., Evansville, Ind. 680,794–5, canc. Cl. 32.
Creative Shoes Ltd., Montreal, Quebec, Canada. 794,125, pub. 5–25–65. Cl. 39.
Crown Rubber Co., Fremont, Ohio. 793,862, pub. 5–25–65. Cl. 1.
Crystal, David, Inc., New York, N.Y. 794,084, pub. 5–25–65. Cl. 39.
Curtition Corp., Los Angeles, Calif. 680,645, canc. Cl. 12.
Custanite Corp., The: *See*—
Cutting Tools, Inc.
Cutting Tools, Inc., from The Custanite Corp., Brooklyn, N.Y. 793,991, pub. 3–23–65. Cl. 23.
Cyprus Mines Corp.: *See*—
Sierra Talc Co.
D & G Valve Mfg. Co., Inc., Stoneham, Mass. 793,901, pub. 5–25–65. Cl. 13.
Dairyland Supply Co., Inc., Wichita, Kans. 680,597, canc. Cl. 2.
Damus, Shibli S.: *See*—
Highland Exchange Association.
Dan River Mills, Inc., Danville, Va. 794,139–40, pub. 5–25–65. Cl. 42.
Dan River Mills, Inc., Danville, Va. 794,141–2, pub. 5–25–65. Cl. 42.
Daniel, Jack, Distillery: *See*—
Daniel, Jack.
Daniel, Jack, to Jack Daniel Distillery, Lem Motlow, Prop., Inc., Lynchburg, Tenn. 44,460, ren. 8–10–65. Cl. 49.
Davis Paint Co., Kansas City, Mo. 793,926–7, pub. 5–25–65. Cl. 16.
Dayton Co., The, Minneapolis, Minn. 794,075, pub. 5–25–65. Cl. 38.
Delander, John B., d.b.a. Torette Mfg. Co., St. Paul, Minn. 794,010, pub. 5–25–65. Cl. 23.
Deknatel, J. A., & Son, Inc., Queens Village, N.Y. 794,149, pub. 5–25–65. Cl. 44.
Delphi Products Co., Delphi, Ind. 680,904–5, canc. Cl. 50.
Deluxe Reading Corp., Elizabeth, N.J. 793,973, pub. 5–25–65. Cl. 22.
Departamento De Caldas, Manizales, Colombia. 794,236. Cl. 49.
Dermik Pharmacal Co., Inc., Syosset, N.Y. 793,936, pub. 5–25–65. Cl. 18.
Detroit Graphite Co., Detroit, Mich., to The Valspar Corp., Rockford, Ill. 206,011, ren. 8–10–65. Cl. 16.
Dexter Machine Co., Clarendon Hills, Ill. 794,022, pub. 5–25–65. Cl. 26.
Dieckmann, John, & Sons, Inc., Wheeling, W. Va. 794,211. Multiple Class (Classes 1, 100, and 101).
Diplomat Importers, Ltd.: *See*—
Westminster Corp., The.
Diplomat Jewelry Mfg. Corp., New York, N.Y. 794,034, pub. 5–25–65. Cl. 28.
Dixieland Mfg., Inc., Corpus Christi, Tex. 680,743, canc. Cl. 23.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 680,666, canc. Cl. 16.
Doall Co., Des Plaines, Ill. 793,994, pub. 5–25–65. Cl. 23.
Dodson Bros. Enterprises, Arlington, Tex. 794,186, pub. 5–25–65. Cl. 100.
Dominion Corset Co., Ltd., Quebec, Quebec, Canada. 794,086, pub. 5–25–65. Cl. 39.
Douglas, Hunter, International Corp., New York, N.Y. 793,895, pub. 5–25–65. Cl. 12.
Dow Chemical Co., The, Midland, Mich. 717,689, canc. Cl. 50.
Dow Chemical Co., The, Midland, Mich. 793,884, pub. 5–25–65. Cl. 9.
Dresser Industries, Inc., Dallas, Tex., from Manning, Maxwell & Moore, Inc., Stratford, Conn. 793,956, pub. 5–25–65. Cl. 21.
Dresser Industries, Inc., Dallas, Tex., from Manning, Maxwell & Moore, Inc., Stratford, Conn. 793,983, pub. 5–25–65. Cl. 23.
Dryice Corp. of America, New York, and Long Island City, N.Y., to Air Reduction Co., Inc., New York, N.Y. 200,934, ren. 8–10–65. Cl. 6.
Duputel, Fernand P., Bogota, Colombia. 680,811, canc. Cl. 36.
Duro-Test Corp., North Bergen, N.J. 793,958, pub. 5–25–65. Cl. 21.
Dutchess Underwear Corp., New York, N.Y. 794,090, pub. 5–25–65. Cl. 39.
Eam Services Corp., Irving, Tex. 794,193, pub. 5–25–65. Cl. 101.
East Texas Pulp and Paper Co., Silsbee, Tex. 794,073, pub. 5–25–65. Cl. 37.
Educator Sports-Wear Co., Philadelphia, Pa. 794,110, pub. 5–25–65. Cl. 39.
Edwards & Hill, d.b.a. Lewis & Thos. Saltz, Chicago, Ill. 794,123, pub. 5–25–65. Cl. 39.
Efron, Theodore, Mfg. Co., Chicago, Ill. 794,212. Cl. 12.
8 In 1 Pet Products, Inc., Long Island City, N.Y. 793,939, pub. 5–25–65. Cl. 18.
Electric Switch Corp., Indianapolis, Ind. 680,713, canc. Cl. 21.
Electron Industries, Inc., Torrance, Calif. 793,967, pub. 5–25–65. Cl. 21.
Ellanson, Ruth T., Milwaukee, Wis. 794,192, pub. 5–25–65. Cl. 101.
Elm Farm Foods Co., Boston, Mass. 794,068, pub. 5–25–65. Cl. 37.
Elmendorf Research, Inc., Palo Alto, Calif. 793,891, pub. 5–25–65. Cl. 12.
Elsesser-Heynemann Co., San Francisco, Calif. 794,093, pub. 5–25–65. Cl. 39.
Empire Stove Co., Belleville, Ill. 794,056, pub. 5–25–65. Cl. 34.
Englander Co., Inc., The, New York, N.Y. 794,051, pub. 5–25–65. Cl. 32.
Eprad, Inc., Toledo, Ohio. 794,218. Cl. 26.
Europaischer Phonoklub Verlags G.m.b.H., Stuttgart, Germany. 680,812, canc. Cl. 36.
Evans Electric Motor Repair Co., Oklahoma City, Okla. 794,204–5, pub. 5–25–65. Cl. 103.
Evans, Everett E., Oakland, Calif. 690,635, canc. Cl. 12.
Everpure, Inc., Oak Brook, Ill. 794,040, pub. 12–31–63. Cl. 31.
Ezy-Broil, Inc., Marietta, Ga., from W. Smaw, Atlanta, Ga. 680,936, canc. Cl. 13.
Fairchild Camera and Instrument Corp., Syosset, N.Y. 794,029, pub. 5–25–65. Cl. 26.
Fairdeal Mfg. Co., Providence, R.I. 794,035, pub. 5–25–65. Cl. 28.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany. 680,679, canc. Cl.18.
Farm Journal, Inc., Philadelphia, Pa. 794,225. Cl. 38.
Farrel-Birmingham Co., Inc., Ansonia, Conn. 680,753, canc. Cl. 23.
Farwell, Ozmun, Kirk & Co., St. Paul, Minn. 793,868, pub. 5–25–65. Multiple Class (Classes 2 and 13).
Farwell, Ozmun, Kirk & Co., St. Paul, Minn. 793,998, pub. 5–25–65. Multiple Class (Classes 23, 26, and 50).
Feassel, Jesse L., d.b.a. Scotty Products, Philadelphia, Pa. 325,949, canc. Cl. 4.
Federal Sign and Signal Corp., Blue Island, Ill. 793,960, pub. 5–25–65. Cl. 21.
Federated Department Stores, Inc.: *See*—
Goldsmith, J., & Son Co.
Federated Department Stores, Inc., New York, N.Y. 794,120, pub. 5–25–65. Cl. 39.
Felton & Son, Inc., d.b.a. Santa Cruz Distilling Co. of Boston, U.S.A., South Boston, Mass. 794,234. Cl. 49.
Ferrell Mfg. Co., Groton, N.Y. 680,696–8, canc. Cl. 19.
Fiberfil, Inc., Evansville, Ind. 793,858–61, pub. 5–25–65. Cl. 1.
Fiberwoven Corp., The, Elkin, N.C. 794,128, pub. 5–25–65. Cl. 42.
Figure Flattery Brassiere Co., Inc., New York, N.Y. 794,089, pub 5–25–65. Cl. 39.
Filmco, Inc., Aurora, Ohio. 794,071, pub. 5–25–65. Cl. 37.
Finest Lambswool Products Co., Brooklyn, N.Y. 794,037, pub. 5–25–65. Cl. 29.
Fireman's Fund American Insurance Companies: *See*—
Fireman's Fund Insurance Co.
Fireman's Fund Insurance Co., d.b.a. Fireman's Fund American Insurance Companies, San Francisco, Calif. 794,199–200, pub. 5–25–65. Cl. 102.
Fitger Brewing Co., The: *See*—
Fitger Co., The.
Fitger Co., The, to The Fitger Brewing Co., Duluth, Minn. 200,052, ren. 8–10–65. Cl. 45.

Flint, Eaton & Co., Decatur, Ill. 680,684, canc. Cl. 18.
Foote Mineral Co., Berwyn, Pa. 680,659, canc. Cl. 14.
Ford, Gertrude H., Tea Co., Inc., Poughkeepsie, N.Y. 794,166, pub. 5–25–65. Cl. 46.
Foreign Vintages, Inc., New York, N.Y. 794,235. Cl. 49.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 199,845, ren. 8–10–65. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 200,705, ren. 8–10–65. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 200,709–10, ren. 8–10–65. Cl. 42.
Fortney Faraway Gas Pedal Stoplight Warning Co.: *See*—
Fortney, Grant S.
Fortney, Grant S., d.b.a. Fortney Faraway Gas Pedal Stoplight Warning Co., Chicago, Ill. 680,706, canc. Cl. 21.
Fort Worth Mfg. Co.: *See*—
Cook, John H.
Franksville, Inc., Chicago, Ill. 794,154–5, pub. 5–25–65. Cl. 45.
Franksville, Inc., Chicago, Ill. 794,164–5, pub. 5–25–65. Cl. 46.
Franksville, Inc., Chicago, Ill. 794,190, pub. 5–25–65. Cl. 100.
Frantz, Charton C., Wilkensburg, Pa. 254,959, canc. Cl. 46.
Fraternity Mfg. Co., Los Angeles, Calif., from J. Lang, New York, N.Y. 794,179, pub. 5–25–65. Cl. 51.
Freeman & Gossage, Inc., San Francisco, Calif. 793,930–1, pub. 5–25–65. Cl. 17.
Frozen Institutional Sales Co.: *See*—
Frozen Institutional Sales Co-Op., Inc.
Frozen Institutional Sales Co-Op, Inc., d.b.a. Frozen Institutional Sales Co., San Francisco, Calif. 794,230. Cl. 46.
Fuller, W. P., & Co.: *See*—
Hunt Foods and Industries, Inc.
Furniture Loft: *See*—
Villency, Robert.
Gabriel Co., The, Cleveland, Ohio. 680,653, canc. Cl. 18.
Garfinckel, Julius, & Co., Inc., Washington, D.C. 794,119, pub. 5–25–65. Cl. 39.
Garrett County Processing & Packaging Corp., Accident, Md. 794,210. Cl. 1.
Gaslight Club, Inc., Chicago, Ill. 794,077–8, pub. 5–25–65. Cl. 38.
General Aniline & Film Corp., New York, N.Y. 793,857, pub. 5–25–65. Cl. 1.
General Electronic Laboratories, Inc.: *See*—
Rust Corp. of America.
General Foods Corp., White Plains, N.Y. 794,231. Cl. 46.
General Magnaplate Corp., Belleville, N.J. 793,900, pub. 5–25–65. Cl. 13.
Genesco, Inc., Nashville, Tenn. 794,088, pub. 5–25–65. Cl. 39.
Gibson, Inc., Kalamazoo, Mich. 680,813, canc. Cl. 36.
Givenchy (Societe Anonyme), Paris, France. 680,910, canc. Cl. 51.
Glass Laboratories, Inc., Brooklyn, N.Y. 793,867, pub. 5–25–65. Cl. 2.
Globe Roofing Products Co., Inc., Whiting, to Globe Roofing Products Co., Inc., Chicago, Ill. 416,478, ren. 8–10–65. Cl. 12.
Golding Bros. Co., Inc., New York, N.Y. 794,136, pub. 5–25–65. Cl. 42.
Goldmark, Adolph, & Sons: *See*—
Goldmark, Adolph, & Sons, Corp.
Goldmark, Adolph, & Sons, Corp., New York, N.Y. 206,056, ren. 8–10–65. Cl. 46.
Goldsmith, J., & Son Co., Memphis, Tenn., to Federated Department Stores, Inc., Cincinnati, Ohio. 204,817, ren. 8–10–65. Cl. 39.
Goodrich, B. F., Co., The, Akron, Ohio. 794,115, pub. 5–25–65. Cl. 39.
Goodrich, B. F., Co., The, Akron, Ohio. 794,112, pub. 5–25–65. Cl. 39.
Goodyear Aerospace Corp., Akron, Ohio. 794,027, pub. 5–25–65. Cl. 26.
Gotham Hosiery Co., Inc., New York, N.Y., to Chadbourn Gotham, Inc., Charlotte, N.C. 416,508, ren. 8–10–65. Cl. 39.
Great States Corp., Shelbyville, Ind. 415,492, ren. 8–10–65. Cl. 23.
Greater New York Association of Industrial Nurses, Inc., The, New York, N.Y. 794,083, pub. 5–25–65. Cl. 38.
Greencastle Coach Co., Inc., Greencastle, Pa. 793,949, pub. 5–25–65. Cl. 19.
Greenlee Bros. & Co., Rockford, Ill. 793,986, pub. 5–25–65. Cl. 23.
Gretske, Harry, New York, N.Y. 438,140, canc. Cl. 49.
Haggar Co., Dallas, Tex. 794,227. Cl. 39.
Hairе Publishing Co., New York, N.Y. 794,222. Cl. 38.
Hammermill Paper Co., Erie, Pa. 794,072, pub. 5–25–65. Cl. 37.
Handal, Victor B., & Bro., Inc., New York, N.Y. 794,097, pub. 5–25–65. Cl. 39.
Hanson-Gorrill-Brian, Inc., Glen Cove, N.Y. 680,763, canc. Cl. 26.
Hearst Corp., The, New York, N.Y. 794,081, pub. 5–25–65. Cl. 38.
Heberlein & Co., A.G., Rietwiss, Wattwil, Switzerland. 201,484. ren. 8–10–65. Cl. 42.
Curtis, Helene, Industries, Inc., Chicago, Ill. 794,182, pub. 5–11–65. Cl. 51.
Heublein, G. F., & Bro., to Heublein, Inc., Hartford, Conn. 46,616. ren. 8–10–65. Cl. 49.
Heublein, Inc.: *See*—
Heublein, G. F., & Bro.
Highland Exchange Association, Highland, to S. S. Damus, d.b.a. United Citrus Growers, Redlands, Calif. 205,940, ren. 8–10–65. Cl. 46.
Hill-Shaw Co., to Hill-Shaw Co., Chicago, Ill. 416,009–10, ren. 8–10–65. Cl. 21.
Hill-Shaw Co., to Hill-Shaw Co., Chicago, Ill. 417,470–1, ren. 8–10–65. Cl. 13.
Hoffman, J. L., Co., Allentown, Pa. 200,324, ren. 8–10–65. Cl. 18.
Holland Wire Products, Inc., Holland, Mich. 794,047, pub. 5–25–65. Cl. 32.
Holley Carburetor Co., Warren, Mich. 793,955, pub. 5–25–65. Cl. 21.
Hollywood Water Heater Co., Los Angeles, Calif. 680,797, canc. Cl. 34.
Horne's Enterprises, Inc., Bayard, Fla. 794,189, pub. 5–25–65. Cl. 100.
Hudnut, Richard, Morris Plains, N.J. 680,944, canc. Cl. 51.
Hunt Foods and Industries, Inc., d.b.a. United Can Co., Fullerton, Calif. 793,866, pub. 5–25–65. Cl. 2.
Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. 793,920, pub. 5–25–65. Cl. 16.
Huntington Mfg. Co., Inc., Chicago, Ill. 794,116, pub. 5–25–65. Cl. 39.
Hyer Hardware Mfg. Co., Anaheim, Calif. 793,904, pub. 5–25–65. Cl. 13.
Hyper-Humus Co., d.b.a. Peat Co., Newton, N.J. 793,885, pub. 5–25–65. Cl. 10.
I.W. Air Conditioning Corp., New York, N.Y. 680,940, canc. Cl. 34.
Industrial Abrasives, Inc., to Super-Cut, Inc., Chicago, Ill. 413,027, ren. 8–10–65. Cl. 4.
Insurance Co. of North America, Philadelphia, Pa. 794,197–8, pub. 5–25–65. Cl. 102.
Intercollegiate Broadcasting System, Inc., Bethlehem, Pa. 794,221. Cl. 38.
International Oil Burner Co., St. Louis, Mo. 794,063, pub. 5–25–65. Cl. 34.
Jabsco Pump Co., Costa Mesa, Calif. 793,976, pub. 5–25–65. Cl. 23.
Jacobson, F., & Sons, Inc., New York, N.Y. 794,111, pub. 5–25–65. Cl. 39.
Jacuzzi Research, Inc., Berkeley, Calif. 794,148, pub. 5–25–65. Cl. 44.
Jalbert Aerology Laboratory: *See*—
Jalbert, Domina C.
Jalbert, Domina C., d.b.a. Jalbert Aerology Laboratory, Boca Raton, Fla. 680,700, canc. Cl. 19.
James Candy Co., Atlantic City, N.J. 794,173, pub. 5–25–65. Cl. 46.
Jet Dispenser Corp., Los Angeles, Calif. 793,902, pub. 4–27–65. Cl. 13.
Jo-Juniors, Inc., Dallas, Tex. 680,826, canc. Cl. 39.
Johnson & Johnson, New Brunswick, N.J., from LePage's, Inc., Gloucester, Mass. 680,608, canc. Cl. 5.
Kamehameha Garment Co., Ltd., Honolulu, Hawaii. 680,850, canc. Cl. 42.
Kayser-Roth Corp., New York, N.Y. 794,121, pub. 5–25–65. Cl. 39.
Kaz Mfg. Co., Inc., New York, N.Y. 794,052, pub. 5–25–65. Multiple Class (Classes 34 and 44).
Kellogg Co., Battle Creek, Mich. 415,047, ren. 8–10–65. Cl. 46.
Kellogg Co., Battle Creek, Mich. 680,888, canc. Cl. 46.
Kewpee Hotels System, Inc.: *See*—
Kewpee Hotels.
Kewpee Hotels, to Kewpee Hotels System, Inc., Toledo, Ohio. 414,545, ren. 8–10–65. Cl. 46.
Keystone Lubricating Co., Calumet City, Ill. 793,917, pub. 5–25–65. Cl. 16.
Kilgore, Inc., Westerville, Ohio. 680,719, canc. Cl. 22.
Kildeer Corp., The, Upper Sandusky, Ohio. 680,906, canc. Cl. 50.
Kim-Kraft, Inc., Erie, Pa. 794,067, pub. 5–25–65. Cl. 37.
Kiyyo Kasuals, Inc., Los Angeles, Calif. 794,087, pub. 5–25–65. Cl. 39.
Knowlton Brothers, Inc., Watertown, N.Y. 794,069, pub. 5–25–65. Cl. 37.
Kon-Gay Laboratories: *See*—
Kornegay, Marvin E.
Korfund Co., Inc., The, Long Island City, N.Y. 680,790, canc. Cl. 32.
Kornegay, Marvin E., d.b.a. Kon-Gay Laboratories, Greensboro, N.C. 794,180, pub. 5–25–65. Multiple Class (Classes 51 and 52).
Kraft, G. J., New York, N.Y. 680,725, canc. Cl. 22.
Kraus Accessories Co., The, d.b.a. California Custom Accessories Mfg. Co., Los Angeles, Calif. 680,667, canc. Cl. 16.
Lacivita, Michael J., Youngstown, Ohio. 793,903, pub. 5–25–65. Cl. 13.
Lakeside Laboratories, Inc., Milwaukee, Wis. 680,693, canc. Cl. 18.
Lafayette Peat Co.: *See*—
Hyper-Humus Co.
Lanco Container Corp., Brooklyn, N.Y. 760,483, canc. Cl. 2.
Lang, Jerome: *See*—
Fraternity Mfg. Co.
La Velle Laboratories, Inc., Oklahoma City, Okla. 794,239. Cl. 51.
Lasiter Corp., Charlotte, N.C. 680,856, canc. Cl. 44.
Layman, Fred, d.b.a. Park-N-Wash, La Marque, Tex. 680,926, canc. Cl. 103.
Le Chien, Inc., North Hollywood, Calif. 794,183, pub. 5–25–65. Cl. 52.
Le Page's, Inc.: *See*—
Johnson & Johnson.
Leblance, G., Corp., Kenosha, Wis. 794,066, pub. 5–25–65. Cl. 36.

Lee, H. D., Co., Inc., The, Kansas City, Mo. 794,105, pub. 5–25–65. Cl. 39.
Lee, Wm. W. & Co.: *See*—
Lee, William W.
Lee, William W., Troy, N.Y., to Wm. W. Lee & Co., Watervliet, N.Y. 45,796, ren. 8–10–65. Cl. 18.
Lewis, Florence N., d.b.a. Elizabeth Arden, to Elizabeth Arden Sales Corp., New York, N.Y. 205,732, ren. 8–10–65. Cl. 51.
Lewis & Tho. Saitz: *See*—
Edward & Hill, Inc.
Light and Power Utilities Corp., Olive Branch, Miss. 793,953, pub. 5–25–65. Cl. 21.
Lionel-Porter: *See*—
Lionel Toy Corp., The.
Lionel Toy Corp., The, d.b.a. Lionel-Porter, Hillside, N.J. 794,025, pub. 5–25–65. Cl. 26.
Louisville Jaycee Charities, Inc., Louisville, Ky. 680,925, canc. Cl. 102.
Ludlow Papers, Inc., Needham Heights, Mass. 680,596, canc. Cl. 1.
Lumaside, Inc., Milwaukee, Wis. 793,893, pub. 5–25–65. Cl. 12.
Luminall Paints, Inc.: *See*—
Bradley, Lawrence R.
MGM Brakes, Inc., Cloverdale, Calif. 793,950–1, pub. 5–25–65. Cl. 19.
Macrosonics Corp., Carteret, N.J. 793,952, pub. 5–25–65. Multiple Class (Classes 21 and 26)
Macy, R. H., & Co., Inc., New York, N.Y. 199,307, ren. 8–10–65. Cl. 35.
Mahon, Thomas J., Inc., Englewood Cliffs, N.J. 794,150, pub. 5–25–65. Cl. 44.
Malco Products, Inc., Akron, Ohio. 793,911, pub. 5–25–65. Cl. 15.
Management, Inc., St. Paul, Minn. 794,220. Cl. 38.
Manning Maxell & Moore, Inc.: *See*—
Dresser Industries, Inc.
Manuel-Pertegaz Ibanez, Barcelona, Spain. 794,113, pub. 5–25–65. Cl. 39.
Mark, Clayton, & Co., Evanston, Ill. 680,730, canc. Cl. 23.
Marshall-Wells Co., d.b.a. Western Paint Co., Duluth, Minn. 680,665, canc. Cl. 16.
Mary Carter Paint Co., Tampa, Fla. 793,887, pub. 5–25–65. Cl. 12.
Mayer & Loewenstein, New York, N.Y., to Clover Leaf Paint & Varnish Corp., Long Island City, N.Y. 47,077–8, ren. 8–10–65. Cl. 16.
Maynard Mfg. Co.: *See*—
Maynard, Mark K.
Maynard, Mark K., d.b.a. Maynard Mfg. Co., Glendale, Calif. 680,750, canc. Cl. 23.
Mecanair, Inc., Framingham, Mass. 794,036, pub. 5–25–65. Cl. 29.
Merck & Co., Inc.: *See*—
Mulford, H. K., Co.
Merck & Co., Inc., Rahway, N.J. 793,942–3, pub. 5–25–65. Cl. 18.
Mermaid, Inc., Butler, Wis. 794,045, pub. 5–25–65. Cl. 31.
Metal Box Co., Ltd., London, England. 793,865, pub. 7–9–63. Cl. 2.
Microleak-Seal Impregnant, from H. H. Voorhoeve, d.b.a. The Microseal Co., Rome, N.Y. 793,880, pub. 5–25–65. Cl. 6.
Microseal Co., The: *See*—
Microleak-Seal Impregnant.
Microwave Associates, Inc., Burlington, Mass. 793,954, pub. 5–25–65. Cl. 21.
Mid-States Distributing Co., Inc., St. Paul, Minn. 794,007, pub. 5–25–65. Cl. 23.
Mid-West Oil Co., Kansas City, Kans. 793,882, pub. 5–25–65. Cl. 6.
Mid-West Oil Co., Kansas City, Kans. 793,918, pub. 5–25–65. Cl. 13.
Midwest Program On Airborne Television Instruction, Inc., Lafayette, Ind. 794,209, pub. 5–25–65. Cl. 107.
Milchem, Inc., Houston, Tex. 793,881, pub. 5–25–65. Cl. 6.
Miller Co., The, Meriden, Conn. 680,704–5, canc. Cl. 21.
Miller Electric Mfg. Co., Appleton, Wis. 794,060–1, pub. 5–25–65. Cl. 34.
Minco Products, Inc., Minneapolis, Minn. 794,021, pub. 5–25–65. Cl. 26.
Mindlin, Richard B., d.b.a. Minuteman Beverage Co., Kansas City, Mo. 794,188, pub. 5–25–65. Cl. 100.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 794,009, pub. 5–25–65. Cl. 23.
Minter, James W., Garden City, N.Y. 680,781, canc. Cl. 28.
Minuteman Beverage Co.: *See*—
Mindlin, Richard B.
Missionary Servants of the Most Holy Trinity, Holy Trinity, Ala. 794,241. Multiple Class (Classes 100 and 107).
Mr. Wicks, Little Rock, Ark. 794,100, pub. 5–25–65. Cl. 39.
Modica, Charles P., Freeport, Ill. 680,720, canc. Cl. 22.
Mohasco Industries, Inc., Amsterdam, N.Y. 680,844, canc. Cl. 42.
Monsanto Co., St. Louis, Mo. 793,908–9, pub. 5–25–65. Cl. 15.
Monsted, Otto, A/S, Copenhagen, Denmark. 794,229. Cl. 46.
Moore Business Forms, Inc., Niagara Falls, N.Y. 794,001, pub. 5–25–65. Cl. 23.
Motlow, Lem, Prop., Inc.: *See*—
Daniel, Jack.
Moulinage et Retorderie de Chavanoz, Societe Anonyme, Chavanoz, Isere, France. 794,145, pub. 5–25–65. Cl. 43.
Mulford, H. K., Co., Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 206,586, ren. 8–10–65. Cl. 18.
Murray Ohio Mfg. Co., Nashville, Tenn. 793,946, pub. 5–25–65. Cl. 19.
McGinnis, L. Omar, d.b.a. Atlas Sales, Santa Cruz, Calif. 793,948, pub. 5–25–65. Cl. 19.
McGovern, E. B., d.b.a. McGovern and McGovern, Seattle, Wash. 680,884, canc. Cl. 46.
McGovern and McGovern: *See*—
McGovern, E. B.
N.V. Koninklijke Veenendaalsche Sajet- en Vijfschacht-Fabriek Voorheen Weduwe D. S. van Schuppen en Zoon, Veenendaal, Netherlands. 794,146, pub. 5–25–65. Cl. 43.
Naamlooze Vennootschap Cacaofabriek "De Zaan," Zaan, Netherlands. 794,160, pub. 5–25–65. Cl. 46.
Napier, D., & Son Ltd., London, England. 793,964, pub. 5–25–65. Cl. 21.
Nappies, Inc., Prattville, Ala. 680,726, canc. Cl. 22.
National Association of Metal Finishers, Upper Montclair, N.J. 794,219. Cl. 38.
National Automobile Club, San Francisco, Calif. 201,157, ren. 8–10–65. Cl. 38.
National Board of Fire Underwriters, New York, N.Y. 680,924, canc. Cl. 102.
National Electronic Filter Co., Inc., Cannonsburg, Pa. 794,041–3, pub. 5–25–65. Cl. 31.
National Engineering Co., Chicago, Ill. 793,984, pub. 5–25–65. Cl. 23.
National Macaroni Manufacturers' Association, Palatine, Ill. 203,469, ren. 8–10–65. Cl. 38.
National Portland Cement Co., The, Philadelphia, Pa. 793,886, pub. 7–21–64. Cl. 12.
National Spiritual Assembly of the Baha'is of The United States, d.b.a. Baha'i Publishing Trust, Wilmette, Ill. 794,080, pub. 5–25–65. Cl. 38.
Nelson Knitting Co., Rockford, Ill. 794,096, pub. 5–25–65. Cl. 39.
Nettleton, A. E., Co., Syracuse, N.Y. 794,095, pub. 5–25–65. Cl. 39.
New Jersey Chemical Co., Inc., Lyndhurst, N.J. 793,871, pub. 5–25–65. Cl. 4.
New Jersey Chemical Co., Inc., Lyndhurst, N.J. 794,185, pub. 5–25–65. Cl. 52.
New Process Co., Warren, Pa. 794,196, pub. 5–25–65. Cl. 101.
Newman, Michael L., Brooklyn, N.Y. 793,937, pub. 5–25–65. Cl. 18.
New York Rubber Corp., New York, N.Y. 680,906, canc. Cl. 50.
Norco, Inc., Georgetown, Conn. 793,896, pub. 5–25–65. Cl. 13.
Norex Laboratories: *See*—
Park & Tilford.
Northwestern Extract Co., Milwaukee, Wis. 206,940, ren. 8–10–65. Cl. 45.
Nysco Laboratories, Inc., Long Island City, N.Y. 794,213. Cl. 18.
Ohio Fruit Products Co., Inc., North East, Pa. 680,864, canc. Cl. 46.
Olga Co., Van Nuys, Calif. 794,098, pub. 5–25–65. Cl. 39.
Optical Development Corp., Chicago, Ill. 680,775, canc. Cl. 26.
Orradio Industries, Inc., Opelika, Ala. 680,818, canc. Cl. 36.
Orr, J. Herbert, Enterprises, Inc., Opelika, Ala. 794,064, pub. 5–25–65. Cl. 36.
Orscheln Lever Sales Co., Moberly, Mo. 794,000, pub. 5–25–65. Cl. 23.
Outboard Marine Corp., Waukegan, Ill. 680,754, canc. Cl. 23.
Owens-Illinois Glass Co., Toledo, Ohio. 794,039, pub. 5–25–65. Cl. 30.
Pacific Hawaiian Products Co., Fullerton, Calif. 794,153, pub. 5–25–65. Cl. 45.
Pacific International Rice Mills, Inc., Stockton, Calif. 680,901, canc. Cl. 50.
Palmolive Co., The, Chicago, Ill., to Colgate-Palmolive Co., New York, N.Y. 205,739, ren. 8–10–65. Cl. 51.
Palmolive Co., The, Chicago, Ill., to Colgate-Palmolive Co., New York, N.Y. 206,184, ren. 8–10–65. Cl. 52.
Paper Converting and Finishing Co.: *See*—
Paper Converting Corp.
Paper Converting Corp., from Paper Converting and Finishing Co., Chicago, Ill. 793,918, pub. 5–25–65. Cl. 16.
Paradiso, Inc., Norwalk, Conn. 794,194–5, pub. 5–25–65. Cl. 101.
Park & Tilford, d.b.a. Norex Laboratories, from Norex Laboratories, Inc., New York, N.Y. 794,176–7, pub. 4–21–64. Cl. 51.
Parke, Davis & Co., Detroit, Mich. 416,252, ren. 8–10–65. Cl. 18.
Park-N-Wash: *See*—
Layman, Fred.
Parsons Corp., Traverse City, Mich. 794,187, pub. 5–25–65. Cl. 100.
Pascal, Charles J., Hollywood, Calif. 680,954, canc. Cl. 52.
Pepper Records, Inc., Memphis, Tenn. 680,819, canc. Cl. 36.
Perham Fruit Corp.: *See*—
Perham Fruit Co.
Perham Fruit Co., to Perham Fruit Corp., Yakima, Wash. 206,135–7, ren. 8–10–65. Cl. 46.
Periseal Co., The: *See*—
Bradley, Lawrence R.
Peterson, Bernhard, d.b.a. Berlou Mfg. Co., to Berlou Mfg. Co., Marion, Ohio. 414,481, ren. 8–10–65. Cl. 6.
Pet Milk Co.: *See*—
Whiteman, Stephen F., & Son, Inc.
Pet Milk Co., St. Louis, Mo. 794,170, pub. 5–25–65. Cl. 46.
Pettiboue Mulliken Corp.: *See*—
Beardsley & Piper Co., The.
Pfiser, Chas., & Co., Inc.: *See*—
Coty, Inc.
Pharaoh Cosmetics: *See*—
Burt, Charles M.
Piconics: *See*—
Piconics, Inc.

Piconics, Inc., from S. A. Sleaker, d.b.a. Piconics, Billerica, Mass. 793,968, pub. 5–25–65. Cl. 21.
Pik-Up-Pak Mfg. Co., Wilton, Calif. 793,947, pub. 5–25–65. Cl. 19.
Pillsbury Co., The: *See*—
Pillsbury Flour Mills Co.
Pillsbury Co., The, Minneapolis, Minn. 794,156–8, pub. 5–25–65. Cl. 45.
Pillsbury Flour Mills Co., now by merger Pillsbury Mills, Inc., to The Pillsbury Co., Minneapolis, Minn. 414,410, ren. 8–10–65. Cl. 46.
Pillsbury Mills, Inc.: *See*—
Pillsbury Flour Mills Co.
Pinkerton Electro-Security Corp., Webster, Mass. 794,014, pub. 5–25–65. Cl. 26.
Plastic Processes, Inc., Freeport, N.Y. 680,718, canc. Cl. 22.
Plextone Corp. of America, Newark, N.J. 793,925, pub. 5–25–65. Cl. 16.
Plumbing and Drainage Institute, Chicago, Ill. 680,934, canc. Cl. A.
Plywood Ranch: *See*—
Arrow Plywood Corp.
Popell Bros., Inc., Chicago, Ill. 680,733, canc. Cl. 23.
Powerking Industries, Inc., Tonawanda, N.Y. 680,734, canc. Cl. 23.
Precision Flexopress Corp., from Precision Welder & Flexopress Corp., Cincinnati, Ohio. 680,739, canc. Cl. 23.
Precision Welder & Flexopress Corp.: *See*—
Precision Flexopress Corp.
Pre Finish Metals, Inc., Elk Grove Village, Ill. 793,906, pub. 5–25–65. Cl. 14.
Prosthetics Research, Inc., Philadelphia, Pa. 794,151, pub. 5–25–65. Cl. 44.
Pro-Tech, Inc., Springfield, Pa. 794,018, pub. 5–25–65. Cl. 26.
Publishing Industries, Inc., Oklahoma City, Okla. 794,226. Cl. 38.
Punch 'N Judy Beverage Co., Inc., Los Angeles, Calif. 794,159, pub. 5–25–65. Cl. 45.
Quality Courts Motels, Inc., Daytona Beach, Fla. 794,076, pub. 5–25–65. Cl. 38.
Radcliffe, Charles C., d.b.a. Radcliffe Products, Chicago, Ill. 680,711, canc. Cl. 21.
Radcliffe Products: *See*—
Radcliffe, Charles C.
Radio Frequency Laboratories, Inc., Boonton, N.J. 680,776, canc. Cl. 26.
Radio Frequency Laboratories, Inc., Boonton, N.J. 680,768, canc. Cl. 26.
Rain Jet Corp., Burbank, Calif. 793,989–90, pub. 5–25–65. Cl. 23.
Reece Button Hole Machine Co., The, Boston, Mass., to The Reece Corp., Waltham, Mass. 44,479, ren. 8–10–65. Cl. 23.
Reece Corp., The: *See*—
Reece Button Hole Machine Co., The.
Reichhold Chemicals, Inc., White Plains, N.Y. 793,856, pub. 5–25–65. Cl. 1.
Rent-A-Rama Auto Rental Agency, Inc., Plainview, N.Y. 794,207, pub. 5–25–65. Cl. 105.
Restonic Corp., Chicago, Ill. 794,048, pub. 5–25–65. Cl. 32.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 794,126, pub. 5–25–65. Cl. 42.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 794,127, pub. 5–25–65. Cl. 42.
Ricard, Societe Anonyme, Paris, France. 794,175, pub. 5–25–65. Cl. 49.
Ricoh Industries, U.S.A., Inc., New York, N.Y. 794,065, pub. 5–25–65. Cl. 36.
Ritchie, Harold F., & Co., Weston, Ontario, Canada. 680,688, canc. Cl. 18.
Rhodia, Inc., New York, N.Y. 794,118, pub. 5–25–65. Cl. 39.
Roalex Co., Inc., The, Forest Hills, N.Y. 793,970–1, pub. 5–25–65. Cl. 22.
Robertson, H. H., Co., Pittsburgh, Pa. 793,892, pub. 5–25–65. Cl. 12.
Rochester Button Co.: *See*—
Cap-Roc, Inc.
Rockwell Mfg. Co., Pittsburgh, Pa. 794,017, pub. 5–25–65. Cl. 26.
Rolli N' Games: *See*—
Schonblom, H. James.
Rome Plow Co., Cedartown, Ga. 793,995, pub. 5–25–65. Cl. 23.
Rosenberg, Simon, d.b.a. Rosenberg's Flip-A-Hoop Div., Cleveland, Ohio. 794,217. Cl. 22.
Rosenberg's Flip-A-Hoop Div.: *See*—
Rosenberg, Simon.
Rudin & Roth, Inc., New York, N.Y. 794,122, pub. 5–25–65. Cl. 39.
Rust Corp. of America, from General Electronic Laboratories, Inc., Cambridge, Mass. 794,015, pub. 5–25–65. Cl. 26.
Samuels Shoe Co., St. Louis, Mo. 794,114, pub. 5–25–65. Cl. 39.
Santa Cruz Distilling Co. of Boston, U.S.A.: *See*—
Felton & Son, Inc.
Savada, Bros., Inc., New York, N.Y. 794,106, pub. 5–25–65. Cl. 39.
Schoeller-Bleckmann Stahlwerke Aktiengesellschaft, Vienna, Austria. 793,982, pub. 5–25–65. Cl. 23.
Schonblom, H. James, d.b.a. Rollin' Games, Bradford, Pa. 680,723, canc. Cl. 22.
Schreter, A., & Sons Co., Inc., Baltimore, Md. 794,103, pub. 5–25–65. Cl. 39.
Schutter Candy Co.: *See*—
Schutter-Johnson Candy Co.
Schutter Candy Co., Chicago, Ill., to Schutter Candy Co., Brooklyn, N.Y. 415,890, ren. 8–10–65. Cl. 46.
Schutter-Johnson Candy Co., Chicago, Ill., to Schutter Candy Co., Brooklyn, N.Y. 201,022, ren. 8–10–65. Cl. 46.
Sea-View Packing Co.: *See*—
Sea View Ranch, Inc.
Sea View Ranch, Inc., d.b.a. Sea-View Packing Co., Thermal, Calif. 680,861, canc. Cl. 46.
Selchow & Righter Co., Bay Shore, N.Y. 793,974, pub. 5–25–65. Cl. 22.
Sessions Clock Co., The, Forestville, Conn. 794,081, pub. 5–25–65. Cl. 27.
Sheffield Hosiery Mills, Inc., Miami, Fla. 794,082, pub. 5–25–65. Cl. 39.
Shiell, Wain, & Son, Ltd., London, England. 794,123, pub. 5–25–65. Cl. 42.
Shuko Shoe Corp., Meadville, Pa. 794,109, pub. 5–25–65. Cl. 39.
Sierra Talc Co., to Cyprus Mines Corp., Los Angeles, Calif. 197,912, ren. 8–10–65. Cl. 1.
Sifo Co., St. Paul, Minn. 794,216. Cl. 22.
Simmer, Simmerwerke W., K. G. Austrian Co., Kufstein, Austria. 680,805, canc. Cl. 35.
Simplex Wire & Cable Co., Cambridge, Mass. 793,897, pub. 5–25–65. Cl. 13.
Slenker, Stephen A.: *See*—
Piconics, Inc.
Smithers, W. L., Mfg. Co., The, Kent, Ohio. 794,227. Cl. 50.
Smokers' Haven, Inc., Columbus, Ohio. 793,929, pub. 5–25–65. Cl. 17.
Snow White Egg Co.: *See*—
Vandenakker, Dick.
Sonic Engineering Corp., Norwalk, Conn. 794,011, pub. 5–25–65. Cl. 24.
Southeastern Art Supply, Inc., Atlanta, Ga. 680,907, canc. Cl. 50.
Southern Steel Co., to Southern Steel Co., San Antonio, Tex. 199,787, ren. 8–10–65. Cl. 14.
Stanley Works, The, New Britain, Conn. 302,717–9, ren. 8–10–65. Cl. 13.
Stardust, Inc., New York, N.Y. 680,839, canc. Cl. 39.
Starrett, L. S., Co., The, Athol, Mass. 794,006, pub. 5–25–65. Cl. 23.
Statmaster Corp., Hialeah, Fla. 794,080, pub. 5–25–65. Cl. 26.
Stelter, Paul J., d.b.a. The Stelter Co., Des Moines, Iowa. 794,062, pub. 5–25–65. Cl. 38.
Stelter Co., The: *See*—
Stelter, Paul J.
Stephan Co., The, Fort Lauderdale, Fla. 794,240. Multiple Class (Classes 51 and 52).
Stevens, J. P., & Co., Inc.: *See*—
Forstmann & Huffmann Co.
Stevens, J. P., & Co., Inc., New York, N.Y. 680,846, canc. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 794,137–8, pub. 5–25–65. Cl. 42.
Stiefvaters': *See*—
Stiefvaters', Inc.
Stiefvaters', Inc., d.b.a. Stiefvaters', San Francisco, Calif. 794,172, pub. 5–25–65. Cl. 46.
Stokermatic Co., The, Salt Lake City, Utah. 794,054, pub. 5–25–65. Cl. 34.
Storer Broadcasting Co., Miami Beach, Fla. 680,931, canc. Cl. 107.
Straus, Henry, Co., The, Cincinnati, Ohio. 793,932, pub. 5–25–65. Cl. 17.
Success Motivation Institute, Inc., Waco, Tex. 794,223–4. Cl. 38.
Sulfo, Inc., Elizabeth, N.J. 793,916, pub. 5–25–65. Cl. 15.
Sun Drop Sales Corp. of America, d.b.a. Sun Drop Sales Corp., St. Louis, Mo. 794,228. Cl. 45.
Sun Drop Sales Corp.: *See*—
Sun Drop Sales Corp. of America.
Super-Cut, Inc.: *See*—
Industrial Abrasives, Inc.
Swift & Co., Chicago, Ill. 794,171, pub. 5–25–65. Cl. 46.
Taussig, Paul, & Son, Inc., New York, N.Y. 680,929, canc. Cl. 105.
Tavco, Inc., Santa Monica, Calif. 793,996, pub. 5–25–65. Cl. 23.
Teale & Co., Omaha, Nebr. 794,002, pub. 5–25–65. Cl. 23.
Tennent, William, Augusta, Ga. 680,932, canc. Cl. 107.
Thermo Cote, Inc., Paterson, N.J. 793,921–2, pub. 5–25–65. Cl. 16.
Thibault Milling Co., Little Rock, Ark. 199,937, ren. 8–10–65. Cl. 46.
Tibert, L. E., Co.: *See*—
Tibert, L. E.
Tibert, L. E., to L. E. Tibert Co., Voss, N. Dak. 415,999, ren. 8–10–65. Cl. 46.
Time, Inc., New York, N.Y. 414,009, ren. 8–10–65. Cl. 38.
Todd Chemical Co., Inc., Great Neck, N.Y. 793,870, pub. 5–25–65. Cl. 4.
Torbitt & Castleman Co., The: *See*—
Union Starch & Refining Co.
Torette Mfg. Co.: *See*—
Delander, John B.
Transportation Parts Co. of New York, Inc., Hicksville, N.Y. 793,979, pub. 5–25–65. Cl. 23.
Transoriest Boat Co., Inc., New York, N.Y. 680,694, canc. Cl. 19.
Tredway, Martha, Denison, Tex. 794,085, pub. 5–25–65. Cl. 39.
Trimount Plastic Co., Inc., Arlington, Mass. 680,642, canc. Cl. 12.
Trio Chemical Works, to Trio Chemical Works, Inc., Brooklyn, N.Y. 412,274, ren. 8–10–65. Cl. 52.

Trio Chemical Works, Inc.: *See*—
Trio Chemical Works.
Tropic-Isle Products, Inc., Evanston, Ill. 794,152, pub. 7–7–65. Cl. 45.
Trouin, Joseph, Villeurbanne Rhone, France. 793,985, pub. 5–25–65. Cl. 28.
Tucker, Clifford E., Gardena, Calif. 793,945, pub. 5–25–65. Cl. 19.
Union Carbide Corp., New York, N.Y. 680,803, canc. Cl. 34.
Union Fork & Hoe Co., The, Columbus, Ohio. 793,977, pub. 5–25–65. Cl. 23.
Union Starch & Refining Co., Columbus, Ind., to The Torbitt & Castleman Co., Louisville, Ky. 199,647, ren. 8–10–65. Cl. 46.
United Can Co.: *See*—
Hunt Foods and Industries, Inc.
United Citrus Growers: *See*—
Highland Exchange Association.
United Grocers, Ltd., Richmond, Calif. 794,162–3, pub. 5–25–65. Cl. 46.
United Merchants and Manufacturers, Inc., New York, N.Y. 794,121, pub. 5–25–65. Cl. 42.
United Rubber, Cork, Linoleum & Plastic Workers of America: *See*—
United Rubber Workers of America.
United Rubber Workers of America, to United Rubber, Cork, Linoleum & Plastic Workers of America, Akron, Ohio. 417,687, ren. 8–10–65. Cl. 38.
United States Plywood Corp., New York, N.Y. 793,889–90, pub. 5–25–65. Cl. 12.
United Tool & Engineering Co.: *See*—
Yetter, Lloyd E.
United Wallpaper, Inc., Chicago, Ill. 680,609, canc. Cl. 5.
Universal Paper Goods Co., d.b.a. Universal Paper Goods Co., Los Angeles, Calif. 794,074, pub. 5–25–65. Cl. 37.
Univis, Inc., Fort Lauderdale, Fla. 794,020, pub. 5–25–65. Cl. 26.
Valspar Corp., The: *See*—
Detroit Graphite Co.
Vandenakker, Dick, d.b.a. Snow White Egg Co., Salt Lake City, Utah. 680,873, canc. Cl. 46.
Vassar, Clyde W., San Mateo, Calif. 430,941, canc. Cl. 22.
Vermilye-Bell, Bothell, Wash. 793,944, pub. 5–25–65. Cl. 18.
Villeneuy, Robert, d.b.a. Furniture Loft, New York, N.Y. 794,046, pub. 5–25–65. Cl. 32.
Vinfloat Industries, Division Alberhill Corp., Los Angeles, Calif. 680,722, canc. Cl. 22.
Vitalfa Corp., Reseda, Calif. 793,940, pub. 5–25–65. Multiple Class (Classes 18 and 46).
Vokal Metal Stamping Corp., Vernon, Calif. 680,801, canc. Cl. 34.
Voorhoeve, Hester H.: *See*—
Microleak-Seal Impregnant.
W.D.L. Corp.: *See*—
Willo-Peer Corp.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 680,678, canc. Cl. 18.
Warren Unlimited, Inc., Atlanta, Ga. 794,206, pub. 5–25–65. Cl. 103.
Warshavsky, Lorett, and Concetta Leonowich, d.b.a. Your Private Secretary, Hempstead, N.Y. 680,923, canc. Cl. 101.
Washington Mfg. Co., Nashville, Tenn. 794,102, pub. 5–25–65. Cl. 39.
Waumbec Mills Inc., New York, N.Y. 794,132, pub. 5–25–65. Cl. 42.
Webb, David, Inc., New York, N.Y. 794,033, pub. 5–25–65. Cl. 28.
Wells & Coverly, Inc., Troy, N.Y. 794,099, pub. 5–25–65. Cl. 39.
Werner & Mertz, G.m.b.H., Mainz, Germany. 793,869, pub. 5–25–65. Multiple Class (Classes 4, 6, and 52).
Western Industrial Equipment Co., Los Angeles, Calif. 794,028, pub. 5–25–65. Cl. 26.
Western Paint Co.: *See*—
Marshall-Wells Co.
Westminster Corp., The, d.b.a. Diplomat Importers, Ltd., Long Island City, N.Y. 794,174, pub. 5–25–65. Cl. 47.
Westran Corp., Muskegon, Mich. 793,914, pub. 5–25–65. Cl. 15.
Wilder, Carlton B., from Wilder-Hoekstra, Crystal Lake, Ill. 794,215. Cl. 22.
Wilder-Hoekstra: *See*—
Wilder, Carlton B.
Willo-Peer Corp., New York, from W.D.L., Corp., Yonkers, N.Y. 794,026, pub. 5–25–65. Cl. 26.
Wings Boyswear, Inc., New York, N.Y. 680,823, canc. Cl. 39.
Winterbottom Book Cloth Co., Ltd., The, Weaste, Salford, England. 794,070, pub. 5–25–65. Cl. 37.
Wiremold Co., The, Hartford, Conn. 793,963, pub. 5–25–65. Multiple Class (Classes 21 and 34).
Witco Chemical Co., Inc., New York, N.Y. 793,910, pub. 5–25–65. Cl. 15.
Whirlpool Corp., Benton Harbor, Mich. 794,055, pub. 5–25–65. Cl. 34.
Whirlpool Corp., Benton Harbor, Mich. 794,062, pub. 5–25–65. Cl. 34.
White Clover Dairy Co., Inc., Kaukauna, Wis. 794,168–9, pub. 5–25–65. Cl. 46.
Whitman, Stephen F., & Son, Inc., Philadelphia, Pa., to Pet Milk Co., St. Louis, Mo. 417,866, ren. 8–10–65. Cl. 46.
Whitney, W. A., Mfg. Co., Rockford, Ill. 793,993, pub. 5–25–65. Cl. 23.
Wonder Products, Inc., Kansas City, Mo. 793,987, pub. 5–25–65. Cl. 23.
Woodworth, N. A., Co., Detroit, Mich. 415,110, ren. 8–10–65. Cl. 26.
Woodworth, N. A., Co., Detroit, Mich. 418,383, ren. 8–10–65. Cl. 14.
Woolworth, F. W., Co., New York, N.Y. 680,791, canc. Cl. 32.
Wyandotte Chemicals Corp., Wyandotte, Mich. 793,912, pub. 5–25–65. Cl. 15.
Yancey Sales, Inc., Scottsdale, Ariz. 680,749, canc. Cl. 23.
Yetter, Lloyd E., d.b.a. United Tool & Engineering Co., Colchester, Ill. 680,702, canc. Cl. 21.
Your Private Secretary: *See*—
Warshavsky, Loretta, and Concetta Lenowich.
Zensa Bronica Kogyo Kabushiki Kaisha, Itabashi-ku, Tokyo, Japan. 793,883, pub. 5–25–65. Cl. 8.
Zip Tube Systems, Inc., from Ross Cook, Inc., Los Angeles, Calif. 793,980, pub. 5–25–65. Cl. 23.

U.S. GOVERNMENT PRINTING OFFICE:10—1965

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
August 17, 1965 Volume 817 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of June 1965

Examiner affirmed	280
Examiner affirmed in part	47
Examiner reversed	91
Total	418

Disclaimers

2,967,107.—*Kenneth H. Geiger* and *John Compton*, London, Ontario, Canada. CONTINUOUS FERMENTATION PROCESS. Patent dated Jan. 3, 1961. Disclaimer filed July 12, 1965, by the assignee, *John Labatt Limited*.

Hereby enters this disclaimer to claims 5 to 8 inclusive of said patent.

3,087,487.—*Manfred E. Clynes*, Orangeburg, N.Y. COMPUTER OF AVERAGE RESPONSE TRANSIENTS. Patent dated Apr. 30, 1963. Disclaimer filed July 7, 1965, by the assignee, *Technical Measurement Corporation*.

Hereby enters this disclaimer to claims 3 and 4 of said patent.

International Convention for the Protection of Industrial Property

Adherence of Uganda to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence of the Government of Uganda to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect June 14, 1965.

EDWARD J. BRENNER,
July 20, 1965. *Commissioner of Patents.*

Dedication

3,046,144.—*Douglas R. Braats*, Shawano, and *William C. Winder*, Madison, Wis. PROCESS OF MAKING FROZEN CONCENTRATED MILK. Patent dated July 24, 1962. Dedication filed May 14, 1965, by the inventors.

Hereby dedicate to the public the remaining term of said patent.

International Convention for the Protection of Industrial Property

Adherence of Kenya to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland, of the adherence of the Republic of Kenya to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect June 14, 1965.

EDWARD J. BRENNER,
July 20, 1965. *Commissioner of Patents.*

Revision of "Discontinuance of Deposit Account Service for Sale of Patent Copies"

In view of the difficulties experienced by many of its customers, the Patent Office is revising the Notice appearing in the December 1, 1964, issue of the *Official Gazette of the U.S. Patent Office*. This Notice—Discontinuance of Deposit Account Service for Sale of Patent Copies—is revised to except certain types of patent copy orders.

The Patent Office will now accept lists of fifty (50) or more numbers arranged in numerical sequence to be charged to Deposit Accounts. Service charges, such as Special Handling and Air Mail postage for these orders, may also be charged to Deposit Accounts.

C. A. KALK,
July 15, 1965. *Director of Administration.*

Extension of Trial of "Special" Examining Procedure for Certain "New" Applications

The program announced in 812 O.G. 953 under the title "Trial of 'Special' Examining Procedure for Certain 'New' Applications" will continue until further notice.

The restriction in the announcement which requires that an application be "awaiting action for more than six months," in order to qualify for "Special" status under the program, is hereby waived. Requests for "Special" status will be entertained any time after an application has been assigned a serial number and filing date.

The provision in the announcement which limits to 100 the number of applications that may be processed under the program by each Examining Group is lifted. Until further notice there will be no ceiling.

This notice becomes effective immediately.

EDWARD J. BRENNER,
July 26, 1965. *Commissioner.*

New Applications Received June 1965

Patents	8657
Designs	456
Plant Patents	7
Reissues	28
Total	9148

Issue—August 17, 1965

Patents	1387	No. 3,200,413 to No.	3,201,799, incl.
Designs	75	No. 201,946 to No.	202,020, incl.
Reissues	2	No. 25,840 to No.	25,841, incl.
Total	1464		

ADDRESS OF COMMISSIONER EDWARD J. BRENNER

Prepared for Delivery to the Patent Office Professional Staff, Departmental Auditorium, Department of Labor Building, at 8:30 a.m., Thursday, July 29, 1965

I would like to review today our accomplishments for Fiscal 1965 and our goals for Fiscal 1966, as well as to discuss with you a number of studies currently underway relating to possible future programs of the Office. For your information, I have arranged to have copies of my talk reproduced and distributed to each of you in the near future.

I would first like to discuss the results of our Patent Examining Operations in Fiscal 1965, since I believe these were particularly noteworthy. I am especially pleased to be able to report that we disposed of more than 102,000 patent applications in Fiscal 1965, as compared with approximately 76,000 disposals in the preceding fiscal year. *This is an increase of approximately 35% in disposals.* Further, as far as we can determine, this increase was achieved with no reduction in quality of examination or validity of patents issued. I particularly wish to express my sincere appreciation to all of those people in the Office, as well as those outside the Office, whose efforts and excellent cooperation made this fine record possible. Incidentally, our disposal record for Fiscal 1965 corresponds almost exactly with the disposal projections made by our Group Managers last summer. We also issued more than 53,000 patents in Fiscal 1965, as compared with approximately 44,000 patents the previous fiscal year. The filing of patent applications continued to increase and amounted to 89,200 new patent applications, as compared with 87,800 new patent applications in the preceding fiscal year. It is anticipated that statistics now being developed will confirm that most of this increase in patent filing, amounting to approximately 1,400 patent applications was due to increased filing of patent applications originating from other countries.

As a result of the record 102,000 plus disposals in Fiscal 1965, we are able to reduce our total backlog by approximately 13,000 applications from a total of about 220,000 applications down to approximately 207,000 applications. It is significant, however, to note that the backlog reduction varied considerably from Operation to Operation. More particularly, our Mechanical Engineering Operation reduced its backlog by about 5,500 applications, our General Engineering Operation reduced its backlog by about 4,500 applications, our Electrical Operation reduced its backlog by about 2,000 applications, and our Chemical Operation reduced its backlog by about 1,000 applications. In each Operation the results were considerably better than in the previous fiscal year when our Mechanical Engineering Operation's backlog increased by about 500 applications, our General Engineering Operation's backlog increased by about 1,000 applications, our Electrical Operation's backlog increased by about 3,000 applications, and our Chemical Operation's backlog increased by about 7,000 applications.

Although our total backlog of pending patent applications was significantly reduced, the number of applications awaiting action by our examiners increased from about 127,000 up to about 147,000 applications, and of these the number of new applications awaiting a first action by our examiners increased from about 75,000 up to about 125,000 applications. It is also of interest to note that the number of applications awaiting action by applicants decreased by approximately 33,000 applications, a 35% reduction. The period of pendency of patent applications issuing as patents stayed about the same in Fiscal 1965, as compared with the preceding fiscal year, amounting to an average of slightly over three years. However, the average period of time from filing to first action increased from an average of somewhat over one year up to an average approaching one and one-half years. This period varies considerably from Operation to Operation. More particularly, the period of waiting for a first action in our Mechanical and General Engineering Operations now averages a little over one year, whereas in our Chemical and Electrical Operations the period of waiting for a first action now averages almost two years.

The number of first actions issued per month continues to increase and at the present time stands at a rate of about 5,000 per month. This compares with a patent application filing rate of approximately 7,500 per month and our overall disposal goal of about 8,300 applications per month.

The percentage of applications allowed in Fiscal 1965 was approximately 68%, as compared with 63% for the preceding year. This higher percentage of allowances was anticipated in view of the fact that allowances generally precede abandonments from a timing standpoint, and further in view of the fact that a permanent increase in percentage of applications allowed can be expected as a result of the more cooperative and constructive working relationships we have developed with patent applicants. In this regard, I am pleased to note that our overall average for indicating allowable claims and allowable subject matter in first actions is nearly 50% of the first actions, which is our overall goal in this respect. A large number of our Groups are now meeting their particular goals of indicating allowable claims or subject matter in first actions at a level equivalent to 75% of the ultimate allowance level for their particular group. It is hoped that the other Groups will also be able to meet their particular goals in this regard in the near future.

The one major disappointment in our Patent Examining Operations in Fiscal 1965 was an increase in the separation of patent professionals. More particularly, we lost 196 patent professionals in Fiscal 1965 as a result of resignations and retirements. This compares with a loss of 169 patent professionals in Fiscal 1964 and a loss of 201 patent professionals in Fiscal 1963. We had hoped we would be able to continue in 1965 to reduce still further the losses of patent professionals, or at least to maintain the 1964 level. We therefore

plan to redouble our efforts to develop new ways to reduce such losses by further increasing the attractiveness of a career with the Patent Office.

The number of appeals filed increased substantially, as anticipated in Fiscal 1965, as compared with the preceding year. More particularly, 23,600 appeals were filed in Fiscal 1965, as compared with 10,600 appeals filed in Fiscal 1964. During Fiscal 1965 the number of appeals filed per month rose from the 1964 average of about 900 per month up to a peak of 3,200 per month in March. However, the rate of appeals has been dropping rapidly and is currently running below 2,000 per month. The number of appeals has been about as anticipated based on the number of final rejections issued. The final rejections issued in Fiscal 1964 averaged about 2,700 per month. At the start of our new examining program last summer, the number of final rejections issued increased sharply, hitting a peak of 8,200 in October 1964. However, after approximately four months of issuing final rejections at an 8,000 per month level, the number of final rejections has declined steadily, and currently is running at an average of about 2,800 per month. Our backlog of pending appeals increased from 5,600 at the beginning of Fiscal 1965 to a peak of 11,300 in May. At the present time, however, the number of appeals being disposed of exceeds the number of new appeals filed. Last month, for example, we disposed of approximately 500 more appeals than were filed. The number of cases awaiting hearing or decision by the Board of Appeals decreased during the year from about 2,600 to about 1,800.

The number of pending interferences, which had been increasing substantially in recent years, reached a peak of 2,100 interferences last summer. However, as a result of the changes in interference practice made last summer, the number of pending interferences has now decreased to approximately 1,900. It is anticipated that the number of pending interferences will continue to decrease sharply as a result of the new interference practice which became effective July 1, 1965. As you know, a main purpose of these recent interference changes is to reduce substantially the period of time between declaration and the end of the motion period and, as a result, to substantially reduce the inventory of interferences in this category. You may be interested to know that at the end of 1964 the time between declaration of an interference to the end of the motion period averaged about 26 months. Our new interference practice is aimed at reducing this period to approximately 6 months or less. We expect, therefore, within the next two years, to be able to reduce the total inventory of interferences from its present level of about 1,900 to a level approaching 700.

Time, unfortunately, does not permit me to cover in detail all of the many important programs we have in the Office, but I would like to mention a few of the highlights of activities in other areas in Fiscal 1965. During the past year we have taken the first steps to implement an Office-Wide Career Development Program. We also established the Office of International Patent and Trademark Affairs to make studies and advise on policy and action concerning international patent and trademark affairs. In addition, we initiated the use of a new index in the OFFICIAL GAZETTE listing patent numbers by major geographical areas, which should significantly contribute to the dissemination of information on patented inventions in particular geographical areas. In the last fiscal year, we also issued our 200,000th design patent and our 2,500th plant patent. In addition, we produced more prints of documents, recorded more assignments, and processed more than twice as many employment applications as in the previous year. We also initiated a new program of supplying copies of references for our examiners' files and for automatically supplying copies of references to patent applicants. The United States Supreme Court accepted our first petition for certiorari from a decision of the Court of Customs and Patent Appeals. Although our total backlog of trademark applications increased somewhat, individual examiner productivity was higher in Fiscal 1965 than in the previous year. The Trademark Trial and Appeal Board maintained their work on a current basis during the past year. The Scientific Library was the scene of the beginning of a far-reaching project to identify and apply U.S. classification to counterpart foreign patents or publications; in full operation, this project will save about one-half the examiner time now required to classify foreign patents. The Office of Patent Classification completed the reclassification of over 72,000 U.S. original patents, including new Class 72, Metal Deforming, containing over 25,000 patents. This is the largest class to be issued since 1959, and the total number of patents reclassified is the highest since that year.

I am also particularly pleased that the President has nominated, and the Senate has recently confirmed Mr. Wahl and Mr. O'Brien to be our new Assistant Commissioners. It is anticipated that they will be sworn into office by Secretary Connor in the very near future. For your information, I plan to rely heavily in the future on our three Assistant Commissioners to give appropriate direction to our programs in their respective areas. As a further note, I wish to advise that Mr. Wahl, in his new capacity as Assistant Commissioner, will continue his former responsibilities, including the responsibility of superintending the Patent Examining Corps.

As I mentioned in my last talk to you, Fiscal 1966 will undoubtedly be one of the most significant years in the history of our patent examining operations. For example, we anticipate that we will be able to determine quite accurately about six months from now the long-range potential of our new patent examining program, since at this time we will have completed work in most areas on the "old" cases and be handling a "normal" percentage of new applications. This information will no doubt be of particular interest to the Presidential Commission, since at this time they may well be considering the basic question of whether the United States should continue on the full examination system or should consider adopting a deferred type of examination system. The examination time distribution study which is presently underway on a 25,000 case sample of new applications indicates that we are currently taking an average of about 6 to 6½ hours to prepare our first Office actions. As you know, our overall goal is to dispose of approximately 100,000 patent applications per year, which means that we must average approximately 15 hours of examining time per disposal. Thus, if it takes us approximately

6 to 6½ hours per first action, this leaves us 8½ to 9 hours to complete the disposition of the average application. Based on the figures to date, I believe we have an excellent chance to meet our overall goal of disposing of 100,000 patent applications a year.

We also anticipate that we will issue approximately 67,000 patents in Fiscal 1966, which represents the approximate limit of the Government Printing Office to print patents. This high level of patent issuances is attributable in part to our high level of disposals in Fiscal 1965, and in part, to the patent issue provision of the new patent fee statute, which the President signed on July 24 and which becomes effective three months thereafter. As you know, the new statute includes a provision for payment of final fees within three months as compared with the present six months period, which will result in a doubling up of fee payments during a three months period in Fiscal 1966.

In the remainder of my time I would like to discuss a number of studies currently underway in the Office which relate to possible new programs for the future.

We have recently initiated a joint study with the patent bar to consider changes in our Rules of Practice relating to the writing of patent specifications and claims. I believe that such a study is particularly timely for several reasons. First, I believe it is desirable to review these rules in relation to the effect the new patent fees will have on the length of patent specifications and the number and nature of patent claims. Secondly, it seems to be generally agreed that appropriate changes can be made which will result in savings of time and money to the Patent Office, patent applicants and the patent bar in the preparation, prosecution and examination of patent applications in the U.S. Patent Office. And third, it also seems to be generally agreed that it would be highly desirable to try to harmonize the rules of the various patent offices of the world with regard to the writing of patent specifications and claims in order to simplify the filing of patent applications on an international basis to the mutual benefit of patent applicants and the various patent offices. We are hoping to have any rule changes relating to the writing of patent specifications and claims ready to go into effect by the beginning of next year.

As you may have heard, we have recently been making a study of the Group Manager and Director positions in the Patent Examining Corps. I believe you will be interested to learn that this study has now been completed and we have decided not to make any basic changes with regard to these positions at this time.

We are also currently studying the feasibility of making a further change with regard to automatically supplying references to applicants. Under the provisions of the new patent fee statute, as you may know, the Commissioner may provide, without charge, copies of references cited in the examination of patent applications. Thus, we are considering the possibility of adopting later this year a program to automatically supply, without charge, one set of references with all Office actions we issue. Under the plan being studied, additional sets of references would be supplied upon prior written request by applicant for a flat fee of, say, $4.00 per application. Such procedure would simplify and expedite the handling of patent applications by the patent applicant or his patent attorney or agent, since when an Office action was received, it would be accompanied by copies of all references cited in the Office action. We are also considering the possibility, if we were to adopt this new procedure, of reducing the period for response to Office actions to three months in those cases where we are presently setting four-month response periods. We feel this would help to further increase the efficiency of our patent examining operations and, in most cases, would not place an undue burden on the patent applicant in view of the counterbalancing convenience of having copies of references supplied *simultaneously, without charge*, with all of our Office actions. We would, of course, continue our current practice of authorizing Primary Examiners to grant extensions of time for response in appropriate cases in accordance with the provisions of Rule 136(b). Incidentally, I would like to encourage applicants, on a purely voluntary basis, to file their responses to our Office actions as soon as conveniently possible, preferably within a month of receipt of the Office action, since this would help considerably in improving the effectiveness of our examining operations.

We are also currently studying the possibility of the United States adopting the International Patent Classification. In this connection, we have this week a four-man team in Europe reviewing the operations of the British, Dutch and German Patent Offices. It is hoped that we can conclude this study and reach a decision before the end of the year with regard to the feasibility and desirability of converting to the International Patent Classification. If we should decide to make this change, it would probably be best to plan to make the conversion at the time we move into our new Patent Office building, hopefully by 1970. Thus, we would plan to continue to operate on the present U.S. classification system until, say 1970, but during this period we would develop a new set of search files which would be available when we moved into the new building. Adoption of the International Patent Classification would, of course, have a number of benefits to the U.S. Patent Office, as well as those of other countries. For example, it would eliminate the need for the U.S. Patent Office to reclassify patents of other countries from the International Patent Classification to the U.S. patent classification. Likewise, it would eliminate the necessity for other patent offices to reclassify U.S. patents from the U.S. classification to the International Patent Classification. Further, reclassification in the future could be carried out on a cooperative basis by all the patent offices of the world rather than individually by each patent office. Finally, a unified system of patent classification would substantially increase the effectiveness of international efforts directed toward the development of mechanized searching and, more importantly, it would further assist in the attainment of other long-term goals for international patent cooperation. Eventually, it might be feasible to provide in the Public Search Room a complete classified set of worldwide patents. Such an arrangement, of course, has been suggested many times in the past by the users of our Public Search Room, but heretofore has not seemed practical.

We have also recently initiated discussions on an informal basis with the patent offices of several other countries concerning joint studies of possible future cooperative arrangements for exchanging examination results. We believe that such cooperative arrange-

ments could have an important bearing on international patent operations by making possible the elimination of duplicate examination on the part of patent offices and duplicate prosecution on the part of patent applicants. The possibility of exchanging examination results with other examining patent offices would have the effect of reducing the number of patent applications which would have to be examined in these offices, and this would offset the steady increase in patent filings in these countries. It appears that the long-range potential of such a program could enable the U.S. Patent Office to maintain the level of patent applications which would have to be examined below 100,000 per year, which level otherwise would be reached, and passed, some time during the 1970's. Such a program could make it possible for the U.S. Patent Office to operate effectively for the foreseeable future, with the necessity of having to add only a reasonable number of additional examiners to handle the future workload. Such cooperative arrangements would, of course, have corresponding benefits for the patent offices of the other countries, and would offer definite advantages to patent applicants. The studies on this subject are being carried out, on our part, by our Office of International Patent and Trademark Affairs, in conjunction with the Office of Legislative Planning.

We are also giving considerable study to possible U.S. patent systems of the future which would meet the goals expressed by the President's proclamation establishing the Presidential Commission to study the U.S. patent system. For example, one patent system we are currently studying includes the following basic features: optional deferred examination; priority based on filing date, including possibly the use of provisional applications; a patent cancellation procedure; the exchange of examination results with other countries; and certain provisions of the Patent Convention recently approved by the Council of Europe, including a twenty-year patent term, running from the filing date.

For your information, when I refer to an optional type of deferred examination system, I mean a system in which a deferred examination system could be initiated for a time and to the extent that a determination was made by the Secretary of Commerce that this would be in the public interest. The determination of public interest would involve consideration of such factors as the backlog or period of pendency of patent applications in a given field, the ability to recruit a sufficient number of qualified examiners, and the interest of a particular industry in operating under deferred examination rather than full examination. Thus, the system would permit the use of deferred examination in those technical fields at such times as would appear to be in the public interest, yet retaining the flexibility of using full examination in those technical fields at such times as would appear to be in the public interest.

As part of our overall studies on this subject, we are also estimating 1975 budget and manpower requirements for a number of different types of patent systems, including (1) a full examination system requiring approximately 15 hours of examining time per disposal, (2) a Dutch-type of deferred examination system, (3) an EEC-type of deferred examination system, and (4) a modified deferred examination system in which provision would be made for deferring examination, but once examination was requested the entire examination would be completed. Preliminary studies to date indicate that the cost of a full examination system requiring 15 hours per disposal, would be approximately the same as any of the various types of deferred systems, just mentioned.

In the field of trademarks, we have initiated a study to determine the desirability of the United States joining the Madrid Agreement, which agreement presently has 21 member countries. It is our understanding that a number of other countries are also currently considering the possibility of joining the Madrid Agreement in 1967, when certain revisions of the Agreement become effective. A part of our studies of the matter will include an investigation of the feasibility and desirability of adopting the International Trademark Classification, and also in this connection, the development and establishment of an improved trademark search file in the Patent Office. At a recent meeting held by the Office with representatives of a large number of companies with important international trademark interests, the establishment of a worldwide search file of trademarks appeared to be a desirable and worthwhile objective. However, there appears to be no strong support in other countries, at this time, for the establishment of a worldwide trademark search file which would include both international and national marks, since it is the general feeling that such a file would not be practical or economic. However, it should be noted that, if most countries of the world were to join the Madrid Agreement, the file of international marks maintained at the International Bureau for the Protection of Industrial Property in Geneva would provide an applicant interested in international trademark registration with a search service which would enable him to determine generally whether a conflicting mark was already used on an international basis.

In concluding my remarks today, I would like to emphasize again that I believe this coming year will be a most significant year in the history of the U.S. Patent Office. Likewise, I anticipate that the next five years will represent a most significant period in the history of the U.S. patent system. Also, I believe we can expect to see significant developments in the international patent and trademark picture within the next five years as a result of increased cooperation between the countries of the world in documentation and patent and trademark examining, which cooperation will result in substantial benefits to the patent and trademark applicants worldwide, and to the patent and trademark offices of the world.

I am pleased to be able to report to you today such progress and activity in the year in which we are commemorating the 175th Anniversary of the U.S. Patent System. Our future progress and ability to meet vital challenges will have a most important effect on the economic and industrial capacity of our country and in the market-place at home and abroad. It will also be reflected in the kind of patent systems which will exist in the world of tomorrow.

Thank you.

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF JULY 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	3- 3-55
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Manager Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	12- 7-62	9-23-55
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	6-20-60
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Manager Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	10- 1-62	5-26-59
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Manager Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	1- 6-60
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures	7-20-62	3-22-60
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	8-10-59
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12-18-62	7-24-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10-12-62	11-23-60
SECURITY, GROUP 220—S. BOYD, Manager Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	1- 3-62	7-14-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager Communications; Multiplexing Techniques; Facsimile and Related Art.	10-22-62	2-20-60
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	10-30-58
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager Semi-Conducter and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 2-62	2- 2-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager Optics; Radiant Energy; Measuring.	9-24-62	7- 9-59
ELEMENTS, GROUP 270—E. J. SAX, Manager Conductors; Switches; Miscellaneous.	1-25-63	2-20-61

Total number of pending applications (excluding Designs)	197,122
Total number of Design applications pending	5,148
Total number of applications awaiting action (excluding Designs)	147,473
Total number of Design applications awaiting action	1,827
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	March 3, 1958

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during August 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents ..... Numbers 2,446,166 to 2,448,805, inclusive

Plant Patents ..... Number 806

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6-26-63	11-14-61
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	10-26-62	10-14-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	3- 5-63	11- 2-59
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	5- 3-61
FLUID HANDLING, GROUP 360—E. PAUL, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	2- 4-63	12-13-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Manager Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	5-20-63	7-29-60
HEAT GENERATION, TRANSFER AND UTILIZATION, GROUP 380—P. L. PATRICK, Manager Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation; Refrigeration; Drying; Ventilation; and Illumination.	4- 8-63	8-25-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	4- 5-63	8-28-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 5-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-28-63	1-10-61
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-21-63	9-21-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	6- 6-63	9-13-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager Printing; Typewriters; Stationery; Material Treatment.	7-20-62	12-31-58
DESIGNS, GROUP 490—J. A. MANIAN, Manager Industrial Arts; Household, Personal and Fine Arts.	9- 2-64	6-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE DAVID TANNER

No. 7514. Decided April 30, 1965

[52 CCPA —; — F.2d —; 145 USPQ 345]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—REMAND—TERMINAL DISCLAIMER.

"Appellant has moved to correct diminution of the record by the addition of a terminal disclaimer filed by applicant in the Patent Office and recorded therein on November 9, 1964. The motion is denied without prejudice. The case is *remanded* to the Patent Office Board of Appeals to determine the effect of said terminal disclaimer on the issues presented by the appeal, taking into consideration *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485, decided May 14, 1964, and *In re Kaye*, 51 CCPA 1465, 332 F.2d 816, 141 USPQ 829, decided June 11, 1964, and to take such further action as it may deem appropriate. See 28 U.S.C. 2106."

APPEAL from the Patent Office. Serial No. 40,503.

REMANDED.

Carl A. Hechmer (*Frederick Schafer* of counsel) for appellant.

Clarence W. Moore for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

PER CURIAM:

This appeal is from a decision of the Patent Office Board of Appeals dated March 31, 1964.

[1] Appellant has moved to correct diminution of the record by the addition of a terminal disclaimer filed by applicant in the Patent Office and recorded therein on November 9, 1964. The motion is denied without prejudice. The case is *remanded* to the Patent Office Board of Appeals to determine the effect of said terminal disclaimer on the issues presented by the appeal, taking into consideration *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485, decided May 14, 1964, and *In re Kaye*, 51 CCPA 1465, 332 F.2d 816, 141 USPQ 829, decided June 11, 1964, and to take such further action as it may deem appropriate. See 28 U.S.C. 2106.

WORLEY, *Chief Judge*, dissenting with whom ALMOND, *J.*, joins.

It is embarrassing to witness this attempted exercise of authority which Congress has not seen fit to give this court. Quite the contrary, Congress has expressly limited our authority.[1]

Appellant has had his day in court through the legal procedures controlling the Patent Office.[2] The appeal is now ready for decision here on the record made below. It is our duty—indeed we have no choice—but to proceed accordingly.

It is doubtful that the Patent Office wishes to abdicate its heretofore independent status as an arm of the executive branch of the

[1] 35 U.S.C. 144 states:

The United States Court of Customs and Patent Appeals, on petition, *shall hear and determine such appeal on the evidence produced before the Patent Office*, and the decision shall be confined to the points set forth in the reasons of appeal. * * * [Emphasis supplied.]

[2] The Commissioner of Patents, in a decision dated November 19, 1964, denied a petition to reopen this case. Appellant failed to utilize the remedies then available to him to obtain judicial review of that decision.

government; but, if so, it would be hard to imagine a better precedent than the instant command offers.

United States Court of Appeals
District of Columbia Circuit

KENNETH E. LYMAN *v.* DAVID L. LADD, COMMISSIONER OF PATENTS

No. 18,935. Decided May 6, 1965

[— U.S.App.D.C. —; —F.2d —; 145 USPQ 369]

1. PATENTABILITY—PATENTABLE SUBJECT MATTER—MERE CONCEPT NOT PATENTABLE.

"* * * it may be seriously questioned whether a 'concept,' an 'intangible relationship,' or even a 'mathematical apportionment' is patentable. Certainly naked ideas, independent of the means to carry them out, are not patentable. *Atlantic Works* v. *Brady*, 107 U.S. (17 Otto) 192 (1882). And where, as here, the structure used to demonstrate the concept is old in the art, no basis for the issuance of a patent is shown. Compare *The Telephone Cases*, 126 U.S. 1, 533 (1887). It is true, of course, that a process is patentable under 35 U.S.C. § 101. But appellant does not even suggest that his invention qualifies for a process patent. See *Cochrane* v. *Deener*, 94 U.S. (4 Otto) 780, 788 (1876)."

2. SAME—OBVIOUSNESS—PRINCIPLE DISCLOSED IN THE PRIOR ART.

"The District Court, like the Patent Office Board of Appeals and the Patent Examiner, held that appellant's alleged invention was anticipated by Metz. Although Metz does not use the term 'mathematical apportionment,' the principle is clearly disclosed in his invention. As the District Court stated: 'The Metz patent describes a suspension arrangement which is predicated upon these very same mathematical relationships [appellant's equal rates of downward movement of the spring and the linkage].' *Lyman* v. *Ladd*, D.D.C., 232 F.Supp. 754, 756 (1964). Continuing, the District Court added: 'In any event, it certainly cannot be said that the mathematical relationship would have been unobvious to a person ordinarily skilled in the art with the Metz patent to guide him.'" *Ibid.*

3. APPEAL TO U.S. COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT—FINDINGS BELOW NOT SET ASIDE UNLESS CLEARLY INFECTED WITH ERROR—FEDERAL RULES OF CIVIL PROCEDURE, RULE 52(a).

"This court has frequently stated that 'the findings of the Patent Office, an expert administrative body, especially when confirmed by the District Court, will not be overturned here unless clearly infected with error.' *Zenith Radio Corporation* v. *Ladd*, 114 U.S.App.D.C. 54, 57, 310 F.2d 859, 862 (1962). The fact that appellant, testifying in the District Court as his own expert witness, was unimpressed with the Metz patent and challenged its viability as an anticipatory reference would not in itself require the District Court to reverse the action of the Patent Office. The District Court weighed appellant's expert testimony against the record compiled in the Patent Office and found his expert testimony wanting. Its assessment of the credibility of that expert testimony is entitled to 'due regard' by this court. Rule 52(a), Fed. R. Civ. P."

4. PATENTABILITY—PARTICULAR SUBJECT MATTER—AUTOMOTIVE WHEEL SUSPENSION ELEMENTS.

The judgment of the District Court, dismissing the complaint in a suit under 35 U.S.C. 145 to authorize the issuance of a patent for automotive wheel suspension elements, is affirmed.

APPEAL from the United States District Court for the District of Columbia.

AFFIRMED.

N. D. Parker, Jr. and *James F. Davis* (*Edwin S. Booth* of counsel) for appellant.

Clarence W. Moore (*Joseph F. Nakamura* of counsel) for appellee.

Before BAZELON, *Chief Judge*, and WRIGHT and MCGOWAN, *Circuit Judges*

WRIGHT, *Circuit Judge:*

After a trial *de novo* pursuant to 35 U.S.C. § 145, the District Court affirmed the action of the Patent Office denying appellant's patent application. Appellant alleges trial court error in failing to perceive that the gist of his invention is the "mathematical apportionment" [1] of automotive wheel suspension elements shown in his patent application, and not the wheel suspension elements themselves. He insists that his invention defines "an intangible relationship, independent of specific structure," and that the trial court's finding of obviousness within the meaning of 35 U.S.C. § 103 [2] resulted from its failure to recognize this distinction. Appellant readily concedes that the structural elements shown in his patent application to demonstrate the intangible relationship have been in the public domain for many years and are particularly described in the Metz patent which was cited as prior art by the Patent Office in denying his application. His invention, however, according to appellant, "lies in a concept; namely, mathematical apportionment."

[1] Initially, it may be seriously questioned whether a "concept," [3] an "intangible relationship," [4] or even a "mathematical apportionment" [5] is patentable. Certainly naked ideas, independent of the means to carry them out, are not patentable. *Atlantic Works* v. *Brady*, 107 U.S. (17 Otto) 192 (1882). And where, as here, the structure used to demonstrate the concept is old in the art, no basis for the issuance of a patent is shown. Compare *The Telephone Cases*, 126 U.S. 1, 533 (1887). It is true, of course, that a process is patentable under 35 U.S.C. § 101.[6] But appellant does not even suggest that his invention qualifies for a process patent. See *Cochrane* v. *Deener*, 94 U.S. (4 Otto) 780, 788 (1876).

[2] Moreover, appellant's contention that the District Court misconceived the nature of his invention is not supported by this record. The District Court, like the Patent Office Board of Appeals and the Patent Examiner, held that appellant's alleged invention was anticipated by Metz. Although Metz does not use the term "mathematical apportionment," the principle is clearly disclosed in his invention. As the District Court stated: "The Metz patent describes a suspension arrangement which is predicated upon these very same mathematical relationships [appellant's equal rates of downward movement of the spring and the linkage]." *Lyman* v. *Ladd*, D.D.C., 232 F.Supp. 754, 756 (1964). Continuing, the District Court added: "In any event, it certainly cannot be said that the mathematical relationship would have been unobvious to a person ordinarily skilled in the art with the Metz patent to guide him." *Ibid.*

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[1] Appellant's brief, at p. 5, reads:

"The elements of the above-described assembly are old and appellant takes no position to the contrary (JA 67). Appellant's invention, and the point of novelty on which appellant predicates patentability, is the invention or discovery of a specific relationship between the frequency of the spring element and the gravity induced rate of downward movement of the mechanical elements of the system such that the wheel and the spring move downward through the same distance in the same time interval without creating unbalanced forces. This appellant calls 'mathematical apportionment.'"

[2] 35 U.S.C. § 103 reads:

"A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made."

[3] See *Westinghouse Elec. & Mfg. Co.* v. *Powerlite Switch. Co.*, 6 Cir., 142 F.2d 965 (1944).

[4] See *In re Kothny*, 25 CCPA (Patents), 96 F.2d 289 (1938).

[5] Compare *Application of Shao Wen Yuan*, 38 CCPA (Patents), 188 F.2d 377 (1951).

[6] 35 U.S.C. § 101 reads:

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."

[3] This court has frequently stated that "the findings of the Patent Office, an expert administrative body, especially when confirmed by the District Court, will not be overturned here unless clearly infected with error." *Zenith Radio Corporation* v. *Ladd*, 114 U.S.App.D.C. 54, 57, 310 F.2d 859, 862 (1962). The fact that appellant, testifying in the District Court as his own expert witness,[7] was unimpressed with the Metz patent and challenged its viability as an anticipatory reference[8] would not in itself require the District Court to reverse the action of the Patent Office. The District Court weighed appellant's expert testimony against the record compiled in the Patent Office and found his expert testimony wanting. Its assessment of the credibility of that expert testimony is entitled to "due regard" by this court. Rule 52(a), Fed. R. Civ. P.

[4] AFFIRMED.

[7] There were no other witnesses.
[8] Appellant, citing *Bullard Co.* v. *Coe*, 79 U.S.App.D.C. 369, 147 F.2d 568 (1945), opined that the structure described in the Metz patent would not work and was, therefore, without anticipatory significance.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,321,467, G. M. Merta, CUP-MAKING MACHINE, filed May 23, 1958, D.C., E.D. Wis. (Milwaukee), Doc. 58–C–138, *Solo Cup Company* v. *Paper Machinery Corp. et al.* Judgment holding patent invalid Apr. 9, 1965.

2,706,697, P. Eisler, MANUFACTURE OF ELECTRIC CIRCUIT COMPONENTS; **Re. 24,165**, same, filed Feb. 11, 1958, D.C., E.D. Pa. (Philadelphia), Doc. 24100, *Baldwin-Lima-Hamilton Corporation and Technograph Printed Circuits, Ltd.* v. *Tatnall Measuring Systems Company et al.* Consent order of dismissal (notice Apr. 6, 1965).

2,707,821, A. B. Sowter, COLD PRESSURE WELDING; **2,999,194**, Boswell and Ewels, SEMICONDUCTOR DEVICES, filed Aug. 21, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1489, *General Electric Company Limited et al.* v. *Motorola Semiconductor Products, Inc.* Stipulation and order dismissing complaint Apr. 14, 1965.

2,730,300, J. S. Baer, REELING SYSTEM, filed Apr. 12, 1965, D.C., S.D.N.Y., Doc. 65/1091, *Shuford Mills, Inc.* v. *Abraham Mineo et ano.*

2,778,637, G. H. Eash, ENDLESS MAGNETIC TAPE CARTRIDGE, filed Apr. 12, 1965, D.C. Kans. (Wichita), Doc. W–3392, *The Ohio Citizens Trust Company et al.* v. *William P. Lear et al.*

2,787,210, F. H. Shepard, Jr., HAMMER IMPELLING MEANS IN HIGH SPEED PRINTERS, filed Apr. 7, 1965, D.C., S.D.N.Y., Doc. 65/1029, *Francis H. Shepard, Jr.* v. *International Business Machines Corp.*

2,901,621, Anderson and Hunt, FUEL-PUMP CARBURETOR, filed Feb. 12, 1959, D.C., S.D. Tex. (Houston), Doc. 12,520, *Mission Manufacturing Company* v. *Tool Traders, Inc. et al.* Stipulation and order of dismissal without prejudice Apr. 9, 1965.

2,902,448, D. H. Young, FOUNTAIN PEN CONSTRUCTION AND INK CARTRIDGE THEREFOR, filed Apr. 23, 1965, D.C., S.D.N.Y., Doc. 65/1236, *Waterman-Bic Pen Corp.* v. *David Kahn, Inc.*

2,856,635, Gerson and Bruins, METHOD OF MANUFACTURING PLASTIC SHEET MATERIAL WITH PEARL ESSENCE INCORPORATED THEREIN, filed Apr. 26, 1965, D.C., S.D.N.Y., Doc. 65/1263, *Patrician Plastics Corp.* v. *Schwanda Plastics, Inc. et ano.*

2,859,845, B. Bachman, ELECTROMAGNETIC CLUTCH, filed July 17, 1963, D.C., N.D. Ohio (Cleveland), Doc. C63–567, *Globe Industries, Inc.* v. *Sterling Precision Corp.* Stipulation substituting Designatronics, Incorporated for Sterling Precision Corporation as party defendant and dismissing said Sterling Precision Corporation from this action Apr. 8, 1965.

2,882,384, J. E. Foster, WELDING SYSTEM, filed Apr. 14, 1965, D.C., S.D.N.Y., Doc. 65/1114, *Julius E. Foster* v. *Magnetic Heating Corp. et al.*

2,896,945, H. Waldman, TAPE RECORDING AND REPRODUCING APPARATUS, filed Aug. 2, 1962, D.C., S.D.N.Y., Doc. 62/2700, *Robosonics, Inc.* v. *Ansa Fone Corp. et al.* Order of discontinuance May 13, 1965; said order vacated May 27, 1965. Final Consent judgment; defendants, Ansa Fone Corp., Harold Gamburd, doing business as Teleminder Co., and Hank Klumb, enjoined June 28, 1965.

2,967,219, L. L. Galin, VIBRATING REED CONTROL DEVICE, filed Dec. 12, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c2241, *Leo L. Galin* v. *Great Lakes Runway & Engineering Co., doing business as Klinetronics Division of Great Lakes Runway & Engineering Co. et al.* Final consent decree against defendant Great Lakes Runway & Engineering Co.; said defendant enjoined Apr. 14, 1965. Order dismissing cause as to remaining defendant Al Kline and cause hereby dismissed May 19, 1965.

2,976,550, H. F. Silver et al., GRAB-ROLL SCREEN, filed Oct. 1, 1963, D.C., N.D. Calif. (San Francisco), Doc. 41795, *Silver Corporation* v. *Spreckles Sugar Company.* Consent judgment; defendant enjoined Apr. 1, 1965.

2,977,315, B. J. Scheib, WATER SOLUBLE IODINE-PHOSPHORIC-ACID-SYNTHETIC DETERGENT COMPOSITION, filed Apr. 2, 1965, D.C. Minn. (Minneapolis), Doc. 4–65/100, *West Laboratories, Inc.* v. *Sep-Ko Chemicals, Inc.* Same, Doc. 4–65/101, *West Laboratories, Inc.* v. *A & L Laboratories, Inc.* Same, filed Apr. 2, 1965, D.C. Minn. (St. Paul), Doc. 2–65–104, *West Laboratories, Inc.* v. *National Cooperatives, Inc. et al.* Stipulation and order of dismissal without prejudice July 12, 1965. Same, Doc. 2–65–105, *West Laboratories, Inc.* v. *Northern States Laboratories.* Decree as above.

2,999,194. (See 2,707,821.)

3,022,926, S. Bailey, Jr., METHOD OF HEAT SETTING, DYEING AND OPTIONALLY SCOURING BOARDED SYNTHETIC THERMOPLASTIC TEXTILES WITH SUPERATMOSPHERIC STEAM, filed Mar. 13, 1962, D.C., E.D. Pa. (Philadelphia), Doc. 31156, *Turbo Machine Co.* v. *Proctor & Schwartz, Inc.* Judgment holding patent valid but not infringed (notice Apr. 13, 1965).

3,049,853, Kroll and Benson, ROTARY POWER MOWER, filed May 8, 1963, D.C., E.D. Wis. (Milwaukee), Doc. 63–C–109, *Toro Manufacturing Corporation* v. *Jacobsen Manufacturing Company.* Patent held invalid Apr. 30, 1965.

3,057,709, J. C. Stewart, METHOD OF AND COMPOSITION FOR ELIMINATING CRAB GRASS INFESTATIONS, filed Apr. 16, 1963, D.C. Colo. (Denver), Doc. 9106, *Pax Company* v. *Shoppers' Mart.*

3,075,731, G. O. Atkinson et al., BEARING SEAL, filed Apr. 6, 1965, D.C., W.D. Tex. (Pecos), Doc. 4023, *Hughes Tool Company* v. *Smith Industries International (Inc.).*

3,100,068, Podmore and Fahey, VIBRATION MILLS, filed Apr. 8, 1965, D.C., E.D. Mich. (Detroit), Doc. 26759, *Roto-Finish Company* v. *Southwestern Engineering Company.*

3,109,738, J. W. Tucker, SELF-RISING FLOUR COMPOSITIONS COMPRISING MIXTURES OF SODIUM ALUMINUM PHOSPHATE AND ANHYDROUS MONOCALCIUM PHOSPHATE, filed Feb. 26, 1964, D.C., S.D.N.Y., Doc. 64/614, *Stauffer Chemical Co.* v. *Monsanto Chemical Co.* Stipulation and order dismissing action Apr. 15, 1965.

3,117,152, E. B. Michaels, SUBSTANTIALLY NEUTRAL MAGNESIUM SALT OF A PHOSPHORIC ACID ESTER OF OXETHYLATED NONYL PHENOL; **3,162,604**, same, DRY CLEANING SOLVENT COMPOSITIONS, filed Apr. 20, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–429, *Stamford Chemical Industries, Inc.* v. *Mortimer Simon & National Cleaners.*

3,131,965, I. S. Blonder, ELECTRICAL OUTLET ATTACHMENT, filed Sept. 18, 1964, D.C.N.J. (Newark), Doc. 862–64, *Blonder-Tongue Electronics* v. *Viking Cable Co.* Stipulation and order of dismissal Apr. 14, 1965.

3,134,366, A. L. Miller, FLOW REGULATOR FOR A HEATER, filed Apr. 19, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–599–WM, *Avy L. Miller* v. *Anthony Pools, Inc. et al.*

3,139,881, J. J. Fannon, INFRARED CHICKEN BROODER, filed Apr. 26, 1965, D.C., N.D. Ga. (Atlanta), Doc. 9430, *Hupp Corporation* v. *The Bradshaw Manufacturing Company.*

3,151,297, H. Toomin, HIGH GAIN SUPERREGENERATIVE DETECTORS, filed Apr. 3, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–522, *Electrosolids Corporation* v. *The May Dept. Stores et al.*

3,154,966, W. R. Smith, CUTTER UNIT SUSPENSION ARRANGEMENT FOR POWER MOWERS, filed Apr. 22, 1965, D.C., N.D. Ga. (Atlanta), Doc. 9424, *McDonough Power Equipment, Inc.* v. *AMF Western Tool, Inc.*

3,160,361, W. C. Monahan, UNITARY PAPER TOWELLING RACK, filed Apr. 7, 1965, D.C. Conn. (New Haven), Doc. 10906, *Monaplastics, Inc.* v. *Caldor, Inc.*

3,161,423, L. L. Markel, CAMPING TRAILER, filed Apr. 15, 1965, D.C., N.D. Ind. (South Bend), Doc. 3580, *Skamper Corporation* v. *Heckaman Mfg., Inc.*

3,162,604. (See 3,117,152.)

3,171,018, J. A. Lawler, TEMPERATURE CONTROL, filed Apr. 8, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c545, *Blue M. Electric Company* v. *Cenco Instruments Corporation.*

3,177,106, J. C. Waszkiewicz FLORAL GARLAND AND CLIP, filed Apr. 29, 1965, D.C., S.D.N.Y., Doc. 65/1305, *Foster-Form Corp.* v. *Lion Ribbon Co., Inc.*

3,178,402, Smith and Zelinski, RUBBERY POLYMER OF 1,3-BUTADIENE HAVING A HIGH CIS 1,4-ADDITION, filed Apr. 12, 1965, D.C., N.D. Ohio (Cleveland), Doc. C65–211, *Goodrich-Gulf Chemicals, Inc.* v. *Phillips Petroleum Company.*

Re. 23,421, R. H. Whisler, Jr., SHOCK ABSORBER, filed July 7, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1172, *Monroe Auto Equipment Company* v. *General Wholesale Auto Supply Co.* Stipulation and settlement agreement releasing defendant from any claims for infringement of Reissue Patent No. 23,421; cause dismissed without prejudice Apr. 6, 1965.

Re. 23,947, H. H. Fox, PROCESS OF AND COMPOSITIONS FOR COMBATING TUBERCULOSIS, filed Sept. 16, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–916, *Hoffmann-La Roche, Inc.* v. *Lee-Allen Drugs & Pharmacal Corp.* Action dismissed Apr. 5, 1965. Same, filed Jan. 17, 1964, D.C., S.D.N.Y., Doc. 64/183, *Hoffmann-La Roche, Inc.* v. *Consolidated Midland Corporation.* Stipulation and order of discontinuance May 4, 1965.

Re. 24,165. (See 2,706,697.)

Re. 24,966, E. W. Buck, ELECTROMAGNETIC DRILL UNIT, filed Apr. 20, 1965, D.C., E.D. Mich. (Detroit), Doc. 26795, *Buck Manufacturing Co.* v. *General Automation Manufacturing, Inc.*

Des. 176,492, J. Barofsky, TELEVISION CABINET OR SIMILAR ARTICLE, filed Apr. 16, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–596–FW, *Jack Barofsky* v. *General Electric Corporation.*

Des. 181,096, N. A. Hana, DENTAL CHAIR; **Des. 182,954**, same, DENTAL CHAIR SEAT; **Des. 182,955**, same, filed Apr. 22, 1965, D.C., N.D. Calif. (San Francisco), Doc. 48528, *Hek Manufacturing Company* v. *S. S. White Company.*

Des. 182,750, B. Berger, BATHROOM CABINET, filed Apr. 11, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c606, *National Steel Cabinet Co.* v. *General Bathroom Products Corp.* Consent order dismissing complaint and counterclaim Jan. 14, 1965.

Des. 182,954. (See Des. 181,096.)

Des. 182,955. (See Des. 181,096.)

Des. 191,901, J. C. Breneman, BATH MAT OR SIMILAR ARTICLE, filed Apr. 5, 1965, D.C., S.D.N.Y., Doc. 65/1013, *Rubbermaid, Inc.* v. *Fred S. Strauss.*

Des. 193,422, D. J. Scholz, HOUSE, filed Mar. 26, 1965, D.C., E.D. Mo. (St. Louis), Doc. 65C99(3), *Scholz Homes, Inc.* v. *Lamar Construction Co. et al.*

Des. 199,168, Costantini and Di Angelus, REFRIGERATOR CABINET OR SIMILAR ARTICLE, filed Apr. 26, 1965, D.C., E.D. Pa. (Philadelphia), Doc. 37936, *Victory Metal Manufacturing Corp.* v. *Glenco Refrigeration Corp.*

Des. 199,291, F. L. Jahn, DISPLAY STAND FOR PHOTOGRAPHS AND THE LIKE, filed Apr. 1, 1965, D.C., S.D.N.Y., Doc. 65/974, *Eaton Paper Corp.* v. *Dan-Dee Imports, Inc. et ano.*

Des. 200,856, R. T. Martin, HEARING AID, filed Apr. 26, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c649, *Dahlberg Electronics, Inc.* v. *Fidelity Electronics, Inc.*

Erratum

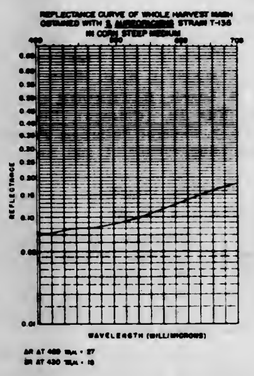
In the OFFICIAL GAZETTE, issue of July 6, 1965, vol. 816, p. 15, under the heading "Patent Suits," first column, line 11, for "2,451,758, H. Malm, RUBBER GLOVES;" read *2,471,578, C. F. Libby, SELVAGE FORMING MECHANISM;* under the same heading, p. 16, second column, line 8, for "2,451,758" read *2,751,758.*

REISSUES

AUGUST 17, 1965

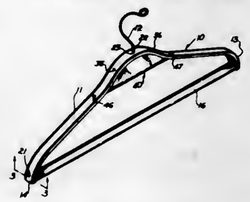
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,840
TETRACYCLINE FERMENTATION
John Andrew Growich, Jr., New City, N.Y., and Nicholas Dodack, Rahway, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine
Original No. 3,092,556, dated June 4, 1963, Ser. No. 172,394, Feb. 12, 1962. Application for reissue June 9, 1964, Ser. No. 384,817
5 Claims. (Cl. 195—80)



1. The process of producing tetracycline which comprises cultivating a strain of Streptomyces aureofaciens which produces tetracycline exclusively under submerged aerobic conditions in an aqueous nutrient medium containing assimilable sources of carbohydrate, nitrogen, and inorganic salts until substantial quantities of tetracycline are produced, said tetracycline-producing strain of Streptomyces aureofaciens being [also] characterized by its ability to impart to the whole harvest mash a color characterized by a reflectance curve, when plotted linearly, wherein the vertical distance between the reflectance curve and a straight line drawn through the reflectance curve intercepts at 400 mμ and 550 mμ is greater at 420 mμ than at 430 mμ [·], *and by the failure of a mature agar slant culture thereof, obtained by the technique described in Example 6, to give a blue fluorescent response to ultraviolet light at 3660 A.*

25,841
CLOTHES HANGER
Carl E. Gingher, 304 Depot St., Scranton, Pa.
Original No. 3,052,390, dated Sept. 4, 1962, Ser. No. 95,913, Mar. 15, 1961. Application for reissue Aug. 3, 1964, Ser. No. 399,425
11 Claims. (Cl. 223—88)



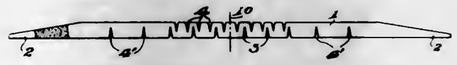
1. A garment hanger assembly comprising a shoulder bar having an inverted U-shaped cross section for supporting a garment, a cross bar of inverted U-shaped cross section secured thereto and extending between the opposite ends of said shoulder bar, the outermost end portions of said shoulder bar comprising a socket including an inwardly projecting wall portion for receiving the outermost end portions of said cross bar and interlocking the parts together, a hanger hook connected to said shoulder bar for supporting said hanger, said hook having a shank portion extending through an aperture in said shoulder bar, a locking plate of U-shaped cross section with upstanding side wall portions which fit snugly against the inner side walls of said shoulder bar, means for securing said locking plate to said shoulder bar, said hook having an end portion fastened to said locking plate, a cover plate disposed beneath and enclosing said locking plate, and means for securing said cover plate to said shoulder bar, said cover plate being U-shaped in cross section and comprising a bottom wall with upstanding side walls which are fitted snugly and contiguously against the upstanding side wall portions of said locking plate.

PATENTS

GRANTED AUGUST 17, 1965

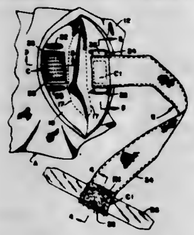
GENERAL AND MECHANICAL

3,200,413
REPLACEABLE PROTECTING MEANS FOR COLLARS
Iris R. Vaughan, Hamilton, Bermuda
Filed Sept. 28, 1962, Ser. No. 226,968
1 Claim. (Cl. 2—60)



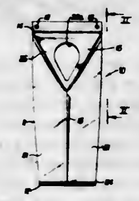
A collar stiffening element, comprising a strip of water-repellant material, said strip having a central portion adapted to be secured to the inside of a neckband of a collar, said central portion being provided with adhesive means for securing it to the inner surface of a neckband, closely arranged shallow cutouts along the central neck-circling portion of one edge to permit curvature of said strip longitudinally in one direction, and intervening dart cutouts deeper than said shallow cutouts and of less number than said shallow cutouts in the other edge, and more closely approaching the opposite ends of said strip, to permit said strip to be curved longitudinally to a less degree in the opposite direction to said first-mentioned curvature, and the opposite ends of said strip being tapered to conform with and be normally secured to a hidden portion of the surface of the lapel of a lady's coat or a gentleman's shirt.

3,200,414
DETACHABLE STIRRUP FOR WOMEN'S SLACKS AND STRETCH-PANTS
Samuel Sternberg, 562 Cardinal Road, Dresher, Pa.
Filed June 26, 1964, Ser. No. 378,156
3 Claims. (Cl. 2—232)



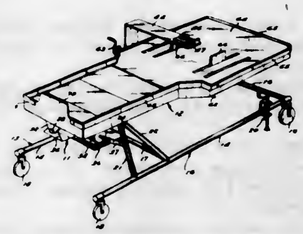
1. A detachable stirrup construction for slacks comprising in combination a peripheral internally cuffed hem at the terminal portions of the slack legs, a first type of contact engaging material secured to said hem at oppositely disposed lateral portions thereof, slits in said hem at the flanks of each of said patches and cooperatively communicating with the area within said hem to define stalls, a flexible strap, tongued stay elements secured to the respective ends of said strap and transversely projecting outwardly therefrom, a patch of a second type of contact engaging material secured to each end of said strap, said stay elements being inserted through the respective slits into said stalls and urging said first and second type patches into face-to-face abutment with each other whereby the abutting patches interlockedly engage with each other and cooperate with said stays in detachably coupling said strap to said hem.

3,200,415
PEDIATRIC URINE COLLECTION MEANS
Lee K. Breece, Jr., San Pedro, Calif., assignor, by mesne assignments, to Rexiflex Laboratory, Los Angeles, Calif., a corporation of California
Filed Mar. 1, 1963, Ser. No. 261,984
4 Claims. (Cl. 4—110)



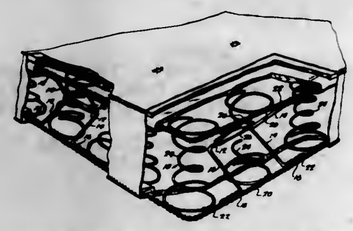
1. In a pediatric urine collection means, the combination of: an elongated bag having side wall portions folded to form longitudinal front and back fold lines; and ported attachment means at one end of said bag and including folded upper side wall portions lying in a planar zone and forming a triangular shaped attachment area extending diagonally between said front and back fold lines whereby said triangular area is attachable to surfaces surrounding uro-genital organs while said elongated bag lies longitudinally of the body.

3,200,416
INVALID BED
Arthur M. Warrick, 1945 E. 71st St., Cleveland, Ohio
Filed Dec. 4, 1963, Ser. No. 327,897
12 Claims. (Cl. 5—62)



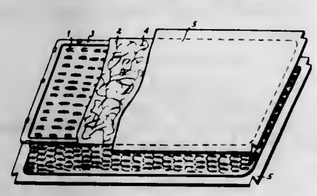
1. An invalid bed comprising a base adapted to rest on a floor, an elongated patient receiving bed platform, means supporting said platform on said base for independent tipping movement laterally and longitudinally from a horizontal position, first patient controllable power means connected to control lateral tipping of said platform, second patient controllable power means controlling longitudinal tipping of said platform and being operable to move said platform to a vertical position, said first and second power means each comprising reversible electric motors driving self-locking gear reductions, a crank arm connected for rotation by each gear reduction and driving member connected to said crank arm proportioned to move the platform to a limit of its respective ranges of movement when each crank arm rotates through one revolution, and a footplate on said platform adjacent to the floor when said platform is in a vertical position.

3,200,417
TORSIONAL EDGE SPRING FOR MATTRESSES AND THE LIKE
Robert C. Costello, Flossmoor, Ill., assignor to Simmons Company, New York, N.Y., a corporation of Delaware
Filed Oct. 22, 1962, Ser. No. 231,937
8 Claims. (Cl. 5—260)



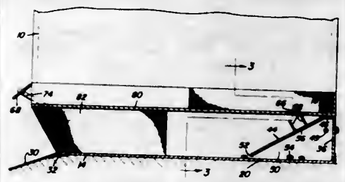
1. A torsion edge spring for the core of a mattress, bed spring, cushion or the like, comprising a pair of torsionally-resilient elongated elements co-journalled in mutually-supporting, relatively-rotatable relationship and each having at each end thereof a transverse arm, said arms of each element extending divergently from the torsional axis of said element and having at their ends means for attachment to the upper and lower peripheral edges respectively of said core.

3,200,418
INNERSPRING MATTRESS WITH PLASTIC FOAM COVER
Wilhelm Lebens, Leuchtenburg, Germany
Filed Nov. 2, 1961, Ser. No. 150,118
2 Claims. (Cl. 5—351)



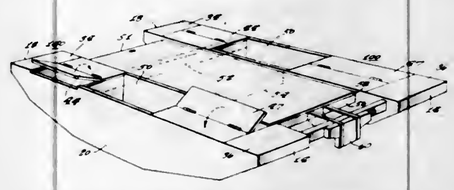
1. A reversible, long-life innerspring mattress having good form retention and a selected degree of softness, said mattress comprising,
an interconnected coil spring assembly having an outer surface, a lower surface and a continuous outer side edge,
an upper and lower fibrous material layer covering said upper and lower surfaces respectively and each having marginal portions bent over and attached to said coil spring assembly,
an upper and lower resilient, substantially planar foam material layer covering said upper and lower fibrous material layers respectively and each having a free peripheral portion thereof extending beyond said outer side edge of the mattress,
said peripheral portion of said upper foam layer being overturned toward said lower foam layer at said side edge and said peripheral portion of said lower foam layer being overturned toward said upper foam layer at said side edge with said overturned portions of said upper and lower foam layers defining ends spaced from and substantially facing each other,
an upper and lower anti-friction layer covering said upper and lower resilient foam material layers respectively,
said foam layers having corners defining angular slots therein positioned adjacent corners provided by said assembly,
and said assembly and all said layers being encased in an outer ticking which solely maintains said folded over ends of said foam layers in their intended position.

3,200,419
TRAFFIC CONTROL HIVE BASE
Victti E. Root, Cadis Stage Road, Owego, N.Y.
Filed Mar. 15, 1963, Ser. No. 265,509
11 Claims. (Cl. 6—4)



1. A method of elminating traffic congestion in a beehive comprising separating incoming honey laden bees from outgoing honey seeking bees by providing separate inlet and outlet passages for a beehive, providing contrasting dark and light areas for said inlet and outlet passages respectively and thereby utilizing the natural instincts of honey laden bees to seek the dark areas and of honey seeking bees to seek the light areas.

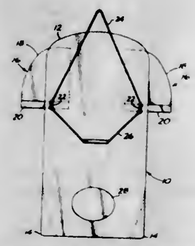
3,200,420
EASILY ASSEMBLING AND DISASSEMBLING BOAT
Joseph P. Palus, 32 Pitman Ave., Fords, N.J.
Filed Jan. 25, 1965, Ser. No. 427,863
5 Claims. (Cl. 9—2)



1. A boat comprising first and second hulls and means detachably securing said hulls together, each hull having a bottom having front and rear vertical plates extending upward therefrom and side pieces secured to opposite sides of said bottom and said plates extending upward to the top of said plates and extending downward below said bottom, the portions of said pieces between the bottom and the bottom edge of said pieces serving as runners, said bottom edge being comprised of flat surfaces defining as viewed from an exterior side of a hull an upwardly concave bottom edge.

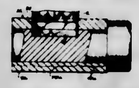
3,200,421
AQUAPLANE
James R. Williams, 11312 Clover Crest Drive S., Tacoma 99, Wash.
Filed June 20, 1963, Ser. No. 289,238
4 Claims. (Cl. 9—310)

1. An aquaplane comprising
(a) a body having a substantially flat under surface,
(b) a pair of laterally spaced step planes fastened to the under surface of the forward portion of the body, one on each side,
(c) each of the step planes comprising a downwardly and rearwardly inclined plane member the transverse axis of which is substantially parallel to the transverse axis of the body, and a substantially upright support member bracing the rearward end of the plane member,
(d) each of the step planes being open at its sides to permit free lateral passage of water between the planes and the body,



(e) tow means fastened to the forward portion of the body and extending forwardly for connection to a towing boat, and
(f) handle means connected to the body and extending rearwardly for grasping by the aquaplane operator.

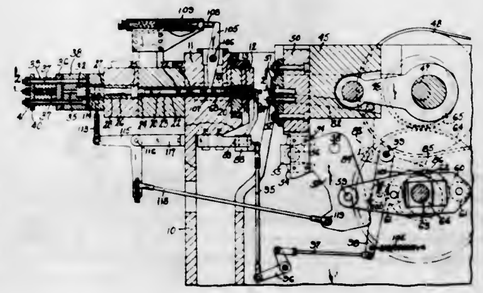
3,200,422
METHOD OF FORMING A SCREW WITH A SLOT IN THE SHANK
L. D. Willmon, Montclair, Calif., assignor to Long-Lok Corporation, Los Angeles, Calif., a corporation of California
Filed July 9, 1962, Ser. No. 208,233
2 Claims. (Cl. 10—10)



1. A method of accurately fabricating a screw of a given diameter with a longitudinal peripheral groove in a shank portion of the screw to seat an insert, characterized by the steps of:
forming a blank screw with a shank portion that is oversized with respect to said diameter;
confining said shank portion of the blank screw in a cavity of the same configuration as the shank portion of the blank screw but of slightly larger diameter to compensate for the cross sectional area of the desired groove;
driving into the material of the confined shank portion a forming member, the transverse cross section of which is the same as the longitudinal cross section of the groove, to form the groove in the shank portion by displacement of the material with the displacement confined circumferentially by the surrounding wall of the cavity and with consequent increase in the diameter of the shank portion; and
then removing the excess material of the shank portion and at the same time forming a screw thread on the shank portion by a grinding operation.

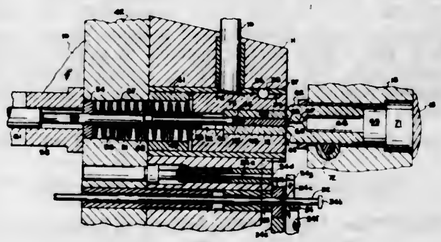
3,200,423
SINGLE-DIE DOUBLE-STROKE TUBULAR HEADERS
Erwin B. Byam, Wolcott, and Anthony K. Undraitis, Waterbury, Conn., assignors to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Jan. 27, 1961, Ser. No. 85,251
16 Claims. (Cl. 10—12.5)

1. A double-blow header for making tubular articles comprising a supporting frame, a gate slidably mounted on the frame and carrying a plurality of punches, said gate arranged to sequentially position said punches in operative relation to a die carried by the frame upon which said punches sequentially advance, said die being mounted in said frame for rearward movement in the direction of travel of the punches upon impact thereon, means connected to said gate and actuated in timed relation with the movement of said gate for blocking said die against movement in said frame during the advance of one of said



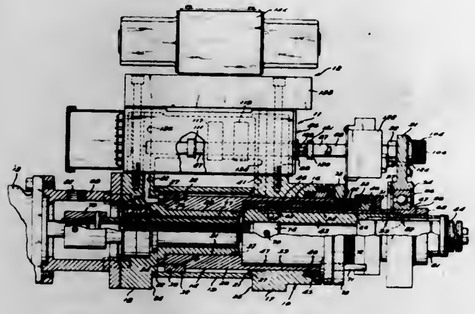
punches thereon and thereafter releasing said die and permitting rearward movement of said die in said frame upon advance of the second of said punches thereon, spring means for returning said die to its forward position upon retraction of said second punch from the die, and a piercing pin positioned within said die, said pin remaining stationary during the advance of said first and second punches toward said die.

3,200,424
METHOD AND APPARATUS FOR FORMING HOLLOW RIVETS
Herbert L. McClellan and Robert E. Wisebaker, Tiffin, Ohio, assignors to The National Machinery Co., Tiffin, Ohio, a corporation of Ohio
Filed June 25, 1962, Ser. No. 204,986
10 Claims. (Cl. 10—12.5)



1. A double blow header comprising a frame, a die breast on said frame, a die slidably mounted in said breast for movement between a forward and a rearward position, spring means urging said die toward said forward position, a slide reciprocable in said frame, a pair of tools on said slide each operable to engage and work a blank in said die on alternate forward strokes of said slide, one tool operating to move said die to said rearward position during its working stroke, and clamp means operable when said one tool is in its forward position to lock said die in said rearward position against movement relative to said breast and continue to lock said die in said rearward position during the forward stroke of the other of said tools.

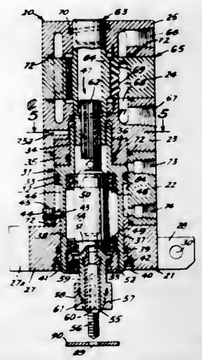
3,200,425
HYDRAULIC TAPPER UNIT WITH MEANS TO PERMIT YIELDING OF THE FEED NUT
Stanley E. Vickers, Columbus, Ohio, assignor, by mesne assignments, to Imperial Manufacturing Company, Middlefield, Ohio, a corporation of Ohio
Filed Mar. 16, 1962, Ser. No. 180,137
7 Claims. (Cl. 10—136)



1. A tapper unit comprising a base, a carrier element linearly reciprocable on said base, a tap spindle element supported by said carrier element rotatable relative to said carrier element and movable relative thereto along the axis of rotation thereof, lead screw and nut members, one of said members being mounted on said carrier element fixed against substantial axial movement relative thereto and rotatable in response to axial thrust on said spindle greater than a predetermined value and the other of said members being mounted on said spindle element, said members interengaging to axially move said spindle relative to said carrier in response to relative rotation therebetween, rotary means connected to rotate said spindle, actuator means connected to move said carrier, a first control connected to said rotary means and actuator means operating said actuator means to move said spindle element to a first predetermined position relative to said base and energize said rotary means, a second control operable to reverse said rotary means when said spindle reaches a second predetermined position relative to said base, and a third control operable to stop said rotary means when said spindle reaches a third predetermined position relative to said carrier and operate said actuator means to move said carrier relative to said base.

3,200,426
FLUID DRIVEN AND CONTROLLED TAPPING UNIT
Ellis V. Barr, Dayton, Ohio, assignor to Laughter Corp., Dayton, Ohio, a corporation of Ohio
Filed Mar. 28, 1962, Ser. No. 183,255
7 Claims. (Cl. 10—136)

1. A tapping unit comprising a body, a double acting piston and cylinder assemblage carried by said body, a spindle journaled for rotation in said piston and axially reciprocatable therewith and thereby from a retracted to an extended position, means for detachably coupling at least one tap to one end of said spindle, a fluid motor having a rotor drivingly coupled to the other end of said spindle, said body comprising a plurality of block-like portions in superposed rigid assembly with certain of said portions having bores formed therein defining said cylinder and the motor chamber for said rotor, means for reversibly supplying a first fluid to said motor for selectively driving said rotor in a threading direction or in a reverse direction of said spindle, means including first conduit means connected to opposite ends of said cylinder for alternately supplying a second fluid thereto to reciprocate said piston, and means including second conduit means establishing fluid connection between said first



conduit means and said reversible supply means to reverse the direction of rotation of said rotor when said piston reciprocates.

3,200,427
SHOE-TREE ACCESSORY
Catherine Gravett Daley, 25 E. 37th St., New York, N.Y.
Filed Mar. 10, 1964, Ser. No. 350,903
2 Claims. (Cl. 12—128)

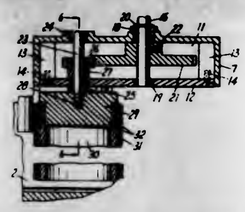


1. A sanitary shoe tree including a toe-piece and a flexible cover surrounding said toe-piece; said cover comprising a casing having a stall portion, a gauntlet portion formed as a continuation of said stall portion and an open end remote from the stall portion; a flexible lining in said casing having a stall portion, a gauntlet portion and an open end remote from the stall portion and conforming substantially in size, shape and length to the casing; means for collapsing the open ends of said casing and lining to retain said cover on said toe-piece; a flexible pocket portion interposed between the stall portion of said casing and the stall portion of said lining; an impregnatable pad in said pocket; effervescent sanitary means impregnated in said pad; said casing and lining being pervious to the effervescence from said sanitary means.

3,200,428
APPARATUS FOR CLEANING APPLICATORS
Perry J. Fuller, 109 E. Chicago St., Sturgis, Mich.
Filed Nov. 26, 1963, Ser. No. 326,094
9 Claims. (Cl. 15—21)

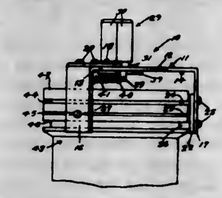
9. An apparatus of the class described comprising a support unit adapted to be supportedly mounted on a receptacle and having a gear chamber therein, a driving shaft rotatably mounted on said support unit and provided with a handle, a driven shaft supportedly mounted on said support unit, driving connections for said driving and driven shafts disposed within said gear chamber, an elongated comb body member supportedly mounted

on said driven shaft in depending relation to said body member, and a cylindrical comb unit supportedly mount-



ed on said comb body member and having closely spaced, radially projecting teeth of uniform length.

3,200,429
PISTON RING GROOVE CLEANER
Robert E. Davis, 14253 Collins St., Van Nuys, Calif.
Filed May 7, 1964, Ser. No. 365,577
4 Claims. (Cl. 15—104.01)



1. A piston ring groove cleaning implement comprising a body member adapted to be disposed above an internal combustion engine piston and having depending legs adapted to straddle a peripheral portion of the piston, a set of bits supported by the extending inwardly from one of said legs and adapted to simultaneously engage each of the ring grooves of the piston, means slidably connecting a second one of said legs to the body member for radial movement of the second leg inwardly and outwardly of the body member, a guide element projecting inwardly from said second leg and adapted to engage in one of said ring grooves when the second leg is in a retracted, operative position, a turning tool receiving member journaled and extending upwardly from said body member, and means connecting said turning tool receiving member to the second leg whereby when a torque is applied in one direction to said turning tool receiving member said member initially turns relative to the body member for drawing said second leg inwardly to a retracted, operative position, said turning tool receiving member thereafter rotating the implement relative to the piston to effect cleaning of the ring grooves by the bits.

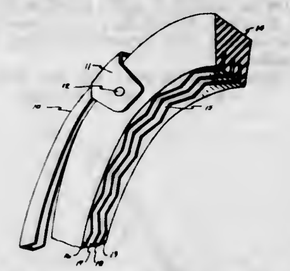
3,200,430
ROTARY BRUSH ROLL
Edward F. Haracz, 161 Pershing Ave., Clifton, N.J.
Filed Aug. 22, 1963, Ser. No. 303,772
4 Claims. (Cl. 15—183)

1. A brush roll comprising a cylindrical core, a plurality of longitudinal brush units each comprising a backing member having a generally U-shaped cross-section and a folding bristle assembly having its fold imbedded and secured in the packing member with the bristles projecting radially therefrom, and a plurality of longitudinally extending brush unit mounting members having a polygonal cross-section comprising a base, a top wider than said base, and at least two intermediate sides inclined inwardly from said top toward said base, each of said mounting members having at least one outwardly open channel of generally U-shaped cross-section extending longitudinally therethrough, said channel being adapted to receive and hold the backing members of the longitudinally extending brush units with the brush portions extending through said channel, said mounting members being secured to and around the external surface of said core in contiguous side by side relation with the base of



the polygonal cross-section of each mounting member adjacent said core and with the inclined sides of adjacent mounting members in contact, whereby said longitudinally extending brush units are disposed in circumferentially spaced relation around the core with the brush portions thereof extending radially outward.

3,200,431
WINDSHIELD WIPER BLADE
Richard R. Thompson, Totowa, N.J., assignor to The Jack P. Hennessy Sales Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 1, 1963, Ser. No. 269,256
1 Claim. (Cl. 15—250.41)



An attached windshiped wiper for a vehicle comprising a wiper operating arm and a wiper blade mounted in juxta-position to the exterior surface of the windshield for wiping, rain, snow and ice from the windshield,

said wiper blade being a pre-curved resilient continguous element,

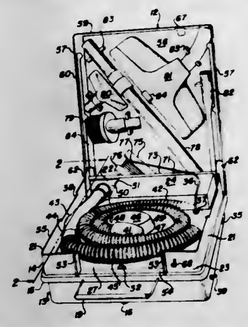
said wiper blade formed as a broad body portion to be retained by said wiper operating arm parallel to the windshield and with a face having a plurality of parallel contacting surfaces having a serpentine formation that remain in contact with said exterior surface of the windshield,

said contacting surface separated from each other to be independently flexed.

3,200,432
SUCTION CLEANER
Donald H. Voegeli, Turtle Creek, Pa., and George F. Carabet, North Canton, Ohio, assignors to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed Aug. 14, 1962, Ser. No. 216,772
15 Claims. (Cl. 15—323)

1. A suction cleaner comprising a body including a base and a cover therefor, support means within said base having a suction air inlet arranged substantially at the mid-portion of said support means, a hose connected to said suction air inlet, means on said support means

arranged with respect to said suction air inlet for supporting the hose in stored condition circumferentially about said suction air inlet in substantially one plane within the confines of said base independent of said cover and while connected to said suction air inlet, said cover mov-



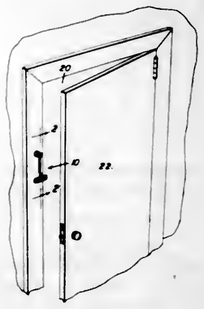
ably mounted on said base to expose said hose storing means when in opened position whereby the hose may be stored thereon, and said cover when in closed position arranged with respect to said base to overlie said hose and enclose the said stored hose while connected to said suction air inlet.

3,200,433
POWER NOZZLE AND RUG SCRUBBER
David F. Downey, Stamford, Conn., assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Filed June 26, 1963, Ser. No. 290,833
8 Claims. (Cl. 15—328)



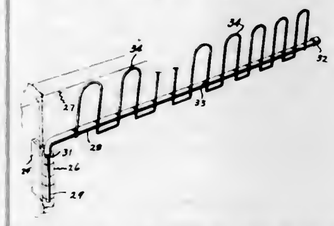
4. In a nozzle body having a suction inlet opening formed in the bottom thereof within which an elongated cylindrical brush, which includes bristles extending outwardly through the suction inlet opening for contacting a surface to be cleaned, is mounted for rotation about a horizontal axis by a motor mounted on the nozzle body, and a hollow wand having an open top end and a bottom end which is coupled to the nozzle body and communicates with the suction inlet opening, said wand serving as a conduit for conveying dirt-laden air to a vacuum cleaner tank unit through a suction hose when the suction hose is coupled between the wand's top end and the tank unit so that the surface may be cleaned by the simultaneous effects of brush agitation and applied suction, the improvement wherein said nozzle body including its motor-rotated brush and wand may be used for shampooing a rug by brushing a liquid detergent onto the rug's surface when the suction hose is uncoupled from the top end of the wand, said improvement comprising: a container for the liquid detergent including a member fixed thereto for removably supporting the container on the wand, said member including a portion also serving as a handle to apply force to said wand to move the nozzle body across the rug surface, and means for conveying liquid detergent from the container to the brush.

3,200,434
DOOR CLOSING PREVENTER
Frank L. Jarnot, 190 Orland St., Bridgeport, Conn.
Filed Oct. 3, 1963, Ser. No. 313,487
7 Claims. (Cl. 16—86)



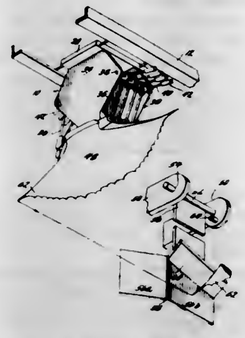
1. A safety device for preventing the accidental closing of an opening through a wall by a swinging closure means, comprising an elongated resilient bumper having a relatively broad flat face extending along the length thereof, an elongated flexible member having one end thereof secured to the mid-point along the length of the bumper, and mounting means fixed to the other end of said flexible member for mounting the device on the face of the wall in a manner so as to freely suspend the flexible member adjacent the opening in the wall with the bumper having the flat face thereof positioned against the face of the wall and with a portion of the bumper projecting laterally inward beyond the side of the opening into the path of travel of the closure means for engagement by a closure means so as to prevent a complete closing of the opening.

3,200,435
HANGER FOR USE WITH A HINGE
George T. Hemmeter, Los Altos Hills, Calif. (4125 Black Point Road, Honolulu, Hawaii), and William L. Madsen, Mountain View, Calif. (960 Elm St., San Jose, Calif.)
Filed May 14, 1963, Ser. No. 280,198
1 Claim. (Cl. 16—137)



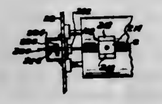
A hanger for use with a hinge having a flat top and secured to mount a door panel on a door frame and normally having a pin spaced from said door panel and door frame comprising a rod of a predetermined diameter having one end portion of a lesser diameter to provide a shoulder, said one end portion being adapted to replace said pin with said shoulder against said flat top, said rod having another portion extending substantially at right angles to said one end portion and being provided with a plurality of circumferential grooves spaced apart along said other portion, and hooks seated in said grooves and secured to said rod and extending therefrom substantially parallel to said one end portion, said hooks lying in a common plane and forming with each other a generally sinusoidal configuration adapted to retain shoes on said rod.

3,200,436
APPARATUS FOR THE REMOVAL OF CRAB CARAPACES
Jewett Parker Moncure, 203 Nottingham Road, Richmond, Va.
Filed Dec. 11, 1963, Ser. No. 329,698
8 Claims. (Cl. 17—2)



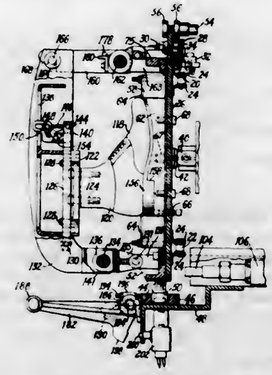
1. An apparatus for separating the carapace from a crab comprising: a conveyor system adapted to move said crab and adapted to hold the body of said crab rigidly thereon; and means in the path of said crab for engaging a lateral end of said carapace and adapted to deflect said end from said body and separate said carapace from said body, the said deflecting and separating means comprising a supporting plate extending in a generally vertical direction and a deflecting plate mounted on said supporting plate, the said deflecting plate extending along the surface of said supporting plate at an angle to the horizontal and extending inwardly toward the crab from said supporting plate at an angle forwardly and away relative to the direction of movement of the crab.

3,200,437
APPARATUS FOR RENDERING POLYSTYRENE SHEET MATERIAL FLEXIBLE
Alvin M. Sasanko, Allen Park, Mich., assignor to Swedish Crucible Steel Company, Detroit, Mich., a corporation of Michigan
Filed Feb. 16, 1962, Ser. No. 173,739
10 Claims. (Cl. 18—1)



1. An apparatus for rendering expanded polystyrene sheet material flexible, comprising
an elongated approximately pressure-tight housing having an inlet opening and an outlet opening,
a main sheet material conveyor extending from said inlet opening to said outlet opening,
means for supplying steam under pressure to said housing,
and for sealing said sheet material against substantial escape of steam during entrance into said inlet opening and exit from said outlet opening, power-driven mechanism drivingly connected to said main conveyor in operating relationship therewith, and control means including a humping detection device disposed near said inlet opening and responsive to humping of the conveyed sheet material upward from said main conveyor above its normal path of travel thereon near said inlet opening for temporarily increasing the speed of said mechanism to temporarily speed up said main conveyor and consequently eliminate said humping by taking up any slack in the sheet material being deposited on said main conveyor.

3,200,438
INJECTION SOLE MOLDING MACHINES
Donald B. McIlvin, Danvers, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Oct. 17, 1962, Ser. No. 231,222
6 Claims. (Cl. 18—4)



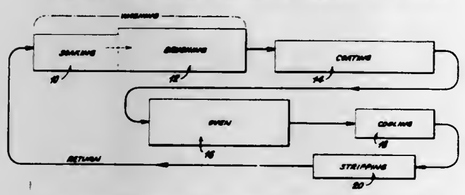
1. An injection molding machine in which a conveyor means transfers a vertically disposed carrier through a closed circuit from a mold charging station step by step through a plurality of idle stations to a discharging station and thence onward to the charging station, an arm fulcrumed at the lower extremity of the carrier for swinging movement between a horizontal position and a vertical position and arranged to mount a shoe form with its toe end uppermost when the arm is vertical, a mold assembly mounted on the carrier and designed to mold in situ onto a shoe on the form a sole and heal unit in which the heel has a square breast face, a platen fulcrumed on the arm at a point adjacent to the fulcrum of the arm on the carrier, means for securing the shoe form to the platen, and means for biasing the platen toward the arm, the arrangement of the platen relatively to the arm permitting the platen to swing away from the arm during swinging movement of the arm from its vertical position thereby to maintain a vertical disposition of the platen until the breast face of the newly molded heel has moved clear of the mold assembly, the biasing means yielding to permit such swinging movement of the platen.

3,200,439
PLASTIC DIE-MOLDING APPARATUS
Alexander Katz, New York, N.Y., assignor to EFKA Plastic Corporation, Bayonne, N.J., a corporation of New Jersey
Filed Dec. 12, 1962, Ser. No. 244,144
24 Claims. (Cl. 18—4)

1. Apparatus for die-molding plastic sheet articles such as doilies, tablecloths, and the like, said apparatus comprising:
(a) a flat faced die plate which defines a flat upper and lower surface, said plate having a design configuration indented from said upper surface downwardly into said plate;
(b) a washing means for washing said die plate clean of any plastic material which may be adhered to said die plate, said washing means comprising a soaking machine and a brushing machine,

(1) said soaking machine comprising a liquid-holding trough member adapted to hold a liquid solvent therein at a certain liquid level, first conveyor means adapted to carry said die plate through said trough member in an upwardly inclined path from a position below said liquid level to a position above said liquid level;

(2) said brushing machine comprising a second conveyor means which includes a plurality of successive conveyor rollers, a plurality of successive brush means alternately interposed between said conveyor rollers, said brush means comprising opposed brush members adapted to receive



said die plate therebetween, said conveyor rollers rotating so as to introduce said die plate to between successive ones of said brush members;

(c) a conveyor means for carrying said die plate from said brushing machine to a coating apparatus;

(d) a coating apparatus, comprising a conveyor means for moving said die plate, feed means for feeding plastic material onto said die plate upper surface, wiper means adapted to wipe clean said die plate upper surface;

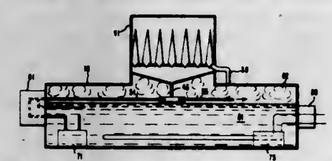
(e) heating means for heating said die plate to thereby cure said plastic material which is contained in said indented design configuration.

3,200,440

APPARATUS FOR PRODUCING COMPOSITE TEXTILE FILAMENTS FROM A PLURALITY OF SYNTHETIC POLYMERS

James C. Bryan, Waynesboro, Va., and Robert D. Hurt, Hixson, Tenn., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Nov. 4, 1963, Ser. No. 332,320
2 Claims. (Cl. 18—8)



1. An apparatus for producing composite textile filaments from a plurality of heat-fusible, fiber-forming, synthetic polymers, comprising

a plurality of polymer melting units, each adapted to receive a heat-fusible, synthetic, fiber-forming polymer and to provide a continuous melt thereof into a distributing system adapted to divide the molten stream from said melting unit into a plurality of substreams,

a plurality of metering pumps,

a plurality of spinneret assemblies,

conduit means associated with said distributing system, metering pumps and spinneret assemblies whereby molten polymer from the distributing system for each melting unit is conveyed to a plurality of metering pumps and whereby each metering pump is connected to at least one spinneret assembly, the arrangement of said pumps and conduit means being such that each spinneret assembly receives a streamlet of molten polymer originating in each of said polymer melting units,

said conduit means being individually so shaped and proportioned as to give all the molten streamlets through correspondingly located conduits the same length of transit time,

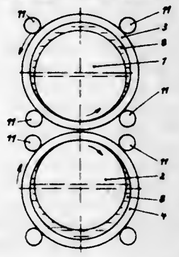
and heating means associated with said apparatus to maintain the molten streamlets flowing from any particular melting unit at the same temperature at all mutually corresponding points along the path of flow of any of the polymers from said melting unit to the level of said plurality of spinneret assemblies.

3,200,441

ROLLING MILLS, WITH COOLING MEANS, FOR THE TREATMENT OF PULVERULENT AND GRANULAR MATERIALS, PARTICULARLY METALS

Ulf Geier, Osterrath-Bovert, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany

Filed Dec. 4, 1963, Ser. No. 327,949
Claims priority, application Germany, Dec. 24, 1962, Sch 32,517
3 Claims. (Cl. 18—9)



1. A rolling mill, with means for cooling the rolls, for the treatment of pulverulent and granular substances, particularly metals, comprising: a roll sleeve eccentrically surrounding each roll, the internal diameter of each roll sleeve being greater than the external diameter of the roll that encloses, each roll engaging its associated roll sleeve along a generating line in a plane containing the axes of the roll and of the roll sleeve, and thus forming a crescent-shaped space between the roll and the roll sleeve, guiding means, independent of the roll, for each roll sleeve, a positive driving connection between each roll and its roll sleeve so that one is driven by the other, stationarily arranged anular end plates closing the crescent-shaped space between each roll and its roll sleeve the said end plates each engaging the associated roll in a fluidtight manner, inlet connections for admitting cooling liquid to the crescent-shaped spaces, and outlet connections for discharging the liquid therefrom.

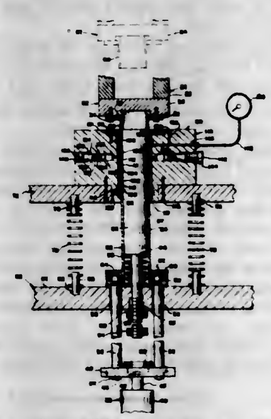
3,200,442

MOLDING APPARATUS

John Haller, 18500 Sheldon Road, Northville, Mich.

Filed Oct. 12, 1961, Ser. No. 144,798
12 Claims. (Cl. 18—16.5)

1. A molding apparatus for forming elongated powered material compacts or briquettes, said apparatus comprising a die structure having a bore therein with an internal surface, a core structure disposed within said die structure bore and having an external surface disposed in radially-spaced relationship with said internal surface, a resilient deformable sleeve member of evenly expansible and contractible metallic spring material disposed between said surfaces adjacent one of said surfaces in radially-spaced relationship with the other surface and defining a die cavity with said other surface and secured at its upper and lower ends to one of said structures, means forming a liquid-tight hydraulic fluid chamber between said upper and lower ends of said sleeve member and said one surface, a tubular lower punch movably mounted in the lower part of said die



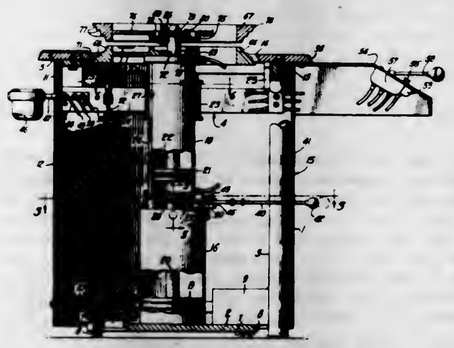
cavity in closing relationship therewith, a tubular upper punch movable into and out of the upper part of said die cavity toward and away from said tubular lower punch, and means for supplying hydraulic pressure fluid to said chamber to deform the midportion of said sleeve member and consequently decrease the radial width of the midportion of said die cavity.

3,200,443

TIRE LOADER

James R. Maddox and Anthony T. Fazzero, Oakland, Calif., assignors to Clement O. Dennis, Bibb County, Ga.

Filed Oct. 27, 1959, Ser. No. 849,036
9 Claims. (Cl. 18—18)



1. Apparatus for loading and unloading tires into and from recapping matrices comprising, a body unit having means to seat a matrix thereon in predetermined relation to the body unit, a matrix on the seat, a pair of air cylinder assemblies superimposed upon one another to provide upper and lower cylinder assemblies in vertical axial alignment with one another and with the matrix seating means and with the lower cylinder assembly being fixed to the body unit, each air cylinder assembly including a cylinder, piston and piston rod, means carried by the cylinder of the upper assembly to support a tire, means carried by the piston rod of the upper assembly to engage a tire bead and in cooperation with the tire supporting means to draw the beads of a tire together when the piston rod of the upper cylinder assembly is withdrawn into its cylinder, means to detachably lock the upper cylinder to the piston rod of the lower cylinder assembly, means to connect opposite end of each cylinder to a source of air supply, and separate means to control the flow or air to the respective cylinders.

ERRATUM

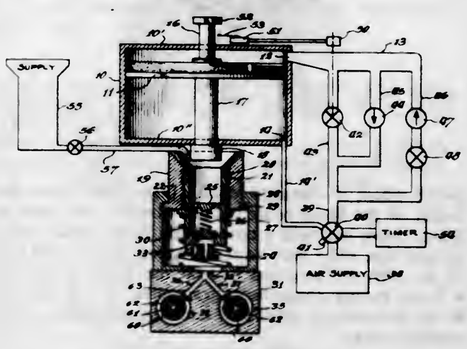
For Class 18—30 see:
Patent No. 3,201,799

3,200,444

TWO STAGE INJECTION MOLDING APPARATUS FOR ENCAPSULATING DEFORMABLE ARTICLES

DinuAlma J. Davis, % D. J. Davis Co. Inc., 303 Dallas Road, Wheaton, Ill.

Filed June 1, 1962, Ser. No. 199,348
3 Claims. (Cl. 18—30)



1. An injection molding apparatus, comprising: a mold having a cavity for a deformable article to which a thermoplastic material is to be molded; a source of liquid thermoplastic material; a movable ram; a pneumatic piston and cylinder device connected with said ram, moving the same with relation to said material source and said mold to force plastic material from the source into said mold, the quantity of material forced into the mold being a function of the position of said ram; a source of air under pressure for operating said piston and cylinder device; valve means controlling the air from said source to said piston and cylinder and having an open condition in which said piston and cylinder device is actuated by said air at a first air pressure; and control means, connected with said valve means, and responsive to the position of said ram, actuated when the quantity of material in said mold is less than sufficient to fill the mold, to close said valve, the air under pressure in said cylinder expanding to force additional material into the mold at a pressure less than said first pressure.

3,200,445

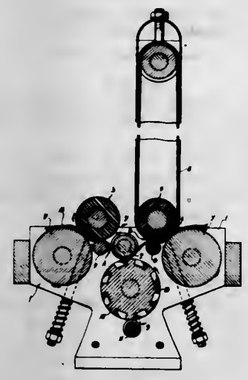
APPARATUS FOR THE REMOVAL OF BURRS AND OTHER FOREIGN MATTER FROM FIBRES

William Vivian Morgan, Highton, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, Victoria, Australia, a body corporate

Filed Sept. 4, 1962, Ser. No. 221,011
Claims priority, application Australia, Sept. 7, 1961, 8,963/61; Jan. 17, 1962, 13,409/62
7 Claims. (Cl. 19—84)

1. An apparatus for removing burrs from partially aligned fibres comprising a rotatable working roller having a plurality of closely adjacent plain continuous ribs de-

fining narrow circumferential grooves therebetween extending in the direction of partial fibre alignment, input feed means for feeding fibres to said working roller and having an input nip, output feed means for moving fibres from said working roller and having an output nip, said output means being operated at a speed greater than said input means, said input nip and said output nip being located so that the fibre path therebetween is of a



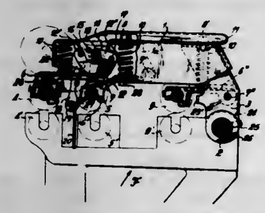
length which is comparable with that of the mean fibre length of the fibres being treated whereby the fibres are drawn down into said grooves while burrs remain set up on said ribs, and a burr beater mounted close to and clear of the ribs and arranged to beat the burrs set up with a force having components transverse to and opposite to the direction of motion of the adjacent surface of the working roller.

3,200,446

LOCKABLE TOP ROLLER ARRANGEMENT FOR A TEXTILE DRAWING MECHANISM

Ernst Dausch, Stuttgart, Germany, assignor to SKF Kugellagerfabriken Gesellschaft mit beschraenkter Haftung, Stuttgart-Bad Cannstatt, Germany, a company of Germany

Filed Jan. 21, 1963, Ser. No. 252,658
Claims priority, application Germany, Jan. 19, 1962, S 77,623
7 Claims. (Cl. 19—267)



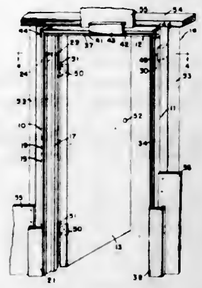
1. A top roller arrangement for a drawing mechanism which comprises:
(a) a support;
(b) carrier arm means movable on said support toward and away from an operative position;
(c) bottom roller means mounted on said support;
(d) top roller means mounted on said arm means for cooperation with said bottom roller means when said arm means is in said operative position;
(e) resilient means on said arm means for urging said top roller means toward said bottom roller means, whereby said arm means is resiliently urged away from said operative position;
(f) catch means on said support;
(g) an operating lever pivotable about a pivot axis fixed on said arm means toward and away from a locking position;
(h) a latch member movable on said arm means between a locking position in which said latch member engages said catch means when said arm is in said operative position, and a releasing position spaced from said locking position; and
(i) motion transmitting means interposed between a portion of said lever and said latch member for moving said latch member between said positions thereof a distance greater than the distance moved by said lever portion when said lever pivots about said pivot axis; said motion transmitting means constituting a linkage permanently conecting said lever to said latch member for joint movement toward and away from the respective locking positions, said linkage including an intermediate lever member mounted for pivoting movement about another axis fixed on said arm means and spaced from said pivot axis.

3,200,447

PACKAGED DOOR ASSEMBLY

John H. Parker, Phoenix, Ariz., assignor to National Brass Company, Grand Rapids, Mich., a corporation of Michigan

Filed Aug. 24, 1962, Ser. No. 219,337
1 Claim. (Cl. 20—11)



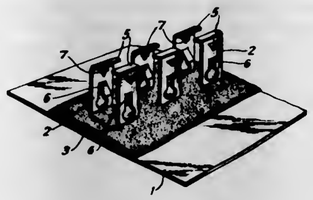
A packaged door assembly for installation in a conventional rough door frame of a wall opening comprising a pair of jamb units and a header, the jamb units being adapted for vertical positioning in parallel relation to the sides of the door frame and the header spanning the upper ends of the jamb units, each of said jamb units and header including a central frame member, the lateral extremities of which are provided with longitudinal grooves, the jamb units and header further including casings having tongues adapted for insertion in the longitudinal grooves of the central frame member, the proximate ends of the frame member and casings of the jamb units and header being complementally mitered and in slidable engagement, a miter clip engaged with the frame member of each jamb unit at the upper terminal thereof, each of said miter clips being substantially coextensive with the width of the frame member of each jamb unit, each miter clip including a stationary body portion in flush engagement with, and secured to, the rear face of the frame member, the upper portion of said miter clip extending beyond the upper limit of the jamb unit frame member being bent inwardly and downwardly to a point below the upper terminal of said jamb unit, thereby providing a resilient portion adapted for engagement with the rear face of the jamb unit frame member, for effecting a close, tight miter joint and limiting the upward movement of the header, a shimming block affixed to the rear face of the frame member of one of said jamb units, and a single adjusting member positioned in an opening in the frame member of said other jamb unit, the adjusting member including a T-nut engaged with said frame member at the locus of the opening, the adjusting member further having a pressure screw threadedly engaged with, and extending through said T-nut, with a terminal thereof engaged with the rough door frame, said pressure screw being accessible from the inner side of said other jamb unit for moving said other jamb unit toward said first jamb unit effecting sliding movement of the mitered surfaces to raise the header against the tension of the resilient portion of said miter clip until the mitered surfaces are matched.

3,200,448

SEALING STRIPS, BEADINGS OR MOULDINGS

Robert G. Bright, Leamington Spa, England, assignor to Bright Manufacturing Company Limited, Coventry, England

Filed Feb. 1, 1962, Ser. No. 170,339
Claims priority, application Great Britain, Oct. 13, 1961, 36,834/61
6 Claims. (Cl. 20—69)



1. A sealing strip for application to a supporting flange comprising an elongated strip of fabric, a relatively thick layer of foam material defining a resilient strip extending longitudinally of said fabric strip and bonded thereto, a plurality of substantially U-shaped clips arranged in longitudinally spaced relation along said fabric strip, each of said clips comprising a cross piece and a pair of parallel legs each having an inwardly pressed tang adapted to engage said supporting flange only, the cross piece of each clip being embedded in said strip of foam material and extending transversely thereof, the longitudinal edge portions of said fabric strip being bent inwardly around the free ends of the legs of said clips into the interior thereof.

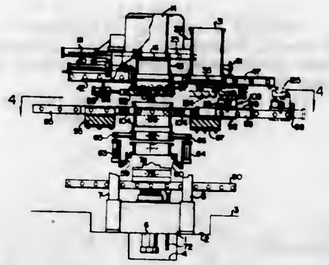
3,200,449

CONTOUR SQUEEZE MOLDING MACHINE

Edmond K. Hatch, Brecksville, Ohio, assignor to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 22, 1961, Ser. No. 161,459
22 Claims. (Cl. 22—20)

1. A foundry molding machine comprising a base, upstanding columns, a head supported on said columns, said head including a molding sand reservoir and a facing sand reservoir, transfer means mounted to shuttle between said molding and facing sand reservoirs to form a sand charge for said molding machine comprised of a layer of molding sand and a layer of facing sand, clamp means to assemble a flask and pattern plate to form a mold box beneath said assembled sand charge, means responsive to the assemblage of such mold box to dump such sand charge from said transfer means into such mold box, means laterally to shift a squeeze head into operative position between said transfer means and mold box, said squeeze head being marginally dimensioned to fit within the top of such mold box whereupon further



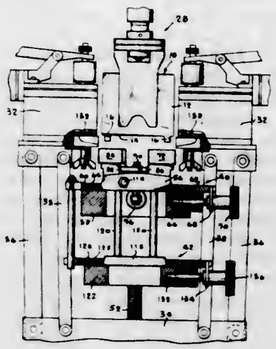
elevation of said clamp means will be operative to squeeze the layered sand charge in such mold box against said squeeze head.

3,200,450

APPARATUS FOR CASTING A POST STRAP AND WELDING SAME TO THE PLATES OF A BATTERY STACK

Richard A. Buttke, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

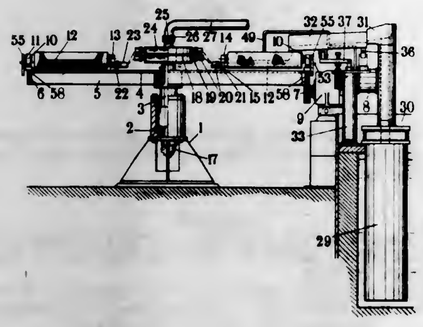
Filed Nov. 24, 1961, Ser. No. 154,709
4 Claims. (Cl. 22—58)



4. Apparatus for casting a post strap and welding same to the plates of a battery stack comprising:
a mold assembly including a plurality of mold boxes each including a main body and a movable gate, said main mold body and movable gate each having a cavity therein which together form a single cavity for casting a post strap, said main body and movable gate being arranged side-by-side with said gate mounted for movement in a horizontal plane with respect to said main body for movement between a closed and an open position, both said main body and movable gate movably mounted to be lowered together as a unit in a vertical plane;
pouring means positioned above said mold boxes for pouring a metered amount of molten metal into said single cavity of each of said mold boxes; and
mold actuator means operatively connected to said movable gates to produce relative horizontal movement between said main body and gate of each mold box to move the parts to open position and a means

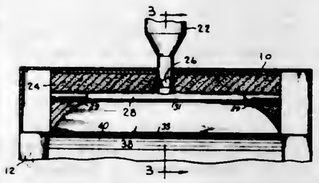
to subsequently lower said mold boxes in a vertical plane with said mold boxes in open position to thereby facilitate removal of castings from said mold boxes.

3,200,451
INGOT CASTING MACHINES
Alan Worswick, Blackburn, England, assignor to Alan Worswick (Engineering) Limited, Blackburn, England, a company of Great Britain
Filed May 11, 1962, Ser. No. 194,032
5 Claims. (Cl. 22—63)



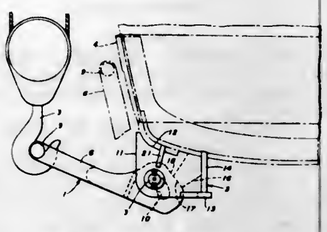
1. An ingot casting machine comprising a base, a vertical shaft rotatably mounted on said base, a horizontal turntable carried by said shaft, means to rotate said turntable, a plurality of radially disposed ingot molds pivotally mounted on said turntable for movement from an upright mold filling position to an inverted ingot discharge position, means including a steel tube embedded in a wall of each mold for circulating a cooling medium, means for successively filling said molds with molten metal during continuous rotation of said table and comprising a launder pivotally mounted for movement about a vertical axis and with the discharge end of said launder disposed above the path of movement of said molds, means for feeding molten metal to said launder including a pump having a portion thereof immersed in a bath of molten metal, a power operated valve for controlling flow of metal from said bath to said pump, and means for preventing operation of said pump when the metal in said bath reaches a predetermined low level, an upwardly projecting pin on said turntable adjacent each mold, an arm projecting from said launder in the path of movement of said pin, means for biasing said launder to an initial mold filling position, whereby upon movement of said turntable a pin will engage said arm and move said launder and maintain the discharge end of said launder above a mold until filling thereof is completed whereupon said arm will disengage from the pin and permit said launder to return to initial position, automatic means for controlling the feed of metal to said launder to fill each mold to the desired depth, said automatic means including solenoid valves for controlling the operation of said pump and said valve, a reducing valve controlled in accordance with the level of metal in said bath to in turn control the operating pressure of said pump, a normally open switch in series with a normally closed switch for controlling the operation of said solenoid valves, cam means on said turntable for closing said normally open switch when a mold is in position to be filled, and means projecting into the mold being filled and connected to said normally closed switch to open the same when the metal in the mold being filled reaches a predetermined level, and means operable in response to rotation of said turntable for successively inverting said molds to discharge ingots therefrom and for returning said molds to filling position.

3,200,452
DEVICE FOR CASTING BATTERY GRIDS
Everett J. Williamsen, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed Apr. 16, 1962, Ser. No. 187,865
4 Claims. (Cl. 22—79)



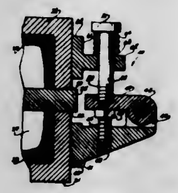
1. A distributor head for a battery grid casting mold having an elongated top mold opening, comprising:
- a member having a generally vertically extending inlet passage;
- a transverse passage connected to said inlet passage and extending generally horizontally and transverse to said inlet passage, said inlet passage having a smaller transverse dimension than the length of the transverse passage; and
- a slit passage having an entrance which is connected along its length to said transverse passage, said slit passage extending downwardly and having an exit which is adapted to overlie the mold opening, the width dimension of said slit passage being smaller than the width dimension of said inlet passage and smaller than the width dimension of said transverse passage to thereby cause molten metal which is introduced to the head at said inlet passage to be conveyed in a uniform manner over the length of the elongated top mold opening.

3,200,453
RIGGING FOR TILTING LADLES
Arthur G. Mazarakis, Hubbard, Ohio, assignor to United States Steel Corporation, a corporation of New Jersey
Filed July 12, 1963, Ser. No. 294,594
7 Claims. (Cl. 22—82)



1. A rigging for tilting a ladle about its trunnion axis comprising a tilting lever having a shackle at its outer end for lifting engagement by a hoisting hook, a bracket on said ladle adjacent its bottom edge, and means pivotally mounting the other end of said lever on said bracket for pivotal movement relative to said ladle, said mounting means including means operating to hold said lever in a normal position projecting outwardly from said ladle in which said lever shackle may be engaged by a crane hoist hook and providing for pivotal movement from said position in one direction toward said ladle, and means responsive to upward movement of said lever by a hoist hook for rendering said holding means ineffective and for releasing said lever for pivotal movement in an opposite pivotal direction from said holding position during tilting movement of said ladle by said lever.

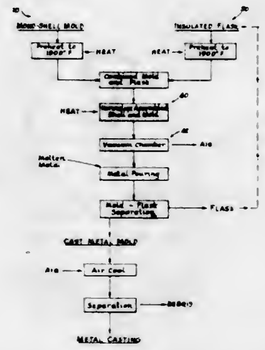
3,200,454
HINGE MECHANISM FOR FLASK FOR USE IN METAL MOLDING
Frank V. Grameuzi, 322 Line St., Camden, N.J.
Filed Feb. 7, 1963, Ser. No. 257,011
1 Claim. (Cl. 22—107)



An adjustable hinge for keeping the cope and drag portions of a molding flask in parallel relationship comprising a first arm mounted on the drag, a second arm pivotally connected to said first arm and having a pin secured perpendicular thereto, said pin being disposed between the drag and the pivot when the flask is closed, means for keeping the second arm horizontal when the flask is closed, a third arm mounted on the cope having an aperture therein, said pin being slidably mounted in the aperture, a fitting attached to an end of the pin opposite that end secured to the second arm, a helical compression spring surrounding said pin between the fitting and the third arm, said spring thereby urging the cope toward the second arm to maintain a positive relation between them while the slidable pin allows the cope to maintain a plurality of parallel relationships with the drag when the flask is closed.

3,200,455
METHOD OF SHELL MOLD CASTING
Theodore Operhall, Muskegon, and Charles Yaker and Daniel B. Rapoport, North Muskegon, Mich., assignors to Howe Sound Company, New York, N.Y., a corporation of Delaware
Filed Apr. 4, 1962, Ser. No. 185,079
6 Claims. (Cl. 22—200)

1. In the process of metal casting with shell molds having ceramic walls of relatively thin cross-section for heat transfer therethrough at a relatively high rate, the steps of preheating the shell mold, preheating an insulation flask having an open top in communication with a central opening having crosswise dimensions greater than the crosswise dimensions of the shell mold and a depth slightly less than the overall depth of the shell mold, inserting the preheated shell mold into the preheated insulation flask, transferring the preheated flask with the preheated shell mold therein to the position for metal pouring, pouring the molten metal into the preheated shell mold while in the preheated insulation flask, separating the shell mold and the insulation flask after the metal has been poured, and cooling the metal cast in the shell mold while the mold is outside of the insulation flask



for more rapid removal of heat from the metal cast in the mold.

3,200,456
CONTINUOUS CASTING METHOD AND APPARATUS
Isaac Harter, Jr., and William G. Wilson, Beaver, Pa., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 12, 1961, Ser. No. 137,594
3 Claims. (Cl. 22—200.1)

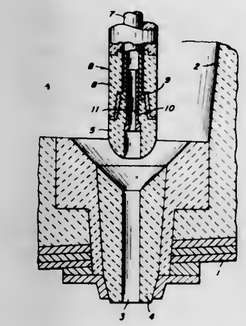


1. In the continuous casting of metal wherein molten metal is delivered at a substantially continuous rate to an upright open ended fluid cooled mold and an embryo casting is withdrawn from the opposite end of said mold, the method of operation which comprises withdrawing the embryo casting from said mold in a pattern of changing withdrawal rates to vary the molten metal level in the mold between a range of selected upper and lower limits, and separately reciprocating the continuous casting mold in an axial direction.

3,200,457
METHOD OF REGULATING THE DISCHARGE OF MOLTEN METAL FROM LADLES
James B. Wagstaff, Franklin Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Mar. 9, 1964, Ser. No. 350,231
7 Claims. (Cl. 22—209)

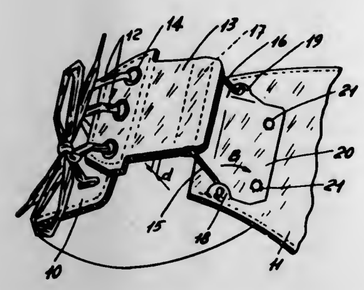
1. A method of regulating the discharge of molten metal flowing through a vertically extending orifice in a

teeming nozzle in the bottom of a refractory-lined ladle which comprises forcing gas through said nozzle orifice to



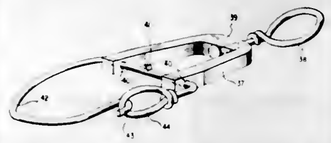
reduce the rate at which metal is discharged from said ladle.

3,200,458
FASTENING DEVICE
Lorenzo Marzocchi, via Bellinzona 38/2, Bologna, Italy
Filed Dec. 26, 1962, Ser. No. 247,151
Claims priority, application Italy, Dec. 30, 1961, 23,570/61
1 Claim. (Cl. 24—71)



A shoe comprising an upper formed with two oppositely disposed edge portions adapted to be drawn together, a plurality of eyelets provided along one of said edge portions for passage of a shoelace therethrough, a separate closing portion, a plurality of eyelets provided along one side of said closing portion for passage of said shoelace therethrough, two crank levers each pivotally mounted at one end on said other edge portion and at their other ends respectively pivotally engaging the ends of the side of said closing portion opposite said side provided with the eyelets, whereby said closing portion can be swung from an open position in which said crank levers extend in the direction of the tension exerted by said shoelace upon being tied to a closed position in which said crank levers extend, following their rotation, in a direction opposite to that of the tension exerted by said tied shoelace, and said two crank levers being pivotally mounted on said other edge portion at a height above its surface greater than the thickness of said closing portion, whereby said crank levers, when said closing portion is moved to its closed position, are rotated beyond the dead center of their rotation.

3,200,459
SWIVELS
George F. Hartman, Winter Park, Fla. (1413 Calle del Sol, Jardines del Bosque, Guadalajara, Jalisco, Mexico)
Filed Oct. 19, 1962, Ser. No. 231,617
7 Claims. (Cl. 24—73)



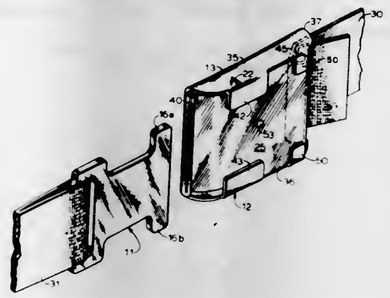
1. A swivel structure of the type employed to connect fishing tackle with a fishing line and to prevent twisting of said line comprising a body portion of molded, tough, translucent, thermoplastic organic synthetic resin having lubricating properties, said body portion being substantially flat and relatively large in the area which it spans in one plane and being relatively narrow in a plane at right angles to said one plane, said body portion having an opening at one end thereof, a metallic attaching eye having a shank portion rotatably positioned within said opening, said shank having a head on the end thereof remote from the eye presenting a bearing surface for engagement with the body portion adjacent said opening, and at least one second attaching element connected with said body portion at an opposite extremity thereof from said attaching eye.

3,200,460
CATAMENIAL PAD HOLDING DEVICE
Katherine Steeg, 36 Wooding St., Bristol, Conn.
Filed Mar. 19, 1964, Ser. No. 353,120
8 Claims. (Cl. 24—81)



1. A device for holding an article to a fabric comprising a substantially flat elongated base, means defining a first aperture in one end of said base and extending transversely therethrough to allow passage of said article, fabric gripping means comprising a gripping cap having rounded edges and a coinciding element for engaging said gripping cap and tightly positioning said fabric therebetween, a stem of smaller diameter than said element and having said element attached at one end for holding said element away from said elongated base, said stem positioned at the end opposite said first aperture on the elongated base, said stem extending outwardly from a flat side of said base, means defining a second aperture passing through said stem, said second aperture being of sufficient dimensions to accommodate an associated portion of said article, and said second aperture being so positioned with respect to said element as to allow said associated portion of said article when passed therethrough to be frictionally held therein by pressure imparted by the rim of said gripping cap upon engagement of said gripping cap with said element.

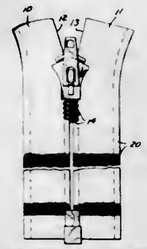
3,200,461
FASTENER DEVICE
Matthew N. Miller, Topanga, Calif., assignor to Jay P. Freer
Filed Dec. 2, 1963, Ser. No. 327,397
6 Claims. (Cl. 24—201)



1. A fastener having locking and releasing positions for a seat belt comprising:
a receptacle including a relatively broad side, first and second spaced opposed sides extending from said broad side in generally the same direction, said opposed sides having flanges extending inwardly therefrom and also projections extending inwardly adjacent the inner faces of said flanges, said flanges being spaced longitudinally from one end of said fastener, thereby providing gaps;
a resilient plate in said receptacle;
first retaining means adjacent said one end of said fastener for retaining one end of said resilient plate spaced outwardly from said broad side;
second retaining means secured to said broad side at the other end of the fastener for retaining the other end of said resilient plate closely adjacent said broad side, said resilient plate in said locking and in said releasing positions extending generally diagonally between said first and said second retaining means; and
a connector unit including a plate having a pair of outwardly extending arms positionable between said projections and said back wall and engageable with said projections and said flanges in said locking position, said arms being movable through said gaps into said locking position, said fastener assuming said releasing position by application of pressure to said resilient plate to cause deflection thereof intermediate said ends of said resilient plate.

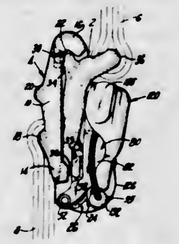
3,200,462
FASTENER TAPE
Arthur W. McMurray, Cranford, N.J., assignor to Borland Industrial Corporation, New York, N.Y., a corporation of New York
Filed Feb. 26, 1963, Ser. No. 261,154
4 Claims. (Cl. 24—205.16)

1. In a zipper tape slide fastener,
a pair of tapes adapted to inhibit differential stretching and shrinkage along their edges,
said tapes being adjacent one another and having opposed edges,
each of said tapes constituted of a composite laminated structure composed of a single strip of cloth enveloping a plastic lamina, each tape having parallel straight outer edges and the width of said plastic lamina being equal to the full width of the tape throughout its length whereby the width of the tape and the straightness of its outer edges are fixedly determined,
the warp threads of each strip of cloth disposed lengthwise of the strip and the weft threads extending crosswise of the strip,
each strip folded inwardly on a line of fold at a crease in the cloth forming the edge of a tape which is opposed to the said edge of the other tape,
fastening elements along said opposed edges of the respective tapes and having a plurality of uniformly spaced projections projecting toward the opposed edge of the other tape,
the other edge of each tape defined by two folds bordering superposed sections of the cloth strip which are substantially coextensive with the width and length of the tape,
each strip having inturned longitudinal edge portions respectively connected to said sections by respective ones of said two folds with one of said two folds



separating one of said edge portions from one of said sections and the other of said two folds separating the other edge portion from the second of said sections,
said plastic lamina sandwiched between and bonded directly to the oppositely facing inner surfaces of the folded strip, said lamina consisting wholly of a coherent film of a thermoplastic synthetic organic resin which has been applied under heat and pressure into adhering relationship with said oppositely facing inner surfaces of the folded strip and having fibrilliform projections indiscriminately distributed between threads of the cloth at the inner surfaces of the folded strip,
the lamina having an area substantially coextensive with the area of tape,
said tapes having a high degree of flexibility.

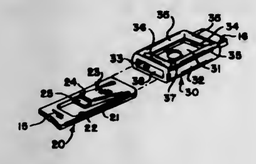
3,200,463
QUICK-RELEASE CONNECTOR
Wilbur J. Craven, East Hartford, and Dwight N. Dewey, West Hartford, Conn., assignors to The Capewell Manufacturing Company, Hartford, Conn., a corporation of Connecticut
Filed Dec. 10, 1962, Ser. No. 243,576
11 Claims. (Cl. 24—230)



1. In a quick-release connector comprising two separable units, means for releasably latching the units together including a movable lock member, spring biased

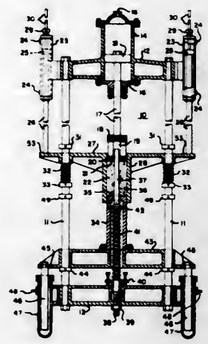
detents engageable with shoulder portions on one of said separable units for retaining the lock member in locking position, said detents being disengageable from said shoulder portions to decouple the units, a pivoted release lever having depending actuating members engageable with said detents to release the detents from said shoulder portions, and means for pivoting the release lever in a direction to release the detents from said shoulder portions for separating the units.

3,200,464
SEPARABLE FASTENER
Sydne Cousins, 345 W. 58th St., New York 19, N.Y.
Filed Aug. 29, 1963, Ser. No. 305,474
5 Claims. (Cl. 24—230)



1. A fastener device comprising:
a pair of separable members,
one of said separable members having an elongate base plate,
said base plate having wall portions projecting in a generally common direction from adjacent at least an end portion and opposed side portions and bar-like structure extending between the opposed side wall portions in spaced relationship to the end wall portion to define a housing having a fenestration therein with that end portion of the housing which is opposed to the end wall portion thereof being substantially open and unobstructed,
the other of said separable members comprising an elongate frame member having opposed side and end portions and a fenestration therein together with a resiliently disposed substantially solid tongue member having a thickness substantially the same as the thickness of the frame member projecting from one end portion of the frame member into the fenestration whereat the tongue member terminates in a free end portion,
said tongue member defining an inclined surface extending from flush with the frame member to a location outside the fenestration whereat the surface terminates to define a shoulder facing the free end portion and closer to the free end portion than to the one end portion forming a notch having a depth not greater than the thickness of the bar-like structure extending along said tongue member from said shoulder to said free end portion,
the frame member being receivable within the housing by projecting the one end portion of the frame member through the open and unobstructed end portion of the housing with the shoulder and free end portion of the tongue member into the fenestration of the housing and into engagement with said bar-like structure to substantially securely position said tongue within said housing to preclude the advent of protuberances by relative movement between said tongue and said housing, and maintain a flush relationship therebetween and with the side portions and the one end portion of the frame member being in engagement with the side and end wall portions of the housing,
said frame member and the tongue portion thereof being disposed in a plane substantially common to the plane of the housing and within the confines thereof when the frame member is attached thereto, and means for attaching said separable members to separable and adjoining areas.

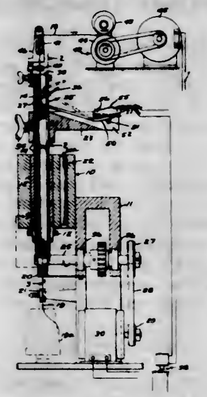
3,200,465
SOLIDS PRESS MOLDING APPARATUS
Benjamin Lassman, Pittsburgh, Pa., assignor to Benjamin Lassman & Son, Glenshaw, Pa., a partnership of Pennsylvania
Filed Jan. 28, 1963, Ser. No. 254,255
6 Claims. (Cl. 25—27)



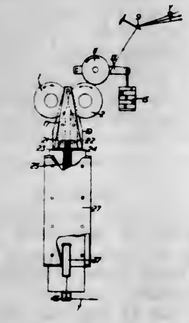
2. A press for molding solids, comprising, in combination, a vertically movable mold box having a peripheral closed slightly flared vertical wall, a movable bottom for said mold box, means holding said bottom in fixed spatial position during molding operation irrespective of any movement of said wall, a pressing head having a pressing surface in opposition to said bottom adapted to compact solids in a mold space extending generally upwardly from the top of said bottom, said head being movable slightly into the space defined within said wall, means for moving said head, said mold box being depressible by the action of said head on the contents of the box in the first course of a molding operation, and means acting on said mold box directly to depress said box a slight additional amount while said head moving means acts simultaneously to depress said head to cause said head to further press said solids for uniform densification thereof into a final molded shape.

3,200,466
APPARATUS FOR CRIMPING FILAMENTS
Robert J. Duga, Newark, Del., and Henry A. Sinski, Aldan, Pa., assignors to Joseph Bancroft & Sons Co., Wilmington, Del., a corporation of Delaware
Filed July 1, 1963, Ser. No. 291,658
2 Claims. (Cl. 28—1)

1. Apparatus for crimping filaments or yarns comprising an elongated tube forming a crimping chamber, a pair of feed rolls positioned to feed filaments to be crimped into the bottom of said tube to be folded over and crimped against the back pressure of the mass of previously crimped filaments in said tube, a winder withdrawing the crimped filaments from the top of said tube, separate means driving said feed rolls and said winder, said tube having an elongated slot in the zone of the top of the mass of crimped filaments therein, and means responsive to the level of said mass of crimped filaments with respect to said slot to control one of said independent drive means in a sense to maintain said mass at a constant level, said last means comprising a bracket, a mercury switch pivotally mounted on said bracket and adapted to be opened or closed by pivotal movement, a feeler wire attached to said switch and extending through said slot, said switch being substantially balanced and adapted to cause said feeler wire to rest lightly upon the mass of filaments in said tube whereby pivotal movement for opening or closing said switch is produced without causing said wire to apply appreciable back pressure on said filaments.

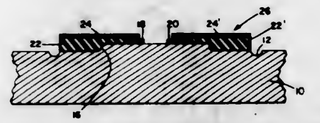


3,200,467
PROCESS OF CRIMPING AND SETTING TEXTILE STRANDS
Kurt Iwnicki, Ponthir, and David B. Miller, Stanmore, England, assignors to British Nylon Spinners Limited, Pontypool, England
Filed July 15, 1963, Ser. No. 294,990
Claims priority, application Great Britain, July 19, 1962, 27,713/62
2 Claims. (Cl. 28—72)



1. In a process for crimping and setting textile strands in a stuffer-box crimper while maintaining uniformity of crimping and setting effects, the steps comprising: forcing the strands from between nip rolls into a confined fixed compression chamber to subject them to back pressure for imparting crimp to them substantially at the point where the strands are discharged from the rolls; setting the crimp thus imparted to the strands by maintaining the crimped strands under pressure and passing them from the compression chamber to a setting chamber where heat is supplied to the strands; and continuously and automatically controlling the pressure in a manner to maintain the back pressure constant in the compression chamber and to hold the strands in the setting chamber under pressure during a longer period than that for which the strands are held in the compression chamber thereby maintaining uniformity of crimping and setting effects, said continuous and automatic control being effected by yieldingly urging the setting chamber in a direction opposite to the direction of travel of the strands through the chamber by applying a constant load to the setting chamber.

3,200,468
METHOD AND MEANS FOR CONTACTING AND MOUNTING SEMICONDUCTOR DEVICES
Reinhard Dahlberg, Gundelfingen, near Freiburg, Germany, assignor to Clevite Corporation, a corporation of Ohio
Filed Mar. 16, 1962, Ser. No. 180,251
Claims priority, application Germany, Mar. 17, 1961, J 19,618
9 Claims. (Cl. 29—25.3)



1. A fabrication method for semiconductor devices comprising: providing a plate of semiconductor material having depressions in a major surface subdividing said surface into a plurality of individual coplanar surface regions delimited and mutually segregated by said depressions and further having on each said surface region at least one operating electrode; providing an insulating coating on said surface regions contiguous with the respective electrodes thereon while leaving at least a substantial portion of each of said electrodes exposed; applying atop said insulating coating a respective strip of electrically-conductive material contacting each of said electrodes and extending toward an edge of the respective surface regions; coating the entire said major surface with an etch-resistant material; etching the exposed opposite surface of said semiconductor plate until the etch-resistant material in said depressions is reached, whereby said plate is effectively separated into discrete segments; and applying ohmic contacts to the respective etched surfaces of said discrete plate segments.

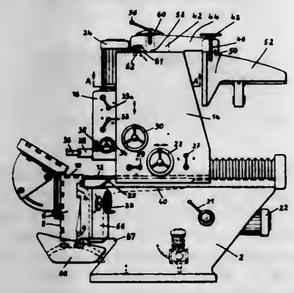
3,200,469
SPHERICAL GRIDS AND METHODS OF MAKING SAME
Harold B. Law, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 28, 1960, Ser. No. 5,132
2 Claims. (Cl. 29—25.18)



1. The method of giving a convex shape to thin, flat metallic material which comprises laying an annular ring on and transversely of an elongated forming tool having an axial hole therein, said forming tool having teeth extending radially towards said axial hole therein, applying said thin material over said ring and said tool, pushing said material into the hole in said forming tool and against said teeth to form a pocket of material having radially extending corrugations, fastening said material at the edges of said forming tool to said ring, removing said ring and material from said forming tool and inserting a convex tool into said pocket with said ring around a portion of said convex tool, applying weight to said ring and heating the material while on the convex

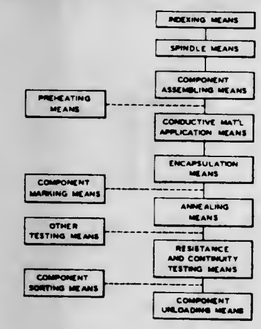
tool to stretch said material in part and shrink said material in part to thereby shape said material to the shape of the convex tool.

3,200,470
MACHINE TOOL
Johann Müller, Munich, Germany, assignor to Hans Deckel, Munchen, Germany, and Friedrich Wilhelm Deckel, Zug, Switzerland
Filed July 30, 1962, Ser. No. 213,480
Claims priority, application Germany, Aug. 4, 1961, D 36,740
8 Claims. (Cl. 29—26)



1. A boring, drilling and milling machine comprising a machine bed formed with side guideways on a substantially vertical surface and top guideways on a substantially horizontal top surface in angular relation to said side guideways, a work table mounted on said machine bed for slidable movement on one of said guideways, a column slidably mounted on said machine bed on the other of said guideways having a guideway extending in angular relation to the guideways on said machine bed, and a spindle head slidably mounted in the guideway on said column.

3,200,471
APPARATUS FOR MANUFACTURING ELECTRICAL COMPONENTS
Robert M. Johnson, Smethport, and John C. Manley, Bradford, Pa., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 3, 1963, Ser. No. 313,581



1. In an apparatus for manufacturing fixed electrical resistors of a type having a substantially cylindrical body and leads affixed to said body at the ends thereof substantially along the longitudinal axis thereof, the combination comprising,

(a) a head rotatable in a vertical plane,

(b) means for rotating said head embodying indexing means for providing a plurality of dwells in the rotation of said head, said head being operatively connected to said indexing means and responsive thereto,

(c) spindle means comprising a plurality of pairs of chucks operatively associated with said head and rotatable therewith in said vertical plane, each of the chucks of each said pair of chucks being disposed in an opposing relationship to the other, said pairs of chucks being suitable for receiving resistor parts,

(d) means for providing a second rotation of said chucks independent of said head rotation for rotating said resistors about the longitudinal axis thereof,

(e) resistor assembling means for feeding resistor parts comprising an individual substantially cylindrical resistor blank and a pair of resistor leads, and disposing said leads in a predetermined opposing relationship in said chucks and disposing said blank between said leads,

(f) means for stopping said second rotation of said pairs of chucks in a predetermined desired position relative to each other and to said head while feeding said blank and leads thereto,

(g) means for individually retracting at least one chuck of each said pairs of chucks to facilitate assembling the resistor parts,

(h) means for clamping said leads in said chucks to prevent axial movement while permitting longitudinal movement of said leads with respect to said chucks,

(i) means for applying conductive material to the junctions of said resistor blank and said leads to provide electrical continuity therebetween,

(j) encapsulation means for applying an adherent dielectric coating to said resistor blank and a portion of said leads and for adhering said leads to said blank,

(k) means for stopping said second rotation of said pairs of chucks in a predetermined desired position relative to each other and to said head while removing the completed resistor therefrom,

(l) means for unclamping the leads of said completed resistor in said chucks to facilitate removal of said resistor from said chucks, and

(m) means for removing said resistor from said chucks.

3,200,472
AUTOMATICALLY CHUCKING MULTIPLE SPINDLE MACHINE TOOL
Erwin Kohring, 11 Sieglarer Strasse, Cologne-Poll, Germany, and Helmut Drees, 1177 Am Flugplatz, Senne I, Post Windelsbleiche, Germany
Filed Jan. 21, 1963, Ser. No. 253,244
Claims priority, application Germany, Jan. 22, 1962, Sch 30,864
9 Claims. (Cl. 29—38)

1. In an automatically chucking multiple spindle machine tool, in combination:

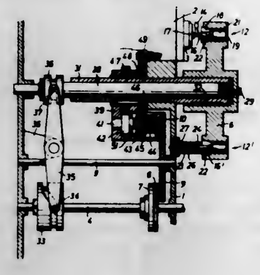
(a) a support;

(b) spindle drum means rotatable about an axis on said support, said drum means defining a machining space axially extending therefrom;

(c) a plurality of chucking spindles spaced about said axis on said drum means for sequential passage of said spindles through a plurality of work stations during rotation of said drum means, said work stations being circumferentially spaced about said axis in said machining space, and said spindles having respective axes parallel to the axis of rotation of said spindle drum means;

(d) a carrier mounted on said support for cyclic movement;

(e) a plurality of chucking means mounted on said carrier for sequential movement toward and away from a position of axial alignment with a chucking spindle at one of said work stations during said cyclic movement of said carrier, said spindles and said chucking means each being adapted to hold a work piece during said rotation of said spindle drum means and said cyclic movement of said carrier;

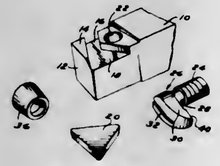


(f) first tool means engageable with a work piece held by one of said spindles at one of said work stations for machining said work piece;

(g) second tool means engageable with a work piece held by one of said chucking means for machining the work piece; and

(h) drive means for rotating said spindle drum means, cyclically moving said carrier, operating said tool means, and opening and closing said chucking means in timed sequence.

3,200,473
SWIVEL LOCK TOOLHOLDER
William Bader, Ferndale, Mich., assignor, by mesne assignments, to Fansteel Metallurgical Corporation, Chicago, Ill., a corporation of New York
Filed June 13, 1963, Ser. No. 287,695
5 Claims. (Cl. 29—96)



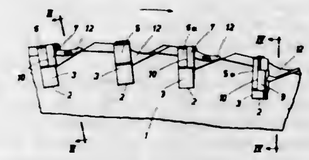
1. A toolholder for indexable cutting inserts comprising:

(a) a body having a recess adjacent one edge for receiving an insert, and having a passage therethrough spaced from said recess,

(b) a conical nut in a conical recess formed at one end of said passage, said nut having a threaded bore, and

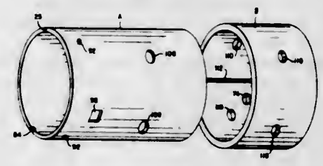
(c) a locking clamp to apply locking pressure to an insert in said recess comprising a shaft to lie in said passage having a threaded surface to co-operate with the threaded bore of said nut and a radial finger on said shaft at the end of said passage opposite to said nut extending over said body swingable to a position overyling said recess and movable vertically downward to a clamping position while simultaneously moving to said overlying position.

3,200,474
PROFILE MILLING CUTTER FOR CIRCULAR MILLING
Bruno Kralowetz, St. Ulrich, near Steyr, Austria
Filed Nov. 7, 1963, Ser. No. 322,226
Claims priority, application Austria, Dec. 18, 1962, A 9,864/62
3 Claims. (Cl. 29—105)



1. A cylindrical milling cutter head having two end faces and a periphery, the periphery of the cutter head defining a plurality of transverse recesses extending from one of said end faces to the other end face and said transverse recesses being spaced from each other around the entire periphery of the cutter head; at least two hard metal cutter plates spacedly arranged in each of the transverse recesses, each cutter plate having the shape of a square prism, and the cutter plates being transversely staggered in said recesses in relation to the cutter plates in adjacent ones of said recesses so that the cutter plates in a succession of recesses extend continuously from one of said end faces to the other end face, one of the cutter plates in each of said transverse recesses extending to one of said end faces; a bearing block mounted in each of said transverse recesses and supporting all of the cutter plates in each recess of the cutter head in a radial direction; a holder for the cutter plates in each recess, each holder having a supporting surface for a trailing face of a respective one of said cutter plates and another supporting surface for laterally positioning the respective cutter plate in the transverse recess; and a clamping wedge movably mounted on the cutter head adjacent each cutter plate and holding the same in position against said supporting surfaces.

3,200,475
METHOD OF MAKING A TWO-PIECE FRAME FOR DYNAMO-ELECTRIC MACHINES
Karl H. Weber, Fay T. Ryan, and James M. Clark, Toledo, Ohio, assignors to Eltra Corporation, a corporation of Ohio
Original application Nov. 12, 1959, Ser. No. 852,488. Divided and this application Jan. 23, 1961, Ser. No. 94,103
4 Claims. (Cl. 29—155.53)



1. The method of fabricating a two-piece magnetic field member for a dynamo-electric machine consisting of two telescoping concentric tubular magnetic members, including an inner and an outer tubular member, comprising fabricating the inner supporting member from a flat continuous strip of relatively thin magnetic material wherein apertures are punched at predetermined loca-

tions, forming the punched flat strip into a tubular conformation, welding the confronting edges of the tubular conformation to form a longitudinal seam, cutting an inner tubular frame member from the tubular conformation of the rolled up strip, expanding the inner diameter of said tubular member to a predetermined dimension, fabricating the outer magnetic tubular member from a relatively thick flat strip of magnetic material having apertures punched therein at predetermined locations, cutting a predetermined length of said thick strip and rolling said severed portion into tubular conformation having a predetermined diameter relative to the inner member with an air gap between the confronting ends to form the outer tubular member, moving the inner and outer members longitudinally together into concentric touching relation to slightly expand the outer member with some of the prepunched apertures in the two members in alignment, and providing holding means in some of the aligned apertures to hold the two members together.

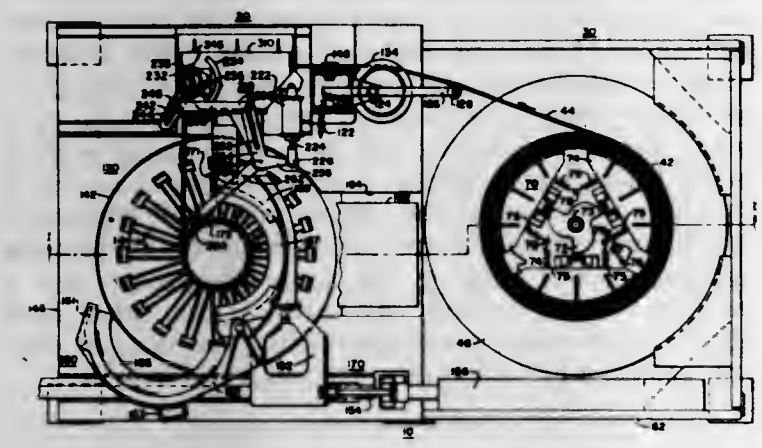
3,200,476

METHOD FOR WINDING MAGNETIC CORES

Willy Olsen, Lynchburg, Va., and Belvin B. Ellis, Pulaski, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Original application Sept. 25, 1959, Ser. No. 842,295, now Patent No. 3,081,962, dated Mar. 19, 1963. Divided and this application July 20, 1961, Ser. No. 125,481

2 Claims. (Cl. 29—155.57)



2. The method of making a wound type core from magnetic strip material comprising the steps of: passing said strip material around a generally curved member to impart a predetermined varying bend radius continuously along said strip material, winding a plurality of superposed turns of said strip material on a rotatable member in a first predetermined direction to form a ring-shaped closed core loop while maintaining the tension in said strip material at a value in excess of substantially a predetermined value, the bend radius along said strip material increasing with the number of turns wound on said rotatable member, the radius of curvature of any turn in said ring-shaped closed loop core exceeding the predetermined bend radius imparted to that portion of the strip material, cutting the end of the outermost turn of said strip material, rotating said rotatable member in a direction opposite to said first predetermined direction while simultaneously restraining the outer diameter of the wound core to substantially a predetermined value larger than the diameter of the core as first wound to obtain a predetermined uniform space factor in said core shaping the core to a predetermined shape having yoke and leg members, and annealing said core to relieve stresses.

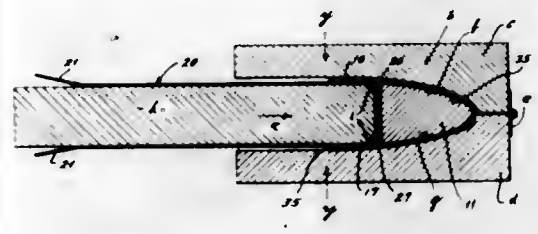
3,200,477

HELICOPTER TAIL ROTOR STRUCTURE AND METHOD OF CONSTRUCTION

Paul L. Shultz, Menominee, Mich., assignor to R. J. Eastrom Corporation, Menominee, Mich., a corporation of Michigan

Filed Nov. 21, 1962, Ser. No. 239,136

1 Claim. (Cl. 29—156.8)



A method of constructing an airfoil having a hollow elastically conformed afterbody, comprising the steps of

forming a spar of the type having a curved leading edge and terminating chordwise in a vertical aft face,

independently forming a curved leading edge abrasion strip having aft margins of such chordwise length as to extend aft of the spar's aft face,

independently bending the opposite lengthwise margins of a sheet of metal symmetrically to trailing-edge marginal bends, and

forming a channel-like bend in said sheet midway between such margins to a depth equal to the depth of the aft face of the spar, so that such margins project partly away from each other,

then applying adhesive material and nesting said parts for bonding as follows:

nesting the spar leading edge forwardly within and against the leading edge of the abrasion strip, and

nesting the web of the channel-like bend against the aft face of the spar and the sheet portions adjacent to the web within the aft margins of the abrasion strip,

independently inserting a bonding mandrel supportively within the channel-like bend and applying chordwise-forward pressure,

then bonding the nested parts simultaneously under external pressure,

then removing such bonding mandrel,

then elastically drawing the bent margins together against the elastic resistance of the channel-like bent sheet and the bending restraint offered by the bonded together nested parts and adhering said bent margins together to form a trailing edge,

thereby elastically curving the sheet portions unsupported between the margins of the abrasion strip and the trailing edge to airfoil afterbody contour.

3,200,478

METHOD OF FORMING AND SEALING JOINTS IN METALLIC TUBING

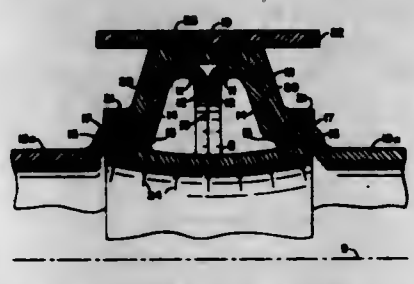
Herff C. Emerson, Chula Vista, and Gilbert C. Cadwell, San Diego, Calif., assignors to Rohr Corporation, Chula Vista, Calif., a corporation of California

Filed Apr. 30, 1962, Ser. No. 191,080

5 Claims. (Cl. 29—157)

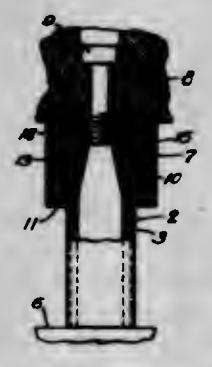
1. The on-site method of forming, joining and sealing a pair of thin walled expandable metallic tube sections coaxially end to end comprising the steps of forming each of the confronting tube end portions by identically and precisely expanding the same with high energy and each with a yieldable annular flared portion having inner and outer flared surfaces, interposing between the inner flared surfaces a yieldable metallic tubular sealing ring of concavely arcuate cross section longitudinally of said tube sections, and applying a clamping ring directly to

the outer flared surfaces of said tube sections and with coacting wedging action therewith to move said tube



sections coaxially toward each other thereby forcibly to engage said inner flared surfaces in dynamically balanced sealing engagement with the ends of said sealing ring.

3,200,479
METHOD OF MAKING A SAND RETAINING BLOW TUBE
Edwin F. Peterson, P.O. Box 151, Neponset, Ill.
Filed Aug. 5, 1963, Ser. No. 299,753
9 Claims. (Cl. 29—157)



1. The method of producing a sand pinching and sand flow control blow tube comprising providing a random length of stock tube having a casing of uniform diameter and thickness with a resilient liner of uniform diameter and thickness secured therein, severing a given length stock piece from said stock tube for a predetermined installation, then forming one end of said stock piece into a tapered sand discharge end by constricting the casing of said stock piece radially inwardly and correspondingly reducing the adjacent circumferential portion of the resilient liner to build up the thickness of said liner at the restricted tapered discharge end of said stock piece and maintaining said resilient liner in said built up thickened form with said constricted casing.

3,200,480
HEAT EXCHANGER
Charles Archibald Heuer, East Alton, Ill., assignor to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia
Original application Sept. 30, 1959, Ser. No. 843,483, now Patent No. 3,173,479, dated Mar. 16, 1965. Divided and this application May 27, 1963, Ser. No. 292,176
4 Claims. (Cl. 29—157.3)

1. The method of making an integral sheet metal heat exchanger of a spirally coiled configuration having a plurality of internal unjoined portions in juxtaposed relationship to each other, the method comprising

(A) interposing a plurality of continuous patterns of stop-weld material between superposed metal sheets, said patterns being in aligned and spaced relationship along the length of said superposed sheets, each of said patterns

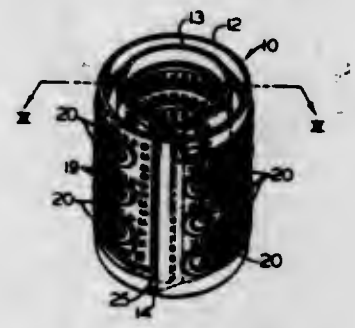
(1) having terminal portions disposed adjacent to opposite edges of said superposed sheets, and

(2) having at least one terminal portion joined to one terminal portion of a successive pattern;

(B) joining the adjacent surfaces of said sheets not separated by stop-weld material;

(C) spirally coiling said sheets about an axis transverse the length of said sheets into a coil having a plurality of convolutions in spaced relation to each other, wherein each successive convolution contains one of said patterns in juxtaposed relationship to a successive pattern; and

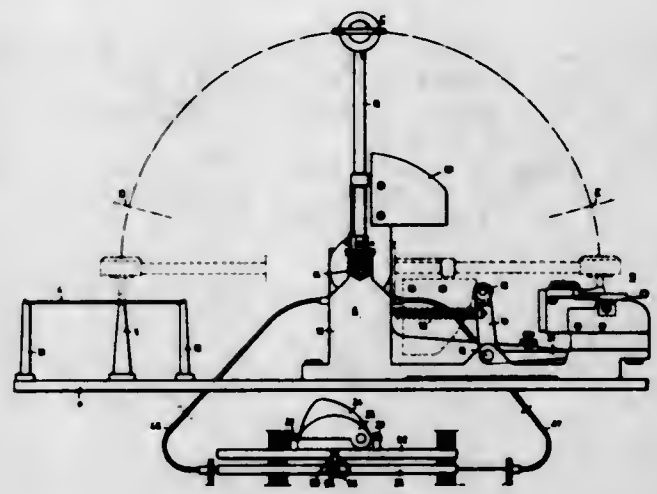
(D) off-setting said convolutions by bending said sheets



between successive patterns on a line passing through the joined terminal portions thereof and extending in a direction transverse the direction of coiling, to bring terminal portions of each of said convolutions into substantially abutting relationship,

whereby fluid flow in said juxtaposed patterns will be constrained to flow in counter-current relationship between their terminal portions.

3,200,481
COMPONENT INSERTING MACHINE
Wilhelmus Leonard Louis Leenders, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 20, 1961, Ser. No. 97,012
Claims priority, application Netherlands, Mar. 24, 1960, 249,789
12 Claims. (Cl. 29—203)



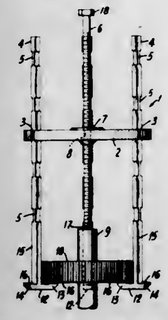
1. An inserting machine comprising a frame, means on said frame for receiving an apertured plate member, means on said frame for holding component parts having parallel extensions, at least one arm member pivotly secured on said frame at one end, the other end of said arm being moveable in an arcuate path between said apertured plate and said holding means, a head member attached to said other end of said arm for grasping a component held by said holding means and inserting said component in said apertured plate, means for driving said arm between said holding means and said apertured plate and separate means for driving said arm in the reverse direction, said separate means driving said arm at a greater velocity than said first named driving means.

3,200,482
TOOL FOR INSERTING ELASTOMER HIGHWAY JOINT SEALS AND THE LIKE
Delmont D. Brown, North Baltimore, Ohio, assignor to The D. S. Brown Company, North Baltimore, Ohio, a corporation of Ohio
Filed Feb. 25, 1963, Ser. No. 260,403
5 Claims. (Cl. 29—235)



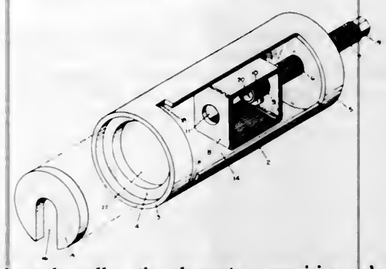
1. A tool for inserting a compressible strip in an elongated slot comprising a horizontal, central frame bar, a pair of stub axles attached to and projecting outwardly from opposite sides of said frame bar, each at a downwardly sloping angle, a disc rotatably mounted on each stub axle, said discs being rotatable at opposite sides of said frame bar in spaced, converging relationship, a downwardly extending bar rigidly supported on said frame bar between said discs and an ejector bar rigidly supported on the lower end of said support bar between said discs in the approximate zone of closest convergence of said discs, whereby a compressible strip may be carried between said discs as they rotate, compressed therebetween, and ejected in the compressed state from said discs by said ejector bar.

3,200,483
PULLER WITH ADJUSTABLE PULLER ARMS PROVIDED WITH DIFFERENT SIZE CLAWS AND A CENTRALLY LOCATED THREADED MEANS TO ENGAGE THE WORK
Primo Menegoni, 39—25 65th St., Woodside, N.Y.
Filed Mar. 27, 1964, Ser. No. 355,277
1 Claim. (Cl. 29—259)



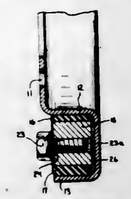
A pulling device comprising a circular flange portion including; a plurality of equidistant radial slots of optional length; and a central threaded portion, a screw adapted to fit in said flange threaded portion said screw including; a threaded portion; and end portion adapted to rotate against a shaft end; and a means for grasping said screw for rotating it, and a plurality of pulling arms each including; a shank portion; a plurality of indentations in said shank portion adapted to fit into said flange slots; a plurality of claw portions of different lengths on each of the ends of said pulling arms; said claw portions including grasping means; said plurality of claw portions on each said pulling arm being identical and forming a U with said shank portion, said pulling arm set in said flange portion whereby said claws each extend an equal distance from said flange.

3,200,484
AXLE PULLER
Robert C. Garman, Penn Township, Lancaster County, Pa. (Box 25, Penryn, Pa.)
Filed Apr. 16, 1962, Ser. No. 187,807
2 Claims. (Cl. 29—263)



1. An axle puller, the elements comprising a housing to engage the dust shield surrounding the axle of an automobile, an opening in the end of said housing to receive the end of the axle to be removed, a screw-threaded shaft in threaded engagement with the other end of said support in alignment with the axle to be removed, a rectangular yoke positioned within the housing and carried by the end of the screw threaded shaft, said yoke being alignment with the axle and having an opening at the end opposite the end of the screw threaded shaft to receive the end of the axle, and means to restrict the size of the opening in the end of said housing through which the axle moves to prevent the passage of a bearing carried on the axle from passing through the opening.

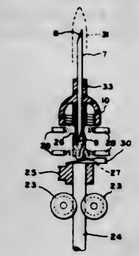
3,200,485
METHOD OF FABRICATING VIBRATION DAMPER
Sanford A. McGavern, Jr., Indianapolis, Ind., assignor to Schwitzer Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Mar. 11, 1963, Ser. No. 264,213
3 Claims. (Cl. 29—421)



1. A method of assembling a torsional vibration damper of the type which includes a disc adapted to be supported on a member subject to torsional vibration and having an annular cavity concentric with the center of the disc formed by radially spaced side walls joined by a base wall, annular elastic members at the spaced side walls of the cavity and an annular inertia element within the cavity between the elastic members, and a shear fluid in the space between the inertia element and the cavity base wall, said method of assembly comprising: inserting vented

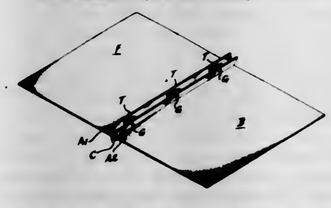
abutment members transversely through the inertia element at spaced points thereon with the abutment members protruding through the inertia element a predetermined amount; inserting said inertia member into the disc cavity to a depth determined by the bottoming of said abutment members on the cavity base wall; removing said abutment members from the inertia element and filling the space between the inertia element and the cavity base wall with a shear fluid through the apertures vacated by the abutment members; and finally inserting and sealing capscrews into the vacated apertures with the depth of insertion of the capscrews establishing the fluid pressure in said space.

3,200,486
METHOD OF APPLYING A SHIELD TO A HYPODERMIC NEEDLE
Walter A. Shields, Jamaica, N.Y.
(38—09 24th St., Long Island City, Long Island, N.Y.)
Filed Sept. 16, 1963, Ser. No. 309,035
3 Claims. (Cl. 29—422)



1. The method of applying a protective shield on one end portion of a hypodermic needle mounted in a cap member with the first end portion of the hypodermic needle extended from the exterior of said cap member and the second end portion of the hypodermic needle extended into the cap member, comprising feeding tubing of protective material and of greater length than the second end portion of the hypodermic needle onto said second end portion of the hypodermic needle with the forward end of the tubing abutting the interior of the cap member, collapsing spaced portions of the tubing to close the tubing around the second end portion of the hypodermic needle and at a point beyond the extremity of the second end portion of the hypodermic needle, and severing the tubing beyond the collapsed portion positioned beyond the extremity of the second end portion of the hypodermic needle.

3,200,487
METHOD AND MEANS TO PRODUCE FOLDERS WITH EYELETS AND TANGS
Jefferson M. Fluke, Bothell, Wash., assignor of one-half to Aubrey L. Hilscher
Filed Nov. 12, 1963, Ser. No. 322,668
25 Claims. (Cl. 29—430)



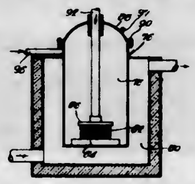
1. A continuous method of forming folders with interrelated eyelets and tangs from a flat blank, which comprises advancing successive flat blanks from a feed station to a first bending station, and there bending the front and back of each blank along spaced parallel lines, relative to a central strip therebetween to form a channel configuration; advancing the folded blank to a T-creasing station and there bending reentrantly and creasing the blank at both sides of the central strip into T-shape with its front and back closely adjacent, and the two arms of the T doubled; advancing the blank to and through an anchoring station, and there applying to the doubled arms of the T an eyelet and a tang, respectively, at like distances from the leading edge of the blank; advancing the blank beyond the anchoring station to a second bending station, and there bending the opposite arms of the T into closely adjacent relationship; and finally hinging the front and back into adjacency along lines adjacent and parallel to the bend lines for the arms of the T, as bent at the second bending station.

3,200,488
METHOD FOR JOINING REINFORCING RODS AND TOOL FOR CARRYING OUT THE METHOD
Kurt Erland Alfred Johansson, Allegatan 13, Hyltebruk, Sweden
Filed Mar. 29, 1963, Ser. No. 269,107
3 Claims. (Cl. 29—453)



3. A method for joining right-angularly extending reinforcing rods at the crossings of said rods, comprising preforming resilient, generally U-shaped clamps each having sides connected at one end and formed with inwardly bent free ends which are reverted so as to converge in the direction toward said one end, and, at each crossing of the rods, driving one of said clamps against one of the rods with said sides of the clamp lying in a plane diagonal with respect to the axes of the rods to be joined and with said converging reverted free ends of the clamp being engaged by the rod so as to be resiliently spread by the latter and thereby permit embracing of both rods at said crossing.

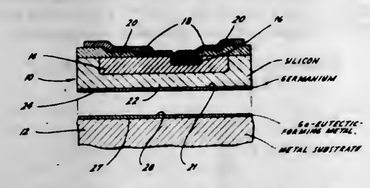
3,200,489
METHOD OF MAKING HONEYCOMB CORE
George F. Keeleric, Dundee, Ill. (Big Sur, Calif.)
Filed June 18, 1957, Ser. No. 666,383
3 Claims. (Cl. 29—470.9)



1. In the method of making honeycomb core, the steps including defining a plurality of spaced parallel nodes on at least one face of a large number of foils, stopping off the spaces between adjacent nodes on each foil with a

pressure transmitting stop-off material, stacking the foils so that the exposed surface of each node contacts exposed foil material on the superposed foil, and subjecting the stacked foils to heat to uniformly raise the temperature of all the foils to diffusion welding temperature and simultaneously subjecting said stack to static compressional forces applied uniformly simultaneously throughout the entire stack permanently to weld the contacted node surfaces and foil surfaces of superposed foils without appreciable attenuation of the foil material.

3,200,490
METHOD OF FORMING OHMIC BONDS TO A GERMANIUM-COATED SILICON BODY WITH EUTECTIC ALLOY FORMING MATERIALS
Gerald K. Clymer, Sellersville, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 7, 1962, Ser. No. 243,013
2 Claims. (Cl. 29—473.1)



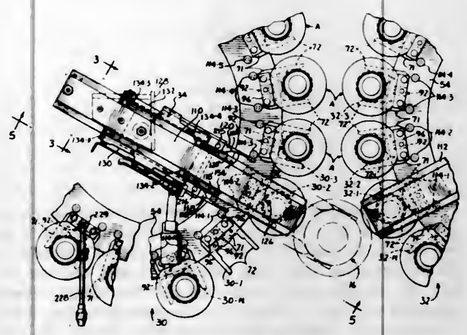
1. The method of making ohmic connection to a body of silicon which comprises:
(a) coating surface portions of said body, to which connection is to be made, with an overlay of germanium;
(b) coating mating surface portions of a connecting member with a metal selected from the group consisting of gold and lead;
(c) placing said coated surface portions in contact;
(d) heating the zone of juncture to a temperature adjacent the temperature of the eutectic formed by said metal and said germanium; and
(e) cooling said zone of juncture to permit formation of a mechanically strong ohmic connection between said body and said member.

3,200,491
CLADDING PROCESS
David E. Walker, Park Forest, and Robert A. Noland, Chicago, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 4, 1955, Ser. No. 506,094
2 Claims. (Cl. 29—474.4)



1. A process of security and uniformly bonding a uranium-metal-containing core directly to a cladding metal of the group consisting of zirconium, titanium, molybdenum and vanadium, comprising placing a strip of cladding metal of the same thickness as that of the core around said core in a picture-frame manner; placing said framed core between a bottom plate and a top plate of cladding metal to form a sandwich-like assembly consisting of said core, cladding strip, and bottom and top plates, said plates being large enough to cover both core and frame; and moving a rolling pressure and at the same time an intermittent electrical potential along the entire length of said assembly from opposite sides, whereby pressure and potential are applied through the entire thickness and over the entire width of the assembly, the assembly being allowed to cool between each pressure-electricity application whereby melting of the metals is avoided, a continuous bond between core, strip and plates is formed and the thickness of the assembly is reduced.

3,200,492
MULTIPLE USE MACHINE WITH TOOL CHANGER
Robert A. Lehmkuhl, Appleton, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed Aug. 27, 1962, Ser. No. 219,538
14 Claims. (Cl. 29—568)

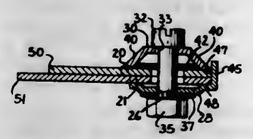


13. In a machine tool having an automatic tool changer; the combination comprising a vertical, axially movable, rotatable spindle; a tool storage matrix defining a plurality of supports horizontally spaced from said spindle for carrying tools in vertical storage position; a tool transfer shuttle mounted to move bodily in a horizontal linear path extending from a first terminal point adjacent said matrix to a second terminal point between said matrix and said spindle for carrying a tool along a horizontal linear path between said matrix and said spindle; a fixed horizontal track extending laterally from said spindle to said matrix for carrying said shuttle along said path; and holding means on said shuttle for selectively gripping or releasing a tool in the matrix tool support or in said spindle and for holding a tool in vertical position while said shuttle moves along said path between said terminal points, said shuttle and said holding means serving as said shuttle moves toward said first terminal point to hold a tool in horizontal alignment with its storage position and to transfer such tool directly to a matrix tool support as an incident to shuttle movement, and serving as said shuttle moves to said second terminal point to withdraw a tool from said matrix tool support and to transport the tool to a position in vertical alignment with said spindle, said spindle being movable vertically downward into engagement with a tool held in said shuttle so as to transfer the tool directly to said spindle as an incident to spindle movement past said shuttle.

ERRATUM

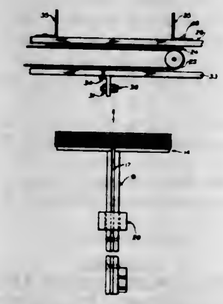
For Class 30—34.1 see:
Patent No. 3,201,178

3,200,493
HEDGE TRIMMER
Carl A. Dodegge, Maywood, Ill., assignor to Aero Metal Products Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 1, 1963, Ser. No. 261,968
6 Claims. (Cl. 30—216)



3. In a portable hedge trimmer, a housing enclosing a power unit, an elongated cutter blade guide bar fixed to said housing, said guide bar having a side portion and a laterally projecting straight flange extending therefrom so as to lie parallel with the longitudinal axis thereof, a pair of elongated cutter blades disposed in face-to-face relation and mounted for longitudinal reciprocable movement in alternate forward and rearward directions adjacent said one side of said bar, and each having a straight edge adapted to bear against said flange for guiding said blades in their reciprocable movement, each said blade having spaced forwardly slanting cutting teeth adapted to cooperate with like teeth on the other blade to produce a cutting action when said blades are reciprocating, the cutting teeth on one of said blades extending beyond the teeth on the other in a direction transverse to the axis of reciprocation for guiding twigs and the like into said hedge trimmer, and drive means operated by said power unit, connected to said cutter blades for reciprocating the same relative to one another.

3,200,494
CUTTER
Charles James Grant, Plymouth, Wis., assignor to The Borden Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 19, 1963, Ser. No. 331,872
2 Claims. (Cl. 31—26)



1. A machine for packaging comestibles wherein a comestible is moved by an elevator to a wrapping station, comprising a wrapping station, elevator means positioned below said station comprising a platform mounted on a rod and adapted to raise comestibles to said station, at least one cutting element positioned between the path of said elevator means and said station, and means defining a slot extending through said platform and into said rod to a depth sufficient to accommodate said cutting element when said elevator means has made its maximum upward travel, said slot being in planar alignment with and adapted to receive said cutting element.

3,200,495
REINFORCED INTERCHANGEABLE ARTIFICIAL TOOTH AND BACKING
Robert Spalten, 333 Central Park W., New York 25, N.Y.
Filed Nov. 9, 1962, Ser. No. 236,522
3 Claims. (Cl. 32—9)



1. An artificial tooth for attachment to a support in the mouth, said tooth having a body portion simulating a natural tooth, a U-shaped metal reinforcement permanently affixed to the tooth body, the legs of the U-shaped metal reinforcement extending from one lateral edge of the body to the other, the space between the legs of the U-shaped metal reinforcement having a cross-section that is transversely curved from one lateral edge to the other, the space between the legs having openings extending towards the lingual side of the tooth body, forming interlocking means in said space between the legs; and a backing for said reinforcement having a similar cross-section as the space between legs of the metal reinforcement to provide a mating connection therewith.

3,200,496
INTERCHANGEABLE ARTIFICIAL TOOTH AND BACKING
Robert Spalten, 333 Central Park W., New York 25, N.Y.
Filed Nov. 9, 1962, Ser. No. 236,523
2 Claims. (Cl. 32—9)

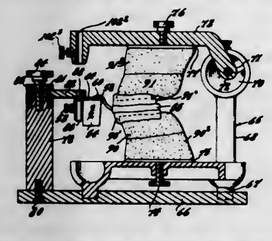


1. An artificial tooth for attachment to a support in the mouth, said tooth having a body portion simulating a natural tooth, an opening in a portion of the rear or lingual area of the tooth body and extending from one lateral edge to the other, said opening forming a slot in the tooth body, the walls of said tooth body defining said slot being transversely curved from one lateral edge to the other, the lateral openings extending towards the lingual side of the tooth body and forming interlocking means on said slot defining walls, and a backing for said tooth body having a similar cross-section as the slot in the tooth body and interconnecting with said interlocking means.

3,200,497
METHOD OF REPRODUCING DENTAL RELATIONSHIPS ON AN ARTICULATOR
David J. Goodfriend, Philadelphia, Pa., assignor to Prosthetics Research Incorporated, Philadelphia, Pa., a corporation of Delaware
Filed May 21, 1962, Ser. No. 196,339
7 Claims. (Cl. 32—32)

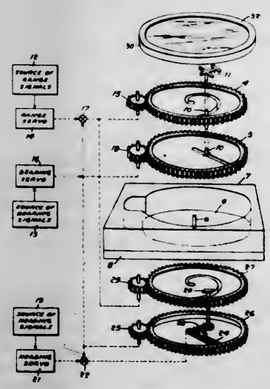
1. A method of establishing and reproducing critical reference dimensions for reconstructing and replacing teeth, which comprises setting up a face-bow having a

first reference point in a predetermined relationship to the patient's condyle centers and the horizontal plane through the condyle centers of the patient, positioning an impression cup containing a deformable, age-hardening substance at the first reference point on the face-bow, placing a bite web in the patient's mouth, with an extension from the bite web protruding from the mouth and extending into the deformable age-hardening substance, allowing the deformable age-hardening substance to harden, thereby making a cast in the said impression



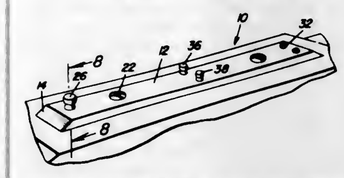
cup around the end of the bite web extension to secure together the said impression cup and the bite web, removing the said impression cup from the said face-bow and mounting the said impression cup at another reference point in relation to an articulator which corresponds to the first reference point with respect to the condyle centers and the horizontal plane through the condyle centers of the articulator and mounting jaws casts on the articulator against the bite web while it extends from the impression cup.

3,200,498
DISPLAY SYSTEM
Michael A. Argentieri, Lyndhurst, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed July 22, 1960, Ser. No. 44,596
3 Claims. (Cl. 33—1)



1. A position display system for indicating the position of a vehicle with respect to a fixed geographical point comprising a pair of movable transparent discs rotatable about a reference point corresponding to said geographical point, one of said discs having a spiral slot representing vehicle distance from said reference point cut therein and the other of said discs having a radial slot representing vehicle bearing from said reference point cut therein, means for mounting one of said discs above the other on a common shaft at said reference point for movement with respect to each other so that said spiral and radial slots intersect during relative movement of said discs, a member positioned in said spiral and radial slots at said intersection thereof, said member being free to move in accordance with said intersection during relative movement of said discs, a map having said geographical point represented thereon, said map positioned below said discs such that said representative geographical point is located below said common shaft, a first source of signals representative of the bearing of said vehicle with respect to said reference point, a second source of signals representative of the distance of said vehicle with respect to said reference point, and means coupling said first and second sources of signals to said discs such that said member is moved accordingly and indicates the instantaneous bearing and distance of said vehicle with respect to said reference point, a third source of signals representative of the heading of said vehicle, an electromagnet positioned below said map, means responsive to said source of bearing signals and said source of distance signals for positioning said electromagnet below said vehicle symbol, and means coupling said source of bearing signals and said source of heading signals to said responsive means to align said electromagnet in accordance with said vehicle heading, said electromagnet thereby causing said vehicle symbol to be similarly aligned.

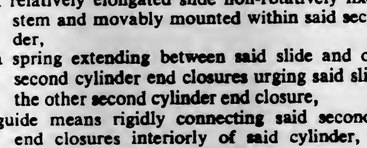
3,200,499
GUNSIGHT
James E. Kingston, Rte. 1, Arlington, Wash.
Filed Aug. 8, 1961, Ser. No. 130,185
3 Claims. (Cl. 33—51)



1. A gunsight comprising a single elongated mounting plate adapted to be mounted on the top surface of a shotgun with the center line thereof in alignment with the center of the bore of the shotgun barrel, a single bead mounted on and adjacent the rear of the mounting plate, a pair of laterally spaced beads mounted on the plate equidistant from the center line and in longitudinally spaced relation to the single bead whereby the sight will automatically adjust the gun for lead when the rear bead is aligned with one of the beads spaced therefrom, a first pair of laterally spaced interally threaded holes, said pair of beads being removably mounted within the first pair of laterally spaced internally threaded holes, a second pair of laterally spaced internally threaded holes positioned between the first pair of holes and the single rear bead, said pair of beads being selectively positioned in either the first pair of holes or the second pair of holes, said first pair of holes being spaced from the single bead a distance contemplated to insure maximum efficiency for normal hunting, said second pair of holes being spaced from the single bead a distance contemplated to insure maximum efficiency for trap shooting.

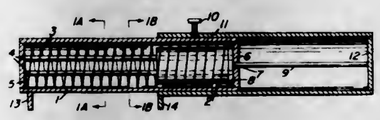
3,200,500
INTERLOCKING MASONS' GUIDE LINE HOLDERS
Harry D. Stone, Uniontown, Pa., assignor to Summit Products Company, Uniontown, Pa., a partnership consisting of Eleanor M. Stone and Harry D. Stone, Jr.
Filed Oct. 30, 1963, Ser. No. 320,029
1 Claim. (Cl. 33—85)

A companion pair of mason's guide line holders adapted to interfit and frictionally interlock so as to form a substantially rigid assembled unit, each holder of said pair formed of resilient plastic and being approximately L-shaped and comprising a longitudinal portion and an end transverse portion projecting laterally beyond one side only of the longitudinal portion, each holder having a slot formed in its end adjacent the transverse portion for the anchorage of a guide line, the longitudinal portions of both holders provided in their forward ends and corresponding outer corners with approximately right angular recesses extending for the full widths of the longitudinal portions, and complementally-shaped tongues on the transverse portions of both holders at the corners thereof diagonally opposite the longitudinal portions and



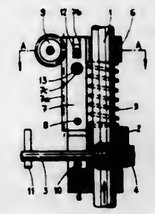
projecting inwardly of the transverse portions in the directions of the longitudinal portions, whereby said pair of holders may be assembled with said longitudinal portions in side-by-side contacting relation and with the transverse portions opposed to and abutting the ends of the longitudinal portions, said tongues then entering said recesses at diagonally oppoiste points on the assembled holders, said tongues and recesses dimensioned so as to have an interference fit causing the holders to be frictionally interlocked when assembled.

3,200,501
VERNIER MEASURING DEVICE
Ernest Kenzler, 3520 N. Broadway, Chicago 13, Ill.
Filed Aug. 15, 1962, Ser. No. 217,117
4 Claims. (Cl. 33—143)



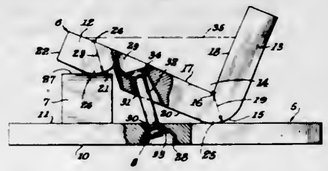
1. A measuring device, comprising:
first and second elongated hollow cylinders, with said second cylinder partially telescopically received within said first cylinder,
said first cylinder having an end closure closing one end thereof, with the second end being open to telescopically receive said second cylinder,
said second cylinder having the first and second ends thereof closed with an end closure,
a stem non-rotatatively fixed to said first cylinder end closure and extending axially thereof into said second cylinder, said second cylinder having an aperture in the end closure at a first end thereof receiving said stem,
a relatively elongated slide non-rotatively fixed to said stem and movably mounted within said second cylinder,
a spring extending between said slide and one of the second cylinder end closures urging said slide toward the other second cylinder end closure,
guide means rigidly connecting said second cylinder end closures interiorly of said cylinder, said slide being non-rotatively, slidably mounted on said guide means whereby said cylinders are maintained against relative rotational movement and whereby a constant bearing surface is provided between said slide and guide means irrespective of the degree of telescoping of said cylinders,
laterally-extending glides secured to the outsides of said cylinders at said first cylinder second end and said second cylinder second end for conjoint action in measuring,
said first cylinder being equipped with a longitudinally-extending slot for revealing a portion of said second cylinder, said cylinders adjacent said slot and on said portion being equipped with true and vernier scales, and
set screw means on said first cylinder for maintaining said second cylinder in fixed relation thereto.

3,200,502
COMPARATOR
Hans Meyer, Le Bugnon 24, Renens, Vaud, Switzerland
Filed Feb. 11, 1964, Ser. No. 344,026
Claims priority, application Switzerland, May 30, 1963, 6,769/63
3 Claims. (Cl. 33—172)



1. In a comparator, the combination of a feeler adapted to be shifted along the direction of its axis, a rack pivotally secured to the feeler and provided with a short longitudinal slot at a distance from its pivotal connection with the feeler and with a rectilinear series of teeth extending longitudinally of the feeler, a gearwork including a pinion meshing with said rectilinear series of teeth, a hand controlled by said gearwork, and a rotary hand-controlled member carried by the feeler and including an eccentric section engaging the slot in the rack to shift adjustably to a slight extent the rack with reference to the feeler axis in a plane perpendicular to the axis of the pinion and passing through the feeler axis to set the rectilinear series of teeth in position within an angle bounded by a line parallel with the axis of the feeler and also slightly oblique with reference to said axis and passing through the pivotal connection between the rack and the feeler.

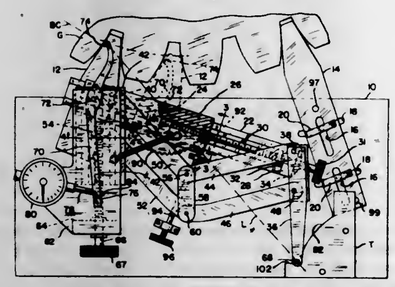
3,200,503
SINE GAGE
Edward L. Gutknecht, Norwalk, Calif. (11434 Planett St., Downey, Calif.)
Filed Feb. 13, 1962, Ser. No. 173,069
2 Claims. (Cl. 33—174)



1. In a sine gage having a base with a flat support face upon which a gage block is adapted to be positioned with one gage face thereof on said support face and a parallel gage face thereof elevated according to the height of the block,
(a) in sine bar of uniform thickness having an upper gaging surface and a parallel lower surface and provided with longitudinally spaced arcuate bearing surfaces that are formed in said lower surface, the radii of the arcuate bearing surfaces and the thickness of the sine bar being equal,
(b) the centers of generation of curvature of said bearing surfaces being located on the upper gaging surface of the sine bar,

(c) one of said arcuate surfaces being in tangential bearing engagement with the support face of the base and the other being in tangential bearing engagement with the elevated gage face of the gage block, and
(d) means to adjustably connect the base and sine bar.

3,200,504
PANTOGRAPH TYPE PROFILE CHECKER
Arthur B. Bezoff, Detroit, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Filed May 7, 1962, Ser. No. 192,717
18 Claims. (Cl. 33—179.5)



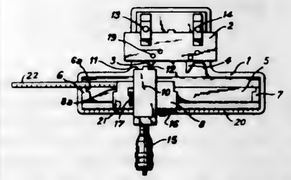
16. A tracing pantograph comprising a base, an adjustable pantograph carried by said base comprising base bar means adjustable in length and pivoted to said base, said base bar means comprising a pair of elongated aligned members interconnected for relative adjustment solely in a direction parallel to the longitudinal axes thereof, means for effecting continuous relative adjustment of said members, parallel bars pivoted to opposite end portions of said members by single pivot means to provide for free swinging of said parallel bars relative to said base bar means, and automatic means interconnecting said parallel bars operable during approach and separation between said parallel bars as a result of changes in length of said base bar means and during relative swinging between said base bar means and said base and between said parallel bars and said base bar means to maintain said parallel bars in parallelism.

3,200,505
PROTRACTOR GUIDE FOR BENDING PIPES
Ralph G. Hedges, R.R. 1, Floyd, Iowa
Filed June 7, 1963, Ser. No. 286,275
3 Claims. (Cl. 33—180)



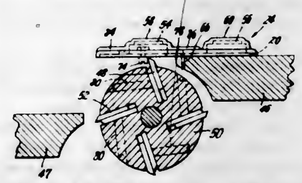
1. A protractor guide for bending pipes comprising, in combination, a main reference plate, an alignment pipe fitting carried by one end of said reference plate, a bar having a pivot joint pivotally connecting one end of said bar to said plate adjacent said fitting, said reference plate having an arcuate peripheral portion with a center of curvature coincident with the axis of rotation of said pivot joint, the opposite end of said bar having an alignment pipe socket mounted thereon for arcuate rotation adjacent said arcuate peripheral portion of said plate, and incremental detent means acting between said bar and said plate for sequentially rotating said bar through a predetermined angle relative to said reference plate.

3,200,506
TOOLS SETTING DEVICE
Jules Louis Jeanneret, 13 a 21 Rue H. Gelin, Niort, Deux-Sevres, France
Filed July 25, 1961, Ser. No. 126,637
Claims priority, application France, Aug. 3, 1960, 834,841
6 Claims. (Cl. 33—185)



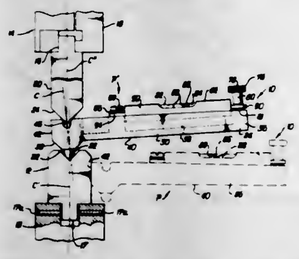
1. In combination: A setting device, and a tool carrier having a plurality of tools each of which is adapted for being fixed in an adjustable position in the tool carrier, the setting device comprising a chassis, means detachably securing the tool carrier on the chassis, a slide, means slidably supporting the slide on the chassis for movement parallel to a first axis, means for determining the position of said slide relative to a fixed location, setting means for setting the positions of the tools on the tool carrier, means supporting the setting means on said slide for movement in the direction of a second axis extending perpendicular to the movement of the slide, said setting means including surfaces parallel to said axes and defining a right-angle notch, means for determining the position of the setting means relative to the slide in the direction of movement of the setting means relative to the slide, whereby said setting means may be located in predetermined positions relative to said fixed location, said notch of the setting means being adapted for accommodating a tool therein for each position of the setting means whereby a plurality of tools may each be successively positioned relative to said fixed location by adjusting the respective positions of the tools in the notch of the setting means with the latter appropriately adjusted relative to the fixed location.

3,200,507
JOINTER-KNIFE SETTING TOOL
Alfred L. Rivard, 632 New Haven Ave., Milford, Conn.
Filed Apr. 9, 1963, Ser. No. 271,723
12 Claims. (Cl. 33—185)



1. A jointer knife setting tool comprising, in combination:
(a) a base member,
(b) means on the base member, for positioning it over the jointer table to overhang the edge of the latter which is disposed adjacent the cutter head, said means including an adjustable stop arm having a portion projecting from the base member,
(c) adjustment means, including a locking screw having a protruding head, for holding the stop arm in different adjusted positions on the base member, and
(d) a stop on the base member, engageable with a knife carried by the cutter head to position the knife and head, said stop being constituted of said locking-screw head.

3,200,508
PRESS BRAKE DIE ALIGNMENT INDICATOR DEVICE
Henry J. Harper, 720 Greentree Road, Pacific Palisades, Calif.
Filed Mar. 29, 1963, Ser. No. 269,208
11 Claims. (Cl. 33—185)



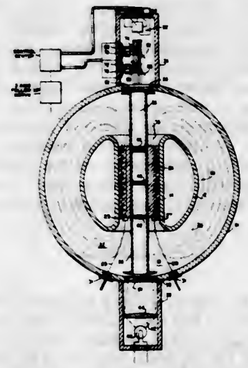
1. An alignment indicator device for a punch and a die of a press brake, comprising level indicator means, mounting means for said level indicator means, said mounting means adapted for adjustment of said level indicator means to a frame of reference on the press brake, and a member having an axis and yieldably mounted on said mounting means for flexible change of position along the axis, said member having a tip adapted for positioning and for insertion in an opening of the die for relating the die to the axis, said mounting means being adapted for contact under a small force by the punch when said member is inserted in the opening to relate the punch to the axis, said mounting means and said member adapted to permit change of position of said mounting means when the die is moved with respect to the punch, said level indicator means adapted to indicate the accuracy of alignment of the die with the punch, as represented by the position of said mounting means.

3,200,509
DOOR TEMPLATE
Wayne A. Stephens, Rte. 1, Box 52, Raymondville, Tex.
Filed Mar. 25, 1963, Ser. No. 267,525
12 Claims. (Cl. 33—194)



1. In a door template, a pair of vertically extending frame beams, means extending transversely between said beams, means releasably securing said beams to said transversely extending means, said beams being transversely adjustable toward and away from each other on said transversely extending means, a pair of guide plates, one extending substantially parallel to each frame beam and laterally outward therefrom, adjustable means interconnecting each plate to the adjoining beam for varying the distance therebetween, said transversely extending means consisting of a plurality of vertically spaced generally elongated rectangular members, each of said beams having a plurality of sleeves fixed thereon for adjustably receiving the adjacent ends of the members, said means releasably securing said beams to said transversely extending means being associated with each sleeve for selectively fixing the corresponding member in a plurality of adjusted positions therein, and means for effecting a simultaneous engagement and disengagement of all of the releasably securing means associated with the sleeves on one of said beams.

3,200,510
ZERO DRIFT INERTIAL REFERENCE
Jack A. Hunter, Baltimore, Md., assignor to Martin-Marietta Corporation, a corporation of Maryland
Filed Sept. 25, 1961, Ser. No. 140,288
22 Claims. (Cl. 33—204)

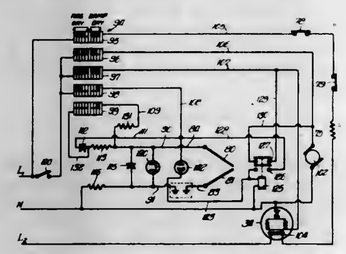


1. A zero drift inertial reference device of the nonrotating type comprising: a first body formed of superconducting material, a second body formed of superconducting material completely surrounding and spaced from said first body, the adjacent surfaces of said bodies being of such configuration as to allow complete freedom of relative rotary movement in all directions, means for maintaining said bodies in a superconducting state and means for providing a magnetic field between said bodies, whereby said first body seeks a position centrally of said second body corresponding to a position of minimum magnetic field energy.

3,200,511
DRIER CONTROL
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Original application Apr. 14, 1960, Ser. No. 22,323. Divided and this application Dec. 11, 1962, Ser. No. 243,780
2 Claims. (Cl. 34—45)

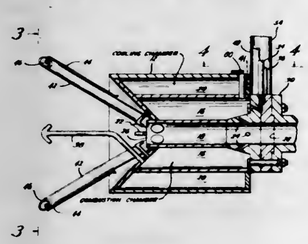
1. In an apparatus for drying fabrics, a drum for containing fabrics, means for rotating said drum to tumble the fabrics, heating means for drying the fabrics in the drum, electrodes positioned for contacting and completing an electrical circuit through the tumbled fabrics, sensing means responsive to the electrical resistance across said electrodes, timer means for controlling a series of operations for the drying of fabrics, said timer

means including means for controlling the beginning of the drying operation including initiating rotation of the drum and energization of said heating means, said timer means including means for controlling the termination of the drying operation responsive to said sensing means, said timer means including means for sequentially advancing said timer means from said beginning to said termination of the drying operation, said timer means including means for stopping the sequential advancement of said timer means while controlling energization of said heating means and while maintaining rotation of said drum, and preselection means associated with said



timer means for controlling said sensing means to respond selectively to a first predetermined preselected amount of higher electrical resistance across said electrodes to initiate termination of the drying operation by re-energizing said timer means and cutting off said heating means after a first preselected quantum of heating or to respond selectively to a second predetermined preselected amount of lower electrical resistance across said electrodes to initiate termination of the drying operation by re-energizing said timer means and cutting off the heating means after a second different preselected quantum of heating.

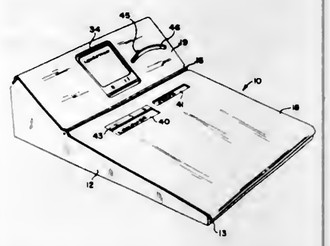
3,200,512
APPARATUS FOR GAS-JET PROPELLING AND HEATING GRANULAR MATERIAL
Augustine J. Tucker, 3115 Buffalo Drive, Houston, Tex.
Filed Jan. 5, 1962, Ser. No. 164,580
4 Claims. (Cl. 34—57)



1. An apparatus for moving granular material comprising,

(a) a material passageway having an inlet and outlet,
(b) a combustion chamber surrounding said material passageway,
(c) a plurality of jets connected between said combustion chamber and the passageway,
(d) said jets directed toward the outlet of said passageway thereby moving material in said passageway through said passageway,
(e) a cooling jacket surrounding said combustion chamber,
(f) cooling passageways connecting said cooling jacket and the material passageway.

3,200,513
MECHANICAL TEACHING MACHINE
John William Blyth, Charles Augustus Godcharles, and John Howard Jacobson, Clinton, and Walter John Rozmus, Hubbardsville, N.Y., assignors to Hamilton Research Associates, Inc.
Filed June 14, 1961, Ser. No. 117,049
11 Claims. (Cl. 35—9)

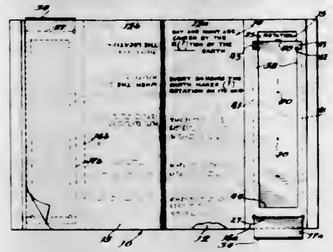


1. A teaching aid comprising, a housing including walls defining a support portion and a top spaced from the support portion, said housing walls also defining an answer sheet access aperture, an answer sheet supporting and moving structure within the housing and accessible through said access aperture, said top including an answer aperture and a correction aperture above said answer sheet structure, said structure including a writing surface positioned immediately below such answer and correction apertures, whereby a writing implement projected through a selected one of the answer and correction apertures may be used to write on an answer sheet carried by the structure, a window in the answer aperture and extending transversely thereacross, the window being transversely aligned with the correction aperture such that when an answer space is oriented below the window the corresponding correction space will be oriented below the correction aperture, said housing walls also defining a viewing aperture, card means in the housing for carrying a plurality of question and answer cards, said card means including cyclic means to cyclically position the answer and question cards in a viewing position alinged with said viewing aperture, said card means including answer covering means to cover the answer portion of a card during a portion of each cycle, indexing means to actuate the card means and move a new question card into viewing alignment with the viewing aperture during a first portion of the cycle and to shift the answer covering means to expose the answer during a second portion of the cycle, said indexing means being connected to said structure to advance an answer sheet one space during said second portion of the cycle only whereby an answer space corresponding to a question presented on a card will be moved under said window and away from access by pupil each time the answer to a question is exposed.

3,200,514
INSTRUCTIONAL DEVICE
Harold Kopel, Chicago, Ill., assignor to Esquire, Inc., a corporation of Delaware
Filed Nov. 30, 1962, Ser. No. 241,344
7 Claims. (Cl. 35—9)

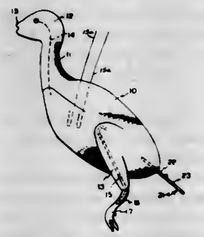
1. A device comprising: a booklet including first and second pages; first means on said first page for visually indicating a concept to be learned by a user and requiring a preselected response by the user; second means on said first page for visually indicating the preselected response; a guide movably integrally associated with said second page to extend removably adjacent said second means, said second page and said guide being formed of a continuous piece of stock; and means formed as an

extension of said guide from said continuous piece of stock and including separation means at which said extension is arranged to be separated from said guide and



to be formed into covering means installable movably on said guide for selectively covering and exposing said second means.

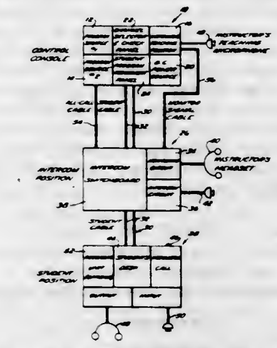
3,200,515
TAXIDERMY
Penny A. Daigre, Box 8596, Louisiana State University, Baton Rouge, La.
Filed May 29, 1962, Ser. No. 198,617
2 Claims. (Cl. 35—20)



1. A prefabricated life-size form for mounting a particular bird in a particular predetermined life-like pose, comprising a unitary body portion having a head, a neck, and leg portions integrally united to said body portion, said head, neck and leg portions being rigid and being of such shape and having such positional relations to said body portion as to be in correct relative rigid position for mounting said bird in the predetermined pose, and mounting means extending into and out of said body portion at spaced points for supporting the wings, the tail, and the feet parts of the bird to be mounted, the outer end of said mounting means being adjustable in such directional relation to said body portion as to support the wings, the tail, and the feet of the bird in correct positional relation to the body portion for the predetermined pose of the bird.

3,200,516
ELECTRONIC TEACHING DEVICE
Donald O. Parker, Grand Rapids, Mich., assignor to Fleetwood Furniture Company, Zeeland, Mich., a corporation of Michigan
Filed Apr. 21, 1961, Ser. No. 104,610
7 Claims. (Cl. 35—35)

1. An electronic teaching device comprising: a program source, a first power source, an intercom position, and a student position, a pair of wires connecting said program source and first power source to said student position, a diode connected in series with one of said wires in a direction where it is forwardly biased by said first power source, means for connecting a second power source of higher voltage than said first power source across said wires so



as to reversely bias said diode, and means for injecting an intercom signal from said intercom position into said pair of wires on the student position side of said diode.

3,200,517
WORD FORMING DEVICE
Amerigo D'Agostino, 1060 Broad St., Newark, N.J.
Filed Nov. 30, 1962, Ser. No. 241,352
1 Claim. (Cl. 35—35)



An educational device comprising front and rear relatively stiff rectangular sheet members of equal dimensions joined together along the entire length of one of the longer sides thereof, whereby to be retained in superposed relation, at least three window openings in said front sheet member arranged in a transverse row adjacent the joined side of said sheet members and substantially centrally of the length thereof; an L-shaped in cross-section rectilinear guide element having a short leg and a long leg, secured along the free terminal edge of the short leg to the back of the front sheet member in line with the window opening nearest the joined side of said sheets and with the terminal edge of the long leg adjacent said joined side of said sheets, a rectilinear guide element U-shaped in cross-section having upstanding parallel legs equal in height to the short leg of said L-shaped guide element and a flat uninterrupted bottom secured along the free terminal edges of its legs to the back of said front sheet and in line with the window opening furthest removed from said joined side of said sheets and parallel to said L-shaped guide element, both said guide elements being of equal length with their terminal ends equally spaced from the shorter sides of said sheets, a slide member positioned in each guide element for frictional sliding movement therein with each slide member being provided with a row of characters thereon to be successively brought into view at its associated window opening, said slide members being each of a length corresponding to the length of said sheet members; a disc between said front and rear sheets, a pivot pin extending through said sheets and disc for retaining said disc for rotative movement relative thereto, said

disc lying on the inside surface of said rear sheet and having a portion thereof disposed between both said guide elements substantially centrally of the length thereof and said inside suface of said rear sheet, whereby to be engaged on both sides thereof to provide for frictional sliding movement therebetween, there being a circular row of characters on said disc adjacent the periphery thereof, to be successively brought into view at the window opening between said slide element window openings, said longer other sides of said front and rear sheets being formed with registering cut-out portions centrally thereof to facilitate manipulation of the disc exposed thereby to rotate the same, the opposed corners at the joined side of said sheets being each beveled to expose an end portion of the slide member in said L-shaped guide element to facilitate finger manipulation thereof, and registering cut-out portions in the shorter sides of said sheets opposite the terminal ends of said U-shaped guide member to facilitate finger manipulation of the slide member therein.

3,200,518
FRENCH HEEL STRUCTURE
Richard E. Rasmussen, Grosse Pointe Park, Mich., assignor, by mesne assignments, to Richard E. Rasmussen and Don R. Rasmussen, Lafayette, California
Filed Mar. 18, 1964, Ser. No. 352,926
4 Claims. (Cl. 36—34)



1. In a French heel for ladies' shoes having a heel body of relatively large cross dimension adjacent its upper end and which tapers to a relatively small cross dimension adjacent a generally horizontal shoulder at its lower end, improved structure comprising,

a stabilizing member having an upwardly disposed generally horizontal surface dimensioned and configured substantially complementally to said shoulder,

said stabilizing member having legs which extend downwardly and outwardly of said horizontal surface in opposite directions which are lateral to the toe-heel direction of said shoe,

said laterally extending legs being disposed substantially symmetrically relative to a central vertical plane extending in said toe-heel direction,

each of said laterally extending legs having a downward outward end which terminates at a downwardly disposed generally horizontal face,

said stabilizing member having a lower central portion between said legs which is upwardly recessed so that said faces are isolated from each other,

said stabilizing member having means projecting upwardly from said horizontal surface in generally vertical alignment with said recessed portion,

said upwardly projecting means engaging within said heel body and providing a fastener by which said stabilizing member is secured to said heel body with said shoulder and upwardly disposed surface interengaged,

said stabilizing member and heel body having means cooperable to secure the same against relative rotation about a vertical axis, whereby to maintain said laterally extending legs in their lateral orientation relative to said toe-heel direction,

and means providing said downwardly disposed faces with ground-engaging wear surfaces which are laterally spaced apart, whereby to stabilize said shoe against lateral tilting.

3,200,519
POWERED HAND SHOVEL
Raymond A. Kennedy, P.O. Box 816, Sioux City, Iowa
Filed Apr. 11, 1963, Ser. No. 272,362
5 Claims. (Cl. 37—43)



1. A powered material mover unit comprising

a substantially horizontal plate like platform having a longitudinal axis as seen in plan corresponding to the normal forward direction of use movement of said unit,

means to rollably support said platform above a general surface, said means mounted upon and below the rear end of said platform,

a handle member horizontally secured to the platform and adjacent said rollable support means and rising rearwardly thereabove in sweeping curves and terminating at a convenient hand height of an operator,

a housing of generally horizontal axis and frusto-conical shape diverging in a forward direction and having one rear frustrum plane portion which is mounted vertically to the forward end of said platform and extending both above and below said plate,

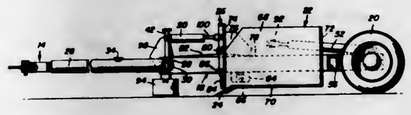
the forward part of said housing having at its lower portion a pair of slanting arms extending outwardly, downwardly and forwardly and a forwardly and downwardly slanting planar base merging with and between said pair of arms,

the extreme bottom of said arms and said base terminating in a single slightly upwardly and forwardly horizontal plane so as to closely fit said general surface when the unit is tilted in use by upward movement of said handle,

a vertically downwardly projecting planar shield member mounted across the upper portion of the forward part of said housing, the lower edge of said shield being concave as viewed from below at a point adjacent a forward extension of the axis of said platform, the areas below the shield member and between said arms and above said planar base collectively forming a material inlet opening,

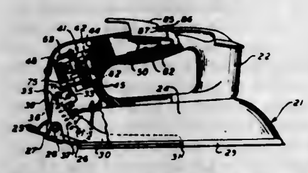
and a material exhaust opening defined in an upper quadrant of said housing as viewed from the front of the unit and extending from said rear frustrum plane to said forward planar shield of said housing to discharge material fed thereto from said material inlet opening upon forward movement of the unit when in use.

3,200,520
EARTH MOVING APPARATUS HAVING MEANS FOR REGULATING DISCHARGE FROM EARTH CARRYING BOWL
Harvey Nicholls, Rte. 2, Warren, Minn.
Filed Jan. 15, 1963, Ser. No. 251,526
7 Claims. (Cl. 37—129)



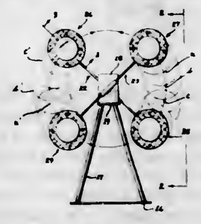
1. Earth moving apparatus adapted to be towed by a towing vehicle comprising a trailer frame having ground supporting wheel means, hitch means adapted to be pivotally connected to the towing vehicle, means pivotally connecting the trailer frame to the hitch means for support thereof between the hitch means and said wheel means, bucket means movably mounted on the trailer frame for displacement to a plurality of operative positions, scraper means mounted on said bucket means for penetration of earth in response to said displacement of the bucket means to said operative positions, positional control means mounted on the trailer frame and operatively connected to the bucket means for adjustable displacement thereof between loading and unloading positions to variably regulate both displacement of earth by the scraper means and spreading of earth from the bucket means, operational control means operatively connected to the trailer frame and the hitch means at the pivotal connecting means for adjustably positioning the trailer frame above the ground to selectively condition the bucket means and the scraper means for digging, leveling and dumping operations, and digging means connected to the frame and rendered operative during said digging operation to cut the earth, said digging means including cutter blade means mounted on the trailer frame at the pivotal connecting means forwardly spaced from the scraper means to penetrate the earth when the trailer frame is positioned by the operational control means for digging operation, and gate means movably mounted on the bucket means and operatively engageable with the trailer frame for uniformly regulating unloading of and spreading of earth from the bucket means in one of said operative positions when the trailer frame is positioned by the operational control means for leveling operation.

3,200,521
SELF-LIFTING FLATIRON
Kenneth O. Whitfield, 175 Bloomfield Ave., Montclair, N.J.
Filed May 5, 1964, Ser. No. 364,929
13 Claims. (Cl. 38—79)



1. A flatiron comprising a handle, lifting means for said flatiron movable between operative and inoperative positions, resilient means urging said lifting means to operative position, a bracket secured to said iron latch means slidably supported by said bracket and movable between operative position, where said lifting means is retained in inoperative position, and inoperative position where said lifting means is allowed to move to operative position, a latch spring acting on said latch means to bias it toward operative position, a heat-sensitive element with one end fixed to said bracket, means connecting the other end to said latch means, an electrical heating element, means mounting said heating element with respect to the fixed end of said heat-sensitive element, an electrical switch open when nearly horizontal, closed when tilted through a predetermined angle in only one direction and disposed in an electrical circuit with said heating element, and resilient means for, when an operator releases the handle, tilting said switch to closed position to energize said heating element and effect transfer of heat to and operation of said heat-sensitive element to move said latch means to inoperative position against the action of said latch spring, and release said lifting means to effect raising of said iron.

3,200,522
DISPLAY APPARATUS
Clyde H. Clement, Phoenix, Ariz., assignor of one-fourth to Milton L. Morrison, Salina, Kans., one-fourth to Kenneth Morrison, Hastings, Nebr., and one-fourth to Lawrence D. Nelson and one-fourth to Harold C. Conard, both of Phoenix, Ariz.
Filed Mar. 26, 1963, Ser. No. 268,138
7 Claims. (Cl. 40—77)



1. Display apparatus of the character described comprising

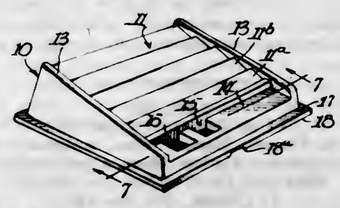
(a) two sets of display elements of generally disc shape, each such set including a plurality of such display elements,

(b) means for moving said sets of display elements in opposite directions in closely matching circular paths so that said sets of display elements pass each other at given points on said circular path, and

(c) means for progressively changing the location of said given points, and

(d) whereby to cause said elements to exhibit an illusion of bouncing away from each other as they pass said point.

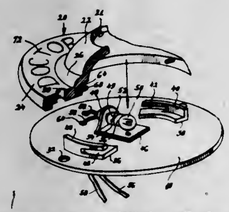
3,200,523
SLIDE SORTING DEVICE
Samuel J. Zagel, Chicago, Ill., assignor to Compco Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 16, 1962, Ser. No. 217,404
1 Claim. (Cl. 40—106.1)



A slide sorting device, comprising a box-like frame presenting a plurality of upper, vertically-stepped translucent support surfaces, all of which but the lowermost surface being inclined to the horizontal, the lowermost surface being horizontally disposed, the width of each of said

support surfaces approximating that of a slide transparency to be supported thereon, a well in the said lowermost support surface and having a generally horizontal bottom wall, the width of said well being less than the width of said surfaces, whereby a slide transparency placed in said well is necessarily supported at an angle to said bottom wall, said lowermost surface being joined to the next adjacent surface by a generally vertical wall adapted to serve as a support for a slide transparency placed in said well, and means for illuminating the underside of said surfaces.

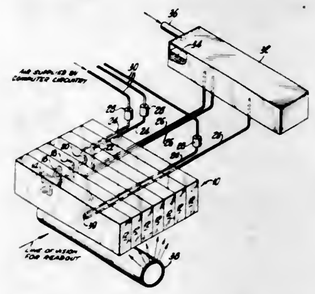
3,200,524
SAFETY TAIL LIGHT
Howard J. Hendrickson, 1123 N. Frink St., Peoria, Ill.
Filed Aug. 31, 1964, Ser. No. 393,233
2 Claims. (Cl. 40—129)



1. An automotive taillight of the character described comprising a circular metallic base plate, an electric light bulb socket secured in fixed position to the upper surface of said base plate, conductor means by which said socket is adapted to be secured to an electrical source, a dome shaped translucent plastic lens, and securing means by which said lens is adapted to be concentrically clamped to the upper surface of said base plate; said securing means comprising a dome shaped metallic lens holder the inner surface of which is complementary to the outer surface of said dome shaped lens, an enlarged axially disposed opening in said holder, an outwardly extending annular flange secured to said holder about the peripheral edge thereof, and interengaging means between said base plate and said holder by which said holder is adapted to be secured to and detached from said base plate by a rotary movement of said holder; said interengaging means comprising a pair of diametrically opposed arcuate plates which are secured to and extend upwardly from said base plate outwardly of said lens and into opposed arcuate recesses formed in the inner wall of said holder, each of said arcuate plates being provided with a slot which intersects one end thereof and is disposed parallel to said base plate, and a pair of pins which are carried by said holder in position to be brought into and out of engagement with said slots by rotary movement of said holder; said base plate and said annular flange each being provided with apertures, which are adapted to align when said holder is in securing position on said base plate, for the reception of bolts by which said taillight is adapted to be secured to a vehicle and said holder is constrained against rotation with respect to said base plate.

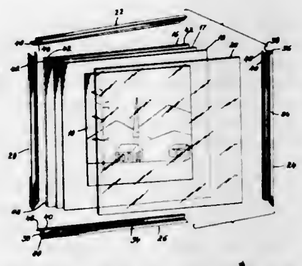
3,200,525
FLUID READ-OUT DEVICE
Samuel A. Francis, Marion, Mass., assignor to Francis Associates, Marion, Mass., a partnership
Filed May 13, 1963, Ser. No. 281,379
11 Claims. (Cl. 40—130)

10. A fluid operated visual display for indicia comprising a body of transparent material having a predetermined index of refraction, multiple superimposed chamber means within said body having portions defining the edges of indicia to be displayed when said body is subjected to edge lighting, means for illuminating the edges of the indicia, means for supplying a transparent liquid having an index of refraction substantially equal to the index of



refraction of said body to said chamber means, and means for selectively clearing individual chamber means of said liquid.

3,200,526
PICTURE FRAME CONSTRUCTION
Ben Munn, Hollis, N.Y., assignor to APF Inc., New York, N.Y., a corporation of New York
Filed May 1, 1963, Ser. No. 277,168
1 Claim. (Cl. 40—152)



A picture frame and mount combination comprising a picture mount assembly including a rigid rectangular backing member, a plurality of similar grooves formed in the rear surface of said backing member one of said grooves being disposed a predetermined distance from and parallel to each side edge of said backing member and extending the entire width of said backing member between opposed edges thereof, and a picture frame comprising a plurality of similar elongated channel-shaped individual frame elements of resilient material, one of which is applied to each edge of said mount assembly; each of said frame elements comprising a base section for engagement with a side edge of said mount assembly, a front flange for engagement with the front surface of said mount assembly, and a rear flange for engagement with the rear surface of said backing member, each end of said element being beveled to form a miter joint with an element disposed normal thereto, said rear flange having an inwardly projecting wedge-shaped lip integral therewith for engagement in an associated one of said grooves to clamp said element in place on said mount assembly; the free end of said rear flange beyond said lip terminating in an elongated arcuate section which is coextensive with said rear flange and extends inwardly of said frame and rearwardly from said backing member, the said arcute sections of each of said elements forming with each other an unbroken annular wall which extends rearwardly from said backing member when one of said elements is applied to each edge of said mount assembly.

3,200,527
HINGED SNAP-LOCK CONTAINER
Thomas C. Clark, Los Angeles, Calif., assignor to Mingwah A. Quon, Los Angeles, Calif.
Filed July 17, 1961, Ser. No. 124,655
6 Claims. (Cl. 40—152)



1. A container, said container comprising a bottom member, and a top member covering at least a portion of the bottom member when said top member is superimposed upon the bottom member, each of said members, upon such superimposition, having a wall facing outwardly and oppositely from the outer wall of the other member, and an inner wall in partial facial abutment with the inner wall of the other member, the inner wall of one of said members having a rectangular ridge, the inner wall of the other one of said members having a mating rectangular recess thereby to define a cavity between them; the abutting faces of said inner walls being constructed with complementary interlocking elements, said interlocking elements comprising a pair of parallel overhung ridges projecting perpendicularly from the plane of the face of said other member and spaced from each other by a distance greater than the width of said cavity and thereby to be disposed one outward of each side of said cavity, each of said ridges extending for a distance substantially equal to the lineal dimension of said member, and a pair of matingly disposed undercut recesses in the face of said one member, respectively contiguous with overhung portions of two opposite ridge portions pertaining to said rectangular ridge, said members being molded of a resilient plastic, such as polypropylene, whereby said members may be separated from each other by the disengagement of said interlocking elements.

3,200,528
DEVICE FOR SUPPORTING A PISTOL ON A BELT
Harold C. Christensen, Pine Hill Road, Croton-on-Hudson, N.Y.
Filed Dec. 10, 1963, Ser. No. 329,553
5 Claims. (Cl. 42—94)



1. A device for supporting a pistol in shooting position, comprising means for engaging a belt on the user at at least two substantially separated locations, at least two extensible elongated members, one end of each member being horizontally pivoted to said belt engaging means at spaced apart locations, and a rigid plate adapted to support the butt surface of a pistol held in shooting position, said rigid plate being horizontally pivoted to the outer ends of said extensible elongated members, said rigid plate having an upstanding lug adapted to cooperate with and stop the butt of the pistol from slipping rearwardly off of the surface of the plate while the pistol is held in shooting position.

3,200,529
HACKLE WRAPPING TOOL
Donald B. Du Bois, 2332 N. Tuckahoe St., Arlington, Va.
Filed Dec. 7, 1961, Ser. No. 157,713
4 Claims. (Cl. 43—1)



1. A tool for wrapping a hackle feather about the shank of a fishhook in making a fishing fly comprising, a handle and a head carried thereby, the head including an elongated guide member attached at one end to one end of the handle to extend therefrom, a second guide member overlying the first-mentioned guide member and spaced therefrom, the guide members being connected together at their ends remote from the handle and being free from attachment adjacent the handle to provide a feather-inserting mouth, the guide members being long enough to overlie the full width of opposite sides of a feather inserted between them so that the feather may be drawn between the guide members and held against twisting during passage therethrough.

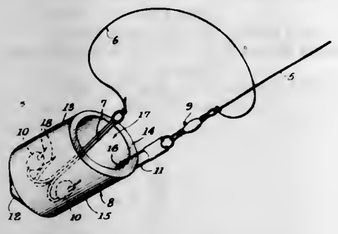
3,200,530
FISHING APPARATUS
Michael Dworski, 411 Main St. E., Rochester, N.Y.
Filed May 18, 1964, Ser. No. 368,128
6 Claims. (Cl. 43—16)



5. Fishing apparatus comprising a tubular member adapted to be attached to a fishing rod, said tubular member having a longitudinal slot therein, a plunger slidable in said tubular member having an arm extending laterally through said slot, resilient tension means disposed in said tubular member and urging said plunger arm towards one end of said slot and tubular member, releasable latch means associated with said plunger for holding said plunger with its arm at the other end of said slot against the tension of said tension means, a fish line grip in the end of said plunger arm, a sensing device disposed adjacent the other end of said tubular member comprising an arm having one end pivoted on the device, on an axis transversely disposed with respect to said plunger arm, said pivoted arm at its other end having a friction grip for the fish line, resilient means for rotating said pivoted arm toward said plunger arm, electrical contact means closed by opposite rotation of said pivoted arm,

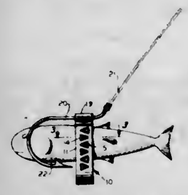
and electro-magnetic means for releasing said latch means in circuit with said contact means for releasing said plunger on opposite rotation of said pivoted arm.

3,200,531
BAITED-HOOK CARRIER
Otto F. Colbert, 10107 Adella Ave., Whittier, Calif.
Filed Jan. 7, 1963, Ser. No. 249,619
3 Claims. (Cl. 43—41.2)



1. In combination,
(a) a leader on the end of a fish line,
(b) a bait hook on the end of the leader,
(c) a cup member comprising a sinker and having an interior space in which the hook, when baited, is adapted to be disposed, and
(d) a connection having a fixed maximum length between the cup member and the fish line shorter than the leader, said connection, when pulled by the cup member when the latter is sinking in water into which cast, drawing on the leader and the baited hook thereon in a direction toward the bottom of the water.

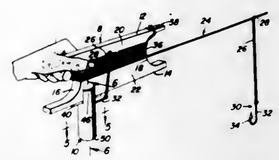
3,200,532
LIVE FISHBAIT HOLDER
Sylvan Brooks Walton, 21050 Saratoga Hills Road, Saratoga, Calif.
Filed Mar. 28, 1963, Ser. No. 268,750
3 Claims. (Cl. 43—44.6)



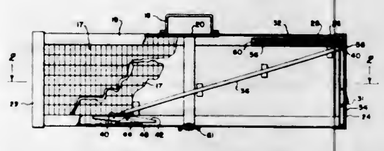
1. In a live fish bait holder the combination comprising a resilient member bent upon itself to provide opposing side portions between which the live fish bait is positioned, at least one of said side portions of said member having oppositely oriented teeth which engage said fish bait and which exert only slight pressure on the sides of the fish bait so that the fish bait can swim, said teeth being oppositely oriented and being pointed in the direction of the length of said fish bait to prevent said fish bait from purging itself of said member, and means for attaching said member to a fish hook, said attaching means holding said fish hook adjacent to said fish bait.

3,200,533
TROTLINE STORING AND HANDLING MEANS
Hallie O. Early, 1407 East Ave. E, Brownwood, Tex.
Filed Apr. 16, 1964, Ser. No. 360,360
2 Claims. (Cl. 43—54.5)

1. Manually usable trotline storing and dispensing means comprising a line winding and storing reel, and a hook storing safeguarding sheath fixedly mounted on and carried by said reel, said sheath comprising a tube which is open at the hook inserting and removing end, said tube having a slot in one side, one end of said slot opening through the open end of said tube, said slot functioning to permit the shank portions of the hooks to be systematically slid and removably held therein, and keying and retaining means fixed within the hollow portion of said tube and aligned with said slot and serving to permit the barbed hooked ends of the individual hooks to be retentively connected therewith, whereby the line having leader-like drop lines is wound and stored on the reel and the drop line hooks are stored and sheathed for manual step-by-step withdrawal in said sheath, said tube being open-ended, one end thereof having tongues struck out therefrom at diametrically opposite places, said tongues being bent laterally outward and providing furcations and intervening notches, and an edge portion of said body being seated in the notches straddled by the furcations and said tongues constituting attaching and assembling tabs and the latter being affixed to coacting edges of said reel.

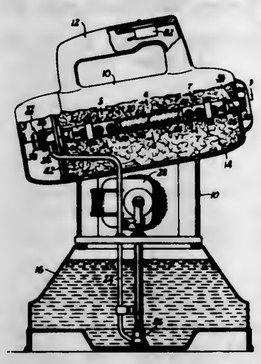


3,200,534
ANIMAL AND WILD GAME TRAP
Fred A. Wood, 2916 Broadway St., and Joseph A. Gordon, 2536 University St., both of San Diego, Calif.
Filed Jan. 19, 1962, Ser. No. 167,298
3 Claims. (Cl. 43—61)



1. A trap for trapping animals and wild game comprising,
an enclosure having an entrance,
a door for said entrance movable to open and closed positions and gravitationally urged toward said closed position,
said door in said open position being angularly positioned relative to said entrance,
support means for releasably supportng said door in said open position,
means for translating said door between said open and closed positions in a manner that said door is moved between open and closed positions by translation,
game actuable means in said enclosure for shifting said support means out of said door-supporting position in response to actuation of said actuable means by said game,
and means for varying the force required to actuate said actuable means.

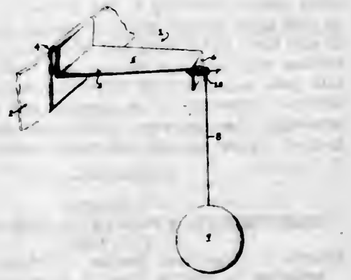
3,200,535
APPARATUS FOR CREATING AEROSOL DISPERSIONS
John W. Hession, Jr., New Canaan, Conn., assignor of one-third to George D. Besler, New York, N.Y., and one-third to Mark A. Hession, Darien, Conn.
Filed Sept. 10, 1963, Ser. No. 307,870
10 Claims. (Cl. 43—129)



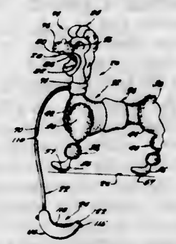
1. Apparatus for producing an aerosol dispersion, comprising in combination,
(A) an electrical resistance heating element,
(B) means forming a pressure chamber
(1) in an adjacent heat exchange position to said heating element,
(2) means forming an orifice in said pressure chamber opening to the atmosphere,
(C) a reservoir,
(1) having a connection to said pressure chamber for fluid communication therewith,
(D) pressure means for moving a liquid under pressure from said reservoir to said pressure chamber,
(E) thermostatic control means on said pressure chamber for sensing the temperature of liquid therein,
(1) said thermostatic control means being connected to control said pressure means,
(2) and said heating element,
whereby said pressure means is operated by said thermostatic control to move liquid under pressure from said reservoir through said pressure chamber and said orifice only when the liquid in said pressure chamber is within a predetermined temperature to explosively vaporize a portion of the heated liquid forced through said orifice under pressure and released to the atmosphere.

3,200,536
DEVICE ACTIVATED BY HIP MOVEMENT OF A USER
John J. Petitto, Sr., 203 Hodge St., Clarksburg, W. Va.
Filed Aug. 1, 1962, Ser. No. 214,039
1 Claim. (Cl. 46—51)

An amusement device adapted to be attached to a garment element surrounding a user's waist and to extend outwardly from the garment element whereby rotational movement of the user's hips sets said amusement device into operation, said amusement device comprising:
a bracket means having an attachment portion at one end thereof;
said attachment portion including means defining a generally U-shaped channel which receives and accommodates said garment element and thereby attaches said amusement device thereto;
said bracket means further including an arm portion extending substantially horizontally outward from said attachment portion and terminating in a downwardly depending flange portion;
rotatable means operable by rotational movement of said user's hips; and
connecting means projecting from said flange portion for connecting said rotatable means to said bracket means;
said rotatable means including an elongated cord having first and second ends and a ball means secured to said second end;
said cord first end being attached to said connecting means whereby reciprocating rotary movement of said user's hips imparts a motion to said bracket means which motion in turn is transferred to said rotatable means to cause said ball means to swing in a circular orbit about said connecting means.



3,200,537
TOY WALKING DOG
Marvin I. Glass, Chicago, Arthur E. Neumann, Winnetka, and Burton C. Meyer and Hans E. Jernstrom, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Feb. 25, 1963, Ser. No. 260,797
5 Claims. (Cl. 46—118)



4. A toy animal comprising, a body including, a hollow torso having front and rear ends, a head movably mounted on said front end, a pair of relatively rigid front legs and a pair of relatively rigid rear legs associated with the front and rear torso ends, respectively, one leg of each pair at each side of said torso, each of the legs having a high friction pad for engaging a supporting surface, leg mounting means including a relatively resilient mounting member operatively attaching said legs to said torso for walking articulation of said legs on said supporting surface as said body is moved across said surface, said mounting member including, a first flat leaf spring disposed in a generally horizontal plane and extending lengthwise within said torso and having front and rear ends adjacent said front and rear torso ends, respectively, front and rear flat leaf springs disposed in generally vertical planes and extending across said torso, said front and rear springs being fixed to opposite ends of said first flat spring and each having leg

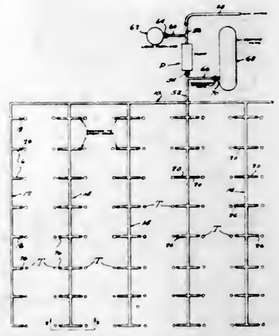
mounting portions on opposite sides of said first spring, one of said mounting portions being adjacent each of said legs, and each of said mounting portions being rigidly secured to an upper end of the adjacent one of said legs, means firmly securing an intermediate portion of said first spring to said torso in a manner affording twisting and vertical flexing movement of said front and rear ends of said first spring, noisemaker means operable for simulating an appropriate animal sound, and operating means including a line having an end connected to said body at said head for moving said head relative to said torso and pulling said body across said supporting surface with said legs moving in a walking manner and said pads engaging said supporting surface, and a grip-actuator connected to an opposite end of said line for tensioning the line when pulling said body and for selectively operating said noisemaker means.

3,200,538
ELECTRICALLY POWERED AND SOUNDING TOY BIRD
Marvin I. Glass and Burton C. Meyer, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Feb. 4, 1963, Ser. No. 255,976
10 Claims. (Cl. 46—232)



6. A toy figure comprising a hollow body, a pair of elongated leg members rotatably mounted at one of their ends within said body in spaced relation to one another, said leg members being adapted to support said body on a supporting surface, a generally circular foot member secured to the lower end of each of said leg members and adapted to rotate therewith, the radius of curvature of the peripheral edge of each of said foot members being greater than the distance between the center of gravity of the figure and the outermost peripheral edge of the foot member, operating means within said body including a plurality of gears in meshing engagement to form a train, an electric motor having a rotatable shaft connected to said gear train, storage battery means, and switch means connected to said battery for selectively connecting said battery to said motor in either a first direction or a second direction and cause rotation of said motor shaft in either of two directions, rotation of said motor shaft in one direction incident to a flow of current to said motor in said first direction being effective to cause a first traveling movement of said body on a supporting surface and rotation in the opposite direction incident to a flow of current to said motor in said second direction being effective to cause a second traveling movement of said body, said first traveling movement and said second traveling movement differing in direction from one another, means on said body connected to said switch means and effective when engaged in a predetermined manner to cause a reversal in the direction of current flow to said motor from said first direction to said second direction so as to cause said figure to commence said second traveling movement, sound-producing means within said body adapted to be actuated when said figure commences said second traveling movement, timing means on said body connected to said switch means for causing a reversal in the direction of current flow from said second direction to said first direction so as to cause said figure to resume said first traveling movement, and means for deactivating said sound-producing means.

3,200,539
COMBINATION HEATING, IRRIGATING, AND FERTILIZING SYSTEM
Marvin J. Kelly, Merritt Island, Fla., assignor to Elements Control Systems, Inc., Winter Park, Fla., a corporation of Florida
Filed May 10, 1963, Ser. No. 279,405
2 Claims. (Cl. 47—1)

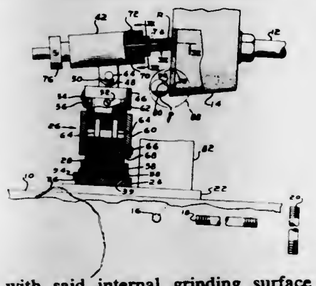


1. In a system of the character described, a header pipe, branch pipes extending from a side of and connected at one end to the header pipe at spaced points along the header pipe, the other ends of the branch pipes being closed, lateral discharge pipes spaced along and connected to the branch pipes, said discharge pipes terminating in upstanding discharge heads adapted to be positioned close to trees, said heads comprising vertical rectangular housings having open upper and lower ends, rectangular horizontal plates relatively smaller than said housings secured within and extending across the lower ends of the housings, said plates each having depending coupling sockets, said sockets having centered small diameter vertical jet means communicating with the risers and the said rectangular housings, said plates having opposite side edges spaced from adjacent opposite side walls of the housings which define air slots for primary air supply with fuel supply from said jet means, means to supply various fluids under pressure to the header pipe to said discharge heads, said supply means comprising a feed pipe connected to the header pipe, a combustible gas pressure tank connected to the feed pipe, a thermostatically controlled valve connected between the feed pipe and gas tank, a force pump having a discharge connected to the feed pipe, a water valve connected between the discharge and the feed pipe, said pump having an intake pipe to which a suitable source of water is adapted to be connected, a fluid fertilizer tank connected to the intake pipe, and a fertilizer valve connected between the fertilizer tank and the intake pipe.

3,200,540
DEVICE FOR GRINDING COMPOUND-CONVEX SURFACES
Joseph Aime Lavallee, Springfield, Mass., assignor to Lavallee & Ide, Inc., Chicopee, Mass., a corporation of New York
Filed Nov. 5, 1963, Ser. No. 321,530
8 Claims. (Cl. 51—73)

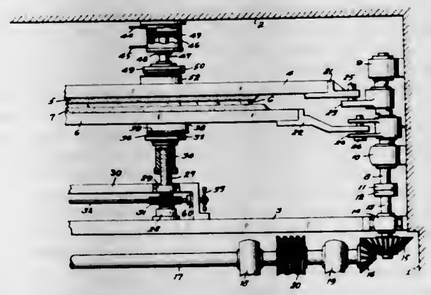
1. A device for sharpening reamers or the like having longitudinal blades, said device comprising a rotatable grinding wheel having an internal concavely curved grinding surface, said grinding surface being generated by a

simple curved line swung about the axis of rotation of said grinding wheel, and a reamer holder for positioning the end faces of successive blades of said reamer in en-



gagement with said internal grinding surface to form compound-convex curved surfaces thereon and thereby produce a curved cutting edge on each blade.

3,200,541
APPARATUS FOR SURFACING GLASS
Giuseppe Banti, Pisa, Italy, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed June 25, 1963, Ser. No. 290,519
Claims priority, application France, June 27, 1962, 902,191
9 Claims. (Cl. 51—112)



9. Apparatus for surfacing sheets of glass, comprising, first and second spaced horizontal rubbing tools adapted to receive between them a sheet of glass to be surfaced, means mounting said tools for circular translational motion and including upper and lower pairs of parallel bearing plates, a plurality of sets of antifriction bearing balls, one set being interposed between each said pair of bearing plates, respectively, each plate of one said pair being horizontally fixed and the other plate of each said pair being connected to a respective one of said rubbing tools, means operable to urge all said plates, and thereby said tools, together with controllable variable force, and means connected with said tools and moving the same equally and oppositely in horizontal orbital movement.

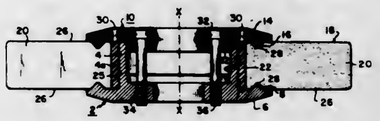
3,200,542
BUFFING BAR AND METHOD OF MAKING SUCH BAR
John E. Ley, Pittsburgh, Pa., assignor to Schaffner Manufacturing Company, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 10, 1963, Ser. No. 279,582
2 Claims. (Cl. 51—262)

1. A buffing bar including a solid grip of a moldable material having at least one recess in one end thereof and a rod of a buffing compound secured in said recess by molding liquified buffing compound in said recess, the liquid buffing compound adhering to said material, the



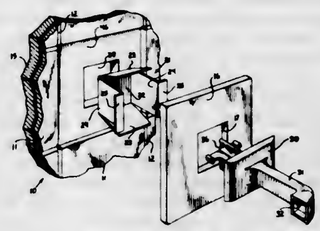
moldable material having a higher melting temperature than the compound.

3,200,543
ABRASIVE WHEEL AND METHOD OF MAKING THE SAME
Joseph R. O'Neil, Jr., Youngstown, N.N.Y., Alphonse J. Kirsch, Geneva, Switzerland, and Halsey W. Buell, Niagara Falls, N.Y., assignors to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Apr. 18, 1962, Ser. No. 188,351
4 Claims. (Cl. 51—337)



1. A replaceable abrasive wheel unit comprising an annulus of abrasive coated leaves, said leaves being bonded solely at their inner edges by a unitary cylindrical collar of substantial thickness having its ends normal to the axis thereof, said collar being formed of hardened adhesive resin poured in place and conforming at its inner periphery to a sleeve of a hub section on which the wheel unit is adapted to be mounted, and a circular groove formed in each lateral face of said annulus concentric with the longitudinal axis of the wheel unit and adapted to receive a circular rib formed on a radially extending flange of a hub section.

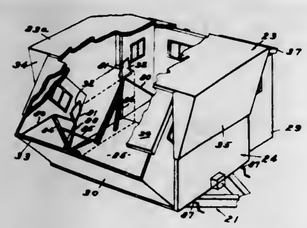
3,200,544
BATHROOM FIXTURE
Eldon Virgil Greek, R.R. 1, Box 807, Carmel, Ind.
Filed July 20, 1960, Ser. No. 44,094
4 Claims. (Cl. 52—27)



4. A fixture mounting comprising a wall having a rectangular aperture therethrough, a concave receptacle formed of resilient sheet material and having a rectangular central portion and four rectangular side portions which extend from the respective sides of said central portion, one opposite pair of said side portions extending a lesser distance from said central portion than the other opposite pair of said side portions, said receptacle projecting through said aperture wtih the concave portion thereof facing forwardly, said one pair of side portions diverging

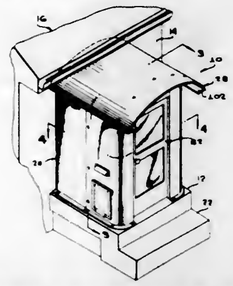
linearly from one another as they extend from said central portion to the distal ends of said one pair of side portions which distal ends engage the rearward face of said wall at locations spaced from said aperture, a pair of flanges on the distal ends of said other side portions, said flanges extending away from one another generally parallel to the central portion of said receptacle and supported on the forward face of said wall, plaster of Paris filling said receptacle and engaging the rearward face of said wall, and a fixture seated in said plaster of Paris and extending through said aperture.

3,200,545
FOLDING TRAILER
Lothar P. Bunge, Berkley, Mich.
(1528 E. 11 Mile Road, Warren, Mich.)
Filed Oct. 17, 1961, Ser. No. 145,702
4 Claims. (Cl. 52—66)



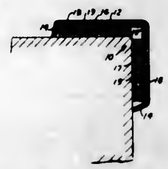
1. In a folding trailer, the combination comprising a lower section having a base wall and end walls on said base wall, an upper section having a top wall and end walls telescoping over the end walls of the lower section, means for raising and lowering said upper section relative to said lower section, and a pair of side units hinged to said base wall of said lower section along opposite sides intermediate the end walls thereof and movable from a position between said end walls to an unfolded position outwardly thereof, each said unit comprising a first wall defining an extension of the base wall of the lower section when the unit is in said unfolded position, a section wall normal to said first wall and defining a side wall of the trailer when the unit is in unfolded position, and opposed end walls normal to said first and second walls and defining extensions of the end walls of the upper and lower section when the unit is in unfolded position, means individual to each said unit for swinging each of said units to said unfolded position, said side units being so dimensioned that one unit telescopes within the other when they are swung inwardly, said upper section including a pair of panels hinged along opposite sides of said top wall intermediate the end walls thereof and adapted to form side walls when the trailer is in folded condition and top walls over the units when the trailer is in unfolded condition, each said means for swinging one of said units comprising a pair of links pivoted to one another at one end, one of said links being pivoted to the lower section and the other of said links being pivoted to its respective unit, a flexible element individual to each said unit and having the end thereof connected to said respective unit, and a rotary element drivingly engaged with said flexible element and being journalled in said lower section whereby rotation of said rotary element causes said flexible element to be driven in one direction or another to swing the unit inwardly or outwardly, each said means for swinging said unit including a lever pivoted to said unit, one end of said flexible element being connected to one end of said lever, and a tension element connected to the other end of said lever and one of said links which is pivoted to said lower section.

3,200,546
VESTIBULE
Albert A. Losak, 316 Ridge Ave., Lakewood, N.J.
Filed Jan. 28, 1963, Ser. No. 254,252
6 Claims. (Cl. 52—94)



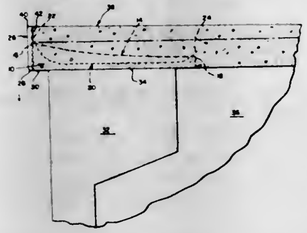
1. A portable storm enclosure for use in conjunction with a building opening comprising, a first side assembly consisting of a first panel member having upper and lower outwardly extending flanges and an inwardly extending rear flange, and a second panel member with upper and lower outwardly extending flanges, said second member having a side panel section, a forward arcuate corner and a front panel section, said arcuate corner integrally connecting said side panel section and said front panel section, a vertically extending door frame member permanently secured to the free end of said front panel section, said second panel member being slightly less in height than said first panel member so that it may be positioned alongside said first panel with its upper and lower flanges inwardly of the upper and lower flanges of said first panel member, a second side assembly constituting a mirror image of said first side assembly; a transversely extending door frame member having the same cross section as said vertically extending door frame member positioned with its ends connected to the top ends of the vertically extending door frame members; a gable connected to and extending across the top of the door frame including a flat plate having an arcuate upper surface and an arcuate flange integrally secured thereto, a roof having an arcuate body portion and two inwardly extending flanges, said roof positioned in contact with said gable with its flanges in overlying relationship with and connected to the upper outwardly extending flanges of said side assemblies.

3,200,547
CORNER MOLDING
Robert B. Johnson, Peekskill, N.Y., assignor to Standard Coated Products Incorporated, Buchanan, N.Y., a corporation of New York
Filed July 1, 1963, Ser. No. 291,760
3 Claims. (Cl. 52—288)



1. In combination with an angular surface, an elongated hinged plastic molding bridging the abutting edges of said angular surface and overlying the adjacent portions thereof, said hinged plastic molding comprising a laminar structure having a hinged outer member of deformable foamed plastic and interior members, said outer member having inturned flanges at the edges thereof and a recess between the flanges; a hinge comprising a V-shaped groove running the length of said outer member, parallel with and in spaced relation to the edges of the outer member, said groove disposed on the inner face of the outer member and forming said hinge around which the molding is bent; a pair of interior members of deformable foamed plastic in adhesive contact with the recess on either side of the hinge and periphery enclosed by said flanges; and an adhesive on the surfaces of the interior members whereby said members are adhered to the adjacent portions of the angular surface as the molding is bent at the hinge, and said flanges are in firm contact with the adjacent portions of the angular surface.

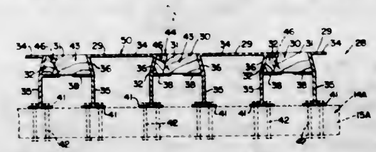
3,200,548
PRECAST SHELL COPING AND METHOD OF CONSTRUCTION FOR SWIMMING POOLS
Merle H. Gillespie, Jr., 908 Parker Ave., Falls Church, Va.
Filed May 9, 1963, Ser. No. 279,088
1 Claim. (Cl. 52—300)



An integral deck and coping structure for a pool having a vertically arranged side wall comprising a plurality of precast shell coping units horizontally arranged in side-by-side juxtaposition about the top periphery of said wall, each of said coping units comprising an elongated precast body portion and a facing means on one end thereof, said facing means extending coextensively from the bottom edge of said body portion to an upper edge above the top surface of said body portion, said facing means extending into the confines of said pool, whereby said facing means form a continuous retaining means, said body portion comprising a generally rectangular block having a point of maximum thickness adjacent said facing means at one end thereof and extending downwardly along the upper surface thereof from said point of maximum thickness to a point of minimum thickness at the other end thereof, and said body portion further including reinforcing means embedded therein and substantially longitudinally coextensive therewith, said reinforcing means including upstanding end portions located one adjacent each end of said body portion and extending above said supper surface, and a poured self-setting aggregate deck means covering said body portions and reinforcing means to a level flush with the upper edges of said facing means.

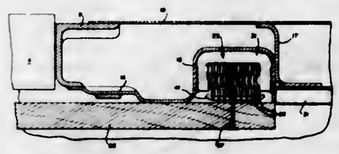
3,200,549
CARGO SUPPORTING STRUCTURES FOR BULK CONTAINERS, TRAILERS AND THE LIKE
Alan R. Cripe, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed May 22, 1962, Ser. No. 196,757
1 Claim. (Cl. 52—376)

A supporting structure having opposed surfaces and comprising a plurality of spaced metallic members respectively having opposed top and bottom edges respectively defining part of said opposed surfaces, each metallic member having a substantially U-shaped cross sectional configuration defined by a cross member forming part of one of said surfaces and defined by a pair of legs, each leg of each metallic member having an outwardly extending shelf portion extending toward a shelf portion of an adjacent metallic member and being disposed intermediate the top and bottom edges of the respective metallic member, each adjacent pair of shelf portions cooperating with their respective legs to define an interlocking channel between the respective metallic members, each interlocking channel having a trapezoidal cross-sectional configuration, a plurality of wooden members respectively disposed in said interlocking channels and resting on said shelf portions, each leg of each metallic member having a portion



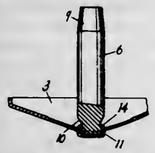
thereof disposed closed to a like portion of an adjacent metallic member at the cross member thereof than at the shelf portion thereof to define a reduced opening to its respective channel, each wooden member including a pair of wooden elements, one of said elements of each wooden member having a trapezoidal cross-sectional configuration and being receivable through said opening of one of said channels, the other of said elements being insertable in said opening after said one element to fill said channel, and means securing said elements together in said channel.

3,200,550
NAILABLE ASSEMBLY
Hartwell T. Doughty, deceased, by Kathryn B. Doughty, executrix, Livonia, Mich, assignor to National Steel Corporation, a corporation of Delaware
Filed Feb. 29, 1960, Ser. No. 11,649
7 Claims. (Cl. 52—377)



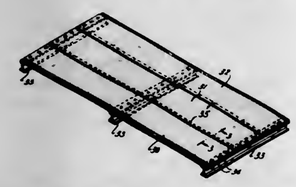
1. A nailable assembly comprising a rigid and inextensible U-shaped member having a midportion terminating on either side in a pair of legs both of which extend away from said midportion in the same direction, and a plurality of elongated parallel strips each of a depth perpendicular to its length at least several times its thickness, means fixedly secured to each strip and fixedly securing the strips in rigid spaced-apart assembly with each other, a longitudinal side edge of at least a plurality of said strips being welded to said midportion of the U-shaped member to secure the strips in rigid assembly with the U-shaped member and to dispose the strips between the legs of the U-shaped member, each strip being spaced from the next adjacent strips to provide a plurality of nailing slots between the strips and extending full depth of the strips for the reception and retention of nails in the spaces between the strips, the depth of the strips perpendicular to their length and the distance between immediately adjacent strips being such that the slots between the strips are of a depth at least several times their width, the strips having complementary corrugations therein extending lengthwise thereof for deforming and retaining nails driven into said slots between said strips.

3,200,551
MOLDABLY CONFORMABLE SHEET METAL STOCK
Gerald V. Jakeway, Grand Rapids, Mich., assignor to Keeler Brass Company, Grand Rapids, Mich.
Filed Nov. 14, 1962, Ser. No. 237,706
3 Claims. (Cl. 52—511)



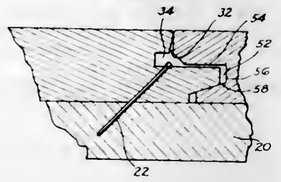
1. The combination of a body member of sheet aluminum stock of substantially uniform thickness and which is moldably conformable without heating, and laterally spaced studs of metal stock which is relatively nonconformable as compared to the conformable stock of said body member which have axially projecting and angularly disposed ribs on their inner ends and annular curved peripheral grooves adjacent but spaced from their inner ends providing outwardly projecting flange-like portions on the inner ends of the studs, portions of said body member being moldably and conformably upset into clamping supporting engagement with the said annular flange-like portions on the inner ends of said studs and said ribs on the inner ends of the studs whereby said body member and studs are fixedly connected and constitute an integral unit with the studs fixedly projecting inwardly relative to the body member.

3,200,552
INSULATIVE BUILDING BOARD
Clyde O. Stock, Allison Park, Pa., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Oct. 18, 1962, Ser. No. 231,422
3 Claims. (Cl. 52—593)



1. As a new article of manufacture, insulative and generally flat building board for forming substantially moisture impervious sheathing, comprising: a corrugated paperboard web, said web having adhesively bonded to opposite sides thereof respectively, laminated facing sheets each formed of a sheet of paperboard and an outer sheet of light and heat reflecting imperforate metal foil bonded thereto, said facing sheets including the foil thereon extending at opposite edges of the board beyond the corrugated web to provide marginal extensions, such extensions at one edge of the board being adhered together to provide a relatively rigid blade-like marginal portion, such extensions at another edge of the board providing spaced apart lips, providing a slot-like formation adapted to receive such a blade-like portion on another board-like panel, a strip of material having a U-shaped cross section, said strip being adhered within such slot-like formation, and the inner surfaces of said U-shaped strip being of metal foil, said strip being in a position to be astride of and to embrace with its inner surfaces of metal foil such a blade-like formation on another board panel when inserted therein, the foil on at least one of said laminated facing sheets has small closely spaced protuberances thereon with smooth surfaces free of rupture for reduced friction and consequent possibilities of rupture of the foil when the generally flat board is slidably engaged by another like area thereof or another object, each of said protuberances being supported by the corresponding protuberance on the paperboard sheet thereunder.

3,200,553
COMPOSITION BOARD FLOORING STRIP
Ronald G. Frashour, Roseburg, Oreg., and Russell J. Pfeiffer, Memphis, Tenn., assignors to Forrest Industries, Inc., Dillard, Oreg., a corporation of Oregon
Filed Sept. 6, 1963, Ser. No. 307,176
2 Claims. (Cl. 52—595)



1. A composition board flooring strip adapted for nailing to subflooring,

(a) each strip having a face surface, a bottom surface, a tongued edge and a grooved edge, the tongued edge being receivable in the grooved edge of an adjacent strip in edge-to-edge tongue and groove relation,

(b) the tongued edge comprising an upper abutment section having an outer meeting surface extending downward from the face surface of the strip to the upper side of an inwardly directed recess in the tongue section, the recess being dimensioned to house a nailhead without contact of the nailhead with the upper surface of the recess,

(c) the tongued edge incuding a lower tongue section which projects outward beyond the outer meeting surface of the upper abutment section,

(d) the lower tongue section comprising an inner base portion extending between the recess and the bottom surface of the strip, and an outer groove-penetrating portion having a top surface co-planar with the top surface of the base and a bottom surface spaced upwardly from the bottom surface of the strip and terminating at its inner end outwardly of the meeting surface of the abutment section,

(e) the base portion of the tongue section being dimensioned to receive nails,

(f) the grooved edge comprising an upper abutment section having an outer meeting surface extending downward from the face surface of the strip to the upper side of an inwardly directed groove dimensioned to receive the groove-penetrating portion of the tongue section.

3,200,554
POLE STRUCTURE
Jack J. Goodman, Highland Park, and Henry Stillman, Chicago, Ill., assignors to Prestige Products, Inc., Chicago, Ill., a corporation of Illinois
Filed July 16, 1963, Ser. No. 295,465
3 Claims. (Cl. 52—727)

1. A pole lamp comprising a first and a second pole section,

said first pole section consisting essentially of a first tubular metal core;

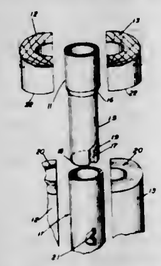
a plurality of elongated first wooden segments encircling said first core and extending along the length thereof; adhesive means bonding said first wooden segments to each other and to said first core to define an annular sleeve surrounding said core and contiguous to and coaxial therewith;

said first metal core being flush with said first wooden segments at one end of said section and extending axially beyond said segments at the other end of said section to define an extension arm integral with said core and coupling said first section to said second section;

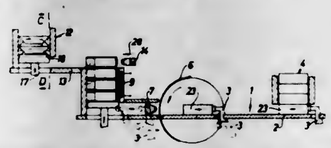
said second pole section comprising a second tubular metal core;

a plurality of elongated second wooden segments encircling said second core and extending along the length thereof, said second wooden segments being coextensive with said second core; adhesive means bonding said segments to said core to define an annular sleeve surrounding said second core and contiguous to and coaxial therewith; and

said second core of said second section having an opening extending axially endwise therein and defining an elongated socket receiving said integral extension arm of said first core in sliding frictional engagement therewith and coupling said first and said second pole sections.

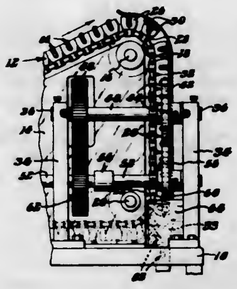


3,200,555
METHOD AND APPARATUS FOR WRAPPING CIGARETTE PACKS AND THE LIKE
Kurt Liedtke, Hamburg, Germany, assignor to Hauni Werke Korber & Co. KG., Hamburg-Bergedorf, Germany
Filed May 9, 1963, Ser. No. 279,670
Claims priority, application Germany, July 7, 1960, H 39,873; Great Britain, May 10, 1962, 17,999/62; Feb. 6, 1963, 4,814/63
55 Claims. (Cl. 53—33)



1. A method of wrapping cigarette packs and similar box-shaped articles, comprising advancing the articles in a substantially horizontal path; feeding flexible wrappers in front of consecutive articles so that the front face of each article engages a central portion of the respective wrapper and transforms the wrapper into a U-shaped body which extends beyond the front, lateral, top and bottom faces of the article whereby the wrapper forms two front end flaps, two upper and two lower lateral flaps, and an upper and lower rear flap; folding the front end flaps of consecutive wrappers by tucking such flaps between the respective lateral flaps as the articles continue to advance in said path; folding the lower rear flaps against the rear faces of the respective articles; consecutively moving the articles upwardly in a substantially vertical path and folding the upper rear flaps over the lower rear flaps of the respective wrappers whereby the end portions of such rear flaps form a pair of rear end flaps which extend beyond the lateral faces of the articles; bonding the upper rear flaps to the lower rear flaps while the articles remain in said vertical path; consecutively advancing the articles in a second substantially horizontal path and simultaneously folding the rear end flaps against the respective lateral faces of the articles by tucking such flaps between the respective lateral flaps; folding the lower lateral flaps against the respective lateral faces of the articles; consecutively advancing the articles upwardly in a second substantially vertical path and folding the upper lateral flaps over the lower lateral flaps; and bonding the upper lateral flaps to the lower lateral flaps while the articles remain in said second vertical path.

3,200,556
CAPSULE SEALING METHOD AND APPARATUS
Charles E. Ackley, Oreland, Pa., assignor to R. W. Hartnett Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1962, Ser. No. 230,208
6 Claims. (Cl. 53—38)

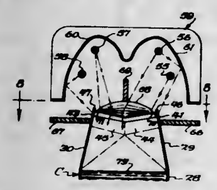


3. In a process for sealing gelatin capsules having inner body and outer cap parts each with one closed end and one open end, the open ends of said outer cap parts being telescoped over the open ends of said inner body parts, the steps comprising moving a series of capsules in a continuous stream thereof at a predetermined rate of speed successively past a sealing station, moving a plurality of series of globules of sealant each in a continuous stream at said predetermined rate of speed successively past said station, and spotting each capsule at circumferentially spaced points on the edge of the outer cap part adjacent the inner body part, as the capsule passes said station, with one globule from each series thereof.

3,200,557
METHOD AND APPARATUS FOR SEALING MILK CONTAINERS AND THE LIKE
William E. Schwenk, Norristown, Pa., assignor to International Paper Company, New York, N.Y., a corporation of New York
Filed Sept. 25, 1961, Ser. No. 140,365
11 Claims. (Cl. 53—39)

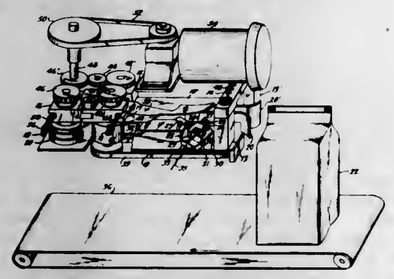
1. In the method of forming a liquid-tight seal at the top of a container made from a flexible blank having a heat-sealable plastic coating on both sides thereof, said container top being formed by folding said blank along score lines and heat sealing overlapping surfaces of the folded blank, the steps of advancing said container with the top substantially open through a heating zone, periodically stopping the advance of said container through said heating zone to provide successive intervals of motion and dwell, directing heat rays onto the top of said container while said container is in said heating zone to heat the plastic coatings of said overlapping surfaces to

be joined to form the top closure of said container to a heat-sealing temperature, and partially shielding said container from said heat rays during said intervals of dwell by providing baffle members located in the path of said heat rays and spaced from each other in the direction of advance of said container, said baffle members deflecting



heat rays directed during said intervals of dwell at selected surfaces of said blank forming a part of the top of said container, the relative durations and numbers of said intervals of motion and dwell being selected so that the plastic coatings of said selected surfaces do not achieve a heat-sealing temperature.

3,200,558
BAG CLOSURE AND SEALER
Samuel T. Adams, New Orleans, and Richard P. Kessler, Metairie, La.; said Kessler and the heirs of said Samuel T. Adams, deceased, assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Sept. 25, 1962, Ser. No. 226,187
3 Claims. (Cl. 53—76)



1. A machine for closing and sealing the tops of partially filled multi-wall paper bags of the pinched-end type which have a freeboard area above the contents, comprising, in combination:

(a) a bag-supporting conveyor upon which the bags in upright position travel edgewise through said machine,

(b) mounting plates spaced apart and defining a frame slot therebetween which is parallel to and somewhat less than the height of a partially filled bag above said conveyor, said mounting plates being biased into parallel position and hingeably separable at their forward ends, where bags enter said frame slot while being carried on said bag-supporting conveyor,

(c) upper conveying belts, each belt being rotatably supported beneath a mounting plate in opposed relationship so as to define cooperatively a hingeably-separable slot beneath said frame slot, said upper conveying belts being adjusted to travel at the same surface speed as the bag-supporting conveyor and being adapted to grasp the sides of a bag in the freeboard area when the bag enters said frame slot, whereby the freeboard area of the bag is flattened, guided, and propelled at the same speed as the filled portion of the bag,

(d) adhesive deposition means for smearingly depositing a strip of adhesive above said conveying belts and from leading edge to trailing edge on one side of the flattened bag,

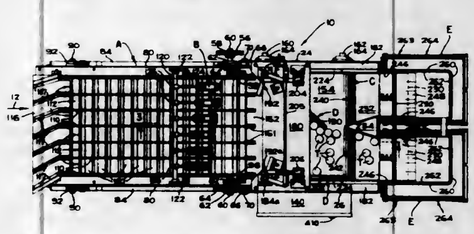
(e) means for accurately sensing the forward edges of a flattened bag, when said forward edges are brought by the bag-supporting conveyor and the upper conveying belts into imminent juxtaposition with the deposition means, comprising a bendable elongated sensing arm which is attached at one end to permit sweeping motion in a plane parallel to the bag-supporting conveyor and which is so positioned, immediately beneath the upper conveying belts athwart the path of travel of said bag, that the unattached end of said sensing arm is contacted by the leading edge of the flattened freeboard area of the upright bag and pivotably deflected thereby,

(f) actuating means which cooperate with the sensing means and control the flow of adhesive from the adhesive deposition means, whereby adhesive is delivered to the flattened surface of the bag along one side thereof at the instant that the leading edge appears in juxtaposition with said adhesive deposition means,

(g) means for folding a multi-wall paper strip at the top of one side of the bag over the other side having a strip of adhesive applied thereto;

(h) Pressure-applying means for compressing the folded-over paper strip against the side of the bag having the adhesive strip applied thereto.

3,200,559
FRUIT HANDLING MACHINE
Francis Curtis, Riverside, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 13, 1961, Ser. No. 123,844
12 Claims. (Cl. 53—78)

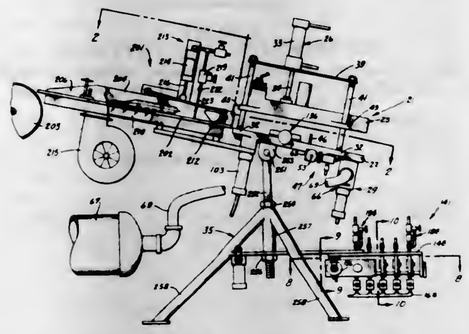


10. A fruit handling machine comprising a continuously driven input conveyor for advancing fruit in parallel lanes at a predetermined speed, means for individually counting the fruit in each lane at a counting station of said input conveyor, means for tallying all of the fruit conveyed through said counting station, a continuously driven fruit transfer conveyor arranged to receive the counted fruit discharged from said input conveyor and convey the fruit at a speed greater than said predetermined speed, fruit diverting means mounted over the conveying flight of said transfer conveyor and controlled by said counting means to channel all the fruit in each counted batch alternately to one side or the other of said transfer conveyor.

3,200,560
MACHINE FOR VACUUM SEALING BAGS
Ralph S. Randall, 3380 20th St., San Francisco, Calif.
Filed Sept. 29, 1960, Ser. No. 59,399
11 Claims. (Cl. 53—86)

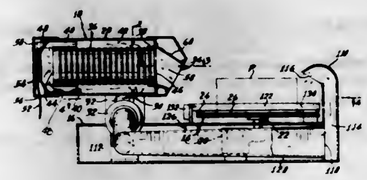
1. A machine for evacuating and sealing airtight bags, comprising a bottom member having an area adapted to receive and support a product encased in an open-ended bag, a cover member mounted for relative movement toward and away from said first member and formed to define a chamber therewith, means on said members for

hermetically sealing said chamber when said members are together, means for moving said members together, means connected to said chamber for evacuating same when said members are together, spaced dewrinkling means carried by each of said members and movable toward each other in a plane intercepting the open end of a bag in said cham-



ber, said dewrinkling means being first engageable with each other outwardly of the opposite side edges of said open end and, upon further movement toward each other, being progressively oppositely inwardly engageable with said open end for smoothly spreading the open end of the bag, and means for sealing the said open end of the bag while the same is so spread.

3,200,561
APPARATUS FOR SHRINKING WRAPPERS OF PACKAGES
Martin Siegel, Roslyn, N.Y., and Seymour Zelnick, Toms River, N.J., assignors to Weldotron Corporation, Newark, N.J., a corporation of New Jersey
Filed Feb. 2, 1962, Ser. No. 170,629
10 Claims. (Cl. 53—184)



1. Apparatus for shrinking heat-shrinkable wrappers of packages, comprising:

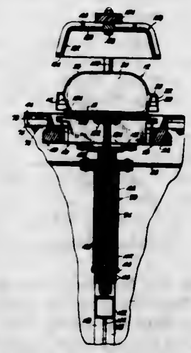
(a) a horizontal rotary support for the package,

(b) means positioned laterally of said rotary support at one side thereof for heating a supply of air,

(c) said heating means having an opening for directing a supply of heated air on said package during the rotation thereof on said support, and

(d) scoop means positioned diametrically opposite said heating means at the other side of said rotary support in the path of flow of said heated air for directing the latter back toward said heating means for reheating said scoop means having an inlet disposed vertically above said rotary support and a downwardly extending passage communicating with said inlet to receive the air for its return flow to the heating means.

3,200,562
APPARATUS FOR ARTICLE PACKAGING
Ralph S. Zoberth, Kansas City, Richard L. Lewis, Independence, and Drexel T. Carlson, Kansas City, Mo., assignors to Gordon Johnson Company, Kansas City, Mo., a corporation of Missouri
Original application Apr. 6, 1959, Ser. No. 804,481, now Patent No. 3,071,906, dated Jan. 8, 1963. Divided and this application Aug. 24, 1962, Ser. No. 219,166
14 Claims. (Cl. 53—184)

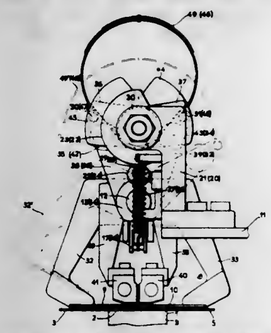


1. Apparatus for sealing the overlapped, abutting marginal portions of a pair of members of thermoplastic, heat-shrinkable material and adapted to receive an article therebetween to present a package, said apparatus including a frame; a heating element on said frame and substantially conforming to the configuration of said marginal portions of the members; a platen shiftably mounted on the frame, disposed to receive the package in supporting relationship thereto and normally spaced from the heating element, the latter being disposed across the path of travel of said marginal portions when the package is supported on the platen, said platen being movable downwardly from a first location above the heating element to a second location permitting said marginal portions of the members to engage the element; and a ram shiftably mounted on the frame, above said platen and movable downwardly from a position sufficiently spaced from said first location of the platen to permit placement of the package therebetween, to a disposition engaging the package and subsequently shifting the latter and thereby the platen to said second location thereof with the marginal portions of the member engaging the heating element.

3,200,563
MACHINE FOR FLAT-SEALING AN END OF A HEAT-SEALABLE LINING OF A BOX OF PARALLELEPIPEDIC SHAPE
Marius Berghgracht, Le Vieux Logis, Place Joyale, Vineuil St. Firmin, Oise, France
Filed July 17, 1964, Ser. No. 383,312
Claims priority, application Luxembourg, July 26, 1963, 44,141
4 Claims. (Cl. 53—373)

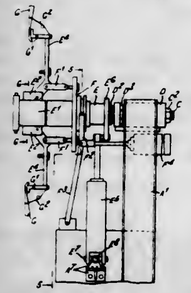
1. A machine for flat-sealing one end of a heat-sealable lining of a parallelepipedic box of cardboard or the like, such end projecting from the box body and being flattened along a central plane of the box, then sealed in this position, by means of sealing members, the machine comprising two flattening members normally disposed outside the lining end, means for introducing the flattening members into the lining end and for separating them from each other along the central plane of the box by forcing them against diametrically opposite places of the lining until the flattening members substantially flatten the lining end, two spaced-apart plates disposed on either side of the lining end and having a length at least equal

to the width of the flattened lining end, means for moving the said plates transversely of the said central plane until the plates positively press between them the flattened lining end along a line extending on the whole width thereof and further away from the end edge of the lining than the flattening members, means for there-



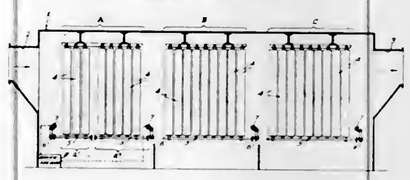
after withdrawing the flattening members from the lining, means for them bringing the sealing members into contact with the flattened lining end and sealing the same outside the said plates and closely adjacent thereto, and means for then removing the sealing members and the plates from the sealed lining end.

3,200,564
DEVICE FOR FOLDING THE ENDS OF CYLINDRICAL WRAPPING
Joseph Henri Alfred Serge Lagesse, Wembley, England, assignor to Tapo Engineering Limited, London, England, a company of Great Britain
Filed Feb. 25, 1963, Ser. No. 260,580
Claims priority, application Great Britain, Feb. 27, 1962, 7,606/62
8 Claims. (Cl. 53—380)



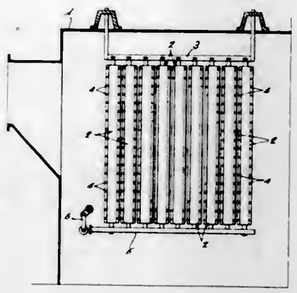
1. In a wrapping machine for enclosing a roll in wrapping material, an end pleating unit operative after the wrapping material has been wrapped into the form of a tube which closely surrounds the roll and projects beyond the ends thereof, such end pleating unit comprising a number of folder plates spaced at angular intervals around a main axis coaxial with the roll, a number of support members to which the folder plates are respectively pivoted, means for simultaneously moving the support members to cause the folder plates to move in an inward direction generally towards the main axis whereby during such inward movement the individual folder plates on contacting the wrapping material will move about their pivots relatively to the support members thereby folding portions of the tubular projecting end of the wrapping material over the end of the roll and will finally take up positions in which they lie flat against the end of the roll with the folded wrapping material interposed between the plates and the roll leaving narrow upstanding pleats of wrapping material between the folded-over portions, and means whereby after completion of such inward movement the assembly of folder plates is rotated in one direction through an angle around the main axis, thereby flattening the pleats of the wrapping material closely against the end of the roll.

3,200,565
ELECTROSTATIC PRECIPITATORS
Stig Gustafsson, Jonkoping, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed July 10, 1962, Ser. No. 208,785
Claims priority, application Sweden, July 12, 1961, 7,225/61
3 Claims. (Cl. 55—112)



1. An electrostatic precipitator comprising in combination: a casing arranged for the horizontal flow of gas therethrough, a plurality of sections of electrodes suspended from their upper ends in said casing, each section including a plurality of rows of vertical elongated generally flat electrodes arranged flat-wise in the direction of gas flow thereover; separate rapping means for each section of electrodes; at least said section which is first traversed by the flow of entering gas being subdivided into two groups; said rapping means for said subdivided section comprising separate end juxtaposed and aligned rapper rods and power rapping means for said rods disposed upstream and downstream respectively of the electrodes of said section; said rapper rods being positioned to engage end-wise when either is rapped and act as mutual recoil stops for each other.

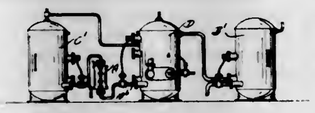
3,200,566
EMISSION ELECTRODE FOR ELECTROSTATIC PRECIPITATORS
Stig Gustafsson, Jonkoping, and Sten Maartmann, Klinten, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed July 11, 1962, Ser. No. 209,182
Claims priority, application Sweden, July 12, 1961, 7,224/61
3 Claims. (Cl. 55—152)



1. An emission electrode for electrostatic precipitators in which a number of vertical plate-like electrodes are arranged in a co-planar row with the planes of the plates

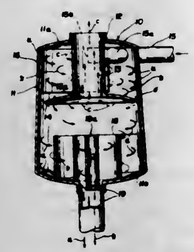
disposed parallel to the flow of gas thereover transversely across the width and edges, said emission electrode comprising a continuous smooth planar web bent at each longitudinal edge to form a vertical stiffening strip having a curved bent portion on at least one side of the plane of the web, and a plurality of vertically spaced, integral, rounded projections on the curved bent portion of each stiffening strip, said projections extending in a direction perpendicular to the plane of said web, each of said projections being pressed outwardly from said curved bent portions and having a substantially hemispherical smooth and unbroken peripheral outline.

3,200,567
SYSTEM FOR THE SONIC TREATMENT OF EMULSIONS AND FOR RESOLVING THE SAME INTO THEIR CONSTITUENT PARTS
Russell Denton May, Tulsa, Okla., assignor, by mesne assignments, to Black Sivalls & Bryson, Inc., Kansas City, Mo., a corporation of Delaware
Filed Sept. 7, 1956, Ser. No. 608,626
4 Claims. (Cl. 55—175)



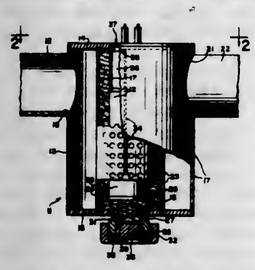
1. Apparatus for the separation of hydrocarbon emulsions comprising a heater for receiving hydrocarbon emulsions, means in the heater for breaking the emulsions to a substantial extent, a filter tank, means connecting the heater tank with the filter tank for flow of oil from the heater tank to the filter tank, means in the filter tank for filtering water from the oil therein, and means connected between the two tanks for treating the products received from the heater tank with ultra-sonic demulsifying vibrations at approximately the cavitation level in the instant volume of oil flowing from the heater tank to the filter tank.

3,200,568
FLASH SEPARATOR
Dalph C. McNeil, 43 Pine St., Brookville, Pa.
Continuation of application Ser. No. 67,813, Nov. 7, 1960. This application Sept. 6, 1963, Ser. No. 307,266
5 Claims. (Cl. 55—191)



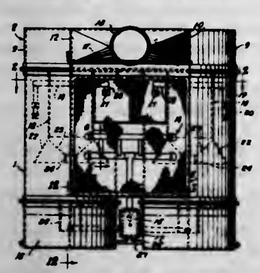
1. In a quietly operating blow-down separator of the character described that processes contaminated blow-down discharge fluid supplied under positive pressure by a boiler or pressure vessel, a circumferentially-rounded enclosing side wall that extends downwardly, generally inwardly-concave top and bottom closure walls defining an internal chamber with and integrally-secured to said enclosing side wall, an inlet pipe extending through a side portion of the enclosing side wall immediately adjacent said top closure wall and in a tangential relation with said enclosing side wall for introducing contaminated blow-down fluid under positive-pressure tangentially into an upper portion of the internal chamber and inducing a centrigugal downward flow of the fluid within the internal chamber, a tubular flash discharge member having a substantially cylindrical wall projecting centrally-downwardly through siad top closure wall along the upper portion of the internal chamber, said top closure wall fully closing-off the upper portion of the internal chamber from said tubular flash discharge member to said side enclosing wall whereby all fluid moving upwardly out of the internal chamber has to pass through said tubular flash discharge member, an inverted dish-shaped disc-like baffle member, located beneath said inlet pipe, centrally-secured to a bottom end of said discharge member and projecting radially-outwardly therefrom into a radially-inwardly spaced relation with respect to the inner periphery of said enclosing side wall and dividing the internal chamber into an upper contaminated-fluid-receiving chamber and a lower expansion and contaminant collecting chamber, said baffle member having a down-turned outer circumferential edge thereabout defining a circumferential flow-restricting aperture with the inner periphery of said enclosing side wall of a vertical extent that corresponds substantially to the thickness of said edge, said cylindrical wall of said discharge member being closed-off and continuous therealong for at least a substantial upwardly-spaced vertical distance from said baffle member and defining an outlet port portion at its lower end that is fully centrally-open from said cylindrical wall to an under face of said baffle member, a vertically-positioned outlet pipe open at its upper end to said lower chamber and extending downwardly-centrally through said bottom closure wall for discharging contaminated portions of the blow-down fluid from said lower chamber, a spiral baffle positioned within said lower chamber and extending vertically-upwardly from said bottom closure wall and being open vertically-upwardly and horizontally-endwise to said lower chamber for receiving residual denser portions of the fluid and conducting them centrally-inwardly into said outlet pipe; said inlet pipe having an inner end portion positioned and adapted in combination with said top closure, said enclosing side wall, the cylindrical wall of said discharge member and said baffle member to direct the contaminated fluid being introduced under positive pressure in a centrifugal-downwardly moving path along said upper chamber with sufficient velocity to separate the fluid into an outer relatively dense portion, into an intermediate portion of intermediate density, and into an inner lower density portion of substantially pure flash; said baffle member and its said outer circumferential edge being positioned and adapted in combination with the cylindrical wall of said discharge member to direct the inner lower density portion of the fluid over its convex upper face, downwardly over its outer circumferential edge, abruptly and acutely-inwardly over its lower concave side face, and upwardly-out through said outlet port portion and said discharge member without flash restriction in movement from said lower chamber into said discharge member; and said outer circumferential edge being positioned and adapted in combination with said enclosing side wall to impart velocity flow to and pass the outer relatively dense and intermediate density portions of the fluid downwardly along and through said restricted aperture into said lower chamber, and said lower chamber as defined by said enclosing side wall, said baffle means and said bottom closure wall being adapted to expand said portions of the fluid therein and lower their pressure and temperature for discharge through said outlet pipe, said cylindrical wall of said discharge member having an inner flow diameter that is greater than the inner flow diameter of said outlet pipe, and said inlet pipe having an inner flow diameter that is smaller than the inner flow diameter of said outlet pipe.

3,200,569
SORPTION GAS AND VAPOR TRAP APPARATUS
William R. Wheeler, Saratoga, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Jan. 31, 1962, Ser. No. 170,001
3 Claims. (Cl. 55—208)



3. A vacuum trap comprising: a cylindrical container made of impervious material having a top wall, a bottom wall and a side wall, said container having gas molecule inlet and outlet openings therein; a hollow, vertical, cylindrical, heat conductive member having a bottom wall spaced above the bottom wall of said container and a side wall extending into said container from the top wall of said container and spaced from the side wall of said container; an apertured cylindrical member obstructing the line of sight between said inlet and outlet openings vertically disposed within said container, spaced from said container side wall and surrounding said heat conductive member; sorbent material disposed between said heat conductive member and said apertured cylindrical member; baffle means extending between said apertured cylindrical member and said container interior side wall for increasing the probability of collision between said gas molecules and said sorbent material; and a body of cooling liquid disposed within said heat conductive member.

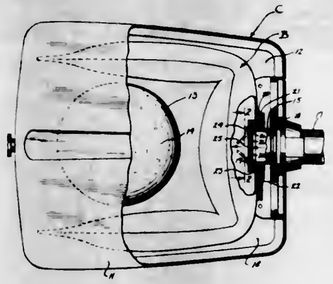
3,200,570
MOISTURE CONTROL UNIT
Sidney M. Pattillo and L. D. France, Lubbock, Tex.; said Pattillo assignor, by mesne assignments, to L. D. France & Co., Inc., a corporation of Texas
Filed Aug. 9, 1962, Ser. No. 215,877
1 Claim. (Cl. 55—227)



Apparatus for controlling the moisture content of a stream of air, whereby the air may be either humidified or dehumidified as necessary to control the moisture content thereof, comprising a housing having an air intake opening, open to the atmosphere, substantially coextensive with one side thereof, and having a screen stretched across said opening, a pair of vertically disposed cylindrical humidifying chambers each having an intake duct communicating with one side thereof adjacent its upper end and arranged tangentially relative thereto, said intake ducts merging adjacent one of their ends and communicating with the side of said housing opposite said air intake opening, said air intake opening being substantially larger than said air intake ducts, whereby said screen is characterized by its large size relative to the rate of flow of air thru it, and said screen being further characterized by its course mesh whereby it is adapted to removed sticks, leaves, and large pieces of trash from air entering the housing while permitting sand, lint, and other foreign matter of smaller particle size to pass thru it, a discharge duct communicating with the tops of said chambers, centrally thereof, and extending across the top of said housing, a water supply tank in the bottom of each of said chambers having float controlled means for maintaining a predetermined water level therein, a cylindrical internal partition of relatively smaller diameter than said chambers in each of said chambers arranged concentrically and coaxially relative thereto, surrounding an opening in the top of said chamber communicating with said discharge duct, and extending downwardly from the top thereof, above the water supply tank, whereby air entering said chambers, respectively, is caused to flow spirally downwardly thru an annulus surrounding the internal partition and then upwardly thru said partition, the cylindrical internal partitions each being flared downwardly and outwardly adjacent its lower end and having a series of circumferentially spaced baffles extending radially inwardly therefrom adjacent its lower end, and the water supply tank having a series of circumferentially spaced, radially extending baffles therein connected at their inner ends to an annular baffle spaced above the bottom of the tank, a series of water spray nozzles in each of said chambers, in the upper portion of the annulus surrounding the internal partition, having means for supplying water thereto from the water supply tank and arranged to discharge water in the path of air entering the chamber, the water spray nozzles being arranged in groups spaced circumferentially relative to each other, said groups each consisting of a plurality of spray nozzles positioned at different elevations each coinciding generally with the elevation of the air intake duct, the water spray nozzles of one group being positioned opposite the intake duct and being arranged to discharge water in a circumferential direction opposite the flow of air entering the chamber and the water spray nozzles of the remaining groups being arranged to discharge water in a circumferential direction corresponding to the flow of air, a valved bypass connection in the top of said housing communicating directly with said discharge duct independently of said chambers, and means in said housing for heating air entering said housing before it is discharged therefrom into said chambers, thru said intake ducts, or alternatively, directly into said discharge duct thru said valved bypass connection.

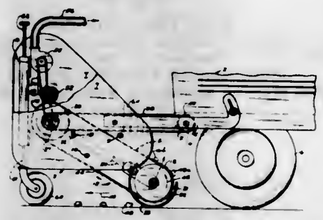
3,200,571
DISPOSABLE FILTER BAG
James C. Shufflebotham, Milwaukee, Wis., assignor of one-half to Shannah Gale Stone, Milwaukee, Wis.
Filed Aug. 30, 1961, Ser. No. 135,018
2 Claims. (Cl. 55—367)

1. A disposable dust bag for vacuum cleaners comprising a body of relatively porous pliable material having an inlet opening of a size and configuration to snugly receive a discharge tube of a vacuum cleaner, exterior and interior reinforcing members secured to the inner and outer surface of one wall of the body around the opening, each reinforcing member having aligned openings of substantially the same size and configuration as the wall opening, a flexible sealing ring carried by the exterior reinforcing member and extending inwardly of the inner edge of the reinforcing member having an opening in alignment with the openings of said reinforcing members but of a substantially smaller diameter than the outer dimensions of the discharge tube for gripping contact with a discharge tube of a vacuum cleaner, and a self-closing valve member secured to the inner reinforcing member and spaced a material distance from the sealing ring, said valve member being formed from a sheet of resilient flexible material, said sheet being slit to provide flexible leaves, whereby upon the placing of a bag on a discharge tube of a vacuum cleaner the walls of said flexible sealing



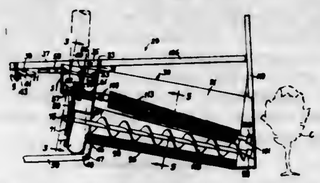
ring will be squeezed between the respective portions of the reinforcing members and the discharge tube the self-closing valve member will be spaced from the inner edge of said discharge tube and not affected thereby so that the valve will be maintained in its normal closed position.

3,200,572
COTTON GLEANER
Dale F. Sweet, 298 E. Glaveston, Chandler, Ariz.
Filed Jan. 8, 1965, Ser. No. 424,412
13 Claims. (Cl. 56— 28)



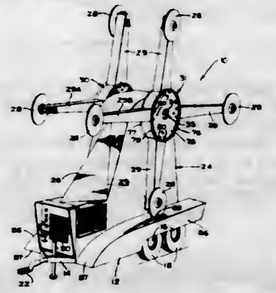
1. A cotton gleaner for removing knocked down cotton from the ground of a cotton field comprising: a body frame having longitudinal side members with rearward extending portions adapted for attachment to the front end of a tractive vehicle having an engine and a power takeoff shaft; a transversely extending gang of parallel endless flat metal gleaner belts each having teeth on their outer surface with sharp points directed in the direction of belt travel, an upper and a lower belt pulley within each endless belt supporting it so that it has downwardly and rearwardly declining parallel upper and lower spaced portions, a stretcher element tending to resiliently force each pair of pulleys apart and to tension the belt which they support, and pivotally support the lower pulley, ground engaging runners on the lower portion of each stretcher element and disposed to support the lower pulley above the ground, a transverse driving shaft on said frame keyed to each of the upper pulleys, a rotary brush rotating in contact with the outer surface of said belts adjacent said upper pulleys to remove cotton from the teeth on said belts, a suction pipe having an open end disposed adjacent said brush to catch and remove cotton from said brush and belts, a blower on said frame having a suction inlet connected to said suction pipe and a discharge pipe connected to said blower adapted to convey cotton to a place of deposit.

3,200,573
COTTON HARVESTERS
Richard P. Brigman, Colt, and Joseph E. Fogg, Forrest City, Ark., assignors to Forrest City Machine Works, Incorporated, Forrest City, Ark., a corporation of Arkansas
Filed May 22, 1963, Ser. No. 282,479
1 Claim. (Cl. 56—35)



A stripping device for attachment to cotton harvester rigs having power and suction means, pivoted lifting arm means and a pivot for attachment of radius rod means; comprising of framework having an upper rear support wall and a lower open front portion for receiving cotton plants for stripping, said wall having two openings therein, rotary cotton stripping brushes extending from the rear support down to the front portion, spaced troughs connected with said openings and containing screw conveyors extending down from the openings in said wall to the front portion for receiving stripped cotton from the brushes and moving it rearwardly to the support, a plenum chamber on said wall having means for effecting a connection with said suction means of the rig, said chamber being characterized by the absence of blower means therein, whereby suction from the harvester rig is in free communication with said openings through the plenum chamber, drive means carried on the rear support for the conveyors and brushes for connection through a universal joint with the power means of the rig, extension means pivoted to said rear support wall including means for making a quick-detachable connection with the pivoted lifting arm means of the rig to form an extended lifting arm, rotatable radius rod means for connecting said support to a rig, said support wall, said radius rod, said rig frame and said extended lifting arm forming a substantially parallel linkage for maintaining the stripping device in substantially parallel positions when adjusted by means of the extended lifting arm to various elevations above the ground.

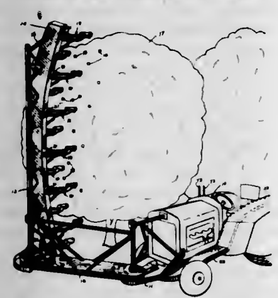
3,200,574
APPARATUS FOR TRIMMING TREES
George R. Meadowcroft, Orlando, Fla., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 20, 1961, Ser. No. 153,555
5 Claims. (Cl. 56—235)



1. A tree hedging machine comprising a chassis adapted for movement in a forward longitudinal direction along the ground between rows of trees, a superstructure

mounted on said chassis, rotatable drive shafts projecting from opposite sides of said superstructure with both a downward inclination and a rearward inclination with respect to said direction, means mounting said drive shafts for adjustable movement toward and away from the longitudinal center plane of said superstructure, first driving means for rotating said drive shafts, a rotor mounted on each drive shaft for rotary movement in planes converging rearwardly and downwardly on each side of said superstructure, each rotor including a plurality of radially extending arms equiannularly spaced, a circular cutting blade mounted for rotation on the end of each arm, and second independent driving means operatively arranged to effect rotation of said blades in the same direction of rotation as said rotor.

3,200,575
AUTOMATIC FRUIT PICKING MACHINE
James W. Hurst, 5572 Berkeley Road, Santa Barbara, Calif.
Filed May 11, 1964, Ser. No. 366,464
13 Claims. (Cl. 56—328)



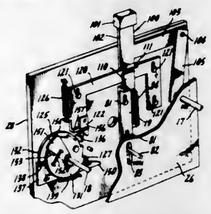
10. A picking head for a picking arm having power means to move the arm comprising:
(a) a tubular member having an inner end and an outer end;
(b) a picking mechanism disposed on the outer end of the tubular member;
(c) a photo-responsive device disposed in the inner end and receiving light from the outer end of the tube;
(d) means disposed in the tubular member for resolving the light from the outer end to define an optical axis generally parallel to the tube and to impinge light from a fruit onto said photo-responsive device;
(e) and means for sensitizing said photo-responsive mechanism to light that is off center from the optical axis, so that control signals may be sent to the power means for the picking arm.

3,200,576
BULKY CONTINUOUS FILAMENT YARN OF DISTINCT PLIES HAVING DIFFERENT SHRINKAGE CHARACTERISTICS
Sidney B. Maerov and Eugene B. McCord, Kinston, N.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 12, 1963, Ser. No. 294,638
6 Claims. (Cl. 57—140)



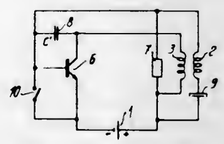
1. A composite plied yarn of linear condensation polymer continuous filaments varying in residual shrinkage, the yarn being characterized by distinct plies of at least two species differing in residual shrinkage by from 2% to 20% and interlaced together at intervals to a split count of less than 12.

3,200,577
SINGLE CONTROL FOR FULL FEATURE TIMER
Thomas F. Ring, Ralph C. Robinson, and Raymond A. Keane, all of Athens, Ga., assignors to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 7, 1961, Ser. No. 150,777
7 Claims. (Cl. 58—21.155)



7. A timer comprising, in combination, a frame, a timing train mounted in said frame, a dial face mounted on said frame, time indicating hands coupled to said timing train and mounted for movement over said dial face, a positionable function shaft on said frame, sleep mechanism driven by said timing train including a rotatable sleep shaft mounted in said frame, drowse mechanism driven by said timing train and including a shiftable drowse actuator mounted in said frame, and a single manually positionable operator on said frame for selectably manipulating said shafts and said actuator.

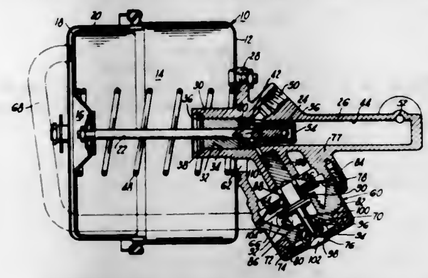
3,200,578
ELECTRIC TIMEPIECE
René Besson, Les Loges, Switzerland, assignor to Ebauches S.A., Neuchatel, Switzerland, a Swiss firm
Filed Apr. 28, 1964, Ser. No. 363,132
Claims priority, application Switzerland, May 7, 1963, 5,732/63
2 Claims. (Cl. 58—23)



1. In the electronic circuit of an electric timepiece including a regulating member, the combination of: a source of current, a transistor inclusive of an emitter and a base polarized by said source of current, and a switch connected between the base and emitter of said transistor for the short circuiting of the base and emitter in the switch-closed position under rest current conditions of less-than-normal current consumption while the regulating member is stopped.

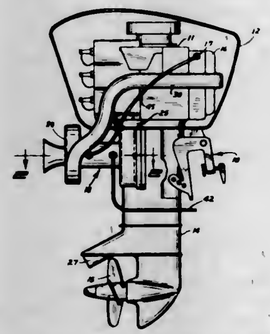
3,200,579
FLUID PRESSURE SERVOMOTORS
René Alphonse Louis Thirion, Paris, France, assignor to Société Anonyme D.B.A., Paris, France, a company of France
Filed Mar. 1, 1963, Ser. No. 262,111
Claims priority, application France, Mar. 30, 1962, 892,805
5 Claims. (Cl. 60—10.5)

1. In a fluid pressure servomotor having a housing divided into two compartments by a power piston, a control valve for controlling the operation of the servomotor, said control valve comprising a casing, a first chamber in said casing connected to one of the compartments and to a first source of fluid pressure, a second chamber connected to the other of the compartments, said first and second chambers being separated by a fluid pressure responsive member operatively connected to a valve actuating member, a third chamber connected to a second source of fluid pressure delivering fluid at a pressure differing from that of the first source and a movable valve assembly formed of a first valve member controlling the



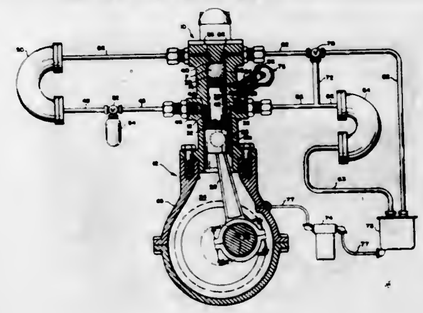
communication between said second and third chambers and having a tail portion which is embedded in a block of rubber or rubber-like material forming a second valve member controlling the communication between said second and third chambers, said block being formed integral with a flexible annular wall which separates said third chamber from a fourth chamber communicating with said first chamber the areas bounded by the seats of said first and second valve members and the effective area of said flexible wall being equal.

3,200,580
BEARING LUBRICATION SYSTEM
Gordon H. Millar, Palos Verdes Estates, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Aug. 8, 1963, Ser. No. 300,831
2 Claims. (Cl. 60—13)



1. In an outboard motor adapted to burn a fuel-oil mix introduced to the motor from a source through a carburetor on the motor, a motor accessory mounted on the motor and isolated from the mix flow therethrough, said accessory including at least one bearing journaling a rotary element for rotation therein, a housing enclosing said bearing, a first conduit providing communication between the fuel-oil mix source and the housing, a fuel pump in said first conduit, a second conduit providing communication between the housing and the carburetor whereby all of the mix will pass through said housing to lubricate the bearing prior to introduction to the motor and a third conduit providing a closed connection between the carburetor and source to carry excess mix from the carburetor back to the source.

3,200,581
METHOD, SYSTEM AND APPARATUS FOR STARTING A FLUID ENGINE
Stanley A. Welland, Akron, Ohio, assignor to Cleveland Pneumatic Industries Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 10, 1962, Ser. No. 222,729
10 Claims. (Cl. 60—24)

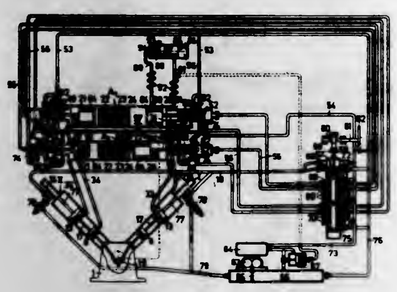


3. In a system having a working fluid traversing a thermodynamic cycle of compression, heating, expansion and cooling stages,
a fluid engine provided with a working fluid compression chamber and a working fluid expansion chamber,
conduit means for connecting the chambers of the engine together,
heating means associated with the conduit means for heating such working fluid,
means for controlling the operation and speed of the engine by variably bypassing the working fluid by the cooling stage of the system,
means for varying the volume of the compression chamber of the engine to compensate for temperature variations and different working fluids, and
apparatus for re-starting the engine after shut down, said apparatus comprising,
an arrangement connected to the conduit means at a location therealong which is between the compression chamber of the engine and the heating means for receiving and storing a quantity of compressed working fluid while the engine is running and for releasing the quantity of stored compressed working fluid after the engine has been stopped to re-start the engine.

3,200,582
HOT-GAS RECIPROCATING MACHINE
Albert August Dros, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 4, 1963, Ser. No. 320,982
Claims priority, application Netherlands, Nov. 26, 1962, 285,957
9 Claims. (Cl. 60—24)

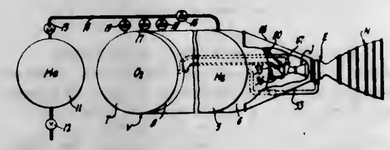
1. A hot-gas reciprocating apparatus comprising at least two pairs of units in each of which a working medium performs a thermodynamic cycle, each unit having a compression space of variable volume and an expansion space of variable volume, means connecting said compression space with said expansion space, said connecting means including a cooler, regenerator and a heat exchanger, said spaces having relatively different mean temperatures, said working medium adapted to flow alternately in said spaces and through said cooler, regenera-

tor and heat exchanger, a cylinder housing piston-like elements, said piston-like elements being adapted to move with a relative phase difference in order to vary the volumes of said compression and expansion spaces, a driving gear, said piston-like elements being coupled to said driving gear, at least two pump units, each of said pump units comprising two closed, fluid-filled cylinders, a pair of double-acting pistons being a compression piston and an expansion piston adapted to move in said fluid-filled cylinders whereas in the first pair of units each of the spaces positioned on the side of the associated expansion piston remote from said expansion space communicates with one of the spaces on either side of one of



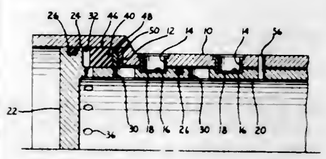
the pistons of the first pump unit, and each of the spaces positioned on the side of the associated compression piston remote from said compression space communicates with one of the spaces on either side of one of the pistons of the second pump unit, and in that of the second pair of units in which the thermo-dynamic cycle is performed each of the spaces being positioned on the side of the associated expansion piston remote from said expansion space communicates with one of the spaces on either side of the other piston of the second pump unit, and each of the spaces positioned on the side of the associated compression piston remote from said compression space communicates with one of the spaces on either side of the other piston of said first pump unit.

3,200,583
ROCKET PROPULSION APPARATUS
Albert J. Sobey and Cyril M. Hawkins, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,626
6 Claims. (Cl. 60—35.6)



1. Rocket propulsion apparatus comprising, in combination, first, second, third, and fourth propellant tanks, a rocket engine having a combustion chamber and a propulsion nozzle, a jet pump, the jet pump including a diverging mixing section extending into the rocket combustion chamber, means pressurizing the first and third tanks to a pressure higher than that of the rocket combustion chamber, means pressurizing the second and fourth tanks to a pressure susbtantially lower than that of the rocket combustion chamber, a combustion gas generator providing motive fluid for the jet pump, means connecting the first and third tanks to the gas generator for liberation of energy therein, means connecting the second and fourth tanks to the intake of the jet pump so that the jet pump pressurizes, mixes and ignites the propellants therefrom and delivers the propellants therefrom through the mixing section into the rocket combustion chamber, the mixing section being adapted to sustain a shock wave therein furthering mixing of the propellants and completion of the reaction between the propellants.

3,200,584
SHEAR SLIDE CUSHION
William H. Mitchell, Randolph Township, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed June 26, 1961, Ser. No. 123,923
2 Claims. (Cl. 60—35.6)

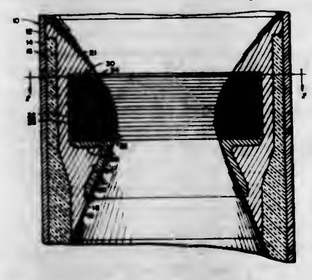


1. A cushioning device for a rocket engine having a combustion chamber and a shear slide movable therewithin from an initial to a final position only comprising, in combination, a first shoulder formed on the wall of the combustion chamber, a second shoulder formed on the shear slide and being spaced from said first shoulder in the initial position and in substantial but not actual contact therewith in the final position, the wall of the combustion chamber defining a cushioning chamber with the slide and said shoulders, a plurality of orifices formed in said slide adjacent said second shoulder and communicating with said cushioning chamber, and a composite cushion having a plurality of elements positioned in said cushioning chamber to simultaneously absorb the shock of and prevent actual contact of said second shoulder with said first shoulder on movement of the slide to final position, one of said elements comprising a plastic expellable through said orifices during said movement and two other of said elements being of materials of low shock transmissibility characteristics, one of said materials being lead and the other being interposed between said plastic and said lead to seal the orifices to prevent expulsion therethrough of said lead.

3,200,585
HIGH TEMPERATURE GAS NOZZLE FOR ROCKET MOTOR
Francis J. Climent, Sacramento, and Edwin M. Corbin, Pleasanton, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed May 10, 1962, Ser. No. 195,016
14 Claims. (Cl. 60—35.6)

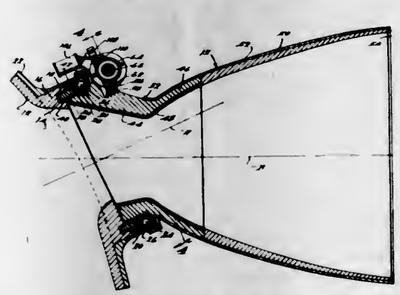
12. A high temperature gas nozzle of the class described comprising an external housing, a heat absorbing material mounted in said housing to serve as a heat sink, an insert mounted in said housing in fixed relation to said heat sink, said insert comprising a plurality of washers made of a high temperature erosion-resistant material, said washers stacked together to form a tubular laminate with the inner surface of the tubular laminate adapted to face the hot gas stream in the nozzle and shaped to define a nozzle throat, said washers being formed from different materials alternately placed, each washer in the tubular laminate

shaped so when heat from the hot gas stream is applied to the insert, the washers can individually thermally respond to the heat without the introduction of significant



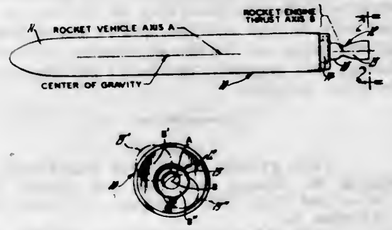
thermal stresses in the washers, while the structural integrity of the tubular laminate is not disturbed by the thermal changes in the size of the washers.

3,200,586
NOZZLE ADJUSTING MECHANISM
Dale S. Ernst, Belleville, Md., assignor to Kelsey-Hayes Company, Detroit, Mich., a corporation of Delaware
Filed June 5, 1961, Ser. No. 114,710
1 Claim. (Cl. 60—35.55)



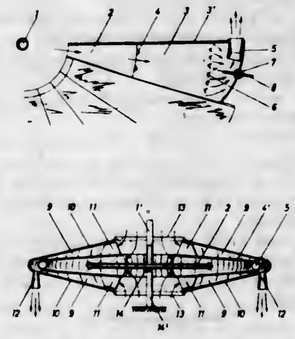
In a propulsively driven vehicle having an angularly adjustable discharge nozzle, collar means for rotatably securing said nozzle to the vehicle, said collar means including anti-friction means annularly disposed about a portion of said nozzle for rotatably holding said nozzle and including seal means peripherally disposed about a portion of said nozzle for preventing the escape of gases between said collar means and said nozzle, a shaft mounted on said collar means adjacent said nozzle, a piston on said shaft, a cylinder enclosing said piston and shiftable on said shaft under the influence of fluid power, said cylinder having opposite end walls having openings through which said shaft extends for supporting and guiding said cylinder, means for admitting fluid into said cylinder on opposite sides of said piston, angularly driven sensing means for continuously sensing the angular position of said shaft and for providing a signal having a magnitude varying in accordance with variations in the angular position of said nozzle whereby the angular position of said nozzle can be controlled in accordance with said signal, a pinion drivably connected to said sensing means, a pinion segment on said nozzle, and rack means on said cylinder engageable with said pinion and pinion segment for producing angular movement of said nozzle and said sensing means upon shifting movement of said cylinder on said shaft, said rack means comprising a first gear rack mounted on said piston and engageable with said pinion segment with one gear ratio and a second gear rack mounted on said piston and engageable with said pinion with a different gear ratio, said sensing means comprising a resistance element actuable for varying said magnitude of said signal.

3,200,587
ROCKET VEHICLE ATTITUDE CONTROL
William Joseph Telson, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 15, 1961, Ser. No. 138,481
5 Claims. (Cl. 60—35.55)



1. In a rocket vehicle of the type comprising a body including a rocket engine and fuel supply, said engine having a nozzle defining a thrust axis for said vehicle, said body having a central axis locating the center of gravity of said body, the improvement comprising an attitude control for said vehicle comprising motored means for movably positioning said nozzle on said body from a position where said nozzle and body axes are coincidental to various positions where said nozzle axis is laterally displaced in parallel relation from said body axis.

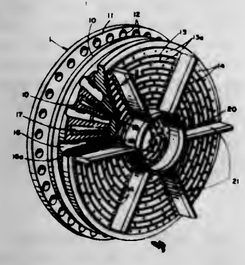
3,200,588
JET REACTION MOTOR
Friedrich C. Math, 6079 Buchschlag, Pirschweg, Germany
Filed Feb. 26, 1963, Ser. No. 262,815
8 Claims. (Cl. 60—39.35)



1. In a jet reaction motor, in combination, a rotor comprising a hollow center disc; fuel supply means communicating with the interior of said center disc at a central region thereof; a plurality of fuel spray nozzles arranged angularly spaced from each other along the periphery of said center disc and communicating with the interior thereof; a housing surrounding said center disc spaced therefrom, said housing having a top wall and a bottom wall each formed with a central air inlet opening and a peripheral wall; a plurality of partitions extending angularly spaced from each other in radial direction from said air inlet openings to said peripheral wall of said housing and between said top and bottom walls

thereof so as to define between themselves, the inner surface of said housing and the outer surface of said center disc a plurality of compression and combustion chambers communicating at the inner ends thereof with said air inlet openings; ignition means in each of said chambers in the space between the periphery of said center disc and the peripheral wall of said housing; and a tangential nozzle for each chamber fixed to said peripheral wall of said housing and communicating at the inner end thereof with the interior of the respective chamber and at the outer end thereof with the surrounding atmosphere, whereby during rotation of said rotor air entering through said inlet openings into said chambers will be compressed therein, mixed with the fuel ejected in atomized form through said fuel nozzles and ignited by said ignition means so that the combustion gases will leave through said tangential nozzles to provide a rotational thrust for said rotor.

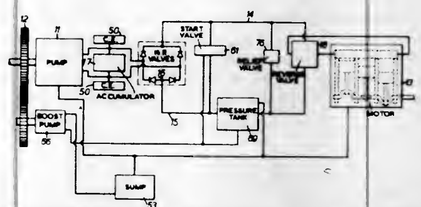
3,200,589
TWO STAGE BAFFLED INJECTOR
William W. Mower, Calabasas, and Dwight I. Baker, Woodland Hills, Calif., assignors to North American Aviation, Inc.
Filed Nov. 3, 1961, Ser. No. 150,085
6 Claims. (Cl. 60—39.46)



1. A combustion device injector comprising
(1) a body portion including
(a) a face on one side thereof adapted to be exposed to a combustion chamber,
(b) passage means in said body for accepting liquid propellant,
(c) orifice means leading from said passage means to said face, and
(2) a plurality of baffle elements attached to and extending from and across at least a portion of said face dividing said face into a series of compartments to prevent combustion instability transverse to said face,
(a) said baffle elements including orifice means therein interconnected with said passage means and exiting from extremities of said baffle elements.

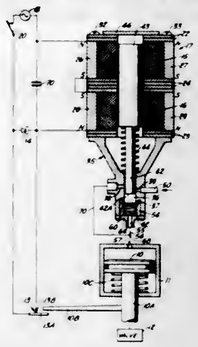
3,200,590
TRANSMISSION MECHANISM
Frederick Arthur Summerlin, 58 Townsend Lane, Harpenden, England
Filed Jan. 22, 1964, Ser. No. 339,377
Claims priority, application Great Britain, Jan. 23, 1963, 2,934/63; Mar. 4, 1963, 8,572/63; Mar. 18, 1963, 10,682/63; May 16, 1963, 19,573/63
16 Claims. (Cl. 60—51)

1. A hydraulic power transmission mechanism comprising a positive-displacement pump having a pumping chamber, means for varying the volume of the chamber cyclically, and means for driving said pump, a hydraulic motor for driving a load, inlet and delivery fluid lines between the pump and the motor, a pressurised accumulator for hydraulic fluid connected to the pump, and a non-return value arrangement connected between the



pump and the fluid lines downstream of the accumulator from the pump for insuring fluid flow in the lines only in a direction from said pump toward said hydraulic motor.

3,200,591
POLARIZED SOLENOID ACTUATING SYSTEM
William A. Ray, North Hollywood, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Sept. 30, 1963, Ser. No. 312,676
20 Claims. (Cl. 60—52)

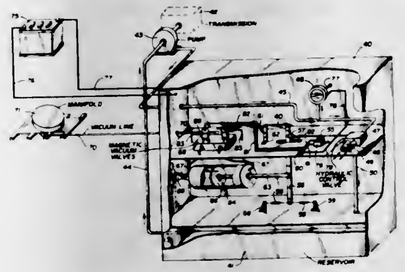


1. In a system of the character described, a first fluid cylinder; a first piston in said cylinder; a second fluid cylinder; a second piston in said second cylinder; check valve means in said first cylinder opened by pressure developed in said first cylinder by movement of said first piston therein; said check valve means having its outlet in communication with said second cylinder; a pair of radially extending and longitudinally spaced ports in said first cylinder; one of said ports being in communication with said second cylinder; the other of said ports being in communication with a fluid source; contact means, means controlled by the position of said second piston for actuating said contact means, electromagnetic means controlled by said contact means for producing movement of said first piston with respect to said ports; and a utilization means connected to said second piston.

3,200,592
HYDRAULIC POWER SYSTEM
Joe B. Nix, 440 Scranton St., Pueblo, Colo.
Filed Mar. 12, 1964, Ser. No. 351,389
10 Claims. (Cl. 60—52)

1. A hydraulic power system comprising a control unit and a portable power unit,
said control unit comprising
(a) a housing,

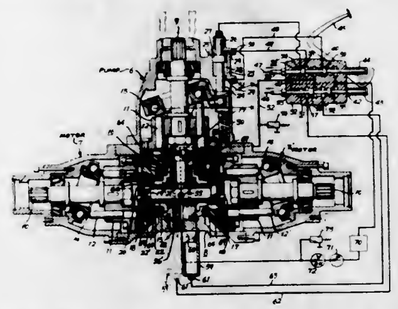
(b) a reservoir in the housing containing a hydraulic supply,
(c) hydraulic feed and pressure lines communicating with each other and with the reservoir,
(d) a hydraulic pump connected in said lines,
(e) a hydraulic control valve connected to the pressure line in the housing and provided with bi-directional hose connections,
(f) mechanical and electrical means in the housing for actuating the hydraulic control valve to connect a selected one of said hose connections with said pump and the other hose connection with said reservoir,
(g) a source of electrical current,
(h) a positive lead connected to said source,
(i) a pair of wires electrically connected to the positive lead and to the means for actuating the hydraulic control valve, and
(j) a plug connector connected to the ends of said lead and pair of wires in the control housing,
said portable power unit comprising



(k) a hydraulic motor,
(l) mechanism driven by the motor,
(m) a pair of hydraulic lines having ends communicating with the hydraulic motor and opposite ends arranged for quick detachable connection to the bi-directional hose connections in the control unit,
(n) a direction selector switch on the portable unit,
(o) an on-off switch on said portable unit,
(p) electrical wires connected to said switches, and
(q) a plug on the free ends of said wires for detachable connection to the plug connector in the control unit housing,
whereby said portable power unit hydraulically operates a tool located at varying distances from the control unit and source of hydraulic supply.

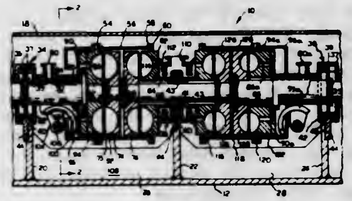
3,200,593
HYDROSTATIC TRANSMISSION
Yoshikazu Kuze, 64 Chidori-cho, Chofu, Ota-ku, Tokyo, Japan
Filed May 25, 1962, Ser. No. 197,687
Claims priority, application Japan, June 6, 1961, 36/20,041, 36/20,042
6 Claims. (Cl. 60—53)

5. An hydraulic running transmission device comprising a pair of oil motors having output shafts aligned on a straight line and arranged symmetrically in opposition, a variable displacement oil pump having an input shaft connected transversely to said output shafts, said pump being in fluid communication with said motors through a T type oil passage member, a pump valve plate, oil passages included in said oil motors and arranged in equilibrium condition; and an oil passage connecting means comprising: a valve plate for the oil pump and a valve plate for each of the oil motors, a central passage in the T-type member in communication with a central opening in an oil supply manifold, respective ones of said valve plates being mounted about respective ones of said central openings, said passage connecting means communicating a suction side of the oil pump with a



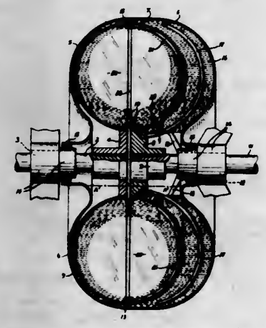
discharge side of the oil motors, and wherein said T-type member includes a plurality of holes in its outer periphery, said holes communicating with a chamber formed between an inner surface of said T-type member and an outer surface of said oil supply manifold, the exhaust side of said pump communicating with the suction side of said motors through said holes and said chamber.

3,200,594
FLUID COUPLING
Eugene R. Braun, Royal Oak, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 5, 1962, Ser. No. 228,700
8 Claims. (Cl. 60—54)



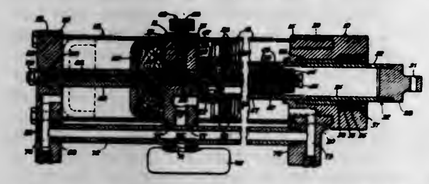
1. A fluid coupling comprising fixed support structure including first, second and third aligned stationary bearing assemblies; an input shaft journaled in the first bearing assembly; a first vaned impeller carried on said input shaft; an annular casing secured to the first impeller and extending axially therefrom; a second vaned impeller secured to the casing in facing relation to the first impeller; a sleeve member secured to said second impeller and journaled within the second bearing assembly; an output shaft journaled within the third bearing assembly and extending through said sleeve member for rotational support therewithin; a first vaned runner secured to said output shaft in juxtaposed relation to the first impeller; a second vaned runner secured to the output shaft in juxtaposed relation to the second impeller; a third vaned impeller carried by the sleeve member; a second annular casing carried by the third impeller; a fourth vaned impeller secured to the second annular casing in facing relation to the third impeller; a third vaned runner secured to the output shaft in juxtaposed relation to the third impeller; and a fourth vaned runner secured to the output shaft in juxtaposed relation to the fourth impeller.

3,200,595
TORQUE CONTROLS FOR FLUID COUPLINGS
John E. Becker, Darlington Township, Durham County, Ontario, Canada, assignor to Eclipse Consultants Limited, Oshawa, Ontario, Canada
Filed Mar. 21, 1963, Ser. No. 266,871
6 Claims. (Cl. 60—54)



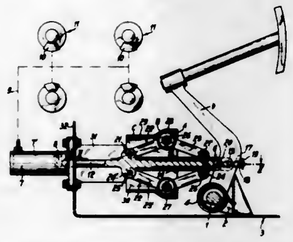
1. In a fluid coupling comprising a vaned impeller shell rotatable by a prime mover, a vaned turbine shell having the same axis of rotation as the impeller shell and rotatable by the impeller shell, the shells encompassing a fluid containing working chamber wherein rotation of the impeller shell impels the fluid in the chamber in a vortex path; means for automatically withdrawing a proportion of the fluid volume from the working chamber for the purpose of reducing torque load upon the prime mover in proportion to load upon the turbine shell and comprising a fluid reservoir rotatable about the axis of the impeller and turbine shells and rotated by and in unison with one of the shells, an open ended fluid circulation tube for ejection of fluid from the working chamber into the reservoir, the tube being contained within and extending radially of the working chamber and rotating in unison with the turbine shell, one open end of the tube being in the radially-outermost portion of the chamber and directed toward said impeller shell and into the fluid vortex in the chamber for reception of fluid flow therefrom under conditions wherein momentum of the vortex fluid flow is greater than outward centrifugal fluid thrust in the rotating tube, a fluid scoop pipe contained within a portion of the reservoir and communicating with working chamber for return of fluid from the reservoir to the working chamber, and means holding said scoop pipe stationary.

3,200,596
CYLINDER AND PISTON ARRANGEMENT
Raymond G. Olson, Niles, Ill., and Howard W. Roufeldt, Kalamazoo, Mich., assignors to Power Control Products, Inc., a corporation of Illinois
Filed Apr. 30, 1962, Ser. No. 190,884
8 Claims. (Cl. 60—54.5)



1. In an air operated hydraulically controlled air piston and cylinder arrangement, an elongated air cylinder, an air piston and rod slidably carried in said cylinder for reciprocating movement therein, said air piston rod being tubular, hydraulic control means carried through the head end of said cylinder and extending through said air piston and into said air piston rod for applying hydraulic control forces on said air piston rod to check the speed of movement of said air piston rod in one direction and to augment the directly applied air pressure on said air piston and rod in the other direction, and said hydraulic control means comprising a second cylinder carried on the head end of the first cylinder, a hydraulic piston slidably carried in said second cylinder, hydraulic circuit means connecting said second cylinder into said air piston rod, and air circuit means for applying air pressure to said hydraulic piston in said second cylinder to augment said directly applied air pressure on said air piston and rod in said other direction.

3,200,597
BRAKE SYSTEM
Erich Stotz, Rommelshausen, Konstrukteur, Germany, assignor to Firma Dr. Ing. h.c. F. Porsche K.G., Stuttgart-Zuffenhausen, Germany
Filed Oct. 15, 1964, Ser. No. 404,008
Claims priority, application Germany, Oct. 29, 1963, P 32,870
5 Claims. (Cl. 60—54.6)



1. An actuating mechanism with variable transmission ratio for hydraulically actuated disk brakes of vehicles in which the friction linings are held with respect to the brake disks with a venting play, comprising:

a brake actuating member,

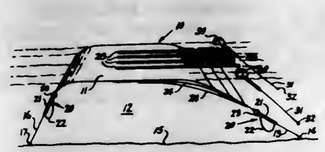
master brake cylinder means including piston means, and connecting means operatively connecting said actuating member with said master brake cylinder means including knee-joint-like lever means, cam track means, and means guiding said lever means at said cam track means in such a manner as to effect at least over a part of the actuating path of the actuating member an increase in the piston stroke of the master brake cylinder means,

said knee-joint-like lever means each including two mutually coordinated joint-rods, said piston means including a two-partite piston rod, means pivotally connecting one end of said joint-rods at one part of said two-partite piston rod, and further means pivotally connecting with each other the other end of said joint-rods.

3,200,598
WAVE DAMPER DEVICE
John C. Krepak, 315 Sklar Bldg., Shreveport, La.
Filed Oct. 19, 1961, Ser. No. 146,103
4 Claims. (Cl. 61—5)

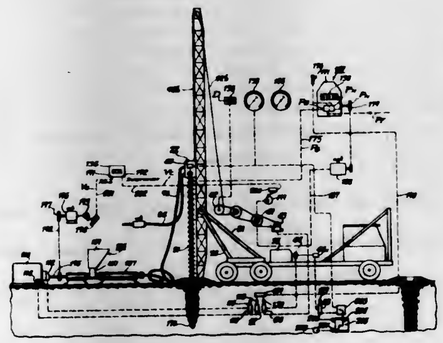
1. A wave damper for a body of water comprising a first buoyant impervious sheet on the surface of the water, a plurality of secondary impervious buoyant sheets disposed in underlying relation to said first buoyant sheet, cable means anchoring opposed submerged elongated edge portions of said first sheet to the bottom of the body of water, the remaining area of said first sheet floating on the surface of the water, opposed elongated edge portions of said secondary sheets being submerged and

secured below the surface of the water, the remaining area of said secondary sheets extending under said cable means and floating near the surface of the water under said first sheet, said secondary sheets including a plurality



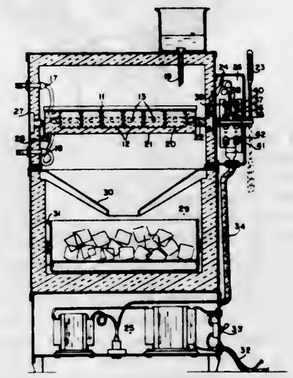
of elongated parallel spaced members disposed horizontally over said first sheet, supporting means carrying one end of each elongated member, the other end of each elongated member being free and in contact with said first sheet.

3,200,599
METHOD FOR FORMING PILES IN SITU
Lindsey J. Phares, Smoke Rise, Butler, and Harold M. McCall, Fair Lawn, N.J., Richard K. Snow, St. Petersburg, Fla., and Ernst W. Spanenbake, Smoke Rise, Butler, N.J., assignors to Raymond International Inc., New York, N.Y., a corporation of New Jersey
Filed Dec. 23, 1960, Ser. No. 77,973
4 Claims. (Cl. 61—53.64)



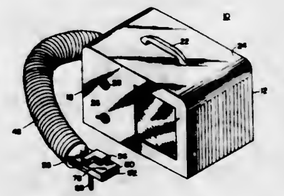
1. The method for forming piles in the earth which consists in drilling a hole in the earth by turning an auger type drill having flights and sinking the lower end thereof to a desired depth below the surface of the earth, thereafter progressively withdrawing the drill from the hole, together with the earth in its flights, by applying a lifting force to the drill thereby forming beneath the drill a cavity of a volume which progressively increases as the drill is withdrawn, forcing a flowable pile-forming substance into the cavity resulting beneath the upwardly moving lower end to progressively fill said cavity and simultaneously measuring the respective flow volume rate of the substance being provided to the lower end of the drill, further simultaneously and continuously measuring the depth of said end of the drill below the surface while measuring the respective pressure of the flowable substance at the particular level of said measured depth, and based on the respective measured depth, varying said flow volume rate of said substance until the measured pressure changes to substantially match that of a pre-selected pressure as demanded for said respective measured depth on a pressure gradient predetermined for successive levels of depth measured below the surface of the earth, and removing said drill from said hole and leaving said flowable substance to be hardened in the cavity and provide a solid load-bearing pile.

3,200,600
THERMOELECTRIC ICE-FREEZER
Thore M. Elfving, 433 Fairfax Ave., San Mateo, Calif.
Filed July 1, 1964, Ser. No. 379,692
7 Claims. (Cl. 62—3)



1. A thermoelectric heat pump assembly comprising a plurality of bodies of semiconductive material of opposite conductivity types, hot and cold junction bridges connected between bodies of opposite conductivity type, said cold junction bridges being in the form of metal containers for receiving a liquid to be cooled with opposite walls of said cold junction bridges connected directly to the bodies of semiconductive material.

3,200,601
HEAT EXCHANGER
Gordon S. Bird, Jr., Brighton, Mass., assignor, by mesne assignments, to Sanbern Mortgage and Finance Co., Boston, Mass.
Filed Oct. 25, 1962, Ser. No. 233,074
1 Claim. (Cl. 62—3)

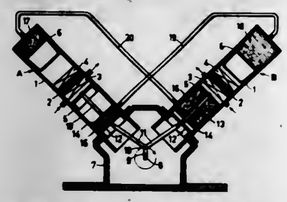


A refrigerating attachment for microtomes, comprising in combination, an operational head, a thermo couple assembly having hot and cold junctions, the cold junction being mounted in heat exchange relationship with the bottom of the operational head, a heat sink consisting of an air heat transfer sinuous fin means adjacent to and in thermal exchange with the hot junction, a mounting jig secured to the under side of the heat sink, a cabinet containing a central power supply and air induction means, said cabinet remotely disposed from the operational head, a flexible duct means connecting the heat sink to the cabinet to maintain an air flow through said heat sink.

3,200,602
HOT-GAS RECIPROCATING MACHINE

Albert August Dros, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 1, 1963, Ser. No. 299,347
Claims priority, application Netherlands, Aug. 7, 1962, 281,835
11 Claims. (Cl. 62—6)

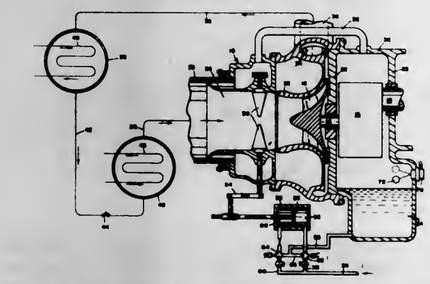


1. A hot-gas reciprocating apparatus comprising at least one cylinder, at least two piston-like bodies mounted for reciprocating movement with a predetermined phase difference in said cylinder forming in the latter at least one compression space and at least one expansion space, a medium in said compression space and said expansion space, a closed space adjacent to each piston-like body, a transferable fluid in said closed spaces, said compression and expansion spaces upon operation of said apparatus having relatively different mean temperatures, means interconnecting said compression and expansion spaces including a regenerator through which said medium traverses, said piston-like bodies reciprocating with said phase difference in order to vary the volume of the expansion space and the compression space, a driving gear coupled to one of said piston-like bodies, said piston-like bodies being connected by ducts enclosing fluid columns from said closed spaces moving in said ducts so that power can be transferred by said fluid columns from said driving gear to at least one of the associated piston-like bodies and vice versa.

3,200,603
LUBRICANT CONTROL MEANS FOR REFRIGERATION APPARATUS

James F. Wake, Syracuse, and John Vervaet, La Fayette, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Nov. 15, 1963, Ser. No. 324,029
10 Claims. (Cl. 62—84)

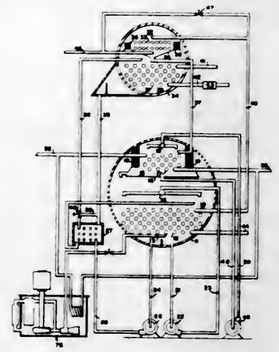


1. In the operation of a refrigeration machine including an evaporator, a refrigerant gas compressor having a lubrication sump for accommodating lubricant for supply to the compressor, wherein the lubricant in the sump includes a portion of the refrigerant charge adsorbed therein, the method of preventing loss of lubricant through entrainment by vaporization of the adsorbed refrigerant which comprises the steps of withdrawing gaseous refrigerant from the evaporator in accordance with the refrigeration demand on the machine and varying the withdrawal to regulate the pressure in the compressor pump independently of the refrigeration demand.

3,200,604
CORROSION INHIBITION

Edward M. Greeley, Syracuse, and Randolph N. Stenerson, De Witt, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Jan. 29, 1962, Ser. No. 169,508
13 Claims. (Cl. 62—85)

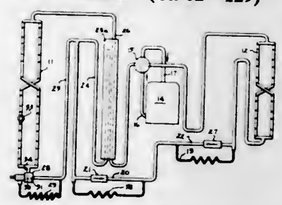


1. An absorption refrigeration machine comprising an absorber, a generator, a condenser and an evaporator, an absorbent solution in said machine, at least a portion of said machine in contact with said solution being made of a metal subject to corrosion, means to pass said absorbent solution through said machine into contact with said metal, said absorbent solution including a hygroscopic salt of lithium, lithium hydroxide, and a corrosion inhibitor comprising an antimonial material.

3,200,605
REFRIGERATION SYSTEM INCLUDING CHARGE CHECKING MEANS

Herbert M. Brody, Tyler, Tex., assignor to General Electric Company, a corporation of New York

Filed July 6, 1964, Ser. No. 381,612
5 Claims. (Cl. 62—129)

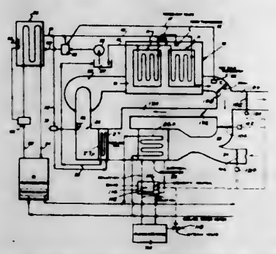


1. In a refrigeration system including a closed refrigerant circuit comprising a compressor, first component for receiving and condensing high pressure refrigerant from the compressor, a second component operating as an evaporator, and means for normally controlling flow of refrigerant from said first component to said second component; means for operating said system on a charge checking cycle including means for substantially restricting the flow of refrigerant from said first component to said second component so that substantially all of the refrigerant charge in said system will collect in said first component when said compressor is operating, said first component having a total volume during operation of said system on a charge checking cycle over a range of ambient temperatures that it will store substantially the proper charge of refrigerant for said system as relatively constant volumes of liquid and high pressure gas, and fluid level indicating means spaced from said restricting means a distance such that the volume of said first component between said indicating means and said flow restricting stant volumes of liquid and high pressure gas, and liquid whereby a liquid-gas interface at said indicating means during the charge checking cycle indicates that the system contains substantially the proper charge of refrigerant.

3,200,606
AIR CONDITIONING SYSTEMS

John B. Hewett, 154 Martling Ave., Tarrytown, N.Y., and Elwood A. Windham, 57 W. Meadow Road, Wilton, Conn.

Filed June 29, 1964, Ser. No. 378,755
7 Claims. (Cl. 62—176)

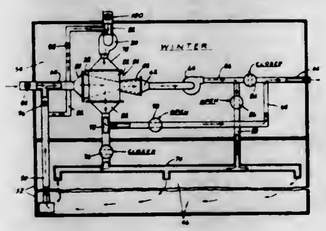


1. In an air conditioning system having a single chemical dehumidifying unit of the liquid type to remove moisture from the air and a regenerator and a solution density control to govern the operation of the regenerator, said system using outside air and return air, means to reduce the volume of outside air and increase the volume of return air whenever the outside moisture conditions exceed the capacity of the regenerator, said volume reducing means comprising the combination of the solution density control and modulating dampers disposed in the ducts which supply outside air to the dehumidifying unit and return air.

3,200,607
SPACE CONDITIONING APPARATUS

Virgil C. Williams, 103 Frontenac Forest, St. Louis, Mo.

Filed Nov. 7, 1963, Ser. No. 322,131
12 Claims. (Cl. 62—274)

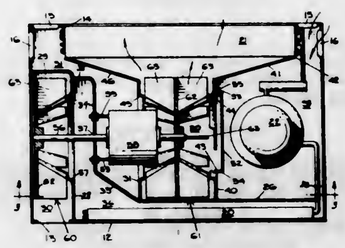


1. Space conditioning apparatus comprising a nozzle means and heat exchange means, said nozzle means including an air receiving isothermal section discharging through a nozzle to an insulated adiabatic air discharge section wherein the air is relatively heated at the discharge end, and said heat exchange means receiving air and having means for passing said air in heat exchange relation across said isothermal section to maintain an isothermal condition therein, and means for discharging air from said heat exchange section at a relatively cooled degree, said isothermal section being comprised of a plurality of parallel conduits converging from a relatively wide inlet to a restricted nozzle joining the isothermal section and the adiabatic sections, said conduits having an elongated cross-section of a relatively narrow width and relatively great height, said conduits being separated by heat exchange conduits passing in meshing heat exchange relation therewith.

3,200,608
APPARATUS FOR UTILIZING AND DISPENSING AIR CONDITIONER CONDENSATE

Leonard Glickman, 3330 Flamingo Drive, Miami Beach, Fla.

Filed Oct. 16, 1961, Ser. No. 145,187
8 Claims. (Cl. 62—279)



1. Apparatus for disposing and utilizing air conditioner condensate comprising a blower, means rotatably mounting said blower about an axis, wall means having an outside surface, said wall means substantially enshrouding said blower, baffle means extending between said wall means and about said blower, said wall means having a first opening at a suction portion of said blower to permit the flow of air to said blower, a second opening in said baffle means at a discharge portion of said blower, and a condensate dispersing opening at a lower portion of said wall means at a position of high air pressure and further baffle means positioned in spaced relation to the outside surface of said wall means at said condensate dispersing opening and extending to proximity of said first opening, said further baffle means forming a passageway for the flow of condensate toward said condensate dispersing opening whereby air under pressure is directed against said condensate and forces droplets of condensate in the path of air entering the first opening to become intermixed with said air and be ejected by said blower through said second opening.

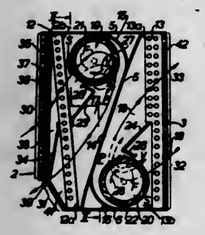
3,200,609
HEAT EXCHANGE APPARATUS AND AIR CONDITIONER UNITS INCORPORATING SUCH APPARATUS

Nikolaus Laing, Aldingen, near Stuttgart, Germany, assignor, by mesne assignments, to Laing Vortex, Inc., New York, N.Y.

Filed Apr. 15, 1964, Ser. No. 360,053
39 Claims. (Cl. 62—280)

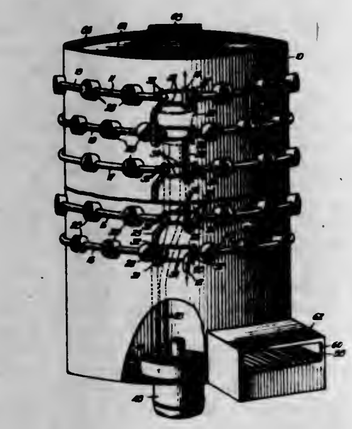
1. A rectangularly-shaped heat exchanger apparatus having an air outlet and an air inlet positioned on the same side of said apparatus, a cross-flow blower having a hollow cylindrical bladed rotor positioned in said apparatus for moving and turning air 180° in said apparatus from said inlet to said outlet and in a direction perpendicular to the longitudinal axis of said apparatus, a rectangularly-shaped heat exchanger block positioned in said apparatus between said inlet and said outlet and to one side of said rotor whereby air will pass through substantially the complete cross-section of said block when said rotor is rotated, ducting including enclosure walls extending perpendicular to the rotor axis and substantially cover-

ing the ends of said rotor, and guide means associated with said rotor to guide air passing from said inlet to said outlet through said rotor from the suction side thereof



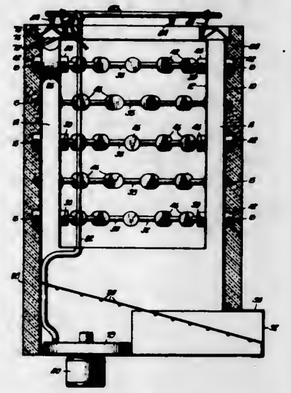
through the path of the rotating blades and out of said rotor to the pressure side thereof through the path of the rotating blades.

3,200,610
APPARATUS FOR MAKING ICE MEMBERS
Leon R. Van Steenburgh, Jr., 511 Parkside Drive, Rockford, Ill.
Filed Jan. 8, 1964, Ser. No. 336,414
8 Claims. (Cl. 62—298)



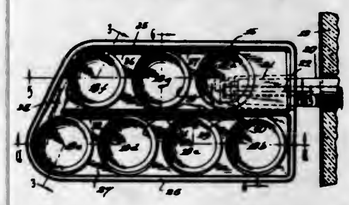
1. Ice member making apparatus comprising a vertical cylindrical tubular metal wall, a refrigerator system including an evaporator tube embracing the outer surface of said wall, cooling members on said evaporator tube at spaced positions, means for wetting the inner surface of said tubular metal wall, means for contracting said evaporator tube about the outer periphery of said tubular metal wall to press said cooling members into contact with the outer surface of said tubular wall to supply a cooling effect to said cooling members and thereby to refrigerate a plurality of areas along the inner surface of said tubular metal wall at the inner ends of said cooling members to cause ice members to form on the inner cylindrical surface of said tubular metal wall, the evaporator tube embracing the outer surface of the tubular metal wall having spaced end portions, and spring means coacting with said evaporator tube and acting yieldingly to contract said evaporator tube about the outer periphery of said tubular metal wall and to press said cooling members yieldingly into contact with the outer surface of said tubular metal wall.

3,200,611
APPARATUS FOR MAKING ICE MEMBERS
Leon R. Van Steenburgh, Jr., 511 Parkside Drive, Rockford, Ill.
Filed Apr. 30, 1964, Ser. No. 363,731
11 Claims. (Cl. 62—298)



1. Ice member making apparatus comprising an outer generally tubular wall, an inner generally tubular wall spaced inwardly from said outer wall to form a space within which ice members are formed, means for wetting the facing surfaces of said walls, evaporator tube means surrounding the outer surface of said outer wall and the inner surface of said inner wall, cooling members on said evaporator tube means at spaced positions, and means for contracting the evaporator tube means surrounding the outer wall and for expanding the evaporator tube means surrounding the inner wall to press said cooling members against the outer surface of the outer wall and against the inner surface of the inner wall without separate physical attachment of said cooling members to said walls.

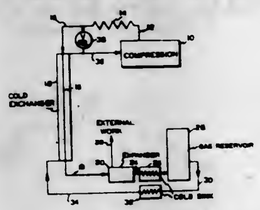
3,200,612
AUTOMATIC ICE CUBE MAKER
Edwin H. Frohbieter, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware
Original application June 12, 1961, Ser. No. 116,491, now Patent No. 3,143,866. Divided and this application Feb. 26, 1963, Ser. No. 261,011
1 Claim. (Cl. 62—345)



An ice body maker, comprising: a mold defining a series of more than two horizontally spaced, successively arranged cavities for holding water to be frozen, said mold being shiftable between first and second water retaining positions and having successive upper portions between said successive cavities; passage means each with an overflow weir in said upper portions between each pair of successively adjacent cavities, said weirs having their tops at successively lower levels in said series from a first cavity to a last cavity to cause water introduced into said first cavity to overflow the successive weirs into successive cavities from said first cavity to said last cavity, the water

level in each cavity prior to said last cavity substantially coinciding with the top of its said successive weir when the mold is in said first position and said water level being beneath its said successive weir when said mold is in said scond position; means for arranging said mold in said first position; means for thereafter introducing water into said first cavity for said weir overflow into said successive cavities; and means for moving said mold to said second position preparatory to freezing said water, said cavities being arranged in adjacent rows each containing a plurality of cavities.

3,200,613
CRYOGENIC REFRIGERATING METHOD AND APPARATUS
George A. Zotos, Baltimore, Md., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Jan. 2, 1963, Ser. No. 249,058
7 Claims. (Cl. 62—402)



1. A closed cryogenic refrigerating system comprising in combination:
(a) a fixed mass of cryogen contained within the said closed system and having an exclusively gaseous phase;
(b) a compressor for compressing said cryogen, having a low pressure side and a high pressure side;
(c) at least one turbine expander for extracting energy from said cryogen and operable in response to the pressure of cryogen compressed at the high pressure side of the said compressor and exhausting expanded cryogen withn the system to establish the coldest point within said system;
(d) conduit means, including at least one cold exchanger, in connection between said compressor high pressure side and said expander for delivering a cooled compressed cryogen to said expander;
(e) a pressure modulating reservoir in connection with said expander and adapted to receive said expanded cryogen and retain under pressure an amount of said cryogen sufficient to restrict the rate of expansion of point within said system;
(f) return loop conduit means in connection between said expander and said compressor low pressure side, said return loop conduit means returning expanded cryogen to recompression and providing thermal exchange within said cold exchanger; and
(g) cold sink means in connection with said return loop conduit means and situate intermediate said expander and said cold exchanger, for utilizing the cold production of the system.

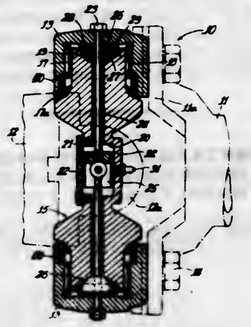
3,200,614
ADJUSTABLE SPRING CLIPS FOR EARRINGS OR THE LIKE
George C. Udry, Jr., 1302 Illinois St., Pekin, Ill.
Filed Jan. 3, 1962, Ser. No. 163,978
2 Claims. (Cl. 63—14)

1. An earring clip comprising: a base, means at one end of the base for mounting an ornamental device, a spring clip adjacent the other end of the base, means mounting the spring clip on the base of pivotal movement about an axis, a resilient tongue on said spring clip, and means threadably mounted on the base manually



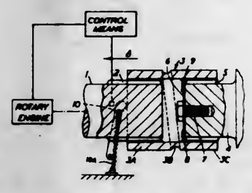
adjustable along an axis transverse to said pivotal axis to vary the tension in the tongue and thereby vary the pressure exerted by the spring clip, said means engaging the tongue in all positions to urge the spring clip about said pivotal axis.

3,200,615
SEALING ELEMENT
Raymond E. Stokely, Rockford, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 14, 1963, Ser. No. 302,165
7 Claims. (Cl. 64—17)



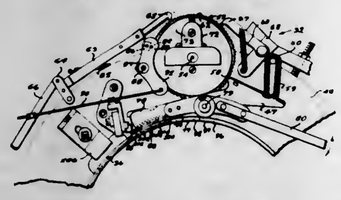
4. In a universal joint having a cylindrical trunnion portion with the base thereof flared radially outwardly, and having a cylindrical bearing cup with a plurality of needle bearings disposed therebetween for transmission of force, a seal element disposed between said bearing cup and said trunnion portion for maintaining lubricant about said needle bearings, said sealing element comprising an annular body of resilient material having a first flange extending radially inwardly thereof and provided with a tapered neck portion terminating in an annular lip adapted to engage said trunnion portion, said annular lip being offset along said trunnion portion from said tapered neck so that pressure of said lubricant assists in urging said lip more tightly against said trunnion portion, a second annular flange depending from said body and having a rounded nose portion adapted to flexibly engage said bearing cup in a manner so that lubricant tends to bleed past said second annular flange when of a predetermined value, and a metal backing ring joined to said annular body and adapted to seal against said bearing cup, said ring having grooves therein permitting said lubricant to communicate with said second annular flange.

3,200,616
SAFETY DEVICES
John W. Hawkins, Sunbury-on-Thames, Middlesex, England, assignor to Power Jets (Research & Development) Limited, London, England, a British company
Filed Mar. 8, 1963, Ser. No. 263,937
Claims priority, application Great Britain, Mar. 23, 1962, 11,220/62
3 Claims. (Cl. 64—28)



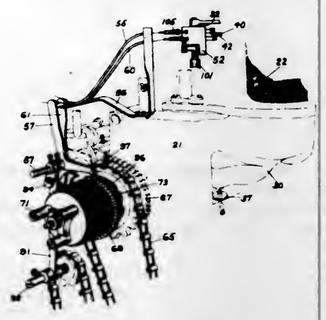
1. A safety device for a rotary machine, which safety device includes a torque-transmission element and a control means operated by said torque-transmission element to prevent damage to the rotary machine, the torque-transmission element including two portions joined by a weakened zone, said weakened zone being positively defined and lying about a plane inclined to the longitudinal axis of the element whereby on the occurrence of a predetermined overload torque said element is adapted to fracture along said weakened zone forming two parts, the weakened zone defining a cam-like surface at each adjacent end of the said two parts, said cam-like surfaces cooperating on fracture of the weakened zone, axial movement of one of said parts resulting from relative rotation of the cam-like surfaces serving to initiate operation of said control means, and means to support the other said part from axial displacement upon fracture of said element.

3,200,617
CIRCULAR KNITTING MACHINE
Salomao J. Haddad, Charlotte, N.C., assignor to Carolina Knitting Machine Corporation, a corporation of North Carolina
Filed Dec. 24, 1962, Ser. No. 247,475
10 Claims. (Cl. 66—50)



4. An improvement for providing effective high speed pattern knitting with a circular knitting machine of the type wherein needles are controlled for knitting a pattern by selector jacks carried on the needle cylinder and manipulated by selector fingers that are actuated selectively by a selector drum that intermittently advances stepwise for actuation of selector fingers in a predetermined pattern, said improvement comprising a stabilizing cam fixed on the knitting machine adjacent said selector jacks in advance of and through the area in which the selector jacks are selectively manipulated by said selector fingers, said stabilizing cam having a selector jack engaging and positioning surface in advance of said manipulation area for engagement of the selector jacks to position them positively for presentation of the selector jacks in proper position as they enter the manipulation area during high speed operation, said stabilizing cam having a stabilizing surface extending from said engaging and positioning surface through said manipulation area to stabilize the selector jacks in said proper position as they pass through said area and are selectively manipulated during high speed operation, said selector drum having a peripheral series of recesses corresponding in number to the number of stepwise advancements of the selector drum in one revolution thereof, a stop member movable into said recesses for positively stopping advancement of said selector drum and movable to a position out of said recesses to allow advancement of said selector drum, and means for moving said stop member in complementary timed relation with respect to said drum advancement to effect positive stepwise advancement of said selector drum at high speeds without override and thereby provide with said stabilizing cam positive, high speed, pattern control of the knitting needles.

3,200,618
KNITTING MACHINE AND METHOD
Oscar Fregeolle, Lincoln, R.I., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed July 18, 1960, Ser. No. 43,600
2 Claims. (Cl. 66—54)



1. In a circular, independent needle, knitting machine adapted to draw a base yarn over the backs and behind the nibs of sinkers, a vertically movable sinker head adapted to vary the length of stitches to be knitted, a sinker cam cap overlying said sinker head, a flopper cam pivoted on the cap, a pattern controlled means for operating said flopper cam, a casting off cam adjacent said flopper cam and pivoted on said cap, means for withdrawing said casting off cam progressively and in unison with lowering of said sinker head, and further pattern controlled means for effecting movement of said casting off cam to its full extent in a single move.

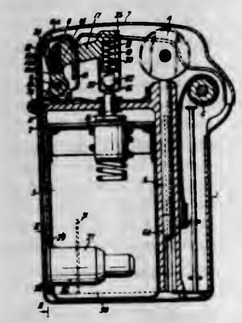
3,200,619
TRIPLE-STITCH JOINT FOR KNITTED MESH
Hagin Franklin Frith, Jr., Willow Grove, Pa., assignor to Hagin Frith & Sons, Willow Grove, Pa., a partnership
Filed July 5, 1963, Ser. No. 293,086
10 Claims. (Cl. 66—195)

1. A knitted mesh comprised of a plurality of warp chains extending in the same direction, each chain being interknitted at spaced points along its length to an adjacent chain on one side and at points intermediate the points first named being interknitted to an adjacent chain on its other side, each chain of said mesh comprising at least three component yarn elements, each of which lies in the same chain throughout the length of the mesh save only at the points of interknitting, at which points two component yarn elements of a first chain extend to and are interknitted with a third component yarn element of an adjacent second chain, extending thence back to the first chain, while two component yarn elements of the second chain extend to the first chain, being interknitted with a third component yarn element of said first chain, and extending thence back to the second chain,



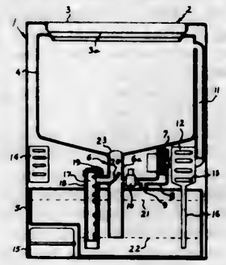
the runs of a given yarn element interconnecting said chains lying in courses separated from each other by at least one course.

3,200,620
GAS BURNING CIGARETTE LIGHTERS
Hans Lowenthal, London, England, assignor to Colibri Lighters Limited, a British company
Filed Apr. 2, 1964, Ser. No. 356,744
Claims priority, application Great Britain, Dec. 10, 1963, 48,751/63; Apr. 16, 1963, 14,880/63
7 Claims. (Cl. 67—7.1)



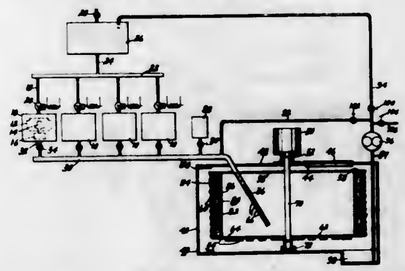
1. In a cigarette lighter of the type comprising a casing, a gas reservoir within the casing, a burner carried by said casing near said reservoir, a valve for admitting gas from said reservoir to said burner, and a lid for covering said burner hinged to said casing for swinging movement between an open position and a closed position at opposite ends of its path of travel, the improvement which comprises valve closing means pivotally mounted on said casing and releasably connected to said lid so as to move therewith as said lid is opened from a valve closing position occupied by said valve closing means when said lid is in its closed position to a valve releasing position normally occupied by said valve closing means when said lid is open, said valve closing means being manually movable relative to said lid away from its valve releasing position into its valve closing position when said lid is in its open position, and resilient means releasably retaining said valve closing means in its valve closing position.

3,200,621
DRY CLEANING MACHINE
Joseph C. Worst, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 19, 1963, Ser. No. 309,989
6 Claims. (Cl. 68—12)



1. A dry cleaning machine comprising:
(a) a receptacle adapted to receive clothes to be cleaned,
(b) a container for cleaning fluid, said container being positioned below said receptacle,
(c) first conduit means connecting said container to the lower portion of said receptacle, said first conduit means extending within said container to a point below the upper level of fluid in said container,
(d) an air pump having an outlet,
(1) second conduit means connecting said outlet to said container,
(2) third conduit means connecting said outlet to said receptacle, said third conduit means including a valve,
(e) a filter for the fluid,
(f) first means connecting said filter with said container,
(g) second means connecting said filter with said first conduit means for receiving fluid draining form said receptacle,
(h) means projecting into said first conduit means for diverting substantially all of the fluid draining from said receptacle to said filter through said second means.

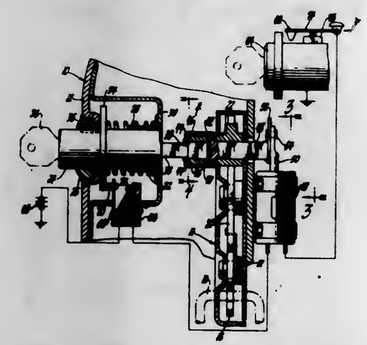
3,200,622
DRY CLEANING APPARATUS
Byron L. Brucken, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 24, 1961, Ser. No. 112,296
1 Claim. (Cl. 68—18)



In combination with a solvent storage tank and a dry cleaning machine having a spin tub adapted to receive clothes to be dry cleaned and connected to said storage tank for receiving solvent therefrom, means for agitating in said tub and means for selectively oscillating said agitating means to clean said clothes and for spinning said tub to remove the solvent from the clothes and the

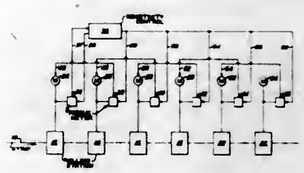
tub, a filtration system for said dry cleaning solvent comprising a centrifugal filter for simultaneously decontaminating the solvent of solid contaminants and dissolved contaminants, said filter having a closed, stationary filter drum and a rotatable cylindrical screen basket enclosed in said drum for supporting a filter bed including a radially inner layer of coarse filtering medium, a radially outer layer of fine filtering medium and a layer of carbonaceous medium sandwiched therebetween on a sidewall of said basket, said basket having an open top portion spaced from the top of said drum to permit solvent to overflow the top of said basket when flow through said filter bed is restricted and a plurality of outflow ports on the bottom thereof spaced radially inwardly from said filter bed and in communication with said filter drum, spray means in communication with the spin tub to receive contaminated dry cleaning solvent being removed therefrom and having an outlet end in spray relationship to said filter bed, inner screen means between said spray means and said filter bed to filter lint and buttons from the solvent, said inner screen means being spaced from said filter bed in intercepting relationship to the solvent from said spray means to minimize the impact of said solvent on said filter bed by breaking up the solvent sprayed toward said filter bed, means operative with said spray means for rotating said basket to centrifuge contaminated solvent from the radially inner portion of said basket through said filter bed to the filter drum on the radially outer side of said basket thereby to decontaminate the solvent, pump means connected to said filter drum and said storage tank for returning the decontaminated solvent from said drum to said storage tank, means adapted to contain a slurry of one of said filtering mediums and said carbonaceous medium, and flow control means for periodically connecting said spray means to said slurry containing means for spraying a new filter bed on said basket, said flow control means including means for disconnecting said pump means from said storage tank and for connecting said pump means to said spray means whereby to cause solvent pumped from said filter drum to mix with said slurry and facilitate the building of said new filter bed.

3,200,623
LATCH ACTUATING MEANS
Theodore F. Peters, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 9, 1963, Ser. No. 293,608
3 Claims. (Cl. 70—279)



3. In a vehicle including a body and a body closure latch having a latch release member, latch actuating means, comprising, in combination, an actuating member, means mounting said actuating member on said body for combined rotatable and bodily movement relative thereto, means operably connecting said actuating member and said release member for actuating said release member upon movement of said actuating member in one of said modes of movement thereof, power-operated means, means operably connecting said power-operated means and said release member for actuating said release member upon operation of said power-operated means, first authorized control means, and second control means operated by movement of said actuating member in the other mode of movement thereof, a source of power, and control circuit means connecting said first and said second control means and said power-operated means across said source of power, said power-operated means being operated by said source of power upon authorized operation of said first control means and operation of said second control means by movement of said actuating member in said other mode of movement thereof.

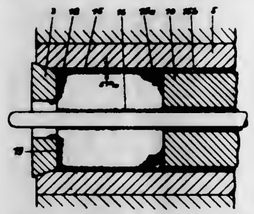
3,200,624
APPARATUS AND PROCESS FOR PROCESSING STRIP MATERIAL
Arthur Tix, Bochum, Germany, assignor to Bochumer Verein fur Gusstahlfabrikation A.G., Bochum, Germany
Filed Feb. 14, 1962, Ser. No. 173,863
Claims priority, application Germany, Feb. 15, 1961, B 61,282
13 Claims. (Cl. 72—19)



1. In association with a sequence of at least two rolling stations at each of which is located drive means which transmits power in the form of torque and speed for the purpose of applying rolling force to a continuous length of material passing from a first of said stations to the other of said stations, a method comprising measuring the torque at said first station to detect the influence of said length of material on the torque developed at said first station and establishing a detection level at the other of said stations in accordance with said influence; and measuring the influence of said length of material on the torque developed at one of the stations and varying the speed in another station in accordance with said influence.

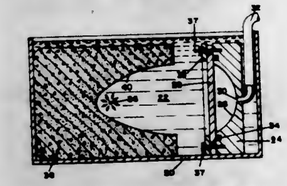
3,200,625
COOLING AND THERMAL INSULATION OF THE TOOLS OF EXTRUSION PRESSES
Werner Wehmeyer, Essen, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany
Filed Feb. 12, 1962, Ser. No. 172,693
Claims priority, application Germany, Feb. 14, 1961, Sch 29,231
7 Claims. (Cl. 72—42)

1. A method of cooling and lubricating the tools of a metal extrusion press, comprising: mixing a liquid that evaporates at a temperature below the temperature which the tools have during working, with a carrier for the liquid, consisting of solid particles of insulating and lubricating substances which are not combustible and do not lose their insulating and lubricating properties at billet-extrusion temperature, the mixing being effected in such a proportion that the mixture is in a pasty condition, adding to this pasty mixture, before use, such insulating and lubricating substances as are sticky or viscous at the tool temperature occurring (300° to 500° C.), and depositing this paste, to a thickness of several millimeters, on the tools, after the extrusion of one billet and a short time before a fresh hot billet engages the tools for the next extrusion, the quantity of cooling liquid, the duration of the transmission of heat from the billet to the tools, and the time of action of the cooling liquid upon the tools



before the insertion of a fresh billet, being so related to one another that the cooling liquid withdraws from the surface layer of the tools, during the complete evaporation of the cooling liquid, about that quantity of heat which is supplied to it from the billet during the extrusion operation.

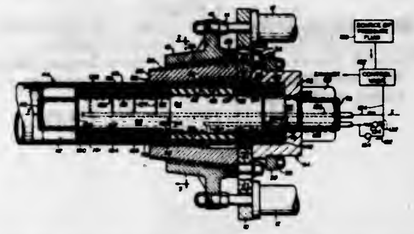
3,200,626
ELECTRICAL EXPLOSION FORMING
Edwin Meyers Callender, Bala-Cynwyd, Pa., assignor to General Electric Company, a corporation of New York
Filed Dec. 26, 1961, Ser. No. 161,819
9 Claims. (Cl. 72—56)



1. Apparatus for electrical explosion forming comprising:
a chamber containing a fluid,
a die having a working surface positioned in said chamber,
a means for supporting a blank adjacent to said working surface,
a pair of spaced electrodes positioned in said chamber,
containing means for containing a material capable of supporting an electrical discharge extending between said electrodes and through said fluid and sealing said material from said fluid, and a material capable of supporting an electrical discharge contained within said containing means.

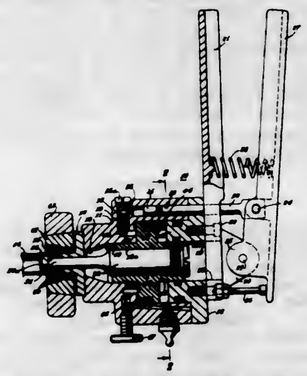
3,200,627
PIPE FLARING OR BELLING
Leo Hoffmann, New York, N.Y., assignor to Baldwin-Lima-Hamilton Corporation, a corporation of Pennsylvania
Filed Dec. 12, 1961, Ser. No. 158,769
6 Claims. (Cl. 72—61)

1. Apparatus for flaring an end of a pipe, comprising
(a) a mounting member,
(b) a die supported on said mounting member and having a cavity therein for receiving said end of the pipe; said cavity having a flaring portion, the contour of which conforms to the shape of the flared pipe end to be produced,
(c) a mandrel supported on said mounting member so as to extend through the die and into the bore of pipe in said die,
(d) pipe clamping means mounted on said mandrel for radial movement relative thereto into frictional engagement with the interior surface of said pipe, said clamping means being offset from said flaring cavity portion in the axial direction of the mandrel,
(e) means for applying fluid pressure to said clamping means to urge the latter into engagement with the internal wall of the pipe in an area adjacent said pipe end and thereby hold said pipe in place,
(f) means for applying fluid pressure to the interior



of the pipe end to be flared to cause said end to conform to the contour of said flaring cavity portion, and
(g) sealing means for engaging the interior surface of said pipe and preventing escape of pressure fluid therefrom, said sealing means being spaced from and mounted independently of said clamping means so as to minimize transmission of axial forces from said clamping means to said sealing means.

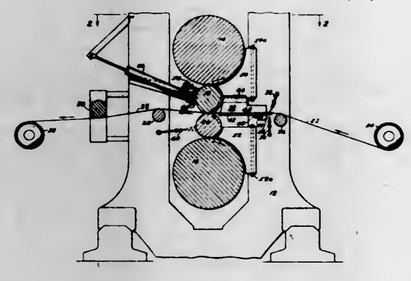
3,200,628
SWAGING TOOL FOR FORMING JOINTS
Henry W. Palkowski, 27441 Rainbow Ridge Road, Rolling Hills, Calif., and Kenneth F. Lagerson, 17411 Lassen St., Northridge, Calif.
Filed Mar. 18, 1963, Ser. No. 265,854
7 Claims. (Cl. 72—62)



1. A swaging tool for joining a fitting having a recess on the inner wall thereof onto a tubing to form a high pressure seal assembly comprising: a draw mandrel having a nose portion whose diameter is equal to the inside diameter of said tubing and a shaft portion of a reduced diameter; a sleeve formed of a resilient material and positioned on the shaft portion of said mandrel such that one end of the sleeve abuts against said nose portion; a spacer positioned so as to slidably support said mandrel, said mandrel adapted to be inserted into the end of the tubing having the fitting thereon with the surface of said spacer adapted to abut against the other end of the sleeve, retaining means adapted to encircle said fitting for fully supporting the outer surface of said fitting radially opposite the inner surface thereof provided with said recess; hydraulic means for building up a hydraulic force for

axially moving said mandrel relative to said spacer to cause said sleeve to expand radially outwardly to thereby swage the wall of said tubing to conform to the inner wall of said fitting; and a pressure gauge for indicating when said hydraulic force has reached a predetermined value so as to form a binding pressure-tight connection between the walls of said tubing and said fitting.

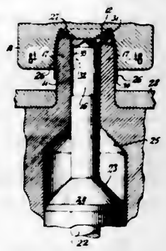
3,200,629
OBTAINING IMPROVED SURFACE FINISHES ON DOUBLE REDUCED MATERIAL
Owen W. James and Eugene P. Waters, both of Baltimore, Md., assignors to Bethlehem Steel Corporation, a corporation of Delaware
Filed July 18, 1961, Ser. No. 124,889
8 Claims. (Cl. 72—201)



1. A method of producing unmottled uniform texture surfaces on double reduced tin coated sheet and strip material comprising spraying a water-free mixture of palm oil and an alkyl ester of fatty acids on the material entering the reducing rolls, applying cooling water to the exit sides of the reducing rolls, shielding the material entering the roll bite and the entrance side of the reducing rolls from water splashed from the exit side of the rolls and preventing any water from migrating around the end of the reducing rolls from the exit to the entrance side, the alkyl ester, comprising a lower straight chain alkyl ester of fatty acid containing from 6 to 22 carbon atoms, serving to decrease the lubricity of the palm oil to increase the brightness of the product.

3,200,630
INTEGRAL HEAVY DUTY DOOR KNOB AND METHOD OF FORMING THE SAME
William B. Wilson, La Habra, Calif., assignor to Robert H. Miller and F. Louis Behrends, both of Peoria, Ill.
Filed Nov. 20, 1962, Ser. No. 238,973
7 Claims. (Cl. 72—254)

1. The method of forming an integral heavy duty knob assembly including a knob and an integral internal tubular part in a high energy press which comprises the steps of inserting a slug of metal of lesser diameter than that of the cavity of a female die forming the external contour of the knob, and impacting the outer face of the slub by means of a ram containing the female die with the latter having an internal contour conforming to the outer contour of the knob and concentric extrusion punches contacted by the inner face of the slug and over which the metal of the slug flows, the outer of said punches having a central bore receiving a center punch having a reduced free end spaced from the interior of the outer concentric punch to provide an annular space therebetween and during impact the exterior of said outer concentric punch is encompassed by the female die with the latter spaced from the interior of the die to cause metal of said slug to flow into said annular spaces to form an internal hollow tubular part and an external concentric knob, withdrawing the female die from the formed cupped extruded knob assembly, withdrawing the inner punch relative to the outer punch for removing said assembly from the outer punch, and removing said assembly from the inner punch.



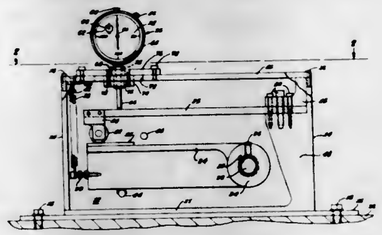
3,200,631
APPARATUS FOR EFFECTING REVERSE BENDS IN DUAL HEAT EXCHANGE TUBING
Richard W. Kritzer, Jr., Chicago, Ill., assignor to Peerless of America, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 6, 1962, Ser. No. 214,972
8 Claims. (Cl. 72—306)

1. In an apparatus for simultaneously producing successive parallel reentrant bends in multiple heat exchange tubing of the type that presents elongated, straight, parallel tube lengths, in combination, a pair of mandrel carriers mounted one above the other in spaced relationship for independent rotation about respective vertical axes, a mandrel eccentrically disposed on each carrier and having its axis disposed vertically, the two mandrels extending in opposite directions and side-by-side relationship so as to overlap each other and being adapted to receive therebetween for bending purposes the parallel tube lengths, and means for selectively rotating said carriers, each to the exclusion of the other, selectively in opposite directions throughout a predetermined degree to cause the mandrel of the rotated carrier to orbit around the mandrel of the other carrier and effect simultaneous bends in the tube lengths.

3,200,632
TORQUE MEASURING DEVICE
Bosko Grabovac, Altadena, Calif., assignor to Torque Controls, Inc., San Gabriel, Calif., a corporation of California
Filed May 22, 1962, Ser. No. 196,747
13 Claims. (Cl. 73—1)

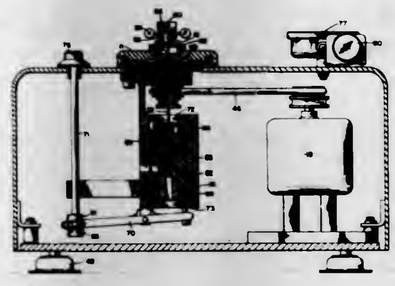
1. In a torque measuring device, the combination of: a beam member free and unhindered at one end and rigidly anchored at the other end;

means to convert an input torque to be measured into a force directed against the beam member laterally thereof with consequent flexure of the free end of



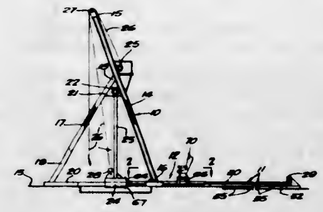
the beam member; and
a gage adapted to measure the degree of flexure of the beam.

3,200,633
TORQUE TEST DEVICE
Bernard J. McCoy, Los Angeles, Calif., assignor to Tamar Electronics Industries Inc., Anaheim, Calif., a corporation of Delaware
Filed Feb. 4, 1963, Ser. No. 256,060
7 Claims. (Cl. 73—9)



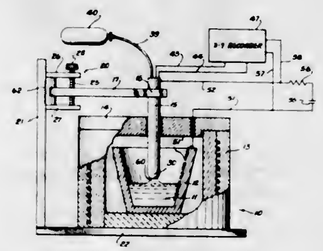
1. A device for checking the breakaway torque of a roller bearing having inner and outer races comprising
support means for supporting one of said races for rotation about an axis,
means for rotatably driving said one of said races,
means for selectively providing one of several predetermined load forces on the other of said races along said axis, said means for providing load forces including a torsion bar connected at one end thereof to the other of said races, means for selectively providing one of several predetermined loads on said torsion bar along said axis in a direction away from said races, and means for preventing the other end of said torsion bar from rotating about said axis,
said means for selectively providing one of said loads on said torsion bar including a first weight pendulously suspendable from said bar, a second weight mounted slidably with respect to said first weight and in concentricity therewith, one of said weights having means thereon for pendulously suspending said one of said weights from the other of said weights, and selector control means for selectively lifting said one of said weights so that it is not suspended from the other of said weights,
position pickoff means mounted on said support means for detecting rotation of said other of said races about said axis, and
means connected to receive the output of said pickoff means for producing an output signal in accordance with the rotation of the other of said races.

3,200,634
DYNAMIC TEST FACILITY
Michael A. Rickards, Studio City, Calif., assignor to Weber Aircraft Corporation, Burbank, Calif., a corporation of California
Filed Dec. 1, 1961, Ser. No. 156,418
19 Claims. (Cl. 73—12)



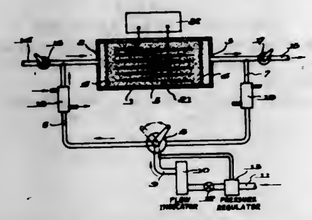
1. In a dynamic testing apparatus for rapidly accelerating a specimen to be tested, the combination of: mounting means for supporting said specimen, means for supporting said mounting means for movement thereon, impact-transmuting means mounted on said mounting means for receiving an impact force and having means for converting said force into a relatively sustaining force for accelerating said mounting means and said specimen, and means for generating an impact force and applying the same directly to said impact-transmuting means without directly engaging said specimen.

3,200,635
APPARATUS FOR DETERMINING MELTING POINTS
Clyde L. McDaniel, Bethesda, Md., assignor to the United States of America as represented by the Secretary of Commerce
Filed June 26, 1963, Ser. No. 290,866
2 Claims. (Cl. 73—17)



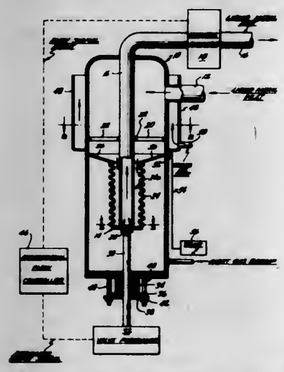
1. Melting point apparatus comprising, a container for holding the material to be tested and having means for electrically contacting the material therein, a furnace, said container being disposed in said furnace, an elongated, electrically-conductive electrode closed at one end to form a tip, a cavity within said electrode adjacent said tip, means for passing coolant through said cavity, means for measuring the temperature of said tip, means for moving said electrode lengthwise within said container, and means for measuring the electrical resistance between said electrode and said contact means of said container.

3,200,636
APPARATUS FOR DETECTING WATER VAPOR IN GAS
Gene C. Flumerfelt, Pittsburgh, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 30, 1963, Ser. No. 255,047
3 Claims. (Cl. 73—29)



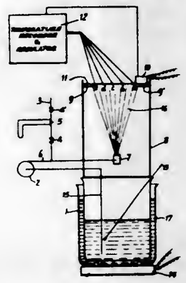
1. A detector for water vapor in a gas, comprising a casing containing an adsorption bed and having a combination inlet and outlet port at each end of the bed, means for delivering a stream of gas containing water vapor to one of said ports at a predetermined flow rate and simultaneously venting the other port, means for sensing the temperature of the bed produced by the heat of adsorption of said water vapor, means for indicating said temperature as a measure of the concentration of water vapor in the gas, and means operative after a predetermined interval but before half the length of said bed has become moistened to switch said stream of gas to said other port at said same flow rate and to vent said one port in order to reverse the flow through the bed, whereby the moist end of the bed is dried by gas that has deposited its water vapor in the opposite end of the bed.

3,200,637
CONTINUOUS OXIDE PLUGGING INDICATOR
Donald K. Ballou, Rockfall, and Jesse C. Hendelman, Durham, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 25, 1962, Ser. No. 233,018
13 Claims. (Cl. 73—61)



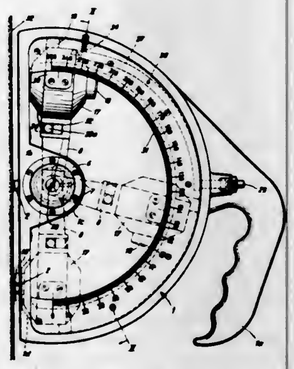
1. In an oxide plugging detector, a conduit for circulating high-temperature liquid metal, said conduit having an open end, a plate having a surface engageable with the open end of said conduit, the surface of said plate having transverse grooves therein providing flow passages for the liquid metal in the tube abutting position of the plate, means responsive to the quantity of liquid metal flowing in said conduit for moving said plate toward and away from the end of said conduit, means for detecting oxide plugging of the plate grooves, and means for cooling the liquid metal upstream of said plate.

3,200,638
TESTING OF LUBRICANTS AND THE LIKE
Henri Jacobé de Haut, Viroflay, France, assignor to Society Orogil, Paris, France, a corporation of France
Filed June 7, 1963, Ser. No. 286,298
Claims priority, application France, June 12, 1962, 900,384
10 Claims. (Cl. 73—64)



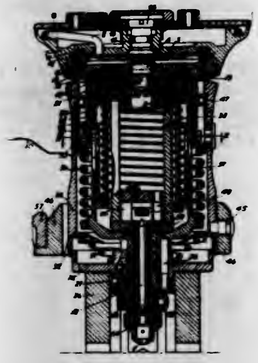
1. Apparatus for testing a liquid comprising a replaceable plate of thermally-conductive material, a support on which the plate is carried, means for creating a temperature gradient across the plate, temperature-measuring devices measuring the temperature at various points on the plate, and means for projecting onto the plate the liquid to be studied.

3,200,639
HARDNESS TESTER
Ernst O. Schmidt, Leimenstrasse 44, Basel, Switzerland
Filed Jan. 30, 1962, Ser. No. 169,968
Claims priority, application Germany, Jan. 31, 1961, Sch 29,144
15 Claims. (Cl. 73—79)



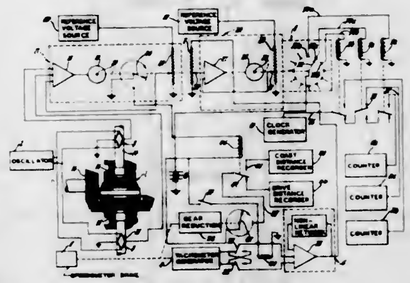
1. A rebound-type hardness tester, comprising, in combination, a housing having a wall adapted to be positioned adjacent the surface of a specimen with an outer face of said wall directed toward said surface, a hammer pivotally attached to said housing wall for swinging movement toward said surface of a specimen to be tested, from an initial position toward a contact position and back to a rebound position commensurate with the hardness of said specimen, the pivotal axis of said hammer being substantially parallel with said face of said wall, an arcuate scale on said housing carrying hardness graduations and extending along a circle whose center is in said axis and whose radius is slightly larger than a circular arc described by said hammer during swinging thereof, said scale being situated beside said hammer during at least part of its swinging movement, an index rigid with said hammer and swingable therewith along said scale, and clamping means carried by said hammer for swinging movement therewith and engaging said housing for preventing movement of said hammer from said rebound position toward said contact position once it has moved from said initial position to said contact position during a test, so that a reading taken between said scale and said index at said rebound position will give a direct hardness indication.

3,200,640
HARDNESS MEASURING APPARATUS, OPERATED BY A SINGLE COMPRESSIVE MOTION
Alfredo Ernst, Via Magenta 10, Varese, Italy
Filed Nov. 8, 1961, Ser. No. 151,085
Claims priority, application Italy, Nov. 9, 1960, 19,336/60, Patent 638,812; Oct. 11, 1961, 18,272/61
4 Claims. (Cl. 73—81)



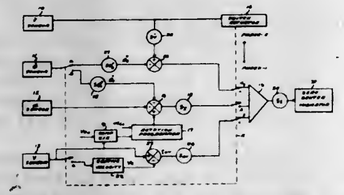
1. Hardness measuring apparatus comprising load and preload means adapted for accurate measurements on non-smooth irregular surfaces as well as regular surface comprising,
an outer cylindrical casing having means for manually pressing the device onto a surface to be tested for hardness in an axial direction with respect to said casing,
an annular base member connected to slide axially with respect to the lower part of said outer casing,
a projecting annulus on said base member adapted to rest on the surface to be tested,
a first compression spring means normally holding said base member and outer casing axially extended with respect to each other but being compressible whereby it holds said annulus on the surface to be tested by predetermined pressure when the device is pushed against a surface to be tested,
chamber containing means positioned adjacent the opposite end of said casing with respect to said base member,
said chamber containing means comprising a diaphragm forming one wall of a chamber therein,
a penetrating tip holder having a penetrating tip at the lower end thereof,
shield means for said penetrating tip,
cylindrical means connecting said chamber containing means to said shield means,
said cylindrical means having a lower portion of reduced diameter adapted to slide within said base member,
means including a second compression spring connecting said cylindrical means to said casing for axial movement with respect to each other,
feeler means positioned for axial movement with respect to said chamber to act on the diaphragm of said chamber containing means,
means on said cylindrical means to limit the axial movement of said feeler means,
slider means contacting said feeler means,
a first pressure transmitting means slidably connecting the penetrating tip holder to said feeler means whereby pressure applied to said casing is partially transferred to said penetrating tip through said second compression spring to preload said tip,
a second pressure transmitting means adapted to move axially with respect to said feeler to apply back pressure thereto in the direction of said diaphragm after said first spring means has been compressed,
pin means adapted to apply pressure to said penetrating tip,
an inner casing comprising means adapted to contact said pin means after the outer casing has been moved axially to compress said first and second springs,
third compression spring means adapted to apply predetermined uniform pressure to said inner casing,
said third compression spring means acting on said inner casing to apply uniform pressure to said penetrating tip after said first and second springs have been compressed, and
means connecting said second pressure transmitting means to the inner casing to transmit to the feeler the movement of the tip after preloading under the pressure of said third compression spring means.

3,200,641
PINION TORQUE ANALYZER
Marvin K. Stark, Milford, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,433
5 Claims. (Cl. 73—138)



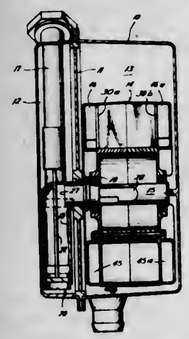
1. Apparatus for obtaining data on carrier bearing fatigue in a motor vehicle drive train including a differential having a driven gear connected with a propeller shaft and a driving pinion connected with an axle, said apparatus comprising means for generating a first electrical signal corresponding to the instantaneous actual torque transmitted from said pinion to said axle, means for generating a second electrical signal corresponding to the instantaneous actual speed of said pinion, multiplying means for obtaining the product of said first and second signals to develop an output signal corresponding to the instantaneous effective torque transmitted from said pinion to said axle, pulse generating means for generating pulses at a predetermined time interval, pulse counting means, circuit means interposed between said pulse generating means and said pulse counting means and adapted when actuated to transmit the pulses to said pulse counting means, distributing means responsive to said output signal for actuating said circuit means.

3,200,642
MAXIMUM PERFORMANCE TAKE-OFF DIRECTOR
Charles A. Neuendorf, Toledo, Ohio (Box 9273, Wright-Patterson AFB, Ohio), and William G. Moretti, Jr., 17 Princeton Road, Burlington, Mass.
Filed June 25, 1962, Ser. No. 205,135
4 Claims. (Cl. 73—178)
(Granted under Title 35, U.S. Code (1952), sec. 266)



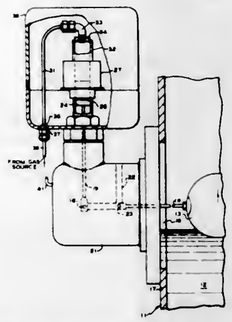
1. Apparatus for directing the take-off of an aircraft in two successive phases, said apparatus comprising: means operative during the first of said phases for comparing the instantaneous angle of attack of said aircraft with a predetermined lift-off angle of attack and for indicating the magnitude and direction of any difference, means operative during the second of said phases for comparing the instantaneous air velocity of said aircraft with a captive velocity and for indicating the magnitude and direction of any difference, and means responsive to the acceleration of said aircraft and operative when said acceleration equals zero to effect a transition from the first phase to the second phase and to establish the air velocity at the instant of transition as said captive velocity.

3,200,643
DRUM TYPE METER
Ernest C. Porterfield, 3801 N. 21-A St., Waco, Tex.
Filed July 17, 1961, Ser. No. 124,682
7 Claims. (Cl. 73—200)



1. In a revolving drum meter comprising a housing, a drum mounted in the housing for rotation about a horizontal axis, an inner partition disposed about said axis and defining a central compartment in the drum, said inner partition having a plurality of fill openings therein, a plurality of cross partitions respectively extending from the inner partition adjacent the leading edge of said fill openings to the circumferential wall of the drum thereby dividing the outer portion of the drum into a plurality of metering compartments each limited by a leading and trailing cross partition, a dam extending inwardly of the inner partition adjacent each of said leading edges of the openings to thereby impede flow into an empty succeeding metering compartment until a preceding metering compartment has been substantially filled and, upon rotation of the drum to fill the succeeding compartment becoming substantially ineffective to impede flow into the succeeding compartment, means for discharging liquid into said central compartment, and individual means for discharging liquid from each of the metering compartments upon each of such compartments becoming filled, including a lateral discharge opening in each compartment into a corresponding discharge conduit, said lateral discharge opening being substantially flush with the trailing cross partition and with the inner partition in the compartment, that improvement which comprises a fluid tight vertical partition dividing the housing into a preliminary chamber and a chamber in which the drum is disposed; an inlet line for liquid arranged to discharge liquid into the bottom of the preliminary chamber; a central shaft in the central compartment having a passageway for liquid therethrough communicating with the preliminary chamber and the central compartment; a float in the preliminary chamber; and a valve responsive to movement of said float to control discharge of foam-free liquid from a lower part of the preliminary chamber into the central compartment in the drum.

3,200,644
LIQUID LEVEL CONTROL APPARATUS
Jack C. Brous, Overland Park, Kans., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 4, 1961, Ser. No. 156,782
5 Claims. (Cl. 73—308)



1. In a liquid level control apparatus comprising: a float disposed in a tank containing the liquid to be gauged; an arm connected to said float at one end and pivotally to a shaft at its other end; a housing adapted to be secured to said tank and surrounding said arm; a piston secured to the free end of said shaft; switching means adjacent said piston; and means affixed to said piston to trip said switching means in one direction and alternately the other; the improvement which comprises a purge system for maintaining the operating components of said control apparatus free from fouling by said liquid, said system comprising tubing means communicating with said housing and a source of fluid spaced from said tank for continuously passing a stream of fluid inert to said liquid through said housing and venting the same therefrom.

3,200,645
ELECTRIC POSITION SENSOR
Dave B. Levins, Swampscott, Mass., assignor to General Electric Company, a corporation of New York
Filed May 22, 1963, Ser. No. 282,395
4 Claims. (Cl. 73—313)

2. An electric position sensor of the variable resistance type comprising

a support member having a longitudinal axis,

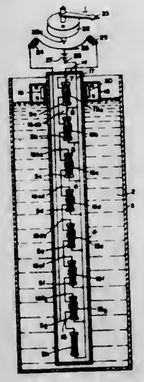
a plurality of magnetically actuated switches, each of said switches comprising an elongated hermetically sealed casing housing a pair of normally open switch contacts and means magnetically actuating said switch contacts to a closed position in response to a magnetic field of predetermined strength passing through said switch casing in the direction of the longitudinal axis thereof,

means mounting said switches on said support member so that they are progressively displaced in the direction of the longitudinal axis of said support member with the longitudinal axis of the casing of each switch extending in a direction parallel to the longitudinal axis of said support member,

a plurality of resistors electrically connected in series-circuit relation to provide terminal connections and a plurality of intermediate connections between the resistors,

means electrically connecting one of the contacts of each of said switches to a common conductor,

means electrically connecting the other contact of each of said switches to different ones of said intermediate and terminal connections so that the electrical resistance between said common conductor and one of said

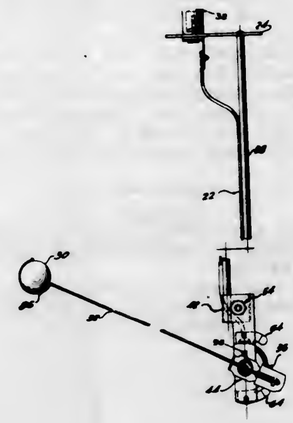


terminal connections progressively changes as said switches are progressively closed along the direction of the longitudinal axis of said support member,

a magnet member guided for movement in the direction of the longitudinal axis of said support member so as to be sequentially positioned in juxtaposition with different ones of said switches, said magnet member being constructed to produce a magnetic field passing axially through the casing of each juxtaposed switch of sufficient strength to actuate the switch to a closed circuit position during a predetermined portion of the total length of travel of the magnet member whereby said switches are actuated in sequence during movement of said magnet member, said switches being disposed in a helical configuration about said axis of said support member and overlapped sufficiently in the direction of said longitudinal axis so that said magnet member causes simultaneous actuation of adjacent switches during a fractional part of the total travel of said magnet member between adjacent switches, and means for moving said magnet member.

3,200,646
UNIVERSAL LIQUID LEVEL INDICATING DEVICE FOR A FUEL TANK
Harold A. Donko, Chicago, and Edmond W. Kraft, Hoffman Estates, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed May 15, 1963, Ser. No. 280,581
6 Claims. (Cl. 73—317)

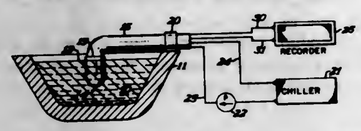
1. For use with a fuel tank of generally independent size and depth having a top opening flanged with a conventional irregularly spaced hole pattern, the improvement being a universally adaptable liquid level indicator device, comprising a flange cover plate having a hole pattern corresponding with the conventional hole pattern and adapted to be connected to the tank over the top opening, a round bar secured at one of its ends to the cover plate within the confines of the top opening and projecting towards its other end away generally normal to the cover plate, a clamping bracket, adjustable means to secure the clamping bracket to the bar frictionally at any adjustable distance from the cover plate and at any rotatable position relative to the hole pattern thereof, a mounting member, means pivoting the mounting member to the clamping bracket to rotate through a limited angle about a rotational axis transverse to the longitudinal axis of the bar, said mounting member including at least two portions spaced apart in a direction transverse to the rotational axis, said portions each lying in a plane parallel to said rotational axis and having aligned openings with one of said portions having an offset section thereon extending transverse to said rotational axis and also having an opening lying in a plane common to said aligned openings, said opening in said offset section being



continuous with the opening in said one portion so as to define a slot, a float, a float arm formed of a generally round bar member, said float arm having means at its opposite ends adapted to be connected to the float and to the mounting member, the connection means for the float including a shepherd's hook adapted to surround and detachably grasp the float, the connection means for the mounting member including the float arm extending through the aligned openings in the mounting member and having its end portion bent transverse to its longitudinal axis to be received through said aligned openings including said slot whereby the transverse bend in said float arm is held between the side walls of said slot to prevent rotation of said float arm, tab means on the mounting member adjacent at least one of the openings bendable against the float arm to lock the float arm rotatably and axially relative to the mounting member, said float arm being adjustable as to its length by cutting off the inner portion spaced from the float and forming the previous mentioned transverse bend as required, and rheostat control means actuated by the rotation of the mounting member responsive to changes in the level of the liquid in the tank.

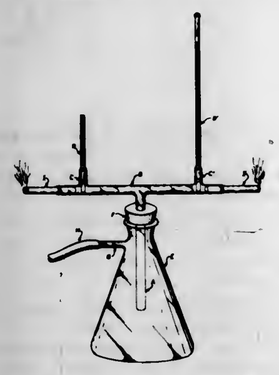
3,200,647
MEASURING APPARATUS
Frederick W. Knether, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,690
6 Claims. (Cl. 73—329)

1. A device for continuously measuring by direct immersion the temperature of a molten metal bath, the metal being characterized by undergoing a change in state from liquid to solid at some predetermined temperature, comprising: a solid metal block having a composition substantially identical to that of the bath metal, said block having a generally cylindrical configuration including a flat first end and a convex hemispherical second end, said block having an annular chamber formed therein at a point intermediate from said ends in a plane normal to the axis of said block, a first and a second tube imbedded longitudinally in said block, the first ends of each of said tubes opening into diametrically opposing



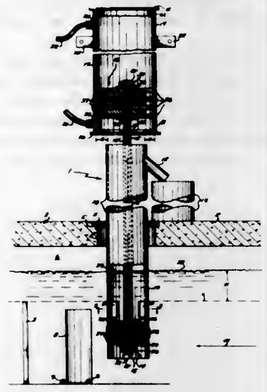
sides of said chamber and the second ends of said tubes separately opening onto said first end of said block, said tubes and said chamber providing a loop for the flow of a cooling fluid therethrough, fluid cooling means in cooperative relation with said loop for maintaining said loop at a first predetermined temperature below the melting point of said metal; and temperature sensing means imbedded within said block on the axis thereof at a point intermediate from said chamber and said second end of said block.

3,200,648
METHOD AND APPARATUS FOR COMPARING SMOKING PROPERTIES OF VARIOUS CIGARETTES
William H. Waggaman, P.O. Box 111, Alexandria, Va.
Filed Feb. 4, 1963, Ser. No. 256,080
9 Claims. (Cl. 73—343)



1. An apparatus for comparing visually, the burning rate of the tobacco and the temperature of the smoke drawn through two cigarettes which are smoked simultaneously under the same reduced pressure, said apparatus including a horizontal section of tubing open at both ends into which two cigarettes fit snugly, two short vertical lengths of tubing extending upward from and connecting with the horizontal section of tubing, a thermometer inserted into each of said short vertical sections with the lower ends of the thermometer extending into said horizontal section of tubing, a central vertical section of tubing having one end connected with and opening into the said horizontal section and having its other end connected with a source of reduced pressure.

3,200,649
SEWER SAMPLING SYSTEM
Herbert T. Peterson, Longview, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Dec. 21, 1962, Ser. No. 246,502
4 Claims. (Cl. 73—422)



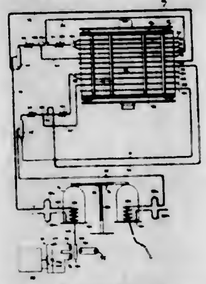
3. An apparatus for obtaining a sample from a sewer conduit, comprising: a sample pipe adapted to be extended into a conduit sewer and being provided with openings adjacent the lower end thereof, an air cylinder of a larger diameter than said sample pipe spaced axially above said sample pipe, a first piston means mounted in the sample pipe, a second piston means mounted in said air cylinder, said first and said second piston means being interconnected by a piston rod whereby said first and second piston means move longitudinally as a unit, said piston rod provided with a conduit extending between the upper end of said second piston means and the lower end of said first piston means.

3,200,650
PIPETTE
Vaughan Morrill, Jr., 26 S. Spoede Road, Creve Coeur 41, Mo.
Filed Nov. 14, 1962, Ser. No. 237,493
2 Claims. (Cl. 73—425.6)



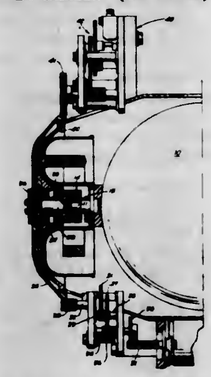
1. A pipette comprising a tubular member formed of one piece of glass and having a capillary tube portion adjacent one end, an enlarged bulb portion communicating therewith and providing a mixing chamber and a well portion disposed between the capillary portion and the enlarged bulb portion, said well portion having a cylindrical side wall and a flat base disposed at right angles to the side wall at the end adjacent the capillary tube which defines the end of the bore in the capillary tube and the glass in the well portion and the adjacent capillary and bulb portions being substantially free from internal stresses and light-ray distortion characteristics.

3,200,651
METHOD AND APPARATUS FOR DETERMINING THE CONCENTRATION BY WEIGHT OF A SUBSTANCE IN A FLUID STREAM
Edwin C. Whitehead, Slontsburg, N.Y., assignor to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed Nov. 21, 1961, Ser. No. 154,007
22 Claims. (Cl. 73—434)



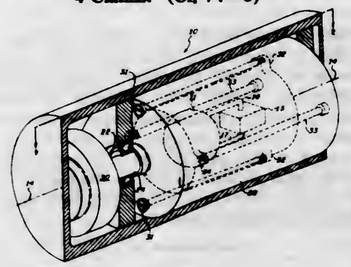
1. Apparatus for continuously determining the concentration by weight of a substance in a liquid, comprising:
(a) means for continuously transmitting said liquid in the form of a stream,
(b) separating means in fluid flow communication with said transmitting means for continuously separating said substance from said stream, and
(c) means in fluid flow communication with said separating means for continuously weighing a stream containing said separated substance during the flow of said last mentioned stream.

3,200,652
BEARING RACE COUNTER ROTATION APPARATUS FOR GYROS
Elias G. Chaggaris, Dover, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 19, 1960, Ser. No. 76,712
14 Claims. (Cl. 74—5)



1. In a gyroscope apparatus including a gimbal, shafts for supporting the gimbal of a gyroscope, rotary anti-fraction bearings for supporting said shafts and comprising inner and outer races, and means for oscillating said outer races in opposite directions comprising a motor having oppositely extending spur pinion shafts, a pair of spur gear train means, each operatively connected with one of said spur pinion shafts, a first housing member having an opening therethrough, bearing means in said opening and supporting a hollow shaft, a spur ring gear outwardly of said housing member connected with said hollow shaft and in engagement with one said spur gear train means, said hollow shaft at the inner end thereof supporting the outer race of one said rotary anti-friction bearing, a second housing member having a central opening in alignment with said gyroscope gimbal shafts, bearing means in said last mentioned opening supporting a hollow shaft, said second housing having an opening in the side there, a spur ring gear located adjacent said housing and connected with said second hollow shaft, said spur ring gear being in engagement with said second spur gear train means through said side opening through the housing, said second hollow shaft at the inner end thereof supporting the outer race of the other said rotary anti-friction bearing, third spur gear train means in engagement with said first mentioned spur ring gear and in driving relation with switch means for the motor, the number of shafts in one of said spur gear train means being an even number, and the number of shafts in the other of said spur gear train means being an odd number.

3,200,653
THERMAL GRADIENT COMPENSATING DEVICE
Willis G. Wing, Glen Head, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Aug. 20, 1962, Ser. No. 218,181
4 Claims. (Cl. 74—5)



1. In combination,
(1) means having a sensitive element for providing an output signal whereby temperature gradients along a predetermined axis through said sensitive element cause errors in said output signal,
(2) containing means for containing said sensitive element,
(3) hollow housing means in spaced relation surrounding said containing means, and
(4) a plurality of high thermal conductivity members connected between said housing means and said containing means and extending along said predetermined axis within the space between said containing means and said housing means for a distance at least approximately equal to the dimension of said sensitive element along said predetermined axis,
(5) said members being so constructed and arranged that temperature gradients along said predetermined axis through said sensitive element are substantially eliminated.

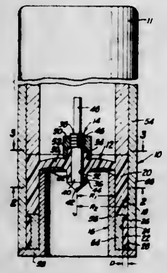
3,200,654
HERMETIC SEAL CONSTRUCTION
Ole G. Landsverk, Glendale, and William R. Anderson, Burbank, Calif., assignors to Landsverk Electrometer Co., Glendale, Calif., a corporation of California
Filed May 6, 1963, Ser. No. 278,309
2 Claims. (Cl. 74—18.2)

2. A hermetic seal structure which comprises:
a tubular housing having an open end and a cylindrical interior surface having a first radius;
a diaphragm formed of elastomeric material, said diaphragm comprising a peripheral tubular sleeve, said ring being formed of a material having a substantially zero coefficient of thermal expansion having ends and

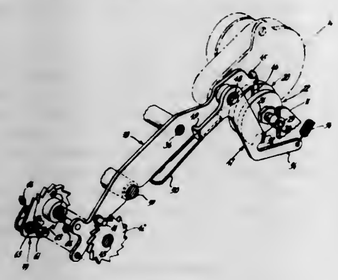
having inner walls, and a membrane extending between said inner walls of said tubular sleeve intermediate the ends of said tubular sleeve, said tubular sleeve having an exterior surface in contact with said cylindrical interior surface of said tubular housing, said tubular sleeve having an interior surface at a first distance from the exterior surface thereof;

a ring positioned against said interior surface of said tubular sleeve;

said tubular housing being made of a material having a first coefficient of thermal expansion and said tubular sleeve being made of a material having a second coefficient of thermal expansion, said second coefficient of thermal expansion forming a first ratio with respect to said first coefficient of thermal expansion, said first radius forming a second ratio with respect to said first distance, said first distance being arranged so that said first ratio is greater than said second ratio so that sealing is maintained between said tubular sleeve and said tubular housing upon decrease in ambient temperature.

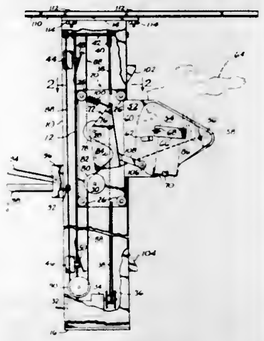


3,200,655
SNAP ACTION INCREMENTAL ACTUATOR
Dominick Tringali, Litchfield, Conn., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 24, 1963, Ser. No. 311,102
12 Claims. (Cl. 74—54)



1. A snap action incremental actuator mechanism comprising in combination:
drive means,
a disc having an irregularity formed at its periphery and an eccentric, each cycled by said drive means,
a conditioning lever associated with said disc, a triggering lever associated with said eccentric,
said levers joined by a shiftable pivotal arrangement,
and initiating means including said irregularity effective during one portion of said cycle to initiate said snap action and cause said pivotal arrangment to shift whereby an actuation is effected.

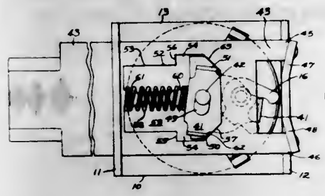
3,200,656
MOUNTING APPARATUS FOR TRAVELING, STRUCTURAL - SURFACE - PROCESSING APPLIANCES
Theodore N. Baskett, 9514 Portland Ave., Tacoma, Wash.
Filed May 22, 1963, Ser. No. 282,489
12 Claims. (Cl. 74—95)



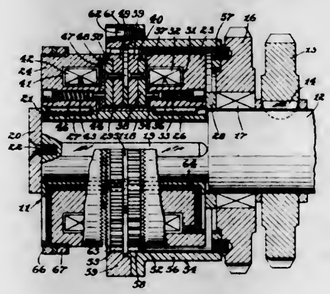
1. Mounting apparatus for traveling, structural-surface-processing appliances, said mounting apparatus comprising:
(a) an elongated frame having a longitudinal guideway in one side,
(b) a carriage guided for longitudinal reciprocation in the frame,
(c) reciprocating drive means connected to the carriage,
(d) bracket means mounted on the carriage and extending laterally through the guideway,
(e) appliance-securing means on the bracket means,
(f) appliance control means on the carriage for starting and stopping the operation of the appliance at selected positions of carriage travel,
(g) the appliance control means comprising an appliance control lever mounted on the carriage for movement between appliance activating and deactivating positions, a control cable secured at its ends to the frame and slidably engaging the control lever for actuating the latter, and
(h) cam means on the frame arranged to engage the control lever adjacent the ends of travel of the carriage and operable to move the control lever to appliance-deactivating position.

3,200,657
ELECTRIC SWITCH
Wayne A. Barden and Mervin B. Arisman, Elkhart, Ind., assignors to CTS Corporation, Elkhart, Ind., a corporation of Indiana
Filed Sept. 27, 1962, Ser. No. 226,566
4 Claims. (Cl. 74—99)

1. A mechanism for operating a rotary switch with a reciprocal motion comprising:
a supporting member;
a switch actuating member pivotally mounted on the supporting member;
an operating member reciprocally carried by the supporting member in a plane parallel to the plane of the switch actuating member;
means carried by the operating member arranged to engage only one side of the switch actuating member upon movement of the operating member in one direction;
and cam means carried by the operating member for moving the pivotal axis of the switch actuating member laterally when the operating member moves in the opposite direction so that the means carried by the operating member engages the other side of the switch actuating member thereby imparting an oscillating and lateral motion to the switch actuating member with repeated movements of the operating member.



3,200,658
COUPLE
Walter E. Rudisch, Elmira, N.Y., assignor to The Bendix Corporation, Elmira, N.Y., a corporation of Delaware
Filed July 31, 1961, Ser. No. 128,188
11 Claims. (Cl. 74—125.5)



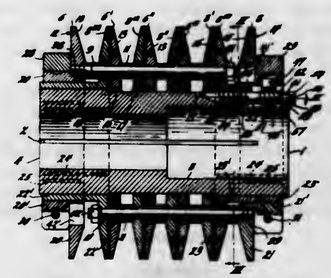
1. An indexing couple for use with a pair of driven members and adapted for continuously maintaining a driving connection with one of the driven members while controllably rotating said one driven member relative to the other driven member, said indexing couple comprising:
a pair of spaced body members having opposing faces, said body members including actuator means;
a first driven member,
a power shaft member fixedly connected to said pair of spaced body members and said first driven member to prevent relative movement therebetween,
a second driven member rotatively mounted on said power shaft member,
an adapter member fixedly secured to said second driven member;
driver means slidably journalled between the opposing faces on the body members, said driver means adapted to be motivated by the actuator means;
torque transmitting means on the opposing faces of the body members;
torque transmitting means on the driver means adapted to alternatively singly and concomitantly engage the body members' torque transmitting means; and,
cooperating means on the driving means and the adapter member for providing a driving connection therebetween.

3,200,659
ROTARY MOTION TRANSMITTING MECHANISM FOR INTERNAL COMBUSTION ENGINES AND THE LIKE
Sergio Angelini, Fenton, Mich., assignor to John Dolza, Fenton, Mich.
Filed Apr. 24, 1963, Ser. No. 275,329
11 Claims. (Cl. 74—219)



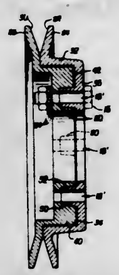
1. A rotary motion transmitting mechanism comprising a first rotary member, a second rotary member with its axis of rotation spaced from that of the first rotary member, and means interconnecting said rotary members to transmit the rotary motion of the one to the other, at least one of said rotary member having a hub, a rim, and a plurality of generally radially projecting thin plate spring portions connecting the hub to the rim, each of said spring portions having a part which extends in a plane at an angle to the radial axis of the leg to thereby permit eccentricity between the hub and the rim while inhibiting angular movement of the hub with respect to the rim.

3,200,660
VARIABLE PITCH SHEAVES HAVING A LARGE NUMBER OF GROOVES
William A. Williams, Philadelphia, Pa., assignor to T. B. Wood's Sons Company, a corporation of Pennsylvania
Original application Mar. 7, 1961, Ser. No. 94,046, now Patent No. 3,108,483, dated Oct. 29, 1963. Divided and this application Mar. 25, 1963, Ser. No. 267,457
11 Claims. (Cl. 74—230.17)



1. In a multi-grooved, adjustable pitch sheave, a sleeve, a plurality of sheave flanges on said sleeve, said flanges having conical surfaces toward their outer edges, said flanges being arranged with said conical flanges alternately facing in opposite axial directions forming V-shaped grooves between the adjacent pairs thereof, means fixedly connecting the alternate ones of said flanges into sets, pitch adjusting means for moving one of said sets axially relative to the other set, releasable means fixedly securing the end sheave flanges of said one of said sets of flanges on said sleeve, the connecting means of said sets of flanges supporting the intermediate flanges of said sets, respectively, against both axial and radial movement in operation with said intermediate flanges out of contact with said sleeve and means fixing said other set on said sleeve.

3,200,661
VARIABLE DIAMETER PULLEY
Willie Bill Chambers, 606 Edgewood Ave., Inglewood, Calif.
Filed July 12, 1963, Ser. No. 294,501
6 Claims. (Cl. 74—230.17)



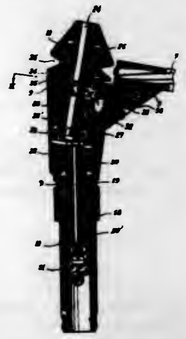
1. A variable diameter V-pulley comprising:
first and second juxtaposed pulley disk members having mutually opposed truncated conical V-belt engaging surfaces,
said first disk member having a plurality, forming a set, of protuberances extending axially toward said second disk member and being substantially equally angularly spaced along a circle concentric with the axis of said pulley,
said second disk member having a like plurality, forming a first set, of female receptacles formed in the face thereof exposed toward said first disk member, said first set of receptacles being angularly spaced and radially disposed substantially similarly to said protuberances, each of said receptacles of said first set having dimensions for receiving one of said protuberances to a predetermined depth; and
at least one additional set of receptacles formed in said second disk member radially similarly to those of said first set but angularly offset and spaced therefrom, said additional set of receptacles being formed with dimensions for receiving said protuberances to a second predetermined depth,
whereby the axial spacing of said conical V-belt engaging surfaces is adjustable depending upon which set of said receptacles said protuberances are received into,
one of said disk members including a convex short cylindrical portion formed radially within said conical surface and being concentric therewith, and the other of said disk members including a concave, short cylindrical portion adapted to fit telescopically over said convex cylindrical portion when said protuberances and a set of said receptacles are engaged.

3,200,662
ENDLESS RAW EDGE V-BELT
Joseph Rochedl, Dale L. Waugh, and Walter E. Huber, Dayton, Ohio, assignors to Dayco Corporation, a corporation of Ohio
Original application Mar. 13, 1958, Ser. No. 721,169, now Patent No. 2,991,498, dated July 11, 1961. Divided and this application Feb. 6, 1961, Ser. No. 92,433
3 Claims. (Cl. 74—233)



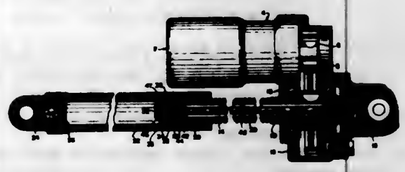
1. As an article of manufacture, an endless raw edge V-belt comprising compression, tension and neutral axis sections and longitudinally extending strength cords composed of synthetic fibers embedded in said neutral axis section, the exposed fibers at the edges of said belt being partially fused to the adjoining portion of the belt.

3,200,663
TWO-SPEED ARTICULATED ANCHORING JOINT FOR DENTAL DRILL
Henri Leonard, Besancon, France, assignor to Micro-Mega, Besancon, Doubs, France, a French company
Filed Oct. 4, 1962, Ser. No. 228,338
Claims priority, application France, Apr. 27, 1962, 895,808
6 Claims. (Cl. 74—353)



1. A gear transmission comprising a body, a sleeve turnable in said body, a drive shaft rotatably mounted in said sleeve with the axis of rotation of said shaft being eccentric relative to the axis of turning of said sleeve in said body, one end of said drive shaft projecting from said body and being adapted for rotation by input means, two concentric gears of different diameters secured to the other end of said drive shaft within said body, a driven shaft rotatably mounted in said body and having a gear at one end thereof selectively engageable with said concentric gears secured to the drive shaft, said driven shaft having means at its other end adapted to couple said driven shaft to output means, and means for turning said sleeve relative to said body between first and second positions where one of said concentric gears and the other of said concentric gears, respectively, are engaged with said gear on the driven shaft.

3,200,664
STOP FOR LINEAR ACTUATORS
Gerhard Mauric, Los Angeles, Calif., assignor to Electronic Specialty Co., Los Angeles, Calif., a corporation of California
Filed Oct. 16, 1963, Ser. No. 316,612
18 Claims. (Cl. 74—424.8)



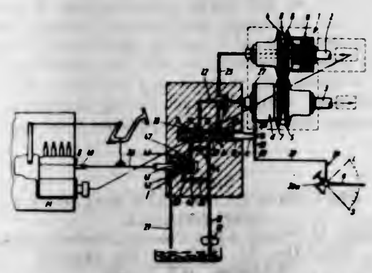
1. An actuator comprising a rotatable member and a linearly movable member, means for translating rotary movement of the rotatable member into linear movement of the linearly movable member to a limit of movement where impact between the two members takes place, a stress member carried by one member and having a part engageable by the other member in the region of relative movement of said members, means connecting the stress member to the member by which it is carried for movement therewith and longitudinal movement thereof but inhibiting rotational movement with respect thereto, whereby upon engagement of the stress member part with the other member the stress member will be put under compression or tension but not torsion.

3,200,665
GEARS
Martin Wells, 826 Emerald Bay, Laguna Beach, Calif.
Filed Feb. 14, 1963, Ser. No. 258,411
4 Claims. (Cl. 74—446)



4. In a composite gear:
(A) an axially arranged hub;
(B) a metal rim about said hub and including an annular ring having external teeth thereon, an internal annular flange normal to the axis of the gear, and a plurality of buttons on said flange, said buttons being wider than said flange and being annularly spaced apart and spaced from the adjacent inner surface of the ring;
(C) and a plastic web between the hub and rim, said web being secured to the hub and to the rim, said buttons being embedded in the peripheral portion of said web for anchoring said rim to said web.

3,200,666
CONTROL MECHANISM FOR A DRIVING UNIT CONSISTING OF A DRIVING ENGINE AND AN INFINITELY VARIABLE GEAR
Rudolf Schrodt, Kronberg, and Erich Petersen, Bad Homburg vor der Hohe, Germany, assignors to Reimers Getriebe K.G., Ascona, Switzerland, a firm of Switzerland
Filed July 12, 1961, Ser. No. 123,543
Claims priority, application Germany, Aug. 4, 1960, R 28,483
10 Claims. (Cl. 74—472)



1. In a control mechanism for operating a driving unit comprising a driving engine having an automatic governor with a movable control member for controlling the output of said engine, and an infinitely variable transmission connected to and driven by said engine having cylinder and piston means for varying the transmission ratio of said transmission, means for normally maintaining a constant transmission ratio comprising a source of fluid pressure medium, a line connecting said source to said cylinder and piston means, a pressure-regulating valve in said line for determining the pressure of said medium settable control means, a control member operatively connected to said valve and connected to said cylinder and piston means and to said control means for moving said valve in response to movement of said cylinder and piston means to maintain the same substantially constantly in a position determined by the setting of said control means, and a control element comprising a pressure release valve connected to said line operatively connected to said control member of said governor of said engine to be adjusted thereby when said engine has reached its normal maximum output for then reducing the pressure of said medium acting upon said cylinder and piston means to said transmission so as thereby to reduce the transmission ratio of said transmission.

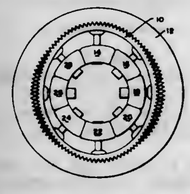
3,200,667
CONTROL DEVICE FOR WINDSHIELD CLEARING SYSTEMS
Leonard C. Neufeld, Des Moines, Iowa, assignor to The Delman Company, Cookeville, Tenn., a corporation of Tennessee
Filed Apr. 12, 1962, Ser. No. 186,984
1 Claim. (Cl. 74—479)



Actuating linkage for a reciprocating control unit of a windshield wiper motor comprising:
(a) a single member having opposite end sections,
(b) means operatively connected to a portion of said member between said end sections pivotally mounting said member to said control unit for pivotal movement in a plane substantially normal to the plane of movement of said control unit,
(c) first actuating means having a first pivot means connected with one end section of said member, and
(d) second actuating means having a second pivot means connected with the other end section of said member,
(e) said first and second actuating means being independently operable to selectively pivot the member utilizing the pivot means of the non-operated actuating means as a stationary fulcrum whereby the control unit is reciprocated upon operation of either of said actuating means,
(f) said pivotal mounting between the member and the control unit being positioned on the member to provide the member with arms of unequal lengths between such mounting and the first and second pivot means to compensate for the differences in traverse of the first and second actuating means.

3,200,668
ELECTRO-MAGNETIC ACTUATOR
Charles F. Jones, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 22, 1964, Ser. No. 369,648
8 Claims. (Cl. 74—640)
(Granted under Title 35, U.S. Code (1952), sec. 266)
1. A rotating wave generator comprising:
a plurality of solenoids;
each of said solenoids including a plunger;
said solenoids being arranged in a circle with the longitudinal axes of the plungers lying on radii of the circle; and
means connected to said solenoids for generating electrical waves to energize selected ones of said solenoids in a desired sequence; whereby, the plungers of said solenoids will reciprocate in a predetermined sequential fashion.

4. A motion transmitting device, comprising:
an outer ring gear having teeth formed along its inner peripheral edge;
a deformable inner ring gear concentrically disposed within said outer ring gear, and having teeth formed along its outer peripheral edge which are fewer in number than the teeth on the outer ring gear;
a plurality of solenoids disposed within said inner ring gear for generating a rotating wave therein;
each of said solenoids including a plunger;
said solenoids being arranged in a circle in the inner



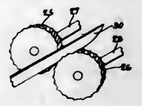
ring gear with the plungers of the solenoids lying on radii of the circle; and
means connected to said solenoids for generating electrical waves to energize selected ones of said solenoids in a predetermined sequence;
whereby, the plungers of said solenoids will reciprocate in a predetermined sequential fashion to generate a rotating wave in said inner ring gear, to force the teeth on the inner and outer ring gears into camming engagement with each other to cause relative rotating movement between the inner and outer ring gears.

3,200,669
MULTIPLE SPEED HUB WITH INTERNAL SPEED CHANGING MECHANISM
Hans Joachim Schwerdhöfer, Schweinfurt (Main), Germany, assignor to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany
Filed May 16, 1962, Ser. No. 195,123
Claims priority, application Germany, May 17, 1961, F 33,934
14 Claims. (Cl. 74—750)



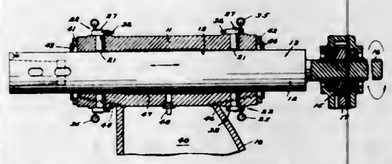
1. In a multiple speed hub, in combination:
(a) sprocket means rotatable about an axis in a forward and in a backward direction;
(b) rotatable hub shell means; and
(c) multiple speed transmission means interposed between said sprocket means and said hub shell means for transmitting rotation of said sprocket means in said forward direction to said hub shell means at two alternative speed ratios, said transmission means including:
(1) two transmission elements operatively connected for joint rotation at different speeds, one of said elements being connected to said sprocket means for rotation therewith;
(2) a speed changing clutch including a rotatable ratchet member and a rotatable detent member coaxially engaging said ratchet member, said ratchet member having a plurality of engagement face means circumferentially spaced from each other in two axially spaced radially extending planes, and sequentially axially engageable with said detent member during relative rotation of said members about the common axis, said face means being shaped to prevent relative rotation of said members in a direction opposite to said one direction, whereby said clutch members are moved between two axial positions relative to each other during said relative rotation of said members in said one direction, one of said clutch members being connected to one of said transmission elements for joint rotation therewith;
(3) one-way clutch means selectively responsive to backward rotation of said sprocket means for connecting the other clutch member to the other transmission element for joint rotation therewith in said one direction relative to the other clutch member; and
(4) coupling means responsive to said relative axial positions of said clutch members for coupling said shell means to a respective one of said transmission members for joint rotation in said forward direction.

3,200,670
STROPPER
James B. Wayman, 8 Asby St., Cincinnati 18, Ohio
Continuation of abandoned application Ser. No. 834,709, Aug. 19, 1959. This application May 4, 1964, Ser. No. 365,857
1 Claim. (Cl. 76—89.2)



A stropper for sharpening the cutting edge of a cutting instrument comprising, a pair of elements, said elements being rotatably mounted for contra-rotation about spaced parallel axes, each of said elements having at least one non-abrasive rounded smooth convex projecting surface of at least as great hardness as that of said cutting edge, each of said elements being located opposite a similar element, said surfaces being meshed and angulated relative to each other with a section of one of said surfaces at least partially disappearing behind its counterpart so as to define a V-shaped slot, said slot defining surfaces being located on said convex cross sections of said elements so as to present only rounded smooth surfaces to the cutting edge of a cutting instrument introduced into and pressed downward in said slot and while so held moved longitudinally through said slot so as to realign the blade edge particles of such cutting instrument without abrading and removing said particles from said edge.

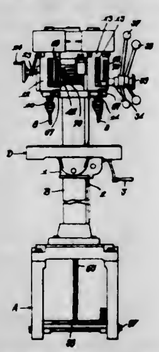
3,200,671
PRECISION QUILL-TYPE MACHINE TOOL SPINDLE
Gordon H. Porath, 6101 Concord, Detroit, Mich.
Filed Dec. 11, 1962, Ser. No. 243,870
5 Claims. (Cl. 77—5)



1. In a precision quill-type machine tool spindle, the combination comprising
a housing having a cylindrical opening therethrough,

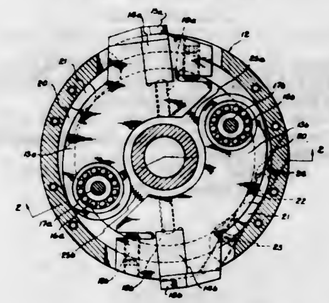
a spindle having a cylindrical portion extending through said opening,
said cylindrical portion of said spindle being longer than the cylindrical opening in said housing,
means on said spindle for engaging said spindle to rotate the spindle and move the spindle longitudinally of said housing,
means at one end of said spindle for supporting a tool,
said housing having at least two longitudinally spaced sets of pressure pads in the surface of said cylindrical opening,
each said set comprising a plurality of circumferentially spaced pressure pads,
an orifice associated with each pressure pad and communicating directly with its respective pressure pad,
means for supplying liquid under pressure to each said orifice,
the sizes of said orifices being such that the pressure of liquid in the pads of each set of pads is normally equal,
the relative dimensions of the surfaces of said cylindrical opening wherein said pads are positioned and said spindle being such that a pressurized film of liquid flows continuously between the surfaces through the pressure pads so that forces on the spindle are balanced by pressure in the pads providing a separation of the surfaces and retaining the spindle in a predetermined radial position relative to the housing throughout the rotational and longitudinal movement of the spindle relative to the housing.

3,200,672
MULTIPLE SHAFT TYPE DRILLING MACHINE
Kiyoshi Kawasaki, 4619 Shimada-shi, Shizuoka-ken, Japan
Filed Oct. 2, 1962, Ser. No. 227,917
Claims priority, application Japan, Oct. 2, 1961, 36/49,946
8 Claims. (Cl. 77—24)



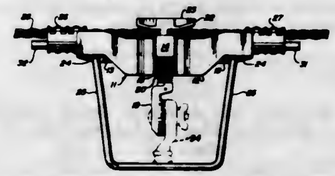
1. In a multiple shaft type drilling machine comprising a base adapted to be secured on a floor, a vertical pillar member upwardly extending at a location near the rear side of said base; a head assembly mounted at the upper end of said pillar member and a table supported by said pillar member for vertical movement along the pillar; characterized by that said drilling machine includes a plurality of spindle boxes disposed within said head assembly for receiving their respective spindles; a common drive motor disposed on said head assembly; spindle drive means interconnected between said common drive motor and said spindles for providing rotational movement of said spindles; a horizontal positioning means including a threaded bar connected between said spnidle boxes for selectively moving said spindle boxes relative to each other in a horizontal direction; vertical positioning means individually engaging the upper portion of said spindles within their respective spindle boxes and including means for seletcively moving said spindles in a vertical direction; said vertical positioning means including means for moving said spindles in unison when in a first condition and separately when in a second condition; said spindle drive means including reversing means for selectively reversing the rotational direction of said spindles; said spindle drive means including intermediate shafts corresponding in number to said plurality of spindles, each of said intermediate shafts being connected between said common motor and a connector member disposed in its associated spindle box.

3,200,673
TOOL FOR FINE CUTTING
Alfred Pfeifer, Frankfurt am Main, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
Filed May 22, 1964, Ser. No. 369,460
Claims priority, application Germany, June 21, 1963, D 41,807
3 Claims. (Cl. 77—58)



1. A tool for the fine cutting of a workpiece such as a cylinder or bushing comprising a cylindrical tool head adapted to be attached to a spindle, a tool arm pivotally mounted in said tool head on an axis offset from and parallel to the longitudinal axis of said tool head, a cutting tool secured to said arm and extending outwardly of said tool head, means for the rough setting of said cutting tool, adjustable ring cam means for the fine adjustment of said cutting tool with respect to its outward movement due to the centrifugal force produced by the rotation of the tool head, and return spring means secured to said tool arm for withdrawing the cutting tool from a workpiece when the tool head is stopped.

3,200,674
ELECTRICAL TOOL
Kenneth N. Crago, Rte. 2, Canal Winchester, Ohio
Filed June 21, 1963, Ser. No. 289,518
4 Claims. (Cl. 81—3)



1. A tool for holding a hot line saddle temporarily supported by a wiring carrying an electric current so that the hot line saddle may be more easily attached to the current-carrying wire, wherein the hot line saddle consists of a wire capable of carrying current, bent in the

shape of a U with a pair of integral aligned extensions extending oppositely from the ends of the U, but in the same plane as the U, said tool comprising:

means, which comprises a pair of substantially vertical plates said plates being contiguous at their mid-portions but flexibly spaced apart adjacent to their ends and at least one of said plates having a substantially horizontally extending tab adjacent to each end for supporting the extensions of the saddle;

a vertically extending bearing secured at one side of and to said plates at their contiguous mid points;

a rotatable shaft extending vertically through said bearing; and

means for supporting said tool upon the electric current carrying wiring and thus supporting the saddle in a position in which the extensions of the saddle are contiguous to the current carrying wire and parallel thereto comprising a cam secured at the top of said shaft and movable upon rotation of said shaft from a position in which it does not intrude in the space directly above the electric current-carrying wiring, to a position in which a portion of said cam directly overlies said wiring.

3,200,675

CRIMPING DEVICE FOR STRAPPING MATERIAL OPERATING BOTH DURING INSTROKE AND OUTSTROKE OF THE HANDLES

Grant Noble Willis, Bristol, Conn., assignor to The American Manufacturing Company, Inc., Brooklyn, N.Y., a corporation of Delaware

Filed June 3, 1963, Ser. No. 284,901
8 Claims. (Cl. 81—9.1)



1. Apparatus for applying a seal to strapping material comprising:

(a) means including mounting means to which a pair of levers and a pair of sets of jaws are mounted, said jaws being respectively coupled to said levers for producing a first deformation in said seal in response to the movement of said levers in a first direction,

(b) means including said sets of jaws for producing a second deformation in said seal in response to the movement of said levers in a second direction which is opposite to said first direction.

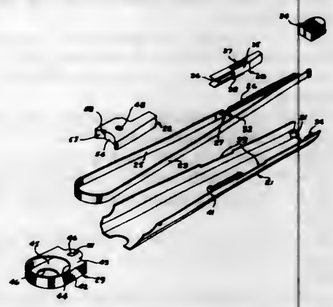
3,200,676

WRENCHES

Armin B. Pagel, 821 Arlington Court, Janesville, Wis.

Filed May 14, 1962, Ser. No. 194,639
4 Claims. (Cl. 81—64)

1. A tool comprising an elongate handle member, support means defining a support surface adjacent one end of said handle member and facing away from the opposite end thereof, an elongate flexible band supported by said handle for reciprocable longitudinal movement through a substantially U-shaped path around said support means with the curved intermediate portion of said band opposite said support surface and with the end portions of said band extending along said handle in generally parallel relation, spring means connecting one end of said band to said handle for biasing said one end away from said support means, actuating means accessible at



a location remote from said support means for moving said band along said path against the influence of said spring means, and adjusting means independent of said actuating means for moving the end of said band connected to said spring means toward said support means against the influence of said spring.

3,200,677

SLIP PIPE WRENCH WITH LOCKING RING

William Miranda, Welch Road, Ringwood, N.J.

Filed Nov. 20, 1963, Ser. No. 325,060
1 Claim. (Cl. 81—160)



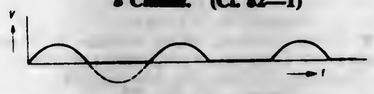
A device of the character described comprising an elongated handle, a head formed integrally at the upper end of said handle, a pair of ears integrally formed on said handle in spaced relation below said head, a fixed jaw mounted on said head, a movable jaw having a vertical shank extending freely through said head and between said ears, a rotatable lock ring positioned between said head and said ears and surrounding said shank, said shank being generally rectangular in cross-section and having a rack formed in each of the forward and rear surfaces thereof, the inner periphery of said ring being provided with threads which are adapted to engage the teeth of said racks to lock said movable jaw in adjusted position, said threads being provided with diametrically opposed cut out portions of slightly greater length than the width of said rack which are adapted to be brought into register with said rack by the rotating of said ring to permit free movement of said shank through said ring, the outer periphery of said ring being provided with vertically extending grooves, and said handle having a spring pressed plunger mounted therein which is adapted to engage said grooves to yieldingly maintain said ring in adjusted position.

3,200,678

METHOD AND APPARATUS FOR SCALPING ROD-SHAPED MATERIALS

Hans Lindemann, Grondernberg, Germany, assignor to Th. Calow & Co., Bielefeld, Germany

Filed Feb. 25, 1963, Ser. No. 260,460
Claims priority, application Germany, Feb. 28, 1962, L 41,347
8 Claims. (Cl. 82—1)



1. A method of scalping material such as wire, rods, pipes, or the like comprising the steps of feeding said material in one direction axially thereof through a revolving cutter head for scalping said material and varying the feeding speed of the material in said one direction during said scalping continuously between zero and a preselected maximum.

3,200,679

WORKPIECE LOADING AND UNLOADING APPARATUS

Arthur W. Johnson, Canfield, Ohio, assignor to Youngstown Foundry & Machine Co., Youngstown, Ohio, a corporation of Ohio

Filed Aug. 2, 1962, Ser. No. 214,228
7 Claims. (Cl. 82—2.5)



1. In apparatus for working upon the surface of a workpiece, the combination of an elongated bed having a headstock at one end and a tailstock at the other end, a pair of cradle structures between the headstock and tailstock for supporting the opposite ends of a workpiece to be worked upon, means for supporting said cradle structures for movement axially along said bed whereby the workpiece on the cradle structures may be shifted back and forth between the headstock and tailstock, single rotating drive motor means located intermediate the headstock and tailstock for moving said cradle structures axially along said bed, first rotating mechanical drive means on one side of the single motor means for transmitting driving power from the single motor means to one of said cradle structures, second rotating mechanical drive means on the other side of the single motor means for transmitting driving power from the single motor means to the other of said cradle structure, clutch means for selectively coupling said drive motor means to either the first or second mechanical drive means, single drive motor means for elevating both of said cradle structures and a workpiece carried thereby, and means for transmitting power from said last-mentioned drive motor means to said cradle structures to elevate the same.

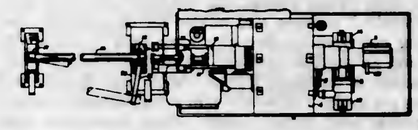
3,200,680

MACHINE TOOLS

Claude D. Collin, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 4,765, Jan. 26, 1960. This application July 27, 1964, Ser. No. 386,485
10 Claims. (Cl. 82—2.5)

1. A machine tool for operating on a length of bar stock comprising means for feeding the bar stock to position a predetermined portion thereof in machining position, means for machining the predetermined portion of the bar stock including cross and turret slides and an indexible turret on said turret slide, a cutoff slide adapted to carry a cutoff tool and movable to cut said bar stock transverse to the elongation thereof, cycle control means for cyclically operating said machine through a work cycle which includes the feeding of a predetermined portion of bar stock to machining position, machining said portion



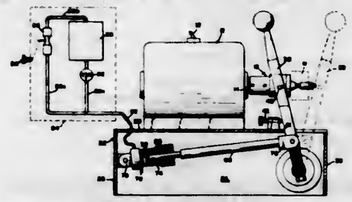
and cutting off said machined portion, a control element for said cutoff slide actuatable to actuate movement of said cutoff slide to square off the end of a new length of bar stock prior to a work cycle being performed thereon, and means responsive to the movement of said cutoff slide to square off the end of a new length of bar stock for starting the cyclical operation of the machine on the new length of bar stock.

3,200,681

LATHE FOR FORMING A VIRTUALLY CYLINDRIC SURFACE ON AN ARTICLE

Walter P. Laskey, Hayward, and Merle Bibb and Roger M. Sherman, Palo Alto, Calif., assignors to The Kor-It Company, Inc., Santa Clara, Calif., a corporation of California

Filed Mar. 5, 1963, Ser. No. 263,000
8 Claims. (Cl. 82—12)



1. A lathe for forming a virtually cylindric surface on an article between two ends of the article spaced from one another along a central axis of the article comprising: means for rotatably driving the article about the central axis thereof, a cutting tool having a cutting edge narrow with respect to the space between the article ends and being formed for finishing the surface of the article, means for mounting said cutting tool for movement across the surface of the article, said tool mounting means being adapted for pivotal movement relative an axis, last said axis being fixedly disposed perpendicular to the axis of rotation of said article and spaced therefrom a distance sufficient that movement of said cutting tool across said article surface forms a virtually cylindric surface, and stop means for limiting pivotal movement of said tool mounting means.

3,200,682

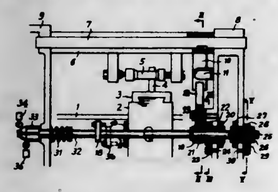
DEVICE FOR CONTROLLING THE MOTIONS OF THE TEMPLATE HOLDER OF A COPYING LATHE

René Le Bruegue, Malakoff, Seine, France, assignor to H. Ernault Batignolles S.A., Paris, France, a company of France

Filed May 23, 1961, Ser. No. 112,059
Claims priority, application France, May 31, 1960, 828,660
7 Claims. (Cl. 82—14)

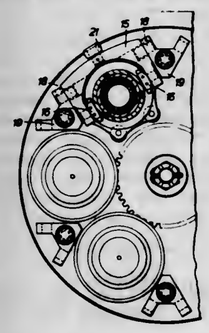
1. In a copying lathe comprising a saddle the successive forward strokes of which correspond to alternating roughing and finishing cut cycles, and a template holder

adapted to hold a template and movable between a roughing cut position and a finishing cut position, a control device for controlling the movements of said holder between said positions, said control device comprising fixed stop means engageable during said finishing cut cycle by said holder for determining said finishing cut position thereof, stop means displaceable between an active position wherein it engages said holder for determining said roughing cut position thereof during said roughing cut cycle, and an inactive position wherein said displaceable stop means is disengaged from the holder during said finishing cut cycle; a rotatable cam of substantially square cam profile and having edges which determine said active position of said displaceable stop means, and flat



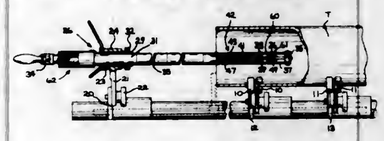
sides which determine said inactive position of said displaceable stop means, a bar having a "reversible pitch" thread thereon, an axially fixed rotatable nut in engagement with the reversible pitch thread on the bar, said cam being rotationally solid with, and axially displaceable on said bar, said bar being solid with at least one axial stop engageable by said saddle when the latter reaches a given point of its forward stroke to cause an axial displacement of said bar; first ratchet-wheel-and-catch means adapted to lock said bar angularly during the forward motion of said saddle, and second ratchet-wheel-and-catch means adapted to lock said nut angularly and to cause thereby an angular displacement of said bar during the return motion of said saddle.

3,200,683
POSITIONING DEVICE FOR ROTARY MACHINE TOOLS
Albert Howard Whitbread and Roy Sidney Dolman, Ward End, Birmingham, England, assignors to Birmingham Small Arms Company Limited, Birmingham, England
Filed Sept. 11, 1961, Ser. No. 137,251
8 Claims. (Cl. 82—28)



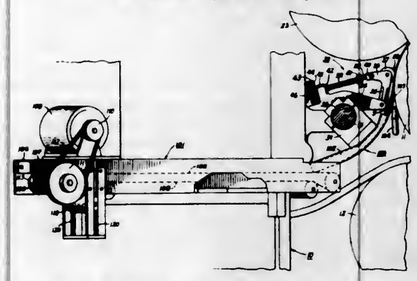
1. In a machine tool, a spindle carrier mounted for rotation about a first axis, a spindle supported on said carrier and being rotatable about a second axis in parallel spaced apart relationship to said first axis, a drive train for rotating said spindle, a cam follower having a polygonal periphery providing angularly spaced apart follower surface region, means non-rotatably mounting said cam follower on said spindle, fixedly mounted cam surface means engageable by adjacently disposed ones of said follower surface regions upon rotation of said carrier to a predetermined position and coacting with said follower surface regions to impart rotation of said spindle to a predetermined oriented position and to lock said spindle against rotation in said oriented position.

3,200,684
SCORING DEVICE
William B. Read, Sylvania, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Apr. 20, 1964, Ser. No. 361,180
6 Claims. (Cl. 83—12)



1. Apparatus for applying an internal score line on glass tubing comprising, an elongated support member, a pair of spring steel arms, means pivotally connecting said arms to said support adjacent one end thereof on a common axis, scoring means mounted on the free end of one of said arms a cam nut mounted on said support intermediate the end thereof and said arm pivot, means extending through said support for shifting said cam nut longitudinally of said support to pivot said arms outwardly, means connected to said cam moving means adjacent the opposite end thereof for operating said moving means, a presettable force limiting means interposed said cam moving means and said means for operating said cam moving means, whereby a preselected force is supplied to said cam nut, and means connected to said support means for rotating said support about its longitudinal axis.

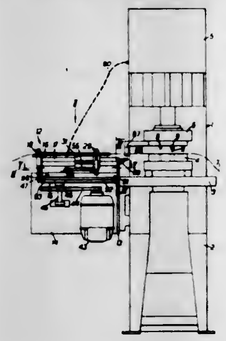
3,200,685
DEVICE TO CUT EDGES OF SHEETS AND REMOVE SCRAP
Alfred Heilbrunn, Brooklyn, N.Y., assignor to Topps Chewing Gum, Incorporated, Brooklyn, N.Y., a corporation of New York
Filed Feb. 4, 1963, Ser. No. 255,898
8 Claims. (Cl. 83—98)



1. In a high speed printing device or the like for handling paper and cardboard including an impression cylinder, a delivery cylinder, and gripper means for guiding and thereafter transferring discrete sheets from said impression to said delivery cylinder, a cutter assembly including cutter knife means carried by the frame of said press and yieldably biased toward said impression cylinder, annular anvil means carried by and extending radially beyond the periphery of said impression cylinder adjacent an end thereof, said anvil means being in engagement with said knife means, hold down means yieldably biased toward said impression cylinder and maintained in proximate spaced relation thereto, said hold down means including contact portions disposed closer

to the axis of rotation of said impression cylinder than the point of engagement of said knife means and anvil means, said hold down means being in immediate leading position with respect to the point of engagement of said cutter knife and anvil, and waste removal means carried by said frame and positioned laterally outwardly with respect to said cutter knife to receive scrap portions of said sheets, said waste removal means being laterally angularly oriented with respect to the axis of rotation of said impression cylinder and including scrap removal means operating at a linear speed in excess of the linear speed of said impression cylinder, said scrap removal means including a conveyor belt, and an idler roller yieldably urged against said belt, the severed scrap portions being guided between said belt and roller.

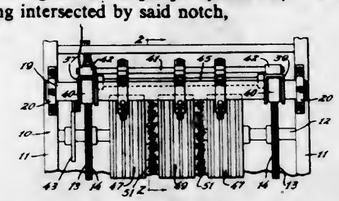
3,200,686
FEED MECHANISM
Henry Norton, Hubert Veare Norton, Leslie Buckingham Norton, and Douglas Edwin Norton, all of Horley, Surrey, England, assignors to Norton Tool Company Limited, Horley, Surrey, England, a company of Great Britain
Filed July 1, 1963, Ser. No. 292,055
Claims priority, application Great Britain, July 4, 1962, 25,693/62
8 Claims. (Cl. 83—277)



1. A feed mechanism for material in continuous form comprising a stationary clamp for the material, a cam and cam follower mechanism for opening and closing the stationary clamp, a movable clamp for the material having a pair of jaws and mounted for reciprocation relative to the stationary clamp, rotary crank means, a connecting rod connecting said crank means to said movable clamp, a longitudinal slot in said connecting rod, a lever pivoted in said slot, connecting means between a first point on said lever and one of said jaws, a cam follower on said lever at a second point spaced from said first point, and a cam mounted for engagement by said cam follower.

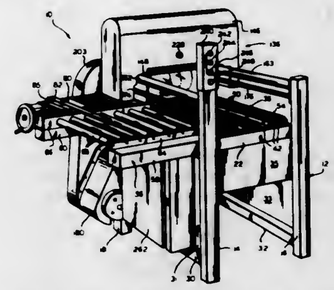
3,200,687
PERFORATOR ATTACHMENTS FOR OFFSET PRINTING MACHINES
Harold E. Paulson, 842 W. Nebraska Ave., St. Paul, Minn.
Continuation of application Ser. No. 3,876, Jan. 21, 1960. This application Feb. 21, 1963, Ser. No. 260,957
9 Claims. (Cl. 83—346)

1. In combination, a perforating attachment for use with the delivery mechanism of an offset press including,
a pair of parallel endless conveyor chains,
coaxial guide sprockets for changing the direction of said conveyors and about which said conveyors extend,
a drum coaxial with said guide sprockets and mounted therebetween,
said drum being of a diameter substantially equal to the diameter of said guide sprockets,
transverse bars connecting said conveyors at equal intervals and including sheet gripping members,
said drum having a notch extending into the periphery thereof parallel to the drum axis to accommodate said bars,
said drum having a plurality of axially spaced grooves extending about the periphery thereof, these grooves being intersected by said notch,



a strip of flexible resilient plastic engaged in a selected one of said grooves and having its outer surface substantially flush with the surface of said drum,
a perforating wheel supported on an axis parallel to the drum axis and engageable with said strip substantially throughout the length thereof capable of perforating a sheet carried over the surface of said drum by said sheet gripping members, and
means holding said strip in said selected groove, whereby
the length of the line of perforations in the sheet is controlled by the length of said strip in said selected groove.

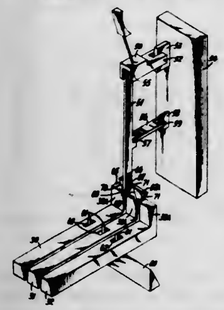
3,200,688
SAWING MACHINE
Jack T. Feeney, Schiller Park, Henry F. Thiele, Jr., Wheaton, and Edwin G. Koriath, Itasca, Ill., assignors to Graphic Saw, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 11, 1962, Ser. No. 229,801
7 Claims. (Cl. 83—383)



1. A sawing machine which comprises a bed for supporting an article to be sawed on a surface thereof, a saw head mounted for reciprocable traversing movement along a path relative to said bed, clamp means for clamping an article to be sawed on said bed surface, said clamp means comprising a clamp arm and a plurality of counterweighted clamping elements pivotally mounted on said arm and normally projecting upwardly therefrom for respective clamping engagement with the edges of different articles, said arm being movable from a release position with said elements disposed below said surface to a clamping position with said elements normally projecting above the surface, said elements not engaging an article and located beneath the article being pivotally moved thereby to avoid interference therewith, and means in the path of and

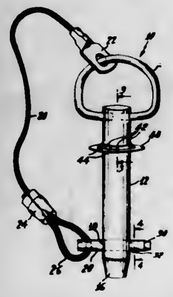
adapted to be engaged by said saw head for moving said arm in response to said traversing movement of the saw head, to clamp an article on said bed as said saw head moves in a direction to saw the article and to release the article as said saw head moves in a reverse direction.

3,200,689
KEYBOARD
Paul S. Rosberger, 260 Parker Ave., Maplewood, N.J.
Filed Apr. 2, 1964, Ser. No. 356,876
14 Claims. (Cl. 84—423)



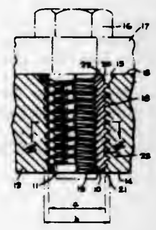
1. A keyboard comprising a single row of keys in side by side relation, elements selectively operable by said keys, means responsive to the depression of one pair of laterally adjacent keys for actuating one of said elements and means responsive to the depression of a second pair of laterally adjacent keys for actuating another of said elements, one of the depressed keys being common to said first and second pair of keys.

3,200,690
DEVICES FOR CONNECTING WORKPIECES
Walter H. Dickman, 6 Darby Drive,
Huntington Station, N.Y.
Filed Nov. 14, 1963, Ser. No. 323,856
1 Claim. (Cl. 85—7)



A device for connecting workpieces together comprising a support pin member having an elongated body of uniformly round size, a permanent ring mounted on one end of said body by which the body may be manipulated, the other end of said body being tapered to a narrower size, a through opening in said body at the other end thereof adjacent said taper, a lock pin having a body portion thereof removably insertable through said opening, a blind hole in said body portion, a locking ball in said blind hole, a spring in said hole urging said ball beyond said body portion, said locking ball projecting beyond the confines of said portion for engagement with one of the defining walls of said opening when said body portion of said lock pin is extended therethrough, means connecting said ring and lock pin together, a washer shaped limiting element movable in one direction along said body of said support pin member to be adjustably positioned a desired distance from said lock pin when the body portion of said lock pin is extended through said opening, and resilient means on said limiting element operable to engage said body of said support pin member to secure said limiting means in its one direction of movement to its adjusted position.

3,200,691
THREADED ELEMENTS WITH SELF-TAPPING PEAKS AND RECESSES
Robert Neuschotz, 1162 Angelo Drive,
Beverly Hills, Calif.
Filed Aug. 6, 1962, Ser. No. 214,939
8 Claims. (Cl. 85—47)



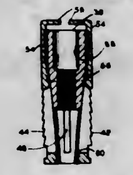
1. An element comprising a body having external threads about an axis to be screwed into a carrier member; said threads having modified minor diameter surfaces which are substantially wider axially than the narrowest portions of the crests of said threads; said body having a second set of threads different from said external threads for engaging a mating part to attach it to said carrier member; said external threads having radially outer surfaces of non-circular cross-section defining radially outwardly projecting circularly spaced peaks, and which, in advancing circularly between peaks, advance first progressively radially inwardly and then outwardly relative to said axis and said modified minor diameter surfaces, and thereby progressively truncate the external threads to first progressively decrease and then increase in radial thickness; said outer surfaces having minimum radius portions circularly between said peaks at which said surfaces are nearest to said axis and which are recessed radially inwardly a substantial distance beyond planes drawn to just touch adjacent peaks; said body having at least one end which may be its leading end upon installation and which has a tapering chamfer surface of circular cross section centered about said axis and progressively truncating said peaked threads toward said end of the body; said external threads having opposite side faces defining a thread profile which remains the same from one minimum radius portion to the next except insofar as the threads are truncated; said outer surfaces, as they advance radially inwardly, increasing in width axially between said opposite side faces; said outer surfaces, as they commence their inward advancement from the outermost portions of said peaks, at sides of the peaks which may be the circularly leading sides when said element is screwed into said carrier member, being shaped to initially advance primarily in a circularly advancing direction and at a much slower rate radially inwardly; and said outer surfaces changing progressively in radial distance from said axis through the major portion of the circular distance between two successive minimum radius portions.

3,200,692
ANCHORING DEVICE
Robert T. Catlin, Trumbull, Conn., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed July 30, 1963, Ser. No. 299,686
2 Claims. (Cl. 85—68)



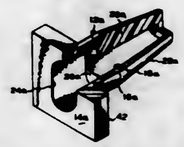
1. A masonry expansion anchor comprising a tubular body member having expansion means at one end and securing means at the opposite end thereof, cutting means fused to the end having said expansion means, said cutting means being a layer of nodular tungsten carbide particles no small than .020 inch and no larger than .080 inch in size arranged so as to cover the end and the inner and outer side walls of said body adjacent said end providing a cutting surface having a greater inner and outer diameter than said body, whereby said anchor performs drilling by rotary motion only without impact motion, said cutting means being free of sharp points.

3,200,693
EXPANSION SHELL
Frederick P. Dickow, Auburn, N.Y., assignor to The Eastern Company, Naugatuck, Conn., a corporation of Connecticut
Filed Oct. 17, 1963, Ser. No. 316,949
10 Claims. (Cl. 85—75)



1. An expansion shell assembly for mine roof support and the like consisting of an expansion shell and wedge, said expansion shell comprising a one piece malleable iron casting in the form of a generally hollow cylindrical member, said member having a plurality of slits extending lengthwise thereof subdividing the shell into four substantially equal arcuate segments, said segments each having a series of uniformly lengthwise spaced arcuate gripping teeth on their external faces over a substantial portion of the lower half of the length of the shell, and having transversely concave and longitudinally convex camming surfaces behind said teeth on their inside faces, said camming surfaces extending upwardly and flaring outwardly, said shell having a pair of spaced parallel upwardly extending arms integral with and extending upwardly from at least two of said segments that are oppositely disposed, and said arms being in alignment with two of said slits that are oppositely disposed, and integral deformable tab means extending inwardly toward the axis of the shell at the upper end thereof in the plane of said arms, said expanding wedge having an upper cylindrical portion having lengthwise extending grooves on its exterior embracing said arms to confine the wedge within the shell and resist relative rotation therebetween, and a tapered wedge portion extending upwardly and tapering outwardly from its lower end and complemental to a portion of said camming surfaces of said segments, said wedge member having an axial threaded bore to receive the threaded end of an expansion bolt, and said tab means extending at least partially across the threaded bore, and adapted to engage the end of an expansion bolt when threaded through the wedge bore to provide initial downward thrust of said wedge to spread said segments.

3,200,694
PLASTIC FASTENER
George M. Rapata, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Feb. 8, 1963, Ser. No. 257,339
12 Claims. (Cl. 85—82)

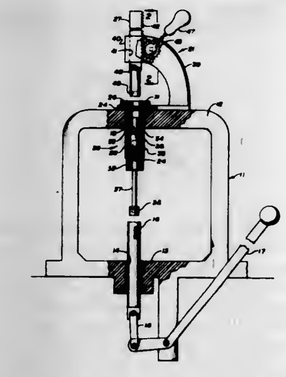


2. A resilient one piece plastic fastener in combination with a workpiece having an aperture of predetermined configuration and transverse dimension, said fastener including a shank and a laterally extending head at one end of said shank, said head provided with an axially extending counterbore through said head and for a predetermined distance into said shank and defining in transverse section an oval with major and minor axes, a second bore provided in said shank of smaller transverse dimension than said counterbore and having its longitudinal axis which is coincident with the longitudinal axis of the counterbore in said head, said second bore communicating with said counterbore and defining in transverse section an oval with major and minor axes rotated 90° relative to the major and minor axes of said counterbore, said shank in transverse sections spaced along its axis presenting a first portion having a continuous thin wall section in the vicinity of said head and a second portion having a thicker wall section of substantial axial extent and extending from said first portion to the vicinity of the terminal end portion of said shank, the outer surface of said shank in the vicinity of said laterally extending head having a complementary configuration to the counterbore provided in the shank section adjacent said head with its major and minor axes in a substantial registry with the major and minor axes of said counterbore, the walls of said workpiece aperture forming a substantially circular surface adapted to contact a portion of said outer shank surface in the vicinity of said laterally extending head when the fastener is finally positioned in the workpiece aperture, the outer surface of said shank around said second bore generally defining an oval in transverse section generally complementary to said second bore, said workpiece aperture being so dimensioned as to deform the wall section of the entering end of the fastener as it passes through the workpiece aperture and to deform the thinner wall section of said shank in the vicinity of said head to form retaining shoulder means when the fastener is in finally mounted position relative to the apertured workpiece and the wall section of the entering end of said shank portion has returned to its normal dimension after the temporary deformtion of it by said workpiece aperture.

3,200,695
BULLET SWAGING ATTACHMENT FOR RELOADING PRESS
Louis S. Santonieri, 1176 Valle Vista, Vallejo, Calif.
Filed May 6, 1964, Ser. No. 365,428
6 Claims. (Cl. 86—1)

1. In a bullet reloading press having a base frame including spaced rigidly connected upper and lower portions, a first piston slidably mounted on said lower portion for reciprocating vertical movement in confronting relation with said upper portion, said upper portion being adapted

to have removably mounted thereon a bullet reloading die in confronting relation with said piston and lever means for reciprocating said piston, a bullet swaging attachment comprising, in combination, a tubular member removably mounted on said upper portion and having a vertical bore disposed in alignment with said first piston, a second piston disposed in said bore for sliding movement there-



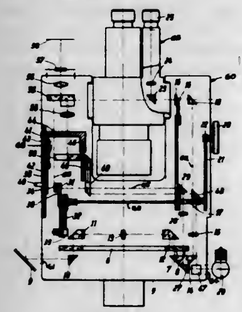
in, means for coupling said first piston to said second piston for moving the latter upwardly in said bore, a press frame mounted on said upper portion, a ram member mounted on said press frame for vertical slidable movement in alignment with said bore and in confronting relation with the upper end thereof, a bullet swaging die head provided on the lower end of said ram member and adapted to fit downwardly into said bore, and second lever means for reciprocating said ram member.

3,200,696

THEODOLITE WITH CODED INDICATIONS

Eduard Lang, Wiesbaden, Walter Faulian, Sandershausen, near Kassel, and Erwin Zwickert, Kassel, Germany, assignors to Otto Fennel Söhne K.G., Kassel, Germany, a German firm

Filed Dec. 20, 1960, Ser. No. 77,208
Claims priority, application Germany, Jan. 18, 1960, F 30,328
5 Claims. (Cl. 88—1)



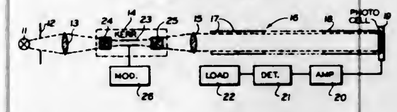
1. A portable theodolite comprising, in combination, a transparent circular plate; a first annular scale on said plate subdivided into graduations corresponding to relatively coarse values of the measured angles; a second annular scale on said plate in the form of first coded indicia corresponding to said graduations, said first and second annular scales being concentric with said circular plate; a second transparent plate having an index thereon; a first optical system defining a light ray path extending normal to said circular plate and through said first annular scale, then parallel to said circular plate substantially diametrically of said first annular scale, and then again normal to said circular plate and through said first annular scale, to provide a pair of closely spaced images of diametrically opposite graduations of said first annular scale; a second optical system, including an adjustable optical element, directing said closely spaced images through said second transparent plate with reference to said index, and to means forming an image plane for observation, at said image plane, of said pair of closely spaced images in relation to said index; an optical micrometer including a transparent scale having thereon second coded indicia representative of relatively fine subdivisions of said relatively coarse values; a third optical system defining a light ray path extending normal to said transparent circular plate through said second annular scale, said adjustable optical element, and said transparent micrometer scale and to said image plane to provide thereat superposed images of said first and second coded indicia; setting means operable to adjust said adjustable optical element to shift said pair of closely spaced images relative to said index to bisect said closely spaced images by said index; means connecting the scale of said optical micrometer to said setting means for conjoint adjustment of said adjustable optical element and said optical micrometer scale; and viewing means including said image plane.

3,200,697

IRIS TYPE BEAM WAVE GUIDE

Georg Johann Ernst Goubau, Estontown, N.J., assignor to Beam Guidance, Inc., New York, N.Y., a corporation of New York

Filed Apr. 11, 1961, Ser. No. 114,581
11 Claims. (Cl. 88—1)



1. In a high frequency transmission system, means for producing a free wave beam of substantially planar electromagnetic wave front progressing into a predetermined direction, said wave beam being coherent at a predetermined point along its path and having at said predetermined point along its path a predetermined cross-section amplitude and phase distribution, and diffracting means arranged across said path at a succeeding point thereof and operative on the circumference of said wave beam to reset the phases of said wave front at a further succeeding point of substantially said predetermined amplitude distribution substantially to the phase distribution prevailing at said predetermined point thereby reiterating said wave beam.

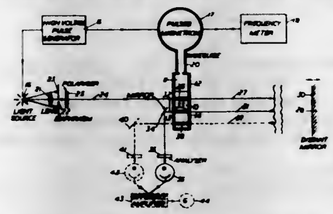
3,200,698

MEASUREMENT OF DISTANCE BY MEANS OF MODULATED POLARIZED LIGHT

Keith Davy Froome and Robert Howard Bradsell, Teddington, England, assignors to National Research Development Corporation, London, England, a British corporation

Filed Sept. 18, 1961, Ser. No. 138,839
Claims priority, application Great Britain, Sept. 22, 1960, 32,675/60
6 Claims. (Cl. 88—1)

3. Apparatus for use in testing whether a light reflecting means is in a desired position comprising a birefringent crsytal, a light source, a polarizer for effecting plane polarization of the light from said light source in a plane parallel to the *x* or *y* axis of the crsytal, means for applying to said crystal an alternating electric field in the direction of the *z* axis of said crystal, means for transmitting a beam of said plane polarized light parallel to the *z* axis of said crystal and through an antinode of said field and onto the said light reflecting means said



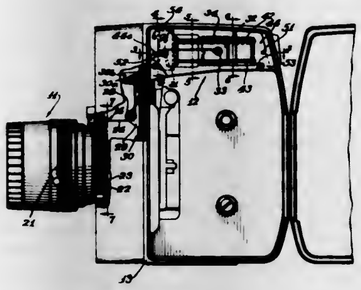
crystal producing ellipitically polarized light whose ellipticity varies cyclically at the frequency of the said alternating electric field, an analyzer which is crossed with respect to said polarizer, and a photo electric detector onto which falls light which has been reflected from said light reflecting means and has passed back through said crystal.

3,200,699

CAMERA ZOOM OBJECTIVE AND ZOOM VIEWFINDER WITH FLEXIBLE CABLE COUPLING

Howard K. Graves, Morton Grove, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Nov. 23, 1959, Ser. No. 854,640
1 Claim. (Cl. 88—1.5)



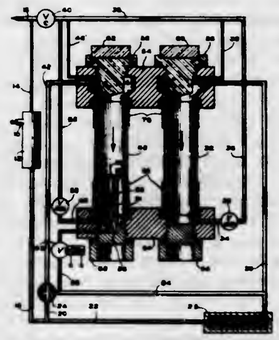
In a zoom camera,
a housing including a front wall,
a zoom objective mounted on said front wall and projecting forwardly therefrom,
a viewfinder chamber in said housing positioned rearwardly of said front wall,
a manually rotatable zooming sleeve surrounding said zoom objective and cooperable therewith to zoom said zoom objective,
a capstan mounted for rotation about the axis of said zooming sleeve,
a pin on said capstan splined to said zooming sleeve to turn the capstan as the zooming sleeve is rotated,
a plurality of guide rods in said viewfinder chamber,
a viewfinder carriage mounted for reciprocating movement on said rods,
a viewfinder zooming lens means mounted on said carriage for movement along the viewfinder chamber in a direction substantially parallel to the axis of said zoom objective and axially spaced therefrom,
a flexible cable fixedly attached at one end to said capstan and at its other end to said viewfinder carriage for converting rotary movement of said capstan to a linear driving action on said viewfinder carriage,
a spring mounted in said viewfinder chamber for biasing said viewfinder carriage to maintain said flexible cable taut and permit said cable to transmit movement when said capstan is rotated in either direction,
a plurality of curved and grooved guide members engaging said cable between said capstan and said viewfinder carriage to guide said cable in an offset path and to transmit vertical motion imparted to it by the capstan into horizontal motion of the viewfinder carriage.

3,200,700

PHOTOELECTRIC COMPARISON APPARATUS FOR INDICATING THE AMOUNT OF CONTAMINATION IN LIQUIDS

George J. Topol, Hamilton, Ontario, Canada, assignor to Bowser, Inc., Cookeville, Tenn., a corporation of Indiana

Filed Apr. 23, 1959, Ser. No. 808,406
4 Claims. (Cl. 88—14)

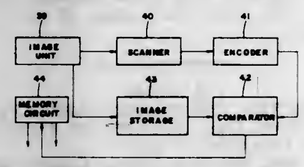


1. Apparatus for continuously testing transparent liquids comprising, in combination:
(a) a filter adapted for micron particle selectivity, said filter communicating with the liquid under test to receive samplings thereof,
(b) a first container means including a transparent tubular portion connected to said filter to receive filtered liquid therefrom, said filtered liquid serving as a reference liquid,
(c) a second container means including a transparent tubular portion connected with the liquid under test to receive unfiltered samplings thereof,
(d) a light source means disposed adjacent the first and second transparent containers,
(e) photometric cells disposed adjacent one end of each of the first and second transparent containers for measuring the intensity of light originating as reflected light from particles of adulterant material contained in said filtered and unfiltered liquid samplings,
(f) means surrounding the end portions of the first and second transparent containers for shielding said photometric cells from direct and incident beams of said light source thereby limiting the energization of said photometric cells essentially to scattered light produced continuously by adulterants in said liquid,
(g) said photometric cells connected in parallel with opposite polarities so that their net signal provides a measurement of adulterations in the unfiltered liquids, and
(h) meter means for receiving the net signal from said photometric cells to continuously provide an indication of adulteration amount.

3,200,701
METHOD FOR OPTICAL COMPARISON OF SKIN FRICTION-RIDGE PATTERNS

Wyman White, Dallas, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware

Filed Jan. 29, 1962, Ser. No. 169,454
2 Claims. (Cl. 88—14)

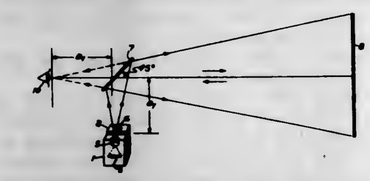


1. A method for comparing the friction-ridge pattern of a portion of skin with a reference friction-ridge pattern comprising: producing an optical image of the friction-ridge pattern directly from skin containing the friction-ridge pattern; projecting the optical image on a screen; serially performing a plurality of scanning operations of different types on the optical image thereby producing a first plurality of electrical signals directly representative of the optical image; generating a second plurality of electrical signals directly representative of the reference friction-ridge pattern and each corresponding to the different types of scanning operations; performing a series of comparisons in each of which a respective one of the first plurality of electrical signals is compared with a respectively corresponding one of the second plurality of electrical signals; producing a plurality of electrical signals each of which is indicative of the results of a respective one of said comparisons and which is affirmative when said results are indicative of identity between the friction-ridge pattern and reference friction-ridge pattern; and, upon at least two of the last-named signals being affirmative, producing a signal indicative of identity between the friction-ridge pattern and reference friction-ridge pattern.

3,200,702
STEREOSCOPIC PROJECTION APPARATUS

Ames F. Giordano, Newark, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Aug. 15, 1962, Ser. No. 217,190
1 Claim. (Cl. 88—24)



Stereoscopic projection apparatus comprising:

first means projecting a first stereoscope image of an object;

second means projecting a second stereoscopic image of said object spaced from said first projecting means an interocular distance;

a beam splitter disposed at substantially a 45 degree angle with respect to a plane defined by the axes of said first and second projecting means to reflect said first and second images; and

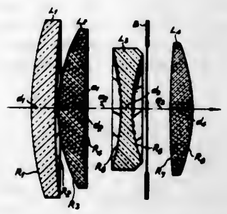
a directive viewing screen disposed on one side of said beam splitter and substantially parallel to the axes of each of said projecting means in a cooperative relationship with said beam splitter to produce a focal point for each of said first and second images spaced at said interocular distance at a given location on the other side of said beam splitter,

said given location being disposed at a distance from said beam splitter equal to the distance between said first and second projecting means and said beam splitter.

3,200,703
FOUR-LENS OBJECTIVE WITH ANASTIGMATIC IMAGE FORMATION

Karl Müller, Grone uber Gottingen, and Friedrich Ueberhagen, Braunschweig, Germany, assignors to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany

Filed Apr. 6, 1961, Ser. No. 101,207
Claims priority, application Germany, Apr. 16, 1960, V 18,453
7 Claims. (Cl. 88—57)



1. A four-lens objective with anastigmatic imaging comprising, proceeding from the longer conjugate toward the shorter conjugate, first and second air-separated single lenses of positive power having opposite surfaces of unequal radii of curvature, a single third and biconcave dispersion lens, having opposite surfaces of unequal radii of curvature, adjacent the diaphragm, and a fourth single lens of positive power having opposite surfaces of unequal radii of curvature, the more sharply curved surfaces of the first, second, and third lenses being convex toward the longer conjugate, while the more sharply curved surface of the fourth lens is convex toward the shorter conjugate; the refractive power of the outer surface (R_1) of the first and meniscus shaped lens (L_1) being greater than 10% but less than 50% of the refractive power of the outer surface (R_3) of the second lens (L_2); the second lens being separated from the third lens (L_3) by an air gap having the shape of a condensing lens with its rear surface being the more sharply curved of the two enclosing and opposite surfaces of unequal radii of curvature, and thus acting as a dispersing air lens; the surface (R_6) of said air gap toward the shorter conjugate being concave toward the longer conjugate and having a radius of curvature less than the arithmetical mean value

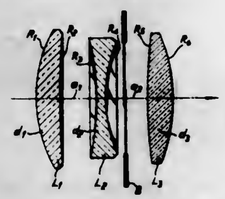
$$\frac{(R_1+R_3)}{2}$$

of the radii of the outer surfaces (R_1 and R_3) of the first and second lenses and also less than the radius of curvature of the outer surface (R_1) of the first lens; the outer surfaces of both the first and second lenses being convex toward the longer conjugate the sum of the refractive powers of the surfaces of the first and second lenses being greater than 115% but less than 230% of the equivalent refractive power of the objective; the sum of the refractive powers of the second, fourth and fifth lens surfaces, considered in ascending numerical order from the longer conjugate toward the shorter conjugate, and which are the less sharply curved surfaces of said first, second and third lenses, having an absolute value greater than two-thirds but less than twice the equivalent refractive power of the objective.

3,200,704
TRIPLET LENS OBJECTIVE

Karl Müller, Grone, near Gottingen, Germany, assignor to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany

Filed May 11, 1964, Ser. No. 367,285
Claims priority, application Germany, Feb. 5, 1960, V 11,240
5 Claims. (Cl. 88—57)



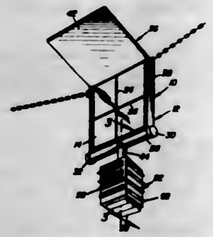
1. A high light transmitting power objective consisting of three serially arranged coaxial and axially spaced lenses including, in the direction of light rays entering the objective from the side of the longer conjugate for the side of the shorter conjugate, a condensing meniscus lens having a concave surface facing in the direction of the shorter conjugate, a bi-concave dispersion lens, and a bi-convex condenser lens having surfaces of different curvature with the more sharply curved outer surface facing in the direction of the shorter conjugate; the objective having the following characteristics as related to a focal length of $f=100$ millimeters:

Lens L_1			
$R_1=+36.5$ mm. $R_2=+942.1$ mm.	$d_1=6.5$ mm. $e_1=9.2$ mm.	$n_1=1.670$	$\nu_1=48.1$
Lens L_2			
$R_3=-67.7$ mm. $R_4=+36.9$ mm.	$d_2=2.4$ mm. $e_2=10.4$ mm.	$n_2=1.704$	$\nu_2=29.8$
Lens L_3			
$R_5=+150.0$ mm. $R_6=-45.8$ mm.	$d_3=6.4$ mm.	$n_3=1.647$	$\nu_3=47.5$

3,200,705
TRAFFIC SAFETY DEVICE

Henry J. Voelker, 2564 Prentiss Ave., New Orleans 22, La., and Henry J. Otnott, 7018 Jeannette Place, New Orleans 18, La.

Filed Aug. 13, 1962, Ser. No. 216,499
3 Claims. (Cl. 88—78)

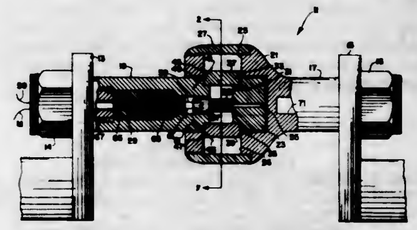


1. In combination with a road intersection defined by the intersection of two angularly disposed streets, a mirror assembly including a mirror having a generally flat and planar reflecting surface, said assembly including means defining at least one guide line extending substantially completely across said reflecting surface, means mounting said mirror assembly in an elevated position generally above the apex formed by the intersection of said streets with said mirror disposed such that a first line perpendicular to its reflecting surface is slightly acutely angulated relative to a second line bisecting the included angle defined by said streets whereby the driver of a first vehicle approaching the intersection on one street may view the approach of a second vehicle toward the intersection on the other street and the image of the second vehicle viewed by said driver will register with said line when said second vehicle is at a predetermined distance from said intersection.

3,200,706
GAS ACTUATED BOLT DISCONNECT

William H. Kinard, Williamsburg, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Oct. 23, 1963, Ser. No. 318,443
10 Claims. (Cl. 89—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A bolt assembly for connecting and effecting sudden disconnection of two parts, comprising:

a first member attached to one of the connected parts;

a second member attached to the other connected part and having a length thereof received by said first member;

a diametric perforation formed through said second member and provided with an individual key receptacle at each end thereof;

a gas-producing charge disposed within said second member;

a pair of diametrically opposed lock keys disposed in said receptacles for confining said charge within said second member and locking said first and second member together;

a unitary ferrule disposed in circumferential engagement about said first member and in spaced adjacency with said pair of lock keys; and

signal responsive means for initiating said charge to remove said pair of lock keys and release said first and second members;

said ferrule serving to confine said lock keys completely within said assembly when said keys are removed from their lock position.

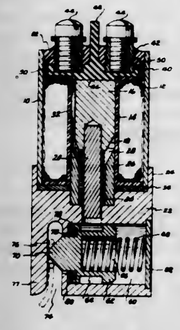
3,200,707
BOMB ARMING SOLENOID

William F. West, Glendale, Calif., assignor to Standard Armament Inc., Glendale, Calif., a corporation of California

Filed Sept. 5, 1963, Ser. No. 306,948
1 Claim. (Cl. 89—1.5)

In a solenoid lock having a housing, a cylindrical solenoid coil in said housing, an armature and locking pin movably mounted in said coil, and a spring-pressed

plunger adapted to be engaged by said locking pin, the improvement comprising a plunger base portion on said housing, a cylindrical bore through said base portion and having a plunger nose outlet opening and a cap opening and containing said spring-pressed plunger, an annular flange on said plunger forming a groove facing



said plunger nose outlet opening at the nose end of said plunger, an O-ring seated in said groove and surrounding said nose outlet opening for sealing said nose outlet opening, and a locking cap press-fitted into said cap opening and forming an abutment for the spring of said spring-pressed plunger.

3,200,708

ROCKET LAUNCHERS

Paul V. Choate, Milton, Mass., assignor, by mesne assignments, to Norris Thermador Corporation, Los Angeles, Calif., a corporation of California

Filed May 24, 1963, Ser. No. 282,902
13 Claims. (Cl. 89—1.7)



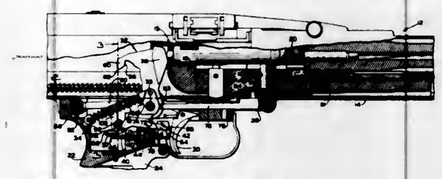
1. In a rocket launcher, first and second tubular sections telescopingly connected to enable said launcher to be extended from a shortened, inoperative position into an elongated, operative position, one end of said first section being the breech end of the launcher, said first section fitting within said second section, said first section including a first rigid member overlying said second section, said second section and said first member including portions releasably interengaged in said operative position, and means to first a rocket positioned in said first launcher section, said means including a second rigid member which is the firing member and is movable relative to said first section between a rearward firing position and a forward cocked position, a firing spring tensioned by movement of said firing member into said cocked position, a trigger slidably connected to said first member, said trigger and said firing member including interengageable portions, said members moving together relative to said second launcher section as said launcher is extended until a predetermined short further relative movement of said sections is required to establish said operative position, and means releasably connecting said trigger to said second section during said short relative movement thereby to tension said spring.

3,200,709

FIRING MECHANISM WITH INTEGRAL SAFETY

Alfred L. Montana, East Longmeadow, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed Feb. 17, 1964, Ser. No. 345,537
5 Claims. (Cl. 89—142)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a firearm, a bolt assembly mounted for reciprocation between a battery and a recoil position, a firing pin actuatably disposed in said bolt assembly, and a firing mechanism including a hammer mounted for pivotal displacement beween a retracted and a firing pin striking position, a trigger actuatable from a normal to a pulled position, semiautomatic sear means operationally disposed between said trigger and said hammer for selective cooperation therewith to provide for semiautomatic fire, automatic sear means operationally disposed between said bolt assembly and said hammer to provide for automatic fire, said automatic sear means including an automatic sear, a rear tip of said automatic sear, means for mounting said automatic sear for pivotal displacement between a holding and a release position, a spring biasing said automatic sear to the holding position, a follower mounted on said automatic sear, a cam slide formed on said bolt assembly to cooperate with said follower for actuating said automatic sear to the release position when said bolt assembly is adjacent battery position, a ledge formed on said hammer and arranged for contact with said rear tip when said automatic sear is in the holding position thereof for retaining said hammer in the retracted position, an annular clearance formed on said hammer to register with said rear tip when said automatic sear is in the release position to free said hammer for displacement to the striking position and a shoulder formed on said clearance and disposed for sliding contact with said rear tip for holding said automatic sear in the release position thereof during displacement of said hammer from the striking to the retracted position.

3,200,710

GAS OPERATING MECHANISM FOR AUTO-LOADING FIREARM

Robert P. Kelly and Wayne E. Leek, Ilion, James S. Martin, Mohawk, Charles H. Morse, Herkimer, Clark B. Workman, Ilion, and John A. Roberts, Utica, N.Y., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware

Filed Dec. 27, 1963, Ser. No. 333,889
7 Claims. (Cl. 89—191)



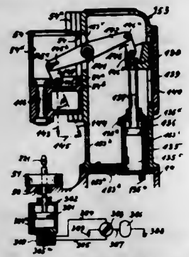
1. In an autoloading firearm having a barrel, a receiver to which said barrel is secured, a tubular magazine mounted in said receiver beneath and coextensive with said barrel, a breech bolt reciprocally mounted in said receiver, and locking means to releasably secure said bolt as a closure for the breech end of said barrel, the improvement in autoloading operating mechanism comprising a cylindrical member secured to said barrel and encircling a portion of said magazine, said cylindrical member and said magazine forming a gas chamber, an annular piston slidably mounted on said magazine normally within said chamber, gas ports connecting said barrel and said chamber, an annular inertia weight loosely mounted on said magazine for reciprocation thereon, action bar means connecting said weight to said bolt, spring means urging said weight toward said chamber, gas entering said chamber through said ports momentarily forces said piston against said weight whereby said weight actuates said bolt.

3,200,711

WORK HOLDING, CLAMPING AND CENTERING DEVICES FOR MACHINE TOOLS

Otto Rogg, Munich, Germany, assignor to Carl Hurth, Munich, Germany

Filed Jan. 12, 1962, Ser. No. 165,844
Claims priority, application Germany, Jan. 13, 1961, H 41,454; Jan. 27, 1961, H 41,560
8 Claims. (Cl. 90—1)



1. In a machine tool, particularly in a gear shaping machine wherein a workpiece is held by clamping means while subjected to treatment by tool means, in combination, a supporting arrangement including a support having elongated ways; a mounting arrangement for mounting one of said means on said supporting arrangement; a headstock for holding the other of said means, said headstock being reciprocable in said ways toward and away from said one means; and a reciprocating arrangement for said headstock comrpising a motive force-transmitting member operatively connected with said headstock and movable in directions enclosing a pronounced acute angle with the longitudinal direction of said ways so that, when said headstock is moved toward said one means, the motive force transmitted thereto by said member includes a reciprocating force component which is parallel with the longitudinal direction of said ways and a pressure force component which is normal to the longitudinal direction of and is directed against said ways whereby the headstock is pressed against and remains in close contact with said ways along a fixed predetermined path to locate said other means in a predetermined position and against transversal movement relative to said one means.

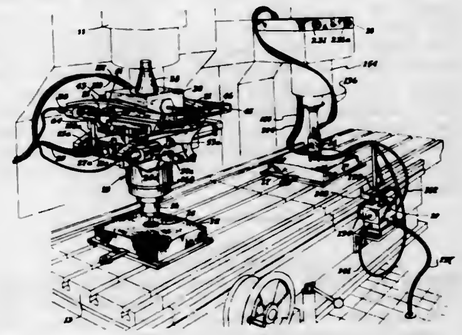
3,200,712

TRACER UNIT FOR MACHINE TOOL ADAPTED FOR COMPOUND CONTOURING

Carlton H. Jenkins, Baltimore, Md., assignor to Martin-Marietta Corporation, a corporation of Maryland

Original application Apr. 23, 1959, Ser. No. 808,364, now Patent No. 3,084,603, dated Apr. 9, 1963. Divided and this application Apr. 26, 1962, Ser. No. 196,839
11 Claims. (Cl. 90—62)

1. A tracer mechanism for use with a machine tool equipped with a universally movable head, said tracer mechanism comprising two pairs of movable stylii, each stylus having thereon an active surface for following the contours of a pattern, said stylii pairs being mounted for motion in substantially orthogonal planes whereby one pair of stylii may indicate contours of a pattern in a direction corresponding to left and right machine tool movement, and the other pair of stylii may indicate the contours of the pattern in a direction corresponding to fore and aft machine tool movement, means for biasing said stylus pairs so that one stylus of each pair will be biased to



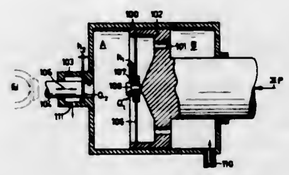
serve as lead stylus, with its active surface closely following concave contours of a master pattern, means to shift the bias to the other stylus member of at least one stylus pair as the direction of machine tool movement changes, and means to provide information as to the position of said stylii for use in the positioning of said head.

3,200,713

HYDRAULIC SERVO-MECHANISM

Taco Jan Vlersma, Eindhoven, Netherlands, and Helmut Gunther, Hamburg, Germany, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

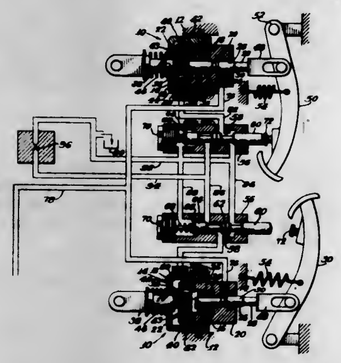
Filed Mar. 26, 1962, Ser. No. 182,289
Claims priority, application Netherlands, Apr. 4, 1961, 263,175
14 Claims. (Cl. 91—49)



1. A hydraulic servo-mechanism comprising a working cylinder, a piston movable within said cylinder and dividing said cylinder into a first and a second compartment, a continuous pressure liquid supply system for moving and positioning said piston within said cylinder, said system including a first adjustable valve port means for controlling a continuous flow of liquid into at least one said compartment and a second adjustable valve port means for controlling a continuous flow of liquid out of said one said compartment, means for adjusting at least one of said first and second valve ports for establishing a flow condition within said one said compartment for positioning said piston within said cylinder, and means responsive to pressure within said one said compartment coupled with at least one of said first and second adjustable valve ports for adjusting the said coupled valve port for maintaining the said established flow condition and position of said piston compensated for external load conditions acting on said piston.

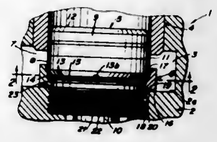
10. A hydraulic servo-mechanism comprising a working cylinder having a piston slideably movable therein and dividing said cylinder into first and second compartments, a pressure liquid supply system conmmunicating with each said compartment and including a control valve means regulating the liquid flow from said working cylinder for moving said piston, and pressure responsive means for compensating for load variations acting on said piston; said pressure responsive means comprising said piston, a recess in said piston adjacent one of said compartments, at least one duct in said piston communicating said recess and the other of said compartments, an elastic diaphragm secured to said piston at its periphery and overlying said recess, said diaphragm defining a variable aperture between said piston recess and said one compartment for providing a variable liquid flow passage between said compartments.

3,200,714
FORCE BOOSTER
Eugene P. Virtue, Tinley Park, Marvin D. Jennings, Naperville, and William C. Swanson, Clarendon Hills, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed May 23, 1963, Ser. No. 282,710
2 Claims. (Cl. 91—378)



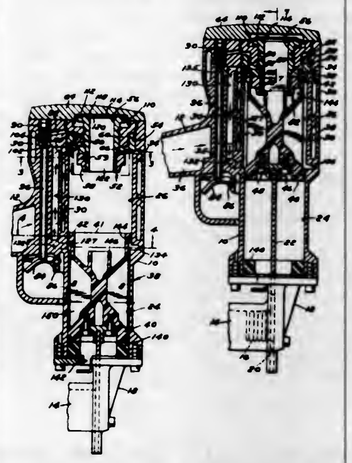
2. In combination: a plurality of force operated devices; a plurality of force transmitting members; and a plurality of force boosters each interconnecting one of said devices with an associated member, each of said boosters including a housing defining a cylinder, a piston having a bore therein slidable in said cylinder, a fluid inlet and a fluid outlet in communication through said bore and said cylinder, first flow control means slidable in said bore between first and second positions respectively blocking and unblocking said inlet, said one device and said associated member being connected respectively with said piston and said first flow control means, a spring interposed between said piston and said first flow control means biasing said first flow control means toward its first position, second flow control means in said outlet movable between first and second positions respectively establishing relatively unrestricted and relatively restricted communication therein, and means biasing said second flow control means toward its second position; said member including means for allowing movement of said second flow control means toward its second position upon movement of said member to slide said first flow control member toward its second position; and fluid passage means interconnecting said cylinders of said force boosters through said second flow control means; said second flow control means blocking said fluid passage means when in their second positions.

3,200,715
PISTON ASSEMBLIES
Jack B. Ottestad, La Jolla, Calif., assignor to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,238
19 Claims. (Cl. 91—392)



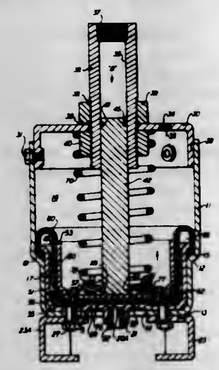
1. In a power unit
(a) a cylinder
(b) a piston reciprocable in said cylinder through a predetermined stroke,
(c) said piston having two end portions
(d) an annular sealing ring in one end of said cylinder, and
(e) abutment means within said ring,
(f) one of said end portions being movable into sealing engagement with said sealing ring and then movable further relative to said sealing ring into abutting engagement with said abutment means at one end of said stroke.

3,200,716
PNEUMATIC FASTENER DRIVING MACHINE
Clarence V. Le Sage, Los Angeles, Calif., assignor to Berry California Corporation, Los Angeles, Calif., a corporation of California
Filed July 23, 1963, Ser. No. 296,960
12 Claims. (Cl. 91—461)



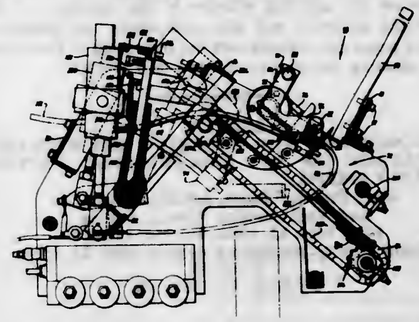
1. In a fastener-applying machine the combination comprising a reservoir for pressure fluid, a cylinder having an inlet port communicating with said reservoir, a piston reciprocable in said cylinder, a valve movable to open and close said inlet port, an exhaust tube movable with said inlet valve and adapted to communicate at opposite ends thereof respectively with said cylinder and with atmosphere, means for slidably guiding said tube and for opening and closing the atmosphere end of said tube in response respectively to closing and opening movement of said inlet valve, said last-mentioned means comprising a sleeve and a closure cap defining an exhaust chamber therebetween communicating with atmosphere, said cap defining an end wall of said exhaust chamber disposed perpendicular to the axis of said tube against which said atmosphere end of the tube axially abuts to close the same, said tube being slidably supported in said sleeve with said atmosphere end of said tube projecting axially therefrom into said exhaust chamber in radially spaced relation from the radially surrounding wall of said exhaust chamber, said tube having a pressure surface exposed via the interior of said tube to pressure fluid in the cylinder when said tube is closed and disposed to develop an opening force on said tube, said inlet valve having a pressure surface exposed to reservoir pressure fluid for holding said inlet valve in open position with a force greater than that developed by said tube pressure surface, and means for developing a force on said inlet valve additive to the force of cylinder pressure fluid acting on said tube pressure surface to thereby initiate opening movement of said tube and closing movement of said inlet valve.

3,200,717
HYDRAULIC PRESSURE VOLUME TRANSFORMER
Charles Stephen Einsiedler, 67 King Philip Circle, Warwick, R.I.
Filed Apr. 11, 1963, Ser. No. 272,408
4 Claims. (Cl. 92—94)



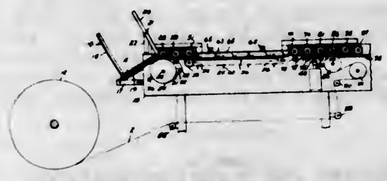
1. A hydraulic pressure volume transformer consisting of a casing defining a chamber, means providing a conduit connection to said chamber, a cover plate, means fastening said cover plate to said casing, a piston housing provided with a positon rod seat, means fastening said piston housing to said cover plate, a piston rod slidably mounted in said piston rod seat and extending into said chamber, a follower, a flexible diaphragm provided with an annular portion, means securing said annular portion to said casing, and means fastening said follower to said flexible diaphragm, a spring seat, means mounting said spring seat upon said piston rod for sliding angular movement of said spring seat upon said piston rod, and abutting means on said piston rod engageable and disengageable with said spring seat to limit the sliding movement of said spring seat on said piston rod in one direction, said spring seat engaging said follower, and resilient means acting upon said spring seat to yieldingly force said piston rod through said abutting means, said follower and said flexible diaphragm into a preselected position within said chamber; said conduit connection to said chamber providing means to move said flexible diaphragm, said follower and said spring seat against the force of said resilient means and to move said piston rod in said piston rod seat through engagement of one end of said piston rod with said follower.

3,200,718
CARTON FORMING MACHINE
Wolfgang B. Fahrenbach, Oakland, Calif., and Fred E. Helmick, 381 Felton Drive, Menlo Park, Calif.; said Fahrenbach assignor to said Helmick
Filed Nov. 14, 1962, Ser. No. 237,474
13 Claims. (Cl. 93—37)



1. In a machine for forming cartons: a feeding station including upstanding guide means and a transverse support means forming a hopper adapted to receive a stack of pre-folded, collapsed, substantially planar blanks; a carton folding station immediately below said feeding station, said folding station including means to periodically engage a carton blank in lowermost position in said feeding station to open a forward portion thereof downwardly about said transverse support means, means to deflect a portion of said opened blank into partitions, and means to fold and tuck another portion of said opened blank between said partitions; said transverse support means resisting the movement of said folding and tucking means to permit the forming of said opened carton portions into a completed partitioned carton, means for holding rear portions of said carton in the feeding station; and discharge means adapted to engage said completed partitioned carton to pull the rear unfolded portions thereof from said hopper and to eject the same.

3,200,719
ENVELOPE ATTACHING MACHINE
Archibald H. Welch, Branford, Conn., assignor to Converters, Incorporated, West Hartford, Conn., a corporation of Connecticut
Filed Apr. 8, 1963, Ser. No. 272,185
9 Claims. (Cl. 93—61)



1. A machine for forming a combined web and envelope product comprising, a magazine for receiving a stack of envelopes of the type having separable end tabs, feeding means for removing the envelopes individually and sequentially from the bottom of the magazine and advancing them in a linear path of movement with the envelopes disposed transversely of the path of movement and the end tabs extending outwardly from opposite sides, conveyor means for advancing the envelopes in succession along a path extending from the feeding means, said conveyor means including a pair of endless chains mounted in parallel relationship having spaced projections pivotally mounted on the chains and including means

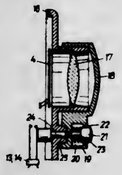
resiliently biasing the projections to upright positions, said projections engageable with the trailing edges of the envelopes in succession, positioning means on opposite sides of the conveyor means engageable with the end tabs of the envelopes while they are being advanced, means for supporting the envelopes intermediate the end tabs thereof, means for applying adhesive to the underside of the extending separable end tabs, and means for feeding a web of paper into contact with the succession of envelopes and adhering the web to the end tabs thereof.

3,200,720

ARRANGEMENT FOR CHECKING THE BATTERY VOLTAGE OF AN ELECTRICALLY DRIVEN FILM CAMERA

Josef Drasch, Vienna, Austria, assignor to Karl Vockenhuber, Vienna, Austria

Filed Sept. 12, 1961, Ser. No. 137,609
Claims priority, application Austria, Sept. 23, 1960, 7,210/60
5 Claims. (Cl. 95—10)



5. In an electrically driven cinematographic camera an electric driving motor for operating said camera, a battery supplying current to said motor, an exposure control system including a photoelectric cell, a galvanometer energized by said photoelectric cell in dependence upon the light conditions of an image field, a sensitivity regulator in the circuit of said galvanometer adjustable in accordance with the frame frequency of said camera and considering said frame frequency of the camera in the result of exposure measurement, a switch, said switch in one position conductively connecting said galvanometer circuit including the sensitivity regulator with said battery for checking the battery voltage, a masking cap detachably mountable in front of said photoelectric cell to completely darken the latter, said switch being arranged on said cap, plug contacts conductively connecting said switch and the battery checking circuit upon mounting said cap in front of said photoelectric cell, the deflections of said galvanometer depending on the adjustments of said galvanometer sensitivity regulator according to different frame frequencies, the galvanometer deflection attaining the same value for all frame frequency adjustments if the battery shows the respective minimum voltage required for operating said camera at the frame frequency adjusted on the galvanometer sensitivity regulator.

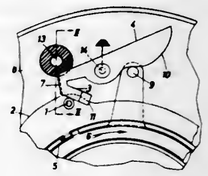
3,200,721

SHUTTER AND FLASH CONTROLLING APPARATUS FOR CAMERAS

Gerd Kiper, Unterhaching, near Munich, and Georg Mitsch, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany

Filed Aug. 11, 1961, Ser. No. 130,896
Claims priority, application Germany, Sept. 15, 1960, A 35,575
7 Claims. (Cl. 95—11.5)

1. In a camera, in combination, a pair of rotary shutter rings one of which is an opening ring for opening the shutter and the other of which is a closing ring for closing the shutter; switch means movable between open and closed positions for closing a flash circuit when said switch means is in said closed position thereof, said switch means including a stationary contact and a movable contact which slidably engages said stationary contact at least during part of the time that said switch means is in said closed position thereof, said movable contact being in the form of a lever and the electrical circuit including a pivot pin supporting said lever for free turning movement; switch-closing means moved by said opening ring when the latter turns to open the shutter and



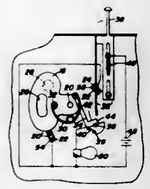
moving said lever in a direction which places said movable contact in engagement with said stationary contact to close said switch means; and switch-opening means moved by said closing ring when the latter turns to close the shutter and moving said lever in a direction which places said movable contact out of engagement with said stationary contact to place said switch means in said open position thereof.

3,200,722

APPARATUS FOR MAKING FLASH EXPOSURES

Miller R. Hutchison, Jr., Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 22, 1962, Ser. No. 204,436
5 Claims. (Cl. 95—11.5)



1. A device for synchronizing the firing of a flashlamp with a shutter mechanism comprising:

(a) a shutter blade initially disposed in a first position and movable to a second position,

(b) shutter operating means for initiating, upon the actuation thereof, the movement of said blade to said second position, and

(c) a trigger element movable along a path in which said shutter operating means is first engaged and then actuated thereby, said device comprising in combination:

(1) socket means for receiving a flashlamp,

(2) voltage supply terminals for electrical connection to a source of voltage,

(3) first conductive elements electrically connecting said socket means and said voltage supply terminals in a normally open series circuit, and including means for closing said series circuit in response to the engagement of said trigger element with said shutter operating means, and,

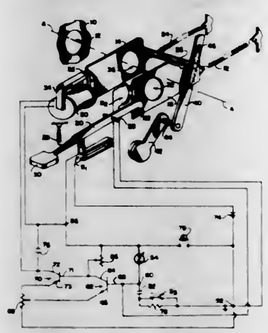
(4) second conductive elements establishing a normally closed electrical shunt circuit across said socket means, and including means for opening said shunt circuit in response to the actuation of said shutter operating means.

3,200,723

SHUTTER TIMING APPARATUS

Jeremy M. Topaz, Brighton, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 29, 1963, Ser. No. 269,000
18 Claims. (Cl. 95—11.5)



1. In a photographic camera adapted to make exposures illuminated either by light of substantially constant intensity or by photoflash apparatus, the combination comprising:

means defining an exposure aperture;

shutter means movable with respect to said aperture to initiate and terminate exposures therethrough;

first means operable to actuate said shutter means to initiate said exposures;

second means operable in response to termination of said time interval to actuate said shutter means to terminate said exposure;

timing means adapted to establish a time interval between operation of said first and second means, said time interval corresponding to that time between initiation and termination of exposure which results in a desired amount of light passing through said aperture when said light is of substantially constant intensity;

means for so synchronizing the movement of said shutter means with operation of said second means that upon operation of the latter a time delay occurs before actual termination of said exposures; and

compensating means selectively operable to shorten said time interval, whereby said time interval, after adjustment by said compensating means, results in substantially said desired amount of light passing through said aperture when said light is provided by photoflash apparatus.

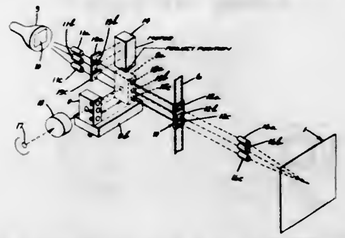
3,200,724

APPARATUS FOR ACCURATE FORMATION AND PRESENTATION OF A VISUAL DISPLAY

Joseph A. Stamm, Carl E. Ramsey, and Ray F. Franke, Fort Wayne, Ind., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Nov. 29, 1962, Ser. No. 240,948
10 Claims. (Cl. 95—12)

1. In apparatus for exposing and developing photographic film and projecting the image of the developed film, a film casing having front and rear flat plates which are superposed, one plate having a portion recessed away from the other plate to provide a chamber, a gasket sandwiched between said plates and surrounding said chamber, said gasket thereby spacing said plates apart, a length of film overlying said gasket and being interposed between said gasket and said other plate, resilient means yieldably urging said plates together and said film into fluid-sealing engagement with said gasket, said chamber having inlet and outlet ducts by means of which processing fluids may be circulated through said chamber, said plates being transparent in the regions which overlie said chamber, the surface of said other plate adjacent said film



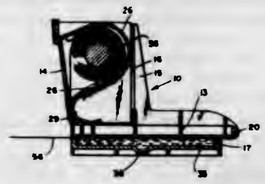
having a series of recesses therein, a manifold mounted on said other plate and having fluid connections to said recesses whereby the pressure in said recesses may be reduced for holding said film in intimate engagement with said other plate.

3,200,725

MAGAZINE FOR A CAMERA

George J. Linder, Jr., Mineola, N.Y., assignor to Camera Corporation of America, New York, N.Y., a corporation of Delaware

Filed Feb. 8, 1962, Ser. No. 171,988
14 Claims. (Cl. 95—13)



1. In a camera, a magazine comprising

(a) a substantially rectangular frame member

(b) a light-tight film container mounted upon said frame member at the rear thereof; said container having a web of photo-sensitive film therein;

(c) a liquid-tight container integral with said frame member and extending upon the undersurface thereof for passage therethrough of said photo-sensitive film,

(d) film guide means laterally disposed on either side of said frame member adjacent the upper surface thereof,

(e) said frame member having a transverse arcuate lip at the forward end thereof for passage of a portion of said film therearound,

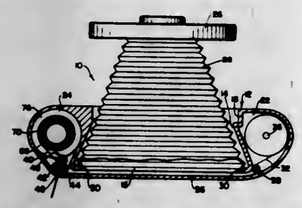
(f) a plurality of girder members disposed upon the upper surface of said frame member to furnish rigid support and strength thereto;

(g) said frame member, on the undersurface thereof being disposed on a substantially flat plane, and

(h) locking means disposed on either side of said frame member adjacent the undersurface thereof for securement of said liquid-tight container thereto; and

(i) a rear vertical wall upwardly disposed from the top of said frame member at the rear thereof, and two vertical walls at right angles thereto along a portion of the sides of said frame member, said walls adapted to receive and securely retain therebetween said film container.

3,200,726
METHOD OF TREATING PHOTOGRAPHIC SHEET WITH A LIQUID
Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Feb. 15, 1962, Ser. No. 173,496
8 Claims. (Cl. 95—13)



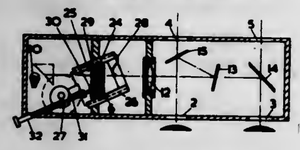
1. In the treatment of a photographic sheet with a liquid distributed in a layer in contact with said sheet, the method comprising:

guiding said photographic sheet and a second sheet along convergent paths into superposition with one another between a pair of members having opposed surfaces defining said paths and supporting superposed portions of said sheets against movement apart from one another with said superposed portions disposed a predetermined distance apart;

supporting a nozzle, having a discharge mouth bounded by a pair of lips which are at least equal in length to the width of the area of said sheets to be treated, between said convergent portions of said sheets and holding said lips in substantially liquid-tight contact with said convergent portions of said sheets; and

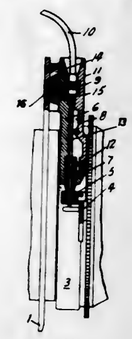
introducing a viscous photographic processing liquid through said nozzle between said lips into contact with the adjacent surfaces of said sheets, said liquid being introduced under pressure sufficient to cause the movement of said sheets along said convergent paths past said lips into superposition between said members in the direction of flow of said liquid between said lips.

3,200,727
CAMERA RANGEFINDERS
Norman Percy Barton, Englefield Green, Surrey, England, assignor to National Research Development Corporation, London, England
Filed Sept. 12, 1960, Ser. No. 55,307
11 Claims. (Cl. 95—44)



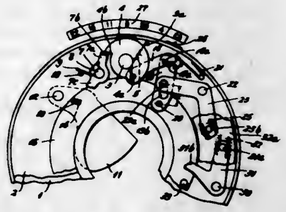
1. A stereoscopic binocular range finder comprising a rotary plate bearing at least one light transmitting indicator mark, means for rotating said plate according to a lens aperture adjustment, a collimator and a semi-reflector on to which light passing through the rotary plate and the collimator is directed, a second semi-reflector located in one line of binocular vision and upon which is directed light passing through the first semi-reflector, and a third semi-reflector located in the second line of binocular vision and on which light reflected by the first semi-reflector is directed and means for effecting relative movement of the rotary plate and the collimator in accordance with movement of the lens focusing adjustment to bring the images of indicating marks in the binocular vision into fusion.

3,200,728
CABLE RELEASE CONNECTORS FOR CAMERA SHUTTERS
Nikolaus Karpf, 45 Rupert Mayer Strasse, Munich 25, Germany
Filed June 18, 1962, Ser. No. 203,169
Claims priority, application Austria, June 24, 1961, A 4,899/61
7 Claims. (Cl. 95—53)



1. In a cable release connector for a camera shutter, a first rigid member fixed to the camera shutter, and a complementary rigid member movable relative to the first member, the said members each having a recess, the two recesses in combination being adapted to receive a locating collar element of the cable release connector, the said members being movable between a closed position in which the locating collar element is prevented from being withdrawn from the recesses and an open position in which the locating collar element can be withdrawn, resilient means connected between the first member and the complementary member and arranged to urge the latter towards its closed position, an operating surface on the complementary member positioned so that pressure applied to the said surface can move the member from its closed to its open position, thereby releasing the locating collar element, and a transmission element arranged to transmit the stroke of the cable release to the shutter.

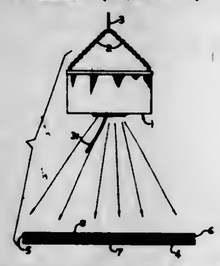
3,200,729
PHOTOGRAPHIC INTRA-LENS SHUTTER
Franz W. R. Starp, Calmbach (Enz), and Heinz K. Mutterer, Sprollenhaus, Germany, assignors to Alfred Gauthier G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed May 25, 1962, Ser. No. 197,633
Claims priority, application Germany, May 29, 1961, G 32,365
4 Claims. (Cl. 95—63)



1. In a photographic intra-lens shutter, a combination of a shutter housing having a base plate, a series of shutter blades pivotally mounted to said base plate, a rotatable shutter blade driving ring operatively connected to each of said blades for swinging said shutter blades between operative and inoperative positions upon rotation thereof

to define an aperture, drive means including a driving pawl, a variable transmission means including a rocking lever having one end thereof pivotally connected to said shutter driving ring and having its other end connected to said driving pawl, means disposed intermediate the ends of said rocking lever for varying the pivot point about which said rocking lever is rotated, said latter means including an adjusting lever pivotally connected about a fixed pivot intermediate the ends thereof to said base plate, a pin connected to one end of said adjusting lever, said pin being articulately received within a slot formed intermediate the ends of said rocking lever, a diaphragm setting member operatively connected to the other end of said adjusting lever whereby said adjusting lever is pivoted about its fixed pivot in response to the setting of said diaphragm setting member to effect displacement of said pin within said slot accordingly to thereby vary the ratio of transmission between the shutter drive means and said shutter driving ring, a stop means operable to positively limit the rotary motion of said driving ring at the moment of its reversal, said stop means including a two-armed angled lever pivoted intermediate the ends thereof at said base plate, with the first arm to said angled lever overlying said driving ring, a stop pin connected to said driving ring for moving into engagement with said first arm at the limit of the rotary motion of said driving ring, and means on the second arm of said angled lever responsive to the setting of said diaphragm setting member for adjusting the position of said first arm relative to said stop pin.

3,200,730
LITHOGRAPHIC EXPOSURE APPARATUS AND METHOD
James T. Heler, Kansas City, Mo. (12436 Park Lane Drive, Aurora, Colo.)
Filed Aug. 20, 1962, Ser. No. 217,868
4 Claims. (Cl. 95—73)



1. A photoprinting combination for transferring half-tone structure from one transparency to another for improving the structure prior to making printing plates therefrom comprising:

(a) a photographic transparency having a lithographic half-tone structure,

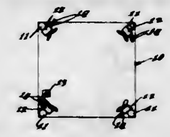
(b) a transparent film having a light sensitive orthochromatic silver halide photographic emulsion thereon underlying said transparency,

(c) a fluorescent type light source in the order of 6 watts and located about 3 feet from said transparency and being adapted to emit light energy toward said transparency substantially competely within a band range of about 315 to 400 millimicrons in wave length and peaking at about 35 milliwatts of radiant power per one hundred angstroms per watt input at about 350 millimicrons, and

(d) a light filter located between said transparency and said light source and having light transmission characteristics for narrowing the wave length band output of said light source,

(e) whereby said half-tone structure is clearly reproduced on said film.

3,200,731
TENT WITH VENTILATING MEANS
John Freeman Hart, Jr., 765 Cherry St., Macon, Ga.
Filed Sept. 11, 1961, Ser. No. 137,323
7 Claims. (Cl. 98—1)



1. In combination, an immediate family funeral tent having tent poles and a series of fans mounted on the tent poles for circulating air within the tent, each of said fans having a clamp secured in detachable assembly therewith and engaged about the periphery of one of said tent poles, said clamps each having a bolt extended through it and said tent pole and a fastener secured to a threaded end of the bolt to prevent disassembly of the clamp from the pole.

3,200,732
CONTROL MEANS FOR VEHICLE HEATING SYSTEM
Fred J. Chantiles, 35 E. 8th Ave., York, Pa., and Clair W. Reiber, York, Pa.; said Reiber assignor to said Chantiles
Filed Dec. 8, 1961, Ser. No. 157,929
3 Claims. (Cl. 98—2)

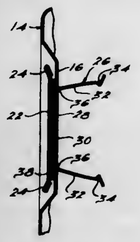


1. Control means to regulate the flow of heated air from outlet means of a vehicle heating conduit provided with a ferrous grill mounted in one wall thereof, said control means comprising an integral shield member formed from sheet material and complementary in shape and size to an outlet opening means in a vehicle heating conduit of the type referred to and operable to cover the same to prevent appreciable discharge of heat therefrom when desired, said shield member having a cup-shaped recess formed therein by pressing said sheet material to displace a portion of it from the plane of said member, a permanent magnet mounted within said recess and flush with the surface of said member from which said recess extends, and means to secure said magnet fixedly within said recess to permit said shield member to be held by magnetic attraction adjustably to a grill of a heating outlet of the aforementioned type to cover a desired portion of such outlet opening and thereby regulate discharge of heat therethrough.

3,200,733
MULTIPLE-POSITION DOOR
Edward Patch, Dearborn Heights, Mich., assignor to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Filed Aug. 10, 1962, Ser. No. 216,134
5 Claims. (Cl. 98—9)

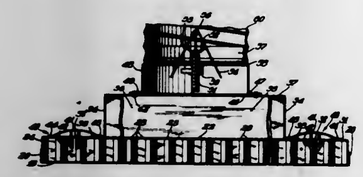
1. Means for controlling the flow of air comprising a wall having an opening therein which is symmetrical about an axis in the plane thereof, a door adapted to close said opening and having a pair of spaced legs secured to and extending laterally therefrom at one side thereof and carried solely by said door, each of said legs having a free

outer end, and cooperating means on said door and on said wall for selectively supporting said door on said wall in a first position in which said door closes said opening, in a second position in which said door is disposed in spaced parallel relation to said opening, in a third position in which said door is inclined relative to said opening,



and in a fourth position in which said door is oppositely inclined relative to said opening, said co-operating means including a notch portion on each of said legs, both of which are adapted to engage said wall in said second position and one of which engages said wall in said third and fourth positions.

3,200,734
COMBINATION ACOUSTIC CEILING PANEL AND AIR DIFFUSER
Lester W. Burns, Itasca, and George K. Raider, Chicago, Ill., assignors to The Pyle-National Company, Chicago, Ill., a corporation of New Jersey
Filed May 8, 1963, Ser. No. 278,894
6 Claims. (Cl. 98—40)



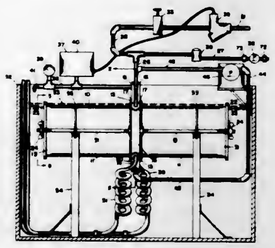
1. In a ventilating system, the combination with a wall or a ceiling of a space to be ventilated of an inner wall spaced interiorly of said wall or ceiling,
said inner wall having an opening therein,
and an air control fixture in said opening comprising a rigid panel having first and second spaced plates,
said first plate being disposed in the plane of said inner wall and closing said opening,
said first plate having a plurality of diffusion passages for diffusing waves of sound moving in a direction,
said second plate having a reflective surface for reversely turning the diffused waves of sound,
sound deadening means between said first and second plates to absorb the reversely turned waves of sound,
said second plate being coextensive in size with and spaced from said first plate in parallel disposition therewith to form a first plenum chamber,
means forming with said rigid panel a second plenum chamber having a portion of said second plate as one wall thereof,
said second plate having a plurality of air passages formed in said portion of said second plate to form an air inlet into said first plenum chamber,
said second plenum chamber having a valve-controlled opening therein for conducting air in controlled quantities to said air inlet,
whereby the rate of flow of air through said fixture is determined by adjustment of said valve-controlled opening for simultaneous diffusion of air and deadening of sound in the same fixture.

3,200,735
ADJUSTABLE ROOF SAFE AND CAP ASSEMBLY
Edward C. Bergen, Orinda, Calif., assignor to Wellmade Metal Products Company, Oakland, Calif., a corporation of California
Filed July 10, 1963, Ser. No. 294,102
4 Claims. (Cl. 98—46)



1. An adjustable flashing and cap assembly comprising a tubular flashing, an arcuate strap secured to said flashing in outwardly curved bridging relation to an end thereof, said strap having a slot extending longitudinally thereof, a cap secured to said flashing by a fastener slidably disposed in said slot to thereby permit arcuate movement of said cap with respect to said flashing to change the the angular orientation of said cap with respect to said flashing, and means for selectively securing said fastener at any position of said slot to maintain said cap at a predetermined angular orientation with respect to said flashing.

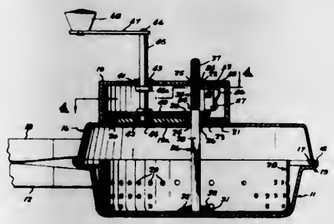
3,200,736
LIQUID MIXING APPARATUS
Harold E. La Rock, Sr., 512 Menomonie St., Eau Claire, Wis.
Filed May 24, 1962, Ser. No. 197,440
7 Claims. (Cl. 99—275)



1. Apparatus for mixing a first liquid with a second liquid comprising:
(a) tank means adapted to contain a quantity of liquid,
(b) a head portion removably connected to said tank means in fixed, substantially fluid-tight relation,
(c) said head portion having a plurality of independent passages,
(d) each of said passages having an inner opening in communication with said tank means and an outer opening,
(e) inlet means connected in substantially fluid-tight relation to selected ones of said outer openings for conducting said first and second liquids into said tank means,
(f) first supply means for conducting said first liquid to said inlet means at substantial pressure,
(g) second supply means for conducting said second liquid to said inlet means simultaneously with said first liquid,

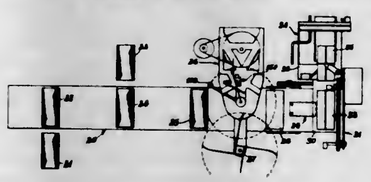
(h) recirculation means connected in substantially fluid tight relation to selected ones of said outer openings for continuously removing a quantity of said mixed liquids from said tank means and redistributing said liquids within said tank means to provide substantially uniform mixing,
(i) control means for said first and second supply means and said recirculation means connected in substantially fluid tight relation to selected ones of said outer openings to maintain said mixed liquids above a predetermined level in said tank means and to provide substantially uniform mixing of said liquids, and
(j) means connected in substantially fluid tight relation to selected ones of said outer openings for removal of said mixed liquids from said tank means.

3,200,737
COOKING UTENSIL
Max Ferenc, R.R. 1, Dresden, Tenn.
Filed Feb. 3, 1964, Ser. No. 341,907
4 Claims. (Cl. 99—355)



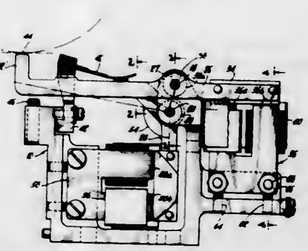
1. In a cooking utensil for removing accrued liquids from cooked foods, the combination of a lower pan, an annular rim in conjunction with the upper periphery of said lower pan, a cover member having an aperture therein and adapted to be placed upon said annular rim, a gear-housing mounted upon said cover member and having a plurality of apertures therein, a perforated basket adapted to fit within said lower pan, a retractable shaft coupled with said basket, said shaft being adapted to protrude through said cover and said housing and terminating exteriorly thereof, means to longitudinally retract said shaft through said cover and said housing, means to engageably retain said shaft in a retracted position, and means to rotate said shaft whereby said basket is rotated to remove accrued liquids from food contained therein when said shaft and said basket are in a retracted position.

3,200,738
METHOD OF TYING BUNDLES WHILE SAID BUNDLES ARE IN MOTION
Benjamin H. Bunn, Chicago, Ill., assignor to B. H. Bunn Company, Chicago, Ill., a corporation of Illinois
Original application May 6, 1963, Ser. No. 278,031, now Patent No. 3,160,088, dated Dec. 8, 1964. Divided and this application Sept. 9, 1964, Ser. No. 395,332
4 Claims. (Cl. 100—3)



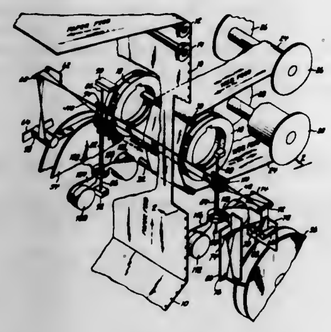
1. The method of tying a longitudinal tie around a bundle of substantially rectangular articles, which method comprises orienting said articles so that corresponding edges thereof are together, placing the bundle of oriented articles vertically upon a moving conveyor with the longitudinal edges of the articles resting upon said conveyor, resiliently and continuously compressing together only those corner regions of the bundle which are nearest one side of the conveyor while said bundle is moving on the conveyor, yieldably restraining from a fixed point adjacent the conveyor the other corner regions of the bundle nearest the opposite side of said conveyor while said bundle is moving on the conveyor to compress only said other corner regions of the articles, and wrapping a reach of twine longitudinally around the central region of the articles while the lower corner regions are compressed as aforesaid.

3,200,739
PRINT HAMMER MODULES FOR HIGH SPEED PRINTERS
Carmine J. Antonucci, Uniondale, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Mar. 18, 1963, Ser. No. 265,621
5 Claims. (Cl. 101—93)



1. A hammer module comprising,
a frame consisting of first and second side plates and a third plate intermediate said first and second plates,
a first and second shaft positioned in parallel separated locations and extending through said third plate and into said first and second side plates,
a first bearing mounted on said first shaft and extending between said first and third plates,
a second bearing mounted on said first shaft and extending between said second and third plates,
a third bearing mounted on said second shaft and extending between said first and third plates,
a fourth bearing mounted on said second shaft and extending between said second and third plates,
a first printing hammer mounted on said first bearing on the end adjacent said first plate,
a second printing hammer mounted on said second bearing on the end adjacent said third plate,
a third printing hammer mounted on said third bearing at the end adjacent said third plate,
a fourth printing hammer mounted on said fourth bearing at the end adjacent said second plate,
each of said printing hammers having a printing head at one end thereof,
said printing heads being aligned,
each of said printing hammers having a soft magnetic armature at the other end thereof,
said first and second printing hammers being substantially straight,
said third and fourth printing hammers being shaped about the second shaft so that the angle defined by said printing head, second shaft, and armature is an obtuse angle, and electromagnetic coils positioned adjacent each armature to actuate each printing hammer selectively.

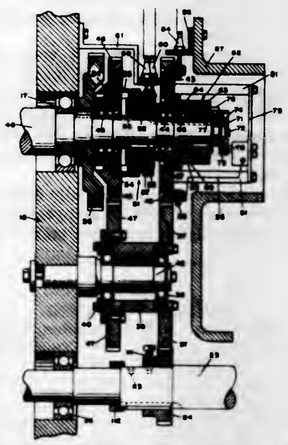
3,200,740
HIGH SPEED PRINTER WITH RIBBON-SHIFT ASSEMBLY FOR PERMITTING PRINTING IN DIFFERENT INK
Frank H. Schaller, Westport, and David W. Hubbard, Stamford, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 6, 1962, Ser. No. 171,520
12 Claims. (Cl. 101—96)



1. A machine for printing characters from either of two inking media on the same surface of the same recording medium, comprising: an assembly of type faces; a web impregnated with a first ink and arranged between said assembly and recording medium so that type face impressions on said web may be transferred as characters in said first ink onto the recording medium; a ribbon impregnated with a second ink; movable means mounting said ribbon and arranged for interposition of said ribbon between the web and the same recording medium; said ribbon including an ink-impermeable masking medium so arranged that the ribbon, when so interposed, is separated from the web by the masking medium; and means for selectively interposing the ribbon whereby selected type face impressions may be transferred as characters in said second ink onto the same recording medium; transfer of first and second inks between said web and said ribbon being prevented by said masking medium.

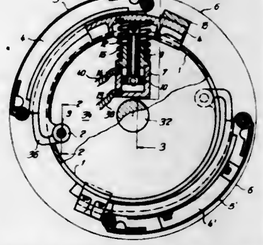
3,200,741
DRIVE MEANS FOR AN INTERMITTENTLY OPERATING MEMBER
Earl H. Weinberg, Evergreen Park, and Ronald R. Spaulding, Glenview, Ill.; said Weinberg assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,204
15 Claims. (Cl. 101—221)

1. In mechanism of the class described, a rotatable member having a shaft, a first gear rotatably mounted on said shaft, continuously operating means for driving said first gear, a second gear rotatably mounted on said shaft, continuously operating means for driving said second gear at a differential speed with respect to said first gear, a first manually actuatable clutch means for coupling said first gear to said shaft to thereby accelerate and drive said member at the same speed as said first gear, a second clutch means for coupling said shaft to said second gear when said member is properly synchronized therewith, sensing means including a member mounted for rotation with said shaft and a coacting member mounted for rotation with said second gear for detecting the relative angular positions of the rotatable member and said second gear, and means responsive to said sensing means for energizing said second clutch



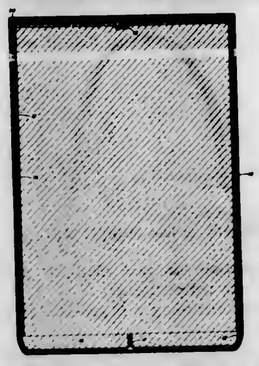
means when said rotatable member and said second gear are in precisely corresponding angular positions.

3,200,742
PRINTING APPARATUS
Werner Käsermann, Bern, Switzerland, assignor to Winkler Fallert & Co. Ltd., Bern, Switzerland
Filed Dec. 27, 1962, Ser. No. 247,715
Claims priority, application Sweden, Jan. 17, 1962, 474/62
1 Claim. (Cl. 101—247)



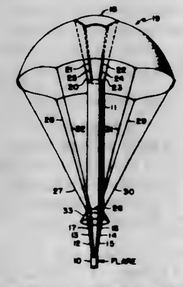
A printing apparatus comprising a cylindrical shell, a printing segment including an arm portion pivotally mounted adjacent the periphery of said shell portion, and a curved portion extending outwardly therefrom around in a circular arc and defining means for accommodating a printing cloth thereon, an abutment defined as an extension of said printing shell, the portion of said segment opposite from the portion which is pivotally mounted being aligned for movement outwardly against said abutment when in an operative position with the outer periphery disposed along a circumferential line of printing, a control cylinder pivotally mounted on said cylindrical shell, a piston movable in said control cylinder and having a connecting rod pivotally connected to said segment adjacent the end opposite the end which is pivotally mounted on said shell, a coil spring compressed between said cylinder and said segment for biasing said segment outwardly against said abutment, and means for admitting pressurized fluid to said cylinder on selected sides of said piston for controlling the position of said piston and said segment in respect to the circumferential line of printing.

3,200,743
WATERPROOF PACKAGE FOR EXPLOSIVES
George L. Griffith, Coopersburg, and Thomas P. Dowling, Fullerton, Pa., assignors to Trojan Powder Company, Allentown, Pa., a corporation
Filed Oct. 24, 1963, Ser. No. 318,629
5 Claims. (Cl. 102—24)



1. In an explosive cartridge free of metal and closable by simple crimping and wax sealing, a cylindrical body comprising an outer covering of paper spirally wound into a firm shell, a waterproof plastic bag within the shell, an inner tube of paper spirally wound to a radial thickness of less than the thickness of the outer shell and within said bag, and a filling of low sensitivity explosive within the package and confined laterally by the tube, there being an annular space between the outer shell and the tube with a radial dimension of about .02" to allow lateral movement of the tube while loading the cartridge, said tube being of sufficient strength to avoid injury to the bag as the cartridge is loaded by conventional equipment, and being of a length less than the length of the interior laoded portion of the bag.

3,200,744
PARACHUTE
George Webb, Richmond, Ind., assignor to Avco Corporation, Richmond, Ind., a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,336
2 Claims. (Cl. 102—35.4)



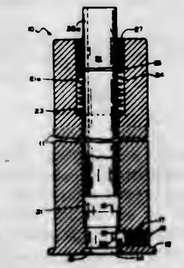
1. In a parachute for carrying a flare, the combination comprising:
- means including a hollow flue member for supporting the flare;
- a canopy member deformable between open and reefed positions;
- a plurality of elastic shroud members individually connected to said canopy member at spaced boundary points, said shrouds maintaining the canopy member in fully open position in response to relatively low air pressures exercised against said canopy member, but said shrouds stretching to permit reefing of said canopy member in response to large air pressures;
- and a plurality of spaced lines between said flue and spaced points bounding a portion of said canopy member which is geometrically definitive of a parachute small by comparison with the canopy member, whereby as the ensemble is dropped into space the flare falls rapidly and is braked solely in the small parachute until a decrease in pressure under the canopy member permits the elastic shrouds to contract and fully to open up the canopy member, whereupon the flare hovers and transmits heat through the flue to prolong hovering.

3,200,745
METAL CANDLE
Leonard M. Vaught, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 20, 1963, Ser. No. 325,187
10 Claims. (Cl. 102—37.8)



1. A metal candle comprising two elements, a metal tube and a metal fuel positioned therein, said metal tube being of a metal selected from aluminum, magnesium, and mixtures and alloys thereof, and having a wall thickness of from about 0.003 to about 0.125 inch, said metal fuel comprising particles of a metal selected from aluminum, magnesium, and mixtures and alloys thereof, said particles having a minimum size of +10 mesh and a maximum size such that the minimum cross-sectional dimension is no greater than one-eighth inch and said metal candle being further characterized in that at least one of said elements consists predominantly of magnesium.

3,200,746
DUMMY SHOTGUN SHELL BLANK
Charles J. McConeghy, 2203 Highland Ave., Utica, N.Y.
Filed May 6, 1964, Ser. No. 365,409
5 Claims. (Cl. 102—39)

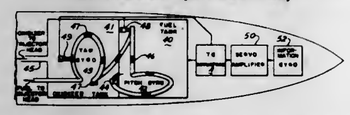


1. A shotgun dummy shell, comprising: a body having the exterior surface contour and size of an assembled impellent shell, said body having at its breech end a recess adapted to receive with a close fit an explosive primer cap, and having a passage extending axially the length of the shell from said recess to the other end of the shell, said recess having a sidewall and spring pressed ball-detent means associated with the sidewall for exerting releasable pressure upon a primer cap inserted therein.

3,200,747
METHOD OF DUPLICATING BALLISTIC DENSITY
Glenn P. Sorenson, Walnut Creek, and Richard G. McKee, Danville, Calif., assignors to MB Associates, a corporation of California
No Drawing. Filed Feb. 8, 1963, Ser. No. 257,088
2 Claims. (Cl. 102—49)

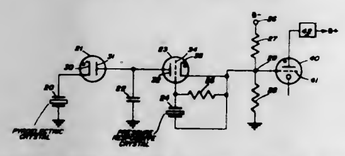
1. The method of duplicating the velocity and acceleration of a body of high ballistic density during re-entry into the earth's atmosphere comprising the steps of deploying a body of high ballistic density and a low ballistic density decoy in outer space and deploying said decoy in the same direction as said body and firing a rocket motor disposed in said decoy when said decoy begins to re-enter the atmosphere, whereby rocket thrust compensates for aerodynamic drag and said decoy has the same acceleration, velocity and direction of said body of high ballistic density.

3,200,748
GYROSCOPIC CONTROL SYSTEM
John Macatician, Lake Hopatcong, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Nov. 16, 1959, Ser. No. 853,420
17 Claims. (Cl. 102—50)



1. In a guidance system for missiles having a propelling motor and fuel storage means including a conduit for supplying fuel to the motor; a pair of circular paths arranged in the conduit in planes at right angles to each other, and means mounted in the missile for forcing fuel from the storage means to the motor unidirectionally through said circular paths to form constant fluid mass stabilizing gyros thereof, the guidance torque of said gyros terminating upon exhaustion of the fuel.

3,200,749
PYROELECTRIC EFFECT IN A SUBMINIATURE HIGH VOLTAGE IMPACT FUSE
Rudolph N. Downs, Springfield, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 11, 1960, Ser. No. 62,064
3 Claims. (Cl. 102—70.2)



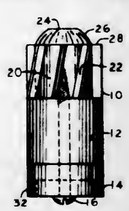
1. A self-contained, self-arming, impact responsive, missile detonator comprising in combination a thermally actuated pyroelectric crystal connected through non-reversing diode means to an electric storage means, said storage means connected through triode switching means to the control grid of a thyratron tube, said control grid being maintained by voltage divider means at a negative voltage, and said switching means being controlled by an impact responsive ceramic trigger means whereby heating of said pyroelectric crystal means will energize said electric storage means and a subsequent impact shock will cause said ceramic trigger means to actuate said switching means resulting in electrical energy from said storage means overcoming the negative voltage applied to the grid of said thyratron, causing said thyratron to conduct.

3,200,750
INSULATING DEVICE
Dale L. Burrows, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 15, 1962, Ser. No. 180,055
15 Claims. (Cl. 102—92.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A heat resistant device comprising:
(a) a shell;
(b) means disposed on said shell for protecting said shell from high temperatures,
(c) said means including a brush-like arrangement of fibers, and
(d) said brush-like arrangement of fibers being so oriented and so fine as far as a boundary layer is concerned that the surface thereof is essentially smooth to promote an increase of laminar flow very much in line with the phenomena occurring on the feathered surfaces of birds.

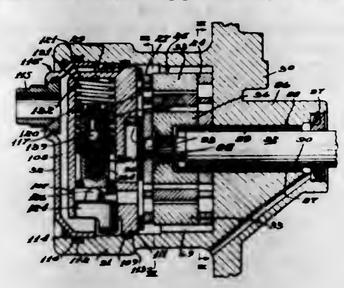
3,200,751
AERODYNAMIC SHOTGUN SLUG
George N. Vitt, 11 Sugar Loaf Drive, Wilton, Conn.
Filed Jan. 22, 1964, Ser. No. 341,163
10 Claims. (Cl. 102—92.5)



1. An elongated shotgun slug whose length is from 2.0 to 3.0 times greater than its greatest outside diameter with a series of longitudinal helical ribs whose airfoil area in square feet is in a ratio of 0.013 to 0.03 inclusive relative to the sectional density of said slug.

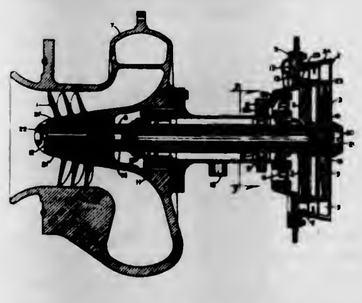
3,200,752
STACK-UP SLIPPER PUMP WITH INTEGRAL FLOW CONTROL VALVE
Hubert M. Clark, Bloomfield Township, Oakland County, and Gilbert H. Drutchas, Detroit, Mich., assignors to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 16, 1963, Ser. No. 280,947
24 Claims. (Cl. 103—42)

1. In a pump,
a stack-up of parts including
a ring part having a contoured bore forming a pumping chamber,
first and second ported pressure plate parts on opposite sides of said ring part and forming inlet and outlet areas communicating with the interior of said ring part,
a valve plate part carrying a flow control valve integrally therewith and having a discharge passage for receiving the discharge of the pump and directing a controlled flow outwardly, said valve plate part and said flow control valve forming a single unit,
a separator plate part between said valve plate part and one of said pressure plate parts to regulate the inlet and outlet areas,
and retaining means aligning and retaining said parts in assembly with one another,
a notched rotor in said ring part having a slipper means



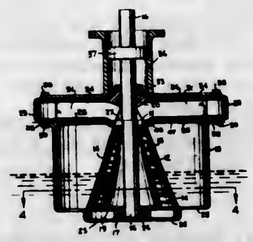
in the notched portion free to move radially and rock angularly in following the bore contour to move fluid from the inlet to the outlet areas,
and means to rotate said rotor comprising a rotatable shaft connected to said rotor,
support means for journaling said shaft,
and a cup-shaped can connected to said support means and enclosing said stack-up of parts and together therewith forming an inlet zone surrounding said ring part and an outlet zone spaced therefrom.

3,200,753
TURBO-BOOST PUMP
Dominic Di Stefano, Denver County, and Howard Macklis, Arapahoe County, Colo., and Jonathan E. Boretz, Cuyahoga County, Ohio, assignors to The Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed Feb. 7, 1963, Ser. No. 256,978
6 Claims. (Cl. 103—87)



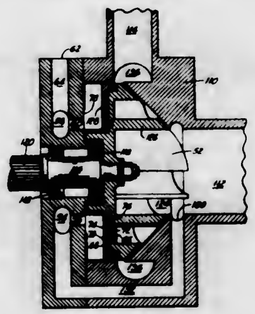
1. A turbopump comprising an axial flow pump for high speed pumping of large volumes of cryogenic fluids, a gas turbine, a shaft directly interconnecting the pump and the turbine, a shaft housing, a collar arrangement surrounding the turbine, a plurality of spaced injector port means positioned in the collar arrangement for injection of hot gas onto the turbine, housing means positioned around the shaft, a loose joint connecting said housing and collar arrangement, and bellows means disposed to also interconnect the collar arrangement and the housing means and to maintain with said loose joint heat exchange between the pump and the turbine at a minimum.

3,200,754
WATER PUMP
Kermit H. Burgin, Whitestown, Ind., assignor of eighty percent to Frederick B. Cline, Indianapolis, Ind.
Filed Feb. 10, 1964, Ser. No. 343,834
3 Claims. (Cl. 103—88)



1. A pump structure having two stages, comprising
a vertically extending drive shaft;
a first hollow frusto-conical member drivingly fixed to said shaft;
a second frusto-conical member of approximately equal height to and being within said first member, drivingly fixed to said shaft and radially spaced from the first member defining an annular space therebetween;
at least one continuous spiral member extending from the lower to top ends of said two members and engaging by its side edges to both of said members forming a confined spiral chamber therebetween open at bottom and top of those members;
an impeller unit above said members and driving fixed to said shaft;
said impeller unit having a central zone open from its underside and comprised a number of vanes of common length radiating horizontally from the zone with openings therebetween from said zone;
a housing surrounding the outer ends of said vanes with at least one side opening;
a discharge conduit; and
a scroll spiralling from over said opening and discharging into said conduit.

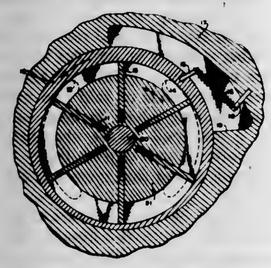
3,200,755
PUMP
Joseph A. Miletl, Oxnard, Calif., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Sept. 10, 1962, Ser. No. 222,399
4 Claims. (Cl. 103—113)



1. A centrifugal pump comprising:
a housing having an internal cavity fed by an axial inlet and a peripheral outlet;

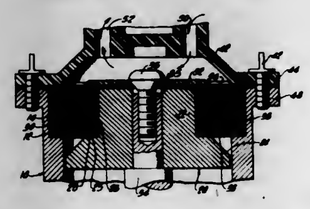
a fluid collecting pocket in the inlet adjacent the cavity;
a first pump impeller rotatably mounted in said housing cavity receiving fluid from said inlet and discharging same through said peripheral outlet;
a second pump impeller adapted to be driven concurrently with said first pump impeller and facing in an opposite direction to that of said first impeller in said cavity;
a resilient means interposed with said first and second impellers to project said second impeller outwardly of said first impeller whereupon running contact is maintained between said second impeller and a housing cavity wall; and
an internal passage connecting said fluid collecting pocket to an opening in the wall in rubbing contact with said second impeller.

3,200,756
VARIABLE DISPLACEMENT MOTORS AND SPEED CONTROLS THEREFOR
George D. Ratliff, Jr., Churchill Borough, Pa.
(2314O Forest Drive, Pittsburgh, Pa.)
Filed Oct. 15, 1962, Ser. No. 230,763
4 Claims. (Cl. 103—120)



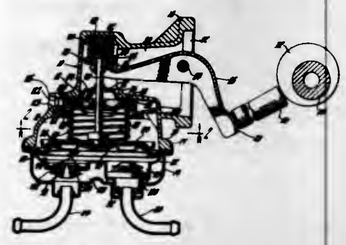
1. In combination in a variable fluid displacement device of the character described, a rotor, a modulator providing a chamber normally eccentrically disposed relative to the rotor, a housing providing bearing surfaces for and rotatably supporting said modulator member in face-to-face relation, said modulator being mounted for adjustment relative to the rotor to vary the relative fluid displacement eccentricity of the chamber and the rotor in operation, means to bias the modulator adjustment in one direction, and a plurality of vanes held with respect to rotation relative to the rotor but movable radially to maintain slidable contact with the modulator.

3,200,757
PUMP
Adam P. G. Steffes, 707 S. Hill St., Los Angeles, Calif.
Filed May 1, 1963, Ser. No. 277,353
18 Claims. (Cl. 103—150)



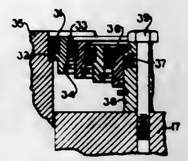
1. In a pump, a pump body having an internal shoulder, a colled flat element within said body, an outer element retainer surrounding the outer periphery of said coiled element abutting said shoulder and fixed within said body, an inner element retainer surrounded by the inner periphery of said coiled element, means for reciprocating said inner element retainer within said body, said retainers being spaced from each other a distance equal to approximately one-half the length of the stroke.

3,200,758
DIAPHRAGM FUEL PUMP WITH VENT
John L. Grabiel, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 15, 1963, Ser. No. 302,277
10 Claims. (Cl. 103—150)



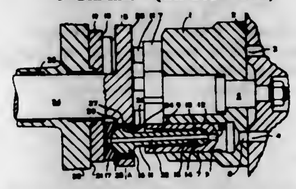
1. A pump having a pumping diaphragm and a body enclosing a spring chamber and a pumping chamber separated by said pumping diaphragm, one-way valves serving said pumping chamber, a rod in said spring chamber and connected to said diaphragm, sealing means between said body and said rod and in a plane normal to said rod, spring means in said spring chamber and adapted to cooperate with said rod for actuating said diaphragm, and a vent channel extending through the wall of said spring chamber with inside and outside ends of the channel angularly spaced about the axis of the pump diaphragm and in said plane.

3,200,759
FRICTIONLESS PISTON PUMP
Salvatore M. Curioni, 151 S. Sunset, Hayesville, Kans.
Filed Nov. 30, 1962, Ser. No. 241,387
4 Claims. (Cl. 103—153)



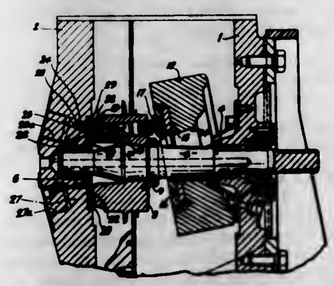
1. In a reciprocating pump having a body, an inlet for said body, an outlet for said body, an inlet chamber communicating with said inlet, an outlet chamber communicating with said outlet, a pressure chamber, valve means for controlling the flow of fluid between said inlet chamber and said pressure chamber and between said pressure chamber and said outlet chamber, a cylinder, the improvement comprising a piston slidably mounted for reciprocal movement in said cylinder and partially defining said pressure chamber, said piston being operative upon reciprocation to vary the volume of said pressure chamber thus drawing fluid from said inlet chamber and discharging said fluid under pressure into said outlet chamber, said piston being comprised of a plurality of telescopically nested sections each movable a predetermined limited extent with respect to adjacent sections.

3,200,760
HYDRAULIC APPARATUS
Oswald Thoma and Thomas D. H. Andrews, Cheltenham, England, assignors to Dowty Hydraulic Units Limited, Ashchurch, England, a British company, and Unipat A.G., Glarus, Switzerland, a Swiss company
Filed Jan. 7, 1963, Ser. No. 249,855
Claims priority, application Great Britain, Jan. 16, 1962, 1,577/62; July 18, 1962, 27,617/62
9 Claims. (Cl. 103—162)



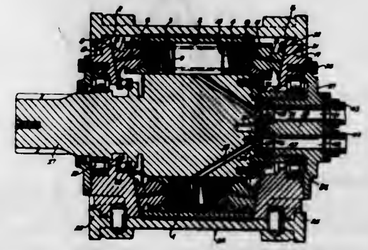
1. A bearing combination comprising a slipper having a cylindrical surface of slight axial extent and a bearing surface transverse to its cylindrical surface, a drive shaft rotatable about a first axis, a driving member integral with the drive shaft and formed with a bore wherein the cylindrical surface of the slipper is closely received and axially movable, but with only sufficient clearance to tilt slightly by reason of its slight axial extent, a cam member having a bearing surface complemental to the slipper's bearing surface, disposed substantially perpendicularly to said first rotation axis, and parallel to the plane of rotation of the driving member, and a thrust member rotatable bodily about a second axis which during operation intersects the first axis, and joined to said slipper by an articulated joint the center of which coincides substantially with the center of said cylindrical surface to urge the slipper generally axially onto the bearing surface of the cam member.

3,200,761
HYDRAULIC POSITIVE DISPLACEMENT ROTARY MACHINES
Donald Firth and Roger Harvey Yorke Hancock, East Kilbride, Glasgow, Scotland, assignors to Council for Scientific and Industrial Research, London, England
Filed May 1, 1963, Ser. No. 287,166
Claims priority, application Great Britain, May 12, 1962, 18,349/62
15 Claims. (Cl. 103—162)



1. A hydraulic positive displacement rotary machine comprising a cam member, a port member having a main inlet port and a main outlet port, a cylinder block which is rotatable relative to the cam member and port member, a plurality of cylinders in the cylinder block having ports each arranged to register in the course of said relative rotation alternately with the main inlet and outlet ports in the port member, pistons in the cylinders reciprocable under the control of the cam member, at least one auxiliary port in the port member disposed between said main inlet and outlet ports, which auxiliary port has a pressure-fluid connection to one of the main ports and is registrable with the cylinder ports as they move towards registration with the main port to which the auxiliary port is connected to permit fluid flow due to differential pressure between the main port and a cylinder connected through the auxiliary port to the main port, an adjustable obturator in the connection between the auxiliary port and main port, and control means connected to said obturator to regulate the rate of fluid flow between the main port and said cylinder.

3,200,762
AXIAL PISTON PUMPS OR MOTORS
Oswald H. Thoma, Charlton Kings, Cheltenham, England, assignor to Unipat A.G., Glarus, Switzerland, a company of Switzerland
Filed Dec. 17, 1963, Ser. No. 331,291
Claims priority, application Germany, Dec. 19, 1962, U 9,464; Feb. 27, 1963, U 9,614
8 Claims. (Cl. 103—162)

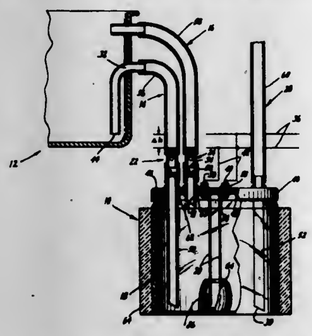


1. An axial piston pump or motor comprising a rotary cylinder block which contains cylinder bores arranged regularly in the block parallel to the axis of rotation, a pair of pistons in the cylinder extending from the opposite ends of the cylinder block, and inclined plate located at each end of the cylinder block against which the projecting ends of the pistons are arranged to react, a drive shaft fast with the block extending from one end of the cylinder block to a central hole in the plate at that end, a first bearing for radial loads located the drive shaft for rotation relatively to the plates, a stub axle fast with the block extending from the opposite end of the block through a central hole in the other plate, a second bearing for radial loads locating the stub axle for rotation relatively to the plate, passages for supplying liquid to and from the cylinders extending through the stub axle, and valve means associated with the passages for sequentially connecting the cylinders through the passages alternately to low and high pressure zones during the cylinder block rotation.

3,200,763
PUMP MECHANISM
Holland S. Lippincott, Riverton, N.J., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 21, 1962, Ser. No. 246,422
4 Claims. (Cl. 103—231.5)

1. A liquid pumping system comprising: liquid-storage means; a container for the receipt of liquid from said liquid-storage means; electrode means extending into said container; liquid feed means interconnecting said storage means and container in fluid-flow communication including a conduit arranged to provide for flow of liquid from said storage means to said container when the liquid in said storage means reaches a predetermined upper level and to maintain liquid flow to said container by siphonic action until the liquid in said storage means reaches a predetermined lower level; valve means associated with said conduit constructed to permit flow of liquid to said container and to prevent flow of liquid in the reverse

direction; means for venting air from said container including valve means constructed and arranged to permit the escape of air displaced by the incoming liquid, to close when the air-flow rate exceeds that produced by water inflow, and to open when the pressure within said container becomes equal to or less than the ambient atmospheric pressure; liquid-venting means including an open conduit extending substantially to the bottom of said container; a floatable, electrically insulative open-ended vessel disposed in said container into which terminal portions of said electrode means extend captively to permit



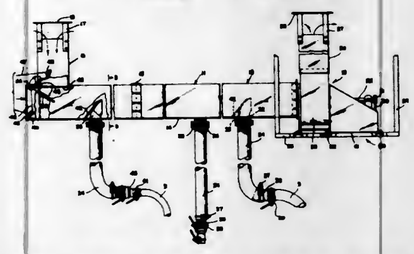
flotation of said vessel, by incoming liquid, to a predetermined elevational level, such that liquid overflowing into the vessel when at said level results in rapid submergence thereof producing complete and substantially instantaneous immersion of said electrode means by overflowing liquid; and means impressing a voltage across said electrode means to provide, on establishment of an electrically conductive path to said electrode means by said overflowing liquid, heat sufficient to effect gradual vaporization of said liquid to develop a pressure within said container sufficient to effect closure of said valve means and discharge of liquid through said liquid venting means.

3,200,764
FLUID INJECTOR
Robert C. Saunders, Jr., 24 Fair Oaks, St. Louis 24, Mo.
Filed Sept. 10, 1962, Ser. No. 222,719
23 Claims. (Cl. 103—264)



1. An injector pump comprising: a mixing tube having an inlet and an outlet end; means to introduce into the inlet end of the mixing tube a low speed driven liquid; means to introduce into the mixing tube a high speed driving fluid capable of becoming condensed by the driven liquid, the high velocity of the driving fluid impinging upon the driven liquid to cause the fluids to mix, move toward the outlet end, and emit therefrom with a velocity above the minimum sonic velocity of mixtures of the two, but with the condensation of the driving fluid incomplete so that the quality of the mixture is above that quality at which such velocity is supersonic, a supersonic diffuser having its entrance spaced from the outlet of the mixing tube but positioned to receive the stream therefrom, means to maintain the integrity of the fluid mixture in the space between the mixer and the diffuser against influx of deleterious foreign fluids, the space between the mixer and the diffuser being sufficient to enable condensation of the driving fluid to continue far enough to render the stream velocity supersonic in the free space, the diffuser having its cross section gradually decreasing downstream from the entrance to a throat, the same being shaped to conduct the stream and to confine shock waves therein, whereby to raise the pressures therein.

3,200,765
DIESEL EXHAUST SYSTEM
Andrew Ambli, 2376 N. Hamline Ave., Roseville, Minn.
Filed Apr. 24, 1963, Ser. No. 275,458
7 Claims. (Cl. 104—52)

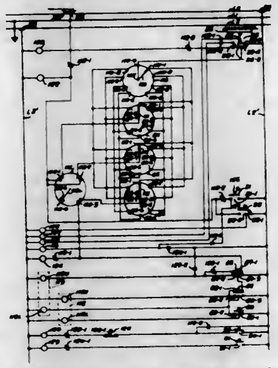


1. An exhaust system for exhausting internal combustion engine fumes from within a vehicle building shelter such as a garage or the like, said system comprising
an elongate conduit positioned within a garage and having an open inlet end and having an exhaust end communicating with the exterior,
said conduit having a plurality of longitudinally spaced-apart openings therein,
a plurality of elongate hose members each having one end thereof connected with said conduit in communicating relation with one of said openings and each being connectible at its other end to the exhaust pipe of a vehicle internal combustion engine,
means constricting the interior of said conduit adjacent each of said openings to produce a venturi effect thereat,
and an exhaust fan mechanism connected in fluid communicating relation with said conduit adjacent the exhaust end thereof and being operable to produce a continuous flow of air through said conduit whereby fumes exhausted through the exhaust pipes of the vehicle engines will be discharged through the exhaust end of said conduit.

3,200,766
CARRIER SYSTEMS
Henry A. Gorjanc, Wickliffe, Ohio, assignor to The Cleveland Crane & Engineering Company, Wickliffe, Ohio, a corporation of Ohio
Filed May 27, 1960, Ser. No. 32,388
4 Claims. (Cl. 104—88)

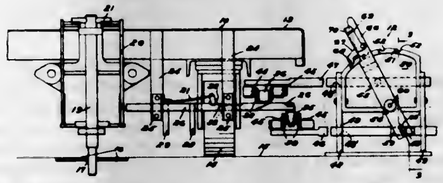
1. A carrier system comprising a closed loop trackway, a carrier supported on and movable along the trackway, a plurality of uncoded groups of control areas along the trackway at each of which areas a carrier controlling operation may be performed, said carrier encountering a plura.ity of said groups in sequence as it travels along the trackway, a single resettable stepping relay on said carrier for counting the control areas in each of said groups as the carrier travels along the trackway, said resettable stepping relay including a plurality of contacts, a conductive member movable from an initial position to engage the contacts, a stepping coil energizable to advance said member, means for holding the member in the position to which it is advanced when said stepping coil is de-energized, and a resetting coil energizable to reset said member to its initial position,

control means on said carrier actuatable to effect energization of said stepping coil to advance said member, a separate uncoded tripper means at each of said control areas for actuating said control means to energize said stepping coil to progressively advance said member at each control area, a plurality of adjustable preselect devices on said carrier for selecting a separate count of control areas in each of said groups which said carrier progresses through and at which a carrier controlling operation is to be performed, each of said preselect devices including a plurality of contacts and a conductive member settable to engage a selected one of said contacts, corresponding contacts of said preselect



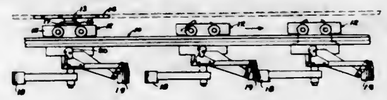
devices and of said resettable stepping relay being electrically interconnected, actuated means for effecting a carrier controlling operation when the movable member of said stepping relay has been advanced to engage a contact corresponding to a selected contact of one of said preselect devices, control means operable to effect energization of said resetting coil each time the movable member of said stepping re'ay has been advanced to engage a contact corresponding to a selected contact of one of the preselect devices, and means for connecting said actuated means in circuit with individual ones of said preselect devices and operable to sequentially connect said preselect devices with said actuated means in response to energization of said control means.

3,200,767
SIGNAL SETTING MECHANISM FOR CONVEYOR TRUCK
Paul Klamp, St. Clair Shores, and Jorgen S. Bildsoe, Royal Oak, Mich., assignors to Mechanical Handling Systems, Incorporated, Detroit, Mich., a corporation of Michigan
Continuation of application Ser. No. 818,820, June 8, 1959. This application Sept. 28, 1962, Ser. No. 226,963
16 Claims. (Cl. 104—88)



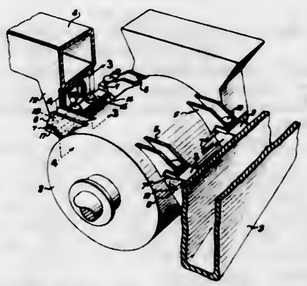
10. A signaling type material transporting system, comprising a wheeled truck to support a load from above for travel on a floor, said truck having an elongated, vertical propelled member engageable for propulsion by a conveyor, and a signalling member mounted for horizontal bodily movement on said truck transversely of said propelled member and the direction of travel of the truck, said signaling member being in non-rotative relation to the truck, and a mechanism for shifting and positioning said signaling member horizontally and transversely relative to said propelled member and truck travel direction, said mechanism comprising a cam member supported adjacent the path of truck travel, and means operatively connected to said cam member for adjustably positioning the same for engagement by the signaling member to cammingly shift the latter as described.

3,200,768
CONVEYOR SYSTEM WITH ACCUMULATING TROLLEY UNITS
Homer S. Harrison, Detroit, Mich., assignor to Mechanical Handling Systems, Inc., Detroit, Mich., a corporation of Michigan
Filed Sept. 4, 1963, Ser. No. 306,446
20 Claims. (Cl. 104—172)



1. In a conveyor system, the combination comprising a track,
a plurality of trolley units movable along said track,
each said trolley unit being provided with a pusher dog which is movable to and from driving and retracted positions,
a rear bumper and a front bumper on each said trolley unit,
said front bumper being movable rearwardly upon engagement with an obstacle,
means on each said trolley unit actuated by rearward movement of the front bumper to retract said movable pusher dog,
and cam means on each said trolley unit operated by movement of said front bumper to engage and lock said trolley unit relative to said track to prevent rearward movement of said trolley unit along said track.

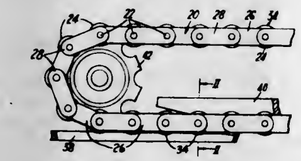
3,200,769
RAILWAY TRUCK STRUCTURE AND MOTOR ATTACHMENT
Richard N. Dobson, Burlington, Ontario, and Howard J. Bexon, Oakville, Ontario, Canada, assignors to Dominion Foundries and Steel Limited, Hamilton, Ontario, Canada
Filed Jan. 10, 1962, Ser. No. 165,447
8 Claims. (Cl. 105—138)



1. In combination with a frame comprising two spaced frame members, a motor disposed between the said frame members, mounting means mounting one side of the motor on its immediately adjacent frame member, and mounting means mounting the other side of the motor on

the other frame member, at least one of said mounting means comprising a pair of spaced mounting members protruding from one of the respective side of the motor and the corresponding frame member, a cooperating mounting member protruding from the other of the said side of the motor and its corresponding frame member and movable freely through the space between the said spaced mounting members, a removable key bar disposed between the said spaced mounting members and the said cooperating mounting member and bridging the said space between the spaced mounting members to prevent movement of the cooperating mounting member therethrough, and means for securing together the said key bar and the associated mounting members.

3,200,770
OVERHEAD GANTRY CRANE TRUCK
David Calder Hendry, Kettering, England, assignor to Stewarts and Lloyds Limited, Glasgow, Scotland
Filed Nov. 28, 1961, Ser. No. 155,296
Claims priority, application Great Britain, Jan. 3, 1961, 279/61
4 Claims. (Cl. 105—163)

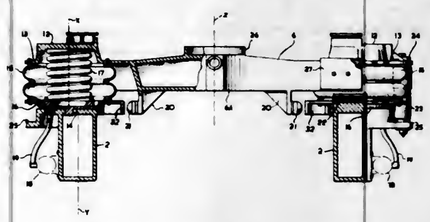




1. In combination with a rail mounted vehicle, a truck comprising a chassis and propulsion means, comprising at least two longitudinally spaced sprocket means mounted on said chassis, at least one of said sprocket means being driven, a carriage rail, means for resiliently mounting said carriage rail beneath said chassis, a return rail mounted above said chassis, a plurality of links, a plurality of shafts interconnecting adjacent lings in overlapping arrangement forming a pair of parallel spaced endless chains, a plurality of roller means each being freely rotatably mounted on one of said shafts, said chain seating said rollers in said sprockets and said rollers bearing on the lower part of said carriage rail and the upper portion of said return rail.

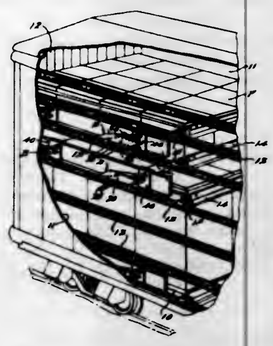
3,200,771
RAILWAY TRUCK HAVING SPRING MOUNTED BOLSTER
Richard N. Dobson, Burlington, Ontario, and Howard J. Bexon, Oakville, Ontario, Canada, assignors to Dominion Foundries and Steel Limited, Hamilton, Ontario, Canada
Filed Dec. 26, 1961, Ser. No. 161,839
3 Claims. (Cl. 105—197)

1. In a railway truck a rigid truck frame having a truck frame central vertical axis and comprising two spaced substantially parallel side frame members each having a respective side frame central vertical axis, and each formed at least approximately centrally of its length with a respective open-topped gap having generally vertical side faces and a horizontal bottom face with the bottom face located intermediately of the depth of the corresponding side member, a journal box mounted at each end of each side frame member for vertical movement relative thereto, resilient means interposed between each journal box and the respective frame end for resiliently controlling the movement of the journal box in the frame, two axles each rotatably mounted in a corresponding pair of journal boxes at corresponding side frame ends, two pairs of road wheels with each pair mounted on a respective axle, a transverse load supporting bolster having its ends disposed in their respective side frame gaps and guided for vertical movement by the said vertical side faces, and a pair of combination springs each interposed between a



respective end of the bolster and the bottom surface of the corresponding side frame gap to resiliently support the bolster in its vertical movement, each combination spring comprising a coiled spring acting along a respective vertical axis and surrounded by a respective tubular pneumatic spring acting along the same vertical axis, each said combination spring vertical axis being within the transverse width of the corresponding gap bottom surface and further from the said truck frame central axis than is the respective side frame central axis.

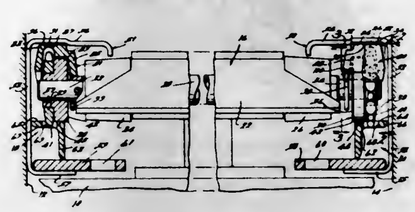
3,200,772
FREIGHT LOADING APPARATUS
John P. Moorhead, Plymouth, Mich., assignor to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Filed Feb. 14, 1962, Ser. No. 173,170
7 Claims. (Cl. 105—369)



1. A freight holding device adapted to occupy the space between a load of freight and the wall of a freight car or other container to hold the freight against the opposite wall comprising, a hanger member, means secured to said hanger member for detachably supporting said hanger member at selected positions to a belt rail secured to said first wall, a supporting arm pivotally connected to said hanger member for angular adjustment from a fully retracted and substantially nested position to a fully extended position with respect thereto, and an elongated thrust member secured to said supporting arm adjacent the free end thereof and adapted to engage the load of freight, said hanger member and said supporting arm having plate portions one of which substantially overlies the

other when said arm is in said fully retracted position and in which the edges thereof remote from said means are substantially parallel and which plate portions are relatively moved to reduce said overlying relation as said arm is pivotally moved toward said fully extended position in which position said edges are angularly disposed, and means for selectively interconnecting said plate portions at a plurality of selected positions of adjustment intermediate said fully retracted and fully extended positions.

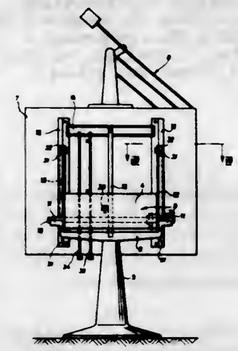
3,200,773
BULKHEAD HOLD DOWN
John P. Moorhead, Plymouth, Mich., assignor to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Filed Mar. 19, 1962, Ser. No. 180,464
12 Claims. (Cl. 105—376)



11. In a system for supporting a door or the like for movement along spaced parallel side walls; track assemblies adapted to be mounted on support structure adjacent said door along each side wall, each of said track assemblies comprising a track means having a support surface for receiving a wheel assembly and a guide groove surface spaced therefrom; wheel assemblies on each side of the door adjacent the side walls, each comprising a guide wheel means having a first peripheral diameter and a support wheel means having a second peripheral diameter varying from the peripheral diameter of said guide wheel means, said support surface of said track means being adapted to receive and support said guide wheel means and said support wheel means, said guide wheel means and said support wheel means being mounted on and supported by said support surface of said track means; and restraining means mounted on and overlying and supported by said wheel assemblies and extending toward said guide groove surface, a portion of said restraining means being located closely adjacent said guide groove and preventing accidental or inadvertent displacement of said wheel assemblies.

3,200,774
DRAFTING APPLIANCE
Erwin Suter, Kolliken, Aargau, Switzerland
Filed Feb. 18, 1963, Ser. No. 259,278
Claims priority, application Switzerland, Feb. 19, 1962, 2,012/62
2 Claims. (Cl. 108—7)

1. Drafting appliance comprising a pedestal support, a yoke rotatably mounted on an upper end of the support, a shaft secured on the yoke, a drawing board having a pair of rails secured on one side of the board in spaced relation, a channel rail interconnecting one of the ends of the said pair of rails, a casing having two rails connected thereto with the casing provided at the approximate other end of the first-mentioned rails and slidable therein by means of the two rails, a rack connected at one end to the channel rail and the other end extending through the casing, a pair of motors mounted in the casing each with connecting means, one to the rack and the other to the shaft for the yoke, and a pair of control means projecting from the casing and each manually operable, one control means to electrically energize one motor and connected to operate the rack to raise or lower the board relative to the support, the other control means to electrically energize the other motor connected to tilt the board in different inclined positions, the pair of control means each including a shift bar projecting from the casing and having contact switches electrically connected to the respective motor to control the latter.



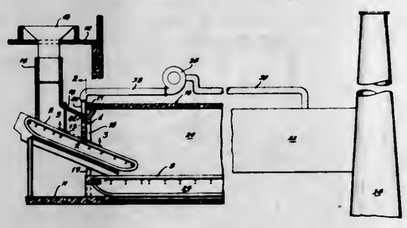
3,200,775
KNOCK-DOWN SHELVING UNIT
Raymond S. Peters, Portland, Oreg., assignor to Peters Metal Fabricating Co., Portland, Oreg., a partnership
Filed Mar. 26, 1962, Ser. No. 184,635
7 Claims. (Cl. 108—108)



1. A shelving unit comprising:
a pair of essentially flat upright parallel spaced end structures,
front member means extending between the front portions of said end structures at the lower portions thereof,
rear member means extending between said end structures at the lower rear portions thereof,
removable shelf brackets supported by said end structures,
and shelves on said brackets,
at least one end structure including a vertical post which has at each of two opposite sides a pair of inwardly facing but adjacent hooking flanges,
there being a pair of said brackets for each of such sides, each such bracket having a hook for hooking engagement with a post flange at the same level as the other brackets, said post having a central web formed with a hole,
each of the four brackets having a prong for fitting in said hole,
said hole being sufficiently horizontally elongate to enable four prongs to concurrently fit in said hole to enable four brackets to be supported by a post at the same level,

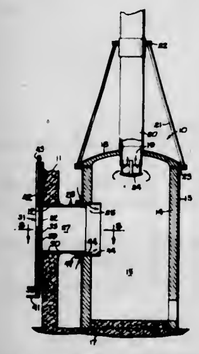
said web having a plurality of other holes similar to the first mentioned hole, said other holes being vertically spaced with reference to one another.

3,200,776
REFUSE INCINERATOR
Frank S. Simpson, Alton, Ill., assignor to Illinois Stoker Company, Alton, Ill., a corporation of Delaware
Filed Aug. 12, 1963, Ser. No. 301,557
6 Claims. (Cl. 110—15)



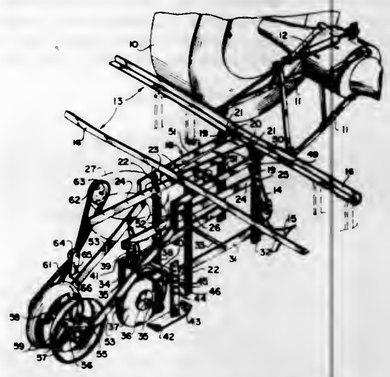
1. In the art of refuse disposal in an enclosed incinerator having a traveling grate through which air is passed upwardly to support combustion on said grate of a deep bed of combustible refuse and said traveling grate having an inlet end at which the refuse is deposited on the traveling grate through a permanently open opening in the incinerator enclosure, the improvement which comprises, locating said permanently open opening at said inlet end of said traveling grate and so that it extends substantially above the top level of the bed of refuse on the traveling grate, subjecting inert gas to a pressure greater than that which exists within said incinerator, and projecting a curtain of said pressurized inert gas athwart said opening.

3,200,777
INCINERATOR
Owen F. McIntire, 145 W. Ogden St., Capron, Ill.
Filed Oct. 1, 1962, Ser. No. 227,134
3 Claims. (Cl. 110—18)



3. In combination with a building wall having an access opening therethrough, an incinerator mounted adjacent one side of said wall and having a feed opening adjacent said wall, and a tubular throat mounted on said wall in communication with said access opening and projecting toward said feed opening to form a feed passage from said wall to said incinerator, the walls of said throat being spaced from and freely movable relative to the walls of said feed opening and said incinerator to form a substantially continuous air passage around all sides of said throat into said incinerator whereby combustion air is drawn into said incinerator around all sides of said throat.

3,200,778
PLANTER
Alvin C. Whelchel, 719 19th Ave. E., Cordele, Ga.
Filed July 30, 1963, Ser. No. 298,616
5 Claims. (Cl. 111—85)



1. A seed planter for mounting on the frame of an earth-working implement, said planter including a first pair of legs fixed to said implement frame, a second pair of legs fixed to said implement frame, an arm connected to said first and second legs at each side of said planter and extending rearwardly thereof, a rearwardly extending bar pivotally connected to the lower portion of each of said first legs, means for maintaining said bars in spaced relation, an axle rotatably mounted on the free ends of said bars, seed planting means carried by said axle, a spacer mounted adjacent to the free ends of said bars, and terminating in a downwardly extending portion at each side, a depth regulating skid adjustably mounted on each of said downwardly extending portions, means on said second pair of legs for limiting the downward movement of said bars, a second pair of arms, one of said second arms pivotally attached to each of said first pair of legs, means on said second pair of arms for limiting the downward movement of said second pair of arms, an axle rotatably mounted on the free ends of second pair of arms, a pair of generally frusto-conical wheels fixed on said axle, a sprocket carried by said axle, a seed box fixed to the rearwardly extending portion of said first pair of arms, an axle extending outwardly of said seed box, a second sprocket mounted on said seed box axle, and chain means connecting said first and second sprockets, whereby said seed planting means will be independently pivotally mounted on said first pair of legs and said frusto-conical wheels will be pivotally mounted on said first pair of legs and adapted to drive said seed box.

3,200,779
BINDER FOLDER ATTACHMENT FOR SEWING MACHINES
Ronald J. Boser, 261—79 Langston Ave., Glen Oaks, N.Y., and Eugene L. Weschler, 288 Bel-Air Drive, Massapequa, N.Y.
Filed Dec. 18, 1963, Ser. No. 331,570
10 Claims. (Cl. 112—152)

1. A sewing machine attachment assembly for feeding tape to a sewing position and folding an end of the tape at said sewing position, comprising:

a support mountable near said sewing position on the machine;

a tubular member open at both ends for passing tape therethrough, said member being secured to said support;

a flat finger secured at one end thereof to said tubular member and extending at its other end beyond one end of the tubular member for engaging a folded free end of the tape;

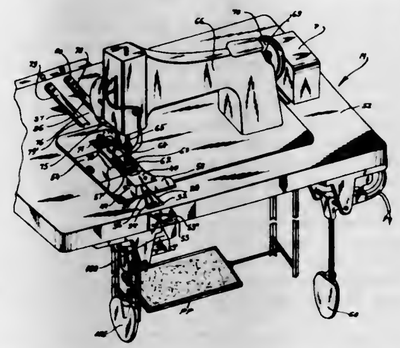
a pressure plate secured at one end thereof to the tubular member and over said finger, and having a movable free other end overlaying said finger and spaced inwardly of said other end of the finger to engage the free end of the tape when folded over said other end of the finger;

a lifter member secured at one end to said support and having a movable other end disposed under said pressure plate for lifting said other end of the pressure plate off of the finger to enable insertion of the free end of the tape between said pressure plate and finger;

another support mountable near said sewing position of the machine;

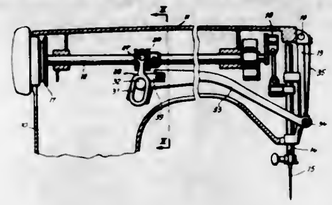
a pair of parallel bars slidably carried by said other support, one of said bars being alignable with said lifter member to lift the lifter member when said one bar is advanced, the other of said bars being alignable with said finger to enter between the finger and pressure plate for inserting the free end of the tape therebetween when said other bar is advanced;

and means for cyclically advancing said one bar to lift said lifter member and in turn lift said pressure plate, advancing the other bar to insert the free end of the tape between the finger and lifted pressure plate, retract the one bar from the lifter member, and retract the other bar from the finger and pressure plate, whereby the free end of the tape is held engaged between the finger and pressure plate, said free end of the tape being looped around the other end of the finger to form a hem so that an edge of the hem is exposed for sewing at said sewing position.

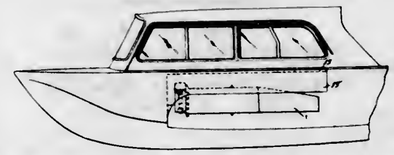


3,200,780
ZIG-ZAG SEWING MACHINE
Allan Herman Eriksson, Ekhem, Huskvarna, Sweden, assignor to Husqvarna Vapenfabriks Aktiebolag, Huskvarna, Sweden
Filed June 22, 1962, Ser. No. 204,474
Claims priority, application Sweden, July 3, 1961, 6,892/61
4 Claims. (Cl. 112—158)

1. A zigzag sewing machine having a hollow frame, a drive shaft journalled in said frame, a longitudinally reciprocable and laterally swingable needle-bar carried by said frame, exterior handle means on said frame, and a device within said frame for imparting a variable lateral motion to said needle-bar, said device comprising a cam driven by said shaft, a swing-arm driven by said cam and having a pivot axle and a pluarlity of adjacent, alternative slide-guides which diverge towards the pivot axle of said swing-arm from a transfer position at a distance therefrom and in a plane perpendicular to said axle, and a guide follower connected to said needle-bar and adjustable along any of said slide-guides for varying the amplitude of the swinging motion of the needle-bar and adjustable in the direction of said pivot axle when in said transfer position selectively between said slide-guides for changing the field position of said swinging motion, said guide follower being operatively connected with, and adjustable and transferable by said exterior handle means.

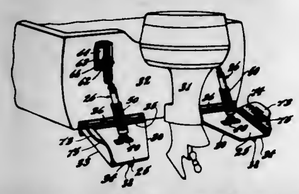


3,200,781
FOLDABLE HYDROFOIL
Keitaro Takagi, Setagaya-ku, Tokyo-to, Japan, assignor to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan
Filed Apr. 23, 1963, Ser. No. 275,108
Claims priority, application Japan, Apr. 30, 1962, 37/16,808
6 Claims. (Cl. 114—66.5)



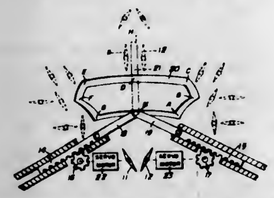
1. A hydrofoil boat comprising an elongated hull having a side, a hydrofoil located at the side of the hull and including an elongated substantially rigid strut having an operative position extending in a generally up and down direction and located directly next to said side of said hull, said hydrofoil further including a lifting foil hingedly connected to a bottom end of said strut and a supporting foil having a pair of sections hingedly connected to each other with one of said sections hinged to an upper end of said strut and with the other section hinged to an end of said lifting foil distant from said strut, turning means operatively connected to the supporting foil section which is hinged to said strut for turning the latter section of said supporting foil away from said strut so as to locate said sections of said supporting foil in a common plane and place the hydrofoil in an expanded position where the supporting foil, the lifting foil, and the strut, respectively, extend substantially along the sides of a triangle, said turning means also being connected to the section of said supporting foil which is connected to said strut for turning the latter section of said supporting foil to a collapsed position next to said strut, and the supporting foil section which is connected to said lifting foil automatically becoming located alongside of the section which is connected to said strut to displace said lifting foil to a collapsed position extending generally parallel to said strut and located adjacent thereto with the collapsed supporting foil situated between said strut and said lifting foil, and support means supporting said strut on said side of said hull for turning movement, about an axis extending transversely across the hull, from a position where said strut extends in a generally up and down direction to a stowed position where said strut and the collapsed supporting foil and lifting foil all extend in a generally horizontal direction and are located closely adjacent to the side of the hull.

3,200,782
POWER BOAT ATTACHMENT
Samuel L. Walden, 711 Shore Road, Northfield, N.J., and Albert B. Thomas, 2143 S. Bayshore Drive, Miami, Fla.
Filed Nov. 6, 1964, Ser. No. 409,359
12 Claims. (Cl. 114—66.5)



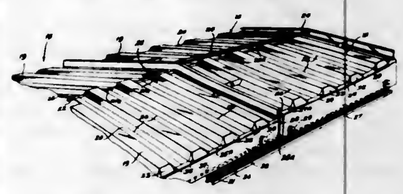
1. A power boat attachment comprising elevator plate means for controlling the angle of a power boat with respect to the horizontal, hinge means connected at one side to the elevator plate means and adapted at the other side to be connected to the stern of the boat, and regulator means including spring means acting at one end against the stern of the boat and the other end against the elevator plate means, said spring means urging the two ends of the regulator means continuously apart and urging the elevator plate means toward an angular position below the horizontal and yielding under increase of load to permit the elevator plate means to assume an angular position closer to the horizontal.

3,200,783
SHIP MANEUVERING MEANS
Duncan K. Winter, 4614 Maple Ave., Bethesda, Md.
Filed Nov. 24, 1964, Ser. No. 413,542
5 Claims. (Cl. 114—163)



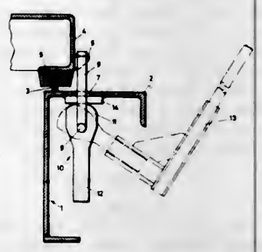
1. Maneuvering means for a self-propelled vessel, a propeller at at least one end of said vessel, a pair of balanced rudders positioned on vertical pivots in the slipstream of the propeller one on each side of the center line of said propeller, single manually movable means cooperatively connected to both said rudders to rotate said rudders on their pivots, a guide restricting the area over which said manually movable means can move, said guide having an elongated generally oval shape extending transversely of said vessel, the cooperative connection between said manually movable means and said rudders being such that upon movement of said manually movable means along one athwartship side of said guide, said pair of rudders operate in unison and remain parallel for conventional steering, movement of said manually movable means against said guide at the end portions of said guide causes the rudder closest to that end of the loop of track to assume a position substantially normal to the slipstream of said propeller whereby said pair of rudders form a deflecting surface for the slipstream of said propeller to direct said slipstream in a directioin substantally normal to the length of said vessel, and upon movement of said manually movable means along the other athwartship side of said guide said rudders are again turned in unison to assume, at the amidships portion of said manually movable means, a position with the edges of said rudders closest to said propeller substantially in contact with each other.

3,200,784
CARGO BARGE COVER
Willard E. Gowan, Sr., Arnold, Mo., assignor to St. Louis Shipbuilding-Federal Barge, Inc., St. Louis, Mo., a corporation of Missouri
Filed June 11, 1964, Ser. No. 374,350
6 Claims. (Cl. 114—201)



1. In a cargo barge having a hopper for cargo to be transported therein, the improvement of a cargo protection cover for the hopper comprising corrugated sheet material having crests and valleys and a bend in the sheet perpendicular to the crests and valleys, said bend being defined by a series of crimps in the valleys constituting a structural discontinuity in the under side of said cover and allowing the sheet material to slope off in opposite directions for rain run off, and a pair of members secured to said sheet at said bend and to the crests and valleys, one of said members being secured to said crimps to restore the structural continuity caused by said crimps, and said members together with said crests and valleys constituting a truss structurally supporting said sheet transversely of the direction of the corrugations.

3,200,785
LATCHING DEVICE FOR HATCH COVERS OR THE LIKE
Erik Holger Isaksson, Goteborg, Sweden, assignor to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden
Filed Sept. 8, 1964, Ser. No. 394,659
Claims priority, application Sweden, Oct. 10, 1963, 11,107/63
2 Claims. (Cl. 114—203)



1. In a latching device for a hatch cover comprising a coaming surrounding a hatch opening, a cover adapted to rest on said coaming when in closed position and a number of fitting for securing said cover to said coaming
an outwardly directed horizontal flange at at least two sides of the coaming and a number of openings in said flange
a number of studs on the edges of the cover, each stud located in a position to match a flange opening when the cover is in closed position
a fitting in each flange opening consisting of a main member shaped as an inverted U and adapted for cooperation with a stud
a lever consisting of an eccentric disc and a handle pivotally mounted between the ends of the shanks of the U-member
and a locking bar fitted between the shanks intermediate the lever and the bottom of the U-member and attached to the lower side of the flange for cooperation with said eccentric disc.

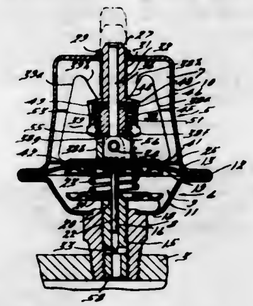
3,200,786
SIGNALLING DEVICE
Montgomery C. Swezy and Robert L. Doyle, Palo Alto Calif., assignors to Western Progress, Inc., Palo Alto, Calif., a corporation of Nevada
Filed Feb. 5, 1964, Ser. No. 342,690
4 Claims. (Cl. 116—63)



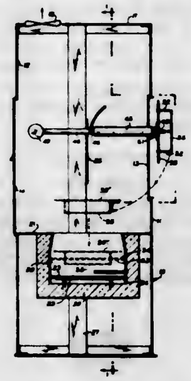
1. In a signalling device for use with a support stand, a pair of non-extensible rigid elongate arms pivotally interconnected intermediate the ends thereof and lying in adjacent substantially parallel planes, means mounted on said arms adapted to be used for securing said arms to said support stand, a flexible sheet-like member having indicia thereon, means securing said sheet-like member to the ends of said arms so that said sheet-like member lies substantially in a single plane adjacent to and substantially parallel to said arms so that said arms provide support for the sheet-like member between the ends of the arms when said arms extend laterally of each other, said means for securing said sheet-like member to said arms including a pair of pocket-like members receiving the ends of one of said arms and each having means for opening the same to permit said one arm to be released laterally therefrom and moved into a position in which it is extending in substantially the same direction as the other arm, an additional substantially opaque flexible sheet-like member, and means removably securing said additional sheet-like member to the first named sheet-like member so that it overlies and obscures at least a portion of said indicia.

3,200,787
SUB-ATMOSPHERIC PRESSURE INDICATOR
Rex C. Darnell, Dexter, Mich., assignor to Michigan-Dynamics, Inc., Detroit, Mich., a corporation of Michigan
Filed Dec. 18, 1963, Ser. No. 331,484
13 Claims. (Cl. 116—70)

1. A vacuum indicating device including a hollow housing, a pressure responsive member movably disposed within said housing and forming therewith a closed pressure chamber on one side of said pressure responsive member with the other side thereof exposed to atmospheric pressure, compression spring means having one end operatively engaging said pressure responsive member and normally biasing said pressure responsive member in one direction, said pressure responsive member being movable in a direction compressing said spring means when a sub-atmospheric pressure exists in said chamber, an indicator element on the other side of said pressure responsive member, means normally biasing said indicator element in a direction away from said pressure responsive member, movable latching means for said indicator element, said pressure responsive member operatively engaging and biasing said latching means into locking engagement with said indicator element when a first predetermined pressure exists in said pressure chamber, said latching means being movable to an unlocking position upon movement of said pressure responsive member in a direction compressing said spring means to release said indicator element for movement in the given direction in response to a second predetermined pressure in said pressure chamber which is less than said first predetermined pressure.



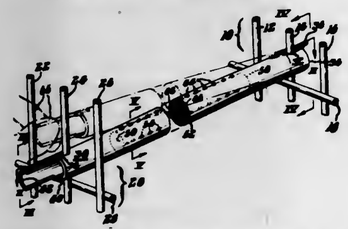
3,200,788
CENTRIFUGAL PRE-TINNING APPARATUS FOR PRINTED CIRCUIT BOARDS
Louis V. Tardoskegyi, Montreal, Quebec, Canada, assignor to Electrovert Manufacturing Co. Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed Oct. 30, 1963, Ser. No. 320,183
14 Claims. (Cl. 118—11)



1. Apparatus for pre-tinning printed circuit boards comprising, in combination, an enclosure having a work loading opening in a side wall thereof; a solder pot within the lower portion of said enclosure and containing molten solder; a jig arranged to have a printed circuit board mounted thereon; a shaft secured to said jig to extend substantially perpendicularly to the printed circuit board; motor means operable to rotate said shaft; supporting means mounting said shaft for swinging movement between a generally horizontal position and a vertical position in which said shaft is substantially centered with respect to said solder pot; and means operable to move said support means between a jig loading position, in which said shaft is horizontal and said jig is adjacent said

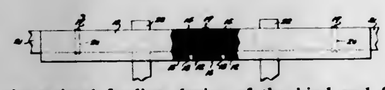
work loading opening, a lower position in which said shaft is verticle and a printed circuit board on said jig is dipped into the molten solder, and an intermediate position in which said shaft is vertical and said printed circuit board is above said solder pot; said motor means, when said printed circuit board is dipped in said molten solder, rotating said shaft at a relatively low speed and, when said shaft is raised to said intermediate position, rotating said shaft at a high angular velocity to fling molten solder from openings in said circuit board; said motor means being ineffective to rotate said shaft when said latter is in the horizontal position.

3,200,789
PERCH FOR BIRD CAGE
Charles A. Danowitz, 145 Markle St., Philadelphia, Pa.
Filed Apr. 20, 1964, Ser. No. 360,973
4 Claims. (Cl. 119—25)



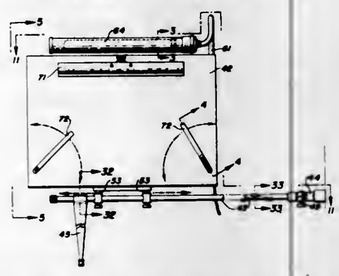
2. In a perch for open wire type bird cages, an elongated member having open notches extending across opposite end portions thereof and adapted for receiving respectively a pair of cage wires, the portion of said member on one side of one notch being substantially longer than the portion of said member on the opposite side of the notch thereby to provide an abutment to facilitate operative engagement thereof with a cage wire, and the portion of said member on one side of the other notch being substantially longer than the portion of said member on the opposite side of the notch thereby to provide a finger grip by means of which the perch may be held, projected endwise through one side of and across the cage and maneuvered into engagement with said pair of wires, and by means of which the perch may be removed from the cage, all from without the cage.

3,200,790
ANIMAL FEEDING DEVICE
Philip C. Anderson, Crete, Nebr., assignor to Feed Service Corporation, Crete, Nebr., a corporation of Nebraska
Filed Sept. 18, 1963, Ser. No. 309,651
2 Claims. (Cl. 119—51)



1. An animal feeding device of the kind and for the purpose described, comprising an elongated body member provided with a plurality of wells horizontally spaced apart by intermediate portions of said body member, each of said wells being of a given size and having therein a block of a corresponding size for licking and ingestion by a feeding animal, at least one of the wells having such a block comprising a control substance and the remainder of said wells having such blocks comprising respective selected nutrient compositions, each of said wells being adapted to permit separate removal of a block therefrom and having a bottom wall provided with drain means, and hanger means affixed to said body member operative to mount the latter on suitable supporting means so that said wells are accessible to a feeding animal.

3,200,791
COPYHOLDER
Erwin G. Swett, 737 Webster St., San Francisco 17, Calif.
Filed Dec. 17, 1962, Ser. No. 245,046
3 Claims. (Cl. 120—28)



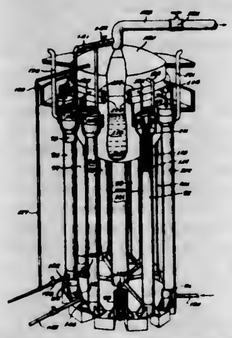
1. A copyholder for papers, books, and other written material comprising, a board for supporting the material to be viewed, a horizontally extending rod providing a swing arm, mounting means at one end of the swing arm mounting the swing arm for swinging motion in a horizontal plane about said one end of the arm, a tilt frame mounted on the swing arm, said tilt frame comprising a pair of tilt arm members each having a slide member encircling the swing arm rod and permitting axial movement along the length of the rod and rotation about the rod, a locking screw associated with each slide member for retaining the tilt frame in the desired axial and angular position on the swing arm, ring members attached to the back of the board for slidably receiving the upper ends of the tilt arm members therein, and locking screws associated with the ring members for retaining the board at a desired height on the tilt arm members, said slide members, ring members and locking screws forming rigid corner connections in the tilt frame.

3,200,792
WRITING INSTRUMENT
Nathan A. Zepell, Marina City, Apt. 5033, 300 N. State St., Chicago, Ill.
Filed May 31, 1963, Ser. No. 284,432
7 Claims. (Cl. 120—42.03)



1. A writing instrument comprising an elongated hollow holder having an opening at one end, an elongated writing unit longitudinally movable within said holder between an advanced position wherein a portion of said unit extends through said opening at said one end and a retracted position, said writing unit defining an upwardly directed surface, biasing means in said holder urging said writing unit towards said retracted position, means for moving said writing unit from said retracted position towards said advanced position, said means comprising a hinged actuating member movable inwardly of said holder and rotatable downwardly therein, said hinged actuating member being an integral portion of the wal of said holder, said movement of said actuating member being effective to cause the engagement between said upwardly directed surface of said writing unit and said actuating member such as will urge said writing unit into said advanced position, and clip means directly in contact with said hinged actuating member for applying a force to said actuating member having a component extending in a direction generally transverse to the longitudinal axis of said holder, said force being effective to cause hinged movement of said actuating member inwardly of said holder and to thereby move said writing unit into said advanced position, said writing unit being locked in said writing position by means of said biasing means urging said writing unit against said hinge actuatng member and in turn against said clip means component.

3,200,793
MULTI-CELL HEATING UNIT
John C. Cleaver, Milwaukee, Wis., assignor to Cleaver-Brooks Company, a corporation of Wisconsin
Filed Dec. 17, 1962, Ser. No. 244,967
1 Claim. (Cl. 122—240)



A multi-cell system for generating steam which comprises an elevated water storage tank having a plurality of inlets and a central restricted downward extension of said tank having a plurality of outlets, said central extension comprising a support member for said tank; a plurality of vertical tube heat exchanger cells disposed in annular array about said tank and in parallel flow with respect to water passed therethrough for heating therein, each of said heat exchanger cells comprising a separate housing, a vertical annular array of generally straight heat exchange tubes in the housing defining separate inner and outer chambers, means for producing hot combustion gases in one of said chambers, means directing hot combustion gases through said chambers, inlet means for introducing liquid to be heated to the lower ends of said tubes, separate conduit means for directing said liquid from an outlet of said tank to said tube inlet means, outlet means permitting flow of heated liquid from the upper ends of said tubes, and separate conduit means lor directing heated liquid from said tube outlet means back to said tank, said hot combustion gases producing means being capable of producing combustion gases of a temperature sufficient to heat water in said tubes and effect cyclic circulation of water from said tubes to said tank and back to said tubes by convection currents; means for withdrawing steam from said storage tank; and an accessible raised platform generally coextensive with said array of heat exchangers adjacent the upper ends thereof and from which the upper ends of the heat exchangers are accessible for servicing.

3,200,794
ROTARY ENGINES
Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Nov. 16, 1961, Ser. No. 152,812
Claims priority, application France, Nov. 21, 1960, 844,570, Patent 1,281,979; Dec. 27, 1960, 848,115, Patent 78,955
7 Claims. (Cl. 123—8)



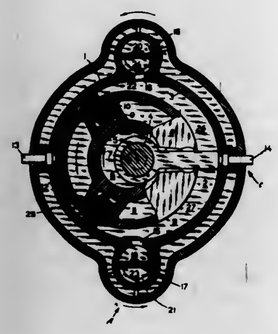
1. In a rotary engine, the combination: a stator having a peripheral wall disposed about an axis, the inner surface of said wall being formed with $N+1$ chambers consisting of lobes at a greater distance from said axis than portions of said wall intermediate said lobes, and said stator having first and second ends normal to said axis; a cavity associated with each of said $N+1$ lobes, for forming a combustion chamber, each of said cavities opening onto the same one of said first and second ends and terminating within said outer wall between said first and second ends, each of said cavities being at least partially defined by at least one generatrix revolving about an axis oblique to said stator axis, and first and second wall means for sealing off said first and second ends, thereby forming an enclosed space within said stator, a rotor, mounted for rotation about its own axis as said axis rotates about the stator axis within said stator between said first and second ends, and having N lobes, for cooperating with said $N+1$ chambers, whereby, during rotation of said rotor, said N lobes and said $N+1$ chambers define together $N+1$ working chambers of variable volume, and each of said cavities is sequentially sealed off by a lobe of said rotor; said rotor and stator defining mutually parallel axes.

3,200,795
METHOD AND APPARATUS FOR FORMING COMBUSTION GAS MIXTURES FOR ROTARY PISTON ENGINES
Siegfried Meurer, Nuraberg, Germany, assignor to Maschinenfabrik Augsburg-Nuraberg A.G., Nuraberg, Germany
Original application Apr. 21, 1961, Ser. No. 104,621, now Patent No. 3,144,006, dated Aug. 11, 1964. Divided and this application Mar. 11, 1964, Ser. No. 375,991
Claims priority, application Germany, Apr. 30, 1960, M 45,163
6 Claims. (Cl. 123—8)



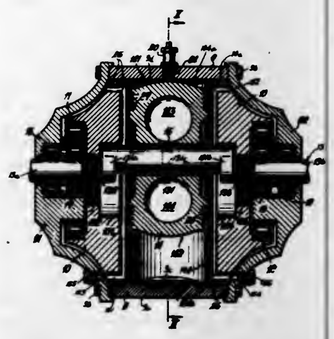
1. In a rotary piston engine having an equilateral arc triangular piston mounted for rotation in a trochoid shaped piston cylinder, said piston having a combustion gas forming structure comprising a gas permeable surface area composed of a body containing a plurality of slits on said piston facing into said cylinder, channel means beneath said surface area, and nozzle means for injecting fuel into said channel means for vaporizing the fuel in conjunction with said surface area and forcing the vaporized fuel through said surface area and through said channel means to mix the vaporized fuel and air into the combustion gas.

3,200,796
ROTARY PISTON INTERNAL COMBUSTION ENGINE
Otto Kraic and Václav Stoupa, Prague, Czechoslovakia, assignors to Ústav pro výzkum motorvých vozidel Praha, Prague, Czechoslovakia
Filed June 1, 1962, Ser. No. 199,475
Claims priority, application Czechoslovakia, June 3, 1961, 3,455/61
11 Claims. (Cl. 123—16)



1. An internal combustion engine comprising, in combination:
(a) a casing having an axis and an inner wall of circular cross section about said axis, said wall defining a cavity in said casing;
(b) an eccentric member rotatable about said axis and having a face of circular cross section in a plane transverse of said axis, said face being eccentric with respect to said axis and to said wall;
(c) a piston member rotatably mounted on said face, said piston member and said wall defining therebetween an annular space in said cavity;
(d) a plurality of vane means secured to said piston member for rotation therewith, said vane means sealingly engaging said wall and said piston member and being spaced from each other about said axis, whereby said annular space is divided by said vane means into a plurality of circumferentially offset chambers;
(e) motion transmitting means interposed between said eccentric member and said piston member for rotating one of said members relative to said casing in one direction at a first speed when the other member rotates relative to said casing in the other direction at a second speed different from said first speed, one of said speeds being an integral multiple of the other speed, whereby the volume of each of said chambers changes cyclically, during each revolution of one of said members, between a plurality of maximum volumes and a plurality of minimum volumes, each chamber when at said plurality of minimum volumes thereof being defined by respective circumferential portions of said inner wall;
(f) ignition means on one of said wall portions;
(g) valve means on another one of said wall portions; and
(h) valve control means operatively connected to said piston member and to said eccentric member for operating said valve means in timed sequence with the rotation of said members.

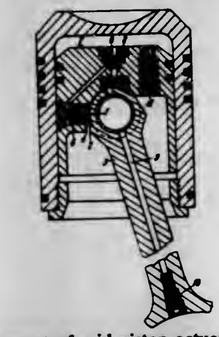
3,200,797
INTERNAL COMBUSTION ENGINE
Horst Dilleaberg, Koenigsraetzer Strasse 25, Haan, Rhineland, Germany
Filed Aug. 29, 1962, Ser. No. 220,206
Claims priority, application Germany, Mar. 24, 1962, 38,468
5 Claims. (Cl. 123—41.72)



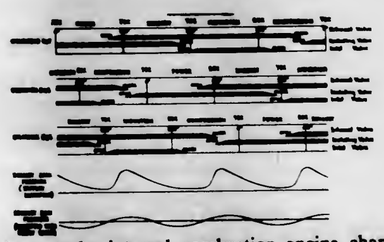
1. A diesel engine, comprising a housing having an internal cylindrical space and an internal cylindrical surface surrounding said space; a cylinder rotatably received in said space and having a diametral through bore defining a cylinder chamber whose axis is perpendicular to the axis of said space; a piston reciprocably received in said chamber and having two end faces; motion transmitting means operatively connected with said cylinder and with said piston for rotating the cylinder in said space in response to reciprocation of said piston in said chamber, said cylindrical surface having a section which is nearest to the one and thereupon to the other end face of said piston during each revolution of said cylinder and said housing having a pair of ports communicating with said space, each of said ports communicating with the one and thereupon with the other axial end of said chamber during each revolution of said cylinder; and fuel-injecting nozzle means provided in said surface section for injecting fuel into said chamber, the angular distance between said nozzle means and said ports as seen in the direction of rotation of said cylinder exceeding 180°

3,200,798
INTERNAL COMBUSTION ENGINES AND PISTONS THEREFOR
Wilfred Percival Mansfield, Slough, England, assignor to The British Internal Combustion Engine Research Institute Limited, Slough, England
Filed Jan. 12, 1965, Ser. No. 424,965
Claims priority, application Great Britain, Jan. 15, 1964, 1,746/64
5 Claims. (Cl. 123—48)

1. In a two-stroke cycle internal combustion engine the improvement comprising the provision of a piston comprising a first main part and a second main part axially moveable with respect to said first main part, said first main part forming at least part of the crown of the piston, means for connecting said second main part to the engine output shaft and an expansible and contractible chamber between said main parts, a first passage in said second main part for conducting fluid from a passage in the said connecting means to said chamber, a second passage in said second main part for conducting fluid from said chamber to the exterior of said piston at the end opposite to the crown, a spring loaded pressure relief valve in said second passage to control flow of fluid from said chamber, and a pump connected on its inlet side through a non-return suction valve to said first passage and on its outlet side through a non-return discharge valve to said chamber, and means responsive to movement of said piston actuating said pump as said piston approaches outer dead-center position.



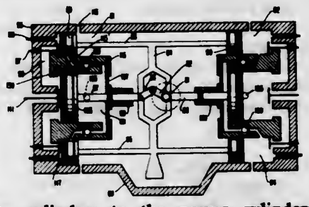
3,200,799
INTERNAL COMBUSTION ENGINE
Frederick Charles Hammick, Prospect, South Australia, Australia, assignor to MacLaine Manufacturing Company Limited, Nailsworth, South Australia, Australia
Filed Mar. 14, 1962, Ser. No. 179,676
Claims priority, application Australia, Mar. 22, 1961, 2,855/61
4 Claims. (Cl. 123—53)



1. A four stroke internal combustion engine characterised by a pair of adjacent cylinders in line, an inlet valve in one cylinder, an exhaust valve in the other cylinder, an interflow duct between the cylinders, an insolating valve between the cylinders operable to open or close the interflow duct, pistons reciprocable in the cylinders, the pistons being in phase or nearly in phase with each other and cams on a driven cam shaft controlling valve timing whereby the exhaust valve opens before bottom dead centre of the power stroke and remains open until part of the compression stroke has been completed, the isolating valve opens at a point close to where the exhaust valve closes and closes at or near the end of the exhaust stroke, and the inlet valve opens as or shortly after the isolating valve closes and closes early in the compression stroke.

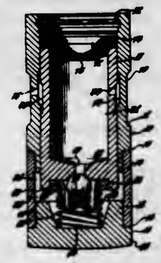
3,200,800
INTERNAL COMBUSTION ENGINE
Francois M. Du Bois, 1199 Park Ave., New York, N.Y.
Filed Apr. 27, 1962, Ser. No. 190,603
7 Claims. (Cl. 123—54)

1. An internal combustion engine comprising a crankshaft, a connecting rod attached thereto, an H-shaped, rigid frame attached to the crankshaft, pistons fixed to the ends of the H, power cylinders enclosing the pistons, a fuel injection means for each said cylinder, an exhaust means for each said cylinder, the cylinders on one side of the crankshaft being thus adapted to fire together, opposed pressure generating cylinders intermediate the said pistons, pistons in the intermediate cylinders each cylinder of which has a volume greater than that of a single power cylinder, conduit means connecting the



intermediate cylinders to the power cylinders at one end of the pressure cylinders, conduit means connecting the power cylinders to the pressure cylinders at the opposite end of the pressure cylinders, and valve means associated therewith controlling the cycle of the engine.

3,200,801
VALVE LIFTER
John Dornbos, Grand Rapids, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Nov. 2, 1960, Ser. No. 66,871, now Patent No. 3,149,410, dated Sept. 22, 1964. Divided and this application Mar. 11, 1964, Ser. No. 351,016
5 Claims. (Cl. 123—90)



5. A hydraulic valve lifter comprising a two-part tubular body, the first of said parts being formed of a ferrous alloy having less than 8%, by weight, total alloy content and less than about 0.8%, by weight, carbon, the second of said parts being formed of a ferrous alloy having at least about 10%, by weight, chromium, the second part having an outer circumference brazed to an inner circumference of the first part at one end thereof, an alloy cast iron end closure imperforately secured to the other end of the first part, and a stainless steel plunger disposed within the second part in working relationship therewith.

3,200,802
AUTOMATIC FUEL CONTROL SYSTEM FOR AN INTERNAL COMBUSTION ENGINE
Kurt Dluhosch and Gerd Otterbach, Schweinfurt (Main), Germany, assignors to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany
Filed Feb. 6, 1963, Ser. No. 256,717
Claims priority, application Germany, Feb. 10, 1962, 35,996/62
11 Claims. (Cl. 123—97)

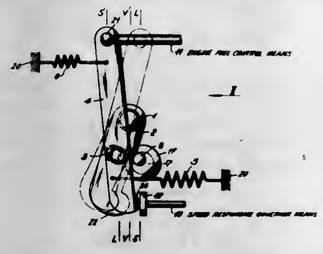
1. In a system for automatic control of the fuel supply of a fuel-operated engine, in combination:
(a) control means movable for controlling the fuel supply of an engine;
(b) speed governor means including a governor member movable in a predetermined path responsive to the speed of said engine; and

(c) motion transmitting means interposed between said control means and said governor means, said motion transmitting means including:

(1) a first lever member having three spaced portions, a first one of said portions being secured to said control means;

(2) a second lever member having three spaced portions;

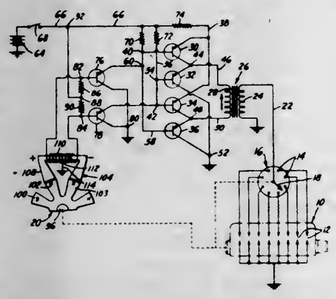
(3) first pivot means engaging a first portion of said second lever member for pivotal movement of said second lever member about a fixed axis;



(4) second pivot means pivotally connecting respective second portions of said lever members; and

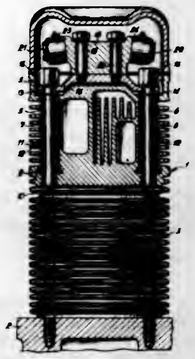
(5) engaging means for sequentially engaging the third portions of said lever member with said governor member when said governor member moves in said predetermined path, said engaging means including holding means for holding the engaged third portions in engagement with said governor member for joint movement therewith.

3,200,803
TRANSISTOR IGNITION SYSTEM
Samuel B. Robbins, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 6, 1962, Ser. No. 215,081
12 Claims. (Cl. 123—148)



1. An ignition system for an internal combustion engine comprising, an ignition coil having a primary winding and a secondary winding, a spark plug connected with said secondary winding, first and second semiconductor switch means, a source of direct current, a first circuit for supplying current to said primary winding in one direction including said first semiconductor switch means, a second circuit for supplying current to said primary winding in a reverse direction including said second semiconductor switch means, and control means driven in synchronism with said engine for controlling the conductivity of said first and second semiconductor switch means in a predetermined sequence.

3,200,804
INTERNAL COMBUSTION ENGINE
Paul Hensler, Muenchingen, Kreis Leonberg, Hans Tomala, Stuttgart, and Karl Ruoff, Kirchheim (Teck), Germany, assignors to Firma Dr. Ing. h.c. F. Porsche K.G., Stuttgart-Zuffenhausen, Germany
Filed Mar. 11, 1964, Ser. No. 351,142
Claims priority, application Germany, Mar. 20, 1963, P 31,408
17 Claims. (Cl. 123—195)



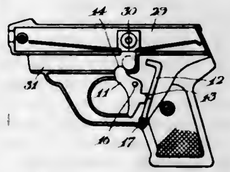
1. An internal combustion engine, especially an air-cooled internal combustion engine having a cylinder head made of light metal, a cylinder and a crankcase, comprising:

bolt means for securing said cylinder head at one of said cylinder and crankcase,

sleeve means within said cylinder head for the support of said bolt means,

and each of said sleeve means being provided with a collar portion and at least the section containing the collar portion of the sleeve means being cast into the cylinder head of the internal combustion engine.

3,200,805
TRIGGER OF TOY GUN
Hiroshi Yano, 3 1-chome, Takase-cho, Moriguchi, Osaka, Japan
Filed May 14, 1962, Ser. No. 194,618
Claims priority, application Japan, May 15, 1961, 36/17,382
4 Claims. (Cl. 124—27)



1. A trigger mechanism for a toy gun of the type having a magazine for projectiles, a barrel, a feed hole for feeding projectiles one at a time from the magazine to the barrel, and a spring biased, pivotally mounted striker, actuated by movement of the trigger for striking projectiles in the barrel, the improved trigger mechanism comprising;

(a) a movable trigger, carried by the gun,

(b) means interrelating the trigger and spring biased, pivotally mounted striker to move the striker in response to the action of the trigger, and to allow the trigger to release the striker on normal movement of the trigger,

(c) a movable projectile stopper normally positioned in the feed barrel to positively stop and hold the projectile in a stationary predetermined position in front of the striker,

(d) means interrelating the projectile stopper with the trigger and hence with the striker such that the stopper will release its positive hold on the projectile during movement of the trigger simultaneously and in synchronism with movement of the striker in striking and propelling the projectile.

3,200,806
FOLDING BARBECUE CONSTRUCTION
Arnold Goldstein, 3363 Trexler Blvd., Allentown, Pa.
Filed July 29, 1963, Ser. No. 298,053
1 Claim. (Cl. 126—25)



A portable grill comprising:

(a) a grill element including a bottom wall and a side wall, a channel mount secured to said side wall, said channel mount defining a through receptacle having a substantially rectangular cross section;

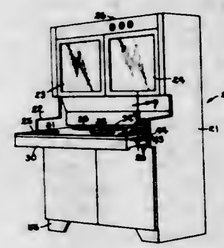
(b) means to support said grill, said means comprising two symmetrical legs pivotally secured to the bottom wall of said grill, having inwardly extending first portions, fold portions, and outwardly extending second portions, and end portions joined by an axle, wheels secured to said end portions and maintained by said axle therebetween, and a support leg pivotally secured to said two legs at said fold portions;

(c) said support leg having a flattened upper end portion shaped for detachable interengagement with said channel mount, a straight central portion, and a lower end portion, a pivotal wheel depending from said lower end portion, and a pair of projections secured to said central portion; and

(d) a spring plate means secured to said outwardly extending portions of said symmetrical legs near said fold portions, said plate means having parallel ears with edges defining slots shaped for interengagement with said projections on said support leg.

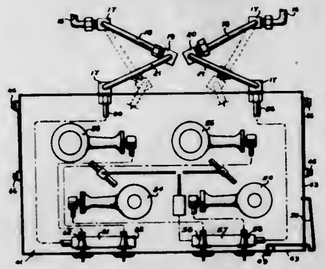
3,200,807
GAS SUPPLY ARRANGEMENT FOR RANGE
Duane O. Culligan, Kankakee, Ill., assignor, by mesne assignments, to Geo. D. Roper Corporation, Kankakee, Ill., a corporation of Delaware
Filed Sept. 20, 1962, Ser. No. 225,041
3 Claims. (Cl. 126—37)

1. In a range the combination comprising a frame including top and side walls and having a source of gas, a burner box slidably mounted in said frame for movement between a forwardly extending position and a rearwardly recessed position, said burner box having a plurality of burners together with associated valves, means for receiving gas from said source for feeding it to the burner valves in all positions of the burner box, at least one of said valves including a mechanical linkage cooperating



with means on its respective adjacent side wall for locking said box in its outwardly extended position when the said one valve is set to feed gas to its associated burner.

3,200,808
GAS STOVE
David J. Swift, Park Holme, South Australia, Australia, assignor to Simpson Pope Limited, Dudley Park, South Australia, Australia
Filed Dec. 30, 1963, Ser. No. 334,094
Claims priority, application Australia, Apr. 2, 1963, 29,121/63
3 Claims. (Cl. 126—37)



1. A gas stove comprising:

a base,

a pair of gas feed pipes fixed relative to the base,

swivel blocks on the discharge ends of the gas feed pipes arranged for gas flow therethrough from said gas feed pipes,

a surface cooking unit, means supporting said surface cooking unit for outward movement relative to said base,

front gas burners on the surface cooking unit,

rear gas burners on the surface cooking unit adapted to move from a retracted to an outwardly extended position upon outward movement of the surface cooking unit relative to the base,

a front gas burner supply pipe and a rear gas burner supply pipe on the surface cooking unit feeding said front and rear burners respectively,

swivel blocks on the inlet ends of the gas burner supply pipes also arranged for gas flow therethrough to respective gas burner supply pipes,

two pairs of elbow pipes, one end of one elbow pipe of a first pair pivotally engaging a said swivel block on a gas feed pipe for gas flow therebetween, the other end of the other elbow pipe of said first pair engaging a said swivel block on a rear burner supply pipe for gas flow therebetween,

a further swivel block constituting gas valve means and joining the other ends of both elbow pipes together, with the angle between the elbow pipes increasing upon outward movement of said surface cooking unit, said further swivel block joining said elbow pipes for gas flow communication between said elbow pipes when said surface cooking unit is in its outwardly extended position but closing said gas flow communication when in its retracted position, and

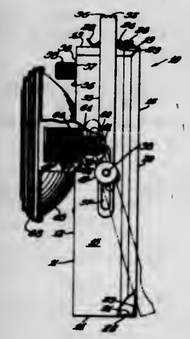
a further swivel block joining the adjacent ends of the other pair of elbow pipes for gas flow communication therebetween when said surface cooking unit is in its outwardly extended position and also when said surface cooking unit is in its retracted position.

3,200,809

SPORTSMAN'S HEATER ASSEMBLY

Walter T. Suchowolec, Sycamore, Ill., assignor to Turner Corporation, Sycamore, Ill., a corporation of Illinois

Filed Nov. 4, 1963, Ser. No. 321,124
6 Claims. (Cl. 126—92)



1. A portable radiant heater assembly comprising, in combination,

a rectangularly shaped case having a front wall and spaced parallel side walls,

a reflector mounted on said front wall and projecting outwardly therefrom,

a gas combustion incandescant filament member situated substantially at the focal point of said reflector,

a burner head mounted on said front panel and connected to said filament for receiving liquefied petroleum fuel from a source and for mixing air with the fuel to provide a hot flame at said filament to incandesce said filament,

a bail member for carrying said case and for selectively supporting said case in any position from horizontal to vertical,

said bail member having a pair of elongated legs and a cross bar interconnecting the legs to maintain the legs in spaced parallel relation and in in overlying relation relative to said side walls,

means forming elongated parallel slots in said legs,

a pair of threaded studs firmly affixed to and projecting outwardly from said side walls to be received respectively in said slots for pivotally mounting said bail member on said case, and

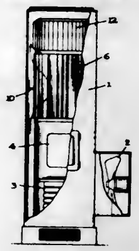
an adjustably threaded locking knob on each of said studs for urging said legs against said side walls to selectively and immovably position said legs relative to said side walls in any position from vertical to horizontal.

3,200,810

HOT AIR GENERATOR

Aimé Hancart, Aubenas, France, assignor to S.A. la Couvinoise, Couvin, Belgium, a corporation of Belgium

Filed Mar. 27, 1963, Ser. No. 268,376
Claims priority, application France, Apr. 25, 1962, 895,478
1 Claim. (Cl. 126—110)



In a generator of hot air comprising in combination: an outer sheath having therein an upright heating body consisting of a fuel burner, a combustion chamber, a heat exchanger and a smoke box interconnected serially in the order listed, said sheath being separated from said interconnected members by an air passage, said heat exchanger consisting of elements which are all alike, one portion of said elements comprising vertical walls of generally flat sides which have approximately the form of dihedral angles whose planes are axial planes of a main cylinder, said walls extending radially in said cylinder to form said dihedral angles, and another portion of said elements comprising vertical arcuate portions welded together so as to form a cylinder presenting deep alveoles, each dihedral angle being bounded at the top and bottom by sectors of welded sheetmetal, welded to said vertical walls, said sheath surrounding said heat exchanger in spaced relation thereto;

a deflector formed by a sheet metal diaphragm mounted in the air passage inside the sheath and on the periphery of said heat exchanger compelling the air which rises in the sheath to enter the interior of the dihedral angles;

a fan forcing air to be heated to flow past said deflector and to sweep the inside of the vertical walls of the dihedral angles and the elements of cylindrical surface while the burnt and hot gases rise in the interior of the assembly and pass along the outside of the walls of each dihedral angle and the inside of the cylindrical elements; and

a circular ring fitting effecting the assembly of said heat exchanger to said combustion chamber and another circular ring fitting effecting the assembly of said heat exchanger to said smoke box.

3,200,811

VERTICAL DRAFT RELIEF

Louis P. Hine, Jr., Elyria, Ohio, assignor to The C. A. Olsen Mfg. Co., a corporation of Ohio

Filed Dec. 2, 1963, Ser. No. 327,228
10 Claims. (Cl. 126—116)

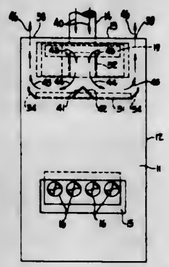
1. In a gas fired furnace a draft hood therefor, and a furnace bonnet with a substantially horizontal wall at the top with a flue pipe opening therein and draft relief openings on either side thereof, and a flue pipe extending through said flue pipe opening terminated below said bonnet top wall, said draft hood comprising:

(a) a top wall with an openinng therein connected to said flue pipe,

(b) vertical front and side walls,

(c) a vertical rear wall with a flue product opening therein,

(d) a bottom wall with a relief opening therein larger than the flue pipe opening in the top wall, and



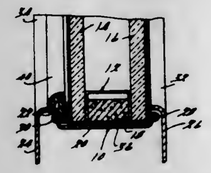
(e) a horizontally extending deflector baffle spaced from and below the bottom wall.

3,200,812

OVEN DOOR WINDOW UNIT

Robert B. Larkin, Farmington, Mich., assignor to Mills Products, Inc., Walled Lake, Mich., a corporation of Michigan

Filed Sept. 24, 1963, Ser. No. 311,071
3 Claims. (Cl. 126—200)



1. A window unit for an oven comprising a pair of spaced glass panels, a continuous hollow spacer between said panels at the edges thereof, a frame in which said panels are mounted, a moisture impervious sealing tape wrapped around the peripheral edges of said spacer and panels and separating the same from contact with said frame, said spacer and tape cooperating to provide a chamber, desiccant in said chamber, said sealing tape comprising aluminum foil and overlapping the outer faces of said panels, and a silicone adhesive capable of withstanding temperatures up to about 550° F. sealing said tape to the periphery and the outer faces of said panels.

ERRATUM

For Class 126—271 see:
Patent No. 3,200,820

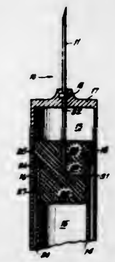
3,200,813

ASPIRATING SYRINGES

George J. Christakis, 326 Cross St., Fort Lee, N.J.

Filed Dec. 24, 1962, Ser. No. 246,742
8 Claims. (Cl. 128—2)

1. In a two chambered syringe for injecting a first substance and subsequently withdrawing a second substance, the improvement comprising in combination a hollow elongated needle defining along the length of the needle a first end opening, a second end opening and a third opening spaced between said first and second openings all said openings extending into the hollow portion of the needle, and a puncturable closure, said puncturable closure having a portion axially aligned with said needle, said portion having a thickness substantially equal to the spacing between said second and third needle opening



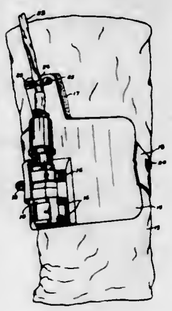
whereby said puncturable closure can cover either of said openings but not both at the same time.

3,200,814

APPARATUS FOR MEASURING REFLEXES, TREMORS AND THE LIKE

Ellis R. Taylor, 1603 Elizabeth St., Lexington, Ky.; Richard F. Chandler, 616 Madison, Alamogordo, N. Mex.; and Leroy W. Rhein, 2864B Quay Loop, Holloman Air Force Base, N. Mex.

Filed Mar. 12, 1963, Ser. No. 264,734
1 Claim. (Cl. 128—2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A device for measuring the muscular response to a stimulus in the limb, of a subject under test, comprising: a strain gage accelerometer for providing an electrical output proportional to the acceleration experienced by said limb; a curved support adapted to substantially conform to the limb of the test subject; a pair of projections on said support; means for securing said accelerometer to said support; a pad on said support on the side thereof remote from said accelerometer; an adjustable restraining strap adapted to pass around the back of the limb of the test subject and to be attached to said projections on said support; a power supply connected to said accelerometer; and a constant speed recording means connected to said accelerometer for providing a graphical record of the muscular response of said test subject.

3,200,815

COIL SPRING INTRA-UTERINE CONTRACEPTIVE DEVICE AND METHOD OF USING

Lazar Margulies, New York, N.Y., assignor to Mount Sinai Hospital Research Foundation, Inc., New York, N.Y., a corporation of New York

Filed Apr. 24, 1962, Ser. No. 191,674
23 Claims. (Cl. 128—130)

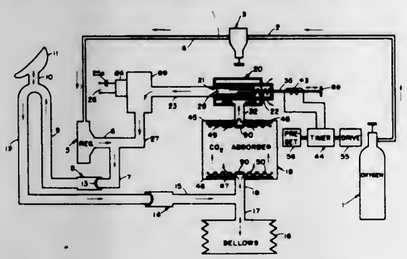
1. An intra-uterine contraceptive comprising an elongated strand having two free ends and a free shape in substantially one plane that includes a coil adapted to lie

within the uterine cavity connected to a substantially straight follower adapted to extend through the cervical canal, said strand being readily deformable to a straight



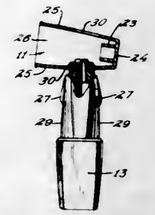
line by application of force and always returning to said coil shape when free of said force, said strand in its free shape or deformed to a straight line presenting a continuous smooth surface along its longitudinal extent.

3,200,816
OXYGEN SUPPLY SYSTEM
Roscoe G. Bartlett, Jr., U.S. Naval School of Aviation, Pensacola, Fla.
Filed June 12, 1962, Ser. No. 202,028
11 Claims. (Cl. 128—142)
(Granted under Title 35, U.S. Code (1952), sec. 266)



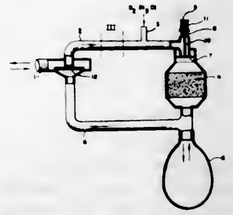
7. In an oxygen supply system for use in rarefied atmospheres, the combination of a facemask, said facemask having an external air supply line which communicates with the interior area of the mask and is opened at a remote end thereof, an air recirculating closed loop connected to the remote end of said air supply line, valve means positioned within said closed loop for permitting only a unidirectional flow of gas around said loop whereby, whenever an individual wearing said facemask exhales, his expirations are discharged into said air supply line, enter said air recirculating closed loop and flow thereabout in one direction only, a source of compressed oxygen, means including a pressure reducer and a demand valve connected between said source of compressed oxygen and said air recirculating closed loop for feeding fresh oxygen into said loop and into said air supply line in accordance with the respiratory requirements of the individual wearing said facemask, air purifying means positioned within said air recirculating closed loop for absorbing carbon dioxide, a valve connected to said loop, said valve in a first position blocking the circulation of air within said loop and opening a venting path to the atmosphere to one side of said loop, said valve in a second position permitting the circulation of air through said loop and closing said venting path, and automatic means for switching said valve back and forth between said first and second positions in accordance with a pre-established schedule such that during corresponding first intervals of time said individual can inhale pure oxygen on demand from said oxygen supply source and discharge his exhalations into the atmosphere and during second intervals of time rebreathe his exhalations after the carbon dioxide content thereof has been reduced by the action of said air purifying means, said first intervals of time and said second intervals of time both being long compared to the time between successive inspirations or expirations of said individual.

3,200,817
SPRAY CONTAINER SHIELD ENCLOSURE
Benson C. Brainard, 14 E. Oaks Road, North Oaks, Minn.
Filed Dec. 5, 1961, Ser. No. 157,113
9 Claims. (Cl. 128—173)



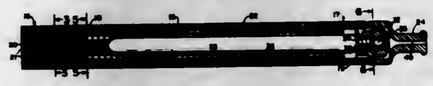
1. In combination with an elongated walled container having a spray head provided with a substantially cylindrical periphery projecting from an end thereof, a cap having an end closure and encircling walls secured thereto and depending therefrom, the walls of said cap being adapted to frictionally engage over the walls of said container when in spray head enclosing position, said walls of said cap having a pair of opposed rounded apertures therethrough, and rounded projections on opposite sides of said container walls, said projections being similar in shape and size to said apertures and positioned to extend into said apertures when said cap is in spray head enclosing position.

3,200,818
BREATHING APPARATUS
Dag Olof Alfred Johannisson, Lidingo, Sweden, assignor to Svenska Aktiebolaget Gasaccumulator, Lidingo, near Stockholm, Sweden, a corporation of Sweden
Filed Nov. 5, 1962, Ser. No. 235,566
Claims priority, application Sweden Nov. 17, 1961
6 Claims. (Cl. 128—202)



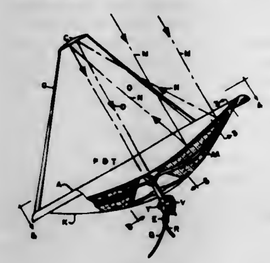
1. A breathing apparatus comprising: an exhalation tube for conducting exhaled gas from a point of use, an inhalation tube for conducting gas to be inhaled to the point of use, said exhalation tube and said inhalation tube being connected to form a closed circuit leading from and returning to the point of use means in said circuit communicating with said inhalation and exhalation tubes for permitting one-way flow only from the inhalation tube to the point of use and from the point of use to the exhalation tube, a breathing bag connected in said circuit, a supply tube connected to said circuit for supplying breathing gas thereto at a point relatively upstream of said breathing bag, a non-return valve in said circuit between said breathing bag and said supply tube opening toward the breathing bag and an overflow valve communicating with said supply tube upstream of said non-return valve for discharging excess gas.

3,200,819
SMOKELESS NON-TOBACCO CIGARETTE
Herbert A. Gilbert, 278 McKinley Road, Beaver Falls, Pa.
Filed Apr. 17, 1963, Ser. No. 273,624
10 Claims. (Cl. 128—266)



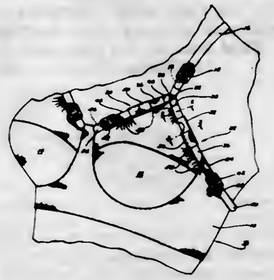
1. A smokeless non-tobacco cigarette comprising
(a) an external tube having inner and outer end portions,
(b) a flavor cartridge in the outer end portion,
(c) heating means in the tube,
(d) a tubular liner also in the tube at least partially surrounding and spaced from the heating means and having
(e) an internal wall shaped to produce turbulence in the air stream drawn through the space between the heating means and tubular liner,
(f) a mouthpiece on the inner end portion of the tube for drawing atmosphere air by inhaling through the outer end portion of the tube including the cartridge and through the space between the heating means and liner and into the mouth of the user, and said cartridge having air passages therethrough communicating at the outer end of the tube with the atmosphere and at the inner end of the tube with said space and ultimately with the mouthpiece for permitting air to be drawn past the flavor cartridge for inhalation by the user at the mouthpiece.

3,200,820
SOLAR ENERGY COLLECTOR
Robert Russell Garrett, Cardiff-by-the-Sea, Calif. (5300 Satel Drive, Orlando, Fla.)
Filed Apr. 5, 1962, Ser. No. 185,449
3 Claims. (Cl. 126—271)



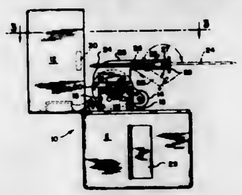
1. A solar heat collector comprising a transparent parabolic film, a darkened film underlying said transparent film, means supporting said films to receive solar radiation, means forming fluid flow passages between and in heat exchange relation with said films, means for passing heat exchange fluid through said passage, and reflector means spaced forwardly of said transparent film for returning to said film solar rays reflected from said transparent film.

3,200,821
ADJUSTABLE BRASSIERE
Robert F. Anderson, 825 Wisconsin Ave., Racine, Wis.
Filed Nov. 18, 1963, Ser. No. 324,420
3 Claims. (Cl. 128—492)



1. In a brassiere having a body portion and a bust cup defined by a peripheral edge, in combination a means to adjust the length of said edge comprising a tongue extending freely along said edge and having one end thereof secured to said body edge, a buckle secured to said edge and spaced from said end and engaging said tongue, and a tubular portion integral with said edge and positioned intermediate said end and said buckle means, and freely surrounding said tongue.

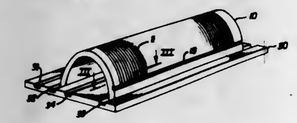
3,200,822
PIPE SMOKER'S KIT
Edgar D. Meyer, 542 Woodbrook Lane, Wyoming, Ohio
Filed Oct. 16, 1961, Ser. No. 145,132
1 Claim. (Cl. 131—243)



A pipe smoker's kit comprising a housing, said housing having a reservoir for fuel therein, and hinged cover portion, pipe lighter means within said housing, said pipe lighter means comprising a wick interconnected with said fuel reservoir, ignition means for said wick, and a plate having a first portion and a second portion, said first portion of said plate being of sufficient extent to cover a pipe bowl during ignition thereof, said plate having an aperture through said first portion, said plate being so mounted within said housing that said aperture is adjacent said wick, a pick pivotably mounted upon said second portion of said plate within said housing, said pick being movable from out-of-use to use position, and a tamper pivotably mounted upon said second portion of said plate within said housing, said tamper being movable from use to out-of-use position, said tamper normally being disposed in use position, and said pick normally being disposed in out-of-use position, said pick being pivotably extensible for use, said tamper being so disposed relative to said pick that upon extension of said pick, said pick will come into contact with said tamper and pivotably move said tamper to an out-of-use position, said hinged cover portion of said housing being movable from closed to open position, said pipe lighter means, said pick, and said tamper being exposed for use when said hinged cover portion is in open position, and said pipe lighter

means, said pick and said tamper being inside said hinged cover portion of said housing when said hinged cover portion is in closed position.

3,200,823
SHAPING DEVICE FOR ARTIFICIAL EYELASHES
Ray Sebastian, 4746 Ledge Ave., North Hollywood, Calif.
Filed Dec. 23, 1963, Ser. No. 333,270
11 Claims. (Cl. 132—31)



7. A device for shaping and spacing lash hairs of artificial eyelashes to selectable curvatures, comprising:

a resiliently deformable longitudinally extending hollow shaping and spacing element provided with a multiplicity of adjacent grooves formed in an outer surface thereof and depending opposed marginal edge portions; and

base means for removably receiving said edge portions and for holding said resilient element in selectable deformed configurations by said edge portions to provide selectable curvatures to said outer surface of said shaping and spacing element when said element is received by said base means.

3,200,824
SPOOL TYPE HAIR WINDING MANDREL WITH TELESCOPING COVER CLAMP
Philip T. Coloccia, 394 Colonial Ave., Union, N.J.
Continuation of application Ser. No. 830,326, July 29, 1959. This application May 23, 1962, Ser. No. 198,413
3 Claims. (Cl. 132—40)



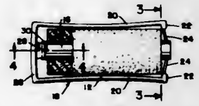
1. A hair curling device having a base member, an elongated tubular member extending therefrom upon which hair is adapted to be wound, said elongated tubular member having a pair of oppositely disposed slots extending from an end thereof remote from said base member towards said base member, a cooperating cup-shaped cover member slidably disposed on said elongated tubular member, said cover member having an aperture through which said tubular member extends, said cover member having an integral element extending across said aperture and into said slots when said cover member is in hair engaging relationship, and elastic means connecting said base member and said integral element biasing said cover member towards said base member to retain wound hair in place, said slots having a depth sufficient for said cover member to receive said base member, said tubular member diverging outwardly from its junction with said base member towards said remote end, and said tubular member being corrugated longitudinally thereof.

3,200,825
BRISTLE BRUSH HAIR CURLER
Abraham Sidelman, 13 Doctor Frank Road, Spring Valley, N.Y.
Filed Aug. 20, 1962, Ser. No. 217,820
34 Claims. (Cl. 132—41)



33. A hair curler adapted to be positioned temporarily in the wearer's hair and to form a hair curl comprising, in combination, a cylindrical hollow open mesh material tube, and a longitudinally extending brush having radially extending bristles positioned therewithin, each of said bristles extending through and beyond said cylindrical hollow open mesh material tube, a flexible frame including spaced-apart longitudinally extending flexible sides and transversely extending flexible members connecting said sides, said frame being rotatably mounted on one end portion of said tube, an inwardly extending flexible tongue member integral with one of said transversely extending flexible members, a member positioned with respect to the opposite end portion of said tube and having recess means therein for receiving said tongue member, and means engaging both said tube and said positioned member for preventing substantial lateral movement of said positioned member with respect to said tube and for keeping said tube in position with respect to said frame member.

3,200,826
HAIR CURLER
Nathan L. Solomon, P.O. Box 550, Englewood, N.J.
Filed May 7, 1963, Ser. No. 278,667
5 Claims. (Cl. 132—41)



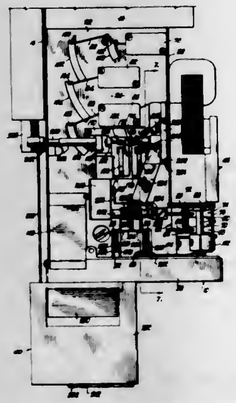
5. A one-piece bail and stiffening member for use with a tubular resilient hair retaining member, comprising a stiffening member adapted to be slidably received within said tubular hair retaining means, hair retaining means spaced from said stiffening member, arms torsionally flexible about their axes transversely extending away from said stiffening member and integrally interconnecting corresponding ends of said hair retaining means and said stiffening member, said hair retaining means being pivotable by twisting said arms, and means releasably interlocking said hair retaining means and said stiffening member in hair retaining position.

3,200,827
HAIR SET PROTECTOR
Dorothy G. Hill, 1504 Lincoln Ave., Pomona, Calif.
Filed Aug. 30, 1962, Ser. No. 220,389
3 Claims. (Cl. 132—49)



1. A head covering for the protection of a set coiffure comprising an outer mesh portion; an inner flexible lining; said lining including a series of transversely extending strips; spaced transversely extending lines securing said lining strips to said outer mesh to provide unattached portions of said strips depending between said lines, the areas of each of said unattached portions of said strips located between the lines of securement of said strips to said mesh being greater than the area of the outer mesh portion whereby said depending portions will bunch and interfit the raised and depressed portions of a set coiffure.

3,200,828
COIN CHANGER HAVING DOUBLE ESCROW UNIT
Elmer Bradley Offutt, Independence, and Leonard Bieri, Lee's Summit, Mo., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed July 3, 1962, Ser. No. 207,233
10 Claims. (Cl. 133—4)



8. In coin changing apparatus for a postselect vending machine:

structure for storing a quantity of coins of change making denomination;

means defining a coin pathway above said structure for coins of said change making denomination and positioned to direct coins therefrom into the structure;

an upper escrow unit having movable inclined means normally located in said coin receiving pathway above the structure in blocking relationship to the latter for supporting at least one coin of change making denomination on edge above the structure and movable out of the coin pathway to a position releasing said change making denomination coin thereon to the structure, and movable coin retaining means normally located in said coin receiving pathway above the inclined means and cooperable therewith to receive and retain a coin of said change making denomination on the inclined means, said retaining means being movable out of the coin pathway to a position clearing the initially retained coin for gravitational movement from the inclined means;

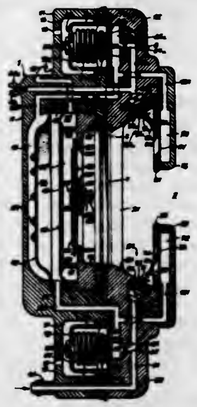
a lower escrow unit below said upper escrow unit and having a first element movable to a position releasing all coins received therein for return to the depositor and a second element movable to a position releasing coins received in the lower escrow unit to a collection area;

means defining an upright coin passage and including a portion extending downwardly from the coin pathway and the lower extremity of said inclined means, to said lower escrow for directing coins released from said inclined means, change making denomination coins deflected from the coin pathway into said coin passage by a coin retained on said inclined means, and coins deposited on the apparatus other than of change denomination, into said lower escrow;

means coupled to said retaining means and the first element for moving the same to coin releasing positions in response to depositor actuation thereof; and

means operably coupled to said inclined means and the second element for moving the same to coin releasing positions thereof only after an article selection has been made.

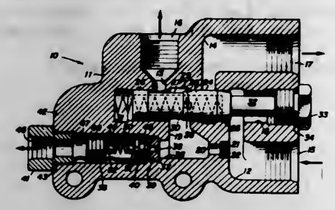
3,200,829
CONTROLLER FOR PRESSURE SUITS
Loyal G. Netteland, East Aurora, N.Y., assignor to The Firewel Company, Inc., Buffalo, N.Y., a corporation of Ohio
Filed Dec. 7, 1962, Ser. No. 242,975
7 Claims. (Cl. 137—81)



1. In a controller for gas pressure maintained in the interior of an aviator's pressure suit, the controller having a hollow body with a compartment adapted to be exposed to said interior of an aviator's pressure suit, a primary control diaphragm across the interior of said body having one face forming with said body a primary control chamber, the other face of said primary control diaphragm forming part of said compartment, a source of pressurized gas, a primary aneroid responsive to ambient pressures and controlling the admission of said pressurized gas to said primary control chamber, a valve seat interposed between said compartment and a passage leading to ambient, said primary control diaphragm being operatively associated with said valve seat to connect said compartment to said passage leading to ambient, and demand valve means admitting said pressurized gas from said source to said compartment to compensate for leakage from the suit as through a hole; the combination therewith of a secondary control diaphragm across the interior of said body in said primary control chamber to form one wall thereof and having one face forming with said body a secondary control chamber on the side of said secondary control diaphragm remote from said primary control diaphragm, said secondary control diaphragm being also operatively associated with said valve seat to connect said compartment to said passage leading to ambient, and secondary control means controlling the admission of pressurized gas to said secondary control chamber at a lower pressure than in said primary control chamber but in step therewith, where-

by the flow of pressurized gas past said valve seat is normally under control of said primary control diaphragm but in the event of failure of control pressure in said primary control chamber, comes under control of said secondary control diaphragm.

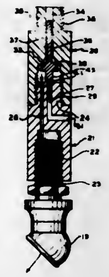
3,200,830
FLOW DIVIDER VALVE
Donald W. Moyer, Chicago, and John S. Lam, Clarendon Hills, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Jan. 16, 1963, Ser. No. 251,930
6 Claims. (Cl. 137—101)



1. A flow divider valve comprising a valve body having a bore therein, an inlet communicating with said bore adjacent one end thereof, a primary outlet communicating with said bore adjacent the other end thereof, a secondary outlet communicating with said bore intermediate said inlet and primary outlet, said inlet communicating through an orifice with said bore intermediate said primary and secondary outlets, a valve spool movable in said bore and having first and second land portions and a stem portion, said valve spool having a first limit of movement wherein said first land portion blocks communication between said inlet and said secondary outlet and unblocks communication between said inlet and said primary outlet around said stem portion, said valve spool having a second limit of movement wherein said first land portion unblocks communication between said inlet and said secondary outlet and blocks communication between said inlet and said primary outlet, said first land portion having at least one flat portion on the surface thereof communicating said inlet with said primary outlet around said stem portion when said valve spool is in its second limit of movement, said second land portion blocking communication between said primary outlet and the other end of said bore, said valve spool having passage means therein communicating said inlet with said other end of said bore, and a spring in said bore biasing said valve spool toward its first limit of movement.

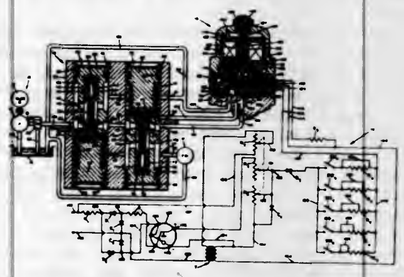
3,200,831
TIRE INFLATING DEVICE
Kenneth O. Whitfield, 175 Bloomfield Ave., Montclair, N.J.
Continuation of application Ser. No. 118,377, June 20, 1961. This application Sept. 27, 1963, Ser. No. 315,418
3 Claims. (Cl. 137—102)

3. A tire-inflating and pressure-controlling device with a body, one end of which is connectable to an air hose and the other end connectable to a valved air chuck adapted to fit the conventional valve of a pneumatic tire, said body being threaded at one end for connection to a valved air chuck and having a chamber with a valve seat adjacent its end which is connectable to said hose, a normally open valve in said chamber movable between seating and release positions, a pressure-release aperture in said body, an extension on said valve loosely received in said release aperture when the valve is seated and merging into a tapered part of said extension which closes said aperture when the valve is unseated, a first port paralleling said aperture and extending longitudinally of said body for transmission of air between a valved air chuck and said chamber, said body having an extension at the other end threaded for connection to an air hose and through which extends a second port beyond the valve seat and closed when said valve is seated, whereby when said device is connected to the valve of a tire to be inflated and the tire air pressure is exceeded by that in said second



port, the valve is unseated by pressure in said second port and is constructed and arranged so that free flow of air through said chamber and into said first port is established, but the valve is seated when the pressure of air in a tire to be inflated exceeds the air pressure in said second port sufficiently to raise the valve to its seat, unblocking said release aperture, whereby air may escape from said release aperture until equalization of said pressures occurs.

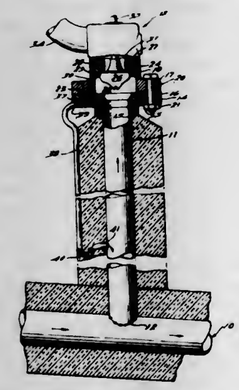
3,200,832
ELECTROHYDRAULIC FLOW CONTROL APPARATUS
Cecil E. Adams, Columbus, Ohio, assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Original application Apr. 4, 1961, Ser. No. 100,753, now Patent No. 3,159,178, dated Dec. 1, 1964. Divided and this application Oct. 24, 1963, Ser. No. 318,676
6 Claims. (Cl. 137—117)



1. Flow control apparatus for maintaining a predetermined rate of flow of fluid under pressure to a work load under variable pressure conditions, comprising, (a) variable orifice means, said variable orifice means comprising a body having a bore therein, an inlet port and an outlet port communicating with said bore at spaced positions, a movable valve member slidable in said bore, said member having a fluid passageway centrally formed therein which cooperates with one of said ports to form a variable orifice regulating the flow of fluid from said inlet port to said outlet port through said passageway, the area of said orifice changing as said valve member is moved axially, said member having opposed surfaces

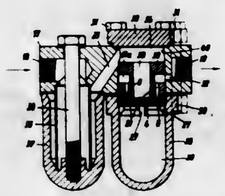
of equal areas presented to two opposed pressure control chambers defined in said bore, both said chambers being isolated from said passageway, inlet port and outlet port, there being no other surfaces of said member exposed to fluid pressure tending to move said member axially, and elastic means biasing said member in a direction tending to close said variable orifice, (b) pressure compensator means maintaining a pressure differential between fluid pressures at said inlet port and outlet port which is substantially constant for any given position of said member with respect to said body, and (c) electrically controllable means for establishing a pressure differential between the pressures of fluid in said two control chambers, said electrically controllable means having an inlet connected to one of said control chambers and an outlet connected to the other of said two control chambers and to a fluid drain, means including a flow restrictor connecting said inlet to a source of pressure fluid, the fluid force arising from the pressure differential established by said electrically controllable means being the sole pressure differential fluid force which is exerted on said movable member tending to move said movable member to vary the area of said orifice.

3,200,833
VALVE HEATING MEANS
William McColl, Southampton, England, assignor to Diamond Power Specialty Corporation, Lancaster, Ohio
Filed Dec. 22, 1961, Ser. No. 161,694
4 Claims. (Cl. 137—154)



1. A valve heating device for a casing having an inlet, an outlet and a valving element movable to open and closed positions to control fluid flow through said casing, said casing comprising body portions defining an inlet chamber communicating at all times with said inlet, said valving element having a portion exposed to the interior of said chamber, a steam supply conduit communicating with said inlet and chamber, a substantially exposed steam condensing conduit having an inlet in communication with condensate collecting means formed at the lower portion of said chamber and an outlet for said condensing conduit positioned below said condensing conduit inlet, said condensing conduit having a higher effective heat radiating capacity per unit cross sectional area than said supply conduit whereby steam condensed in said condensing conduit will flow by gravity through said condensing conduit outlet to create a pressure differential between said chamber and said steam supply conduit to cause a flow of steam through said chamber and past the valving element portion therein to provide heat to the body portions and valving element when the valving element is in closed position.

3,200,834
DISCHARGER FOR CONDENSATION WATER
Haas-Martin Pape, Bremen-Horn, Germany, assignor to Gustav F. Gerdts K.G., Bremen, Germany, a corporation of Germany
Filed Apr. 16, 1962, Ser. No. 187,517
Claims priority, application Germany, Apr. 29, 1961, G 32,185; June 19, 1961, G 32,533
2 Claims. (Cl. 137—183)

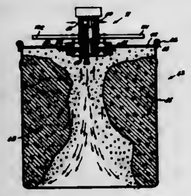


1. A discharger for condensation water, comprising in combination, an elongated casing having a closed bottom and an open top and enclosing a pressure chamber for the condensation water, a conically upwardly converging insert piece having a lower portion engaging the top of said casing, a central support enclosing said insert piece, a cover located upon said central support substantially in alignment with said casing, a space being located between the bottom of said cover and the top of said insert piece, said space being enclosed by said central support, a valve plate movable within said casing from a closing position to an open position and vice versa through a stroke space within said casing, projections carried by said casing and supporting said valve plate in said open position, said valve plate and said insert piece having sealing surfaces which are in engagement when said valve plate is in said closing position, said central support having an inlet passage communicating with the first-mentioned space, a channel extending centrally from top to bottom of said insert piece and connecting the first-mentioned space with said stroke space, said central support further having an outflow opening, said insert piece having an annular channel communicating with said outflow opening and a plurality of parallel outflow channels extending between said annular channel and said stroke space, said valve plate closing the first-mentioned channel in said closing position, said valve plate having an annular recess communicating with said outflow channels, said pressure chamber being of substantially large size and at least twice the size of said stroke space.

3,200,835
CHEMICAL DISSOLVING AND DISPENSING MEANS
Robert E. Farison, Cincinnati, Ohio, assignor, by mesne assignments, to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed Aug. 1, 1962, Ser. No. 214,055
4 Claims. (Cl. 137—268)

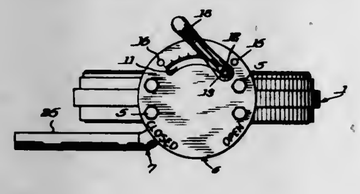
1. A chemical feeder head adapted to be threaded into a lid of a watertight shipping container, said head comprising a plug having a threaded periphery and an enlarged central opening, a swivel support member threadably engaging the opening in said plug and having an enlarged vertical bore therethrough, a swivel tube disposed within said vertical bore and being rotatably journalled therein, a body member fixedly mounted upon the upper end of said swivel tube, said body member having tranverse inlet and outlet ports, a depending nozzle tube carried by said body and extending downwardly through

the bore in said swivel tube, a restricted orifice for forming a high velocity jet formed in the lower end of said



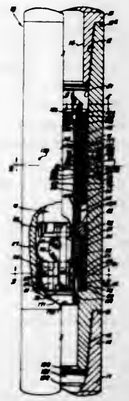
depending tube, said body member having a bore interconnecting said discharge port and the center opening of said swivel tube.

3,200,836
MULTI-LOCK LEVER AND COUPLING
James Trefil, Berwyn, and Edmond P. De Craene, Westchester, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Sept. 26, 1963, Ser. No. 311,783
2 Claims. (Cl. 137—385)



1. In a combined multi-lock coupling and valve actuating mechanism for a quarter turn valve, the combination of a multi-lock coupling adapted for non-rotatable attachment to a valve stem or the like, an apertured indicating and locking plate fixedly attached to the valve, the said plate being slotted for limiting the rotative movement of the valve and having other apertures for receiving the hasp of a padlock in full open and full closed positions of the valve, the said coupling having apertured means for cooperation with the padlock hasp and the lock apertures of said plate, the said coupling having a broached aperture and an opposite end disposed portion for manual gripping when operating the valve and projecting means thereon comprising a lock screw for cooperating with the slotted portion of said plate and securing said coupling against rotative movement in any position desired as determined by the length of the slotted portion of the said locking plate, the said lock screw having a broached lower end portion snugly engaging the said broached aperture of said coupling and having an upper threaded portion, a threaded locking lever mounted on the said upper threaded portion of said lock screw on said coupling and cooperating with said plate to secure said coupling against rotation at any desired position between the full open and full closed positions of the valve, the said lock screw having an enlarged annular collar between said lower broached portion of said lock screw and said upper threaded portion of said lock screw, the said collar portion when assembled being located between the uppermost surface of the coupling and the undersurface of the said plate and being of a height sufficient to allow for sliding contact between said surface of the coupling and the plate while supporting the adjoining portion of said plate against deformation when said locking lever is tightened.

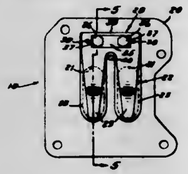
3,200,837
CHECK VALVE FOR USE IN A TUBULAR FLOW CONDUCTOR
Norman F. Brown, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Sept. 21, 1962, Ser. No. 225,283
17 Claims. (Cl. 137—496)



1. A valve including: a tubular housing adapted to be secured in a tubular flow conductor to form a section thereof, said housing having a longitudinal flow passage; valve means mounted in said flow passage for permitting flow in one direction through said passage when in open position and preventing flow in a direction opposite to said one direction when in closed position; and operating means in said flow passage for moving said valve means between open and closed positions, said operating means including a pair of longitudinally spaced members and means connecting said members for causing said members to move simultaneously in said flow passage, said valve means being disposed between and being engaged by said valve members whereby said valve means is moved by and with said operating means, said operating means being exposed and responsive to pressure within said flow passage and also to pressure exteriorly of said housing, said operating means moving said valve means to closed position when the pressure exteriorly of said housing exceeds the pressure within said passage and moving said valve means to open position when the pressure within said longitudinal flow passage exceeds the pressure exteriorly of said housing, said valve means being movable between said closed and open positions only by the force exerted on said operating means by the pressure within said flow passage and the force exerted thereon by the pressure exteriorly of said housing.

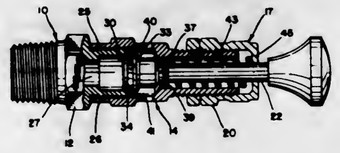
2. A valve including: a tubular housing adapted to be secured in a tubular flow conductor to form a section thereof, said housing having a longitudinal flow passage; valve means mounted in said longitudinal passage of said longitudinal flow passage for permitting flow in one direction through said passage when in open position and preventing flow in a direction opposite to said one direction when in closed position, said valve means having operating means connected to said valve means for moving said valve means between open and closed positions, said operating means being exposed to the pressure within said flow passage and also to the pressure exteriorly of said housing whereby said operating means is movable by such pressure for moving said valve means to closed position when the pressure exteriorly of said housing exceeds the pressure within said passage and for moving said valve means to open position when the pressure within said longitudinal flow passage exceeds the pressure exteriorly of said housing; and locking means removably positionable in said housing and engageable with said valve means for locking said valve means in open position, said locking means being movable into position locking said valve means by a force exerted thereon in one direction and being movable from said locking position and removable from said housing by a force exerted thereon in a direction opposite said one direction.

3,200,838
REED VALVES
Benjamin L. Sheaffer, Palos Verdes Estates, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Dec. 31, 1962, Ser. No. 248,686
1 Claim. (Cl. 137—512.15)



A reed valve device for use with a two cycle internal combustion engine having a crank case with an air inlet passageway connected to said crank case and terminating at its inner end in an inlet port, comprising a base plate having four corner portions and two flat surfaces and being of a size and shape to close the port of said inlet passageway, said plate having a pair of elongated openings in parallel side by side spaced apart relationship to each other, openings provided through the corner portions of said base plate for the reception of means which will retain the same in the port of said inlet passageway, said base plate further characterized in that it has aligned openings therein spaced to one side of one pair of longitudinal ends of said elongated openings for the reception of means which will retain and maintain a movable element of said reed valve against said plate, said plate further having a compensating hole through the central portion thereof between said elongated openings and aligned openings thereof, a flat movable laminate element of phenolic resin binder and a fine weave cotton fabric base, said laminate having a bifurcated shape with the two extensions thereof being of a size and shape larger than the size and shape of said elongate openings, said element having aligned openings therein of a size and shape identical with the aligned openings in said plate, said bifurcated element being of such a size and shape that when the same is retained on said plate with its aligned openings positioned over the aligned openings of said plate, the compensating hole in said plate will lie between the extensions of said element, a reed valve guard of rigid sheet material of bifurcated shape having a pair of fingers overlying the extensions of said element, each finger having an outer portion of lesser width than the extensions of said valve element, said guard further characterized in that it has aligned openings therein of identical size and shape as said aligned openings of said valve element and plate, the fingers of said guard curving away from said element and plate when said guard is positioned over said element and plate, said guard in said position with its aligned openings above the aligned openings of said plate is spaced from the compensating hole in the plate, means for maintaining and retaining said element against said plate comprising nibs formed in the connecting portion of the guards, said nibs being aligned with the aligned openings in the element and projecting into said openings to securely position the guard in proper alignment with the element, other components of said means being positioned through said aligned openings of said plate element and guard to secure the same in assembled and aligned relationship.

3,200,839
SAFETY RELIEF VALVE
Bernard J. Gallagher, Cleveland Heights, Ohio, assignor to Nuclear Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 17, 1962, Ser. No. 217,582
4 Claims. (Cl. 137—516.29)

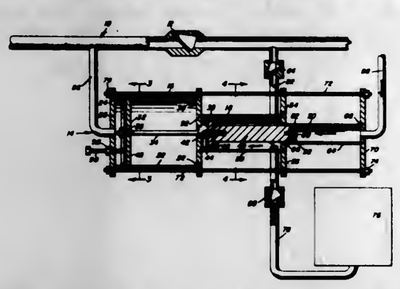


1. A pressure relief valve comprising an apertured body portion having a frusto-conical seat therein;
bonnet means threadably received on said body portion;
said bonnet means having wall means defining a cylindrical chamber therein having a first portion with a first diameter adjacent said seat and a second portion with a second diameter smaller than said first diameter remote from said seat;
port means communicating with said chamber;
an aperture in said bonnet coaxial with said first and second portions;
a slidably movable valve stem extending into said second portion through said aperture;
said stem having seal means thereon remote from said aperture and in guided engagement with said second portion;
a valve disk rigidly carried by said stem and being adapted to cooperate with said frusto-conical seat means;
said valve disk having groove means therein;
sealing means in said groove means adapted to cooperate with said seat thereby to prevent flow through said body portion;
said groove means being defined by forward and rear terminus portions;
said forward terminus being of lesser diameter than said rear terminus but of a greater diameter than said second portion;
said rear terminus having a chamfered portion thereon adapted to engage said frusto-conical seat when said valve is closed;
the included angle of the chamfer on said rear terminus being greater than the included angle of the frusto-conical seat;
spring means in said chamber normally urging said valve disk into engagement with said seat; and
means for facilitating adjustment of said spring means to set said valve for relief over a wide range of pressures.

3,200,840
PRESSURE OPERATED CHEMICAL INJECTOR
John Henry Watts, Rte. 4, Canton, Ga.
Filed July 25, 1962, Ser. No. 212,336
4 Claims. (Cl. 137—564.5)

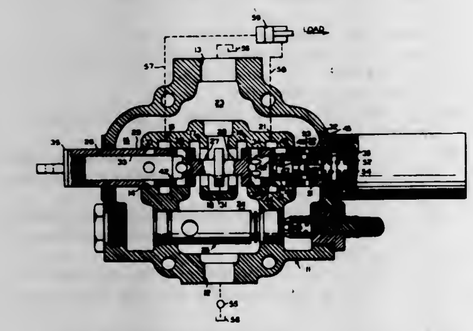
1. For use in combination with a boiler feed line having a periodic flow, a pressure operated chemical injector comprising three axially aligned piston and cylinder assemblies consisting of a first plate, an enlarged cylinder having one end secured thereto, the opposite end of the

enlarged cylinder being secured to a second plate the opposite side of which has a first end of a second cylinder secured thereto, the opposite end of said second cylinder being secured to a third plate, a third cylinder having one end secured to the opposite side of the third plate and being secured at its opposite end to a fourth plate, a piston slidably received within said enlarged cylinder, a rod secured thereto and extending through said second plate and into engagement with a piston



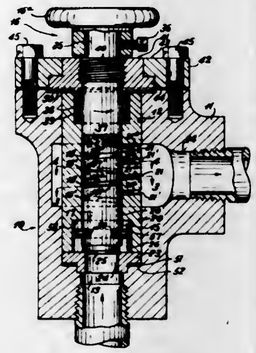
within said second cylinder and a second rod secured to a piston within the third cylinder, means introducing pressure from said feed line into said enlarged cylinder, said pistons movable simultaneously in response thereto, means communicating said third cylinder with a constant source of pressure less than the pressure in said feed line, and means in communication with said second cylinder for introducing and expelling a chemical in response to movement of the pistons.

3,200,841
VALVE
Arthur A. Beutler, Kalamazoo, Mich., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed June 20, 1963, Ser. No. 289,295
2 Claims. (Cl. 137—596)



1. A valve comprising
(a) a housing containing a bore intersected by three spaced chambers, there being a supply chamber, an exhaust chamber and an intermediate motor chamber;
(b) a valve member movable in the bore and containing an internal passage intersected by first and second spaced through ports;
(c) the valve member having a first position in which the second through port registers with the motor chamber, a second position in which the first, and second through ports register, respectively, with the supply and motor chambers, and a third position in which the first and second through ports register respectively with the motor and exhaust chambers;
(d) a check valve seat encircling the internal passage and located between the first and second through ports;
(e) a check valve head reciprocable in the internal passage between open and closed positions with respect to said seat for controlling flow from the first to the second through port;
(f) reaction surfaces on the check valve head subject to the pressure in the second through port for developing forces that urge the head in both the opening and the closing directions, the areas of the reaction surfaces being so proportioned that the force urging the head in the opening direction does not exceed the force urging the head in the closing direction;
(g) means defining a vent chamber within the valve member which communicates with the exhaust chamber at least when the valve member is in the first position;
(h) a relief passage connecting the vent chamber with the second through port, said relief passage constituting the sole fluid connection between the vent chamber and the second through port; and
(i) a relief valve normally preventing flow from the second port to the vent chamber through the relief passage but being responsive to the differential between the pressures in the second port and the vent chamber for opening the relief passage when the differential reaches a predetermined value.

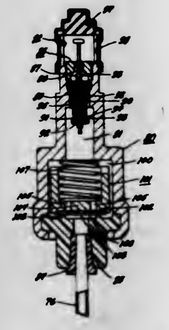
3,200,842
STOP VALVE AND INCLINED PORT VALVE WITH COMMON OPERATOR
Warren M. Wilson, 809 Lake St., Huron, Ohio
Filed June 20, 1962, Ser. No. 204,005
10 Claims. (Cl. 137—614.11)

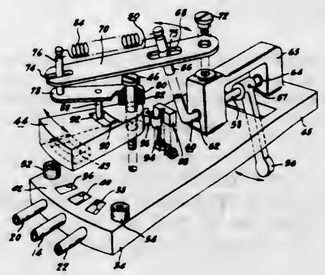


10. A valve comprising a hollow housing member having a port therein providing a fluid passage from the interior thereof to the periphery thereof, a hollow valve member having a port therein providing a fluid passage from the interior thereof to the periphery thereof and positioned in the passageway in said housing member and rotatable and axially movable therein, inlet passage means connecting said port in said valve member to a supply of fluid, valve element means in said inlet passage supported by said valve member, a seat for said valve element, engagement of said valve element and said seat blocking the flow of fluid through said inlet passage, and means for rotating said valve member and moving it axially relative to said housing member to move said valve element out of engagement with said seat and to subsequently align said ports to provide an opening for the flow of fluid therethrough, and said means for rotating said valve member including a threaded stem portion secured to said valve member and a cooperating nut

member within which said stem portion rotates to move said valve member axially simultaneously with rotation thereof, said ports being inclined with respect to a plane extending perpendicular to the axis of rotation of said plug member at an inclination equal to the pitch of the threads on said threaded stem portion.

3,200,843
VALVE FOR VEHICLE SUSPENSION SYSTEM
George W. Jackson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Sept. 12, 1960, Ser. No. 55,359. Divided and this application Jan. 26, 1962, Ser. No. 169,052
3 Claims. (Cl. 137—614.19)





1. A valve for controlling flow of fluid under pressure and exhaust of fluid under pressure respectively to and from an air spring and for retaining in the air spring a residual fluid pressure of a predetermined minimum value, said valve comprising, a tubular valve body having an imperforate outer diameter forming an internal chamber, said tubular body having a first open end and a second open end in communication with said internal chamber, first valve means in one end of said tubular body including a valve element and first spring means for urging said valving element into a position for closing one of said end openings and operable manually to open said one open end for pressure fluid flow in either direction through said internal chamber, and a second valve means in the opposite end of said tubular body for controlling pressure fluid flow through the other open end of said valve body, said second valve means including second spring means and a valving element having one position for allowing pressurized fluid flow from said internal chamber through said other open end to a pressurizable chamber, said valving element having a second position for allowing exhaust of pressurized fluid from the pressurizable chamber into said internal chamber and a third position closing said other open end against exhaust of pressurized fluid flow from the pressurizable chamber into the internal chamber upon the occurrence of the predetermined minimum pressure value in the pressurizable chamber.

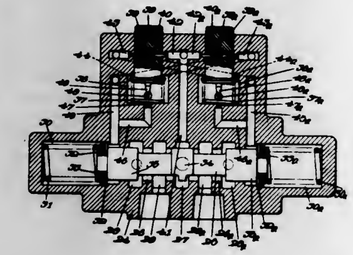
3,200,844
SNAP ACTION VALVING MECHANISM
George W. Jackson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,812
7 Claims. (Cl. 137—625.2)

1. A two-way valve structure comprising housing means, means forming first, second and third passageways in said housing means, means forming first and second ports in said housing means for connecting said first and second housing passageways to a source of atmospheric pressure, means forming an additional port in said housing adapted to be connected through said third passageway with another pressure source, a movable valving element sealingly engaging said housing means including passageway means therein for alternately connecting one of said first and second ports with said additional port while leaving the other of said first and second ports exposed to atmosphere to effect a pressure differential between said first and second ports, valve actuator means for moving said valving element into selected positions to effect a reversal of the pressure differential between said first and second ports by reversing the connection of said first and second ports with said additional port and atmosphere, said valve actuator means including a control arm, an elongated actuator arm pivoted at one end thereof on a first axis, a lever disposed between said elongated actuator arm and said valving element pivoted at one end thereof on a second axis, said valving element being pivotable on said second axis, an elongated bent lever having one end located in spaced relationship to said first and second pivot axes and another end offset substantially perpendicularly to said one end, means connecting said another end to said control arm for moving said one end of said bent lever in a limited rotative path, said one end having a spherically shaped bearing surface thereon in engagement with a portion of said actuator arm for effecting movement thereof about said first axis, and means including said lever for transferring movement of said actuator arm to said valving element to effect movement thereof into preselected controlling positions.

3,200,845
PILOT OPERATED FLUID DIRECTION CHANGE-OVER VALVE
Masaya Nakazima, Yokohama-shi, and Hiroaki Ishikawa, Kawasaki-shi, Japan, assignors to Kayaba Industry Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed July 16, 1963, Ser. No. 295,469
Claims priority, application Japan, July 18, 1962, 37/29,624
8 Claims. (Cl. 137—625.6)

1. A control valve comprising a valve body having a bore, a valve member slidably mounted in said bore, said body member having fluid supply passageways, each intercommunicating a port communicable with a source of fluid under pressure, and opposite ends of said valve member, said body member having fluid discharge passageways each communicating with one of said fluid supply passageways, first and second independently movable means mounted in said valve body each cooperating with one of said fluid supply passageways and selectively operable for obstructing the cooperating fluid supply passageway and having means operable simultaneously for obstructing the fluid discharge passageway communicating

with the other of said fluid supply passageways to permit a pressure increase at one end of said valve member



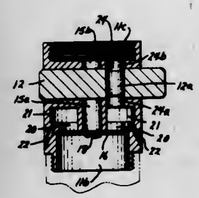
thereby causing a pressure differential across said valve member and responsive movement of said valve member in the direction of the low pressure side thereof.

3,200,846

FLUID CONTROL DEVICE

Clyde S. Beck, 229 Richardt Ave., Evansville, Ind.

Filed Feb. 15, 1962, Ser. No. 173,401
1 Claim. (Cl. 137—625.48)



A fluid control device comprising a body having a first fluid carrying passageway extending therethrough, a separate second fluid carrying passageway substantially parallel to said first passageway and opening into a cut-out portion disposed within said body, outlets extending between said cut-out portion within said body and the outside of said device, and a linearly slidable control member having a portion defining a fluid flow path for completing the said first or the said second fluid carrying passageways through the selective movement of said linearly slidable control member in a direction lateral to said first and said second fluid carrying passageways.

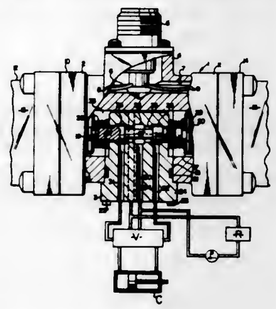
3,200,847

HIGH PRESSURE VALVE ASSEMBLY

Jack F. Gilmore, Van Nuys, and William E. Elder, Playa Del Rey, Calif., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Filed May 23, 1962, Ser. No. 196,973
6 Claims. (Cl. 137—625.65)

1. A high pressure valve assembly comprising a first high pressure housing part having high pressure inlet and outlet passages for communication with a fluid pressure source and a fluid pressure actuated unit respectively, and a low pressure passage extending through said high pressure housing part for communication with a fluid reservoir; a second low pressure housing part to which said housing part is secured to define a low pressure space to which said low pressure passage leads; and a valve means in said first housing part movable therein selectively to establish fluid communication between an outlet pas-



sage and either said high pressure inlet passage or said space, said valve means being operative in all positions to isolate said high pressure inlet passage from said space.

3,200,848

HEAT EXCHANGER TUBES

Ichizo Takagi, 56 Nishi Kashiwabara Shinden, Yoshiwara-shi, Shizuoka, Japan

Filed May 29, 1963, Ser. No. 284,086
1 Claim. (Cl. 138—38)



A heat exchanger tube comprising
an outer metallic tube
a corrugated metal sheet formed of a metal having good conductivity, the corrugations of said plate having flat tops and flat bases and the distance between the tops and bases of said corrugations being less than the radius of said outer metal tube,
said corrugated metal sheet being curved to form a tube of round configuration and being fitted within said outer tube with the flat tops of the corrugations thereof in contact with the inner surface of said outer tube,
the width of the flat tops of said tube being sufficiently greater than the width of the flat bases thereof to provide spaces between adjacent flat bases when said corrugated metal sheet is curved to fit within said outer tube, and
a plurality of spaced cup-shaped anchor means press fitted within said curved corrugated sheet with the flat bases of said corrugations abutting against the outer peripheral surface of said cup-shaped anchor means.

3,200,849

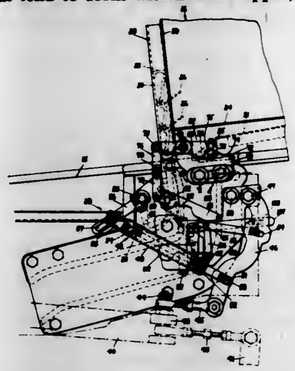
AUTOMATIC FILLING SUPPLY MECHANISM

Harry William Thatcher, Mendon, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine

Filed Mar. 14, 1963, Ser. No. 265,092
11 Claims. (Cl. 139—245)

1. In combination with a loom for weaving, a bobbin feeding means for aligning and presenting a supply of bobbins to a loom shuttle, means for automatically replenishing said feeding means with filled bobbins which comprises an inclined supporting track, a bobbin hopper slidable downwardly along said track, a bobbin ejecting

opening in the under surface of said hopper for passing bobbins singly when positioned over said feeding means, a releasable means for restraining bobbins in said hopper, a bridge breaking slide mechanism forming a part of said hopper, at least one bridge breaker finger pivotally mounted upon said slide mechanism for loosening bridges of bobbins that tend to form within said hopper, a forward



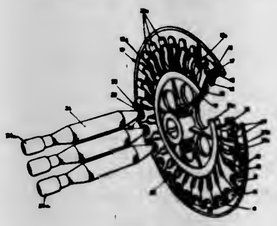
wall of said hopper being adapted for partially enclosing said slide mechanism, said slide mechanism being vertically movable within said forward wall, said finger being movable from a non-functional position in said forward wall to a functional position within said hopper, and an intermittently reciprocatory lifter means to actuate said slide mechanism.

3,200,850

BOBBIN BATTERY FOR LOOMS

Walter Küng, Tann, Ruti, Zurich, Switzerland, assignor to Maschinenfabrik Ruti AG, Ruti, Zurich, Switzerland, a corporation of Switzerland

Filed Mar. 8, 1963, Ser. No. 263,894
Claims priority, application Switzerland, Apr. 12, 1962, 4,518/62
4 Claims. (Cl. 139—249)



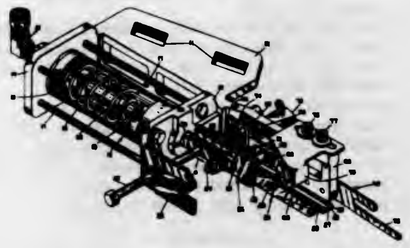
1. A disk assembly for receiving the tips of bobbins in a bobbin battery for looms, comprising a plate, means defining a series of circularly arranged, circumferentially spaced sockets on a portion of said plate, a holder member for each socket and for each bobbin-tip, each holder member being symmetrical about its longitudinal central axis, resilient means disposed in said spaced sockets for yieldably mounting said holder member to said plate, each of said holder member being provided with portions defining a bobbin-tip receiving recess and with additional portions defining guide means in the form of slanted faces tapered toward said recess and opening at their opposite outer ends to the width of said holder member for guiding an associated bobbin-tip into its recess, said holder members being arranged on said plate substantially in contact with each other at their outer confronting marginal edges.

3,200,851

THREAD PARTING AND CLAMPING MECHANISM

George Cadorette, Hopedale, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine

Filed Feb. 17, 1964, Ser. No. 345,459
4 Claims. (Cl. 139—263)



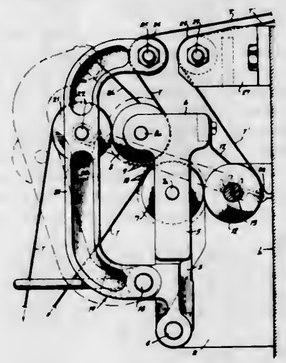
1. A filling end parting and clamping mechanism for automatic filling replenishing looms, a supporting bracket having a pneumatically and spring controlled rod member carried thereby for moving said parting and clamping mechanism to and away from filling parting position, said parting and clamping mechanism comprising fixed and movable blade members, means for actuating said movable blade members including a cam and cam follower, pivotable link members interconnecting said cam follower with said movable blade members, said cam being effective upon said cam follower during the initial movement of said rod to open said movable blade members by means of said pivotable link members, a cam bumper and a second cam effective upon said link members through contact with said cam bumper to close said movable blade members as said rod member continues to move in the direction of its initial movement.

3,200,852

TAKE-UP MECHANISM FOR A LOOM

Walter John Koyder, Meadville, Pa., assignor to Talon, Inc., a corporation of Pennsylvania

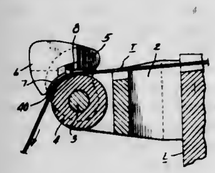
Filed Feb. 11, 1963, Ser. No. 257,563
9 Claims. (Cl. 139—304)



1. Take-up mechanism for a loom comprising,
a driven feed roll rotatably mounted at the delivery end of the loom,
a guide roll rotatably mounted at the delivery end so as to be movable toward and away from said driven roll with which it cooperates,

a second feed roll rotatably mounted at the delivery end of the loom,
a second guide roll rotatably mounted at the delivery end so as to be movable toward and away from said means for maintaining normally the first guide roll in tangential contact with the driven feed roll and the second guide roll in tangential contact with the second feed roll,
a first take-up roll rotatably mounted at the delivery end of the loom in position to receive a loop of a first tape from the loom before the tape passes to said first driven feed roll,
a second take-up roll rotatably mounted at the delivery end directly opposite said first take-up roll and in tandem therewith and in position to receive a loop of a second tape from the loom before the tape passes to said second feed roll, and
means for driving said driven feed roll.

3,200,853
WEFT DETECTOR DEVICE
Walter J. Koyder and Richard W. Phillips, Meadville, Pa., assignors to Talon, Inc., a corporation of Pennsylvania
Filed Feb. 28, 1963, Ser. No. 261,772
5 Claims. (Cl. 139—370)



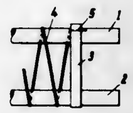
1. In combination with take-up mechanism for a loom having a take-up roll rotatably mounted at the delivery end thereof:
a breakage detector comprising a weighted body member mounted to a shaft for pivotal movement thereabout,
said shaft supported at spaced apart points such that said body member is normally urged by gravity to move in a fixed plane about said shaft and towards the periphery of said roll,
a feeler finger carried by said body member intermediate said shaft and the center of gravity of said body member for riding normally on the surface of a woven fabric moving over said roll, and which has a knitted edge,
said feeler finger having a thickness which is less than the distance between any two adjacent warp threads of the woven fabric for entering the space therebetween to ride on the upper surfaces of the weft threads of the woven fabric as it moves over the roll, and
a normally open electric circuit including said feeler finger and said take-up roll for maintaining said loom in an operating condition when properly woven fabric is normally disposed on said take-up roll,
said feeler finger is movable through a fixed plane substantially perpendicular to the axis of said shaft such that said feeler finger is maintained between the same two continuous warp threads by a force greater than the gravity force exerted at the center of gravity of said body member and is maintained in contact with successive weft threads of said woven fabric moving over said roll for closing said electrical circuit to render said loom inoperative in the absence of a weft thread.

3,200,854
METHOD OF MANUFACTURING GRIDS FOR USE IN ELECTRONIC DISCHARGE VALVES
Paul Guyot, Caen, France, and Louis François Abraham Dieleman, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 14, 1961, Ser. No. 89,278
Claims priority, application Netherlands, Feb. 17, 1960, 248,531
8 Claims. (Cl. 140—71.5)



1. In a method of manufacturing grids for electron tubes in which a pair of continuous grid stays are wound with a series of discrete spaced grid windings comprising the steps of locating the first turn of each said winding and cutting the grid stays between the said series of grid windings a predetermined distance from said location.

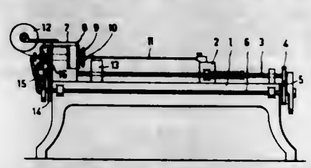
3,200,855
METHOD OF MAKING TENSION GRID
Ehrhard Wenzel, Berlin-Heiligensee, and Günter Marquardt, Berlin-Siemensstadt, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Apr. 25, 1961, Ser. No. 105,351
Claims priority, application Germany, May 10, 1960, T 18,353
6 Claims. (Cl. 140—71.5)



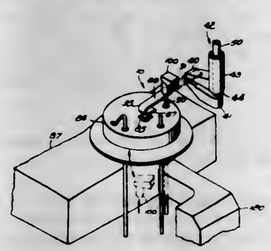
2. In a grid coiling machine for clamping a coiling wire to a tension frame including a strut and two transverse members having projecting portions, an assembly for clamping the coiling wire between the strut and one of said transverse members, a guide cooperable with said assembly and mountable on the machine for movement making possible the clamping of the end of the coiling wire before the beginning of each coiling cycle.

3,200,856
METHOD OF MANUFACTURING GRIDS FOR USE IN ELECTRIC DISCHARGE TUBES
Wilhelmus Bex, Helmond, and Gerrit Starre, Drachten, Netherlands, assignors, by mesne assignments, to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Original application Nov. 10, 1953, Ser. No. 391,278, now Patent No. 3,102,560, dated Sept. 3, 1963. Divided and this application Nov. 23, 1962, Ser. No. 239,631
Claims priority, application Netherlands, Nov. 10, 1952, 173,702
3 Claims. (Cl. 140—71.5)

1. A method of manufacturing grids for electron discharge tubes, without waste turns comprising the steps of feeding grid backbones in spaced parallel relation, notching each of said grid backbones in spaced relation, winding a conductor over said backbones in said notches, peening said notches to secure said conductor on said backbones, clamping the conductor to break it adjacent one said backbone for determining the length of said grid, and resecuring the free end of said broken conductor in a notch on one of said backbones and winding a second grid conductor over said backbones spaced from the preceding grid.



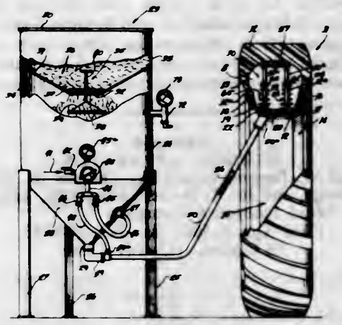
3,200,857
ARTICLE ASSEMBLY APPARATUS
Robert K. Miller, Allentown, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y, a corporation of New York
Filed Nov. 7, 1961, Ser. No. 150,749
5 Claims. (Cl. 140—93)



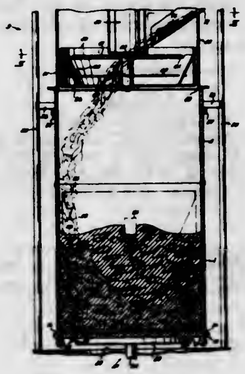
1. Apparatus for forming a J bend conducting element from a length of strip material and assembling same with a transistor header, which comprises:
means for forming an arcuately shaped bend in the leading end of the strip material;
means for intermittently advancing the formed strip material;
a positioning mechanism for receiving and grasping the advanced strip material a predetermined distance from the arcuately shaped bend;
a cutting unit disposed between the forming means and positioning mechanism for cutting the strip material a predetermined length from the arcuately shaped bend to form and free a J bend element graspedly held by the positioning mechanism;
means for moving the positioning mechanism to a fixed relationship with the header so that the respective bent end and free end of the J bend element contact said header; and
welding means rendered effective after the J bend is freed and moved into contact with the header for joining said bent end and free end of the element to the header.

3,200,858
DEVICE FOR FILLING AND REMOVAL OF DRY BALLAST
Keith W. Kampert, Libertyville, Ill., assignor to The Frank G. Hough Co., a corporation of Illinois
Filed Dec. 18, 1961, Ser. No. 160,184
8 Claims. (Cl. 141—38)

7. A device for filling a pneumatic tire with a dry ballast, said tire having a casing supported on a rim and forming therewith an enclosed chamber, said device comprising an intake fitting and an outlet fitting mounted on said rim in closely spaced apart relationship, an intake and an outlet conduit each being flexible and having a first portion and a second portion, the first portion of said intake and outlet conduits being connected to said intake and outlet fittings respectively and extending substantially radially into said chamber, said second portions of said conduits being fastened together and positioned adjacent said casing and opposite said rim and extending substantially parallel to each other in opposite directions.



3,200,859
HOLLOW-CENTERED COMPACTING DEVICE
Samuel Alex Parker, Jr., Maysville, Ky., assignor to Parker Tobacco Company, Maysville, Ky., a corporation of Kentucky
Filed Mar. 6, 1963, Ser. No. 263,157
13 Claims. (Cl. 141—73)



1. A press for compacting loose particulate flake material into a hogshead, said press comprising,
a lifting piston for raising the hogshead,
means for rotating said hogshead when said hogshead is raised on said lifting piston,
a tamping piston for compacting flake material in the hogshead, means supporting said tamping piston above said lifting piston in vertical alignment therewith,
said tamping piston having a tamper at the lower end thereof,
said tamper comprising an annular tamping member, a funnel shaped member joining the inner rim of said annular tamping member, and arms connecting said tamper to said tamping piston,

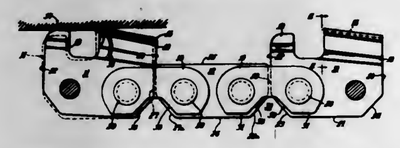
means for delivering flake material into the upper end of said hogshead and through the center of the annular tamping member such that said flake material is deposited primarily adjacent the side of said hogshead,
and means for reciprocating said tamping piston to compact flake material in said hogshead, said tamper applying direct compressing force only to flake material adjacent the wall of said hogshead, a soft center thereby being imparted to said flake material.

3,200,860
NURSING APPARATUS
Raymond W. Barton, Evansville, Thomas A. Benjamin, Newburgh, and Joe T. Herron, Evansville, Ind., assignors to Mead Johnson & Company
Filed Apr. 3, 1961, Ser. No. 100,160
16 Claims. (Cl. 141—330)



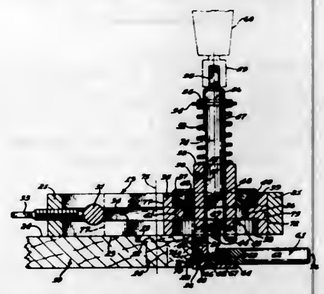
1. A nursing apparatus of the character described, comprising: an expandable nurser having a nipple with an end, said nipple having a crosscut opening in the end thereof, one dimension of the crosscut being greater than the other; a supply of nursing formula; and tubular connector means connected with said supply and including an elongated pointed cannula at the end thereof, extending through the crosscut opening of said nipple, to fill the nurser from said supply.

3,200,861
CHAIN SAW CHAIN
Max Merz, Los Angeles, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 2, 1963, Ser. No. 285,161
7 Claims. (Cl. 143—135)



1. A chain saw adapted for travel in a guiding groove around the periphery of a chain saw guide bar and comprising a plurality of pivotally interconnected links, each pivotal interconnection between said links comprising a middle link extending in one longitudinal direction and a pair side links extending longitudinally in the opposite direction such that each middle link is respectively connected pivotally at its opposite ends to two sets of side links and each pair of side links are pivotally interconnected at their opposite ends to two middle links, certain of said links being formed at the outer exteremity thereof with cutting elements, said middle link and said side links having a depth such that both will travel in said guiding groove and the inner extremity of one of the links of each pivotal interconnection extending beyond the inner extremity of the remaining links of such pivotal interconnection for a fractional distance of less than one-half the overall depth of said side links whereby as the middle links and side links ride in said guiding groove the one link rides on the bottom of said guiding groove and interference with relative pivotal movement between said middle and side links due to possible deformation of a link riding on the bottom of the guiding groove is prevented.

3,200,862
CUTTING TOOL
Lawrence Heathington, 2742 W. Madison St., Phoenix, Ariz.
Filed Jan. 21, 1963, Ser. No. 252,645
1 Claim. (Cl. 144—27)



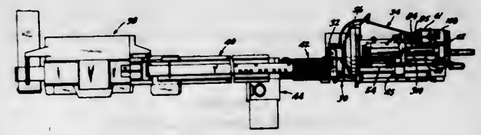
A cutting tool for operating upon a workpiece comprising in combination:
(a) a frame,
(b) a first work engaging surface fixed on said frame,
(c) a second work engaging surface fixed on said frame located at right angles to and facing toward said first work engaging surface,
(d) a tool carriage slidably mounted on said frame for movement parallel to said first work enegaging surface and movable relative to said second work engaging surface from a position behind said second work engaging surface to begin the cutting operation to a position in front of said second work engaging surface at the end of the cutting operation so as to hold said frame in operative position on the workpiece,
(e) a rotary cutter journaled on said carriage for rotation about an axis at right angles to said first work engaging surface,
(f) a rotary drill coaxially mounted for axial movement within said rotary cutter,
(g) means on said drill for connecting a power tool for simultaneously rotating said cutter and drill,
(h) cutting edges on said cutter rotating in a plane parallel to said first work engaging surface and projecting outward thereof,
(i) cutting edges on said drill rotating in a plane parallel to said first work engaging surface,
(j) yielding means interacting between said cutter and said drill to normally hold said drill with its cutting edges retracted below the plane of the cutting edges on said cutter,
(k) said means on said drill for applying said power tool thereto being adapted to the simultaneous rotating of said drill, moving said drill axially outwardly relative to said cutter, and sliding of said tool carriage on said frame
(l) and means on said frame moving parallel to said first work engaging surface and said tool carriage travel having a pointed end normally yieldingly retracted below said second work engaging surface adapted when actuated from retracted position to form a locating hole on a workpiece.

3,200,863
SCREW DRIVING MACHINES
Hugo Feldpausch, Ludenscheid, Germany, assignor to Feldpausch & Co., Ludenscheid, Germany, a firm of Germany
Filed June 25, 1962, Ser. No. 204,870
Claims priority, application Germany, July 1, 1961, F 34,319
5 Claims. (Cl. 144—32)



1. A screw driving machine comprising in combination:
(a) a substantially tubular fixed housing defining a pair of housing abutments adjacent the lower end thereof;
(b) a sleeve member arranged inside said housing and slidable therein between an upper limit position and a lower limit position, said sleeve member defining a pair of radial slots each for receiving one of a pair of cooperating tong members;
(c) a rotatable spindle arranged inside said sleeve member in coaxial relation thereto, slidable therein between an upper limit position and a lower limit position and guided by said sleeve member when sliding therein;
(d) coupling means establishing a positive connection between said sleeve member and said spindle causing said spindle when lifted to lift said sleeve member within said housing;
(e) a first helical spring interposed between said sleeve member and said spindle biasing said sleeve member and said spindle in opposite directions;
(f) a screw driver tool supported and operated by said spindle;
(g) a sleeve-shaped latch member loosely supported on said spindle to allow relative movement of said spindle and said latch member in a direction longitudinally of said spindle, said latch member defining a first abutment means extending substantially parallel to the axis of said spindle and said latch member defining a second means abutment surfaces extending substantially at right angles to the axis of said spindle;
(h) a screw holder including a pair of cooperating tong members each arranged in one of said pair of radial slots of said sleeve member and pivotally supported on said sleeve member and having a closed screw-holding position and an open screw-releasing position, said pair of tong members defining a first pair of latch surfaces adapted to be engaged by said first abutment means of said latch member for precluding pivotal movement of said pair of tong members toward said open screw-releasing position thereof, said pair of tong members defining a second pair of latch surfaces adapted to engage said second abutment means of said latch member for coupling said latch member to said pair of tong members to cause lowering of said latch member when said sleeve member and said pair of tong members are lowered, each of said pair of tong members further having a transverse abutment arm cooperatively engaging one of said pair of housing abutments to pivot said pair of tong members upon lifting of said sleeve member by said spindle from said open screw-releasing position to said closed screw-holding position thereof;
(i) a second helical spring interposed between said latch member and said pair of tong members biasing said latch member in a direction longitudinally of said spindle and biasing said pair of tong members to said open screw-releasing position thereof; and
(j) an abutment jointly movable with and positively operated by said spindle adapted to engage and move said latch member against the bias of said second spring in a direction longitudinally of said spindle to cause disengagement of said first abutment means of said latch member from said first pair of latch surfaces of said pair of tong members and pivotal movement of said pair of tong members under the action of said second spring to said open screw-releasing position thereof.

3,200,864
APPARATUS FOR STACKING AND WEIGHING SLICED FOOD PRODUCTS
Harold K. Gilmann, Albany, N.Y., assignor to Unexcelled Chemical Corporation, Albany, N.Y., a corporation of New York
Filed Dec. 19, 1962, Ser. No. 245,833
10 Claims. (Cl. 146—94)



1. In combination a slicing machine having a slicing blade, a feeding means for feeding of product to be sliced into said blade, and control means for determining the rate of advance of said feeding means towards said blade, and, consequently, the slice thickness; apparatus for stacking a preselected number of slices of said product as they are discharged by said slicing machine and then transferring the stacks of sliced product, said apparatus comprising in combination a stacking means to be located adjacent the discharge end of said slicing machine for receiving the slices discharged therefrom; slice counting means for determining the preselected number of slices discharged from the slicing machine; stacker actuation means coupled with both said stacking means and said slice counting means for actuating said stacking means to transfer the stack of preselected number of slices of said product and ready said stacking means for reception of another stack of slices; stack receiving means and conveying means in stack receiving position adjacent said stacking means, and adapted to receive thereon the stacks of sliced product transferred by said stacking means; weighing means operatively connected with said receiving and conveying means such that it is adapted to register the weight of the individual stacks thereon; said stacking means and said receiving and conveying means being so constructed and arranged such that said stacking means transfers the stacks of sliced product to said receiving and conveying means at a location substantially near said weighing means servo mechanism adapted to be coupled with said control means of said slicing machine and adapted to be actuated to thereby correct the adjustment of said control means of said slicing machine to adjust the rate of advance of said feeding means and, consequently the slice thickness; feed back means operatively connected with said weighing means and said servo mechanism for feeding back signals to such servo mechanism

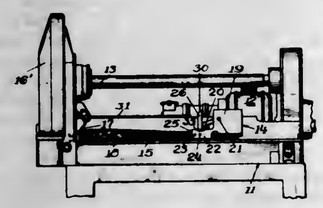
corresponding to the weight of the individual stacks over and below said prescribed weight for the preselected number of slices to thereby automatically actuate said servo mechanism to correct the adjustment of said control means of said slicing machine to, respectively, decrease and increase the rate of advance of said feeding means and, consequently, decrease and increase the slice thickness; said servo mechanism including a reversible motor adapted to be actuated in one direction upon the receipt of signals from said feed back means to adjust said control means and decrease the rate of advance of said feeding means and be actuated in the other direction by said feed back means to adjust said control means to increase the rate of advance of said feeding means; said servo mechanism includes means for braking said motor for accurate adjustment of said flow control means; said weighing means, said knife and said servo mechanism being disposed at a minimum distance from one another to minimize the distance between the place at which the weight is registered and the place at which the adjustment of slice thickness takes place and, consequently, reduce the time required for such adjustment to become effective so that a minimum period of time elapses following the registration of a stack outside the prescribed weight and the correction of the adjustment of said control means of said slicing machine by said servo mechanism; reject means for rejecting stacks of sliced product that are underweight; and electrical means electrically coupling said reject means with said weighing means to cause said reject means to be actuated to reject a stack of sliced product following registration of underweight of this stack by said weighing means.

3,200,865

BACON SLICING MACHINE

Orlando Garapolo, Brookfield, Ill., assignor to Wilson & Co., Inc., a corporation of Delaware

Filed Apr. 12, 1963, Ser. No. 272,570
4 Claims. (Cl. 146—95)



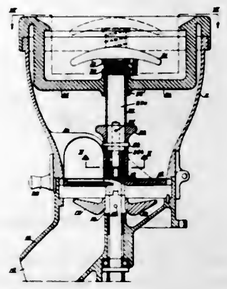
1. In a meat slicing machine, a slicing blade, a carriage for moving a portion of meat to said slicing blade, means for reciprocating said carriage longitudinally of the machine, a plurality of gripper tines engageable with the heel of a portion of meat being moved by said carriage, a cam arm operatively connected to said gripper tines, means engageable with said cam arm during the movement of said meat toward said slicing blade to force said gripper tines into holding engagement with said meat, and means operable automatically to disengage said gripper tines from the heel of said portion of meat at a predetermined point in the return travel of said carriage, said last mentioned means comprising a lever pivotally mounted on the carriage and directly engageable with said cam arm during the return movement of said carriage to move said cam arm a distance sufficient to force said gripper tines out of holding engagement with the heel of said portion of meat before completion of the return movement of the carriage.

3,200,866

VEGETABLE SLICING MACHINE

Bengt Durling, Solna, Sweden, assignor to AB Halldemaskiner, Stockholm, Sweden

Filed May 3, 1963, Ser. No. 277,893
Claims priority, application Sweden, May 24, 1962, 5,852/62
3 Claims. (Cl. 146—124)



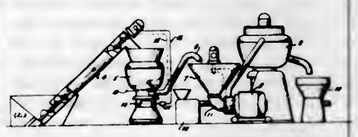
1. A machine for disintegrating vegetable foodstuffs and the like, said machine comprising, in combination, a vertical cylindrical casing, a spindle supported rotatably in said casing and extending axially therethrough, a cutting disk for disintegrating foodstuffs firmly connected with said spindle, a feeding down hopper mounted concentrically on said casing and above said cutting disk, guiding blade members carried in said feeding down hopper and extending downwardly inclinedly in the direction of the cutting disk for guiding foodstuffs from the hopper into the path of the cutting disk, a spreading disk member firmly connected with said spindle a distance above the cutting disk for uniformly spreading foodstuffs within said feeding down hopper, a sorting member having a cylindrical hub-like body firmly connected with said spindle between said spreading member and said cutting disk and integral radially extending portions for sorting foodstuffs being fed into the cutting disk, and feeding out means firmly connected with said spindle below said cutting disk for feeding disintegrated foodstuffs out of said casing.

3,200,867

COMMINUTING AND MIXING ASSEMBLY

Siegfried Stephan, Hameln (Weser), Germany, assignor, by mesne assignments, to Belder Trust reg, Vaduz, Liechtenstein

Filed July 16, 1963, Ser. No. 295,413
Claims priority, application Germany, July 16, 1962, St 19,486
9 Claims. (Cl. 146—192)



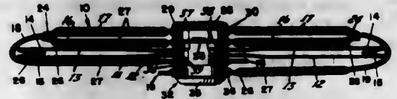
1. In a comminuting and mixing assembly, in combination, a plurality of comminuting means for respectively comminuting a plurality of ingredients, a plurality of supply means respectively communicataing with said plurality of comminuting means for receiving the comminuting ingredients therefrom; a common receiver with which all of said plurality of supply means communicate for delivering the ingredients received from said plurality of comminuting means to said common receiver; and a plurality of adjusting means respectively cooperating with said plurality of supply means for controlling the amount of ingredients respectively delivered thereby to said receiver, so that the proportions of the ingredients to each other in said receiver is controlled according to the adjustments made by said plurality of adjusting means.

3,200,868

LOCK-SEAL NIGHT DEPOSITORY BAG

Arthur C. Strayer, deceased, late of Beaver, Pa., by Eleanore B. Strayer, executrix, Beaver, Pa., assignor to Eleanore B. Strayer

Filed Feb. 14, 1963, Ser. No. 258,657
1 Claim. (Cl. 150—7)



In a lock seal bag comprising: front and rear substantially coextensive flexible panels, means permanently interconnecting said panels at their side and bottom edges, a pair of somewhat flexible closure flaps, one permanently attached to each of said panels adjacent its upper edge, interconnecting means connecting the ends of one of said closure flaps to the other of said closure flaps to permit movement of the intermediate portion thereof to and from bag closing coextensive face contact therebetween, the other of said closure flaps having strap-like extensions which extend outwardly from said interconnecting means; said closure flaps being foldable together about the upper edges of said panels down into contact with the upper end portion of one of said panels, and said extensions being foldable in overlapping engagement with each other about the other of said panels; each of said panels, closure flaps, and extensions being provided with an eyelet-rimmed aperture, said apertures being disposed in axial alignment when said flaps and extensions are in folded positions; a locking means, said locking means comprising a cup-shaped metallic socket member permanently secured in the said eyelet-rimmed aperture in the said other of said closure flaps, and a barrel-type lock member permanently secured in the said eyelet-rimmed aperture in the outer of said overlapping extensions, said socket member extending through the said aligned eyelet-rimmed apertures in the said panels, closure flaps, and the inner of said overlapping extensions, and said barrel-type lock member non-rotatably receivable in said socket member, said lock member having a key controlled means engageable with cooperating retaining means in said socket member.

3,200,869

TRACTOR TREAD FOR USE ON RUBBER TIRE VEHICLES

Heinz Asbeck, Hagen, Westphalia, Germany, assignor to Idealwerken- und Schaufelwalzwerk vorm. Eckardt & Co. G.m.b.H., Herdecke, Ruhr, Germany, a corporation of Germany

Filed Mar. 16, 1964, Ser. No. 352,284
Claims priority, application Germany, June 14, 1963, J 23,875
5 Claims. (Cl. 152—182)

1. A tractor tread for circumscribing a rubber tire wheel of a land vehicle comprising,

(a) a plurality of mutually connected tractor shoes,

(b) each of said shoe being formed of plate having a crown portion terminating in downwardly curved side portions to define a shallow U-shape in cross-section thereof so that said shoe is arranged to envelop the crown and adjacent sides of said tire wheel,

(c) said shoe having a leading longitudinal edge and a trailing longitudinal edge disposed in parallel,

(d) and a grouser formed on the contact surface of said shoes,

(e) said grouser being defined as a V-shaped rib having its apex directed towards a central region on said leading longitudinal edge of said shoe, and



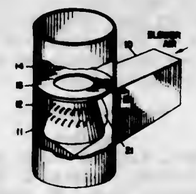
(f) said rib having its opposed wing ends extending toward the trailing longitudinal edge of said shoe, said wing ends having radially and outwardly curved outer end portions gradually diminishing into said curved side portions of said shoe.

3,200,870

DOUBLE VORTEX COMBUSTION CHAMBER APPARATUS

Harvey H. Hanley, 6673 Gardenia, North Long Beach, Calif., and Archibald E. Hanson, Jr., 24733 Long Valley Road, Calabasas, Calif.

Filed Nov. 27, 1961, Ser. No. 154,994
6 Claims. (Cl. 158—4)



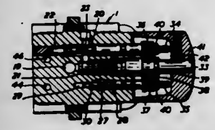
1. A combustion unit comprising: a sealed housing; a combustion chamber mounted in said housing, said combustion chamber being defined in part by circular sidewalls and an imperforate end wall at one end, said combustion chamber being open at the opposite end, said sealed housing having an exhaust outlet opening registering with the open end of said combustion chamber, said sidewalls and said imperforate end wall being spaced from said housing and said sidewalls defining a plurality of peripherally spaced opening means tangentially directed towards said one end; fuel input means communicating through said housing and said sidewalls to the interior of said combustion chamber at a point spaced from said imperforate end wall; pressurized air input means communicating with the interior of said housing, whereby air may be forced towards said opening means, said opening means and said sidewalls being cooperatively formed so as to direct said air tangentially into said chamber and axially in a radially outer vortex towards said imperforate end wall, and said air also serving to cool said end wall and sidewalls; and ignition means communicating through said housing and said sidewalls to the interior of said combustion chamber; said side walls and opening means cofunctioning whereby a radially outer vortex of air may be directed towards said imperforate end wall and thereafter reversed in axial direction to move in a radially inner vortex through said combustion chamber towards said opposite open end.

3,200,871
GAS BURNERS
Harlan H. Blevernicht, Lawrence, Ind., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Feb. 28, 1963, Ser. No. 261,695
2 Claims. (Cl. 158—7)



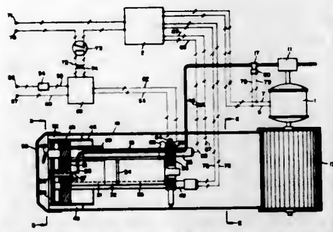
1. A burner assembly for burning a combustible gaseous fuel mixed with air which comprises: an elongated hollow sheet metal burner body adapted to be operatively positioned in a combustion chamber subject to a resonance condition when said burner is ignited, said burner body having an open end for receiving a stream of gas to be burned and for receiving a quantity of primary air induced into said burner body by the action of said stream of gas, said burner body having a burner port for discharging a mixture of gas and primary air from said burner body into an atmosphere of secondary air in said combustion chamber for burning of said gas, a bimetallic strip attached to said burner body and projecting into the hollow interior thereof in contact with the stream of mixed fuel and primary air therein, said bimetallic strip being arranged to obstruct flow of gas through said burner body when said bimetallic strip is in a relatively cold condition so as to limit the quantity of primary air induced into said burner body by said gas stream to an amount which does not give rise to said resonance effect, said bimetallic strip being constructed so as to retract from the path of gas passing through said burner body when said bimetallic strip is heated to reduce the obstruction to the flow of gas therein and thereby permit the induction of a greater quantity of primary air into said burner.

3,200,872
ATOMISING LIQUID FUEL BURNERS
Harold Ernest Jackson, Plympton St. Mary, Devon, and Douglas Raymond Dean, St. Budeaux, Plymouth, Devon, England, assignors to Tecalemit (Engineering) Limited, Plymouth, England, a British company
Filed June 20, 1963, Ser. No. 289,371
Claims priority, application Great Britain, June 22, 1962, 24,180/62
9 Claims. (Cl. 158—76)



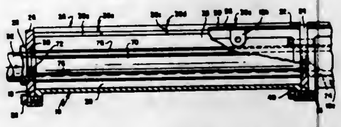
1. A liquid fuel atomising burner having a body portion, an elongated nozzle device projecting from said body portion, means releasably securing said nozzle device to said body portion, an atomising chamber at the distal end of said nozzle device, said nozzle device having first and second fluid flow conduits each communicating with said atomising chamber, a liquid fuel supply passage and an atomising fluid supply passage both extending completely through said body portion transversely of the direction of extent of said elongated nozzle device, first and second fluid flow passages in said body portion connecting said liquid fuel and atomising fluid supply passages respectively to said first and second fluid flow conduits, a first needle valve device for controlling liquid fuel flow from said liquid fuel supply passage through said first flow passage, a second needle valve device for controlling atomising fluid flow from said atomising fluid supply passage through said second flow passage, a rotary stop valve member closable to isolate said first needle valve device from said liquid fuel supply passage, and a common operating means including a member rotatable to effect rotary opening movement of said rotary stop valve member with at least said first needle valve device initially closed and subsequent simultaneous non-rotary linear movement of said first and second needle valve devices whereby to effect variation of liquid fuel and atomising fluid flows.

3,200,873
ULTRASONIC BURNER
John C. O'Connor Young, Staten Island, N.Y., and Robert J. Lang, Watchung, and James A. Wilson, Stanhope, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed June 4, 1962, Ser. No. 199,788
12 Claims. (Cl. 158—77)



1. In a burner for liquid fuels, the combination which comprises:
an ultrasonic fuel atomizer comprising a vibratory horn element having a substantially non-vibratory nodal point, an inlet for fuel adjacent said nodal point;
a pump for supplying fuel to said atomizer and a blower for supplying combustion air in admixture with atomized fuel emerging from said atomizer;
electronic drive means for said atomizer;
valve means for controlling the flow of fuel from said pump to the atomizer, and control means associated with said electronic drive means for preventing the flow of fuel from the pump to the atomizer when power is not being supplied to said drive means.

3,200,874
PREMIXED GAS INFRARED BURNER
Ernst Rudolf Koppel, Perrysburg, Ohio, assignor, by mesne assignments, to General Precision, Inc., Tarrytown, N.Y., a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,280
6 Claims. (Cl. 158—114)



6. In an infrared burner, open-ended trough-shaped members having a terminating edge on either side in parallel longitudinal relation to the said member and provided with a pair of flat mounting faces positioned in the same plane one on each terminating edge said members also having flat end faces at their terminal ends in parallel relation to each other, said flat end faces being adapted to be placed in end-to-end relation to form a continuous burner of desired controllable length, a closure plate adapted to be attached to a first face on a terminal end, said plate being pierced with an aperture for mounting an inlet pipe for gaseous fuel on the outer side of the plate, a tubular fuel distributor having spaced apertures mounted in said aperture on the inner side, said fuel distributor extending to the last perforated closure plate, a tubular screen mounted concentrically about the fuel distributor in each of the trough-shaped members and substantially coextensive with the fuel distributor in an axial direction, other perforated closure plates positioned between the trough-shaped members to connect the members, infrared burner plates fitted on the mounting faces of the terminal edges of the trough-shaped member, an imperforate closure plate for the free end of the last trough-shaped member, and means to hold the burner plates in operative position on said faces.

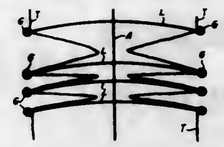
3,200,875
ATTACHMENT FOR GAS-BURNING APPARATUS
Engelbert Cramer, Wernau (Neckar), Germany, assignor to Junkers & Co. G.m.b.H., Wernau (Neckar), Germany
Filed Sept. 24, 1963, Ser. No. 311,031
Claims priority, application Germany, Sept. 27, 1962, J 16,885
5 Claims. (Cl. 158—123)



1. In a gas-burning apparatus, in combination, a wall having a first side, a second side and an opening; an attachment comprising a one-piece supporting member having a base extending across said opening and adjacent to the first side of said wall, and three substantially tubular holders integral with said base and extending through said opening, a burner received in and having a portion extending beyond the first of said holders at the second side of said wall, an igniter received in the second of said holders and having a portion adjacent to said portion of the burner, said second tubular holder being inclined with respect to said first tubular holder, and a thermoelectric current generator received in the third of said holders and having a portion adjacent to said portion of the burner, whereby said igniter and said generator are removable from their respective holders at the side of said base which is spaced from the first side of said wall; and fastener means securing said base to said wall, said fastener means being accessible from that side of said base which is spaced from said wall whereby said supporting member is removable from the wall at the first side thereof.

3,200,876
VENETIAN BLIND
Andreas Krüell, Am Obertor 6, Neuss (Rhine), Germany
Filed Mar. 22, 1962, Ser. No. 181,740
Claims priority, application Germany, Mar. 24, 1961, K 43,293
7 Claims. (Cl. 160—173)

1. In a Venetian blind, in combination, a pair of elongated flexible tapes; a plurality of holding members arranged spaced from each other along each of said tapes, each of said holding members being formed with an elongated cutout through which doubled portions of the respective tape extend to form on one side of said cutouts looped portions of said tape while portions of the respective tape adjacent said looped portions extend in opposite directions away from each other substantially in a plane, the looped portions in one of said tapes arranged to face away from the looped portions in the other tape and the looped portions in said pair of tapes being aligned in pairs; a plurality of pivot pins respectively engaged by and held in said looped portions and each having opposite end portions projecting beyond the respective holding member; and a plurality of substantially parallel slats respectively pivotally supported at transversely spaced



portions thereof on end portions of pivot pins located in aligned pairs of looped portions of said pair of tapes, said slats being movable between an open position and a contracted position in which said slats are closer together than in said open position, whereby when said slats are moved to said contracted position, said portions of said tapes adjacent said looped portions will fold inwardly between said slats.

3,200,877
PACKING UNITS FOR HEAT EXCHANGERS OPERATING AT EXTREMELY LOW TEMPERATURES
Wilhelm Lehmer, Munich, Albert Rein, Augsburg-Westheim, and Josef Weishaupt, Pullach, Germany, assignors to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft, Hollriegelskreuth, near Munich, Germany, a company of Germany
Continuation of application Ser. No. 779,484, Dec. 10, 1958, now Patent No. 3,159,910, dated Dec. 8, 1964. This application Aug. 2, 1963, Ser. No. 299,613
Claims priority, application Germany, Dec. 12, 1957, G 23,553
1 Claim. (Cl. 165—4)

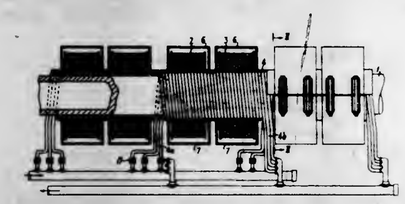


A heat exchanger operating at low temperatures of the order of liquefaction temperature of nitrogen, said heat exchanger consisting essentially of a vessel having an inlet and an outlet and containing a filling of packing units having substantially convex surfaces, there being an even number of limiting surfaces and edges, selected from the group consisting of two and four limiting surfaces and four edges respectively, said packing units being solid bodies composed of a heat exchange material selected from the group consisting of lead and ceramic material.

3,200,878
MEANS FOR CONTROLLING THE WORKING TEMPERATURE IN MACHINES OPERATING UPON PLASTIC MATERIALS
Alfred John Ainley, Stretford, Manchester, John Albert Wright, Timperley, and Ellis Heap, Crest, Rochdale, England, assignors to Associated Electrical Industries Limited, London, England, and The General Engineering Company (Radcliffe) Limited, Manchester, England, both British companies
Filed Oct. 4, 1961, Ser. No. 142,876
Claims priority, application Great Britain, Oct. 5, 1960, 34,155/60
8 Claims. (Cl. 165—64)

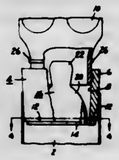
1. Apparatus for controlling the working temperature in machines for operating upon plastic material of the kind in which plastic material is forced along an electrically heated cylinder, comprising a cylinder, helical tubular cooling coils for conveying a cooling liquid, said

coils being wrapped in helical formation around and directly in contact with said cylinder and each fed with a supply of said cooling liquid, a cylindrical sleeve directly in contact with and surrounding the cooling coils, and



at least one electrical induction heating coil placed around the cylindrical sleeve, said heating coil having a housing enclosing the coil and clamped to the external surface of the cylindrical sleeve.

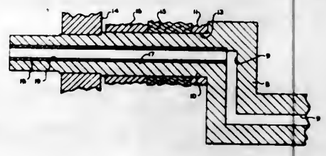
3,200,879
LIQUID WARMING DEVICE
George R. Scanlon, 119 Orchard St., Franklin, Pa.
Filed Dec. 21, 1961, Ser. No. 167,993
8 Claims. (Cl. 165—73)



1. A liquid warming device comprising, a hollow shell of a heat transmitting material having an opening therein, a cup-shaped fluid flow control member tightly received within said opening and extending at least in part into said shell with the open end thereof being located to receive the open end of a vessel in spaced relationship with the inner surface of the base portion thereof, said control member having an elongated portion located intermediate the inner surface of the sidewall portion thereof and extending outwardly from said base portion thereof, an opening extending axially through said base portion and said elongated portion so that fluid may be readily emptied from said shell, at least one passageway extending through said sidewall portion with one end thereof being open to and located to permit fluid flow from the inner portion of said cup-shaped member and with the other end thereof being open to and located closely adjacent to the inner surface of said shell, and at least the portion of said passageway defining said other end extending laterally with respect to the inner surface of said shell to direct fluid thereagainst.

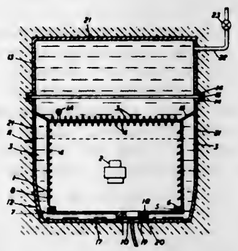
3,200,880
MIXER CONSTRUCTION
Richard J. Balazer, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Feb. 11, 1963, Ser. No. 257,510
4 Claims. (Cl. 165—88)

1. In combination: a bearing; a shaft extending through said bearing and having an axial bore therein through which a heat exchange fluid may flow, said bore having a maximum diameter portion in the zone of said bearing and having a diameter portion smaller than the maximum and forming with the latter a shoulder spaced from the zone of said bearing; and a sleeve of uniform wall thickness formed of thermal insulating material accommodated in the maximum diameter portion of the said bore and having one end abutting said shoulder, said sleeve having an axial length such as to extend from said shoulder through the zone of said bearing, said sleeve having an outside diameter corresponding to the maximum diameter portion of said bore and having its outer



periphery in engagement with said bore portion over the full length of said sleeve, said sleeve having an axial bore therein of a diameter corresponding substantially to the smaller diameter portion of said shaft bore.

3,200,881
COOLING SYSTEMS
Karl Edward Bucks, Bognor Regis, and John Henry Calviou, Emsworth, England, assignors to The Plessey Company Limited, Ilford, England, a British company
Filed Dec. 3, 1962, Ser. No. 243,185
Claims priority, application Great Britain, Dec. 6, 1961, 43,694/61
8 Claims. (Cl. 165—104)



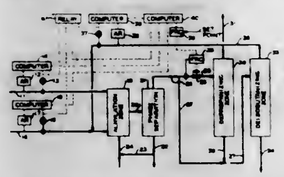
1. Apparatus for cooling electrical equipment comprising a sealed container within which a piece of electrical equipment may be situated, a liquid partly filling the said sealed container and which may contact the said equipment, both the liquid and its vapour being inert and having dielectric properties, an outer container surrounding the sealed container, a valve connecting the interior of the outer container to the atmosphere and controlling the magnitude of the pressure within the outer container, a second liquid at least partly filling the space between, and in contact with, the inner surface of the outer container and the outer surface of the sealed container, the boiling point of the second liquid at the pressure defined by the said valve being not greater than the maximum permissible service temperature of the said electrical equipment and heat being removed from the apparatus by vapourisation of the said second liquid, and wherein the sealed container has a wall projecting from its outer surface and sealed to the inner surface of the outer container, means forming an aperture in the outer container to provide access to said wall, said wall being adapted to support an electrical connection means.

3,200,882
FRACTURING OF WELLS
Richard H. Allen, Charleston, W. Va., assignor to Well Service Incorporated, Charleston, W. Va., a corporation of West Virginia
Filed Nov. 27, 1961, Ser. No. 155,003
6 Claims. (Cl. 166—42)



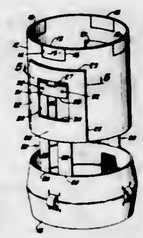
1. A process for fracturing wells which comprises running a high-pressure pipe into the well and providing a seal between the high pressure pipe and the well wall above the strata to be fractured, maintaining body of liquid in the well at the level of the strata to be fractured, sealing the bore of said pipe at a point within the well and maintaining a gas cap below said seal between it and said body of liquid, compressing gas in said pipe above said seal to a pressure of at least 1,000 lbs. per sq. inch while maintaining the pressure of said gas cap at not more than about 1/10 of said pressure above said seal and suddenly releasing said pressure through said seal.

3,200,883
ALKYLATION PROCESS CONTROL METHOD
Jack E. Phillips, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 29, 1962, Ser. No. 183,489
8 Claims. (Cl. 260—683.4)



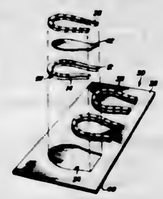
1. In an alkylation process which comprises passing a stream containing an olefin having 3–5 carbon atoms per molecule to an alkylation zone containing an alkylation catalyst, passing a stream containing an isoparaffin selected from the group consisting of isobutane and isopentane to said alkylation zone, separating an alkylation zone hydrocarbon effluent from said alkylating catalyst, passing at least a portion of said alkylation zone hydrocarbon effluent to a fractionation zone, withdrawing an alkylate fraction from said fractionation zone, and passing a fraction containing an isoparaffin from said fractionation zone to said alkylation zone; a method of control which comprises measuring at least one property of said olefin stream passed to said alkylation zone representative of the rate of flow of propane contained therein, measuring at least one property of the isoparaffin feed to said alkylation zone representative of the rate of flow of propane contained therein, and manipulating the rate of flow of said alkylation zone hydrocarbon effluent to a depropanizing zone responsive to the total rate of flow of propane to said alkylation zone.

3,200,884
CLOSE TOLERANCE CENTRALIZER WITH INTERCONNECTING STOP COLLAR
James R. Solum, Los Angeles, and William C. Hempel, Manhattan Beach, Calif., assignors to B & W Incorporated, Torrance, Calif., a corporation of California
Filed Sept. 25, 1963, Ser. No. 311,400
9 Claims. (Cl. 166—241)



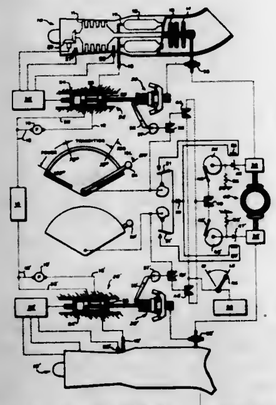
1. In an assembly for mounting a device for limited movement on a well pipe, the combination of: the device having a circumferentially extending portion for slidably engaging the well pipe, a longitudinal slot in said portion of the device extending through one longitudinal end of said portion, a bridge element extending circumferentially across said slot at that said one longitudinal end and spaced radially outward from the well pipe, means for securing to the well pipe adjacent that said one longitudinal end and having an interconnecting strap means extending longitudinally along the well pipe and into said slot radially inside of said bridge element, and means on said strap means beyond said bridge element for engaging said bridge element and limiting the axial movement of said portion of the device in a direction away from said means for securing to the well pipe.

3,200,885
METHOD OF MAKING HORSESHOE WITH RUBBER-CUSHIONED SOLE
Luther R. Johnson, Taylor, Tex.; Berniece Knempel Johnson, executrix of said Luther R. Johnson, deceased
Filed Dec. 19, 1962, Ser. No. 245,748
1 Claim. (Cl. 168—12)



The process of making a cushioned horseshoe consisting of the steps of applying cement to the flat hoof engaging surface of the horseshoe, allowing the cement to partially dry, applying a plurality of blocks of deformable resilient material onto the partially dried cemented surface with the blocks orientated in spaced relation, applying a pressure of 150 tons per square inch for a period of 23 minutes at a temperature of 300 degrees Fahrenheit to the blocks of material to bond the blocks to the substantially flat surface and to each other to form a unitary continuous cushion from the plurality of blocks.

3,200,886
DROOP COMPENSATED FUEL CONTROL SYSTEM
Joseph L. Magri, Danbury, and Herbert N. Shohet, Norwalk, Conn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 28, 1964, Ser. No. 371,160
6 Claims. (Cl. 170—135.74)



1. A fuel control system for a gas turbine power plant having a free turbine means drivingly connected to a load device, a pressurized source of fuel, nozzle means for discharging fuel into the power plant, conduit means connecting source to said nozzle means, fuel metering valve means in said conduit means, computer-actuator means having input signals of selected power plant operating conditions and an output operatively connected to said valve means for controlling the fuel flow therethrough as a function of said computer-actuator means inputs, governor means having inputs of free turbine means speed and actual speed setting and an output operatively connected to said fuel metering valve means for controlling the fuel flow therethrough as a function of said governor means inputs, the improvement comprising:

free turbine means droop compensator means having an output operatively connected to the actual speed setting input of the speed governor means for producing thereby an effective speed setting, differential means having two inputs and an output, said output being operatively connected to said droop compensator means output, load regulating means operative on said load device and one input of said differential means, and torque sensor means having a torque input from said free turbine means and an output operative on the other input of said differential means.

4. A fuel control system as set forth in claim 1, wherein the power plant is mounted in a helicopter and said load regulating means comprises:

a collective pitch stick operatively connected to collective pitch actuator means of the helicopter rotor blades.

3,200,887
HELICOPTER ROTOR SYSTEM HAVING ELASTOMERIC BEARINGS
Alb C. Ballaner, Menominee, Mich., assignor to R. J. Eastrom Corporation, Menominee, Mich., a corporation of Michigan
Filed Aug. 9, 1963, Ser. No. 301,129
12 Claims. (Cl. 170—160.25)

2. A helicopter rotor system tuned to achieve advantageous operating characteristics, comprising

more than two rotor blades,

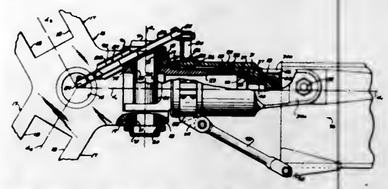
a rotor hub having flapping hinges for said blades at equal angular intervals,

a feathering hinge for each blade secured to and extending radially outward from the flapping hinge and including means at its outboard end to mount the blade, and

pilot-controlled means to vary the pitch of the blade in the feathering hinge throughout an angular range during each cycle or rotation of the hub,

the masses of the blade and its pitch control means having, at rotational speed corresponding to a chosen flight condition, an equivalent intertia torque spring rate,

the blade further having, at such flight condition and for the angular range of pitch change corresponding thereto, an equivalent propeller moment spring rate which partially offsets the inertia torque spring rate,



characterized in that each said flapping hinge and said feathering hinge includes an elastomeric torsional constraint bearing so interposed as to transmit the centrifugal force consequent to blade rotation,

and in that the elastomeric bearings in the feathering hinges have a torsional spring rate relieving the deficiency between the equivalent inertia torque spring rate and the equivalent propeller moment spring rate,

and in that the elastomeric bearings in the flapping hinges have a torsional spring rate act to resist coning,

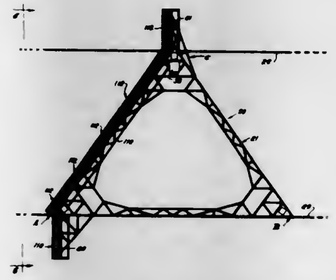
further characterized in that said torsional constraint bearings have keying means interposed in their respective hinges to set angles at which the torque exerted by said constraint is zero.

3,200,888
POTATO HARVESTER
Henry C. Lebde, Box 212, and John J. Dickerman, 22 Oak St., both of Northport, N.Y.
Filed Feb. 15, 1960, Ser. No. 8,649
24 Claims. (Cl. 171—14)



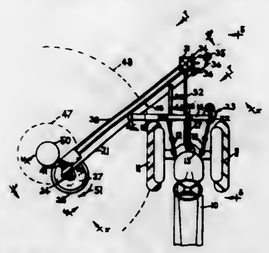
1. A mobile potato harvester system including in combination, a device for excavating one or more potato rows, automatic means for separating and removing stones and debris which are smaller and larger than the potatoes to be gathered and conveying the potatoes and remaining stones to a receiving hopper, a flexible drive member extending longitudinally from the receiving hopper, a column of spaced potato advancing paddles fixed to and extending laterally from said flexible drive member, each of said advancing paddles presenting an arm section fixed to the drive member and extending laterally therefrom and terminating in a potato advancing paddle section which is rearwardly inclined with respect to the direction of travel thereof, a primary tumbling roll positioned under the column of advancing paddles and providing tumbling support for the poatoes, a secondary tumbling roll positioned adjacent said primary tumbling roll and extending along the line of travel of the outer ends of the columnized paddle sections advancing over said primary tumbling roll to thereby maintain the potatoes adjacent to said secondary tumbling roll under the advancing influence of the paddles, means for rotating said primary and secondary tumbling rolls to thereby tumble the advancing potatoes in contact therewith and laterally eject all but one of the potatoes from the advancing influence of each paddle, means for returning the ejected potatoes to the receiving hopper for recycle, and a resiliently supported devining roll positioned above said secondary tumbling roll and in resilient pressure contact therewith, said devining roll being subject to the rotative influence of said secondary tumbling roll and cooperating therewith to strip and remove vines and vegetation from the potatoes as advanced by said paddles.

3,200,889
APPARATUS FOR FARM CULTIVATING AND HARVESTING
Daniel C. Ivy, Amagon, Ark.
Filed Jan. 28, 1964, Ser. No. 340,740
10 Claims. (Cl. 172—26)



1. A machine movable over a pair of parallel spaced tracks extending substantially spirally over a tract of land, said machine including: a substantially triangular base frame having three spaced corners; wheel means at each of said corners of said base frame supporting said base frame for movement on said tracks and over said tract of land, one said wheel means moving over one of said tracks and the other two of said wheel means moving over the other of said tracks; individual drive means for said wheel means at said corners of said frame; control means for individually varying the speed of rotation of each of said wheel means; and implement assembly sections connected to said base frame and extending across the path of movement of said machine over said tracks, each of said implement assembly sections comprising mount means mounted on said base frame and arranged substantially transversely of the path of movement of said machine over said tracks, and implement assemblies mounted on said mount means, said implement assemblies being moveable on said mount means for varying the width of the strips of earth extending parallel to said tracks worked by said implement assemblies as said machine moves over said tract of land on said tracks, said implement assembly sections being individually pivotally movable on said base frame between lower positions wherein said implement assemblies are in operative positions for working the earth and upper inoperative positions.

3,200,890
ORCHARD CULTIVATOR
Richard J. Courtway, Chelan, Wash.
Filed Jan. 29, 1962, Ser. No. 169,442
2 Claims. (Cl. 172—111)



1. An apparatus for hoeing about trees, comprising:

a first horizontal member adapted to be movably mounted at the rear of a farm tractor, said first member being extended outwardly at one side thereof;

a second horizontal member secured to said first member and extending rearwardly therefrom;

a third horizontal member connected to the outer extremities of said first and second members and extending forwardly from these connections at an angle relative to both of said first and second members;

a shaft rotatably journalled on said third member about a vertical axis located adjacent the forward end of said third member, said shaft extending downwardly from said third member;

a hoe fixed to the lower end of said shaft including a flat circular ground engaging disk bounded by a continuous peripheral rim extending upwardly and outwardly therefrom, and a plurality of downwardly protruding lugs fixed to the lower surface of the disk;

and drive means mounted on said third member operatively connected to said shaft adapted to rotate said shaft about its axis, comprising:

a transmission mounted on said third member adapted to be powered by a tractor power take-off, the output of said transmission being a pulley mounted about a vertical axis;

a pulley identical to said first-named pulley and spaced therefrom on said third member;

a belt drivingly connecting said two pulleys;

a first sprocket fixed to said shaft;

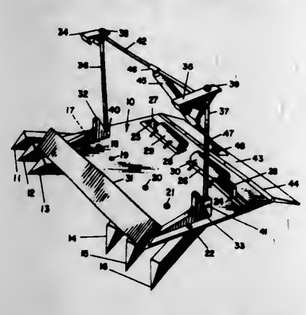
a second sprocket fixed relative to the second of said pulleys;

and a chain drivingly connecting said first and second sprockets.

3,200,891
BULLDOZER ATTACHMENT
John W. Marron, 6110 S. Portshead, Malibu, Calif.
Filed Apr. 16, 1963, Ser. No. 273,370
3 Claims. (Cl. 172—197)

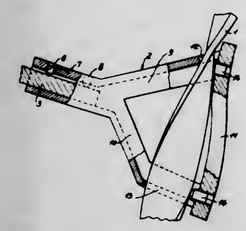
1. An attachment for a bulldozer blade comprising, in combination: a flat plate having a top surface and an upwardly and rearwardly directed front flange defining a hook structure for attaching the front portion of said plate; rod means extending upwardly from said top surface intermediate the front and rear edges of said plate and terminating in hook structures for securing the rear portion of said plate so that said plate is adapted to be held in a position substantially parallel to the ground; first and second sets of teeth individually pivoted to the underside of said plate, each set including three teeth running generally parallel to each other in a fore and aft direction; first and second cross-bars respectively pivoted to

the rear portions of the teeth in each set; and means carried by said plate and coupled to said cross-bars to move said bars in opposite lateral directions whereby said first



and second sets of teeth are swung about their pivot points so that the first set of teeth diverges with respect to the second set of teeth.

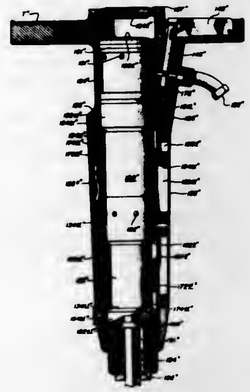
3,200,892
HARROW TOOTH
Kaj Otto Andersen, Skaelskorvej, Slagelse, Denmark
Filed Apr. 13, 1964, Ser. No. 359,305
Claims priority, application Denmark, Apr. 25, 1963, 1,928/63
3 Claims. (Cl. 172—713)



1. A harrow tooth comprising an elongated flat bar twisted about its longitudinal axis at a constant pitch and including an earth engaging portion of a length corresponding to an angle of twist of approximately 180°, and a holding portion twisted at the same pitch as said earth engaging portion and forming a direct continuation of said earth engaging portion at one end thereof.

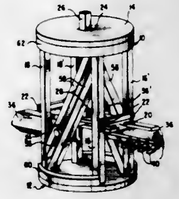
3,200,893
VIBRATION ELIMINATION
Charles Leavell, 206 S. Fairfield Ave., Lombard, Ill.
Filed Apr. 9, 1962, Ser. No. 186,198
45 Claims. (Cl. 173—135)

9. In combination with a pneumatic percussive tool having a main casing element defining a cylinder containing a piston reciprocable therein by an alternate application of pneumatic pressure to the opposite ends thereof which simultaneously produces reactive vibration of the main casing element, a second casing element related to said main casing element for relative reciprocable movements generally along the axis of reciprocation of said piston, connecting linkage for effectuating a necessary transmission of force from one of said elements to the other in either direction along such axis of reciprocation, means for restricting the value of such force communicable through said linkage to a relatively constant value throughout any cycle of the vibratory reciprocation of the main casing element, feedback means for regulatively altering such constant value to maintain a predetermined operational relation between said casing ele-



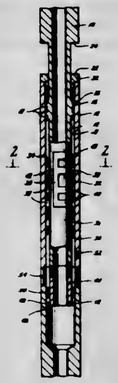
ments, and means for determining the direction of the force transmitted from such one to the other of said elements.

3,200,894
FOUNDATION UNDERREAMER
Edwin G. Brashear, Dallas, Tex.
(1012 Eagle Hill Trail, Longview, Tex.)
Filed Oct. 29, 1963, Ser. No. 319,880
7 Claims. (Cl. 175—286)



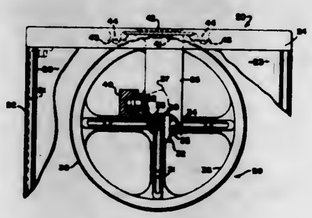
1. A foundation reamer for attachment to a drill stem comprising a frame including a circular bottom pan having a diameter substantially equal to that of the bore hole to be undercut, said frame also including a top plate and two pairs of vertically disposed brace bars extending between and rigidly secured to said pan and plate, said top plate having a centrally disposed opening for the passage of a drill stem, said pairs of brace bars being disposed respectively on opposite sides of said frame and the bars of said pairs being substantially uniformly spaced on opposite sides of a diameter of said pan, a vertically movable blade carrier extending diametrically of said frame with its ends disposed respectively between said pairs of bars, means on said carrier centrally thereof for rigid attachment to the lower end of a drill stem, a pair of blades slidably mounted on said carrier for movement generally radially of said frame, cutting means on the outer end portions of said blades, cam guides on opposite sides of said frame and extending angularly between the bars of said pairs on the same side of said frame, and a cam follower on each of said blades and engaged in a respective cam guide.

3,200,895
JAR MECHANISM
Robert M. Womack, Lafayette, La., assignor to Drilling Jars, Inc., Lafayette, La., a corporation of Louisiana
Filed Nov. 6, 1963, Ser. No. 321,895
4 Claims. (Cl. 175—299)



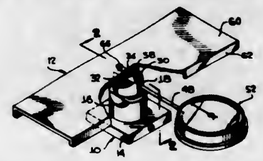
1. In a well jar, inner and outer concentrically arranged tubular parts rotatably and longitudinally movable relative to each other, means on the parts forming impact faces positioned for engagement to deliver an impact from one to the other of the parts when the parts reach the limit of their relative longitudinal movement in either direction, interengageable means on the parts positioned for interengagement upon relative rotation of the parts in one direction when the parts are at the limit of their relative longitudinal movement in either direction to hold the parts against relative longitudinal movement and to be disengaged upon relative rotation of the parts in the other direction to allow such relative longitudinal movement, and means on the parts positioned for coaction to prevent interengagement of said interengageable means when the parts are in positions between the limits of their relative longitudinal movement.

3,200,896
INDICATOR
Robert E. Bell, Frederick C. Carroll, and William H. Gallo, Toledo, Ohio, assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed July 16, 1962, Ser. No. 209,902
4 Claims. (Cl. 177—37)



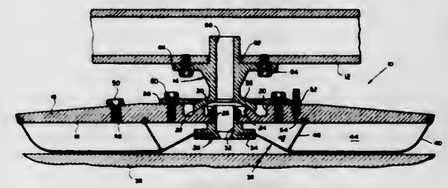
1. An instrument comprising, in combination, a condition responsive indicia-bearing chart, the chart and the indicia having first and second degrees of transparency, a translucent display screen, and means including a light source for projecting and displaying shadow images of the indicia on the screen in color bands coded for quick recognition, the indicia being located between the screen and the light source when their images are being projected.

3,200,897
HYDRAULIC WEIGHING SCALE
Chester S. Gibbons, 158 W. Pulaski Road, Huntington Station, Long Island, N.Y.
Filed Mar. 13, 1964, Ser. No. 351,785
7 Claims. (Cl. 177—126)



1. A hydraulic scale, comprising a base, an upstanding cylinder thereon and having a top opening, a liquid in the cylinder, an upstanding piston supported by the liquid in and projecting through said top opening of said cylinder, a fluid actuated gauge, conduit means connecting the gauge with the interior of the cylinder below the piston for conveying liquid under pressure therefrom to the gauge, a platform, and means coupling the platform with the top portion of the piston for rocking movement in a vertical plane from a horizantal weighing position to either of two opposite inclined positions.

3,200,898
LOAD SUPPORTING DEVICE
Francis M. Dobbertien, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed July 29, 1963, Ser. No. 298,140
3 Claims. (Cl. 180—7)

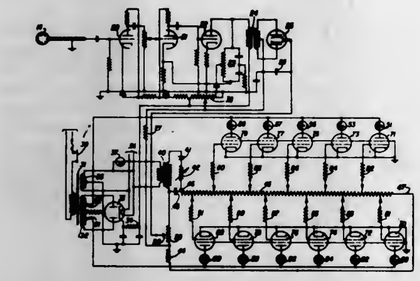


2. An air caster comprising an annular plate member, an air nozzle connected to said plate member centrally thereof, a smooth membrane having a first ring-like portion with inner and outer peripheries and a second ring-like flexible portion with an outer periphery, the outer periphery of said first portion being affixed to said plate member adjacent the outer edge thereof and the inner periphery of said first portion being affixed to said nozzle, the outer periphery of said second portion being affixed to said plate member intermediate the outer edge thereof and said nozzle so that a first closed chamber is defined by said nozzle, plate member and first portion and a second closed chamber adjacent to and separate from said first chamber is defined by said first and second portions and said plate member, valve means for supplying said first chamber with pressurized air and means for substantially filling said second chamber with a liquid.

3,200,899
ELECTRONIC DYNAMIC SOUND LEVEL INDICATOR
Serge L. Krauss, Elkhart, Ind., assignor to C. G. Conn, Ltd., Elkhart, Ind., a corporation of Indiana
Filed Oct. 5, 1959, Ser. No. 844,404
3 Claims. (Cl. 181—.5)

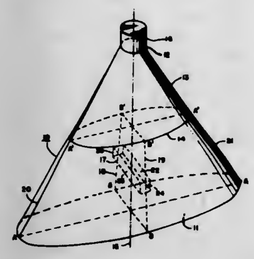
1. An indicator for visually showing the dynamic level of sound including in combination, translating means for converting sound waves to electrical waves, means for amplifying the electrical waves, said amplifying means including first and second stages each having input and

output circuits, with said output circuit of said first stage coupled to said input circuit of said second stage, and feedback means coupling said output circuit of said second stage to said input circuit of said first stage including a parallel T feedback circuit for accentuating the response at frequencies of the order of 4,000 cycles per second to provide a response substantially the same as that of the human ear, full wave rectifier means for rectifying the amplified waves to produce a direct current control voltage, a plurality of strips of different colors positioned adjacent each other, a plurality of lamp means for individually illuminating said strips, a plurality of control means



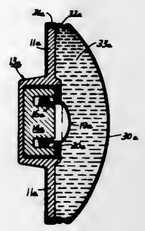
for individually controlling the energization of said lamp means, bias means for said control means including a bleeder resistor across which a static direct current voltage is developed, said resistor having taps connected to said control means for applying different direct current bias voltages thereto for holding the same inoperative, and means applying said direct control voltage from said rectifying means to said bleeder resistor with a polarity to oppose said static direct current voltage, with the control voltage selectively overcoming the bias voltages applied to said control means in accordance with the amplitude of the sound waves and thereby selectively energizing said lamp means to illuminate said strips.

3,200,900
LOUDSPEAKER
Francis Hugh Brittain, Pinner, England, assignor to Hazeltine Research, Inc., Chicago, Ill., a corporation of Illinois
Filed July 17, 1963, Ser. No. 295,667
Claims priority, application Great Britain, July 26, 1962, 28,774/62
3 Claims. (Cl. 181—32)



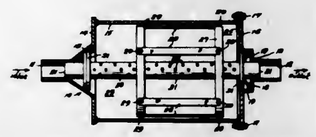
1. In a loudspeaker:
a conical diaphragm of substantially elliptical cross-section the major part of which is paper, in which the slant elements of said paper portion are capable of buckling at low frequency input signals, thereby introducing distortion into the loudspeaker output;
and a rod-like stiffening member secured to the inner surface of said paper portion interjacent those slant elements corresponding to the loci of ends of the minor axes of cross-sectional elements of the diaphragm to produce stiffening of at least those elements while producing negligible other effects on the acoustic characteristics of the speaker;
whereby the low frequency distortion introduced into the loudspeaker output due to the buckling of those slant elements is minimized.

3,200,901
LOUD-SPEAKER
Mark T. Basseches, 18 Old Farm Road S., Pleasantville, N.Y.
Filed Apr. 20, 1964, Ser. No. 360,999
3 Claims. (Cl. 181—32)



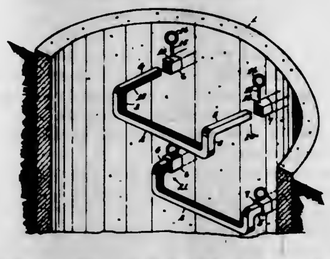
1. A loud-speaker device comprising a sealed, liquid filled container of substantially fixed volume, a relatively stiff radiating diaphragm forming a boundary of said container, a relatively stiff sound generator diaphragm forming a second boundary of said container, said sound generator diaphragm being of lesser area than said radiator diaphragm, first and second flexible suspension means interposed between said container and said radiating and generator diaphragms, respectively, for mounting said input and radiator diaphragms to said container to permit excursions of said diaphragms relative to said container without substantial deformation of said diaphragms, and transducer means connected to said sound generator diaphragm for moving the latter responsive to the amplitude and frequency of electrical impulses applied to said transducer means.

3,200,902
REPLACEABLE CARTRIDGE ACOUSTICAL MUFFLER
Hugh R. Jones, 8509 Thames St., Springfield, Va.
Filed Apr. 7, 1964, Ser. No. 358,126
4 Claims. (Cl. 181—61)
(Granted under Title 35, U.S. Code (1952), sec. 266)



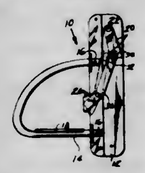
1. An acoustic muffler having a replaceable cartridge, an outer casing means for encasing said cartridge, said cartridge having a central tubing, a plurality of baffle means, a plurality of longitudinal strips, and a plurality of expansible securing means, said baffle means mounted on said central tubing, said longitudinal strips secured to said baffle means by said expansible securing means, said securing means being free from engagement with said outer casing means at ambient temperature and engaging said outer casing means at exhaust gas temperature.

3,200,903
MANHOLE STEPS
Thomas Marino, 122 Meadowcliffe Drive, Scarborough, Ontario, Canada
Filed Dec. 2, 1963, Ser. No. 327,289
1 Claim. (Cl. 182—92)



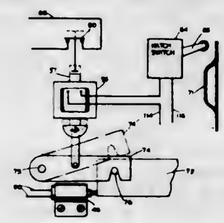
In a manhole step, in combination with a manhole casing having a perpendicular wall, a pair of sockets embedded in said wall in horizontally spaced relation to each other and having portions extending into the interior of the casing, each of said sockets having plane top and bottom walls and having opposing side walls, each of said side walls being provided with a plurality of interior projections of like length spaced from one another lengthwise thereof, a rung, said rung having arms extending laterally from its ends adapted for close sliding fit within said sockets between said interior projections from opposite sides thereof, the sides of said arms which are outermost with respect to each other being plane, a plurality of ribs formed on the sides of said arms which oppose one another and extending lengthwise of said arms in transverse parallel rows, the said arms being adapted to lie within said sockets with the plane sides thereof adjacent the interior projections from the one side walls of the sockets and with the said ribs on the other sides of said arms adjacent the interior projections of the other side walls of the sockets, the said ribs of each arm being slotted transversely in alignment to provide grooves transversely of the ribbed sides thereof, the said top and bottom walls of said sockets having apertures therethrough in aligned relation to each other and adapted to be aligned with the said grooves through said ribs on appropriate adjustment of said arms lengthwise of said sockets, and pins adapted to be projected through said apertures in said sockets and through the grooves in said ribs to lock said arms against lengthwise movement.

3,200,904
CLIMBING STIRRUPS
James L. Weeks, 116 Amarylis Ave., Orange, Tex.
Filed Feb. 3, 1964, Ser. No. 342,067
2 Claims. (Cl. 182—134)



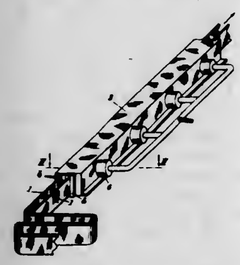
1. Climbing stirrups and channel structure comprising, in combination, pairs of parallel and elongated frames, a spring triggered latch carried between each pair of frames and between oppositely opposed channel members secured to a structure to be climbed, an arcuate foot guard carried by each pair of side frames providing means for raising and lowering said stirrups, a plurality of spaced apart U-shaped and angularly configured channels secured within said channel members providing holding means for said stirrups to support a worker, an elongated release lever carried by each pair of said side frames providing release means for said latches, an eye and associated rollers carried within a central channel on said structure providing safety belt holding means to support a worker to free both of his hands, each said triggered latch received between said side frames of each stirrup member being U-shaped in configuration and provided with an upper pivot pin receiving a spring which provides return means for said latch after actuation by said lever, and a second pin secured in the lower extremity of said latch receiving the slotted upper extremity of said lever, the lower extremity of each said lever being pivotably received upon a third pin traversely between said side frames, said third pin providing pivot means for said lever for releasing said latch, and the upper extremity of said lever is freely and slidably received within a U-shaped slot within the lower extremity of said latch to provide freedom of movement of the upper extremity of said lever within said latch.

3,200,905
ELEVATOR DOOR INTERLOCK
Charles H. Holdridge, New Hartford, N.Y., assignor to Albert Riebea, New Hartford, N.Y.
Filed Mar. 1, 1962, Ser. No. 176,609
1 Claim. (Cl. 187—31)



An elevator door interlock comprising a hatchway, a hatchway door, latch contacts closed only when said door is in closed position, a safety interlock means comprising a solenoid operated lock member to release and lock said door when in closed position, said solenoid releasing said door only when energized potential switch contacts associated with said solenoid held open when said interlock means is in door release position, an elevator car carried fixed cam, a switch connected in series with said solenoid and associated with said hatchway and having a cam follower for switch actuation to closed position and engaged by said car carried cam whenever the car is at the hatchway level, a hoist motor for said car, a solenoid actuated directional switch and a solenoid actuated potential switch for energizing said motor, means actuated by said directional switch when in closed circuit position for deenergizing said lock member solenoid, a series circuit including the solenoid of said potential switch and said potential switch contacts to prevent closure of said solenoid potential switch when said potential switch contacts are open, and a circuit in series with the solenoid of said directional switch and said latch switch to prevent closure of said directional switch upon said latch switch being in open circuit.

3,200,906
STRAND BRAKE FOR AIRCRAFT ARRESTING GEAR
Jean-Paul Bernard, 3 Rue Bixio, Paris, France
Filed Oct. 4, 1963, Ser. No. 314,001
Claims priority, application France, Oct. 9, 1962, 911,701; Jan. 3, 1963, 920,320
2 Claims. (Cl. 188—65.1)



1. For use in an aircraft arresting gear of the type having a purchase cable extending transversely to the landing path to be engaged by an aircraft landing along said path, the combination of

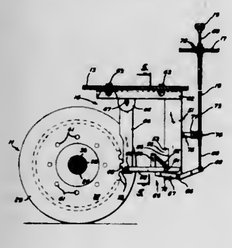
a flat flexible strip having one end thereof secured to said cable,

friction brake means secured to the ground and arranged to engage said strip to brake the movement thereof upon pulling thereof by said cable,

the portion of said flexible strip that is waiting to pass through said friction brake means resting edgewise on the ground and being zig-zag folded so that, during the operation of the device, only the length of said flexible strip portion that corresponds to the pulling of said strip by said cable is brought into movement,

said flexible strip comprising a polyamide core and an elastomer layer on either side of said core.

3,200,907
POSITIVE PARKING BRAKE
Elmer K. Hansen, 126 Cecilia, Sioux City, Iowa
Filed Sept. 25, 1963, Ser. No. 311,446
1 Claim. (Cl. 188—69)



In a brake,

(a) rotor means having teeth means on the outer peripheral section thereof.

(b) a stationary arm positioned in the plane of rotation of said rotor means, said arm having a cam surface facing said rotor means and arranged in a plane normal to a plane extended diametrically of said rotor means, a first stop at one end of said cam surface, and a second stop at the other end of said cam surface, said first and second stops located at opposite sides of said diametrically extended plane,

(c) pivoted locking pawl means pivotally movable in the plane of rotation of said rotor means, and located between said arm means and said rotor means, said pawl means having a portion opposite said cam surface moveable to and from an engaged position with the teeth means of said rotor means.

(d) means pivotally mounting said pawl means for movement about an axis extended parallel to the axis of rotation of said rotor means, said pawl means when engaged with said teeth means being located in a plane substantially parallel to the plane of the cam surface on said stationary arm,

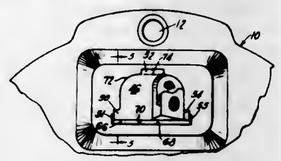
(e) link means pivotally conneced to said pawl means and guidably supported on said arm, said link means having a follower portion engageable with the cam surface of said arm, said follower portion of the link means engageable with the first stop of the arm to hold said pawl means in an engaged position with the teeth means and engageable with the second stop of the arm to hold said pawl means disengaged from said teeth means,

(f) means connected to said arm and link means operative to bias said follower portion into engagement with said cam surface.

(g) lever means pivotally mounted on said arm and engageable with said link means, said lever means movable to a position to move said link means against the action of said biasing means into engagement with the second stop, and

(h) Bowden cable means connected to said arm and lever means operative to pivotally move said lever means to said position.

3,200,908
FLUID MOTOR, BACKING PLATE CONNECTION
Travis G. Budd, John L. Turak, Donald D. Johannesen, and Roy E. McCandlish, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed June 5, 1963, Ser. No. 285,662
16 Claims. (Cl. 188—78)

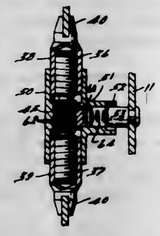


1. In a brake assembly, a backing plate having an opening therein, a fluid motor housing located on the front of said backing plate and having a boss extending from the rear thereof through said opening, at least one lug extending from a peripheral portion of said boss and located opposite a portion of the rear face of said backing plate surrounding said opening, at least a portion of the edge of said opening being spaced from a corresponding peripheral portion of said boss, a locking member located in said space to secure and maintain said fluid motor in position on said backing plate, and means operatively securing said locking member to said fluid motor housing for retaining said locking member in position.

3,200,909
AUTOMATIC BRAKE ADJUSTING MECHANISM
Harvey C. Swift, Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed July 9, 1963, Ser. No. 293,810
4 Claims. (Cl. 188—79.5)

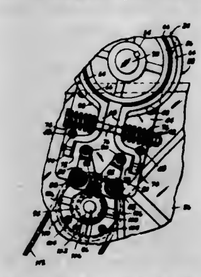
1. A brake comprising, a pair of brake shoes having brake linings, a rotatable brake drum, means for moving said brake shoes into engagement with said brake drum,

an adjustable strut connecting adjacent ends of said brake shoes and having a rotating part, helical threads on the rotating part of said strut, said threads each having an inclined side and an abrupt side, a pawl member provided with a concave end adapted to partially surround said strut and provided with mating threads engaging the threads on said strut throughout a portion of the circumference of said strut, and spring means for



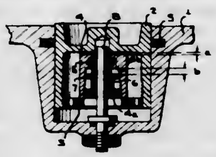
urging said pawl member toward said strut in a direction perpendicular thereto whereby, upon axial movement of said strut member in one direction, the inclined sides of said threads will axially displace said pawl member, whereby upon re-engagement, said pawl member will pick up a new thread on said strut, movement of said strut member in the opposite direction causing the abrupt sides of said threads to rotate said rotating part.

3,200,910
BRAKE MECHANISM FOR INTERMITTENT FEEDING CONSTRUCTION
Donald F. Cunningham, Milwaukee, Wis., and Donald W. Engle, Sherman Oaks, Calif., assignors to U.S. Partition & Packaging Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 16, 1963, Ser. No. 331,013
1 Claim. (Cl. 188—85)



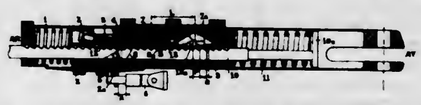
In combination, brake mechanism for stopping, holding and releasing a rotatable member comprising a pair of freely pivoted brake shoe members for engaging a rotatable member, strong springs engaging said brake shoe members biasing them into engagement with a rotatable member, a pair of brake levers freely pivotally mounted for engaging said brake shoe members, a roller freely pivotally mounted on each brake lever, a cam rotatably mounted for cyclical engagement by said rollers of said brake levers to move said brake levers into engagement with said brake shoe members to release them from a rotatable member, said cam including a first peripheral portion of predetermined constant radius, a second peripheral portion of a predetermined constant radius greater than said first peripheral portion, and sharp transistional peripheral portions between said first and second peripheral portions, said first peripheral portion permitting said brake shoe members to engage rotatable member in braked relation for a predetermined time period, said second peripheral portion holding said brake shoe members in released relation with a rotatable member for a predetermined time period, said sharp transitional peripheral portions effecting quick release and braking movements of said brake shoe members, said cam actions being effected through said brake levers and said springs, whereby said brake mechanism is effective to substantially instantly cyclically stop and release a rotatable member substantially eliminating overrun and backup thereof.

3,200,911
HYDRAULIC CYLINDER ASSEMBLY FOR DISC BRAKES
Gottfried Rämselin, Frankfurt am Main-Goldstein, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik KG, Frankfurt am Main, Germany
Filed Nov. 15, 1961, Ser. No. 152,523
Claims priority, application Germany, Nov. 16, 1960, T 19,283
1 Claim. (Cl. 188—196)



An hydraulic cylinder assembly with an automatic adjustment device for disc brakes and the like comprising a cylinder, a sealed piston slidably disposed in said cylinder and having a recess therein, a friction element within the cylinder, an abutment assembly located in the piston recess and disposed for movement with the piston in a brake-applying direction while permitting movement of the piston relative thereto in the opposite direction by an amount corresponding to the desired brake clearance, spring means interposed between the friction element and said abutment assembly for urging the abutment assembly into engagement with the friction element, said spring being disposed to oppose movement of the abutment assembly in the brake release direction.

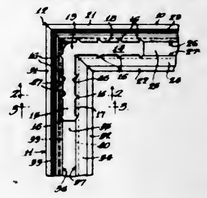
3,200,912
BRAKE ADJUSTER FOR RAILWAY VEHICLES
Jean-Baptiste Bouvat-Martin, Paris, France, assignor to Societe Generale "Isothermos" Societe Anonyme, Paris, France
Filed Dec. 18, 1963, Ser. No. 331,572
Claims priority, application France, Oct. 7, 1963, 949,778, Patent 1,378,988
7 Claims. (Cl. 188—196)



1. A brake adjuster to be mounted between a traction power system and a braking system, which comprises a body having a front end coupled to said traction power system and a rear end formed with a bottom, a traction rod slidably mounted in said body and having a forward end formed with a circular bearing flange, a rear end extending through the bottom of said body and coupled to said braking system, and an intermediate portion having an upper face in which teeth are cut, a trigger slidably mounted on and surrounding the rear portion of said body, said trigger having two control ends disposed on either side of said tooth portion of said traction rod, said ends being directed forwards and bent upwards, said body having a stop ring disposed forward of said trigger, a first spring housed in the rear portion of said body and

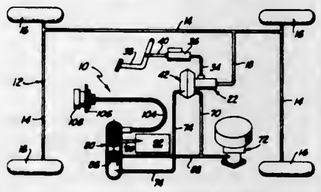
adapted to bear against said bottom for urging said trigger forwards to a position of engagement with said stop ring, means carried by said trigger and co-acting with said body and said teeth on said traction rod for counteracting the forward slipping movement of said rod in said body when said trigger engages said stop ring in said body and permitting said forward slipping movement of said rod in said body when said trigger is shifted to a certain extent towards the rear of said stop ring in said body against the resistance of said first spring, a second spring housed behind said circular flange and bearing against said body to urge said traction rod forwards with respect to said body, said body having formed therein above the teeth of said traction rod at least one recess comprising an upper wall overlying said teeth and consisting of two inclined faces, and, on either side of said teeth, two lateral walls comprising each a flat small face perpendicular to the axis of the adjuster, a clamp located in said recess, formed with two upper inclined faces adapted to bear flat against said inclined faces of said upper wall of said recess, a lower face formed with teeth adapted to mesh with the teeth of said traction rod and two lateral faces each provided with a flat projecting portion bounded on the one hand by a flat small face perpendicular to the axis of the adjuster and adapted to bear flat against said small face of one of said lateral walls of said recess when said two upper inclined faces of said clamp engage said inclined faces of said upper wall of said recess, and on the other hand by another flat small face inclined forwards and downwards at an angle of about 45° to said axis, a pin extending through the upper portion of said clamp, a V-shaped spring mounted on the ends of said pin and bearing with its two arms against said inclined faces of said upper inclined wall of said recess to urge said clamp out from said recess to a position of meshing engagement between its lower toothed face and said upper toothed face of said traction rod, a push member having two portions slidably mounted in said body on either side of the teeth of said upper face of said traction rod, said two portions having each their rear ends shaped to constitute transmission ends, being formed with a flat small inclined face parallel to said flat small inclined faces of said lateral projecting portions of said clamp, and being further adapted to bear against one of said inclined small faces when said transmission ends of said push member are subjected to a forward stress to cause said clamp to slide and rise up said small faces, perpendicular to the axis of the adjuster, of said lateral projecting portions of said clamp, against the small faces perpendicular to said axis of said lateral walls of said clamp-receiving recess, to a retracted position of said clamp wherein said upper inclined faces of said clamp engage the inclined faces of the upper wall of said recess, the control ends of said trigger engaging themselves up the transmission ends of said push member when said trigger is urged by said first spring against said stop ring of said body to hold said clamp in its retracted position, a pair of elastic blades mounted in said body on either side of said teeth formed in the upper face of said traction rod and having each a retaining end directed forwards towards said transmission end of one of said portions of said push member and spaced from said last-named end by a small play E when said trigger, urged by said first spring to its position of engagement with the stop ring of said body, holds with its control ends said clamp in its retracted position, said retaining ends of said elastic blades being adapted to retain the transmission ends of said push member when said trigger and its control ends have been shifted backwards of said body from their position of engagement with said stop ring of said body against said first spring by said play E, said elastic blades being formed at a certain distance from their retaining ends and backwards thereto with release elbows extending downwards and engageable by said bent control ends of said trigger to raise the retaining ends of said elastic blade and thus release the transmission ends of said push member while enabling said clamp spring to urge said clamp downwards, outside said recess, until said clamp engages with its toothed lower face said toothed upper face of said traction rod when said trigger and its control ends have been shifted backwards from its position of engagement with said stop ring of said body and against the action of said first spring by a length equal to the sum of said play E and the relative spacing of said release elbows of said blades backwards of the retaining ends of said blades.

3,200,913
FRAME CORNER FASTENER ASSEMBLY
Averd G. Nelson, Wisconsin Rapids, Wis., assignor to Preway Inc., a corporation of Wisconsin
Filed June 14, 1962, Ser. No. 202,576
2 Claims. (Cl. 189—36)



1. A framing construction comprising a pair of channel shaped frame members each having opposing side faces within the channel, a series of generally parallel, longitudinally extending, corrugations including hills and vales on said opposing side faces within the channel, an elongated connector member having longitudinally spaced, transversely disposed rigid teeth projecting outwardly from opposite side faces of said connector member, said connector member being positioned in the pair of channel members with the channel members abutting at ends with the connector member lapping both channel members and the teeth held in broached recesses traversing the corrugations on said opposing sides of both channel members, said vales being of a size sufficient for accommodation of material broached from the hills of the corrugations, thereby eliminating appreciable deformation of the exterior surface of the channel members.

3,200,914
AUTOMATIC BRAKE DEVICE
Maurice E. Downs, 5963 Gifford Ave., Huntington Park, Calif., and Bertrand D. Mouron, 275 E. 18th St., Corta Mesa, Calif.
Filed Aug. 20, 1962, Ser. No. 217,964
3 Claims. (Cl. 192—3)



1. An automatic brake device for an automotive vehicle which includes:

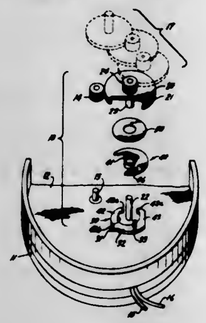
vehicle wheels, a hydraulic brake system connected to said wheels to restrain said wheels so as to inhibit rotation of said wheels, means to accelerate said vehicle wheels, said means to accelerate being connected to said wheels and adapted to accelerate said wheels so as to rotate said wheels, said hydraulic brake system including pump means connected to supply hydraulic fluid under pressure to restrain said wheels;

pump actuating means connected to said pump, said pump actuating means comprising pressure differential sensitive means, said pressure differential sensitive means comprising means defining a space and movable means extending across said defining means so that said movable means divides said space into first and second volumes, said movable means being connected to said pump means so that movement of said movable means in a first direction causes said pump means to supply hydraulic fluid under pressure to said brake system at said wheels, means connected to said movable member to urge said movable member in one direction;

rotary valve means, said rotary valve means having first, second and third ports, said first port being connected to one of said volumes to control the fluid pressure adjacent one side of said movable means, said second and third ports being connected to fluid supply means under different pressures, a valve spool within said rotary valve means, said valve spool being arranged so that rotation of said valve spool selectively places said second port in communication with said first port and places said third port in communication with said first port;

said means to accelerate comprising a control pedal, said control pedal being connected to control the acceleration of said wheels, said control pedal being connected to said rotary valve means so as to rotate said rotary valve means and thus control the actuation of said vehicle brake system.

3,200,915
NO-BACK MECHANISM FOR SMALL SYNCHRONOUS MOTORS
Robert S. Lundin, Thomaston, Conn., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Nov. 20, 1962, Ser. No. 239,023
5 Claims. (Cl. 192—4)



1. In a no-back mechanism for use with a small synchronous motor capable of starting in either direction, the combination comprising a frame, a driven gear having a set of internal ratchet teeth, a pawl having a tip and a body portion with the body portion being pivoted on the frame eccentrically with respect to the driven gear, and operating means interposed between the driven gear and the body of the pawl including a friction connection for rocking the pawl into interfering relation with the ratchet teeth when the gear is rotated in the "wrong" direction for rebound of the gear and connected motor in the "right" direction, the pawl and operating means being totally enclosed within the space within the gear defined by the ratchet teeth.

3,200,916
READY BREAK LOOSE ANTI-FEEDBACK DEVICE
Ralph J. Rasmussen, New Baltimore, Mich., assignor to Formsprag Company, Warren, Mich., a corporation of Michigan
Filed June 24, 1963, Ser. No. 289,952
6 Claims. (Cl. 192—8)

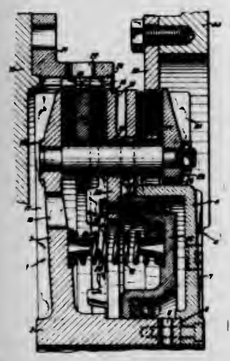


1. A mechanism of the type described, comprising a pair of relatively rotatable, radially spaced and coaxially telescoped race members, one of which is provided with a cylindrical race surface and the other of which is provided with a circumferential series of sprag sockets, a series of circumferentially spaced sprags tiltably mounted in said sockets, said sprags acting between said sockets and said race surface to releasably wedge in engagement against the latter and lock said race members together, and force multiplying means to release the sprags from said wedging engagement by tilting the sprags in said sockets, comprising an operated unit guided for rotation relative to both of said race members, said unit being provided with fingers engageable with the respective sprags to tilt the latter in said sockets and thus release the sprags, said force multiplying means further comprising an operating member having a first outer driving means connecting the same to said operated unit, a second outer means for the application of force to the operating member, and a fulcruming means connecting the same to one of said race members intermediate said respective outer means, the lever arm distance from said last named fulcruming means to said second outer means substantially exceeding that from said fulcruming means to said first outer means, thereby establishing a substantial mechanical advantage in the application of tilting force to said fingers, said fulcruming connection comprising a tooth on one of said operating and last named race members and a recess on the other of said operating and last named race members in which the tooth is received for fulcruming action, said operating member and other race member having means enabling a relative bodily floating movement thereof in said fulcruming action.

3,200,917
AIR COOLED COMPACT CLUTCH AND BRAKE
Robert Herr, Remscheid, Otto Ortlinghaus, Wermelskirchen, Jurgen Lemp, Heide, Wermelskirchen, and Adolf Ortlinghaus, Remscheid, Germany, assignors to Gebr., Ortlinghaus, Wermelskirchen, Germany, a firm
Filed May 14, 1963, Ser. No. 292,508
9 Claims. (Cl. 192—18)

1. In combination with a machine frame, a shaft turnably mounted in said frame, and a continuously rotating flywheel turnably mounted on said shaft, a pressure fluid operated clutch and brake mechanism for selectively coupling and uncoupling said flywheel and said shaft and for braking said shaft when said flywheel is uncoupled therefrom, said mechanism comprising hub means fixed to said shaft for rotation therewith and having at one end a radially extending flange forming a first

counterpressure disc and at the opposite end an annular cylinder of an outer diameter smaller than that of said flange and having an open end facing said flange spaced therefrom and an opposite closed end; a plurality of bolts each fixed at one end thereof to said flange radially outwardly of said cylinder and extending in axial direction beyond said open end of said cylinder; a second annular counterpressure disc fixed to the other ends of said bolts and having an inner diameter larger than the outer diameter of said cylinder, said cylinder extending through said second annular counterpressure disc and forming an annular gap therewith; at least one annular clutch disc adjacent the side of said flange facing said first counterpressure disc and connected at the outer periphery thereof to said flywheel for rotation therewith; an annular brake disc adjacent the side of said second annular counterpressure disc facing said flange and non-rotatably connected to said frame, said cylinder extending also through said brake disc and spaced from the inner peripheral



surface thereof so that cooling air passing through said gap may also pass through said brake disc; an annular piston slidably guided in said annular cylinder and forming with the closed end of the latter a pressure space, said piston projecting with an end thereof beyond said open end of said cylinder; an annular pressure disc sandwiched between said clutch disc and said brake disc and fixed to said one end of said piston for movement in axial direction therewith to engage, during movement of said piston in one direction, said brake disc and, during movement of said piston in opposite direction, said clutch disc, said bolts extending through said clutch disc, said pressure disc and said brake disc and guiding at least said pressure disc during axial movement thereof; spring means operatively connected to said piston for biasing the latter in said one direction; and passage means communicating with said pressure space for feeding pressure fluid in the latter for moving said piston against the force of said spring means in said opposite direction.

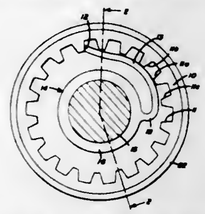
3,200,918
OVERRUNNING CLUTCH
Robert F. Horn, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 3, 1963, Ser. No. 270,364
1 Claim. (Cl. 192—46)

An overrunning ratchet drive clutch, for selectively coupling two coaxial shafts having an overlapping region comprising:

a pawl sleeve removably secured to the inner shaft within the overlapping region;

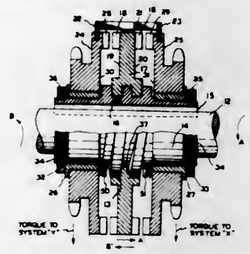
a ratchet gear secured to the other shaft concentric with said pawl sleeve, with teeth thereof extending inward toward and spaced from said pawl sleeve; and

a drive arm of resilient material and of generally uniform thickness in the radial direction along its length in the region of its tip, said arm being of unitary construction with and extending from said pawl sleeve across said space and being of sufficient length and



resiliency to lie along and substantially in sliding contact with at least one of said teeth and said arm being provided with a reverse bend so that its tip engages a single tooth to impart driving force from one shaft to the other in one direction of rotation of the driving shaft.

3,200,919
REVERSIBLE DOUBLE-DRIVE CLUTCH
James P. Lanigan, Metairie, Eugene F. Wallace, Chalmette, and James I. Kotter and Harold L. Salaun, Jr., Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Sept. 25, 1964, Ser. No. 399,421
1 Claim. (Cl. 192—48)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A reversible double-drive clutch comprising in combination:

(a) a driven shaft carrying a uniform external screw thread integral with the central portion of said shaft, said thread originating and terminating on said central portion,

(1) a first radially disposed stop pin located radially adjacent the origin of said external screw thread and

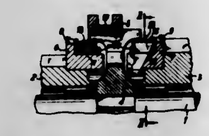
(2) a second radially disposed stop pin located radially adjacent the terminus of said external screw thread, said first and said second stop pins extending radially relative the screw thread and adapted to act as stops at the origin and terminus of said external screw thread;

(b) a first generally disc-shaped end clutch member rotatably mounted on said driven shaft and located in an axially fixed position adjacent the origin of said external screw thread and associated stop pin, said first clutch member being provided with clutch elements on the face directed toward the central portion of the driven shaft and provided with torque transfer elements on the face directed away from the central portion of the driven shaft;

(c) a second generally disc-shaped end clutch member rotatably mounted on said driven shaft and located in an axially fixed position adjacent the terminus of said external screw thread and associated stop pin, said second clutch member being provided with clutch elements on the face directed toward the central portion of the driven shaft and provided with torque transfer elements on the face directed away from the central portion of the driven shaft; and

(d) a third generally disc-shaped clutch member provided with clutch elements on each face, said third clutch member incorporating a central bore carrying a uniform internal thread adapted to match and to move upon the external thread of said driven shaft, said third clutch member mounted upon said driven shaft intermediate said first and said second end clutch members and axially movable on said driven shaft via the internal screw thread of the central bore of said third clutch member and the matching external screw thread of the driven shaft, said internal thread terminating at each end with a flat radially and axially disposed transverse porition adapted to contact the stop pins at the ends of said driven shaft screw thread thereby limiting the axial travel of said third clutch member, whereby rotation of the driven shaft in one direction urges the third clutch member and accompanying clutch elements against the clutch elements of the first of the end clutch members to establish a drive path from said driven shaft through the respective clutch elements of said first end clutch member and third clutch member to the torque transfer means of said first end clutch member, and whereby reversing the rotation of the said driven shaft disengages the engaged clutch elements of the first end and third clutch members, moves the third clutch member across the intervening space between the two end clutch members and urges the clutch elements of the third clutch member against the clutch elements of the second end clutch member to establish a drive path from said driven shaft through the clutch elements of the third clutch member and said second end clutch member to the torque transfer means of said second end clutch member.

3,200,920
SYNCHRONIZATION ARRANGEMENT FOR CHANGE-SPEED TRANSMISSIONS
Hans Reich, Kornтal, near Stuttgart, Germany, assignor to Firma Dr. Ing. h.c. F. Porsche K.G., Stuttgart-Zuffenhausen, Germany
Filed Feb. 1, 1963, Ser. No. 255,471
Claims priority, application Germany, Feb. 21, 1962, P 28,830
7 Claims. (Cl. 192—53)



1. A synchronization installation for change-speed transmissions, especially for motor vehicles, comprising:

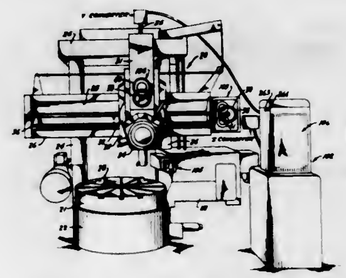
shifting sleeve means having working surface means,

coupling body means adapted to be coupled for rotation in unison with said shifting sleeve means,

and synchronization means for effecting synchronism between said shifting sleeve means and said coupling body means during engagement of a speed in the change-speed transmission including slotted springy synchronizing ring means retained under initial stress in said coupling body means and having at least one friction surface adapted to engage with said working surface means and at least one centering surface adapted to engage with said coupling body means,

said synchronizing ring means being of substantially the same cross section over the entire circumference thereof and being of oval shape in the unstressed condition thereof with the largest dimension extending in an axial plane which is disposed substantially perpendicularly to an axial plane between the ends of the synchronizing ring means, so that the synchronizing ring means assumes a substantially cylindrical shape during synchronization operation of the installation.

3,200,921
CONTROLS FOR MACHINE TOOLS
John C. Hollis, Milwaukee, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed Feb. 15, 1961, Ser. No. 89,449
13 Claims. (Cl. 192—142)

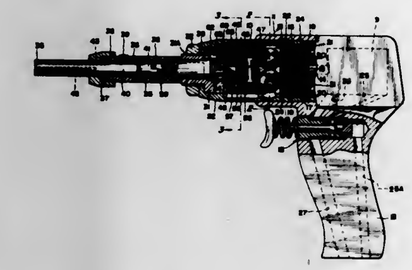


1. In a system including a machine tool and means for controlling the tool to perform a series of machining steps in accordance with a stored program, the combination comprising: a movable tool element, a source of power for positioning said tool element along a particular axis, an analog to digital converter operably connected to said tool element for producing a set of impulses representing in binary digital code the instantaneous position of said tool element along said axis, program recording means adapted to receive manually set-in data for each machining step and including a plurality of lines of bistable elements with the elements in each line being manually operable to represent in like binary digital code a desired end point position for said tool element in a single machining step, and control means including means for coupling said power source to move said tool element toward the desired end point in each machining step, a comparison circuit for connection between each line of bistable elements and said converter and effective to produce an output pulse responsive to impulses from said converter matching the states of said bistable elements in one line, means for uncoupling said power means to stop said tool element at the completion of each machining step responsive to said output pulse, and means for connecting said comparison circuit successively to each line of bistable elements following the completion of each machining step.

3,200,922
CLUTCH AND ROTATION ARRESTING MECHANISM
Edward L. Allen, Ulster, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 9, 1963, Ser. No. 314,982
5 Claims. (Cl. 192—147)

1. A clutch and rotation arresting mechanism for a rotary driving means and a rotary driven means comprising:

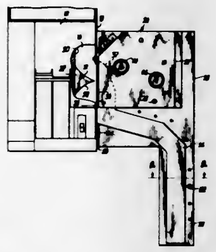
(a) housing means;
(b) a driven clutch element within said housing means connected to said driven means for conjoined rotation therewith;
(c) a driving clutch element within said housing means rotatable by said driving means and axially movable into and out of rotative engagement with said driven clutch element;
(d) resilient means within said housing means intermediate said driving clutch element and said driven clutch element urging said driving clutch element axially out of said rotative engagement with said driven clutch element;
(e) inertial means operatively connected to said driving clutch element for moving such axially into said rotative engagement with said driven clutch element upon a predetermined angular speed of rotation of said driving clutch element;



(f) said driven clutch element including a circumferentially disposed slot therein; and
(g) means within said housing means for arresting the rotation of said driven clutch element after said driving clutch element has moved axially out of said rotative engagement therewith;
(h) said rotation arresting means comprising a non-rotatable locking member circumferentially around said driven clutch element and abutting said driving clutch element such as to be longitudinally displaced thereby upon axial movement thereof; and
(i) lug means depending from said locking member cooperating with said slot in said driven clutch element to prevent rotation of said driven clutch element with said driving clutch element axially out of said rotative engagement therewith.

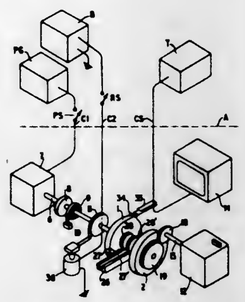
3,200,923
AUTOMATIC RENTAL OR PURCHASE MONEY COLLECTION APPARATUS FOR VENDING MACHINES
Loran Allan Shoutz, Jr., Kansas City, Elmer Bradley Offutt, Independence, and Charley W. Hunter, Raytown, Mo., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed May 20, 1963, Ser. No. 281,634
5 Claims. (Cl. 194—1)

1. In coin collecting apparatus:
a support;
means for receiving and storing coins including structure defining an opening normally adapted for passage of coins therethrough;
key-operated lock means for releasably locking said receiving and storing means upon said support;
blocking means swingable between locations clearing and blocking said opening;
means operably coupling said blocking means with said lock means for disposing said blocking means in clearing relationship to said opening when said lock means is locked and in blocking relationship to said opening when said lock means is released;
latch means shiftable between a pair of positions for latching said lock means in its released condition when said latch means is in one of said positions;
means coupled with said latch means and yieldably biasing the latter toward said one position;
key-operated shiftable means operably coupled with said latch means, when said key-operated means is shifted, for shifting said latch means to the other position; and



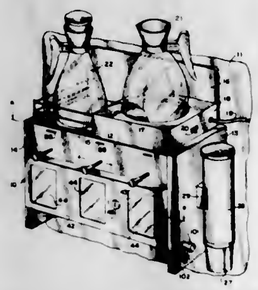
releasable holding means for maintaining said latch means in said other position against the action of said biasing means when said key-operated shiftable means is shifted, said key-operated lock means being operably coupled with said holding means as said lock means is restored from its released to its locked condition for releasing said holding means, said lock means including retaining means operably coupled with said latch means when said lock means is in its locked condition for maintaining said latch means in said other position after said holding means is released and until said lock means is next released.

3,200,924
SUBSCRIBER'S PREPAYMENT MECHANISM FOR USE IN SUBSCRIPTION ENTERTAINMENT SYSTEMS
Patrick Bass, London, England, assignor to R. & R. Research Limited
Filed Sept. 16, 1963, Ser. No. 309,187
Claims priority, application Great Britain, Sept. 21, 1962, 35,982/62
9 Claims. (Cl. 194—1)



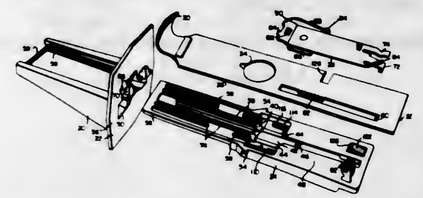
1. A subscription entertainment apparatus comprising means to receive pricing signal denoting program prices, a price registering member, means to move said price registering member from an initial position to a position determined by the received pricing signal and registrative of a specific program price, an account state recording member, a manually operative acceptance control drivingly coupled to both said members, whereby to move said price registering member to said paid position and to debit the account state record by the price of the program accepted, switch means coupled to said price registering member to close an electrical path when and only when said price registering member is in its paid position, thus enabling reproduction of said program, a coin box coupled to said account state recording member, to move this member in a credit direction on coin depositions, and means to inhibit the driving action of said acceptance control on the account state record standing at insufficient credit.

3,200,925
VENDING AND TEMPERATURE MODIFICATION DEVICE
Earl T. Swaney, Vidalia, Ga., assignor to Wilburn W. Woodcock
Filed May 8, 1962, Ser. No. 193,108
6 Claims. (Cl. 194—72)



1. A beverage vending and temperature modification device comprising a housing,
said housing having structure for mounting a plurality of beverage-related packages of substantially uniform size and shape in stacked relation therein,
a plurality of generally vertically extending arms pivotally mounted intermediate their length in said housing at opposite sides of and adjacent said structure mounting each stack of the packages,
a resilient block mounted on the lower portion of each of said plurality of arms adapted to frictionally engage a lower portion of the stack of packages for the support of the major portion of the stack of packages,
a pair of additionally generally vertically extending arms pivotally mounted intermediate their length on said housing and closely parallel each other at said opposite adjacent sides of said stack mounting structure,
a shoe on the lower end portion of each of said pair of additional arms normally underlying and supporting all of the packages in the stack,
abutment means on the upper ends of all of said first and second mentioned arms,
coin-responsive mechanism for controlling the release of packages from said supporting structure for each stack,
said mechanism comprising a movable operating rod,
first means on said operating rod operative when said rod is initially moved to engage with the abutment means on said plurality of arms to move the resilient blocks thereon to frictionally engage the sides of a lower portion of the stack of packages for the support of said major portion thereof,
second means on said operating rod operative for causing a coin when placed thereagainst to sequentially pivot said additional pair of arms during further movement of said rod to withdraw said shoes thereon from supporting positions relative to the lowermost portion of the stack of packages for release thereof from the stack and housing,
spring means operative to return said movable operating rod and said pair of arms to their initial positions relative to the stack-mounting structure after release of the lowermost portion of the stack,
said housing having component wall means forming support means for liquid supply containers thereon,
said support means of said housing component wall means having temperature-modifying means supported thereby for modifying the temperature of the liquid supply containers,
and means for controlling the flow of heating energy to said temperature-modifying means,
each of the packages supported within said housing being functionally related to the liquid of said liquid containers for ultimate intimate association therewith.

3,200,926
COIN SLIDE CONSTRUCTION
Mitchell A. Hall, 445 Rossford Ave., Fort Thomas, Ky.
Filed Apr. 13, 1962, Ser. No. 187,298
26 Claims. (Cl. 194—92)

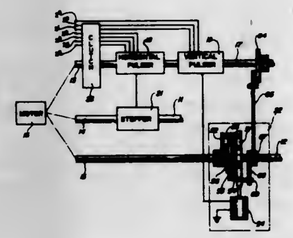


1. A coin slide construction comprising in combination, a mounting bracket including an aperture face plate and an elongate guide means integral therewith and extending outwardly therefrom and aligned with the face plate aperture, a detachable elongate base section having a neck receivable in said aperture and in said guide means, and side portions on said neck to be embraced and supported by said guide means, a slide plate reciprocable upon the base section and having a well to receive a coin for advancement along the base section, an elongate latch plate separate from the base section and the slide plate, and adapted to be superposed upon the slide plate, disengageable cooperative means on the latch plate and the mounting bracket for precluding shifting of the latch plate relative to the mounting bracket upon reciprocation of the slide plate, and means detachably securing an end of the latch plate to the base section with the slide plate interposed between the latch plate and the base section.

3,200,927
POSITIONING MECHANISM
William P. Ryan, Avon, Conn., assignor to Royal McBee Corporation, Port Chester, N.Y., a corporation of New York
Filed Nov. 18, 1960, Ser. No. 70,330
5 Claims. (Cl. 197—16)

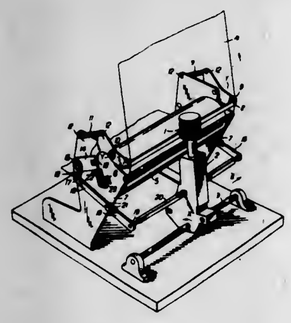
1. Mechanism for converting combinations of simultaneously generated signals to corresponding rotary movements of an output shaft comprising in combination, a

driven shaft, escapement means adapted when actuated to operably couple said driven and output shafts, a control shaft, one revolution clutch means responsive to said signals for connecting said driven and control shafts, switch means selectively conditionable by said signals,



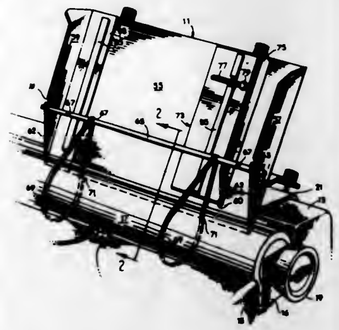
switch operating means on said control shaft operable on conditioned switch means to generate a train of electrical pulses, and means operable to actuate said escapement means in response to each pulse in the train of pulses generated.

3,200,928
PROJECTING TELEPRINTER WITH PLATEN MOVABLE INTO AND OUT OF PROJECTION FIELD
Frank Arthur Moore, Croydon, Surrey, England, assignor to Creed & Company Limited, Croydon, Surrey, England, a British company
Filed Apr. 1, 1963, Ser. No. 269,348
Claims priority, application Great Britain, Apr. 18, 1962, 15,071/62
2 Claims. (Cl. 197—55)



1. Typeprinting apparatus including a typehead mounted on a carriage, means for rocking said carriage and typehead towards a printing medium to print a character thereon and for rocking said carriage and typehead away from said printing medium after printing of said character, a pair of pivots positioned rearwardly of a printing position, a pair of arm members pivotally mounted on said pivots respectively, a platen bar mounted on said arm members for vertical movement, and means for moving said platen bar from a rest position in which said platen bar is retracted below a printing position to said printing position in which it supports said medium prior to and during a printing operation, and for retracting said platen bar from said printing position to said rest position after said printing operation has been effected, said platen-bar-moving means being constituted by said carriage, means being provided to interconnect said carriage and said platen bar so that said platen bar is moved from said rest position to said printing position as said typehead is rocked with the carriage theretoward and so that said platen is retracted from said printing position as said typehead is rocked with said carriage towards said rest position., said last-mentioned means comprising a bar member carried by said carriage and means connecting said bar member to said arm members to pivot said arm members in response to movement of said bar member by said carriage.

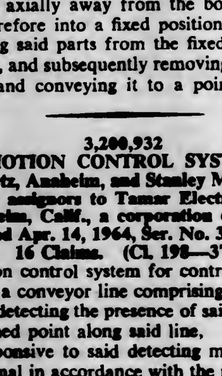
3,200,929
FEEDING DEVICE
Thagrus A. Burns, 2216 Butler Road, Fort Wayne, Ind., and William H. Pheud, Larwill, Ind.
Filed Aug. 9, 1961, Ser. No. 130,304
3 Claims. (Cl. 197—130)



1. A feeding device for conveying paper to a machine comprising, in combination, a mounting bracket adapted to be disposed on the machine, frame means including a pivotal member connected to the bracket, a first adjustment means connected to the bracket and frame means for tilting the frame means with respect to the machine, a platform having a flange portion turned upwardly at each end, a second adjustment means for mounting the platform on the frame means and for positioning one edge of the platform perpendicular with the machine, a third adjustment means associated with the platform for varying the width of the feeding device to correspond with the width of the paper passing therethrough, friction means disposed on the platform to spread units of paper as it passes therethrough, a rotatable shaft mounted on the flange portions of the platform, and a pair of flexible endless belts mounted on the shaft in spaced parallel relationship to each other and adapted to be driven by the machine to feed paper thereto.

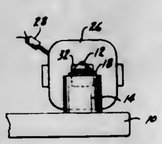
3,200,930
ARTICLE FEEDING APPARATUS
William R. Blackwood, Topsfield, Mass., assignor to Consolidated Cigar Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 3, 1964, Ser. No. 335,515
16 Claims. (Cl. 198—24)

1. An article feeding apparatus comprising a pair of pusher members movable along predetermined paths between advanced and retracted positions, means for releasably locking said pusher members in said retracted positions, means for returning said pusher members to said retracted positions, means for urging said pusher members toward said advanced positions, and means responsive to a predetermined position of each of said



pusher members forward of said retracted position for actuating an opposite of said locking means to release the other of said pusher members.

3,200,931
AUTOMATIC HANDLING OF MAGNETIC PARTS
Carl Voorhies, 2505 N. Villa Lane, McHenry, Ill.
Filed Dec. 20, 1962, Ser. No. 246,196
3 Claims. (Cl. 198—35)



1. A method of separating a single part formed of a magnetic material from like parts, including the steps of stacking said parts, one upon the other, in a fixed lateral position, forming a magnetic field along one side of the stacked parts so that each part assumes one magnetic polarity along the side adjacent the magnetic field and the opposite polarity along its other side whereby said parts repel one another, the magnetic field moving the repelled parts axially away from the bottom part in the stack and therefore into a fixed position in the magnetic field, removing said parts from the fixed position in said magnetic field, and subsequently removing the bottom part in the stack and conveying it to a point of use.

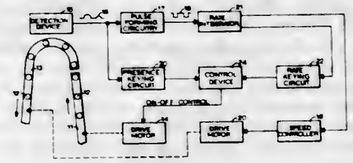
3,200,932
MOTION CONTROL SYSTEM
Ramey B. Metz, Anaheim, and Stanley M. Kerber, Fullerton, Calif., assignors to Tamar Electronics Industries, Inc., Anaheim, Calif., a corporation of Delaware
Filed Apr. 14, 1964, Ser. No. 359,801
16 Claims. (Cl. 198—37)

1. A motion control system for controlling the motion of objects on a conveyor line comprising

means for detecting the presence of said objects at a predetermined point along said line,

means responsive to said detecting means for generating a signal in accordance with the rate of movement of said objects,

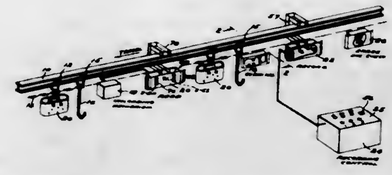
means responsive to said detecting means for generating a signal when said objects are before said detecting means for greater than a predetermined period of time,



means for driving said conveyor line, and

means responsive to said aforementioned signals for controlling said driving means.

3,200,933
DISPATCHING CONTROL SYSTEM FOR CONVEYORS
Adelbert J. Schenk, Huntington Woods, James P. Kohls, Detroit, and Ward T. Brennan, Royal Oak, Mich., assignors to Jervis B. Webb Company, Detroit, Mich., a corporation of Michigan
Filed Dec. 1, 1961, Ser. No. 156,439
17 Claims. (Cl. 198—38)



1. A dispatch system for a conveyor which propels a plurality of load carriers along a defined path of travel, said system comprising:

(a) a plurality of signal carriers;

(b) attaching means for connecting each of said signal carriers to a moving element of the conveyor in defined relation to one of the load carriers thereof;

(c) each signal carrier being constructed of non-magnetic material and having a plurality of magnetizable memory elements mounted thereon in a specific pattern, and a permanent magnet signal element mounted on the signal carrier in spaced relation to said pattern so as to travel on a line transversely spaced therefrom with respect to the direction of travel of said conveyor;

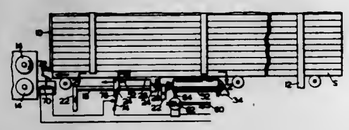
(d) an erasing element having means for demagnetizing all memory elements on said signal carrier;

(e) a recording station located adjacent the path of travel of said signal carrier subsequent to said erasing element with respect to the direction of movement of the conveyor, said recording station including a number of recording heads corresponding to the number of memory elements on the signal carrier and arranged in the same pattern, a sensing device responsive to the presence of said signal element and mounted with respect to said recording heads in the same spaced relation as is said signal element to said memory elements, key and circuit means for potentially activating certain recording heads in accordance with a selected destination of a dispatch code, said circuit means including means for simultaneously energizing said certain recording heads by a rapidly discharged current pulse in response to the passage of said signal element by the

said sensing device whereby a memory element corresponding in position to each of said certain recording heads is magnetized with the polarity for said selected destination;

(f) and a reading station mounted adjacent to the path of carrier travel at each dispatch code destination, each reading station having a detector responsive to the polarity of each magnetized memory element of said signal carrier utilized in the dispatch code for that destination and said memory element detectors being mounted in the same spaced relation to any other detector as are the magnetized memory elements mounted relative to each other on the signal carrier.

3,200,934
STICK FEEDER
Marshall D. Payn, 5237 SW. Dosch Road, and Harry I. Toews, 3529 SE. Crystal Spring Blvd., both of Portland, Oreg.
Filed Nov. 23, 1962, Ser. No. 239,495
10 Claims. (Cl. 198—82)



1. Stick feeding mechanism comprising a forward end, discharge means disposed adjacent said forward end for receiving and conveying away sticks fed thereto, power driven means having forward and reverse movement and having a supporting surface arranged to receive sticks thereon for feeding the latter into said discharge means, a power circuit, control means in said circuit for said power driven means controlling forward and reverse movement of said power driven means, first and second operating means in said power circiut engageable respectively by said power driven means in its reverse position and sticks fed thereby to operate said control means for said power driven means, said operating means being connected in series whereby the power circuit to said power driven means is open when either operating means is open to allow return of said power driven means in one direction.

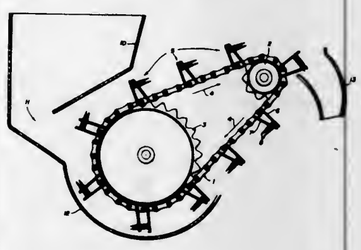
3,200,935
ELEVATOR
Homer G. Whitfield, Clarkston, Mich., assignor to Hydromation Engineering Company, Livonia, Mich., a corporation of Michigan
Filed May 31, 1963, Ser. No. 284,494
7 Claims. (Cl. 198—171)

1. In an article elevator having a frame, a pair of end sprockets mounted on said frame for rotation in a common vertical plane, an endless chain operatively trained about said end sprockets and having a carrying run and a return run extending between said sprockets in spaced relationship to each other within said common plane, article-engaging means mounted at spaced locations on said chain and projecting from one side of said chain, and means for driving said chain to move said chain upwardly along its carrying run to elevate articles engaged by said engaging means; the improvement wherein said frame comprises an elongate hollow tubular post having front and rear end walls and spaced side walls extending longitudinally between said sprockets, the front end wall of said post being disposed rearwardly of the carrying run of said chain and the rear end wall being located in front of the return run, means defining an article inlet adjacent the lower end of said post and an article outlet adjacent the upper end of said post, article guide means mounted on one side wall of said post and defining upwardly extending article guiding passage through which articles are guided upwardly



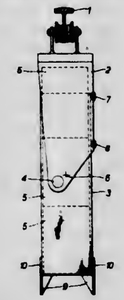
along said post from said article inlet to said article outlet, said article inlet and outlet being located on opposite sides of said passage whereby articles are discharged from said passage in the same general direction as that in which they entered.

3,200,936
ARTICLE PICK-UP AND DELIVERY APPARATUS
Merle A. Briggs, R.R. 2, Plaster Rock, New Brunswick, Canada
Filed Feb. 25, 1963, Ser. No. 260,501
6 Claims. (Cl. 198—178)



1. Article pick-up and delivery apparatus including two rotatable sprockets, a driven, endless, link chain passing over said sprockets, at least one pick-up and delivery element on said link chain, said pick-up and delivery element comprising a pick-up member extending outwardly from said link chain and substantially normal thereto, a tine projecting from said pick-up member in the direction of travel of said link chain and parallel thereo and a stripper extending outwardly from an immediately adjacent link of said link chain past said tine in substantially parallel overlying relationship to said pick-up member and in close proximity thereto, at least one of said rotatable sprockets being of sufficiently small diameter to induce movement of said stripper, as it passes over said one rotatable sprocket, away from said pick-up member throughout the length of said tine whereby to release an article retained by said tine.

3,200,937
CONVEYOR SYSTEMS
Sidney Jefferson, Abingdon, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Apr. 18, 1962, Ser. No. 188,454
Claims priority, application Great Britain, Apr. 27, 1961, 38,628
2 Claims. (Cl. 198—179)



1. A package carrier for use in a conveyor system for a package irradiaiton plant, comprising:

(a) a tubular container mounted on a trolley and open at its opposite longitudinal ends,

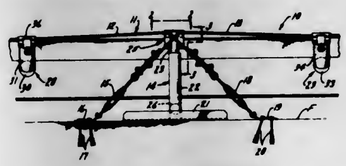
(b) a fulcrum on the trolley around which the container may pivot,

(c) said fulcrum being positioned below the center of gravity of the container and offset sideways relative to the center of gravity such that when loaded the container may be moved from a package loading horizontal alignment to a vertical alignment for package transit, through a dead center position, or vice versa, and brought to rest by gravity biased abutment with a relatively fixed member on the trolley,

(d) abutment means on said trolley against which said container rests in said two positions,

(e) and package retaining means at the bottom of said container.

3,200,938
ROPE ANCHOR STRUCTURE
Mary L. Stinson, Chicago, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 24, 1962, Ser. No. 225,577
9 Claims. (Cl. 198—192)



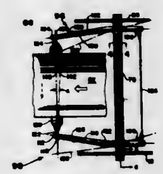
1. An anchor point for supporting a rope sideframe conveyor and limiting endwise movement of the rope sideframes at a location intermediate the ends of the conveyor comprising:

a base;

a pair of horizontally spaced vertical posts extending generally vertically upwardly from and adapted to be disposed on each side of the conveyor;

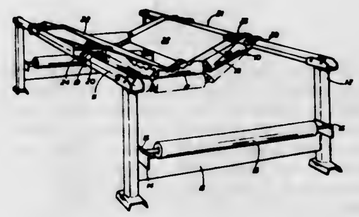
means supported by each post for holding oppositely extending ropes in alignment with one another and with the respective end portions thereof anchored in criss-crossing, overlapping relation across the post.

3,200,939
BELT CONVEYOR
William N. Poundstone, Morgantown, W. Va., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application June 17, 1958, Ser. No. 742,590. Divided and this application Feb. 17, 1964, Ser. No. 345,196
7 Claims. (Cl. 198—192)



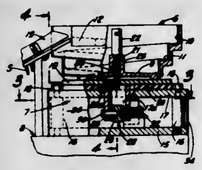
1. In a self-aligning flexible troughed idler roller assembly the combination comprising a pair of idler roller supporting members positioned in spaced relation to each other and having front end portions and rear end portions, a base member secured at its ends to a pair of spaced flexible strands and extending laterally therebetween, said supporting members each pivotally secured to said base member intermediate said end portions, a flexible troughed idler roller connected to both of said supporting members adjacent said front end portions and extending therebetween, and a spacer member connected to said supporting members adjacent said rear end portions, said supporting members adapted to pivot laterally relative to said base member and move downwardly upon lateral deviation of a conveyor belt supported by said idler roller so that said idler roller urges said conveyor belt in a direction opposite to said lateral deviation.

3,200,940
BELT CONVEYORS
Bernard Arthur Higgins, Storridge, near Malvern, England, assignor to The Mining Engineering Company Limited, Worcestershire, England, a British company
Filed Feb. 4, 1964, Ser. No. 342,474
Claims priority, application Great Britain, Feb. 16, 1963, 6,377/63
4 Claims. (Cl. 198—192)



1. A belt conveyor incorporating a belt, and resiliently mounted self-troughing idler roller assemblies supporting the belt and movable between a first level when the belt is unloaded and another level when the belt is loaded, in combination therewith, at least one belt supporting tray mounted between adjacent roller assemblies at a level below said first level of the rollers, and in a position to be frictionally engaged by the underside of said belt when the latter is loaded whereby said tray acts as a friction brake.

3,200,941
ARTICLE FEEDING APPARATUS
Don Heyer, 1019 N. Raymond Ave., Fullerton, Calif.
Original application Apr. 3, 1961, Ser. No. 100,413, now Patent No. 3,133,670, dated May 19, 1964. Divided and this application Mar. 10, 1964, Ser. No. 350,817
9 Claims. (Cl. 198—220)



1. Article feeding apparatus comprising: a hopper for containing a supply of articles; said hopper having a discharge mouth; means in said hopper for advancing said articles so as to discharge through said mouth in response to vibration of said hopper; actuating means operatively connected with the hopper for intermittently effecting movements thereof; a rigid support beneath said hopper; and an elastic disk having opposite surfaces disposed below said hopper and above said support respectively; means fixing one of said surfaces of said disk to said hopper; and means fixing the other of said surfaces to said support so that said disk will be deformed in reponse to said intermittent movements of said hopper to effect said vibration of said hopper.

3,200,942
ARTICLE PACKAGING
Richard C. Wagner, Doylestown, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 18, 1962, Ser. No. 231,536
5 Claims. (Cl. 206—45.31)



1. A package assembly comprising, in combination: an electronic device having elongated wire leads extending therefrom; a generally flat nonconductive package main member; a plurality of elongated conductive elements, one for each of the leads, affixed in spaced generally parallel relation over one face of the main member and constituting extensions of the leads, portions of said leads being electrically connected to the conductive elements, the remaining and substantial portions of the leads projecting beyond the main member and supporting the device in a position remote from said member; and a nonconductive covering member divided into three contiguous panels, the first panel constituting a generally flat backing section upon one face of which the main member is mounted, the second panel constituting a rearward flap section normally folded to a position in which it extends in coplanarity with the first panel and covers one side of the device and those portions of the leads which project beyond the main member, the third panel constituting a forward flap section normally folded over to a position in which it covers the other side of the device and its leads, said second and third panels, in such folded positions, being cooperatively disposed to either side of said device and its leads so that the latter are maintained in substantially fixed position, said forward flap section of said third panel in its normally folded position being fixed adhesively to a portion of the main member so that a part of each conductive element adjacent that portion of the main member is exposed and the covered device can be tested through the exposed conductive elements, said forward flap section being detachable from its recited adhesive attachment to the main member and foldable with respect to, and movable with, the rearward flap section of said second panel as it is folded to a second position in which the device is uncovered and the recited substantial portions of the leads project beyond the main member and its backing section, said lead portions thereby being exposed for connection in a circuit while the device is supported by said main member.

3,200,943
PACKAGE
Daniel E. Waterbury, Whitesboro, N.Y., assignor to Oberdorfer Foundries, Inc., Syracuse, N.Y., a corporation of New York
Filed Jan. 14, 1964, Ser. No. 337,592
3 Claims. (Cl. 206—65)



1. A package for a plurality of articles comprising a pair of like rectangular shaped mating article carriers moulded integrally from a plastic material such as expanded polystyrene, each of said carriers consisting of a plate portion having a row of uniformly spaced apart projections extending outwardly from one surface thereof, each of said projections being formed with an open article receiving cavity extending inwardly from the outer end of the projection toward said plate portion and having a depth at least equal to the cross sectional dimension of the article, the projection at one end of said row being located coincident with the adjacent end edge of the plate portion, and the projection at the opposite end of the row being spaced inwardly from the opposite end edge of the plate portion a distance equal to the spacing between said projections, whereby one carrier may be inverted and positioned on the other carrier of the pair with the projections of one carrier positioned intermediate the projections on the other carrier, and with the surface of each plate portion intermediate said projections overlying said open concavities in the projections of the other carrier, and means for detachably securing the pair of carriers together.

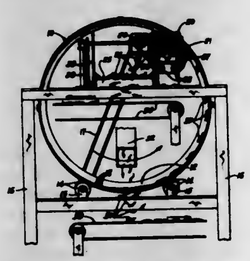
3,200,944
CONTAINER PACKAGE
George M. Rapata, Park Ridge, Ill., assignor to Illinois Tool Works, Inc., Chicago, Ill., a corporation of Delaware
Original application May 26, 1961, Ser. No. 112,933. Divided and this application Feb. 3, 1964, Ser. No. 342,098
5 Claims. (Cl. 206—65)

1. A package comprising a plurality of containers each having a portion of relatively large transverse dimension adjacent the upper end thereof and a portion of reduced transverse dimension therebelow, a relatively inflexible supporting base member with a pluraltity of apertures therein each of sufficient size to receive one of said containers with the upper ends of said containers extending above said base and the lower portions depending below said base, said base apertures and said containers being dimensioned relative to one another to provide a circumferential space between each container and the adjacent edge portion of the base about the respective apertures, and a sheet of relatively flexible material lying above and against said base member and over the upper ends of said containers, said relatively flexible material



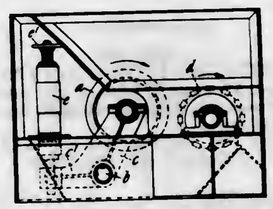
closely conforming to the shape of the upper recessed end of said container including the portion in engagement with the reduced transverse dimension, said relatively flexible sheet and said relatively inflexible base being secured together, and handle means provided in said base member and said relatively flexible sheet to facilitate carrying of the package.

3,200,945
BEAN SEPARATOR
James D. Cota, 324 Orchard St., Gillett, Wis.
Filed Oct. 22, 1962, Ser. No. 232,000
4 Claims. (Cl. 209—75)



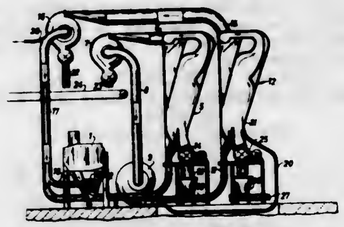
1. An apparatus for separating snipped beans from unsnipped beans comprising, in combination:
(a) an open ended cylinder, said cylinder having an inclined axis of rotation with an inlet for snipped and unsnipped beans at its upper end and an outlet for properly snipped beans at its lower end;
(b) a multiplicity of fixed fins in said cylinder wall,
(1) said fixed fins extending parallel to each other, being evenly spaced, extending longitudinally of said cylinder and defining slots between said fins substantially equal in width to the spacing of the fins, separated substantially only by the thickness of the fins, and being narrower than the diameter of the beans being separated,
(2) the margins of the material when the fins are formed defining edges presented to the material being separated;
(c) means for rotating said cylinder to enable the protrusions on the unsnipped beans to catch on the said edges, and be carried towards the upper portion of said cylinder while properly snipped beans without protrusions gravitate along the lower inclined surface of said cylinder towards said outlet;
(d) means, supported independently of said cylinder in the upper half thereof, for engaging unsnipped beans hanging from, and being at least partially supported by said edges to dislodge them from said edges; and
(e) means for catching said dislodged unsnipped beans and discharging them from said cylinder separately from the properly snipped beans.

3,200,946
SCREENING APPARATUS
Alexander Forsyth Jones, Surbiton, Surrey, England, assignor of one-half to Ross Engineers Ltd., Surbiton, England
Filed May 31, 1962, Ser. No. 199,162
Claims priority, application Great Britain, June 15, 1961, 21,607/61
4 Claims. (Cl. 209—106)



1. A screening apparatus including a first smooth roll, a second roll parallel to the first roll, the second roll being provided with a roughened or longitudinally ribbed periphery, fixed bearings supporting the second roll, a pair of resiliently mounted pivotable arms supporting the first roll, driving means for rotating the second roll, a first chain sprocket rigidly connected to the second roll, a second chain sprocket coaxial with the pivot axis of the arms, the second sprocket being a double sprocket, a drive chain interconnecting the first and second sprockets for rotating them in the same direction, a third chain sprocket rigidly connected to the first roll, and a driven chain interconnecting the second and third sprockets for rotating them in the same direction whereby the material to be screened is fed onto the first smooth roll and carried toward the second roll so that due to the roughened or longitudinally ribbed periphery of the second roll oversized particles are lifted by the frictional grip exerted by such periphery.

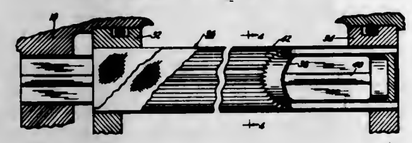
3,200,947
APPARATUS FOR SEPARATING TOBACCO AND THE LIKE MATERIAL
Waldemar Wochnowski, Hamburg, Germany, assignor to Hauni-Werke Körber & Co. K.G., Hamburg, Germany
Filed Sept. 27, 1961, Ser. No. 141,205
Claims priority, application Germany, Oct. 4, 1960, H 40,584
10 Claims. (Cl. 209—133)



1. An apparatus for separating a mixture of lighter and heavier tobacco particles into a first fraction which contains lighter particles and a second fraction which contains heavier particles, including a plurality of classifying separator boxes in a closed pneumatic system located in the order of the movement of the mixture to be separated, said separator boxes being divided into a first group and a second group each including at least one separator box, each separator box having an air inlet, an air outlet and a discharge device for one fraction of treated material, a single blower having a pres-

sure outlet and a suction inlet, means for connecting the suction inlet of said blower only to the outlet in each of said first group of classifying separator boxes and independent duct means for connecting the pressure outlet of said blower only to the inlet in each of said second group of classifying separator boxes, the discharge device of each preceding separator box being arranged to discharge into the inlet of the next following separator box in the order of movement of the material to be separated.

3,200,948
ANTI-ICING FILTRATION UNIT
Walter Kasten, Madison Heights, Mich., assignor to The Bendix Corporation, Madison Heights, Mich., a corporation of Delaware
Filed Oct. 12, 1960, Ser. No. 62,133
6 Claims. (Cl. 210—184)



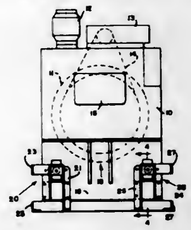
1. A fluid filtering and heater device comprising a housing having first inlet and outlet ports for passing a first fluid therethrough and second inlet and outlet ports for passing a second fluid therethrough, partition means for separating said first inlet and outlet ports from said second inlet and outlet ports, a filter located in said housing and interposed between said second inlet and outlet ports for filtering said second fluid, a hollow member located downstream of said filter, a pleated element located between and in contact with said filter and said hollow member for dividing said second fluid into relatively thin streams after said second fluid has passed through said filter, means for closing off one end of the trough formed by the outer grooves of the pleated element and causing flow of said second fluid downstream of said filter to be along all of the outer grooves of said pleated element towards one end of said hollow member and then along all of the inner grooves of said pleated element towards the other end of said hollow member, and means for flowing said first fluid into and out of the hollow portion of said member.

3,200,949
SLUDGE FLOCCULATING AND FILTERING APPARATUS
Willi Aulich, Buchschlag, and Georg Podlich, Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany, a German corporation
Filed Apr. 4, 1961, Ser. No. 102,569
Claims priority, application Germany, Apr. 8, 1960, M 44,934
3 Claims. (Cl. 210—205)



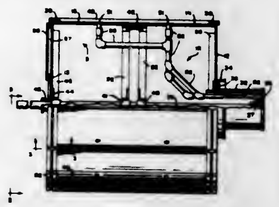
1. Filtering apparatus for flocculating and thereafter filtering flocculated sludge material which comprises a liquid-impermeable elongated substantially horizontally disposed feed conveyor belt having a receiving end and a feeding end, a hopper being disposed adjacent to the receiving end of the feed belt for introducing sludge material to be treated onto said feed belt, a plurality of separate treating liquid dosage means being provided at spaced intervals along said feed belt for individually supplying flocculating agents in predetermined dosages to the sludge material introduced onto said feed belt and being conveyed thereby, means defining a filtering zone for filtering sludge material therein, including a liquid-permeable elongated horizontally disposed filter conveyor belt having an inlet end and a discharge end being disposed for the same longitudinal direction of movement as said feed belt, the feeding end of said feed belt being positioned slightly above said filter belt and inwardly displaced with respect to the outermost portion of said inlet end, and an incline member positioned for flow conveying sludge material from the feeding end of said feed belt to the inlet end of said filter belt.

3,200,950
LAUNDRY MACHINES
Frederick R. Gruner, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 17, 1963, Ser. No. 252,205
4 Claims. (Cl. 210—364)



1. In a washer-extractor, a housing; a basket mounted in said housing for rotation about a horizontal axis; a structural base framework along opposed side walls of said housing, said framework including mounting faces that lie in planes that are transverse to the axis of rotation of said basket; shear-type rubber mountings located between said mounting faces and said housing such that the shear planes thereof are parallel to the plane of rotation of said basket; resiliently mounted shoe means between said framework and said housing for providing a frictional resistance within planes parallel to the plane of rotation of said basket; and heavy inertia means fixed to the bottom of said housing.

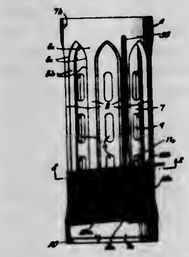
3,200,951
FILTER
John E. Krynski, East Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 9, 1962, Ser. No. 236,667
2 Claims. (Cl. 210—404)



1. A drum filter comprising in combination, two plastic drum half portions of similar construction, each having one end closure integrally molded to a hollow cylinder, the open ends of said cylinders being in abutting relation to each other; seal means including sealing ring means

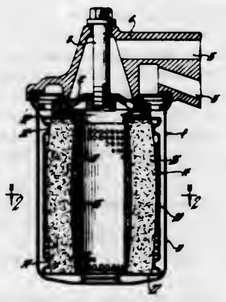
joining the abutting edges of the open ends of said cylinders; external peripheral channel-shaped grooves extending about the periphery of each half portion adjacent the juncture between the end closure and the hollow cylinder; peripherally spaced plastic divider strips extending parallel to the longitudinal axis of said drum and bonded to its outer periphery, said divider strips extending the entire distance between said grooves and forming shallow pockets about the periphery of said drum; ports in said pockets; tubing leading from said ports to a valve housing supported by one of said end closures; arcuately shaped grid means mounted within each of said shallow pockets, means interlocking said means with the divider strips in said pockets; filter media surrounding the periphery of said drum; walls defining grooves extending longitudinally of said divider strips; and caulking means within said peripheral and longitudinally extending grooves securing said filter media to the periphery of said drum.

3,200,952
COILED FILTER HAVING UNIFORM SURFACE POROSITY
Jacques Alphonse Jardin, Paris, France, assignor to Compagnie Electro-Mecanique, Paris, France, a company of France
Original application Mar. 25, 1960, Ser. No. 17,688, now Patent No. 3,105,289, dated Oct. 1, 1963. Divided and this application June 21, 1963, Ser. No. 289,670
Claims priority, application France, Dec. 1, 1959, 811,845, Patent 1,250,592; Jan. 18, 1960, add. app. 815,938 (now add. # 77,314, Jan. 8, 1962)
2 Claims. (Cl. 210—457)



1. A coiled filter comprising a generally cylindrical framework having spaced, coaxial, cylindrical terminal members and a plurality of spaced, circularly arranged, parallel ribs, rigidly interconnecting said terminal members, said ribs having gradually widened ends and adjoining each other sharply-angularly at their junctures with said terminal members in the form of pointed arches, the spacing between said ribs being substantial to provide relatively wide filtering areas therebetween, the framework being formed with an external helical groove extending into said terminal members and about said ribs, and a winding of fine wire disposed under tension in said helical groove with its opposite ends extending about said terminal members; the turns of said groove being so spaced as to maintain the turns of wire therein spaced from each other to an extent less than the size of particles to be prevented from passing therebetween and being uniformly spaced from each other from an area at said gradually widened rib-ends, over the points of said arches, and into adjacent areas of said terminal members; and the wire winding being in generally polygonal form at intermediate points of said ribs and being graduated in form from said intermediate points to the points of said pointed arches, whence the winding continues into said terminal members, in cylindrical form, without interruption in the uniform spacing of the turns of wire of the winding at the points of said arches.

3,200,953
FILTER CARTRIDGE WITH PLEATED ELEMENT
Julius M. Komarmy, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 229,014
3 Claims. (Cl. 210—457)



2. A filter cartridge comprising a perforated housing member and a perforated tube member coaxially arranged, impermeable end plates connecting said members and cooperating therewith to define an annular chamber, one of said end plates having a central discharge opening, a sheet of filter medium formed into pleats each having an acute angle narrow apex extending from one of said end plates to the other, retaining means surrounding and contacting the outer perimeter of each end of said pleated sheet, annular shoulder means interposed between an intermediate portion of said tube member and said pleated sheet and extending into said annular chamber, and said retaining means and annular shoulder means exerting pressure in radial directions against said pleated sheet and causing each of said pleats to be bowed with respect to the axis of the said members.

3,200,954
POT STRAINER
William Marcus, Cleveland, Ohio, assignor to Merrymaid Plastics Corp., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 3, 1960, Ser. No. 66,968
3 Claims. (Cl. 210—470)



1. A pot strainer comprising a flat body having a curved edge and a straight edge defining the contour of a segment of a circle and a chord thereof, said body having a plurality of openings therethrough, a circularly contoured rim projecting from one face of said body and a flange adjacent said rim and projecting from the opposite face of said body, handle securing means carried by said one face of said body, said handle securing means being resilient and including an elongated U-

shaped member extending parallel to said straight edge, said U-shaped member having a through passage generally parallel to said straight edge, said passage being a handle-receiving tunnel, said member having a pair of projections projecting into said passage, said handle-receiving tunnel having a pair of opposed handle entrances, a handle having gripping end and support end portions, said support end portion being releasably and selectively positionable in said tunnel through each entrance, said gripping end portion of said handle being vertically spaced from said one face of said body and generally parallel to said straight edge, said member being in compressive abutment with said support end portion of said handle, said handle having a pair of apertures positioned to interlock with said projections when said handle is engaged in said tunnel, and said handle and said body each being unitary one-piece molded plastic members.

3,200,955

FILTRATION APPARATUS FOR FILTERING LIQUIDS

Thomas Claude Worth and Alan George Hobson, both of Cox Green, Maidenhead, England, assignors to British Filters Limited, Maidenhead, Berkshire, England

Filed Feb. 5, 1962, Ser. No. 170,893

Claims priority, application Great Britain, Mar. 15, 1961, 9,527/61

2 Claims. (Cl. 210—492)



1. In a filter, the combination of a plurality of rigid filter mats arranged in parallel planes presenting one edge to a source of liquid to be filtered and its other edge to a discharge passage, each mat being formed of a self-supporting layer of fibrous material and having a series of alternately thick and thin portions providing channels of substantially rectangular cross-section separated by rib formations on one side of said mat, the other side of said mat having a wave-like contour parallel to said channels, rigid separating means located at each said edge between adjacent mats, the alternate separating means at the one edge having inlet means having openings therein for passage of the liquid to be filtered, and alternate separating means at the other edge of said mats having outlet openings for passage of filtered liquid, and means pressing said rigid separating means toward one another under heavy pressure in a direction normal to the planes of said mats, whereby the margins of said mats between said rigid separating means are crushed and flattened to provide a sealing effect.

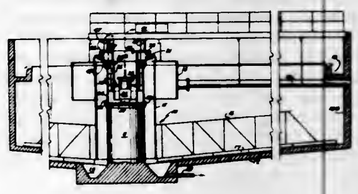
3,200,956

CONTINUOUSLY OPERATING SEDIMENTATION TANKS

Russell C. Raynor, South Salem, N.Y., and Charles H. Scott, South Norwalk, Conn., assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Continuation of application Ser. No. 95,853, Mar. 15, 1961. This application Dec. 22, 1964, Ser. No. 423,892

12 Claims. (Cl. 210—531)



1. In a sedimentation apparatus having a settling tank, said settling tank having a stationary base portion the combination which comprises a rotary sediment engaging structure rotatable about a vertical axis and provided with a central vertical cage portion, a toothed bull gear fixed to said cage portion concentric with the axis of rotation of said sediment engaging structure, a turntable base supported on said base portion for vertical movement thereon, vertical guide means secured to said turntable base, annular thrust bearing means mounted on said turntable base and supporting said cage portion and bull gear for rotation on said turntable base, gear means on said turntable base in driving engagement with said bull gear for rotating said cage and sediment engaging structure relative to said turntable base, a fixed upright guide structure supported on said base portion within the area surrounded by said cage portion and having means cooperating with the guide means on said turntable base for vertically guiding said turntable base while securing the same against rotation, actuating means raising or lowering said turntable base together with said thrust bearing means, said bull gear, said gear means, said cage portion, and sediment engaging structure, and means for imparting driving power to said gear means for rotating said sediment engaging structure on said turntable base.

3,200,957

DISPLAYING MEAT FOR SELF-SERVICE

Lawrence J. Morin, P.O. Box 1284, Sierra Vista, Ariz.

Filed June 15, 1964, Ser. No. 375,281

5 Claims. (Cl. 211—1)



1. In a refrigerated open cabinet for the self-service display of meat, including a base grill for passage of cooling air,

(a) a meat display rack of elongated generally rectangular cross section, said display rack having

(b) an apertured base section, and

(c) a plurality of transverse upstanding spaced cleats supported by said base section;

(d) said display rack adapted to support a plurality of meat packages of generally uniform size in overlapping relation to display as a part of each meat package a label containing pricing and the like data,

(e) each such cleat having a surface defining an acute angle with said base section for supporting a bottom portion of the meat package, and a top edge holding the meat package in sloping relation above the rack.

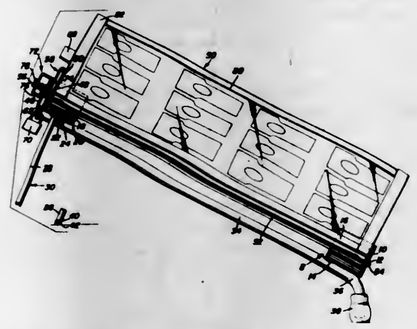
3,200,958

PILFER-PROOF ARTICLE DISPLAY RACK AND STAND

Thomas E. Hudgeons, Sr., 12540 Edgewater Drive, Lakewood 7, Ohio, and Thomas E. Hudgeons, Jr., 5751 Parkland Drive, Parma 30, Ohio

Filed Nov. 23, 1964, Ser. No. 412,905

15 Claims. (Cl. 211—4)



1. A device of the class described comprising a composite panel construction embodying a frame having interconnected compartment parts joined together and each one channel-shaped in cross-section with the channels communicating and providing a receiver, the latter being open at one end and permitting a card to be fittingly inserted into the reception channels, a card having selectively usable pockets on front and back sides, individual coin holders fitted into said pockets, said cards with the pocketed holders being fitted in said channels but withdrawable therefrom through an open end provided for the withdrawal step, base supported means for display counter use, said means having frame members provided with bearing holes, said panel having attaching and hinging journals which are removably journalled in their respective bearing holes, and a guard removably mounted between said panel and the frame members and locking means locking the guard to the frame members.

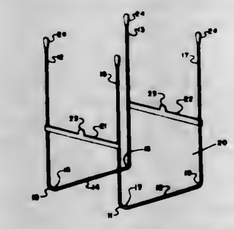
3,200,959

RACK

Bertha L. Theim, 5020 Fremont S., Minneapolis 19, Minn.

Filed Nov. 29, 1963, Ser. No. 326,829

4 Claims. (Cl. 211—49)



2. A rack for supporting flat articles such as folded newspapers, magazines or the like, said rack consisting of

(a) a base,

(b) four spaced uprights arranged in quadrilateral relation and carried by said base,

(c) spaced cross bars connected to opposite pairs of said uprights,

(d) each pair of uprights being spaced apart, a predetermined distance to accommodate the article to be carried by said cross bars,

(e) the corresponding uprights of each pair being spaced apart, a distance sufficient to receive the desired number of articles on said cross bars,

(f) said cross bars being disposed above said base to provide a clear working space between the lower edges of said articles when supported on said cross bars and said base to permit of extending a cord through said space and about the articles and of tying said cord to bundle said articles.

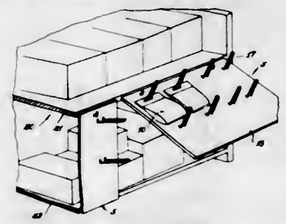
3,200,960

DISPLAY DEVICES

George Basse, Sterling, Ill., assignor to National Manufacturing Co., Sterling, Ill., a corporation of Illinois

Filed May 7, 1962, Ser. No. 192,909

4 Claims. (Cl. 211—59)



1. Apparatus of the type described comprising,

a panel member, and

a support for said panel member,

said panel member having a plurality of openings therethrough,

a plurality of hanger brackets removably mounted on said panel member in said openings in a geometric pattern determined by the arrangement of said openings in said panel member,

a plurality of packages supported on said hangers,

said hangers being spaced apart a sufficient distance such that the packages supported thereby do not overlap one another,

said panel carrying indicia thereon under each hanger corresponding in identity to the article in the package suspended from the corresponding hanger and in position to be overlaid by the package,

said support including a plurality of vertically-spaced, horizonal shelves, and suspension means for suspending said panel member from the front edge of an upper shelf in position and overlying the next lower shelf to thereby openly display said panel member and packages in a convenient ordered arrangement.

3,200,961

MERCHANDISE DISPLAY RACK

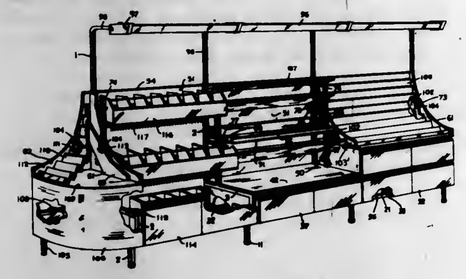
Harvey L. Kolster, Independence, Mo., and Frederick A. Burke, Mamaroneck, and Douglas A. Long, New York, N.Y., assignors to Hallmark Cards, Incorporated, Kansas City, Mo., a corporation of Missouri

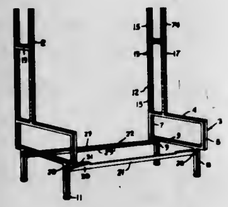
Filed Apr. 23, 1963, Ser. No. 275,017

8 Claims. (Cl. 211—148)

7. A sectional knock-down merchandise display assembly for supporting display members comprising the combination of: a plurality of laterally spaced planar metal frames of tubing and each having a center portion including joined bars, spaced apart forward and rear vertical legs extending downwardly from one of said bars and terminating at the lower ends thereof in foot members for supporting said respective frames, a rear support column

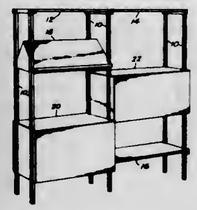
extending upwardly from one of said bars and having vertically spaced apart perforations extending transversely therethrough, a front support column extending upwardly from one of said bars and spaced forwardly of said rear support column and having vertically spaced apart perforations extending transversely therethrough, front and rear elongated horizontally extending supports between respective frames, said supports terminating at opposite ends thereof in joining portions, said joining portions engaging said respective legs forming firm joints therebe-





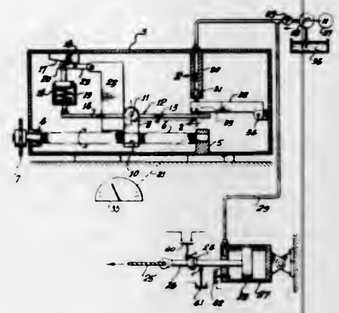
tween for spacing said frames, pins receivable in said front and rear supports column perforations for supporting display members between respective frames, said rear support columns terminating at the upper end thereof in extension receiving socket openings, vertical support members terminating at the lower ends thereof in depending supporting pins receivable in said respective support column socket openings, and forwardly extending struts secured to the upper ends of said vertical support columns, said latter struts supporting elongated transversely extending lighting units therebetween over said frames.

3,200,962
COMPOSITE FURNITURE ASSEMBLY
Russell Frank Davelaar, Tacoma, Wash., assignor to Northwest Chair Company, Tacoma, Wash., a corporation of Washington
Filed Nov. 12, 1963, Ser. No. 322,732
2 Claims. (Cl. 211—177)



1. A composite furniture assembly comprising:
(a) a plurality of standards arranged at least one at each end of the assembly,
(b) each standard having transversely and completely therethrough a plurality of longitudinally spaced openings,
(c) at least one furniture unit adapted for support between the standards and provided at opposite ends with transverse openings arranged and sized to register with selected ones of the openings through the standards,
(d) fastening means dimensioned for insertion through the registering openings in the standards and furniture units, thereby securing the assembly components to each other, and
(e) the fastening means comprising nut and bolt means, the nuts of the nut and bolt means having spurred flanges, there being two nuts placed back to back in each standard opening for mounting furniture units on opposite sides of the standards.

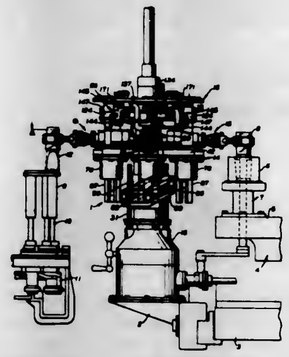
3,200,963
MOMENT COMPARATOR
Laszlo G. Vermes, 1312 Edgehill Drive, Pomona, Calif.
Filed July 5, 1963, Ser. No. 292,849
7 Claims. (Cl. 212—39)



1. A moment comparator generally comprising a fulcrum, a lever positioned to be pivotally movable about said fulcrum, a first variable force means spacially fixed relative to said lever and applying a first force to a fixed point on said lever to move the lever about said fulcrum, a second variable force means imposing a second force on said lever to urge it about said fulcrum in a direction opposite to that induced by said first force, and means connected to said fulcrum, lever, and first force means for moving them relative to said second force means so as to vary the point of application of said second force to said lever, thus changing the moment about said fulcrum occasioned by said second force, without changing the moment about said fulcrum occasioned by said first force means, and means associated with the above for indicating the moments applied to the lever.

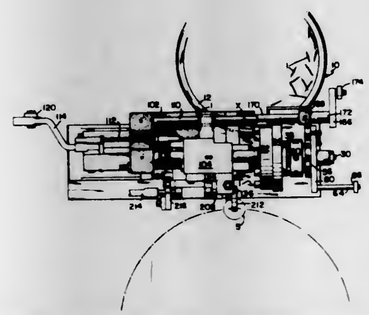
3,200,964
ARTICLE HANDLING APPARATUS
John W. Eldred, 723 Grandon Ave., Columbus 9, Ohio
Original application Aug. 8, 1959, Ser. No. 831,195, now Patent No. 3,034,822, dated May 15, 1962. Divided and this application Mar. 29, 1962, Ser. No. 183,480
6 Claims. (Cl. 214—1)

1. Apparatus for handling articles comprising a rotatable turret, an article-handling unit mounted on the turret for movement therewith about the axis of the turret and having an axis extending radially of the turret, means for inverting the article handling unit during its movement with the turret and comprising means for rotating the unit about its axis, stops between the turret and the unit for engaging the unit to limit its rotation to substantially 180° about its axis, and means for actuating said inverting means and comprising a cam follower yieldingly connected to said inverting means and moving with the turret, and a relatively fixed continuous cam ex-



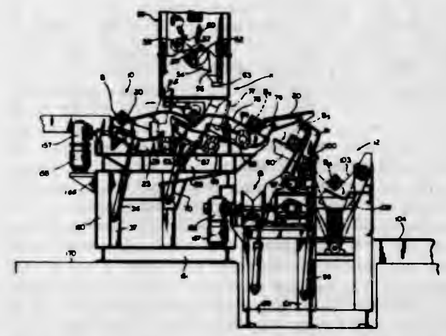
tending around the axis of said turret, said cam having a continuous closed groove in which said follower travels so that said inverting mechanism is under positive cam control at all times during the rotation of the turret.

3,200,965
FILAMENT TRANSFER APPARATUS
John P. Saunders, Danvers, Herbert K. Dick, Lynnfield, and Armand L. Tardiff, Salem, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 24, 1962, Ser. No. 232,723
3 Claims. (Cl. 214—1)



1. A coiled filament transfer apparatus comprising: a valve having a stationary plate and a movable plate, each having an inner and an outer face opposite one another, with the adjacent inner faces being in gas-sealing engagement with one another; a plurality of filament-carrying heads disposed about the outer face of said movable valve plate; means for moving said movable valve plate with respect to said stationary valve plate to advance the heads thereon to a plurality of stations including a filament pickup station and a filament discharge station; means at the pickup station for presenting filaments end on to the heads, and means for drawing a filament into each of said heads and retaining it therein during the travel of each of said heads between said filament pickup station and said filament discharge station, said heads each having a suction port therethrough of a diameter between the diameter of the wire of the coiled filament and the diameter of the coiled portion of the filament.

3,200,966
RAPID TRANSVERSE UNLOADING MECHANISM
Jack A. Peterson, Downers Grove, and Joseph L. Delbel, Palatine, Ill., assignors, by mesne assignments, to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 11, 1962, Ser. No. 243,798
6 Claims. (Cl. 214—1)



1. In billet inspection apparatus including an inspector's platform,
means providing an inspection station adjacent the inspector's platform including a plurality of chain sling means,
means for delivering a billet toward said inspection station from a side thereof opposite the inspector's platform,
means for receiving the delivered billet from the billet delivering means and gradually lowering the billet to said chain sling means,
means for transferring an inspected billet upwardly and laterally from said chain sling means,
conveying means situated adjacent said inspection station on the side thereof opposite the inspector's platform for conveying an inspected billet longitudinally away from the inspection apparatus, and
means for receiving an inspected billet from said transferring means and for gradually lowering the billet to said conveying means.

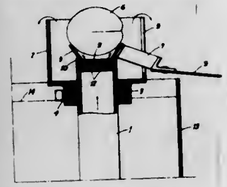
3,200,967
AUTOMATIC TRANSFER DEVICE
Giuseppe Delzanno, Turin, Italy, assignor to Fiat Societa per Azioni, Turin, Italy
Filed Nov. 26, 1963, Ser. No. 326,122
Claims priority, application Italy, Nov. 27, 1962, 23,561/62
6 Claims. (Cl. 214—1)



1. An assembly line conveyor comprising a first guide rail means, a truck means comprising a body reciprocably movable along said side rail means, movement of said truck means being effected by a pair of hydraulic jacks, said jacks having plunger rods operatively connected to said truck means, each rod alternately imparting movement to said truck means in only one direction along said rail means, movement imparted by one rod being oppositely directed to that imparted by the other, said truck means comprising rollers for riding on said rail means, said truck

means comprising a pair of elongated parallel arms each pivoted at one end to the body of said truck means and having a gripping device pivotally attached to the other ends, one of said arms having a roller between its ends, said roller riding on a second guide rail means which comprises upper and lower tracks, a hydraulic jack located at each end of said second rail means and comprising a lug plunger rod movable transversely of the length of said second rail means and an elevator lug on the end of the rod, each elevator lug being aligned to form a continuous surface with said upper and lower tracks respectively, of said second rail means when each lug plunger rod is at the upper or lower limit, respectively, of its stroke, said roller on said arm riding on the upper and lower tracks respectively, of said second rail means during respective reciprocal movements of said truck and leaving said second rail and coming to rest on respective ones of said elevator lugs when said truck means is at the opposite limits of its reciprocal movements, all the aforementioned hydraulic jacks being synchronously correlated one with the other so that when said truck means reaches one limit of its reciprocal movement a one of said elevator lugs is in position to receive said arm roller thereon as said roller leaves either the upper or lower track of said second rail means, said one elevator lug then being moved by its associated jack to a position in alignment with the other track of said second rail, whereby when said truck means performs its reciprocal movement away from said one limit the arm roller will ride on said other track of said second rail.

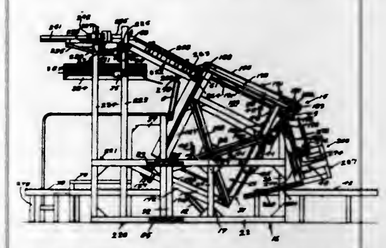
3,200,968
FRUIT ORIENTING JET UNIT
Norman E. Gaddini, Rte. 1, Box 86, Winters, Calif.
Filed Dec. 23, 1963, Ser. No. 332,717
10 Claims. (Cl. 214—1)



1. A fruit orienting unit comprising an upstanding pipe arranged to receive an upwardly directed flow of water under pressure, a sloping-sided open-ended fruit receiving cup adapted to seat on the upper end of the pipe and to be lifted therefrom after the fruit thereon has been oriented, a plug in the pipe at its upper end, and passage means in the plug arranged to cause a circumferential water jet pattern to be directed upwardly in the cup radially inward from the lower edge thereof; said means comprising a plurality of passages extending through the plug in a circular row concentric with the axis of the plug and of the cup; the passages being disposed at an upward and outward slope less than that of the slope of the cup.

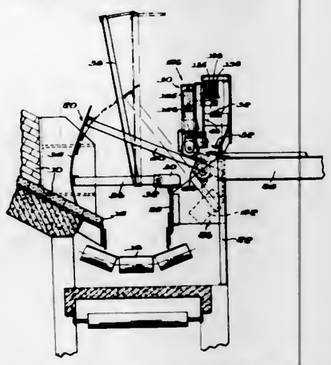
3,200,969
CONTAINER PALLETIZING AND DEPALLETIZING MACHINE
Homer W. Madden, R.R. 3, Box 119, Scottsburg, Ind.
Filed July 24, 1963, Ser. No. 297,349
12 Claims. (Cl. 214—8.5)

1. A machine for palletizing containers comprising a frame, a bin, means supporting said bin on said frame for rocking movement about a substantially horizontal axis, said bin having side walls, a rear wall and an open front, said bin additionally including a bottom and a top wall, said top wall being disposed above and spaced from an upper end of said rear wall, a lift disposed within said bin and supported by said bottom including a vertically movable top portion adapted to support a pallet at different elevations within said bin, means connected to said frame and bin for moving the bin between an upright position and a tilted position with the open front of the bin inclined upwardly, and driven endless con-



veyor means supported by the upper portion of said bin including a lower flight movable along the underside of said top wall for controlling the movement of a tier of containers into said bin through its open front and onto the pallet or onto a previously deposited tier of containers, said bin being disposed in a tilted position thereof during movement of the containers into the bin.

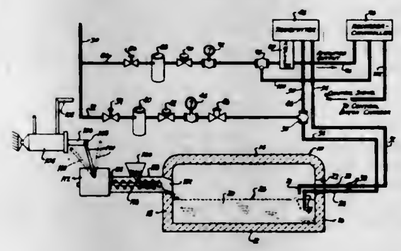
3,200,970
COKE HANDLING APPARATUS
John H. Kromer, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed May 11, 1964, Ser. No. 366,521
6 Claims. (Cl. 214—17)



1. In a material handling apparatus the combination comprising,
an inclined coke wharf having a lower longitudinal edge portion,
a plurality of gates positioned linearly adjacent said wharf lower edge portion said gates operable in a closed position to retain coke on said coke wharf,
each of said gates pivotally secured to a support member and having a frame member extending laterally therefrom, said frame member having a cross member arranged substantially parallel to said coke wharf lower edge portion,
each of said gates arranged to move upwardly away from said coke wharf upon downward movement of said frame cross member,
an endless belt conveyor positioned below said coke wharf lower longitudinal edge portion in parallel relation thereto, said endless conveyor means arranged to convey coke discharged from the lower longitudinal edge of said coke wharf to another location,

a guide member positioned parallel to said coke wharf lower longitudinal edge portion,
a trolley member supported by said guide member and movable longitudinally thereon,
a gate actuator mechanism carried by said trolley and movable therewith, said gate actuator mechanism operable upon actuation to move said frame cross member downwardly to open a gate and discharge coke retained on said wharf by said gate onto said endless belt conveyor mechanism, and
means for propelling said trolley member on said guide member to selectively position said gate actuator mechanism in operative relation with a preselected gate.

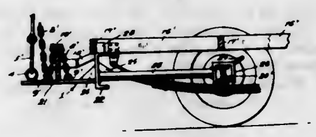
3,200,971
APPARATUS AND METHOD FOR CONTROLLING LIQUID LEVEL
William C. Trethewey, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Aug. 1, 1961, Ser. No. 128,474
10 Claims. (Cl. 214—18.2)



1. In a method of controlling molten glass level in a glass melting furnace having a combustion heated glass melting chamber wherein the atmospheric pressure above the molten glass in said chamber fluctuates due to variations in the combustion, the steps of discharging a gaseous stream at a low velocity and constant volumetric flow at a fixed point beneath the surface of the glass melt, the hydrostatic head of the glass melt and atmospheric pressure above the melt determining the pressure of the gaseous stream required to maintain constant gaseous flow as intermittent slow rate bubbling, sensing the pressure variations in the gaseous stream caused by changes in said hydrostatic head of glass and in said combustion atmosphere to provide a signal, sensing said combustion atmosphere pressure and subtracting the pressure of said atmosphere from said signal to provide an altered signal, and utilizing said altered signal to control the rate of batch charging to the glass melting process.

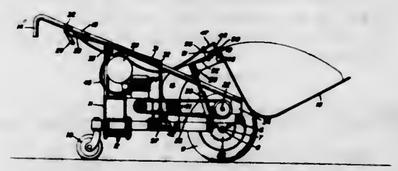
9. In a level sensing mechanism for a glass melting furnace having a melting chamber in which materials are melted to form a body of molten glass and a forehearth from which molten glass is released, and wherein a fluctuating combustion atmosphere in the melting chamber contributes to fluctuations of the liquid level in the forehearth,
a first probe having a tip submerged in the liquid within the forehearth at a fixed point in space,
means for supplying a gas to said tip at a constant volumetric rate of flow and at a pressure variable in accordance with the distance of said tip beneath the surface of the liquid, to provide small individual bubbles traveling in sequence between said tip and the surface of the liquid,
a second probe open to said fluctuating combustion atmosphere,
and means for measuring the difference between the gas pressures in said probes to provide a signal corresponding to variations of level in the body of molten glass.

3,200,972
TOW BAR
Robert H. La Venture, Box 95, R.F.D., Mooers Forks, N.Y.
Original application Dec. 13, 1961, Ser. No. 159,193, now Patent No. 3,154,204, dated Oct. 27, 1964. Divided and this application Aug. 31, 1964, Ser. No. 397,062
1 Claim. (Cl. 214—86)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A tow-bar for a vehicle, said vehicle including a frame, a front axle and a bumper, said tow bar comprising a forwardly tapering flat plate, a ring secured to its forward end for the engagement of a lifiting device therein, a transversely disposed channel iron rigidly secured to the rearward end of said plate and rising thereabove, a pair of upstanding ears rigidly secured, one each, to each end of the topside of said channel iron, a pair of parallel, rearwardly extending tubes rigidly fixed to the rearward side of said channel iron and a transversely disposed, inverted U-shaped beam rigidly secured to the rearward ends of said tubes for engagement over said front axle whereby when said tow bar is raised by said ring, said channel iron will support said vehicle frame, said ears will prevent side slippage thereof and said bumper will rest on said plate.

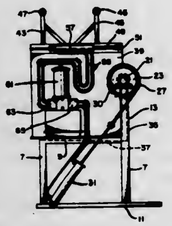
3,200,973
POWER BARROW
Donald D. Galbraith, 1855 Cox Road, Aptos, Calif.
Filed Jan. 8, 1963, Ser. No. 250,074
5 Claims. (Cl. 214—140)



1. A power wheelbarrow comprising, in combination, a horizontal frame, upper and lower parallel shafts journaled transversely on the front portion of said frame, drive wheels journaled on the end portions of the lower shaft, a caster wheel on the rear portion of the frame, rearwardly and upwardly inclined handle bars on the longitudinal side portions of the frame, an engine mounted on the frame, aligned pulleys on the engine and the upper shaft, a normally loose inoperative endless drive belt trained over said pulleys, manual means on the frame for tightening the belt for operatively connecting the engine to the upper shaft, speed reduction gears operatively connecting said upper shaft to the drive wheels, a pair of upwardly arched arms pivotally mounted for vertical swinging movement on the frame and extending forwardly therefrom, a scoop journaled for vertical swinging movement between the free end portions of said arms,

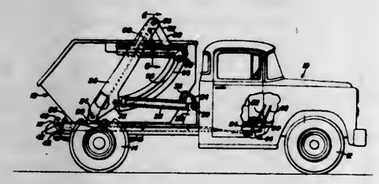
a pair of spaced, parallel front and rear transverse brace bars extending between the arms, means on the frame for raising and lowering the arms, and means on the front bar for releasably securing the scoop against swinging movement in load-carrying position on the arms, the second-named means including a hydraulic jack mounted on the frame and operatively connected to the rear brace bar, a fluid pump on the frame operatively connected to said jack, aligned pulleys on the engine and said pump, a normally loose, inoperative endless drive belt trained over the second-named pulleys, and manually operable means on the handle bars for tightening the second-named belt for operatively connecting the engine to the pump.

3,200,974
DOUBLE BIN DUMPING MACHINE
Samuel Ciraolo, Modesto, Calif., assignor, by mesne assignments, to Carnation Company, Los Angeles, Calif., a corporation of Delaware
Filed Feb. 19, 1963, Ser. No. 259,667
4 Claims. (Cl. 214—314)



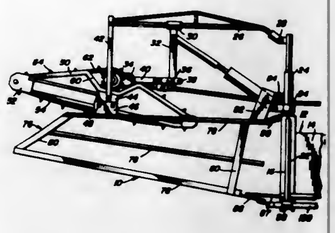
1. A multiple bin dumping machine comprising in combination:
(a) a frame member adapted to hold thereon a bottom bin and an upper bin in superimposed relationship;
(b) means for preventing relative vertical movement of the bins;
(c) means for turning said frame to an inverted position whereby both bins are at least partly inverted and whereby said top bin is dumped; and
(d) means for moving the top bin laterally with respect to the bottom bin, said lateral movement of the top bin effecting release of the material in the bottom bin.

3,200,975
REFUSE CONTAINER AND TRANSPORTING VEHICLE
Harley F. Chase, Rte. 1, Scott Depot, W. Va.
Filed Mar. 31, 1964, Ser. No. 356,269
9 Claims. (Cl. 214—317)



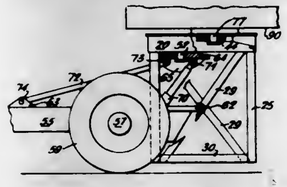
1. A refuse container and transporting vehicle combination, said vehicle including a load bed, a pair of upstanding support arms pivotally supported from opposite sides of said vehicle at their lower ends for simultaneous movement between first forwardly and upwardly inclined positions and second rearwardly and upwardly inclined positions about generally horizontally disposed and aligned axes extending transversely of said vehicle, a pair of hanger frames pivotally supported from the upper end portions of said arms for rotation about axes generally paralleling the first mentioned axes, said container being receivable on said load bed between said arms and said hanger frames when said arms are in said second positions, the rear lower end of said container and said load bed including first coacting means, capable of being rendered inoperative, releasably pivotally connecting said container to said load bed for rotation about an axis generally paralleling the first mentioned axes, said hanger frames and the corresponding opposite sides of said container including second coacting means releasably securing said frames to said container for lifting and swinging the latter off said load bed and to the ground disposed rearwardly of said load bed upon rearward swinging movement of said arms and vice versa when said coacting means are inoperative and for automatically pivotally supporting said container from said hanger frames, when said first coacting means are operative, for swinging the forward end of said container upwardly about said axis upon rearward swinging movement of said arms and for subsequently lowering the forward end of said container upon forward swinging movement of said arms.

3,200,976
COMBINED VEHICLE ASSEMBLY AND LOADER
Joe A. Nieto, Jr., Rte. 2, Box 49, Roswell, N. Mex.
Original application Oct. 19, 1959, Ser. No. 847,187, now Patent No. 3,052,342, dated Sept. 4, 1962. Divided and this application June 14, 1962, Ser. No. 202,454
5 Claims. (Cl. 214—508)



1. An attachment for hay balers having a discharge compressor assembly comprising an elongated chute adapted to be mounted in alignment with the compressor assembly of the hay baler for receiving bales of hay therefrom, means mounted on the chute for moving hay bales longitudinally thereon, a drawbar adapted to be connected to the baler and extending rearwardly therefrom, and a trailer connected to the drawbar and disposed in trailing relation to the chute for receiving baled hay from the chute, said trailer being dumpable, means laterally adjusting the drawbar for orientating the trailer laterally in relation to the discharge end of the chute for receiving bales of hay substantially throughout the area thereof, said means for moving bales of hay along the chute including an endless sprocket chain conveyor assembly overlying the chute and including a lower horizontal run adapted to engage the top surface of a bale of hay for moving the bale of hay along the chute, said chain having outwardly extending projections thereon for engagement with a bale of hay, means for elevating the outer end of the chute, and means connected with the elevating means for rendering the conveyor chain inoperative when the conveyor is elevated.

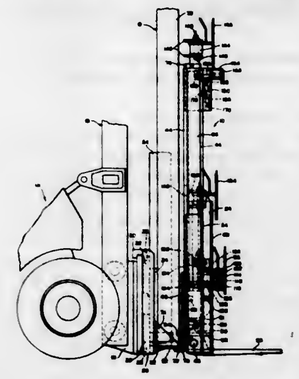
3,200,977
LOADING AND UNLOADING DEVICE FOR SECURING TRUCK TRAILERS UPON CARRYING VEHICLES
Beryl E. Thouvenelle, 4005 San Amaro Drive, Coral Gables, Fla.; William H. Stringer, 2556 Stein St., Jacksonville, Fla.; and C Gordon Anderson, 1415 Sevilla Ave., Coral Gables, Fla.
Filed Apr. 14, 1964, Ser. No. 359,670
5 Claims. (Cl. 214—515)



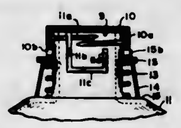
4. A loading and unloading device for placing truck trailers upon carrying vehicles comprising a chassis having spaced side rails thereupon, a motor mounted forwardly upon said chassis, front axle means and rear axle means mounted beneath said chassis, a pair of spaced wheels mounted upon each of said axle means, said motor being operatively connected to said rear wheels, said chassis also having an end portion projecting rearwardly beyond said rear wheels and having a rear end, a first pair of spaced supports forward of said rear wheels and upon said side members, a pivotally movable and elevatable support member above and between said rear wheels and forward of the rear end of said projecting portion, said elevatable support member having a downwardly depending portion thereupon and provided with a first laterally inwardly extending and inwardly tapering recess and a second inwardly extending recess adjacent said first recess, said second recess having an arcuate inner face and adapted to removably accommodate the kingpin of a truck trailer, a plurality of spaced rearwardly inclined telescoping members between said rear wheels, said telescoping members being pivotally connected to said chassis and to said downwardly depending member and extending therebetween, means for extending and retracting said telescoping members, a pair of spaced pivotally movable members connected to opposite sides of said downwardly depending member forward of the connection of said telescoping members, each of said arm members being also pivotally connected to a first support upon said chassis, releasable kingpin securing means operatively connected with said second recess within said elevatable support, a support device having a platform adapted to demountably overlie said elevatable support, said platform provided with an inwardly extending recess at one side thereof adapted to removably accommodate the kingpin of a truck trailer, releasable kingpin securing means operatively connected with said recess, a downwardly depending stand member connected to said platform, and a downwardly depending pin member upon said platform spaced from said recess, said pin member adapted to be removably accommodated within the second recess within said elevatable member.

3,200,978
CRATE AND CARTON HANDLING ATTACHMENT FOR INDUSTRIAL TRUCKS
Joseph L. Brady, Marshall, and Ronald A. Brudi, Battle Creek, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Dec. 3, 1958, Ser. No. 777,999
23 Claims. (Cl. 214—651)

1. In a truck having a load lifting mast at one end thereof, an upright load lifting frame movable vertically in the mast including plate means extending transversely of the truck, a pair of transversely spaced and vertically extending guide means connected to the plate, a vertically extending opening formed in one side of each guide means, a pair of cooperating transversely spaced and vertically extending members slidable relative to the pair of guide means and supported thereby, drop plate means having connection with said pair of members through said openings, cooperating abutment portions associated with said pairs of guide means and members, and at least one load engaging member secured to the lifting frame, said pair of guide means being elevatable with the frame and load engaging means a pre-determined distance relative to said drop plate means following which said cooperating abutment means engage to elevate said drop plate with said load engaging means.

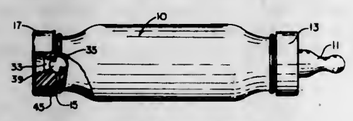


3,200,979
LATCHING CAP
Joseph B. Powers, 117 E. Grant St., New Castle, Pa.
Filed June 17, 1964, Ser. No. 375,844
14 Claims. (Cl. 215—9)



1. A latching cap device for closing-off the mouth portion of the threaded neck of a container which comprises, a cup-shaped cap body having internal threading for cooperating with the threaded neck of the container to removably-secure said cap body in position over the mouth portion, a latching ring of relatively rigid construction adapted to be positioned on the threaded neck, said latching ring and the threaded neck having cooperating portions to independently of said cap body latch-retain said latching ring in an operating position on and against outward movement off said threaded neck, said cap body and said latching ring having projecting latching lug and latching cam means for cooperative engagement when said cap body is screwed-down on the threaded neck, spring means adapted to be positioned about the threaded neck to normally urge said latching ring into latching engagement with said cap body, and said spring means being compressible by downward pressure exerted on said latching ring to release said latching lug and cam means for cooperative engagement, so that said cap body may be screwed-off the threaded neck of the container.

3,200,980
NURSING BOTTLE
Francis A. Jamell, 805 S. 11th Ave., Marshalltown, Iowa
Filed June 5, 1964, Ser. No. 373,005
5 Claims. (Cl. 215—11)



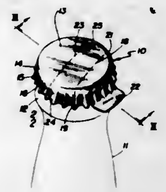
1. In a container having an open end,
a valve means mounted in said open end of said container,
said valve means comprised of a flat circular base member having top and bottom surfaces; a cylindrical member extending upwardly from the top surface of said base member; said cylindrical member having an elongated bore extending therethrough along its longitudinal axis; a valve seat in said elongated bore; a ball valve yieldably movably maintained in engagement with said valve seat and having a portion thereof protruding above the upper end of said cylindrical member; a groove on the outer periphery of said cylindrical member adjacent its upper end; a resilient means extending over the upper end of said cylindrical member and having a lip portion on its periphery detachably engaging said groove; a port in said cylindrical member extending from said elongated bore outwardly therethrough at a plane above said valve seat;
means for maintaining said valve means in said open end of said container,
said resilient means engaging said ball valve and maintaining said ball valve seat, whereby a reduced pressure in said container will cause said ball valve to disengage from said valve seat against said resilient means and permit air from outside of said container to enter said elongated bore and by-pass said ball valve and pass into said container through said port.

3,200,981
BOTTLE CAPS
Sune Hårding, Bromma, Sweden, assignor to Aktiebolaget Wicanders Korkfabriker, a Swedish joint-stock company
Filed Oct. 1, 1962, Ser. No. 227,404
Claims priority, application Sweden, Oct. 3, 1961, 9,817/61
4 Claims. (Cl. 215—41)



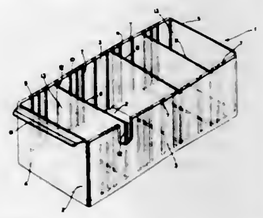
1. An integrally molded plastic cap of generally cylindrical shape comprising: a skirt portion adapted for engagement with the external lateral surface of the mouth of a bottle for securing said cap to said bottle; a transversely extending end wall portion formed integrally with said skirt portion; and a central circular sealing portion, said sealing portion comprising a hollow generally cylindrical base portion formed integrally with said end wall portion concentrically with said cap, said base portion extending away from said end wall portion in the same direction as said skirt portion for engagement with said mouth of said bottle, said sealing portion further comprising a conically divergent integrally formed terminal extension portion of said base portion, said extension portion having originally been outwardly divregent away from said end wall portion immediately after molding, said extension portion being turned to be outwardly conically divergent toward said end wall portion with its periphery under internal tension which presses the terminal edge of said extension portion into sealing engagement with said end wall portion to define a completely enclosed annular space between said end wall portion and said sealing portion with said cap removed from said bottle.

3,200,982
BOTTLE CAP
Louis A. Cormier, 42 Central St., Southbridge, Mass.
Filed Mar. 23, 1964, Ser. No. 354,030
6 Claims. (Cl. 215—46)



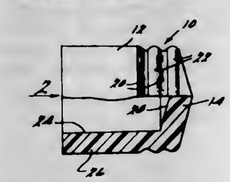
1. A bottle cap, comprising
(a) a crown member having a flat circular body and an annular flange extending away from the body along the periphery thereof, the flange being crimped around the lip of a bottle,
(b) a tab member extending laterally of the crown member generally in the plane of the bottom edge of the flange integral with a limited portion of the flange,
(c) a first weakening means consisting of a pair of notches associated with the flange in the vicinity of the tab to facilitate the upwardly bending of the flange and crown in the vicinity of the tab for release of gas pressure from the bottle, and
(d) a second weakening means consisting of a pair of notches associated with the flange at a position approximately in the center of the crown and spaced substantially from the first weakening means to facilitate removal of the cap from the bottle.

3,200,983
PLASTIC DRAWER CONSTRUCTION
Ernest W. Walter, Canton, Ohio, assignor to Akro-Mils, Inc., Akron, Ohio, a corporation of Ohio
Filed Apr. 10, 1963, Ser. No. 272,082
4 Claims. (Cl. 220—22)



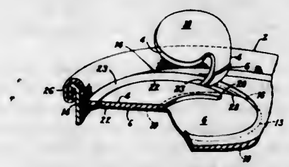
1. A molded synthetic resin cabinet drawer including a bottom wall, front and back walls, outwardly and upwardly inclined side walls, and an open top,
said walls all being integral with each other and at least said side walls having substantially parallel inner and outer vertically inclined faces, said side walls being resiliently flexible in the upper major portions thereof,
a plurality of longitudinally spaced upright dovetail grooves disposed wholly within each of said inclined side walls between said inner and outer parallel faces thereof and open to the inner surface thereof, said grooves being parallel to said inner and outer faces and forming pairs of grooves in transverse alignment with each other,
said inclined side wall grooves being open at and coincident with said open top at their upper ends and progressively and uniformly tapering to a reduced width at their lower ends,
a removable partition member forming compartments within said drawer,
said partition member comprising a flat sheet-like member for the major portion thereof,
said partition member having downwardly and inwardly inclined tapered dovetail end portions thereon complementary to said upwardly tapering dovetail grooves of said inclined side walls for engagement therein,
said end portions of said partition member being selectively insertable into any pair of said transversely aligned side wall grooves,
said upwardly and outwardly inclined tapered side wall grooves and said correspondingly downwardly and inwardly inclined and tapered dovetailed end portions of said partition member forming inclined joints therebetween to provide upwardly progressively widened and enlarged inter-engaged bearing surface areas whereby said joints are progressively and increasingly upwardly reinforced to minimize distortion and to prevent displacement of said side walls and said partition members relative to each other as said compartments are selectively filled with relatively heavy objects, said inclined joints maintaining said partition member locked in its lowermost position in the cabinet drawer.

3,200,984
PRESSURE SEAL PLUG
John R. Fuesiein, Jeddo, and Robert R. Rader, Port Huron, Mich., and Edward C. Roper, Springdale, Conn., assignors to Mueller Brass Co., Port Huron, Mich., a corporation of Michigan
Filed Aug. 14, 1962, Ser. No. 216,841
1 Claim. (Cl. 220—24.5)



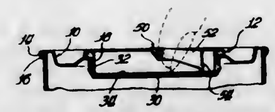
A sealing plug including a body with a substantially cylindrical outer surafce composed of a resilient deformable material, said body defining an axial substantially cylindrical bore extending inwardly from one end thereof to a point spaced from the other end, the major portion of said body having a substantially constant predetermined thickness between said bore and the cylindrical outer surface of said body, a plurality of axially spaced circumferentially extending grooves adjacent said other end of the body and forming sealing ribs therebetween, the outer surfaces of said sealing ribs having a convex configuration, an end wall at said other end of the body, one of said ribs being contiguous with the outer portion of said end wall, the inner and outer surfaces of said end wall having a flat conical configuration directed axially outwardly relative to said body, the thickness of said end wall between said inner and outer surfaces being substantially the same as the thickness of said major portion of the body, the end wall being adapted to flex axially inwardly in response to the application of pressure thereagainst, the thickness of said end wall being sufficient to cause it to tend to flatten in response to the application of pressure thereagainst, and thereby create outwardly radially directed forces inducing an expansion of the diameter of the rib contiguous with said end wall.

3,200,985
CONTAINER OPENING DEVICES
Merwin F. Ashley, Arlington, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed July 31, 1963, Ser. No. 298,872
6 Claims. (Cl. 220—54)



1. A tear-open dispensing closure for a container comprising a molecularly unitary sheet having a substantially planar inner surface which is imperforate and uninterrupted over the entire area exposed to the container contents and a single, fully exposed, outer surface at least equal in area to said inner surface, a discrete area of said sheet comprising inner and outer layers freely separable at their interface, the remaining area of said closure being molecularly unitary and inseparable, score lines incised in the outer surface of the sheet defining a molecularly unitary area to be torn from the closure for dispensing the contents of the container, portions of said score lines extending into said discrete area and there incised at least to the depth of said interface forming from the outer layer a freely liftable pull tab as an uninterrupted part of said outer surface and as an integral continuation of the removable molecularly unitary area of the closure defined by the score lines whereby when the tab is pulled the molecularly unitary sheet material within the score lines comprising both layers will be torn from the closure as a single piece to form a dispensing opening.

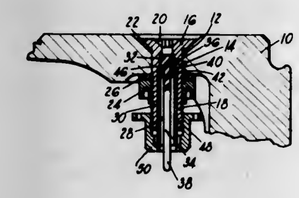
3,200,986
REMOVABLE PLUG CLOSURE WITH PULL LOOP
Pascal A. La Grutta, Cedar Grove, N.J., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Aug. 19, 1964, Ser. No. 390,535
3 Claims. (Cl. 220—60)



1. A closure arrangement for one end of a cylindrical, paperboard can, comprising, in combination:
(a) an annular, metal closure ring having an outside peripheral edge permanently attached to an end edge of said can and having an inside peripheral flange, generally L-shaped in cross-section, defining a circular, central opening and including:
(i) an annular wall presenting a flat, outwardly facing surface;
(ii) a cylindrical wall projecting inwardly from the inside edge of said annular wall and having, at its free inner edge, an inwardly flared, peripheral lip extending into said opening;

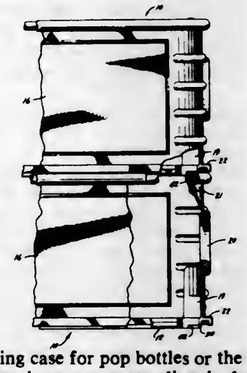
(b) a flexible, plastic, circular, closure plug removably positoned within the opening of said closure ring and including:
(i) a generally flat, circular wall;
(ii) a cylindrical wall projecting outwardly from the outside edge of said circular wall and defining therewith a cylindrical recess;
(c) said closure plug cylindrical wall having:
(i) an annular shoulder projecting laterally outward from its free edge and presenting a flat, inwardly facing surface adapted to seat on the outwardly facing surface of said closure ring annular wall;
(ii) an annular retaining bead spaced axially inward from said shoulder to define therebetween an annular channel for receiving said ring cylindrical wall;
(iii) said retaining ring cylindrical wall lip having an inside diameter slightly less than the outside diameter of said channel so that when the plug is positioned within the ring the lip wall dig into the ring cylindrical wall in said channel to effect a fluid tight seal therebetween;
(iv) said bead presenting an outwardly inclined surface adapted to facilitate entry of said ring lip into said plug channel;
(d) a relatively narrow, thin, flexible pull loop disposed in said plug recess and having its ends formed integrally with the cylindrical wall of said plug on one side of the center thereof spaced apart a distance substantially less than the diameter of the plug and curving between its ends throughout an angle substantially in excess of 180°.

3,200,987
THERMAL FUSE SCREW
Richard F. Horner and Joseph A. Cunningham, both of South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Filed Nov. 3, 1961, Ser. No. 149,967
3 Claims. (Cl. 220—89)



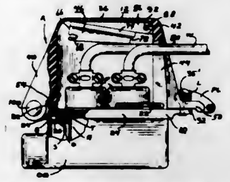
1. A thermal fuse screw for use with a pressurized vessel comprising: a screw body having a stepped diameter through-bore formed substantially along the longitudinal axis of said screw body, said stepped diameter having a first small diameter passage section and a second larger diameter passage section forming a shoulder at the junction of said passages, said passages arranged such that said small diameter passage section is on the pressurized side of said screw body relative to said second larger diameter passage section, and a resilient preformed spherical seal disposed in said small diameter passage section operative to sealingly engage said screw body, a fusible alloy plug removably disposed in said larger diameter passage section operative to restrain said seal against expulsion from said through-bore under pressure forces within the pressurized vessel, means peripherally securing said alloy plug in said larger diameter passage section, said fusible alloy plug operative on melting to permit said spherical seal being expe led from said through-bore under influence of pressure contained in the pressurized vessel.

3,200,988
CARRYING CASE
William J. de Chelbor, Chicago, Ill., assignor to Novo Industrial Corporation, New York, N.Y., a corporation of New York
Filed Oct. 31, 1960, Ser. No. 66,025
2 Claims. (Cl. 220—97)



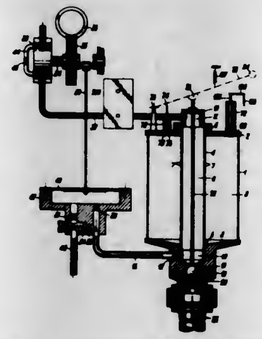
1. In a carrying case for pop bottles or the like, a somewhat rectangular base, an upstanding body around the base and connecting thereto to define a generally open top container, opposite ends of said body having handle openings with defined areas of said ends above the handle openings, inwardly spaced from the corners of the body, being inwardly recessed, said base having a groove at each end of the general size and shape of said defined recessed areas and in general alignment with the recessed areas of said body so that said cases interlock through the combination of said grooves and recessed areas when stacked in the empty condition.

3,200,989
LOCKING WEATHERPROOF COVER ATTACHMENT FOR ELECTRICAL OUTLET BOX
Harvey Hubbell, Southport, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed June 13, 1962, Ser. No. 202,240
4 Claims. (Cl. 220—24.3)



1. A weatherproofing attachment for an electrical outlet box having an open vertical front comprising: a mounting plate arranged to be rigidly secured to the front of said outlet box and having a resilient portion in sealed relationship therewith at their points of engagement; a cover hingedly secured to said mounting plate; said mounting plate and cover having cooperating bead and groove means of similar cross section arranged to sealingly engage to form a chamber therebetween and effect a seal at their points of engagement; an opening in said cover disposed at a location which is under other portions of said cover when the attachment is operatively disposed on an electrical outlet box, whereby it is protected from falling rain, water or spray; and an adjustably positionable closure pivotally secured to said cover for selectively closing or uncovering said opening and arranged to be disposed within said cover in all positions, said adjustably positionable closure having a portion of said means formed on it which cooperates with the remainder of said means to effect a continuous seal between said cover and said plate when said closure is positioned to close said opening.

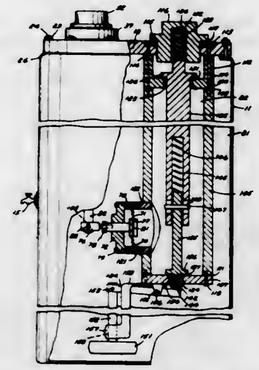
3,200,990
APPARATUS FOR OBTAINING AN APPORTIONED AMOUNT OF LIQUID MIXTURE
Leonardus Petrus Koppens, Postel 11, Someren, Netherlands
Filed Dec. 5, 1960, Ser. No. 73,646
13 Claims. (Cl. 222—2)



1. Apparatus for obtaining an apportioned amount of a mixture of a main liquid with at least one subsidiary liquid in proportions selectable at will comprising a self-mixing dosage container, an internal container inside said dosage container, said internal container communicating by means of apertures of small diameter with the remaining space of said dosage container; a feed system for said main liquid, comprising a main liquid retainer, a pump, a feed line opening into said internal container, and a retaining valve in said feed line, said pump forcing said main liquid into said internal container; separate feed systems for said subsidiary liquids, each system comprising a feed line opening into said internal container, a pump forcing said subsidiary liquid into said internal container, and an adjustable metering device in said feed system; dispensing means associated with said internal container, including a discharge line and a discharge valve in said line; manually actuated means for actuating said discharge valve; and a self-acting switch associated with said dosage container becoming operative when said dosage container is entirely filled; said apertures ensuring intimate mixture of the liquids during the filling operation of the dosage container.

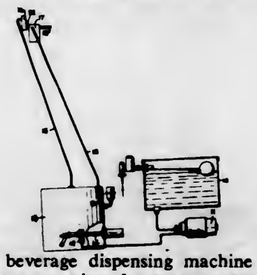
3,200,991
BEVERAGE DISPENSER
Lindley E. Mills, 518 Pinehurst Blvd., Kalamazoo, Mich.
Filed Feb. 17, 1961, Ser. No. 99,655
8 Claims. (Cl. 222—52)

1. In apparatus suitable for dispensing a carbonated beverage therefrom, a container having therein a beverage chamber adapted to contain a carbonated beverage and to have successive portions of the beverage dispensed therefrom; a gas chamber associated with the container adapted to contain a supply of carbon dioxide under a pressure greater than the pressure exerted by a carbonated beverage in the beverage chamber; conduit means including a gas-release valve communicating at one of its ends with the gas chamber and at its other end with the beverage chamber whereby carbon dioxide can be released from the gas chamber into the beverage chamber; a regulating chamber associated with the beverage chamber to provide for heat interchange between the contents of the beverage chamber and the contents of the regulating chamber; valved communication means between the regulating chamber and the beverage chamber normally closed during dispensing of at least a major part of a carbonated beverage from the beverage chamber but adapted to be open during introduction of a carbonated



beverage into the beverage chamber to provide for introduction of a part of the introduced beverage into the regulating chamber; a wall common to the regulating chamber and to the beverage chamber comprising a flexible diaphragm adapted to flex in the direction of the beverage chamber when the pressure in the beverage chamber is substantially less than the pressure in the regulating chamber; and mechanical means connecting the diaphragm and the gas-release valve whereby, when the diaphragm flexes substantially in the direction of the beverage chamber, the gas-release valve is caused to open.

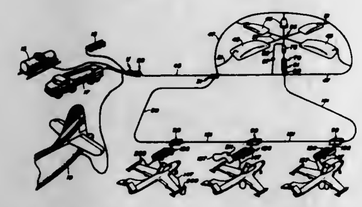
3,200,992
HOT BEVERAGE DISPENSING MACHINES
Stewart A. Maxwell, Walsall, England, assignor to Fisher & Ludlow Limited, Birmingham, England, a British company
Filed July 2, 1962, Ser. No. 206,610
1 Claim. (Cl. 222—52)



In a hot beverage dispensing machine having water supply means, a container for water, means for maintaining the water in the container at a predetermined temperature, a beverage discharge, a mixing chamber ahead of the beverage discharge, a line extending from the container and returning to the container, and a discharge valve in said line, that improvement which comprises a combination water and air collector in the upper portion of said line having an air passage to the atmosphere and an upright valve chamber in the upper portion of said collector and out of the direct line of flow of the water

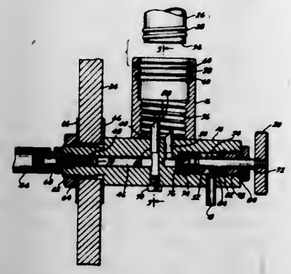
passing through said collector, a hygroscopic valve body in said upright valve chamber having a portion snugly received in said valve chamber and extending downwardly into said collector, said valve body being so constructed and arranged that it will open when the water level is out of contact with said downwardly extending portion and the valve body has had a chance to dry sufficiently to allow air to pass.

3,200,993
ERECTOR TYPE AIR TRANSPORTABLE FUELING SYSTEM
Richard T. Headrick, Fort Wayne, Ind., assignor to Bowser, Inc., Fort Wayne, Ind., a corporation of Indiana
Original application Aug. 13, 1957, Ser. No. 677,935, now Patent No. 3,028,010, dated Apr. 3, 1962. Divided and this application Nov. 24, 1961, Ser. No. 156,555
4 Claims. (Cl. 222—72)



1. A subassembly of the kind described comprising a portable fueling vehicle having an elongated tank, means at one end of said tank defining a fuel inlet, a three-way valve communicating with the fuel inlet, said tank having filter means disposed within the tank for removing contaminant and water from the fuel, said tank provided with fuel and water outlets, said water outlets disposed in the lower portion of the tank, a meter communicating with the fuel outlet, a fueling nozzle communicating with the meter, and a surge suppressor interposed between the nozzle and meter.

3,200,994
POSITIVE-PRESSURE CONTROLLED-ATMOSPHERE LIQUID DISPENSER
Benjamin L. Levinson, Miami, and Edward E. Brush, Coral Gables, Fla., assignors, by mesne assignments, of one-half to Evelyn Levinson, Miami, Fla., and one-half to said Brush
Filed Apr. 16, 1963, Ser. No. 273,495
16 Claims. (Cl. 222—82)



1. A positive-pressure controlled-atmosphere liquid dispenser comprising a bottle having a relatively long neck with a threaded portion at the end of the neck and an axial slip seal part of equal or larger diameter than the thread and located between the threaded portion and the body of the bottle, the end of the bottle being sealed by a thin, easily penetrable membrane, and a holder for said bottle, said holder including a socket having a threaded part and an axial slip seal part, means to rupture the membrane, the slip seal parts providing a seal as the bottle is being put into the socket, one of said slip seal parts being cylindrical and both being effectively of uniform diameter for purposes of axial slip, a gas inlet tube for connection from a gas tank into the base of the socket, a spout, a liquid discharge tube leading from the base of the socket to the spout, and a dispensing valve between the discharge tube and the spout.

3,200,995
MULTICOMPARTMENT DISPENSING PACKAGE
William J. Gangwisch, Jersey City, N J. (% Colgate-Palmolive Company, Colgate-Palmolive Bldg., 300 Park Ave., New York 22, N.Y.)
Filed Aug. 30, 1962, Ser. No. 220,370
12 Claims. (Cl. 222—94)



1. In a multicompartment dispensing package, an outer container having a closed wall at one end and a flexible side wall of polyethylene or like plastic material, an inner container comprising a relatively rigid section attached within said outer container and a collapsible end section of predetermined small volume, means at the other end of said outer container providing an end wall formed with discharge apertures individual to the respective containers, said relatively rigid section being attached to said other end wall and being resistant to collapse by transmitted fluid pressure when the outer container is squeezed and said collapsible section being carried by said relatively rigid section remote from said other end wall and being readily collapsed by said pressure, and closure means on said package separately blocking said discharge apertures.

3,200,996
COLLAPSIBLE BAG TYPE APPLICATOR
Joe E. Picattl, 1068 S. 11th St., San Jose, Calif.
Filed Mar. 23, 1964, Ser. No. 353,860
5 Claims. (Cl. 222—107)

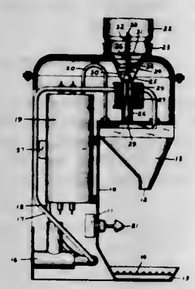


1. A collapsible bag type tube for containing and applying fluent plastic cementitious material comprising: an elongated blank of strong fabric folded double lengthwise thereof,

a layer of sealing material impervious to the intended contents of the tube coating and sealing the inner surface of the folded fabric blank, one end of the folded fabric blank being tapered,

a folded hem along the initially free edges of the untapered end, the longitudinal edge, and the tapered end portion of the doubled, tapered blank to provide a strong and firmly sealed bag structure, the apex of the tapered end portion of the bag thus formed being truncated and unhemmed to provide a filler opening, a conical cap of stiff, sheet material of a size and shape fitted snugly onto the tapered end portion of the bag thus formed when the latter is filled with a fluent, plastic, cementitious material, and adhesive means adhesively interconnecting the interior of the conical cap with the exterior of the portion of the tapered end of the bag covered by the cap.

3,200,997
BEVERAGE DISPENSER
Norman S. Creswick, Middletown, N.J., assignor to Thomas J. Lipton, Inc., Hoboken, N.J., a corporation of Delaware
Filed July 11, 1962, Ser. No. 209,032
4 Claims. (Cl. 222—145)



1. A solenoid valve comprising a member having a passage therein, a valve member in said passage, means in said member engageable by said valve member to close said passage, a solenoid coil having a pair of terminals adapted to be connected to a source of alternating current, an armature in said coil and connected with said valve member, and a half-wave rectifier connected to one of said terminals and interposed between said coil and said source for supplying pulsating direct current to said coil to displace said armature and valve member to open said passage at least partially and vibrate said armature axially of said coil and simultaneously vibrate said valve member.

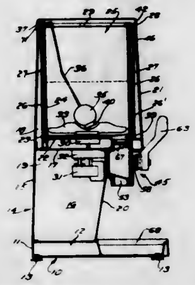
3,200,998
LIQUEFIED GAS CYLINDER
Russell B. Mahar, Westport, Conn., assignor to Union Carbide Corporation, a corporation of New York
Filed June 12, 1962, Ser. No. 201,963
1 Claim. (Cl. 222—184)

A pressure vessel for containing and dispensing liquefied gas in liquid phase and in gas phase comprising, in combination, a hollow cylindrical body, a first end closure at one end of said body, a second end closure at the other end of said body portion, a first externally operable valve in said first end closure, a second externally operable valve in said second end closure, said valves being adapted respectively to discharge liquefied gas contents of the pressure vessel in gas phase and in liquid phase when the cylindrical axis of the body of the vessel is oriented vertically, a cylindrical protective wall extension at each end of said hollow cylindrical body, extending beyond the outer extremity of each respective externally operable valve, each of said extensions having



an opening in the extension wall large enough to permit manual access to the valve.

3,200,999
LIQUID FOOD DISPENSING DEVICE
Frederick J. Price, Jr., Saugus, Mass., assignor to Doryce Appleton, Stuart, Fla.
Filed Sept. 27, 1962, Ser. No. 226,521
8 Claims. (Cl. 222—185)



2. In an apparatus for dispensing a liquid food, a chamber, a supporting deck within said chamber, a removable food trap having an upwardly facing receiving opening, a bowl for containing food of a size to enter said chamber and having a discharge stud from the bottom thereof entering said opening, a striker on said chamber and a cam pivotally mounted on said bowl to swing relative to said bowl and engage said striker and force the bowl downwardly and said stud into said opening to lock the food trap in place.

3,201,000
STORAGE RECEPTACLE FOR PULVERIZED MATERIAL
Wilhelm Hermanns, Frankfurter Strasse 6–14, Porz-Urbach, Germany
Filed July 9, 1963, Ser. No. 293,703
Claims priority, application Germany, July 11, 1962, H 46,344
3 Claims. (Cl. 222—193)

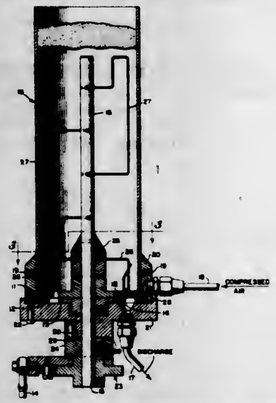
1. In combination with a storage receptacle for sticky powdery material having a discharge outlet centrally of its bottom, a flexible loose lining web normally lying flat against the bottom and inner wall of the receptacle, said web being attached around said discharge outlet and peripherally to the side walls of the receptacle, and means for introducing compressed air between the web and the wall of the receptacle to inflate said web and project the lower portion of said web into a substantially

vertical position, said lower portion of said web forming a conduit for the material to be emptied and only said



lower portion of said web being pervious to air with all other portions of said web being impervious to air.

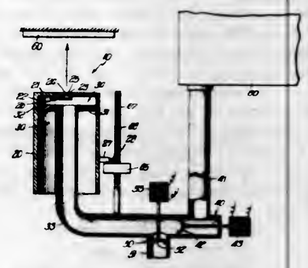
3,201,001
PULVERULENT MATERIALS DISPENSER
Victor I. Roberts and Maynard H. Riddell, Randolph, N.Y., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 12, 1962, Ser. No. 230,294
2 Claims. (Cl. 222—194)



1. A device for dispensing predetermined volumes of a pulverulent material comprising a stationary base having an exhaust aperture extending therethrough, a hopper affixed to said stationary base and having an arcuate hole for discharge in the bottom thereof, a rotatable shaft extending vertically through said stationary base and into said hopper, a rotatable member with circumferentially spaced cavities each of predetermined volume mounted on said shaft between said stationary base and said hopper, said rotatable member being moved by said shaft through a circular path in stepwise fashion sequentially to register each cavity first with said arcute hole and later with said exhaust aperture, detent means resiliently to latch said rotatably member at the end of each stepwise movement, and agitator means for agitating pulverulent material in said hopper, said agitator means comprising at least one resilient rod affixed to said shaft and having a portion thereof extending downwardly with the lower end bent upwardly to form a U-shaped loop whose bottom edge rides into and out of said arcuate hole to help force the pulverulent material into said cavities.

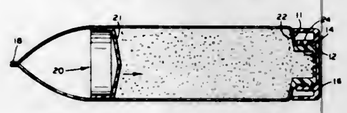
3,201,002
LIQUID MEASURING AND DISPENSING APPARATUS
Earl J. Williams, Fox River Grove, Ill., assignor to Liquid Package Equipment Corp., Woodstock, Ill., a corporation of Delaware
Filed May 20, 1964, Ser. No. 368,961
3 Claims. (Cl. 222—205)

1. A fluid dispenser for repetitively discharging a measured volume of liquid comprising an expansible fluid container normally urged into an unexpanded condition but adapted to be expanded by internal fluid pressure, fluid conduit means communicating with the interior of said container, valve means for selectively connecting and disconnecting said conduit means to a supply of fluid under pressure, said conduit means when so connected causing said fluid to be introduced into said container to expand said container, limit means for selec-



tively limiting the amount of expansion of said container and therefore the volume of said fluid introduced therein, second valve means for venting said fluid conduit means after said conduit means is disconnected from said supply of fluid under pressure so as to permit said container to return to the unexpanded condition and to discharge fluid therefrom through said conduit means.

3,201,003
DISPENSING CONTAINER
John D. Wark, 326 W. Lena Ave., Freeport, N.Y., and Charles L. Metzler, 14 Overlook Road, Alpine, N.J.
Filed Jan. 27, 1964, Ser. No. 340,249
8 Claims. (Cl. 222—206)

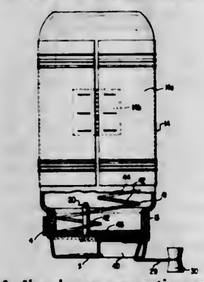


1. A dispensing container for viscous fluids comprising a flexible tubular container having a dispensing outlet at its forward end and a cap forming an airtight closure received in secured relation thereon, a flat seal extending across said container at its rear end, a generally round piston member within the container behind the contents thereof and closely fitting the interior thereof to force said contents out of the dispensing outlet when said piston is driven forwardly, the area of the container from the piston rearwardly to the flat seal being tapered and providing an airspace, the cross section shape of the container in said tapered area progressively decreasing in roundness as the flat seal is approached, thereby offering increasing resistance to rearward travel of the generally round piston in the event that squeezing pressure is applied to the container adjacent its forward end, said tapered area of the container having a small opening which can be closed by a finger of the user when applying squeezing action to said area to develop pressure therein and drive the piston forward.

3,201,004
POWDERED COFFEE DISPENSER
Edward S. Plonski, 291 W. Washington St., Forestville, Conn.
Filed July 31, 1961, Ser. No. 128,936
4 Claims. (Cl. 222—228)

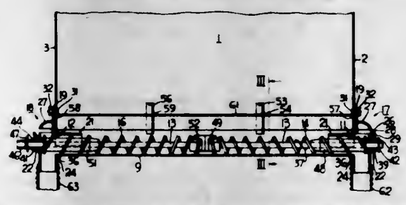
1. A coffee dispensing device of the character described, comprising a cylindrical shaped housing having a container receiving portion at one end thereof and a discharge portion of reduced diameter at its opposite end, said discharge portion defining an inner peripheral flange

at its line of juncture with the container receiving portion, and having a partial bottom closure member, a first disc having a quadrant-shaped opening and a depending flange adjacent one edge of the opening, a second disc of diameter equal to the diameter of said first disc, concentric therewith and superposed thereon, said second disc having a quadrant-shaped opening and a depending flange adjacent one edge of the opening, the depending flanges of the discs defining, in conjunction with the partial bottom closure member of the housing, a compartment for the coffee to be dispensed, a circular-shaped retaining plate seated on the inner peripheral flange at the juncture of the container receiving portion and the discharge portion of the dispenser, said retaining plate maintaining said



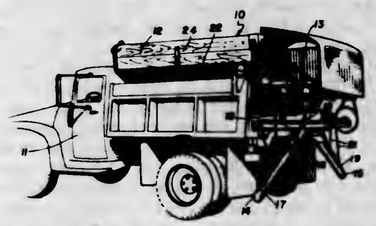
first and second disc in an operative superposed, sliding position, and an actuating arm linearly slidably mounted on the first disc and extending outwardly therefrom, means carried by said first disc for constraining the sliding movement of the actuating arm to a linear direction with respect to the disc, said actuating arm being operatively connected to the second disc, whereby the size of the measuring compartment may be varied by moving the actuating arm linearly with respect to the housing, said actuating arm being movable in a curvilinear path with respect to the housing to move the measuring compartment to discharge position with respect to the partial bottom closure of the discharge portion of the dispenser.

3,201,005
FERTILIZER DISTRIBUTOR
August G. Buhr, Willard H. Tauke, and Kenneth R. Weber, La Crosse, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Nov. 6, 1963, Ser. No. 321,894
11 Claims. (Cl. 222—272)



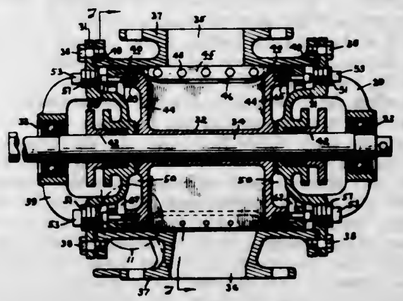
1. In a fertilizer distributor, the combination of a hopper having imperforate, longitudinal side and bottom walls and a pair of end walls presenting side openings, respectively, of said hopper adjacent said bottom wall; a pair of outlet housings, one detachably secured externally of said hopper to one of said end walls in overlying relation to the side opening therein, and the other operatively mounted externally of said hopper on the other of said end walls in overlying relation to the side opening therein, each of said outlet housings presenting a downwardly extending outlet spout exteriorly of its associated end wall; an assembly of oppositely pitched feed augers movable axially into and out of said hopper through the side opening of said one end wall, and rotatably mounted at one end in said one outlet housing; and axially separable bearing means rotatably mounting said auger assembly at its other end in said other outlet housing; said auger assembly communicating at its opposite ends in material dispensing relation, respectively, with said outlet housings.

3,201,006
SALT SPREADER
Frederick A. Bernhardt, Wheeler Road, Ashby, Mass.
Continuation of abandoned application Ser. No. 230,096, Oct. 12, 1962. This application Mar. 8, 1965, Ser. No. 446,761
1 Claim. (Cl. 222—330)



A spreader for salt and the like, comprising
(a) a main hopper having sloping sides which approach each other at their lower edges to form a longitudinally-extending horizontal vertex, and having an H-shaped beam mounted in the bottom of the hopper, the said beam having a portion which extends beyond the rear of the hopper,
(b) an endless chain of open-link type which forms upwardly-directed pockets with the upper surface of the web of the beam between the flanges thereof and having an upper run which extends through the bottom of the hopper along the said horizontal vertex, said endless chain being mounted on sprockets mounted in spaced relationship beyond the ends of said H-beam whereby salt being carried by said chain is permitted to fall free of said chain and the edge of the web of said beam, and
(c) a pair of chutes each having one end positioned to receive said falling salt and adapted to convey the salt laterally to deposit a row of salt from each chute, the chutes each having a hinged outer portion which may be moved to an upwardly-directed inoperative position.

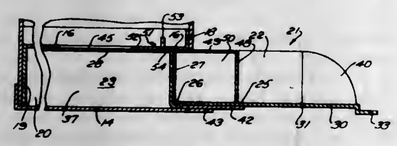
3,201,007
ROTARY FEEDER MECHANISM
Sherman T. Transeau, R.D., Riverside, N.J.
Filed Nov. 13, 1962, Ser. No. 237,123
14 Claims. (Cl. 222—345)



1. A rotary feeder mechanism for conduited bulk material comprising a main housing having a cylindrical

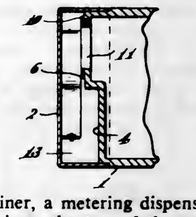
passage therethrough, the cylindrical axis of which extends transversely to the flow of material, an inlet throat and a discharge outlet each communicating with the cylindrical passage of the main housing, a rotor disposed within the cylindrical passage and adapted to rotate therein, said rotor including a plurality of pockets spaced peripherally thereabout which rotate successively past the inlet throat and discharge outlet as said rotor rotates, each of said pockets being defined by a pair of angularly-spaced radially-extending rotor blades and a sector of each of the opposite end walls of the rotor, each of said rotor blades having a sealing tip assembly secured to its outer edge and extending transversely the full width of the rotor pocket and extending radially into sealing engagement with the cylindrical passage of the main housing, and each of said sealing tip assemblies including at least one resilient sealing element and a metal tip element in a layered structure arranged with the metal tip element disposed in front of the said at least one resilient element in terms of the rotational sense of the rotor, said metal tip element and at least one resilient sealing element being both in wiping contact with the wall of the cylindrical passage of the main housing and including means for independently adjusting the same radially relative to the rotor blade to which the sealing tip assembly is secured to thereby permit compensation for wear, said resilient sealing element being of U-shape in cross-section to provide a pair of spaced wall parts disposed in straddling relation to the rotor blade and a base part overlying the longitudinal outer edge of the rotor blade for sealing engagement with the cylindrical passage of the main housing.

3,201,008
DISPENSING PACKAGE WITH SLIDING TRAP CHAMBER
Carmen G. Morena, 48 Columbus St., Providence, R.I.
Filed Apr. 14, 1964, Ser. No. 359,757
2 Claims. (Cl. 222—361)



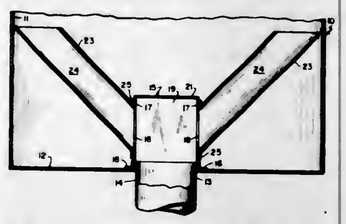
1. A package for dry fluent material having bottom and side walls, a division wall generally parallel to said bottom wall and spaced upwardly therefrom and extending between said side walls to provide a dispensing compartment, one of said side walls having an opening adjacent but below said division wall, said division wall having an opening therein adjacent said side wall in which said opening is located, a drawer slidably mounted in said compartment and having an end wall closing said side wall opening with a portion of said end wall extending upwardly along the outer surface of one of said side walls, said drawer having a material receiving portion adjacent said end wall to register with said opening in the division wall when the drawer is within said compartment to receive fluent material and having a portion spaced above the bottom wall remote from said end wall adjacent to and parallel to said division wall to act as a valve and close said division wall opening when the drawer is moved out of said compartment, said drawer having a bottom wall, means for hinging said end wall of said drawer to the bottom wall of the drawer to swing downwardly when the drawer is moved outwardly from the compartment to open the material receiving portion for pouring the material therefrom and sides connected to said end wall to swing therewith and guide the material over the end wall as poured.

3,201,009
METERING DISPENSER
Sidney Z. Smith, Worcester, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Oct. 7, 1963, Ser. No. 314,138
4 Claims. (Cl. 222—443)



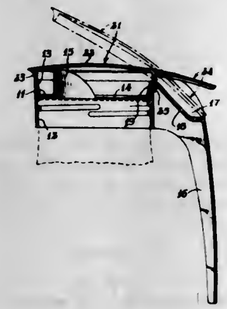
1. For a container, a metering dispenser comprising a cap for the container, the top of the cap having upper and lower portions at different levels and in different sectors, the cap having vertical walls bridging the peripheries of the two portions, a cover rotatably mounted on the cap to turn back and forth between metering and dispensing positions, the top of the cover also having upper and lower parts in different sectors, the cover having vertical walls bridging the peripheries of the two parts, said upper part extending throughout a larger sector than said upper portion to provide a metering space between the cap and cover, the cover having a dispensing opening in said upper part which is closed by said upper portion when the cover is in metering positon, and the cap having a pouring opening in said lower portion which is covered by said lower part when the cover is in dispensing position, whereby a measured amount of material may be poured into said space through said pouring opening when the cover is in metering position and the measured amount may be poured from said space through said dispensing opening when the cover is in dispensing position.

3,201,010
HOMOGENEOUS BATCH FEEDING
Albert J. Werner, Greenville, Ohio, assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Aug. 21, 1963, Ser. No. 303,609
2 Claims. (Cl. 222—464)



1. In combination with a storage bin having sidewall portions and a substantially flat bottom surface provided with a discharge opening, a hopper box positioned within the storage bin and over the bottom discharge outlet for delivering homogeneous granular batch material from the storage bin, an open portion formed in an upper surface of said hopper box communicating between the interior of said box and a substantially central portion of the storage bin for flowing batch material into the hopper from the central portion of the storage bin, a plurality of inclined conduits communicating at their lower ends with the interior of said hopper box and at their upper ends terminating in open communication adjacent sidewall portions of the storage bin at a level above the upper surface of said hopper box for flowing batch material into the hopper from edge portions of the bin, and the discharge outlet communicating with the interior of said hopper for discharging a homogeneous batch mixture therefrom.

3,201,011
POURING SPOUT AND COVER THEREFOR
Karl Brocken, Aurora, Ill., assignor to Anfinsen Plastic Molding, Inc., Aurora, Ill., a corporation of Illinois
Filed Jan. 4, 1965, Ser. No. 423,288
3 Claims. (Cl. 222—473)



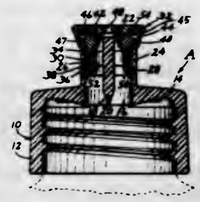
1. The combination of: a circular body having an upstanding circumferential flange, a pouring opening in said body spaced from said upstanding flange, a pouring lip extending upwardly from and on one side of said opening, a handle on said body extending outwardly radially and downwardly, said handle being offset downwardly adjacent to said body to define a well therein, a slot in said handle closely adjacent to said body, and a cover for said body comprising a circular top wall, an annular skirt integral with and depending from said top wall and normally seated on the upper edge of said upstanding flange, a finger piece integral with said top wall and extending outwardly radially to overlie the well, and a tongue integrally connected resiliently to the cover in the region of the juncture of the top wall with said finger piece, said tongue being engaged in the slot to retain the cover in place over the body.

3,201,012
VALVE FOR FLUID DISPENSER
Gabriel de Malglaive, Pontarme, France, assignor to Secive-Societe d'Exploitation de Chimie Industrielle Volturiez & Norman, Catenoy (Oise), France
Filed Dec. 10, 1962, Ser. No. 243,308
Claims priority, application France, Dec. 20, 1961, 882,542
5 Claims. (Cl. 222—501)



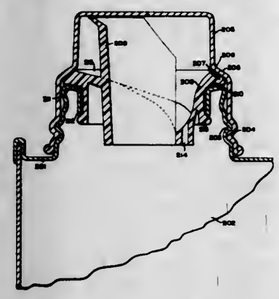
1. A dispenser for fluid under pressure comprising a container for housing fluid under pressure, which container has an open end, a valve means fixed in sealing relationship onto the open end of the container for sealing the pressure fluid therein, said valve means comprising a non-deformable, rigid, hollow housing of frusto-conical shape secured at its base to the open end of the container and having the dispensing opening at its apex portion with the inner surface of said housing being continuously tapered from the bottom to the top, a valve member of frusto-conical shape having its side walls tapered at an angle corresponding to the taper of the frusto-conical housing and dimensioned in cross-section for sealing engagement with the interior of the frusto-conical surface of the housing below the apex portion of the housing and wherein the valve means is mounted for axial movement within the housing between a sealing position responsive to axial displacement of the valve member in the direction toward the apex portion to bring the frusto-conical surfaces of the valve member and the interior of the housing into sealing engagement, and an open position responsive to axial displacement of the valve member in the direction away from the apex portion to provide an annular space between the tapered side walls of the valve member and the inner side of the tapered housing, an actuating rod accessible from outside the container and shiftable axially through the dispensing opening into engagement with the valve member for displacement of the valve member towards open position, and resilient means in operative engagement with the valve member constantly to urge the valve member towards said sealing position.

3,201,013
DISPENSING AND CLOSURE CAP FOR CONTAINERS
Alvin J. Porter, Excelsior, and Anthony W. Marchlewitz, Minneapolis, Minn., assignors to Product Design & Engineering, Inc., Minneapolis, Minn.
Filed Dec. 11, 1963, Ser. No. 329,682
6 Claims. (Cl. 222—525)



6. In a two-piece closure and dispensing cap for the neck of a container, a cylindrical base having a top portion with an opening extending therethrough and a hollow cylindrical neck extending therefrom in axial alignment with said opening, stop means formed on the inner surface of said neck and spaced from the outer end of the neck, a closure pin connected to said base and extending axially through the neck, a stopper member having a top portion and a hollow cylindrical body portion for reciprocable movement in said neck, an annular stop flange formed on the lower outer surface of said stopper body portion adapted to sealingly engage the inner surface of the neck and engage said stop means in said neck, an annular outer flange portion depending from said stopper top portion and spaced from said stopper body portion to form an annular channel surrounding a portion of said cylindrical body portion of said stopper, said top portion of said stopper having an outlet hole formed axially therethrough and adapted to receive said closure pin to close off said hole when said stopper is slidably moved inwardly on said neck with said neck within said annular channel.

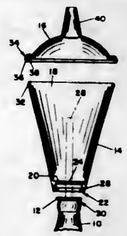
3,201,014
PERFORATE PLASTIC FITMENT WITH BOTTOM WHICH IS AT LEAST PARTLY FLAT IN PRESSURE CONTACT WITH FLAT PORTION OF TOP OF CONTAINER
Jay G. Livingstone, 715 W. Market St., Akron, Ohio
Original application Nov. 25, 1957, Ser. No. 698,414. Divided and this application Nov. 8, 1961, Ser. No. 155,228
2 Claims. (Cl. 222—545)



1. In a package,
the combination of a container and a fitment,
the fitment being composed entirely of stiff plastic with an opening therethrough for dispensing the contents of the container,
the container having a rigid top with a rigidly defined opening therethrough,
said top extending a substantial distance in all directions from the center of said opening,
the fitment comprising an annulus extending downwardly from around the opening therein and extending through said opening in the top of the container,
which annulus is of greater wall thickness in a portion below the opening of the container than at said opening,
said portion of greater wall thickness being in sealing contact with said top of the container, and
the largest outside diameter of said portion of greater wall thickness being larger than said opening in the top and being sufficiently resilient to permit the fitment to be squeezed therethrough without substantial reduction in size due to radial compression thereof,
with an upper part of the fitment extending above said top of the container with a portion thereof extending outwardly above the top of the container,
with the under surface of at lease part of said portion of the fitment which extends outwardly above the top of the container having, when out of contact with the top of the container, a surface which is substantially parallel to the portion of the top of the container it is adapted to contact,
said surface of the fitment which contacts the top of the container being in pressure contact with the top of the container.

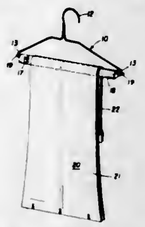
3,201,015
SUPPLEMENTAL CONTAINER FOR A BOTTLE
Robert Waganaar, Atlanta, Ga., assignor to Monoosnock Enterprises, Inc., Leominster, Mass., a corporation of Massachusetts
Filed Apr. 10, 1964, Ser. No. 358,692
6 Claims. (Cl. 222—570)

1. A device of the class described comprising a container and a cover thereof, said container having an open end and a closed end, the container having walls extending slightly beyond the closed end thereof, an inwardly directed bead on said wall for snapping over the pouring lip of a bottle for removable connection to the bottle, the closed end of the container being apertured, the cover being generally dome-shaped and having an inwardly recessed periphery adapted to snap over the open end of the aforesaid container for removable connection



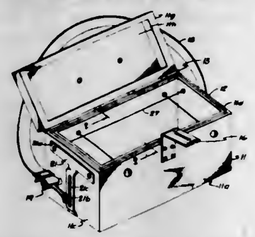
thereto, and an extending pouring spout located generally centrally on said cover member, the aperture providing communication between the bottle and container and the spout providing for exit of the contents of both bottle and container.

3,201,016
TROUSER CLAMP FOR WIRE CLOTHES HANGERS
Edward J. Altorfer, % Altorfer Machinery Co., 2600 6th St. SW., Cedar Rapids, Iowa
Filed Jan. 24, 1963, Ser. No. 253,672
3 Claims. (Cl. 223—91)



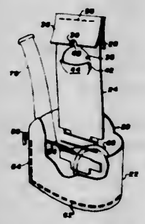
1. A removable attachment for use with a garment hanger of the type formed from wire and when in use having an upper suspending portion, a lower straight horizontal cross portion, and upwardly extending shoulder portions connected at their upper ends to said suspending portion and at their lower ends to the ends of said cross portion, said attachment comprising a bar having a garment supporting portion of a length less than the length of the cross portion of said hanger, said garment supporting portion having a width greater than its height and being provided with a garment suspending upper surface and a garment clamping lower surface generally overlying and in contact with the cross portion of said hanger, said bar including end portions adjacent the ends of the garment supporting portion pivotally engaging the lower ends of said shoulder portions effective to provide a pair of fulcrums offset to one side of the cross portion of said hanger when the garment clamping surface of said bar overlies and is in contact with the cross portion of said hanger as aforesaid, the garment suspending surface of said bar extending outwardly a greater distance from the other side of the cross portion of said hanger than the offset distance of said fulcrums from said first side of said cross portion, whence the weight of a garment suspended around said bar over the garment suspending surface thereof and positioned between the garment clamping surface of said bar and the cross portion of said hanger will cause said bar to pivot on said hanger and clamp the garment between the cross portion of said hanger and the garment clamping surface of said bar.

3,201,017
FISHING TACKLE BOX
William Ernest Morrissey, Rockport, Tex. (Rte. 2, Box 125, Marion, Tex.)
Filed Jan. 2, 1963, Ser. No. 249,053
4 Claims. (Cl. 224—26)



4. A floatable fishing tackle box comprising an essentially rectangular casing consisting of ends, sides and bottom, a lid hingedly secured to one of the sides, a framework within said casing consisting of upper and lower longitudinally-extending partitions, upper and lower laterally-extending partitions, vertical supports, means passing through the ends of said casing into said upper longitudinally-extending partitions, additional means passing through the sides of said casing into the upper laterally-extending partitions, securing means passing through the upper longitudinally and laterally-extending partitions into the upper end of said vertical supports, a plurality of weights fixedly mounted in the bottom of the casing and additional securing means passing through said weights and the lower longitudinally and laterally-extending partitions into the lower portion of the vertical supports.

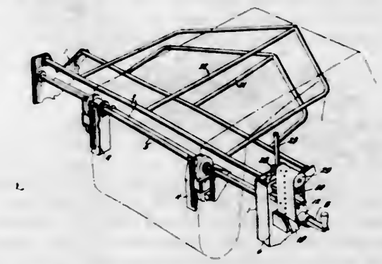
3,201,018
PIPE HOLDER
Eugene P. Moody, 1736 Rockwell Road, Abington, Pa.
Filed Dec. 2, 1963, Ser. No. 327,219
11 Claims. (Cl. 224—26)



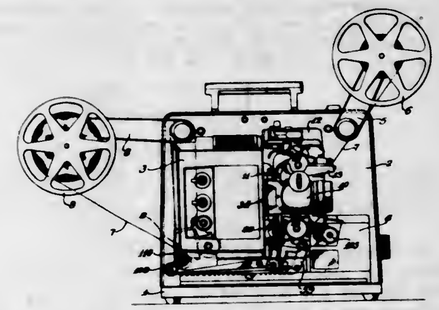
1. A pipe holder comprising a pouch for holding a pipe, supporting means for said pouch, said supporting means comprising a strap having an opening formed at the top thereof and said pouch suspended from the bottom thereof, and securing means associated with said strap, said securing means comprising a tab secured to said strap and depending therefrom.

3,201,019
APERTURE SENSING MECHANISMS
Peter Ernest Gorehams, Hillborough, Herne Bay, England, assignor to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware
Filed Nov. 8, 1962, Ser. No. 236,233
Claims priority, application Great Britain, Nov. 9, 1961, 40,154/61
7 Claims. (Cl. 226—9)

1. An aperture sensing mechanism and stop device comprising, in combination, a stationary supporting frame; means for feeding an apertured tape; a sensing pin member and a feed stop member both disposed in proximity to said tape and disposed respectively upon opposite sides thereof; means supporting one of said members for movement with said tape and means for supporting the other of said members upon said supporting frame; means for yieldingly urging said sensing pin member toward said tape and in lateral registry with the aperture therein; at least a portion of said stop member also being disposed in lateral registry with said aperture on the opposite side of said tape, said sensing pin member when urged toward said tape resiliently bearing against the latter until an aperture is brought into longitudinal registry therewith, said sensing pin member passing through said aperture and contacting positively said stop member to cause it to halt the tape feeding means.



3,201,020
SELF-THREADING MOTION PICTURE PROJECTOR
Jaroslav Cherniavsky, Skokie, Bruno Michaels and Arthur E. Nupnau, Chicago, and John R. Nasiatka, Norridge, Ill., assignors to Bell & Howell Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 25, 1963, Ser. No. 253,969
16 Claims. (Cl. 226—91)

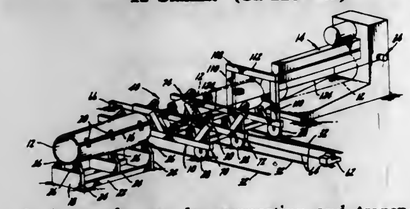


1. In a self-threading motion picture projector,
a gate assembly,
a toothed shuttle for intermittently advancing film through the gate assembly,
means to advance film continuously toward one end of said gate assembly,
means to advance film continuously away from the other end of said gate assembly,
loop forming means adjacent each end of said gate assembly,
means cooperating with said loop forming means to switch the same between a self-threading position and running position, and
shuttle retracting and holding means actuated by movement of said last named means to its self-threading position to maintain the shuttle teeth out of said gate assembly while said loop forming means are in self-threading position.

3,201,021
TRANSFER CAR

Frank P. Albert, Lansing, Ill., and Lawrence W. Bieker, Munster, Ind., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey

Filed Apr. 4, 1962, Ser. No. 185,005
12 Claims. (Cl. 228—49)

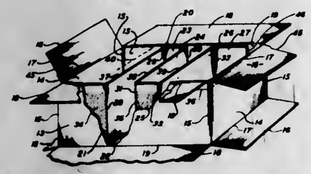


1. A transfer car for supporting and transporting a cylindrically-shaped object, said transfer car comprising a frame having wheels associated therewith whereby said cylindrically-shaped object supported by said transfer car may be moved in a direction transverse to the longitudinal axis of said cylindrically-shaped objects, a plurality of longitudinally spaced, opposing wheels mounted on said frame, said wheels being rotatable in a direction longitudinal to the axis of said cylindrically-shaped object and having a plane of rotation substantially radial to said cylindrically-shaped object, means for lifting said cylindrically-shaped object from said wheels, said lifting means including second wheels rotatable in a direction transverse to said axis of said cylindrically-shaped object whereby rotation of said second wheels will rotate said cylindrically-shaped object, said lifting means including an elongated, flexible, inflatable member which may be expanded by a pressurized fluid to cause said lifting means to support said cylindrically-shaped object on said second wheels.

3,201,022
REINFORCED FIBREBOARD BOX CONSTRUCTION

Donald E. G. Glassco, Temple City, and John M. Bratton, Los Alamitos, Calif., assignors to Purex Corporation, Ltd., South Gate, Calif., a corporation of California

Filed July 16, 1962, Ser. No. 209,932
9 Claims. (Cl. 229—15)



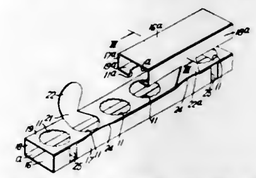
1. A high strength collapsible box, comprising boxboard side panels and end panels with corner hinging so that the box has positions of progressive parallelogram collapse, and a serpentine series of boxboard reinforcing panels extending within the box interior with corner hinging and with attachement to said box side panels so that series alternate reinforcing panels extend crosswise of the box interior and remain parallel to said box end panels in said positions of progressive parallelogram collapse said corner hinging being locally crushed to reduce the hinging thickness and having slits extending part way along the crushed hinge lengths.

3,201,023
CARTONS

Howard T. Hailey and Hilda E. Hailey, both of 77 Brayfield Road, Littleover, Derby, England

Filed Apr. 22, 1964, Ser. No. 361,655
Claims priority, application Great Britain, Apr. 26, 1963, 16,437/63
10 Claims. (Cl. 229—28)

1. A carton comprising identical complementary and separate upper and lower sections, each section being complete in itself, said upper section including an imperforate top wall, a partition wall spaced below and disposed parallel with the top wall, side walls connecting the top wall and the partition wall, said lower section including an imperforate bottom wall, a partition wall spaced above and disposed parallel with the bottom wall, side walls connecting the bottom wall and the partition wall, said partition walls being disposed in

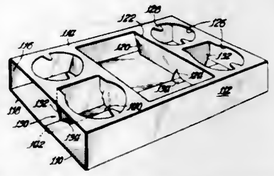


confronting relation and having registering apertures formed therein, locking extension flaps on the sections and depending from the upper section below the partition wall thereof and extending from the lower section above the partition wall thereof, said extension flaps lying substantially coplanar with the side walls of the sections and said partition walls having openings lockingly receiving the extension flaps to secure the sections together.

3,201,024
COLLAPSIBLE SERVICE TRAY

Alfred Brokop, Naperville, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed May 28, 1963, Ser. No. 283,836
1 Claim. (Cl. 229—30)



A collapsible, compartmented, open-ended tubular, service tray, comprising:

(a) a pair of spaced, parallel top and bottom wall panels;

(b) a pair of spaced, parallel side wall panels hingedly attached to and extending between said top and bottom wall panels to form a tubular structure;

(c) said top wall panel including a pair of coplanar sections located at opposite ends of the tray to provide double-wall, cup-receiving end sections and having their adjacent inner edges spaced from each other to provide therebetween a single-wall, food-receiving, center section;

(d) a pair of transverse partitions hinged to the inner edges of respective top wall panel sections and extending toward the bottom wall panel to define the ends of said center wall section;

(e) said end sections each including a central, longitudinal partition hingedly attached to and extending vertically between the top and bottom wall panels;

(f) said longitudinal partition including a medial leg portion and a lower foot portion;

(g) the bottom wall panel including a pair of generally coplanar panel sections having inner edge portions overlapping medially of the tray;

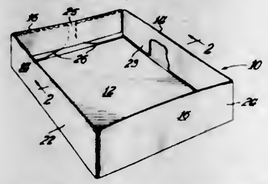
(h) the marginal edge portion of the uppermost bottom wall panel section being cut away locally and the foot portions of said longitudinal partitions being disposed to fit in the cut away portions to overlap the marginal edge portion of the lowermost bottom wall panel section;

(i) a single strip of adhesive material between the marginal edge portion of the lowermost bottom wall panel section, and the marginal edge portion of the uppermost bottom wall panel section and the foot portions of the longitudinal partitions operable to secure them together.

3,201,025
DEBOWING CURVED SCORE IN CARTON END WALL

Richard S. Wolowicz, Chicago, and Joseph A. Warner, St. Charles, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed May 11, 1964, Ser. No. 367,279
3 Claims. (Cl. 229—34)



1. A tray formed from a unitary blank of foldable paperboard cut and scored to form in combination:

(a) a bottom panel and a plurality of contiguous side walls hinged to and upstanding from the bottom panel;

(b) at least one of the side walls including inner and outer panels disposed in adjacent face-to-face relationship;

(c) one of the panels of said one side wall being attached at its lower edge to the bottom panel and being foldably connected at its opposite edge on a hinge line to the other panel;

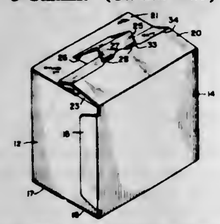
(d) the hinge line being curved slightly convex away from the bottom panel, and being spaced at its opposite ends substantially equal distances from the bottom panel;

(e) the inner and outer panels bowing slightly from the usual plane of the one wall to strengthen the wall against transverse deflection thereof.

3,201,026
RECLOSURE DEVICE FOR AUTOMATICALLY FORMED AND SEALED CORRUGATED CONTAINERS

Jack R. Travis, Corning, and Lewis E. Tremaine, Jr., Horseheads, N.Y., assignors to Corning Fibre Box, Corning, N.Y., a corporation of New York

Filed Aug. 12, 1963, Ser. No. 301,563
3 Claims. (Cl. 229—39)

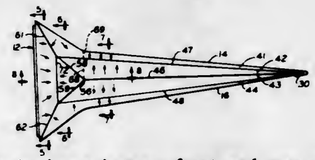


1. A positive locking reclosure device for adhesively-bonded machine-formed corrugated cartons which have been opened at one end by the release of the adhesive bonding which comprises, a T-shaped locking tuck section formed out of an inner partial overlap end flap and foldably secured thereto along a score line; said tuck section having a base portion, a nose portion foldably secured to said base portion along a score line, and a pair of outwardly-projecting engaging tabs foldably secured along score lines to opposite sides of said nose portion; a slot formed in an outer end flap partially overlying said inner end flap, a score line extending transversely across said outer end flap from end portions of said slot; said outer partial overlap flap being foldable along said last mentioned score line to open said slot while partially overlying said inner overlap flap; and said engaging tabs of said tuck section being foldable under said nose portion so that said nose portion may project through said slot and lock said tuck section within said slot to positively retain the partial overlapping flaps in a secured locked position.

3,201,027
DOUBLE GUSSET BAG

Carl E. Meyerhoefer, Little Neck, N.Y., assignor to Equitable Paper Bag Co. Inc., Long Island City, N.Y., a corporation of New York

Filed Apr. 26, 1963, Ser. No. 275,988
10 Claims. (Cl. 229—53)

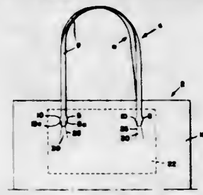


1. A bag having a bottom, front and rear walls extending upward from the bottom, side walls also extending upward from the bottom and each of which extends between the front and rear walls of the bag, each of the side walls comprising at least four panels extending lengthwise of the bag for most of the length thereof, two of the said four panels being joined with the front and rear walls, respectively, along folds, the panels that are joined with the front and rear walls being joined on other sides to intermediate panels along other folds, and the bag having a middle fold at which intermediate panels are joined together, the middle fold dividing into two folds near the bottom of the bag and that diverge as they extend toward said bottom, and said diverging folds connecting with other folds that diverge and that extend to the bottom of the bag and that fold in opposite directions to said first diverging folds.

3,201,028
CONTAINER

Martin E. Fossler, Philadelphia, and William C. Leingang, Jr., Warrington, Pa., assignors to Wolf Brothers, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed July 21, 1964, Ser. No. 384,149
2 Claims. (Cl. 229—54)



1. A paper bag comprising

a front wall,

a back wall,

each front and back wall having a pair of spaced openings substantially equidistant from the top thereof,

a downwardly extending tab connected to the upper terminus of each opening, an upwardly extending tab connected to the lower terminus of each opening,

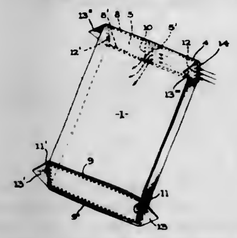
an integral handle having a loop portion passing through each pair of openings in each of said front and back walls,

wings integral with each end of each loop portion to engage the bag adjacent the openings to limit the entrance of the loop portion into the bag,

a locking tab integral with each end of the loop portion having a width substantially greater than the width of the adjacent opening and overlying the adjacent upwardly extending tab.

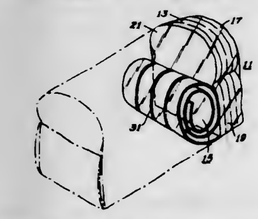
a pair of ears integral with each locking tab and extending upwardly above the adjacent opening outboard of the adjacent wings.

3,201,029
VALVED BAG
Mario Batosti, Milan, and Antonio Belloni, Padova, Italy, assignors, by mesne assignments, to Edison, Milan, Italy, a corporation of Italy
Filed June 7, 1963, Ser. No. 286,387
4 Claims. (Cl. 229—62.5)



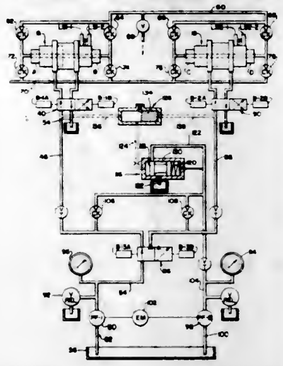
1. A valved bag of synthetic material having welded ends and a substantially squared off shape, comprising; a flattened tube of synthetic material partially slit longitudinally along the flattened edges thereof forming a pair of free end flaps on each end of said tube; said free end flaps of the two opposite sides being overlapped and conjoined by means of welds located transverse to the flattened tube, and closed on the corners thereof by welds located at ninety degree angles to the said transverse welds; a longitudinal slit located in the inner flap of one of said overlapping ends intermediate from the side thereof; a tubular valve formed in the end having said slit; said valve being laterally defined by the said overlapping ends area of the tube sides and by the said transverse welds, and communicating with the inside of the tube through said slit.

3,201,030
CONTAINER
Sid Pollack, 1101 5th Ave., Pittsburgh, Pa.
Filed Mar. 4, 1964, Ser. No. 349,260
4 Claims. (Cl. 229—65)



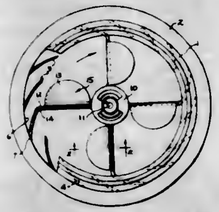
1. A container containing different quantities of discrete articles, said container including walls defining an article containing volume within said walls, at least one of said walls being yieldable and including prestressed resilient means along substantially the whole extent of said one wall, said resilient means being prestressed to a curled position which it tends to maintain and exerting a force on said one wall urging said one wall to curl itself against an adjacent wall of said container in a containing-volume-reducing direction, reducing said volume to a magnitude substantially equal to that occupied by a quantity of said articles within said container.

3,201,031
DIFFERENTIAL PRESSURE CONTROL FOR PIPLESS PUMPING
George F. Maglott, North Attleboro, Mass., assignor to Harwood Engineering Company, Walpole, Mass., a corporation of Massachusetts
Filed Jan. 10, 1964, Ser. No. 336,929
8 Claims. (Cl. 230—53)



1. In an intensifier assembly adapted for delivering a smooth and continuous flow of compressible fluid at a high delivery pressure having a plurality of intensifier units each including a high pressure piston face and low pressure piston faces for effecting a compression and return stroke of each said high pressure piston face, pipe connections with said high pressure piston faces for delivering a compressible fluid against a back pressure determined by demand, and means for supplying said compressible fluid at a precompression pressure to said high pressure piston faces, and means for supplying a substantially noncompressible fluid to said low pressure faces for moving said high pressure faces progressively so that one high pressure piston is always advancing at a high compression demand pressure, while a second high pressure piston is advanced at a precompression pressure, and a third high pressure piston is moved in the return direction, the combination of a source from which said noncompressible pressure fluid is supplied for loading said low pressure piston faces at a delivery pressure which will produce said high pressure piston face demand pressure, a second source from which said low pressure noncompressible fluid is supplied for loading said low pressure piston faces at a lower predelivery pressure, means including a separate supply line to each said intensifier unit through which said low pressure noncompressible fluid is supplied to the low pressure faces associated with each said high pressure piston face, a noncompressible fluid delivery pressure transfer valve shiftable upon completion of the high pressure compression stroke of each successive intensifier unit to connect said noncompressible fluid delivery pressure source with the fluid pressure supply line to a succeeding intensifier unit thereby advancing said next succeeding intensifier unit at said high compression demand pressure, one-way connections from said noncompressible fluid predelivery pressure source to each said noncompressible fluid pressure supply line for continuously supplying said noncompressible fluid at said predelivery pressure to each said hydrualic fluid supply line, and a control device operable upon completion of the high pressure compression stroke of each sucessive intensifier unit to effect a return movement of said intensifier unit and simultaneously to shift said noncompressible fluid delivery pressure transfer valve to connect said non-compressible fluid delivery source with the supply line to a said intensifier unit advancing at said precompression pressure, thereby continuing the advance of said last-mentioned intensifier unit at high compression demand pressure.

3,201,032
AIR IMPELLER CONSTRUCTION
Robert B. Gelbard, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Oct. 21, 1963, Ser. No. 317,719
3 Claims. (Cl. 230—134)



1. A radial flow air impeller construction having an air inlet at the front end thereof, comprising

a hub for mounting said impeller on a drive shaft, spaced apart front and rear annular rings concentric with said hub,

the inner surface of said rear ring having a diameter at least equal to the diameter of the outer surface of said front ring,

a plurality of blades bridging the space between said rings and having outer edge portions adjacent the rear ends thereof connected to said inner surface of said rear ring and the front ends thereof connected to the rear surface of said front ring,

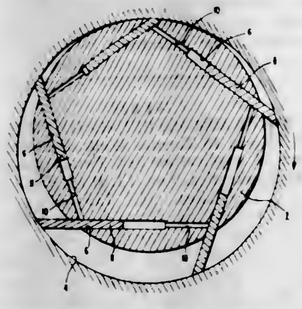
a pluality of radially extending struts connecting said hub to the inner edges of some of said blades adjacent the rear ends thereof,

at least some of said struts including forwardly curved extensions forming with said struts, booster vanes between said hub and said blades,

said booster vanes having edges spaced from said blades and being pitched in the direction of rotation of said impeller,

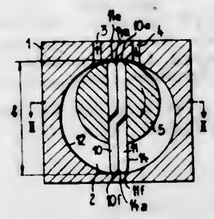
said vanes being disposed rearwardly of a radial plane midway between said rings.

3,201,033
VANE-TYPE ROTARY AIR PUMPS
George Harold Briscoe, Croydon, England, assignor to Lacy-Hulbert and Company Limited, Croydon, England
Filed Mar. 4, 1963, Ser. No. 262,618
1 Claim. (Cl. 230—152)



In a vane-type rotary air pump the improvements comprising a rotor having peripheral slots, vanes slideable in said slots, and conduits from the bottom of each of said slots opening only into a major face of the respective succeeding slot and defining a closed communication therebetween, whereby movement of each vane within its slot produces a fluid pressure within the conduit which is applied to a major face of the vane in the succeeding slot to press said succeeding vane against the face of the slot in which it operates.

3,201,034
FLUID-FLOW DEVICE, PARTICULARLY ROTARY COMPRESSOR AND THE LIKE AND SLIDER CONSTRUCTION
Hans Ryffel, Zurich, Switzerland, assignor to Dr. G. Dätwyler, Zurich, Switzerland
Filed Mar. 29, 1963, Ser. No. 269,008
8 Claims. (Cl. 230—153)

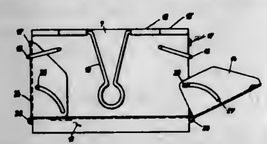


1. In a rotary fluid-flow device comprising a housing having inner walls defining a fluid chamber, inlet and outlet ports communicating with said fluid chamber, a rotor member eccentrically disposed for rotation in said fluid chamber, said rotor member having contact with the walls of said fluid chamber between said inlet and outlet ports and being provided with a diametral slot, a multiple slider carried in said diametral slot for sliding movement relative to said rotor member and contacting said walls of said fluid chamber at opposed ends of said multiple slider, said multiple slider comprising a plurality of intersecting slider blades disposed in said diametral slot, each slider blade comprising a pair of blade wings disposed in separate planes interconnected by an intermediate connecting member provided with a recess, said intersecting slider blades being symmetrical, with each slider blade turned through 180 degrees in its own plane relative to the adjacent slider blade with the respective recess of said slider blades interfittingly engaging with one another, each of said intersecting slider blades having opposed faces which are simultaneously in contact with the inner walls of said fluid chamber during rotation of said rotor member, said opposed faces of each of said slider blades providing respective contact faces, with the zone of contact between each respective contact face of said multiple slider and the inner wall of said fluid chamber changing during rotation of the rotor member, said contact zone wandering along the outer surface of the associated contact face.

3,201,035
STACKABLE, UNIVERSAL INDUSTRIAL BIN
Paul Edgar Martin, 2100 Forster St., Harrisburg, Pa., and Lothar Peranck, Karl-Marx-Str. 166, Berlin-Neukolln, Germany
Filed July 2, 1962, Ser. No. 206,836
Claims priority, application Germany, July 5, 1961, P 27,475
6 Claims. (Cl. 232—1)

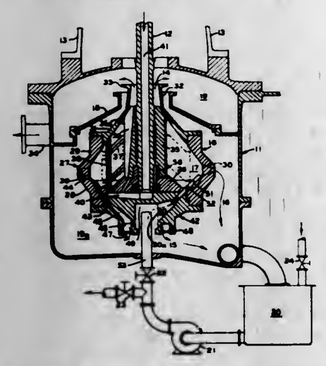
1. A stackable, multi-purpose container bin of approximately rectangular shape for the storing, transporting and dispensing of solid articles, especially of parts used in industrial assemblies having elements on the bottom and lid surfaces for keeping the vertically stacked containers together by an interlocking action, comprising a base and

two opposite sides, shovel-shaped lips on the two opposite sides hinged at the base, so that when the bins are stacked in set-back position and the lips are in open position the bins can be filled with parts from one side simultaneously



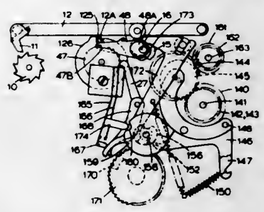
while parts are being taken out from the opposite side, and a bin lid provided with a protruding flange to engage a top rim of the hinged lips, so that when the lid is closed, the flange secures the hinged lips in closed position.

3,201,036
THREE-PRODUCT NOZZLE-TYPE CENTRIFUGE
Ralph H. Halbach, Westport, Conn., and Badawi W. Tielmat, Richmond, Calif., assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Aug. 11, 1964, Ser. No. 389,827
10 Claims. (Cl. 233—14)



1. In a centrifugal machine a rotor structure which comprises a pair of conically shaped bowl end portions having their wide ends connected to each other to constitute a rotor bowl providing an annular separating chamber; overflow discharge means provided at the narrow end of one of said bowl end portions; discharge nozzles provided upon the outer periphery of the bowl intermediate said bowl end portions for centrifugally discharging underflow from said separating chamber; a hub portion closing the narrow end of the other bowl end portion with a first set of inflow passages in said hub portion spaced from one another around the rotor axis and with a second set of inflow passages in said hub portion spaced from one another around said axis and with divergent inflow conduits extending from respective second set inflow passages to the region of said nozzles; a rotor shaft extending from said hub portion through the narrow end of the first mentioned bowl end portion; a complementary construction removably connected to said hub portion and constituting therewith a transverse conduit means having a central portion and radial portions extending therefrom communicating with respective first set inflow passages in the hub portion, said complementary construction furthermore formed with a central influent chamber located outwardly from said transverse conduit means and having a centrally disposed outer entrance opening, and furthermore formed with transfer passages providing communication between said influent chamber and respective second set inflow passages in the hub portion for delivery of control liquid from said influent chamber through said divergent conduits to the region of said nozzles; means for admitting feed mixture into said transverse conduit means for delivery through said first set inflow openings into the separating chamber; and means for discharging from said separating chamber a third fraction, which means comprise a first set of outflow conduits in said hub portion spaced from one another around the rotor axis and having their inlet ends located to receive third fraction material from an intermediate zone in said separating chamber, an annular effluent chamber in said complementary construction concentric with said influent chamber, a second set of outflow conduits in said complementary construction spaced from one another around the rotor axis and providing communication between said first set of outflow conduits in said hub portion and said annular effluent chamber, and a ring dam for said annular effluent chamber providing overflow for said third fraction material from said intermediate zone.

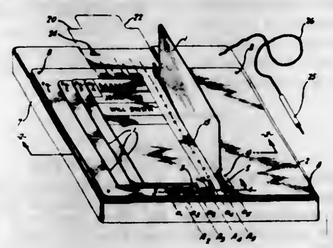
3,201,037
TAXIMETERS
John Edwin Thomas Welland, London, England, assignor to Geecen Limited, London, England, a British company
Filed July 19, 1963, Ser. No. 296,275
Claims priority, application Great Britain, Mar. 14, 1963, 10,138/63
4 Claims. (Cl. 235—30)



1. A taximeter having a rotary member, first drive means for driving the rotary member in accordance with time, second drive means for driving the rotary member in accordance with the distance travelled by the vehicle, a fare indicator, a fare indicator operating means, advance means for operating the latter with a succession of advance movements according to the roatation of the rotary member, first control means driven by said rotary member in accordance with distance and time for changing the rate of advance from one predetermined rate for first tariff to a different predetermined rate for second tariff after a predetermined amount of movement of said rotary member, said means for driving the second drive means including variable ratio toothed gearing, ratio changing means to change said gearing to additionally vary the tariff for distance travelled, and control means operatively connected with said rotary member to effect change of said ratio changing means after a predetermined rotation of said rotary member.

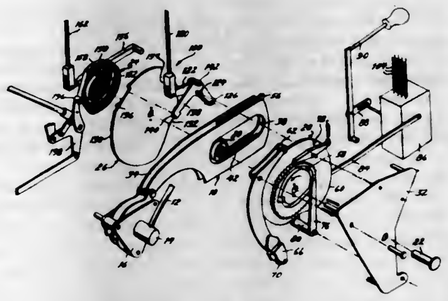
3,201,038
DATA REGISTERING DEVICE
Joseph P. Harris, 15 Terrace Walk, Berkeley 7, Calif.
Continuation of application Ser. No. 218,420, Aug. 21, 1962. This application Nov. 13, 1962, Ser. No. 236,931
22 Claims. (Cl. 235—50)

1. In a data registering device for use with a machine-processable record card provided with a plurality of groups of index point areas: a base, positioning means carried by said base and positioning a record card thereon with said index point areas in a predetermined position relative to said base, a leaf provided with a row of reference indicia associated respectively with the areas in one of said groups of index point areas, means mounting said leaf on said base for movement from a position with said



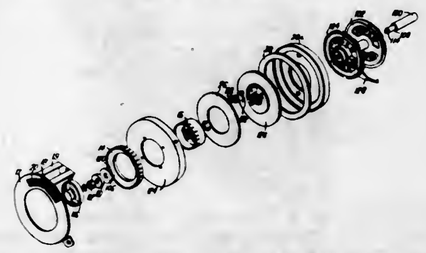
indicia respectively in alignment with the areas of one of said groups and in covering relation relative to another of said groups, to a position uncovering said other group.

3,201,039
ROTARY CAM CONTROLLED VOTING MACHINE
John G. Lord, Swarthmore, Pa., assignor to Shoup Voting Machine Co., a corporation
Filed Apr. 27, 1964, Ser. No. 362,581
5 Claims. (Cl. 235—50)



1. An automatic voting machine comprising actuation means operative in a first step to set a voting machine for voting and in a second step to return the voting machine to its initial positon after voting, a curtain closing means operative from said actuation means to close a curtain on the voting machine during said first step and to open the curtain at the end of said second step, a plurality of spindles operatively set at the end of said first step to be selectively actuated by a voter, spindle locking means operative from said actuation means to lock said spindles in place at the start of said second step, recording means operative to record the position of said spindles when said spindles are locked by said spindle locking means, said locking means being operative to release said spindles during said second step after said spindle recording means has recorded the position of said spindles, and spindle resetting means operative from said actuation means to return said spindles to their initial set position during said second step after said spindle locking means has unlocked said spindles and before said curtain closing means has opened said curtain, and wherein said spindle locking means includes a ladder system mechanically interlocking at least one locking member for each spindle, said spindles having a voted and an unvoted position, said locking members being operative when said ladder system is reciprocated into a locked position to lock said spindles in their respective voted or unvoted positions.

3,201,040
COUNTING MECHANISMS
Edward Albert Tomlin, Southgate, London, England, assignor to Gestetner Limited, London, England, a British company
Filed Dec. 12, 1963, Ser. No. 330,111
Claims priority, application Great Britain, Dec. 21, 1962, 48,469/62
16 Claims. (Cl. 235—132)

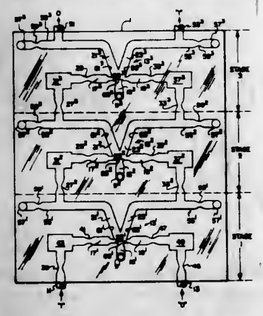


1. A counting mechanism for a duplicating machine, such mechanism comprising a ratchet wheel having an axis about which it is rotatable and having teeth about its periphery adapted to be advanced upon the completion of each operating cycle of the machine forwardly to rotate the ratchet wheel; means controlled by said ratchet wheel for stopping the machine when the ratchet wheel reaches a predetermined zero position; means for setting the ratchet wheel to a selectable initial position, such means for setting the ratchet wheel comprising a fixed reference member and a movable reference member rotatable with said ratchet wheel relative to said fixed reference member; an abutment comprising an annular rotatable about the axis of the ratchet wheel, means defining a shoulder on said annular member, and means for releasably locking said annular member in a preset rotational position corresponding with the initial position of the ratchet wheel, said last mentioned means comprising a projecting pin carried by said annular member; a plate-like coating member mounted for axial movement relative to said annular member, a plurality of holes being defined in said coacting member with an individual hole being provided for each operable position of said annular member; a plate parallel with said annular member and rotatable about the axis thereof; stop means coacting between said annular member and said plate to define a rest position of said plate relative to said annular member; a spring rotatably biasing said plate to said rest position, said plate comprising a shoulder; and a pawl rotatable with said ratchet wheel, said pawl being engageable with said annular member shoulder for preventing rearward movement of said ratchet wheel past initial adjusted position and with said plate shoulder, said annular member being provided with a cam surface adapted upon forward rotation of the ratchet wheel to engage said pawl to disengage said pawl from said plate whereby said plate is permitted to return to its rest position.

3,201,041
FLUID SHIFT REGISTER
Herbert Frazer Welsh, deceased, late of Philadelphia, Pa., by Julea S. Chapline, executrix, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 23, 1964, Ser. No. 355,527
6 Claims. (Cl. 235—201)

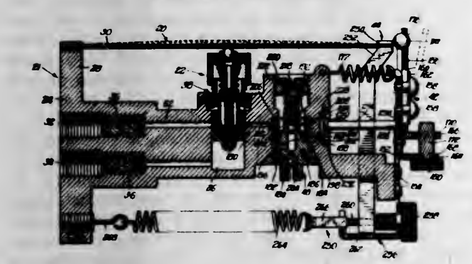
1. A binary shift register comprising: a plurality of fluid amplifiers each having power nozzle means for issuing a fluid power stream, output channel means for selectively receiving said power stream, and control nozzle means for selectively directing said power stream into said output channel means, each of said amplifiers hav-

ing first and second stable states manifested by first and second paths of stable power stream flow from said power nozzle into said output channel means; means for generating a series of fluid pulses occurring serially in time; means for applying said generated pulses to the power nozzle means of each of said amplifiers; a plurality of means for connecting said amplifiers in series, said connecting means being connected between the output chan-



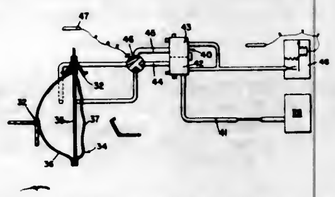
nel means of one amplifier and the control nozzle means of the next amplifier, said connecting means including means for delaying a fluid signal applied thereto for at least as long as the interval of time between successive pulses produced by said generator means and means for limiting the magnitude of said delayed signals to a magnitude sufficient to determine the direction of power stream flow as a power stream is initiated but insufficient to switch an amplifier from one stable state to the other.

3,201,042
RELAY VALVE
Robert J. Norman, Chicago, and Wesley L. Taylor, Glenview, Ill., assignors to The Powers Regulator Company, Skokie, Ill., a corporation of Illinois
Filed June 11, 1962, Ser. No. 201,600
4 Claims. (Cl. 236—1)



3. In a relay, the combination comprising a casing having first and second compartments in which said first compartment is connected to a source of supply pressure and said second compartment is under control pressure, valve seat means connecting said first and second compartmets, valve means disposed in said second compartment cooperating with said valve seat means for selectively connecting said first and second compartments to permit flow therebetween, a diaphragm means mounted in said first compartment and partially defining the same for sensing said supply pressure to generate a force substantially equal and opposite to that generated by said supply pressure on said valve means, a stem means mounted within said casing and connected at one end to said valve and connected to and extending through said diaphragm means, said diaphragm means supporting said stem means in a spaced, substantially coaxial, relationship from said casing, whereby the force imposed by said supply pressure on said valve means and on said diaphragm means cancel each other, and mean on said stem means for sensing said control pressure for generating a force equal and opposite to that force imposed by said control pressure on said valve mean whereby the forces imposed by said control pressure on said stem means cancel each other.

3,201,043
AIR CONDITIONING UNITS
Urban Bowman, New York, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Original application June 30, 1959, Ser. No. 824,067. Divided and this application Feb. 19, 1963, Ser. No. 259,699
3 Claims. (Cl. 236—1)



1. In a control arrangement for an induction type air conditioning unit for regulating the passage of secondary air in a substantially constant volume through a plurality of openings into the unit under summer and winter operating conditions, the combination of a diaphragm arrangement comprising a separating plate placed adjacent the openings, a first diaphragm cooperating with the separating plate to form a first diaphragm chamber to coperate with a first opening to regulate passage of air therethrough and a second diaphragm cooperating with the separating plate to form a second diaphragm chamber to cooperate with a second opening to regulate passage of air therethrough, a regulator to communicate with a source of air pressure, said regulator including a first chamber and a second chamber, said first chamber being connected to said first diaphragm chamber for supply of air pressure thereto and said second chamber being connected to said second diaphragm chamber for supply of air pressure thereto, means for selecting the diaphragm chamber connected to said regulator for supply of air pressue to the selected diaphragm chamber and means for regulating the pressure applied in the selected diaphragm chamber.

3,201,044
THERMOSTATIC VALVE
Juan Alfonso Fellner, Cordoba St. 632, Buenos Aires, Argentina
Filed July 29, 1963, Ser. No. 298,058
1 Claim. (Cl. 236—33)

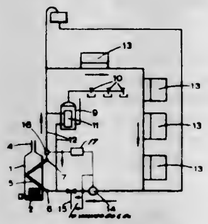
An automatic temperature regulating device, comprising a vertical pipe having an upper water inlet, a valve casing supporting the lower end of said pipe, said pipe having a water outlet intermediate its upper and lower ends and substantially in the middle thereof, a thermosensitive sleeve located within said pipe and having a lower end mounted in said valve casing, whereby a temperature compensating water chamber is provided between said water outlet and the lower end of said pipe, a block carried by the other end of said sleeve, a rod having an upper end fixed to said block, a lever located within said valve casing and having a pivoted end, a bolt carried by the other end of said lever, said rod having a lower end extending into said valve casing and engaging said lever

intermediate the ends of the lever, a valve disc having one side engaged by said rod, said valve casing having a gas inlet and a gas outlet, said valve disc being adapted to engage said valve casing in a closed position to separate



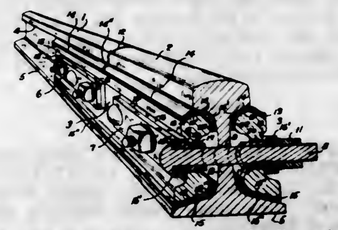
said gas inlet from said gas outlet, said rod tending to move said valve disc into an open or intermediate position, and a spring engaging said valve disc and tending to maintain said valve disc in a closed position.

3,201,045
COMBINED SPACE HEATING AND DOMESTIC HOT WATER HEATING SYSTEM
William Davidson, Gerrards Cross, Leonard Arthur Steer, West Molesey, and Alfred Perrin, Woking, England, assignors to C.D. Patents Limited, London, England, a British company
Filed Mar. 1, 1963, Ser. No. 261,985
Claims priority, application Great Britain, Mar. 19, 1962, 10,449/62
1 Claim. (Cl. 237—8)



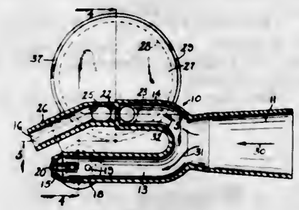
A water heating system comprising a combustion chamber, a plurality of burners within said chamber, said burners being operable independently of one another, a water inlet header disposed above said burners, a water outlet header disposed above said inlet header, a plurality of finned tubes disposed within said chamber above said burners and extending in vertical zigzag paths between said headers so that hot water can flow upwardly through said tubes from one of said headers to the other, a first hot water storge vessel from which hot water for domestic use can be withdrawn as desired, a second hot water storage vessel which is located in said first vessel and is connected with said inlet and outlet headers, a plurality of space heating devices connected *in parallel* with said second vessel, a pump for circulating water through said headers, finned tubes, second vessel and space heating devices, a first of said burners being operative to provide the heat demands of said domestic hot water use, and means for automatically bringing into operation additional of said burners when said pump is set in operation independently of said first burner.

3,201,046
INSULATED RAIL JOINT CONSTRUCTION
Randon O. Ferguson, Park Forest, Ill., assignor to The Johnson Rubber Company, Middlefield, Ohio, a corporation of Ohio
Filed Feb. 29, 1960, Ser. No. 11,685
2 Claims. (Cl. 238—152)



1. In an insulated rail joint, a pair of rails positioned in spaced end-to-end relation each formed with diverging laterally extending fishing surfaces, a rigid joint bar formed with opposed load bearing surfaces and non-load bearing surfaces adjacent thereto, electric insulation formed of deformable material molded and permanently bonded to said joint bar along said opposed load bearing surfaces and said non-load bearing surfaces adjacent thereto, horizontally aligned bearing sheaths formed of sheet metal spaced apart at their inner ends to provide a gap at the location of the space between said rail ends, said sheaths being permanently bonded to said electric insulation along load bearing and along related non-load bearing surfaces, and fastening means electrically insulated from said joint bar pressing said load bearing surfaces toward said fishing surfaces causing tight engagement between said sheath and said fishing surfaces and producing pressures in said electric insulation along said load bearing surfaces greater than the pressure in said electric insulation along said non-load bearing surfaces, said gap preventing electrical continuity between said sheaths, the electric insulation extending along said non-load bearing surfaces providing containment of the electric insulation along said load bearing surfaces by virtue of its bonded relationship with said joint bar and bearing sheath.

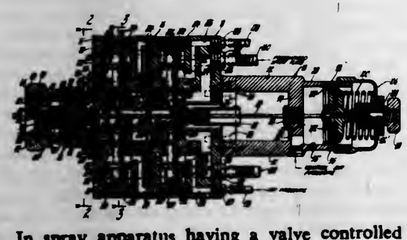
3,201,047
MATERIAL APPLYING APPARATUS
Victor Danberg, 6 Mary Ann Lane, Wallingford, Conn.
Filed Oct. 30, 1963, Ser. No. 320,098
1 Claim. (Cl. 239—336)



Apparatus for applying finely divided material comprising means defining a main conduit, means defining first and second branch conduits communicating with said main conduit, one of said branch conduits being arranged to have a container for holding liquid secured thereto, means in said one of said branch conduits for dischaging a liquid from the container in a spray when air is forced through said one of said branch conduits, the other of said branch conduits having an inlet end and a discharge end of smaller internal diameter than the inlet end directed across the discharge path of said one of said branch conduits, wall means intermediate the ends of

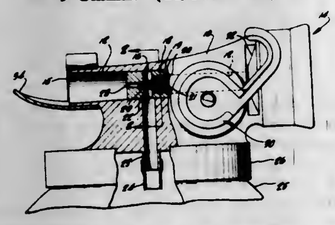
said other of said branch conduits for preventing flow of air through said other of said branch conduits, a material container mounting member attached to said other of said branch conduits defining a cylindrical peripheral mounting flange located wholly below said other branch conduit, an air directing pipe extending downwardly from said other of said branch conduits on the inlet side of said wall means, and a port defined in said other of said branch conduits on the discharge side of said wall means, said pipe and said port residing within said peripheral flange, with the end of said air directing pipe extending below said peripheral flange.

3,201,048
MULTIPLE FLUID SPRAY GUN WITH REMOTELY OPERABLE SELECTIVE VALVE CONTROL
John R. Gibbs, Janesville, Wis., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 19, 1963, Ser. No. 274,180
12 Claims. (Cl. 239—422)



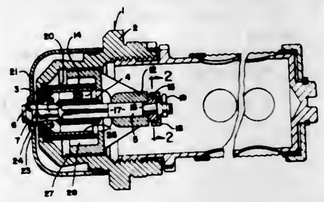
1. In spray apparatus having a valve controlled fluid nozzle, a body member having a fluid supply chamber communicating with said nozzle, a plurality of radially disposed valve chambers opening through valve seating ports to said fluid supply chamber, and a plurality of passages connectable to alternate supplies of pressurized fluid coating material and each of said passages opening through a valve controlled port to a different one of the valve chambers adjacent the valve seating port, valve means including a valve member reciprocably mounted in each valve chamber and shiftable between a seated port closing position and an opened port interconnecting position, and means for selectively actuating each of said valve members between their opened and closed positions thereby selecting the fluid material supplied through said fluid supply chamber and sprayed from said nozzle.

3,201,049
PROPORTIONING EDUCTOR
Stanley A. Hayes, Arcadia, Calif., assignor to Hayes Spray Gun Company, Pasadena, Calif., a corporation of California
Filed Mar. 7, 1963, Ser. No. 263,628
9 Claims. (Cl. 239—433)



1. A proportioning garden hose sprayer for educting a second liquid into a carrier stream of a first liquid comprising:
(a) a body member defining a liquid passageway therethrough between an inlet and an outlet,
(b) an eductor disposed in the passageway and having an inlet passage, an aspiration chamber and a cylindrical diffusion passage connected in series relationship, and
(c) a conduit connecting the aspiration chamber to a source of the second liquid,
(d) the inlet passage having a non-circular cross sectional configuration for providing a highly turbulent and high velocity discharge stream having a velocity substantially in the direction of the flow to provide a solid integral discharge stream,
(e) the aspiration chamber being constructed to permit the boundary of the discharge stream from the inlet passage to directly contact the second liquid to permit entrainment of the second liquid into the first liquid,
(f) the diffusion passage being concentrically aligned with the inlet passage and having a larger cross sectional area than the inlet passage and a length at least equal to its diameter for confining the discharge stream from the inlet passage to allow the transfer of energy from the high velocity discharge stream to the second liquid.

3,201,050
NOZZLE
Harold C. Simmons, South Euclid, and Lawrence B. O'Sickey, University Heights, Ohio, assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 29, 1962, Ser. No. 220,338
9 Claims. (Cl. 239—453)



7. A fuel injection nozzle comprising a body having an inlet for fuel under pressure and a discharge orifice, a pintle valve movable in said body, spring means between said body and valve; and a spring follower and a spring guide defining with said body a fluid damping chamber to reduce vibration and flutter of said valve.

ERRATUM

For Class 241—21 see:
Patent No. 3,201,066

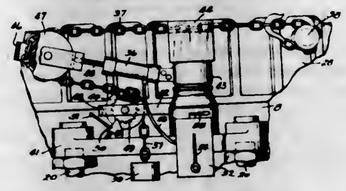
3,201,051
PROCESS OF SALT MILLING A MILL POWDER
Charles W. Manger, Irvington, and Ben H. Perkins, Scotch Plains, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 25, 1963, Ser. No. 297,654
7 Claims. (Cl. 241—22)

1. In the process of salt-milling a mill powder consisting of crude pigments to pigmentary particle size, the improvement which comprises milling said mill powder in the presence of a solid salt grinding agent which is thermally stable under the conditions of said salt-milling and is volatilizable when heated to temperatures below that at which said pigmentary particles decompose and thereafter heating the mill powder-solid salt grinding agent mixture to a temperature sufficient to volatilize said solid salt grinding agent.

3,201,052
PROCESS FOR CRUSHING AND COOLING CALCIUM CARBIDE BLOCKS
Klaus Feldmann and Alfred Rumberg, Hermulheim, near Cologne, Helmuth Klee, Knapsack, near Cologne, Heinrich Floor, Brühl, near Cologne, and Anton Schummer, Hamburg, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
No Drawing. Filed Oct. 30, 1962, Ser. No. 234,205
3 Claims. (Cl. 241—23)

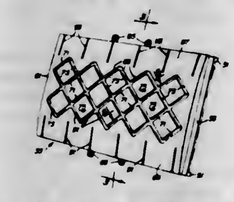
1. In the process for cooling calcium carbide solidified in blocks from the liquid calcium carbide, the improvement which comprises cooling the blocks in a first cooling step to a surface temperature of about 200° C., crushing the blocks, and cooling the crushed material in a second cooling step in layers at most 50 cm. thick before finally processing this material.

3,201,053
CONCAVE ADJUSTMENT FOR CRUSHERS
Harvey H. Rumpel, Sullivan, Wis., assignor to Barber-Greene Company, Aurora, Ill., a corporation of Illinois
Filed Aug. 29, 1962, Ser. No. 220,259
9 Claims. (Cl. 241—286)



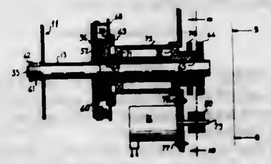
1. Adjustment mechanism for a crusher having a crushing head gyratable within a frame and cooperable with bowl structure which is rotatably adjustable relative to the frame to provide a variable crushing zone, said adjustment mechanism comprising a fluid pressure actuated extensible member having one end fixed with respect to the crusher frame, a flexible force transmitting element traversing the other end of said extensible member and having one end thereof coupled with the bowl structure, and means coacting with said flexible element independently of said extensible member for maintaining said element under constant tension at all times regardless of the direction of movement of said extensible member.

3,201,054
JAW CRUSHER FACEPLATE
Ivan C. King, 7027 SW. Vermont Court, Portland, Oreg.
Filed May 9, 1963, Ser. No. 279,245
6 Claims. (Cl. 241—291)



1. A face plate for jaw crushers for crushing rocks and ore comprising
a rigid, rectangular, plate-like body of manganese or similar steel having a forward crushing face to be mounted upright in a crushing mechanism with its back against a supporting surface on which it bears during crushing,
said crushing face being at least generally flattish,
said body having formed in the crushing face a first and second series of parallel grooves extending obliquely of the direction of travel of crushable material past said face,
the grooves being small in comparison to the areas between the grooves,
said areas between said grooves lying at least generally in a common plane,
the grooves of the first series intersecting the grooves of the second series at abrupt angles and dividing the major portion of said crushing face into a network of grooves and diamond shaped crushing pads isolated from each other by said grooves,
said pads serving to prevent lateral shift of material being crushed and tending to urge crushable material downwardly in such crushing mechanism while resisting the tendency of the same to belch,
said grooves permitting the movement of surface metal of said pads under crushing blows to avoid the accumulation of bulging stresses in the pad portions of said faceplate,
said grooves terminating short of at least the lower edge of said face to leave at least a lower marginal portion free of said grooves,
said grooves at each margin forming a laterally extending generally sinuous or sawtooth shaped composite groove defining a series of apices alternating with indentations,
said body having formed in said lower marginal portions of the crushing face a third series of grooves extending parallel to one another and to the direction of travel of material being crushed,
the spacing between two adjacent grooves of said third series being substantially equal to the spacing between two indentations,
each groove of said third series extending from the lower edge of said face upwardly toward the central areas of said face plate and being aligned at least generally with an indentation so that material does not feed from said apices directly into said third series of grooves to thereby avoid channeling of material into said third series of grooves,
said third series of grooves also permitting the movement under crushing blows of surface metal of the areas between the grooves of said third series to avoid the accumulation of bulging stresses in said lower marginal portion.

3,201,055
FILAMENT WINDING APPARATUS
Carl Guenther and Donald D. Argue, Shelbyville, Ind., assignors to General Electric Company, a corporation of New York
Filed Dec. 21, 1962, Ser. No. 246,639
7 Claims. (Cl. 242—25)



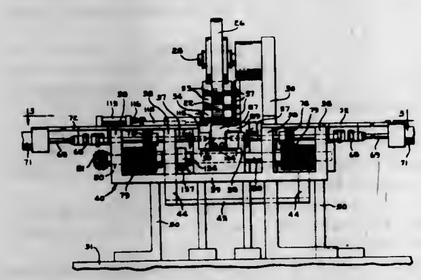
2. Filament winding apparatus comprising:
(a) drive shaft means comprising:
(1) a hollow cylindrical shaft mounted for rotary movement, and
(2) a solid cylindrical shaft mounted within said hollow shaft for free rotary movement relative thereto,
(b) a storage spool removably mounted on one of

said shafts for receiving and storing a continuously moving filament,

(c) an accumulator mounted on the other of said shafts axially adjacent to said storage spool for receiving said filament during the removal and replacement of said spool, and

(d) disengageable drive means for selectively imparting rotary motion to said solid shaft or said hollow shaft, whereby said shafts may be driven independently of each other for rotating and stopping said storage spool and said accumulator.

3,201,056
WINDING APPARATUS
William J. Fanning, Melrose Park, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 26, 1964, Ser. No. 347,479
9 Claims. (Cl. 242—56.1)



1. In an apparatus for winding a pair of webs:

a pair of arbor sections mounted for rotation about a horizontal axis and movable to and from a closed position for receiving the webs therebetween and cooperable in the closed position to form a longitudinally split arbor for winding the webs thereon;

means for guiding the webs from supplies thereof to said arbor in laterally spaced and converging relation to each other;

means for rotating the arbor;

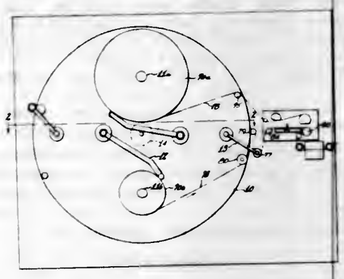
means for moving said arbor sections axially to and from closed position;

a pair of web-positioning elements mounted on opposite sides of said axis for movement toward and away from each other and said axis and having cooperable surfaces below said axis and cooperable surfaces above said axis engageable with the webs for moving the webs into engagement with each other and positioning the webs in alignment with said axis; and

means for moving said web-positioning elements toward and away from said axis.

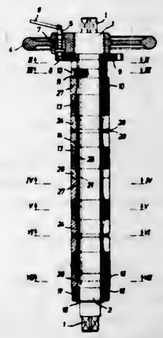
3,201,057
WEB UNWIND APPARATUS
Danahey Ryan, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 1, 1963, Ser. No. 299,244
7 Claims. (Cl. 242—58.1)

1. In a device for unwinding web from spools by the action of an unwind driving force the combination comprising a turret, a pair of rotatable spindles on said turret each adapted to receive a spool, unwind torque means for resisting the rotation of each spindle caused by said driving force, sensing means for sensing the decreasing diameter of web on a spool, control means responsive to said sensing means for reducing the resisting torque of said unwind torque means thereby maintaining constant tension in said web as it is being unwound, means for detecting the exhaustion of the web from a spent spool, said turret having indexing means for positioning a fresh spool



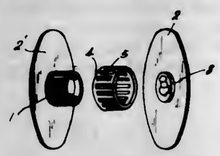
into position for being unwound upon being actuated by said detecting means, and means for splicing of the trailing end of said web to the lead end of the web from the fresh spool when actuated by said detecting means.

3,201,058
WINDING ROLL OR MANDREL
Rudolf Waldherr, Erkrath, near Duesseldorf, and Laurence Welland, Mettmann, near Duesseldorf, Germany, assignors to Hugo Stinnes Personlich Gesellschaft mit beschrankter Haftung, Mulheim (Ruhr), Germany
Filed Aug. 1, 1962, Ser. No. 214,470
Claims priority, application Germany, Aug. 5, 1961, R 30,884
2 Claims. (Cl. 242—72.1)



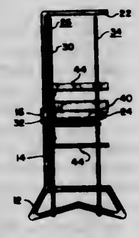
1. A winding mandrel comprising a shaft, a nut threaded on one end for longitudinal movement and an abutment disk fixed on the other end of the shaft, a ring-shaped flange slidably and non-rotatably mounted on said shaft and abutting said nut, said flange having integral fingers projecting therefrom and lying along said shaft, spaced sleeves slidably mounted on said shaft; longitudinally extending radially expandable bars mounted on said sleeves and resilient means holding said bars against said sleeves; cylindrical spacers between said sleeves and holding them in spaced relation, the outer surfaces of said sleeves and the inner surfaces of said bars having slidably contacting frusto-conical surfaces, said bars being held against longitudinal movement, said nut, fingers and cylindrical spacers operating to slide said sleeves axially along said shaft to cam said bars radially outwardly.

3,201,059
SPOOL FOR REELING AND UNREELING STRIP MATERIAL
Otto Winkel, Bismarckstrasse 142, Hamburg, Germany
Filed Jan. 22, 1963, Ser. No. 253,117
7 Claims. (Cl. 242—74.1)



1. A spool for reeling and unreeling strip material, comprising, in combination, core means having a substantially cylindrical center portion and having flanges spaced from each other in axial direction a distance at least equal to the width of the strip material, said center portion having at its perimeter at least one recess defined on two sides by edges which extend in axial direction of said center portion and having a predetermined depth in radial direction said recess being symmetrical with respect to an axial plane passing through the axis of said core means and the deepest portion of said recess; and clamping means formed as a freely rotatable hollow cylindrical body coaxially surrounding said center portion of said core means and having at least one slot extending in said axial direction said slot having edge portions of symmetrical configuration and permitting, when said slot is substantially in radial alignment with said recess of said center portion, insertion of an end portion of the strip material through said slot into said recess, the difference between the radial distance of at least one of said edges of said recess from the axis of said center portion, on one hand, and the radial distance of the inner surface of said hollow cylindrical body at said slot from said axis, on the other hand, being so small that, when after said insertion of said end portion of the strip material a rotary motion of said hollow cylindrical body relative to said core means takes place in either clockwise or counterclockwise direction, said end portion of the strip material is automatically clamped between the corresponding edge of said recess, on one hand, and said hollow cylindrical body at the corresponding edge portion of said slot thereof, on the other hand, thus firmly securing said strip material to said spool irrespective of the direction of rotation of said hollow cylindrical body relative to said core means.

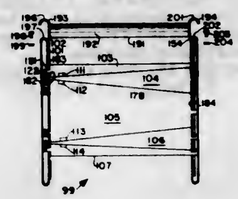
3,201,060
DISPENSING REEL
Arley C. Bluhm, 4400 W. Cliff Ave., Denver 19, Colo., and Elmo F. Bluhm, 350 Sansbury St., Denver 26, Colo.
Filed Jan. 25, 1963, Ser. No. 253,928
3 Claims. (Cl. 242—110.3)



1. A dispenser for an electrical cable which comprises:

an interior wheel member having an axle member; an exterior wheel having a second axle member, said first axle member and said second axle member being mounted in a telescoping relationship; cable support brackets mounted from said interior wheel; means for adjusting the radial position of each said support bracket; a frame member; a third axle member supported from said frame member, said first axle member and said second axle member being rotatably mounted with respect to said third axle member; resilient means connecting said exterior wheel and said interior wheel in a manner to urge them together, said resilient means being between said support brackets and the axle members of said wheel members.

3,201,061
CABLE STRANDER REEL
Victor F. Volk, Hastings on Hudson, N.Y., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Original application Aug. 2, 1961, Ser. No. 128,717, now Patent No. 3,124,923, dated Mar. 17, 1964. Divided and this application June 27, 1963, Ser. No. 298,512
1 Claim. (Cl. 242—115)

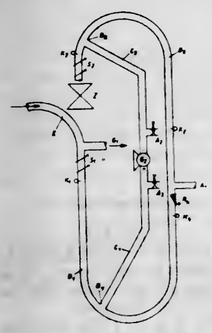


A reel for elongated strand comprising a first flange, a second flange having a portion defining an opening therein, a drum between said flanges, said drum being comprised of axially tapered longitudinal members, each having a wide and a narrow end, means detachably securing said second flange to said drum, means hingedly connecting said members to said first flange, the wide and narrow ends of said members alternating at said first flange, said members having their wide ends hinged at said first flange being closable over the remainder of said members when said second flange is detached to form a substantially continuous curvi-pyramidal surface tapering toward said second flange, said last-mentioned members and said portion of said second flange defining an annular space for the withdrawal of strand therethrough.

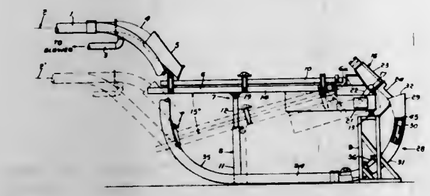
3,201,062
CARRIER STORAGE ARRANGEMENT IN A PNEUMATIC TUBE SYSTEM
Horst Misch, Berlin-Reinickendorf, and Hans Kudritzki, Berlin-Lichterfelde, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 6, 1963, Ser. No. 307,199
Claims priority, application Germany, Sept. 20, 1962, St 19,737
10 Claims. (Cl. 243—1)

1. An arrangement for storing and dispatching pneumatic tube carriers for delivery to and reception from the forwarding tube of a pneumatic tube system comprising a storage loop having a receiving and output end, means for delivering carriers from the forwarding tube

to said receiving end, means for positioning one or more carriers in said storage loop for delivery to said forwarding tube, and means for conveying only said positioned carriers out of said output end to said forwarding tube.



3,201,063
HORIZONTAL CENTRAL TRANSFER POINT
Lewis D. O. Tearne, Bergenfield, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed May 18, 1962, Ser. No. 195,806
9 Claims. (Cl. 243—19)



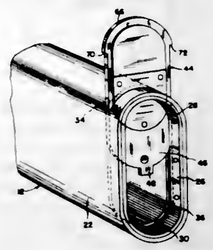
1. A central transfer arrangement for a pneumatic conveyor system comprising:

input means for conveying carriers in a horizontal plane,

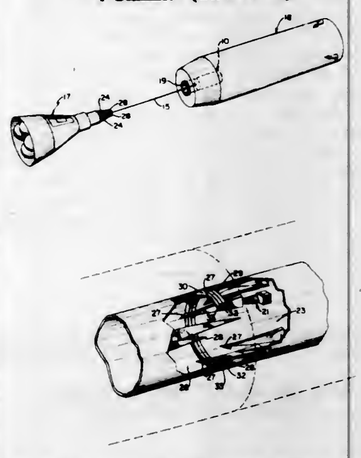
tiltable means, pivotally mounted, for receiving said horizontally conveyed carriers, and for tilting said carriers toward the vertical plane to discharge them by gravity, and means for receiving said carriers from said tiltable means for distributing said carriers by laterally changing their axes of travel, and returning them to a horizontal attitude.

3,201,064
MAIL CARRIER FOR A PNEUMATIC SYSTEM
Glenn C. Dagle, 24844 Pennie, Dearborn Township, Mich.; John L. Vala, 11411 Flanders, Detroit 5, Mich.; and Raymond D'Hondt, 1189 Brys Drive, Grosse Pointe Woods, Mich.
Filed Dec. 24, 1963, Ser. No. 333,064
17 Claims. (Cl. 243—35)

10. A mail carrier for a pneumatic system comprising an elongated tubular body closed at one end thereof, a slot in a wall portion of said body at the other end thereof, said slot being located in a plane which is substantially perpendicular to the axis of said tubular body, a groove on the interior of said body located in said plane and extending around the inner periphery thereof, the ends of said groove intersecting opposite ends of said slot, and a door slidably carried by said body, said door being slidable through said slot and groove from an opened position where it is located exteriorly of said body to a closed position where said door fills said slot and said groove and closes said other end of said body, a recess in said door, and a spring clip in said recess having the inner end thereof fixed to said door, the outer end of said spring clip being biased in a direction out of said recess, said door when in a closed position having said outer end of said spring clip in engagement with the inner surface of said body, the outer end of said spring clip being adapted to be moved into said recess to permit opening of said door, the wall of said slot directly opposite said spring clip holding said outer end thereof in said recess during movement of said door to the opened position.

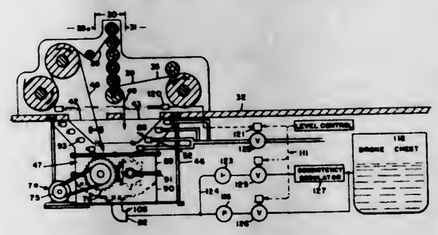


3,201,065
ORBITAL VEHICLE DOCKING SYSTEM
John P. Dunn, Littleton, Colo., assignor to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed Mar. 11, 1963, Ser. No. 264,110
4 Claims. (Cl. 244—1)



1. A final closure and docking system for orbiting space vehicles which compresses a rendezvous drone means adapted for launching from at least one of the space vehicles, attachment line means connected to the drone means and adapted for interconnecting the drone means and the drone launching space vehicle while the drone means is guided toward a second space vehicle, magnetic means mounted in the drone means adapted for establishing physical contact between the drone means and the second-mentioned space vehicle, and means for effecting a passageway between the two space vehicles including means for mutually interlocking said two space vehicles.

3,201,066
MACHINE AND METHOD FOR DISPOSING OF BROKE
Donald W. Danforth, Andover, Mass., assignor to John W. Bolton & Sons, Inc., Lawrence, Mass., a corporation of Massachusetts
Filed Nov. 29, 1962, Ser. No. 240,950
11 Claims. (Cl. 241—21)



10. In a paper making machine having unsupported stretches of a paper web advancing at a predetermined height above floor level and at a predetermined speed, the combination of

a broke pulper, of narrow width and low height extending transversely of said machine under one of said unsupported stretches, said pulper having a funnel-like, broke-receiving, upper opening and a pulping chamber in the bottom thereof;

a pair of toothed rolls, rotating in opposite directions in the upper portion of said pulping chamber on axes parallel to the axes of the rolls of said machine, said rolls having a toothed nip for receiving and shredding broke and rotating at a greater surface speed than the speed of said web for drawing said web away from said machine;

a pulp screen extending across said pulping chamber, said screen conforming in shape to the path of said teeth, with a uniform clearance therebetween, for macerating broke while guiding the same around said rolls and back into said nip,

liquid supply means forming a liquid curtain on the inside face of said funnel-like opening for urging broke downwardly into said nip while hydrating the same,

and a pump connected to the lower portion of said pulping chamber, below said screen, for extracting pulp which has passed through said screen.

11. A method of disposing of broke in a paper making machine by means of a pair of toothed rolls having a toothed nip, said method comprising the steps of

flushing said broke downwardly on a curtain of liquid, into said nip to wet said broke;

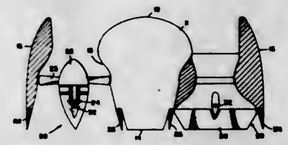
rotating said rolls in opposite directions at a surface speed greater than the speed of said web while shredding said wet broke into small wet fragments and while drawing said broke away from said machine into the entrance throat of said nip;

guiding said wet fragments around said rolls and back into the entrance throat of said nip while macerating said fragments into pulp and screening out pulp of a preselected consistency

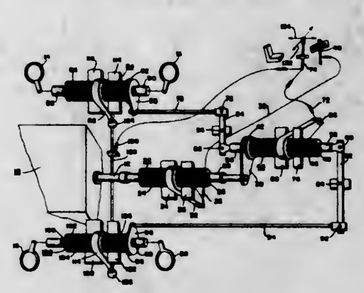
and continuously pumping said screened-out pulp away from said paper making machine.

3,201,067
DUCTED FAN AIRCRAFT
Leonard Meyerhoff, Brooklyn, N.Y., assignor to Eastern Research Group, a partnership
Filed May 31, 1963, Ser. No. 284,713
1 Claim. (Cl. 244—23)

Lift producing means for an aircraft comprising at least two ducts vertically disposed in normal flight and positioned side by side transverse the line of flight, a fixed pitch fan in each of said ducts disposed to cooperate therewith to force a relatively high volume low velocity stream of air downwardly therethrough, a means for powering each of said fans and a dome shaped surface attached to said aircraft and disposed intermediate the upper peripheries of adjacent ducts and within the paths of the streams of air that are forced downwardly through said ducts when the fans are in operation, said aircraft having peripheral body portions, said body portions extending above the plane of fan rotation and enclosing said ducts.



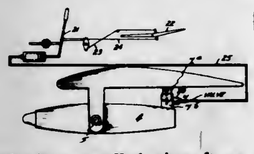
3,201,068
PLURAL PROPELLER PITCH CHANGE CONTROL SYSTEM
Dale Webster Miller, Indianapolis, Ind., and Walter F. Clark, Huntsville, Ala., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 8, 1963, Ser. No. 293,485
15 Claims. (Cl. 244—17.23)



1. A control system for an aircraft having a plurality of engine driven variable pitch propellers comprising, a central control device for collectively varying the pitch of said propellers in either constant speed or beta modes of operation, and emergency manually operated control means for collectively varying the pitch of said propellers in the beta mode of operation independently of said control device.

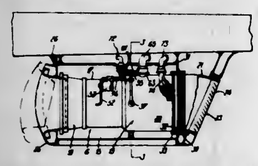
8. A control system for an aircraft having four engine driven variable pitch propellers, two of which are mounted adjacent the front on opposite sides of the aircraft fuselage and two of which are mounted adjacent the rear on opposite sides of the aircraft fuselage, each of said propellers having a pitch control member, comprising, a servo operated central control device including a hydraulically operated actuator for collectively varying the pitch of said propellers in either constant speed or beta modes of operation, and mechanical means comprising a pair of turnbuckle mechanisms interconnecting the pitch control members of the left front and left rear propellers and the right front and right rear propellers, respectively, a third turnbuckle mechanism connected with said first and second turnbuckle mechanisms and mechanical means interconnecting said third turnbuckle mechanism and said actuator.

3,201,069
JET-PROPELLED AIRCRAFT ENGINE MOUNTING
Simon Haskin, 891 Rathdown St., North Carlton, Victoria, Australia
Filed May 31, 1962, Ser. No. 199,163
4 Claims. (Cl. 244—54)



1. In a turbo-jet propelled aircraft, a mounting arrangement for each engine of the aircraft which comprises a pair of spaced support members extending downwardly from a wing, pivotal connections between the lower ends of the support members and the engine at the region of the center of gravity of the engine, said engine being suspended between the support members for free angular movement relative to the aircraft about a horizontal axis transverse to the longitudinal axis of the aircraft, a dash pot connected between one end of the engine and the wing, said dash pot comprising two operating elements connected, respectively, to the wing and the engine, a valve for the dash pot, and elevators for said aircraft coupled with said dash pot and operative upon being in a neutral position to actuate said dash pot to lock the engine in a horizontal position relative to the wing and unlock the engine when the elevators are moved from such neutral position.

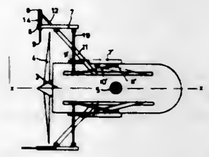
3,201,070
MOUNTING OF GAS TURBINE ENGINES
Ernest Edward Chilvers, Duffield, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Apr. 29, 1963, Ser. No. 276,639
14 Claims. (Cl. 244—54)



1. An installation comprising an engine bay, a gas turbine engine mounted in the engine bay, a fuel conduit through which fuel may be supplied to the engine, and fuel supply control means for controlling the amount of fuel passing through the said conduit to the engine, said conduit and said fuel supply control means each being constituted by at least two mutually co-operating parts which are respectively mounted on the engine and in the engine bay, the engagement of said parts of the fuel conduit and the positioning of the parts of the fuel supply control means constituting the sole means for operatively joining said parts when the engine is correctly installed in the engine bay.

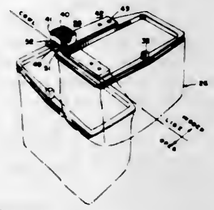
14. An aircraft provided with a pod, a plurality of engine bays in said pod, a gas turbine engine which is mounted in each said bay and which extends transversely of the aircraft, means on each engine whereby its jet gases may be selectively directed forwardly, rearwardly or downwardly, each said gas turbine engine having a fuel conduit through which fuel may be supplied to the engine, an air conduit communicating with the engine, an electrical lead extending to the engine, and fuel supply control means for controlling the amount of fuel passing through the said conduit to the engine, said fuel and air conduits, said electrical lead and said fuel supply control means each being constituted by at least two mutually co-operating parts which are respectively mounted on the engine and in the engine bay, said mutually co-operating parts being automatically brought into operative engagement with each other when the engine is correctly installed in the engine bay.

3,201,071
TILTING ENGINE AIRCRAFT
Clement de Siebenthal, Le Bosquet, Leysin, Vaud, Switzerland
Filed Feb. 25, 1964, Ser. No. 347,272
Claims priority, application Switzerland, Feb. 25, 1963, 2,409/63
3 Claims. (Cl. 244—56)



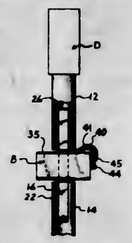
1. An aircraft comprising a body, an engine pivotally mounted on said body in such a manner that it can be rotated between a normal position in which its longitudinal axis is horizontally disposed and either of two extreme positions in each of which such longitudinal axis is vertically disposed, a propeller driven by said engine, two screens arranged respectively above and below the longitudinal axis of said engine in its normal position and each adapted to be placed in front of a portion of the area swept by said propeller, and means for selectively projecting each screen into place and retracting each screen from in place in front of the respective swept area portion whereby, when one of said screens is so projected while the other screen remains so retracted, the engine is caused to rotate toward one of said two extreme positions and whereby, when said other screen is so projected while said one screen remains so retracted, the engine is caused to rotate toward the other of said two extreme positions.

3,201,072
MOTOR-VEHICLE RECEPTACLE-HOLDER
Warren F. Du Bois, 150 Belvidere, Forest Park, Ill.
Filed Feb. 27, 1964, Ser. No. 347,894
7 Claims. (Cl. 248—99)



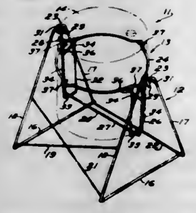
1. A receptacle-holder comprising, a frame element of open rectangular contour and having means for detachably positioning a receptacle thereon, a bar fixed along one lateral portion of the frame element, a swivel head fixed on the exposed face of the bar in spaced relationship thereto, and a permanent magnet having a recessed base for the reception of the swivel head to rotatively suspend the frame element from the magnet when the magnet is in contact with a metal support.

3,201,073
SUPPORT BRACKET
Lorenz F. Buescher, Glenview, and Lawrence M. Buescher, Lincolnshire, Ill., assignors to Bish Creative Display, Inc., Northfield, Ill., a corporation of Illinois
Filed Mar. 18, 1964, Ser. No. 352,798
6 Claims. (Cl. 248—121)



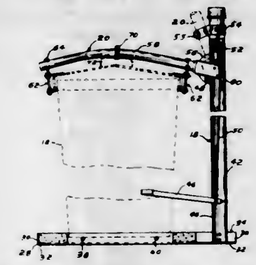
1. A two-piece support for a battery powered display comprising a pair of aligned tubular members and a bracket for joining the two, said bracket comprising a U-shaped piece of springable strap material, having a pair of leg portions extending in diverging relation from a web which is of a length slightly less than the inside diameter of one said tubular member so as to be slidably receivable therein, said bracket being adapted to receive and secure a battery to said support when the tubular members comprising the same are joined by said bracket, said leg portions of said bracket having intermediate oppositely bowed portions which together conform substantially to the cross section of said battery, so that with said web of said bracket received in said one of said tubular members, and with the ends of said leg portions inserted in said other tubular member to join said tubular members, said intermediate portions simultaneously squeeze about said battery for securing the same to said support.

3,201,074
TILTABLE POURING CRADLE
Charles R. Stearns, 4280 Foothill Blvd., Oakland, Calif.
Filed Aug. 15, 1963, Ser. No. 302,364
3 Claims. (Cl. 248—141)



1. A tiltable cradle device of the character described comprising a base of rod stock having a pair of spaced generally triangular side portions each including a generally horizontal bottotm member with front and back upwardly angularly extending leg members integrally joining together adjacent their upper ends to form the apex of the triangle, brace means secured between said back legs at positions intermediate the ends thereof, an elongated brace member secured between said front legs adjacent the juncture thereof with their respective bottom members, hook supporting means provided adjacent said apex, said side portions being disposed with said front legs being laterally spaced further apart than said back legs whereby a plurality of said bases can be nested together by inserting one base rearwardly through the space between the front legs of another base until the corresponding legs of each base are disposed adjacent one another; and a cradle of rod stock adapted for pivotal mounting on said base including an upper generally circular rim member, a generally U-shaped bottom member having spaced leg portions secured adjacent their upper ends to diametrically opposed portions of said rim member and a lower connecting portion extending between the lower ends of said leg portions and disposed generally parallel to the plane of said rim member, hook portions being formed adjacent the upper ends of said leg portions and adapted to mount removably on said hook supporting means for pivotally mounting said cradle on said base, said leg portions of said cradle being tapered upwardly whereby they are spaced further apart at their upper ends than at their lower ends and whereby a plurality of cradles can be nested together by disposing one downwardly into the other; said cradle and base being dimensioned so that a plurality of cradles nested in one another can be disposed within the interior space enclosed by a plurality of bases nested in one another.

3,201,075
GARBAGE CAN HOLDER
Otto H. Sievers, Storm Lake, Iowa
Filed June 27, 1963, Ser. No. 291,081
2 Claims. (Cl. 248—147)



1. A garbage can holder comprising,
a base member of concrete material having a central opening formed therethrough, a length of angle iron having one flange extending along the peripheral outer edge and the other flange extending along the adjacent bottom side of said edge, said angle iron terminating in a pair of parallel end portions extending outwardly of one side edge of said concrete member, at least two rod members extending across said opening below the top surface of said concrete member, said rod members being embedded in said concrete material at the sides of said opening and secured at their ends to said length of angle iron;
an upright pipe standard secured at one end between said pair of parallel end portions, the bottom end of said standard being in supporting engagement with each of the other flanges of said end portions;
means closing the upper end of said pipe,
a lid support arm adapted to have one end secured to a garbage can lid, the other end of said arm extending through the side of the upper end of said pipe member where it is pivotally secured to and disposed at all times within said pipe member;
a foot lever extending through one side of the lower end of said pipe member where it is pivotally secured to and disposed at all times within said pipe member;
a linkage arm extending within said pipe member between said lid support arm and said foot lever, one end of said linkage arm pivotally connected within said pipe to said foot lever between its pivotal connection to said pipe and its free end, the other end of said linkage arm pivotally connected within said pipe to the other end of said support arm on the opposite side of its pivotal connection to said pipe from said

first support arm and, whereby upon moving the free end of said foot lever downwardly a lid may be raised from a garbage can, and

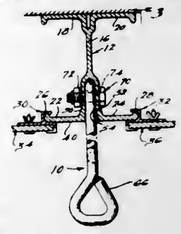
said first end of said support arm having means for engaging a garbage can lid at points on the periphery of said lid which are diametrically opposite each other, and means carried centrally of said first end of said support arm for engaging a centrally positioned handle on a garbage can lid, each of said first mentioned means including a bolt secured to said support arm and extending downwardly therefrom, each of said bolts being provided with a pair of perpendicular spaced apart clips adapted to engage the upper and lower periphery of a garbage can lid, and said clips being adjustable along the length of said bolts; and said first end of said support arm being bent centrally thereof and having its adjacent portions on each side thereof extending downwardly therefrom to conform to the rounded top face of a garbage can lid.

3,201,076
CONSTANT-HEIGHT VERTICAL SUPPORT DEVICE, IN PARTICULAR FOR TANKS
Edouard Deleuze, Paris, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Dec. 29, 1961, Ser. No. 163,306
Claims priority, application France, Jan. 25, 1961, 850,658
8 Claims. (Cl. 248—151)



1. A constant-height pillar for transmitting a vertical load from a wall to a base, comprising; a series of concentric, tubular, load transmitting elements; means connecting said elements with the inner and outer of said concentric elements being subjected to compression forces by said load and with an element arranged between said inner and outer elements being subjected to tensile forces by said load, said elements subjected to compression forces being formed of metal having a low coefficient of expansion and said element subjected to tensile forces being formed of metal having a high coefficient of expansion, said elements being so constructed that the thermal dilations of said elements subjected to compression forces compensate the thermal dilations of said element subjected to tensile forces; a base; means connecting the lower end of one of said inner and said outer concentric elements to said base; stirrup means mounted on the upper end of the other of said inner and said outer concentric elements; a frame; means pivotally mounting said frame on said stirrup means for movement about an axis extending normal to the axis of said elements; spaced, axially aligned, bearing support means carried by said frame and disposed on opposite sides of said pivotal axis of said frame, the axis of said spaced bearing support means extending normal to the pivotal axis of said frame and normal to the axis of said elements; and a friction plate for engaging said wall pivotally mounted on each of said bearing support means for movement about said axis of said bearing support means.

3,201,077
RETRACTABLE MEAT HOOK
Fred G. Heimann, Mount Clemens, Mich., assignor to Fruehauf Corporation, a corporation of Michigan
Filed Aug. 21, 1963, Ser. No. 303,493
4 Claims. (Cl. 248—340)



1. A retractable hook for suspending loads from the roof of trucks, trailers and the like comprising,

a hook support beam,

a horizontally extending hook support pin supported by said beam, and

a folding hook supported by said pin and so as to be movable between a downwardly depending operative condition and a generally horizontal storage condition, said hook having

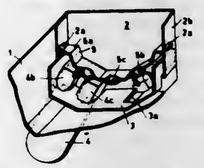
a shank portion with

a reentrantly folded portion at one end thereof extending in spaced relation to the shank portion so as to define a relatively long slot for the acceptance of said pin,

said hook having a load accepting loop at the other end of the shank portion thereof extending a plane generally normal to a plane defined by said shank and reentrant portions,

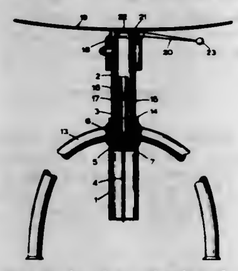
said hook being movable substantially 90° in the plane defined by the shank and reentrant portion thereof between a downwardly depending condition with said pin at one end of said slot and a storage condition with said pin at the other end of said slot and said load accepting loop in a generally horizontal condition.

3,201,078
LAMP HOLDER ASSEMBLY
Rene Grandjean, Bondy, Seine, France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 16, 1964, Ser. No. 338,123
Claims priority, application France, Jan. 21, 1963, 922,052
5 Claims. (Cl. 248—361)



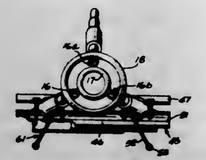
1. Apparatus for assembling a lamp holder with a channel-shaped mounting beam comprising a support member attached within said beam adjacent at least one end thereof, said support member having recesses for receiving said lamp holder, and a brace member having at least one dished portion engaging said lamp holder and beam for clamping said lamp holder against said support member.

3,201,079
ADJUSTING DEVICE
Hans Peter Doetsch, 32 Altdrossenfeld, uber Bayreuth, Germany
Filed Nov. 21, 1962, Ser. No. 239,251
Claims priority, application Germany, Nov. 27, 1961, D 37,544; Oct. 30, 1962, D 40,167
25 Claims. (Cl. 248—412)



1. An adjusting device for adjusting the relative position of two objects which comprises two tubes telescopically slidable one within the other, a gas reservoir filled with a highly compressed gas and mounted within one of said tubes so as to be capable of limited axial displacement relatively thereto, piston means fixed longitudinally within the other of said tubes, and arranged to compress the gas in said reservoir when said tubes are telescoped and means for locking said tubes relatively to each other, said means being operable by axially displacing said reservoir slightly with respect to said one tube.

3,201,080
COLLAPSIBLE EASEL AND SUPPORT THEREFOR
Emilie Orback Rose, 902 President St., Brooklyn, N.Y.
Filed Sept. 5, 1961, Ser. No. 136,706
11 Claims. (Cl. 248—460)



1. A collapsible easel comprising a plurality of legs angularly positioned relative to one another, each of said legs including a tubular central section, a plurality of first tubular sections slidably fitted to the first end of the central section, a plurality of second tubular sections slidably fitted to the second end of the central section means attached to the end of the central section, the sections of the leg adjoining one another, near the first section engaging one of the first sections, to retain the first section in the expanded position, means attached to each of the first sections engaging the section located next to the first section to retain the leg in the expanded position, means attached to the end of the central section near the second sections, engaging one of the second sections, to retain the second section, located adjacent the central section, in the expanded position, means attached to each of the second sections engaging the end of the adjoining section of the leg, to retain the leg in the expanded position, and a plurality of substantially circular members attached to the end of one of the sections of the legs to attach the legs of the easel to one another, the means attached to the end of the central section near the first lower section, being a pin inserted through the outer wall of the central section of the leg and fixedly attached thereto, the first lower section having a slot in the form of an arcuate segment of a circle, therethrough, said slot receiving one end of the pin attached to the central section, to retain the first lower section in the expanded position.

3,201,081
DISPENSING VALVE HAVING CUP-LIKE DEFORMABLE SEALING ELEMENT
John K. Lyon, 1176 Afton, and Gennady Potapenko, 1718 Oakdale St., both of Pasadena, Calif.
Filed Aug. 14, 1961, Ser. No. 131,392
12 Claims. (Cl. 251—172)

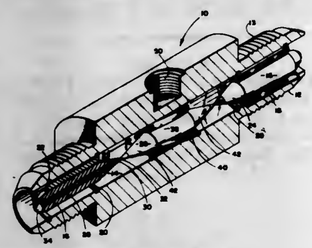


2. In a dispensing valve for a pressurized container: a housing member adapted to be received in the neck portion of a container and including an inner end and an outer end; a passageway through said housing between the inner and outer ends thereof; a stem member mounted in said passageway for axial movement relative thereto between an open position and a closed position, an upper portion of said stem member being of lesser cross-sectional area than an upper portion of said passageway to define a transfer chamber therebetween; passage means at least partially in said stem member for placing said transfer chamber in communication with the exterior of the valve; one of said members providing upper and lower cylindrical wall surfaces of predetermined diameters at the passageway, the other of said members providing upper and lower cup-like sealing elements each with a lip portion adjacent one of said cylindrical wall surfaces, respectively, said cylindrical wall surfaces and said cup-like sealing elements each being of a size and being positioned so that the upper lip portion and the upper wall surface remain in sliding sealing engagement when the stem member is in the closed position and in the open position, and the lower lip portion is in sealing engagement with the lower wall surface when the stem member is in the closed position and is spaced axially therefrom when said member is in the open position, said stem member and said passageway being so formed that communication is established between said transfer chamber and said inner end of said housing member when said stem is in said open position.

3,201,082
CORROSION RESISTANT SEALING STRUCTURE
Raphael Rosen, Elizabeth, N.J., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Aug. 23, 1945, Ser. No. 612,199½
4 Claims. (Cl. 251—368)

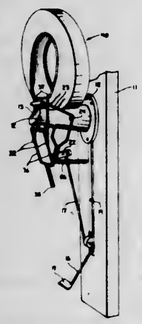
1. In apparatus resistant to deterioration during the passage of fluorine-containing corrosive fluids, a metal pressure member and a cooperating resilient sealing member comprising rubber having incorporated therein a substantially completely fluorinated aliphatic compound having a low vapor pressure under the conditions of use and composed chiefly of carbon and fluorine and containing no elements other than carbon, fluorine, chlorine and oxygen.

3,201,083
SLURRY FLOWMETER
Robert B. Schaus, Northridge, Calif., assignor to North American Aviation, Inc.
Filed June 19, 1963, Ser. No. 289,129
6 Claims. (Cl. 253—148)



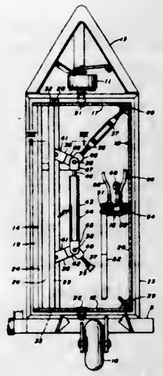
1. A slurry flowmeter comprising:
a housing,
a rotor disposed within said housing, magnetic blades disposed about said rotor, said rotor having a cylindrically-shaped central portion for supporting said rotor blades and conically-tapered ends, said ends tapering away from said central portion to a point,
rotor supports disposed within said housing at each end of said rotor, said supports conically tapered to a point for point to point engagement with said conical ends of said rotor,
whereby said rotor is in point contact with said supports.

3,201,084
TIRE REPAIR FIXTURE
Earl L. Harris, R.R. 1, Spencer, Ind.
Original application May 23, 1960, Ser. No. 32,505, now Patent No. 3,088,348, dated May 7, 1963. Divided and this application May 3, 1963, Ser. No. 277,793
2 Claims. (Cl. 254—50.4)



1. A fixture for supporting a tubeless tire in repair position, said fixture comprising a support member including a flanged base plate adapted to be mounted on a vertical wall surface or the like, an anvil extending horizontally from said base and adapted to receive the tread area of a tubeless tire transversely across its upper surface, means providing a first pair of tire bead-engaging hooks pivotally mounted on said base plate and overlying said anvil, a member providing an actuating handle pivotally supported on the underside of said anvil on a transverse axis spaced outwardly from said tread-engaging area, and a second pair of tire bead-engaging hooks pivotally carried by said handle member intermediate its ends, whereby with said first pair of hooks engaging the tire bead adjacent said base plate and with said second pair of hooks engaging the tire bead remote from said base plate, said handle member may be pivotally moved to displace the pivotal junction of said second pair of hooks with said handle member from a position of outboard of the pivotal support of said handle member to a position inboard thereof to thereby hold the tire on the anvil with its bead areas spread to expose the inner surface of the tire, and a generally U-shaped clamping member overlying said anvil and pivotally supported on the sides of said anvil at points intermediate the ends of its legs, the free ends of the legs of the clamping member being formed to depend below said anvil, and foot operated means connected to the free ends of said clamping member legs, said foot operated means when actuated serving to pivotally move said U-shaped clamping member to displace its bight portion upwardly against the tire, whereby the tire sidewall area is distorted to render its inner surface more accessible for inspection or repair.

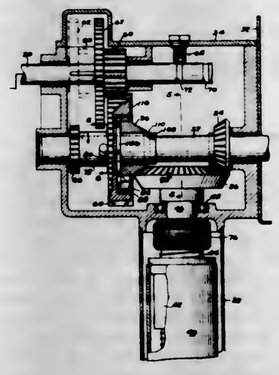
3,201,085
FENCE WIRE TENSIONING APPARATUS
Wayne A. Maley, Des Moines, Iowa, assignor to United States Steel Corporation, a corporation of New Jersey
Filed Mar. 8, 1963, Ser. No. 263,826
8 Claims. (Cl. 254—64)



1. In a fence wire stringing apparatus of the type including a carriage, a tractor for moving said carriage along a fence line and for anchoring it in a stationary position, and a reel for a coil of fence wire on said carriage and from which fence wire is strung along said fence line upon movement of said carriage, a fence wire tensioning apparatus comprising a frame mounted on said carriage for movement relative thereto in a direction generally parallel to said fence line, a clamp on said frame for clamping engagement with said fence wire, and power means for moving said frame relative to said carriage to render said clamp effective to apply tension to said fence wire.

3,201,086
NO-BACK DEVICE FOR SEMI-TRAILER LANDING GEAR LEGS AND THE LIKE
Thomas B. Dalton, Muskegon, Mich., assignor to Westran Corporation, Muskegon, Mich., a corporation of Michigan
Filed Feb. 28, 1963, Ser. No. 261,625
18 Claims. (Cl. 254—86)

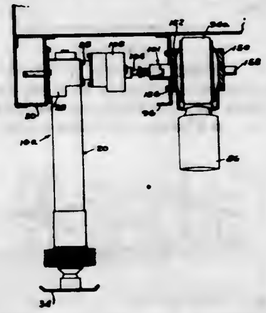
1. In a landing gear for semi-trailer vehicles and the like having a leg structure and having mechanism operable to move the leg structure between a retracted position and a lowered position in which it supports the weight of the vehicle, improved mechanism which comprises,
a driving element and a driven element,
means providing a lost-motion connection between said elements through which motive force is transmitted to said leg structure,
said lost-motion connection being constructed and arranged to facilitate relative movement of said elements upon reversal of the direction of said motive force,
means providing a clutch having two members, one of which is mounted for movement with one of said elements, the other of said clutch members being mounted for movement in opposite directions toward two positions responsive to relative movement of said elements in opposite directions,
means providing obstruction to movement of said other clutch member beyond said positions,
said elements being movable substantially free of the influence of said obstruction when said clutch members are clutchingly disengaged,



control means operable responsive to relative movement of said elements in one direction to restrain said clutch members from clutching engagement,
said control means being operative responsive to relative movement of said elements in the other direction to release said restraint,
said other direction being the direction in which said driven element tends to overrun said driving element under load on said leg structure,
and means operable responsive to such overrunning to cause clutching engagement of said clutch members,
the range of movement of said other clutch member between said positions thereof being greater than the range of said relative movement of said elements, whereby to insure establishment of said restraint upon relative movement of said elements in said one direction.

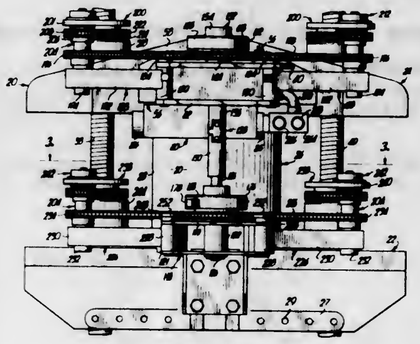
3,201,087
LANDING GEAR STRUCTURE FOR SEMI-TRAILERS AND THE LIKE
Thomas B. Dalton, Muskegon, Mich., assignor to Westran Corporation, Muskegon, Mich., a corporation of Michigan
Original application May 17, 1962, Ser. No. 195,778. Divided and this application Nov. 9, 1964, Ser. No. 409,871
9 Claims. (Cl. 254—86)

1. Powered landing gear structure for semi-trailer vehicles or the like comprising,
a leg having sections which are mutually extensible and shortenable,
means including a motor operatively connected with said leg sections for relatively extending and shortening them,
mounting means adapted to mount said motor on a vehicle so that it can rock bodily under the influence of its reaction to driving torque,
restraining means operable to exert force in restraint of reaction-induced rocking of said motor, said restraining means being yieldable to said reaction when



the latter increases responsive to assumption of a part of the vehicle weight by said leg,
and means operable responsive to said reaction-induced rocking to provide a signal indicating assumption of load by said leg.

3,201,088
SYSTEM FOR ELEVATING BUILDING COMPONENTS
Marshall Long, Overland Park, Kans., assignor to International Lift Slab Corporation, Overland Park, Kans., a corporation of Delaware
Filed Nov. 13, 1961, Ser. No. 151,816
17 Claims. (Cl. 254—89)



1. In a lifting structure, the combination of a jack unit provided with an upper and a lower head; means supporting the lower head; a pair of spaced, upright screws extending through the heads and coupled with a load to be lifted; power means between the heads having vertically reciprocable means for raising the upper head; a pair of upper nuts, one on each screw respectively above the upper head, through which the screws and load are lifted while the upper head is raised; a pair of lower nuts, one on each screw respectively above the lower head, through which the latter supports the screws and load while the upper head descends; a first mechanism connected with the lower nuts for lowering the latter following the commencement of each step of ascent of the upper head; a second mechanism connected with the upper nuts for lowering the latter following the commencement of each step of descent of the upper head; a prime mover for actuating said mech-

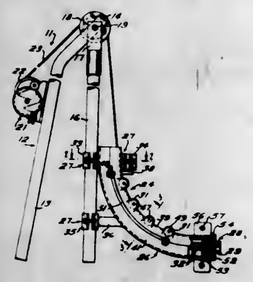
anisms, said prime mover being provided with a drive movable alternately in opposite directions; apparatus coupling the drive with the first mechanism for actuating the latter when the drive moves in one direction; and apparatus coupling the drive with the second mechanism for actuating the latter when the drive moves in the opposite direction.

3,201,089
UPROOTING DEVICE
Romolo Napoletano, Piazza Vida 10, Cremona, Italy
Filed July 26, 1963, Ser. No. 298,530
4 Claims. (Cl. 254—124)



1. An uprooting machine comprising a body, at least one arm extending from said body, said arm having a laterally extending free end, said free end being spaced from said body, defining a space therebetween for receiving a tree, at least two tree engaging means, a first of said tree engaging means being arranged on said free end and having a first engaging surface facing said body, a second of said tree engaging means being arranged on said body and having a second engaging surface facing said first engaging means, said first and said second engaging surfaces being at different levels in an operative position thereof, power means connected with at least one of said tree engaging means to move one of said engaging means towards the other engaging means and ground abutting sole-members on said body distant from said tree engaging means.

3,201,090
ELBOW ADAPTER FOR ELECTRICAL CONDUIT WIRE PULLER
Milton Earl Jones, 357 Athol Ave., Oakland 6, Calif.
Filed Feb. 6, 1963, Ser. No. 256,680
5 Claims. (Cl. 254—134.3)



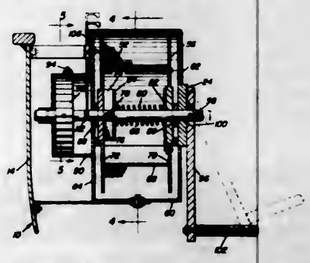
4. An adapter for an electrical wire puller of the type including an elongated brace pivotally connected to a winch supporting frame and having a pulley at the pivot for guiding a pull cable coupled to the winch along a path parallel to the brace, comprising a tubular 90° elbow, means carried at a first end of said elbow for securance of said first end in parallel relation to said brace at selectable longitudinal and angular positions thereof, means carried at the second end of said elbow for coupling said second end in coaxial communication with a conduit, roller means carried within said elbow adjacent the inner radius of curvature thereof for guiding said pull cable between the first and second ends thereof, said means for securance of said first end in parallel relation to said brace comprising a clamp secured to the outer radius of curvature peripheral portion of said elbow adjacent said first end thereof, and a second clamp secured to the outer radius of curvature peripheral portion of said elbow in coaxially spaced relation to said first clamp, said first and second clamps each concentrically engageable about said brace.

3,201,091
PORTABLE OIL WELL DRILLING APPARATUS
Homer J. Woolslayer and Cecil Jenkins, Tulsa, Okla., assignors to Lee C. Moore Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Dec. 9, 1960, Ser. No. 74,869, now Patent No. 3,136,394, dated June 9, 1964. Divided and this application Oct. 4, 1963, Ser. No. 313,947
3 Claims. (Cl. 254—139.1)



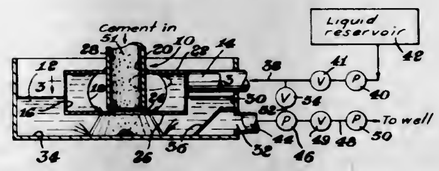
1. Portable oil well drilling apparatus comprising a base, a gin pole extending above said base, an upright mast mounted at one side of the gin pole, means detachably connecting the upper end of the gin pole to the mast to hold the mast upright, and elevatable drawworks unit normally resting on said base at the opposite side of the gin pole, a crown block at the top of the mast, a traveling block inside the mast, a line supporting the traveling block from the crown block and extending from the latter down to the drawworks, a sling connected to the traveling block, means connecting the sling to said unit, whereby when the drawworks is operated to raise the traveling block in the mast to pull the sling said line and sling will lift the drawworks unit, means for guiding the upwardly moving unit to a predetermined elevated position, and detachable means for holding the unit in said position.

3,201,092
ANCHOR WINCH
Casimir J. Skraban, 2427 N. Central Park Ave., Chicago 47, Ill.
Filed June 4, 1963, Ser. No. 285,286
5 Claims. (Cl. 254—187)



1. A winch assembly comprising a mount adapted to be secured to a boat hull and having a winding drum rotatably mounted thereon, said winding drum comprising a shaft journaled from said mount and axially slidable relative to said mount between first and second limit positions and a winding member rotatably and axially slidably disposed on said shaft and held against axial shifting relative to said mount, a ratchet wheel mounted on said shaft for rotation and axial shifting therewith, a ratchet pawl supported from said mount and aligned and engaged with said wheel preventing rotation of said shaft in one direction when said shaft is in said first position, means yieldingly urging said shaft toward said first position, coacting clutch means carried by said shaft and winding member and operable, upon movement of said shaft to said first position to drivingly connect said shaft to said winding member and to disconnect said shaft from driving engagement with said winding member upon movement of said shaft toward said second position past an intermediate position disposed between said first and second poistions, said ratchet wheel being shiftable out of registry and engagement with said ratchet pawl upon movement of said shaft toward said second position past a second intermediate position disposed between the first-mentioned intermediate position and said second position.

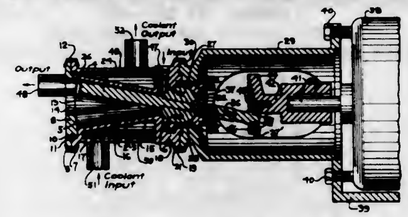
3,201,093
MIXING APPARATUS
Alan G. Smith, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 10, 1962, Ser. No. 186,547
9 Claims. (Cl. 259—4)



1. Slurry mixing apparatus comprising a vortex forming chamber, said chamber having a top, a bottom, and a generally circular inner peripheral wall, pumpable material inlet means, said means communicating with said wall and having a flow axis which is disposed generally in tangential alignement with respect to the inner peripheral wall, a particulate material inlet bore, said bore being coaxial with the longitudinal axis of said chamber, and extending through the top of said chamber, a particulate materials inlet pipe, said pipe being aligned with and extending through said inlet bore and into said chamber, a vortex discharge bore, said bore being coaxial with the longitudinal axis of the chamber and extending through the bottom of said chamber, said discharge bore being larger in diameter than said inlet bore, and baffle means, said baffle means a member having a flat plate-like surface disposed at a distance of between one-half inch and the diameter of said discharge bore from the bottom of said chamber below said discharge bore and in the path of pumpable material escaping from a vortex within said chamber.

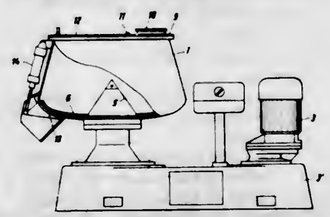
3,201,094
BLENDER
Elmer R. Ligon, Pittsburg, Kans., Wendell J. Johnson, St. Louis, Mo., and Norman C. Grotheer, Pittsburg, Kans., assignors to W. S. Dickey Clay Manufacturing Company, Kansas City, Mo., a corporation of Delaware
Filed Jan. 23, 1963, Ser. No. 253,422
5 Claims. (Cl. 259—5)

1. Apparatus for mixing materials comprising:
(a) a side wall having a curved interior surface forming a frusto-conical enclosure with a base end and an apex end, an end member adjacent said side wall at said enclosure base and,
(b) a conical member having a base and an apex portion, said conical member being supported by said end member and extending coaxially into said enclosure with said conical member apex portion being located within said enclosure, said conical member having an exterior surface spaced from said interior surface forming a conical mixing chamber therebetween,
(c) an end wall at said enclosure apex end and having means forming an opening therethrough axially of said mixing chamber, a spherically curved member, means for maintaining said curved member engaged in universal sliding contact with said end wall and substantially closing said end wall opening, an annular seal, means for maintaining said seal in slidable sealing contact with said curved member and in sealing engagement with said end wall, a rigid finger rigidly secured to said curved member and extending therefrom beyond said end wall opening into said mixing chamber,



(d) a rigid rod rigidly secured to said curved member and extending oppositely and substantially coaxially of said finger, a prime mover driven shaft, means supporting said driven shaft extending coaxially of and spaced from said mixing chamber, a coupling rotatably secured on said shaft and rotatably and eccentrically engaging said rod for orbitally driving said finger through said mixing chamber,
(e) an input connection member communicating with said mixing chamber, and an output connection member communicating with said mixing chamber at a position spaced from said input connection member.

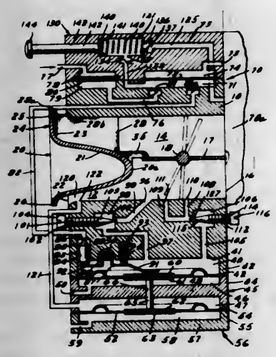
3,201,095
MIXER
Herbert Erwien and Walther Kaiser, Osnabruck, Germany, assignors to Dierks & Sohne, Osnabruck, Germany, a firm
Filed Aug. 13, 1963, Ser. No. 301,838
Claims priority, application Germany, Feb. 27, 1963, D 40,990; July 20, 1963, D 42,043, D 42,044
22 Claims. (Cl. 259—106)



1. A mixing machine for mixing and wetting pulverized and granular substances, comprising in combination, stationary receptacle means of circular cross-section having a curved base and conic upwardly extending and narrowing walls, a shaft rotatably and axially mounted in the base of said receptacle and extending upwardly therefrom, mixing tool means being secured to said shaft and being disposed inside said receptacle, said mixing tool means comprising a plurality of vanes which extend radially from said shaft parallel along the base of said receptacle into close proximity of said conic upwardly extending and narrowing walls, a guide cone member centrally mounted in said receptacle on said shaft and extending from the

bottom surface of said receptacle means with its apex pointing upwardly, so as to occupy at least a portion of the center region of said receptacle means and electric motor means operatively connected to said shaft for rotating the latter at an outer peripheral speed of said plurality of vanes not exceeding 25 meters per second.

3,201,096
CHARGE FORMING DEVICE
Edward J. Barr, Torrance, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Feb. 5, 1962, Ser. No. 170,981
3 Claims. (Cl. 261—41)



3. In charge forming apparatus:

(A) means defining an induction passage having an air inlet section and a mixture outlet section;

(B) an insert removably disposed in the air inlet of said induction passage to define, with the adjacent portion of the induction passage, a venturi, said insert including

(a) a hollow elongated inwardly tapering body portion,

(b) said body being offset relative to the axis of the induction passage so that the throat of said venturi is smaller at one part of the induction passage,

(c) said body having its smaller end within the induction passage and the larger end spaced outwardly of the air inlet opening of the air inlet section,

(d) a flange on the outer end of said body,

(e) arranged axially relative to said induction passage,

(aa) said flange being offset from the body axis so as to be eccentric relative to said body,

(bb) the diameter of said flange being somewhat greater than the diameter of the air inlet of the induction passage;

(f) means for positioning the insert within the induction passage comprising

(aa) a plurality of vanes on the body spaced annularly apart,

(bb) said vanes extending lengthwise in the induction passage,

(cc) the outer ends of said vanes being joined to said flange

(dd) means limiting inward movement of said insert,

(g) means releasably securing said insert in said induction passage;

(C) a throttle valve operably mounted in the induction passage;

(D) said induction passage having

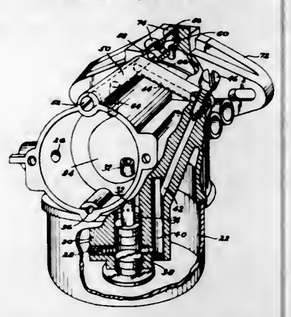
(a) a main fuel port,

(b) a midrange fuel port,

(c) and an idle fuel port;

(E) and means for supplying fuel to said fuel ports.

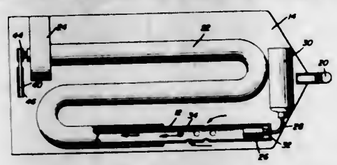
3,201,097
CARBURETOR FUEL SYSTEM
Donald N. Arndt, Cass City, Mich., assignor to Walbro Corporation, Cass City, Mich., a corporation of Michigan
Filed Nov. 20, 1961, Ser. No. 153,577
2 Claims. (Cl. 261—41)



1. In a liquid fuel feed system for an internal combustion engine having an intake manifold, the combination of a carburetor having a body with a throttle-controlled mixture passage having an inlet at one end and an outlet at the other end, the outlet of which, downstream from the throttle, is adapted to be connected to the manifold, a reservoir in said body for holding a body of fuel adjacent said mixture passage, a main fuel supply passage leading from said reservoir to a main fuel jet in the mixture passage, an idle fuel passage leading from said reservoir to a point adjacent said mixture passage, means in said idle fuel passage to adjust the flow of fuel therethrough, an idle mixture air passage spaced from but extending along said mixture passage and intersecting said idle fuel passage, said air passage having an effective area throughout its length approximately four times the effective area of the idle fuel passage, means in said air passage to adjust the flow of air therethrough, said air passage originating adjacent the inlet of said mixture passage and terminating adjacent the outlet of said mixture passage wherein said last means and said means in said idle fuel passage may be adjusted such that the relative effective cross-sectional area available for fluid flow in the air passage and the idle fuel passage can have a relationship of approximately four to one, and adjustment means at the outlet of the idle mixture air passage to direct a combination of fuel and air reaching said outlet in a predetermined direction, said direction being controllable relative to an intake manifold of an engine by said adjustment means at said outlet.

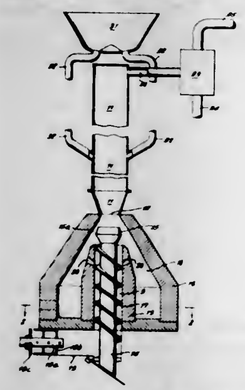
3,201,098
PORTABLE HEATER
Ernest R. Muckelrath, Tioga, N. Dak., assignor to Air Heaters, Inc., a corporation of North Dakota
Filed June 17, 1963, Ser. No. 288,321
1 Claim. (Cl. 263—19)

In combination with a bed, a heater assembly comprising a continuous elongated heat conveying duct mounted on said bed and including inlet and outlet terminal end portions, fuel injection means disposed in the inlet terminal end portion of said duct, blower means supported from said bed and including an air inlet and an air outlet, the outlet terminal end portion of said duct being communicated with the inlet of said blower means, said inlet terminal end portion of said duct including a restricted combustion supporting air inlet means formed therein upstream of said fuel injection means, said duct, downstream of said fuel injection means but adjacent the latter, having a plurality of laterally opening circulating and supplemental combustion air inlets formed therein and spaced longitudinally of and circumferentially about said duct, said inlet terminal end portion and the adjacent portions of said duct in which said supplemental



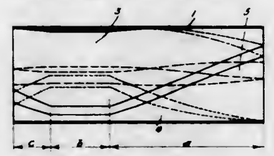
combustion air inlets are formed being of substantially constant cross-sectional area and defining a straight passage for maximum mixture of supplemental air with the combustion of fuel from said fuel injection means whereby maximum combustion of said fuel may be achieved, drive means carried by said bed for driving said blower means, said heat conveying duct being surrounded by insulation material for a substantial portion of its length, said insulation material being disposed entirely downstream of said supplemental combustion air inlets.

3,201,099
METHODS OF EXPANDING PERLITE AND LIKE MATERIALS
George Carpenter, Surbiton, England, assignor to British & Overseas Minerals Limited, London, England, a company of Great Britain and Northern Ireland
Filed Sept. 28, 1961, Ser. No. 141,386
4 Claims. (Cl. 263—21)



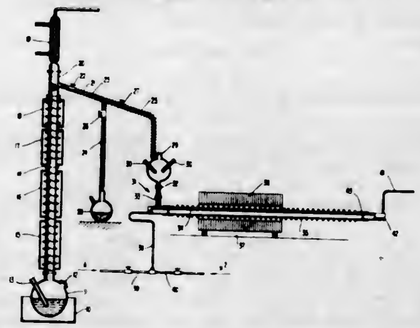
1. A furnace for heat treating expandable volcanic rock known as Perlite and like expandable materials comprising a vertical combustion chamber bounded by a circular wall and closed at its lower end having an outlet at the upper end, separate inlets for fuel mixture and air, a centrally located first tube arranged below the outlet, said tube extending downwardly through the combustion chamber and out through the lower end thereof a second tube arranged concentrically around said first tube, a series of fins secured to the outer surface of said first tube, said fins being inclined to the horizontal, the air inlet being connected to the second tube; a vertical processing chamber bounded by a circular wall arranged above and connected to the combustion chamber, means for imparting rotary movement to the fuel mixture located in the fuel inlet to the combustion chamber, means located at the top of the processing chamber for delivering the Perlite to be treated in free fall downwardly against the upward flow of combustion gases in the processing chamber and means located at the upper end of the processing chamber for drawing off the expanded Perlite which has been carried upwardly with the combustion gases.

3,201,100
HEAT EXCHANGE STRUCTURE FOR A ROTARY KILN
Pierre Dussossoy, Loos-lez-Lille, France, assignor to Ciments du Nord, Paris (Seine), France, a corporation of France
Filed July 24, 1962, Ser. No. 212,005
Claims priority, application France, Oct. 2, 1961, 874,808
6 Claims. (Cl. 263—33)



1. In a rotary kiln for the manufacture of cement and the like having a generally cylindrical outer shell, the combination therewith of a heat exchange structure comprising means in the shell subdividing it into a plurality of separate channels, said means including a member disposed in said shell having a plurality of generally radially disposed flanges, the flanges having their outer ends abutting the inner walls of the shell and their inner ends interconnected, said radially disposed flanges on said member including first portions forming a longitudinally extending helix having a pitch in one direction, a second portion forming a longitudinally extending helix having a pitch in the opposite direction from the pitch of the helix of the first portion, and a generally straight portion connecting said first and second portions.

3,201,101
APPARATUS FOR THE PURIFICATION OF METALS
Roland Jacques, Pavillons-sous-Bois, Seine, France, assignor to Les Produits Semi Conducteurs, Paris, France
Filed Aug. 2, 1962, Ser. No. 214,363
Claims priority, application France, Aug. 3, 1961, 869,937
4 Claims. (Cl. 266—9)



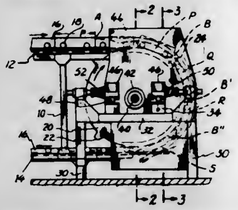
1. Apparatus for the purification of metals, especially antimony, comprising a reflux still, a condenser, and a receptacle capable of holding antimony chloride, means to heat the receptacle, a tubular reaction chamber attached to the receptacle by a valve, means to supply the reaction chamber with inert and reducing gases, means

whereby the chamber may be scavenged by the inert gases, means to heat the reaction chamber more or less uniformly throughout its length, and a second heating means movable along the reaction chamber adapted to heat a localized part thereof to higher temperature than that provided by the first heating means.

3,201,102
SINTERING APPARATUS

Jürg Stieler and Dietrich Münch, Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Filed Aug. 11, 1961, Ser. No. 131,009
Claims priority, application Germany, Feb. 14, 1958, M 36,710; Apr. 18, 1958, M 37,378
7 Claims. (Cl. 266—21)



1. A sintering apparatus comprising an endless sintering band having an upper and a lower reach, a train of abutting sinter material carrying pans on said upper reach, said upper reach having a length substantially equal to the sum of the lengths of the individual pans thereon, a pan lowering mounting at one end of said band composed of a housing having a freely rotatable pan outlet lowering sprocket journalled therein at the extreme discharge end of said upper reach, said sprocket engaging each of said pans and holding them in fixed spaced relation to each other as the sprocket is turned by the weight of the pans and the pans are carried by and turned downwardly around said sprocket during the whole descent of said pans from the upper to the lower reach, housing supporting means for allowing said sprocket to move in and counter to the direction of conveyance of the sintering band, and means constantly urging said sprocket counter to the direction of conveyance which said pans have when they are in the upper reach so that a closed system consisting of a tight train of pans is formed with the pans held in contact with each other by said means constantly urging said sprocket on the entire length of the upper and lower reaches during the thermal expansion and contraction of said apparatus.

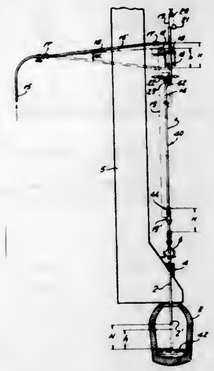
3,201,103
BLOWING TUBE APPARATUS AND METHOD FOR OPERATING IT

Helmut Scherff, Oberhausen-Sterkrade, Germany, assignor to Gutehoffnungshütte Sterkrade Aktiengesellschaft, Oberhausen, Rhineland, Germany

Filed Sept. 15, 1961, Ser. No. 138,329
Claims priority, application Germany, Sept. 24, 1960, G 30,570
19 Claims. (Cl. 266—34)

1. A blowing tube apparatus for a metallurgical furnace and the like comprising, a first tube section, a second tube section freely telescopically movable between fully retracted and fully extended positions in cooperable engagement with said first tube section, said tube sections defining an internal blow passage therethrough, and sealing means carried by said first and second tube sections sealing the connection between said sections only when said sections are in a substantially fully extended orientation, including a formation on one of said sections which is wedged into sealing engagement with the other of said sections when said sections are moved relatively into a fully extended orientation, said sealing means being ineffective when said sections are moved from a fully extended orientation toward a retracted orientation.

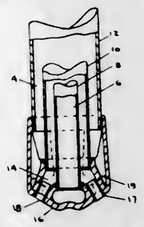
6. A method of operating a telescopic blowing tube having a mouth through which gases are blown and having telescoping tube sections, which blowing tube is associated with a metallurgical furnace comprising moving the telescopic sections of said tube relative to each other to introduce the mouth of said tube into and withdraw it from said furnace before and after blowing through said tube, and moving the entire tube relative to the furnace without movement of said tube sections relative to each other but with the mouth of said tube maintained within the furnace while blowing through said tube.



3,201,104
OXYGEN LANCE FOR SUBSURFACE USE

Walter V. Berry, 2679 Santa Barbara Drive, Bethel Park, Pa.

Filed Aug. 21, 1962, Ser. No. 218,359
6 Claims. (Cl. 266—34)

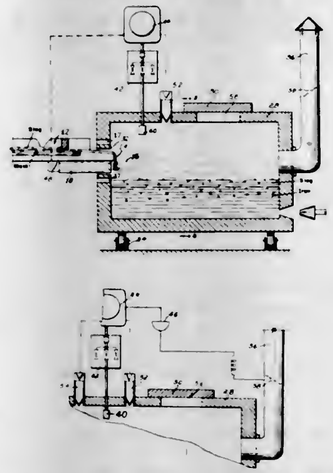


1. A lance for supplying oxygen to a molten metal, comprising a shank and a nozzle, said nozzle comprising a hollow bulbous shell having an open end and an opposite solid end and having a plurality of tubes extending through said solid end; said shank comprising three concentric pipes extending into the open end of said nozzle and being fixedly but removably attached therein; said tubes extending through said solid end of said nozzle and interconnecting at the region between the innermost of said pipes and its circumjacent pipe in the interior of said shell for conducting oxygen from said shank out through said nozzle, said tubes being slightly tapered inside so that the interior cross-sectional area diminishes slightly toward said face of said nozzle, hollow cylindrical inserts of an oxidation resistant material located in each of said tubes and having an angle of taper matching the angle of taper of said tubes, water deflecting vanes located opposite a point midway between adjacent tubes so as to deflect water passing through between a pair of said tubes from the center of said nozzle to the inner side of said nozzle shell, the junction between the inner concentric pipe and said nozzle being located so that when said inner pipe is removed, said inserts can be inserted into their respective tubes.

3,201,105
APPARATUS FOR MAKING STEEL

Jorge Miller, Bogota, Colombia, assignor to Procesos Industriales Ltd., Bogota, Colombia, a corporation of Colombia

Filed July 9, 1962, Ser. No. 208,293
2 Claims. (Cl. 266—34)



1. Apparatus for conversion of molten metal comprising:

(A) a closed reactor, having entry port, as well as exhaust gas and liquid reaction product exit ports;

(B) fore-hearth means interconnecting a cupola containing said molten metal and said entry port;

(C) gaseous compound primary nozzle means disposed adjacent said fore-hearth means and defining a trough-like jet beneath said molten metal falling from said fore-hearth means into said reactor and an auxiliary nozzle co-axially disposed with the line of maximum vacuum created by opposed sides of said trough-like jet;

(D) a secondary gaseous compound nozzle supported in said reactor intermediate said first gaseous compound nozzle and said exit port;

(E) means directing said gaseous compound through said primary nozzle at a pressure sufficient to shatter said molten metal into particles having a diameter in a range of 10 to 1,000 microns; and

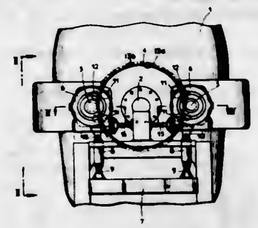
(F) a gas analyzer supported in said reactor, damper means supported in said exhaust gas port and solenoid controls interconnecting said gas analyzer and said damper so as to control said damper in terms according as said gaseous compound varies in analysis.

3,201,106
TIPPING MECHANISM FOR A STEELWORKS CONVERTER

Georges Lafay, Le Creusot, France, assignor to Societe des Forges et Ateliers du Creusot, Paris, France, a company of France

Filed Feb. 12, 1962, Ser. No. 172,507
3 Claims. (Cl. 266—36)

1. In tipping mechanism for a steel works converter, a converter, a trunnion for said converter, a toothed wheel mounted directly on said trunnion, rims having inner and outer smooth surfaces on said wheel, two carriages spaced from each other and mounted adjacent the periphery of said wheel, rollers mounted on said carriages running on said smooth surfaces, a driving pinion on each

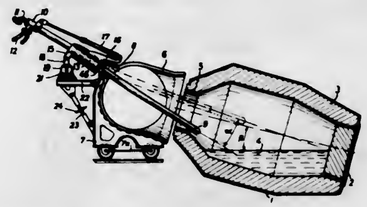


of said carriages in mesh with said toothed wheel, a mechanical differential driving said pinions, planetary and satellite elements for said differential, each of said planetary elements driving one of said pinions, a satellite carrier for said elements and means for rotating said carrier.

3,201,107
APPARATUS FOR SUPPORTING AND MOVABLY GUIDING OXYGEN LANCES FOR ROTATING BARREL CONVERTERS IN PRODUCTION OF STEEL

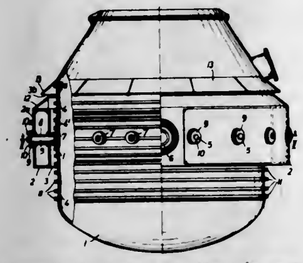
Helmut Kramer, Cologne, Germany, assignor to Pintsch Bamag Aktiengesellschaft, Cologne-Bayenthal, Germany, a corporation of Germany

Filed May 15, 1962, Ser. No. 194,820
Claims priority, application Germany, May 18, 1961, P 27,171
22 Claims. (Cl. 266—36)



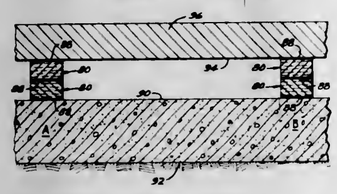
1. Apparatus for supporting and driving a moving oxygen lance in the rotary barrel converter process of steel production, said apparatus comprising a lance supporting member for receiving an oxygen lance and adapted to direct same through the converter outlet opening onto the surface of a bath of steel during converter operation, said supporting member being mounted for pivotal movement about a predetermined substantially horizontal axis to direct said lance sequentially toward rearward and forward portions of said bath surface relative to said converter opening, a drive mechanism for imparting cyclical oscillating motion about said axis to said supporting member and thus to said lance, and linking means connecting said drive mechanism with said supporting member so that said supporting member travels at a greater angular velocity for the cycle period portion corresponding to the time when the lance is moving over said forward portion of the bath surface, as compared to the other portion of the cycle of said oscillating motion, said forward portion comprising the portion of the bath over which the lance is directed between its pivotal position when directed closest to said converter opening and approximately the middle pivotal position of its swing.

3,201,108
STEEL CONVERTER WITH LOOSE SUPPORTING RING
Helmut Kramer, Cologne, Germany, assignor to Pintsch Basmag Aktiengesellschaft, Cologne-Bayenthal, Germany, a corporation of Germany
Filed Jan. 14, 1963, Ser. No. 251,315
Claims priority, application Germany, July 21, 1962, P 29,876
11 Claims. (Cl. 266—36)



1. A converter for the production of steel comprising a supporting ring, a converter vessel, means mounting converter vessel within said supporting ring in spaced relationship thereto and defining an annular gap between the vessel and the ring to permit radial heat expansion of said converter vessel, said means comprising a plurality of annularly spaced retaining eyelets secured to said converter vessel and defining openings whose axes are perpendicular to the vessel wall, and a plurality of pins radially mounted on said supporting ring and slidably engaged in said eyelet openings.

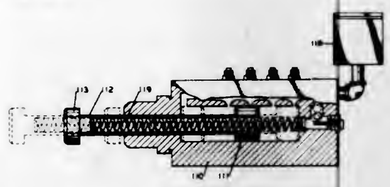
3,201,109
APPARATUS FOR ISOLATING VIBRATIONS
Patrick M. Sweeney and Laurence L. Eberhart, Dublin, Ohio, assignors to Consolidated Kinetics Corporation, Columbus, Ohio, a corporation of Ohio
Filed Apr. 16, 1963, Ser. No. 273,531
1 Claim. (Cl. 267—1)



A composite air and glass fiber spring for isolating vibrations comprising, in combination, a plurality of pads disposed in stacked relationship with confronting surfaces joined together by a mastic, each of said pads comprising non-impregnated glass fiber material including a load supporting side, the fibers of said material being crosswise oriented substantially parallel with said load supporting side; and a flexible material covering said pads of glass fiber material, the interior regions of said pads including impregnant free interstices.

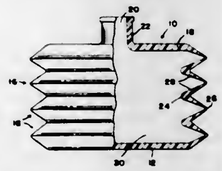
3,201,110
CUSHIONING DEVICE
Russell W. Taccone, Erie, Pa., assignor to Taccone Corporation, Erie, Pa., a corporation of Pennsylvania
Filed Nov. 7, 1963, Ser. No. 322,243
1 Claim. (Cl. 267—1)

A shock absorber comprising
a body,
a piston in said body,
a piston rod in said body attached to said piston and having an end extending from said body and adapted to engage a load to be checked,
means to urge said piston to a position where said piston rod is extended from said body,
said piston defining a cavity,
said cavity comprising a cylindrical opening in said body,
said piston being slidably disposed in said opening and providing a space for fluid in said cavity, both ahead and behind said piston,
a plurality of axially spaced orifices extending through the walls of said body, one at one end and one at the other end thereof,
means to adjust the effective size of said orifices whereby the rate of flow of fluid therethrough may be regulated,



a manifold connecting said orifices,
a flow passage connecting the end of said opening through said body remote from said rod to said manifold,
a ball check disposed in said flow passage,
said ball check being adapted to allow fluid to flow freely from the side of said piston adjacent said rod through said manifold to the side of said piston remote from said rod, but preventing said fluid from escaping through said passage from said side of said piston opposite said rod to said manifold,
and a plug in said body in the end thereof remote from said rod, a pintle attached to said plug and extending toward said piston and underlying said flow passage, said ball check being adapted to rest on said pintle when said piston is moved in the direction of said rod.

3,201,111
MULTI-PURPOSE, INHERENTLY BIASED, SELF-INFLATABLE BELLOWS
Leonard Afton, 4880 N. Marine Drive, Chicago, Ill.
Filed Nov. 12, 1963, Ser. No. 323,167
1 Claim. (Cl. 267—1)



A one-piece molded plastic bellows formed of a resilient material which offers an appreciable degree of resistance to compressional forces and which possesses quickly physical restorative properties, said bellows including spaced end walls and intervening bellows convolutions, said end walls being relatively movable toward and away from each other between a position of wide separation wherein the bellows is extended and a position of close proximity wherein the bellows is collapsed, said bellows being inherently biased by the molecular disposition of the material of which it is formed to its extended condition, one of said end walls being formed with a bellows aperture therein, said bellows' convolutions being of zig-zag configuration in the longitudinal direction of the bellows so as to present thin outside apex regions having sharp exterior peaks and inside base regions having sharp outside valleys, said base regions inwardly of said valleys and internally of the bellows chamber presenting blunt apices, said base regions being dimensionally thick.

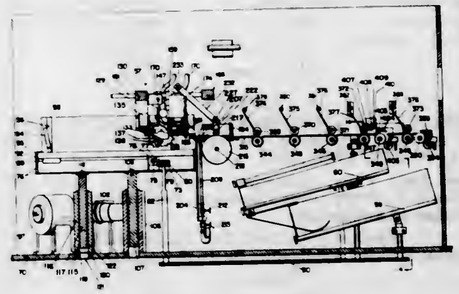
3,201,112
HYDROPNEUMATIC SUSPENSION UNIT
Felix Wössner, Schweinfurt am Main, Germany, assignor to Fichtel & Sachs A.G., Schweinfurt am Main, Germany, a corporation of Germany
Filed Dec. 10, 1963, Ser. No. 329,523
Claims priority, application Germany, Dec. 11, 1962, F 38,519
17 Claims. (Cl. 267—64)



1. A hydropneumatic suspension unit comprising, in combination:
(a) a cylinder member having an axis, and defining a cavity about said axis;
(b) a piston member mounted in said cavity for axial reciprocating movement, said piston member sealingly dividing said cavity into two compartments and being formed with a duct axially extending therethrough having respective orifices in said compartments, the flow area of said duct being substantially smaller than the cross-sectional area of said cavity;
(c) a piston rod member secured to said piston member and axially extending therefrom through one of said compartments, a portion of said piston rod member having a uniform cross section and passing outward through said cylinder member in movable sealing engagement with the same; and
(d) annual baffle plate means projecting from said cylinder member toward said axis in the other one of said compartments, said baffle plate means defining two axially spaced portions in said other compartment and being formed with an opening axially extending therethrough and connecting said portions, the cross sectional area of said opening being substantially greater than the cross section of said piston rod member portion.

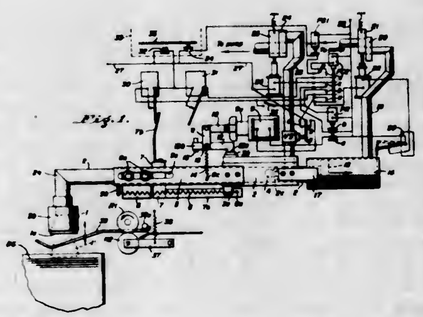
3,201,113
DOCUMENT FEED APPARATUS
Walter Lee, Springfield, Jack Sherwood Hoover, Arlington County, and Cornell Stephen Maruschalko, Alexandria, Va., assignors to Farrington Electronics Inc., Alexandria, Va., a corporation of Massachusetts
Filed Oct. 21, 1963, Ser. No. 317,755
17 Claims. (Cl. 271—5)

1. Apparatus for feeding flat documents along a document advancement path comprising means for supporting a plurality of documents in a vertically aligned stack array, pickup head means movable from a first position overlying the stack of documents to a second position spaced along the document advancement path, said pickup head means having a document holding surface facing said stack, said pickup head means including central suction means for attracting the central portion of the uppermost document on the stack to the central portion of said document holding surface and side suction means for attracting portions of said uppermost document located toward the opposite lateral margins of the document from said central portion to side portions of said document holding surface and retaining the same against



said surface in substantial conformity to a preselected configuration established by the relative positions of said suction means, at least one of said suction means being movable downwardly from said holding surface to engage and retain a document by suction action and automatically returned upwardly responsive to retention of said document to draw said document into engagement with said holding surface, and means for moving said pickup head along a path generally paralleling said document advancement path while maintaining document retaining suction pressure on said pickup head means to advance a document retained thereby to said second position.

3,201,114
DOCUMENT FEEDER AND CONTROL SYSTEM
Richard L. Swartz and William D. Highsmith, Columbia, S.C., assignors to Universal Business Machines, Inc., Columbia, S.C., a corporation of South Carolina
Filed May 11, 1961, Ser. No. 109,459
6 Claims. (Cl. 271—11)



1. A device for transferring documents one at a time from the top of a stack of documents to a discharge station adjacent said stack comprising, a suction cup, an

elongated stem carrying said cup at one end thereof, mounting means supporting said stem for pivotal movement about a transverse axis and for longitudinal sliding movement of the stem, resilient means acting on said stem for holding said cup in a normal position elevated above the top of said stack, resilient means acting on said stem to hold said stem at one end of its longitudinal movement with said cup positioned to pick up the face document of the stack, motive means connected to the other end of said stem for effecting longitudinal movement of said stem in the desired direction of transfer of documents from the stack, means for establishing a vacuum within said cup upon downward movement of said cup, and means for interrupting the vacuum connection upon completion of the axial movement of said stem from the normal position of said cup to the discharge position.

3,201,115

DELIVERY MECHANISMS ENSURING THE TRANSFER OF PUNCHED SHEETS FROM A PRESS TO A WASTE EJECTING DEVICE

Josef Kury, Pully, Switzerland, assignor to J. Bobst and Son S.A., Prilly, near Lausanne, Switzerland, a corporation of Switzerland

Filed July 25, 1963, Ser. No. 297,578
Claims priority, application Switzerland, Mar. 22, 1963, 3,684/63
6 Claims. (Cl. 271—51)



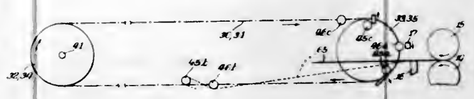
1. In combination, a punching press, a waste ejecting device and a delivery mechanism for transferring punched sheets from the press to the waste ejecting device, said press comprising a plurality of bars which engage successive sheets and transfer the sheets through the press for punching operations, means engaging the bars to periodically drive and immobilize the same to alternately position the sheets between the press during a punching operation and thereafter drawing the thus punched sheets from the press, said bars reaching a maximum speed between successive immobilizations, means operative at constant speed for delivering punched sheets to the waste ejecting device, said delivery mechanism comprising rotating means adjacent said press for engaging the sheets which are driven by said bars, means driving the rotating means at a variable speed in synchronism with the press and causing the rotating means to engage the sheets with a peripheral speed equal to that of the maximum speed of the bars and thereafter decelerate to remove the sheets from the bars, the rotating means being decelerated to a constant speed which is equal to the speed of the aforesaid means which is operative at constant speed such that the sheets can be transferred from the rotating means to said aforesaid means at said constant speed, said rotating means including profiled organs having a notched periphery to permit passage of the bars and thereafter engage the sheets which are conveyed by said bars and means engaging the rotating means to vary the position thereof with respect to the path of the bars to cause the sheets to be temporarily moved away from the bars when the latter are separated from the sheets and thereafter move the rotating means back to its orginal position for engaging subsequent sheets.

3,201,116

STACKER

Ralph F. Barber, Elmhurst, Ill., assignor to Miller Wrapping & Sealing Machine Company, a corporation of Illinois

Filed Feb. 27, 1962, Ser. No. 175,915
10 Claims. (Cl. 271—79)



1. A device for stacking relatively limp lengths of material comprising, a platform on which the material is stacked, a pair of endless members traveling one at each side of the platform, and a pair of bars extending transversely of the platform and mounted at their ends to the members, said bars being in fixed spaced apart relation to have the leading part of a length of material threaded therebetween whereby said material is frictionally held by the bars for movement therewith.

3,201,117

STICK HORSE

Alvin L. Gursha, Amsterdam, N.Y., assignor to Bayshore Industries, Incorporated, Amsterdam, N.Y., a corporation of Maryland

Filed Apr. 2, 1963, Ser. No. 269,929
2 Claims. (Cl. 272—1)



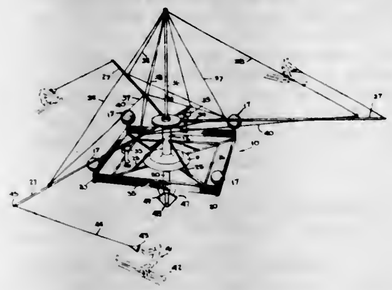
2. In a stick horse, the combination of a hollow body shaped to simulate the head of an animal with the lower jaw missing, said body having a downwardly facing opening at the back of the portion thereof corresponding to the upper jaw and inwardly opening sockets in the opposite sides of said body above said opening, a lower jaw simulating member having a back end portion which is angled upwardly relative to the remainder of said member and extends into said opening, pivot means extending from the opposite sides of said back end portion and being seated in said sockets to pivotally suspend said member from said body for movement between a mouth-open position to which said member is gravitationally urged and a raised mouth-closed position at which said member engages upwardly against said upper jaw portion of the body, said body having additional openings in the sides thereof at locations in back of said sockets, and reins extending from in back of said body through said additional openings and connected to said upwardly angled back end portion of the lower jaw simulating member above and in front of said pivot means so that tugging on said reins causes said movement of the member to said mouth-closed position.

3,201,118

FLOATING TOWING DEVICE

Charles P. Goggi, Staten Island, N.Y., assignor to Goggi Corporation, Staten Island, N.Y., a corporation of New York

Filed Dec. 11, 1961, Ser. No. 158,450
10 Claims. (Cl. 272—32)



1. A floating propelling device including means for buoyantly supporting the major portion of the weight of the device, said supporting means in its operative positive being submerged in the fluid upon which the device is floated, additional means for buoyantly supporting the remaining portion of the weight of the device, means for connecting said additional supporting means to said supporting means at a predetermined radial distance therefrom, said additional supporting means in its operative position being partially submerged in said fluid and being adapted to provide a restoring moment to said supporting means, at least one arm member extending outwardly from the location of said supporting means, means for pivotally attaching said arm member at one end thereof to said supporting means, and means for providing a substantially horizontal driving force to said arm member, said driving force rotating said pivotally attached arm member to rotate about said supporting means, whereby the portion of said arm member adjacent the other end thereof is adapted to propel an object engaged thereto with respect to said fluid.

3,201,119

PORTABLE SUPPORTING STRUCTURE FOR GYMNASTIC EQUIPMENT

Robert M. Feaner and Donald E. Hamilton, both of 3200 S. Zuni St., Englewood, Colo.

Filed Nov. 30, 1962, Ser. No. 241,403
7 Claims. (Cl. 272—62)



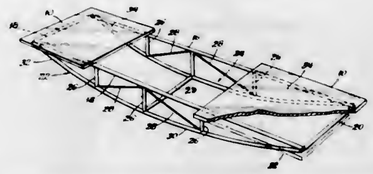
1. A portable supporting structure for gymnastic equipment comprising: two side frame structures, each side frame structure consisting of two truss elements; means for detachably joining the two truss elements together at their inner extremities, said elements extending outwardly and downwardly from the point of attachment; a detachable spacing means joining the outer extremities of said side frame structures and maintaining them in horizontal, spaced relation; and a tubular, equipment-supporting mast arising from each of said points of attachment.

3,201,120

JUMPING BOARD

Clifford Moravetz, Winnetka, Ill. (486 Jefferson, Glencoe, Ill.)

Filed Apr. 2, 1962, Ser. No. 184,468
3 Claims. (Cl. 272—65)



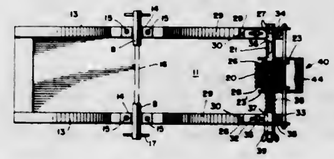
3. An amusement device for two persons comprising individual platforms for supportingly receiving the feet of each person, said platforms being substantially coplanar and horizontally disposed, generally convex platform support means accommodating alternate upward and downward movement of said platforms, means for determining the extent of said movement, said device having a length to height ratio of more than nine to one and being so related to the curvature of said convex surface and to the angular relation of said movement determining means and said platform as to cause said platform to be disposed at an angle to the horizontal so as to project the user substantially vertically when said movement determining means engages a supporting surface.

3,201,121

BICYCLE EXERCISER ACCESSORY

Norbert Locke, 914 James Court, Wheaton, Ill.

Filed May 17, 1963, Ser. No. 281,154
3 Claims. (Cl. 272—73)

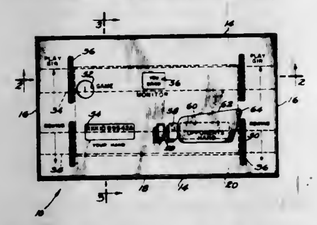


1. A bicycle exerciser-accessory comprising,
(a) a support having a pair of horizontally-spaced upright standards of frusto-pyramidical form,
(b) a pair of stud shafts having bores extending inwardly from one end and dimensioned to seat the exposed ends of the rear axle of a bicycle,
(c) a pair of slots upwardly-open and axially aligned, fixed on the upper edges of the standards,
(d) a pair of angle bars adjustably anchored to the upper rear edges of the standards below said slots, and adjacently above the support base and inwardly from the rear ends of the support,
(e) a stationary supporting shaft extending oppositely outward and supported on the respective angle bars,
(f) a drag roller rotatably positioned on said shaft,
(g) plates on each side of said roller having a portion frictionally bearing against the sides of said roller,
(1) means to prevent rotation of said plates,
(h) a pair of sleeves, one sleeve on each side of said plates respectively and positioned loosely on said shaft,

(i) said angle bars shiftable on the support for varying the position of the drag roller with respect to the bicycle tire, and

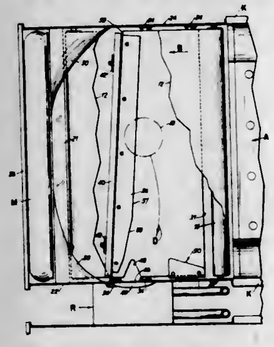
(j) means on one end of the shaft for varying the frictional contact between the plate and the roller.

3,201,122
SOLITAIRE GIN RUMMY GAME
Jeff Horwitz, Winnetka, Ill., assignor to Jeffco Games, Inc., Winnetka, Ill.
Filed July 22, 1963, Ser. No. 296,731
5 Claims. (Cl. 273—1)



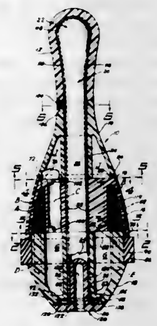
1. A solitaire gin rummy card game comprising:
a base member;
an inverted box-like game board mounted in said base member, said game board including a top face and a pair of opposed end walls;
bearing means on said end walls;
at least one roller securely and rotatably journalled in said bearing means when said game board is mounted in said base member;
a scroll having card indicia and other intelligence connected to said one roller;
actuating means connected to said one roller for rotating said one roller to move said scroll thereabout; and
hinge means for pivotally connecting at least one of said end walls to said top face to permit the removal of said one roller from said bearing means when said one pivotally connected end wall is swung outwardly, said top face being formed with a plurality of windows for viewing said card indica and intelligence.

3,201,123
PIN AND BALL HANDLING MECHANISM FOR BOWLING PIN SPOTTING MACHINES
John M. Ernst, Shelby, Ohio, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Apr. 27, 1959, Ser. No. 809,221
10 Claims. (Cl. 273—43)



1. Ball and pin handling apparatus for use with a bowling alley having a pit at one end and a kickback at each side of said pit comprising an endless travelling conveyor means mounted in said pit, means for travelling said conveyor means to move balls and pins thereon from the playing surface of said alley rearwardly of said pit, means in said pit for separating balls from pins on said conveyor, a support, means inclinedly mounting said support beneath the upper surface of said conveyor, a ball guide strip, means mounting said guide strip on the upper surface of said support beneath said conveyor in spaced relationship with said separating means, said separating means, said conveyor, said support and said guide strip coacting to urge balls laterally across said pit in an arcuate path of travel, and a discharge station comprising an opening in a kickback at one side of said pit through which said balls move to a ball return device.

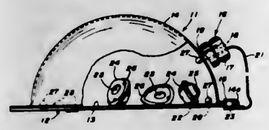
3,201,124
COMPOSITE COMPOSITION BOWLING PIN
Nickolas J. Halip, 1907 Arras Place, Windsor, Ontario, Canada
Filed Sept. 26, 1961, Ser. No. 149,475
24 Claims. (Cl. 273—82)



7. A composite bowling pin structure comprising a plurality of tandemly arranged shape retaining sections of molded synthetic resin composition, including a head section, an intermediate section, and a base section, a reinforcing stem securing said sections in abutting relationship, said stem comprising a hollow metallic member having a bulbous upper end portion bonded in said head section and having an elongated shank portion extending through said sections to adjacent the lower end of the base section thereof, said bulbous end and shank portion having an integral key-like projection extending lengthwise thereof and engaged in mating keyways in said sections for rendering them relatively non-rotatable, a recess in said base section through which said shank extends, a transverse slot in said key projection of said shank extension and a clamping member received over said shank extension in said recess in abutment with said base section and having a lip portion engaged in said slot.

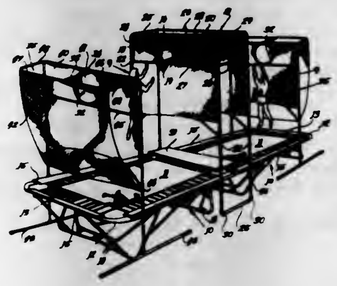
11. A composite bowling pin structure comprising tandemly arranged base and upper sections of molded synthetic resin composition, said pin having a theoretical ball line at the normal points of impact of a ball therewith, each section having a central bore and each comprising inner and outer annular wall simulating portions interconnected by web portions defining a structure of elongated cavities extending longitudinally of the sections with certain of said cavities crossing said ball line and certain cavities touching on said wall portions and in part defining the same, said cavities on the ball line of the pin being arranged in concentric groupings with the cavities of each grouping staggered with respect to those of the immediately adjacent grouping such that certain of said cavities are backed up on one side by said outer wall simulating portion and on the opposite side by radially extending sections of said web portions in part defining pairs of cavities of an adjacent concentric grouping thereof and connecting with said inner wall simulating portion.

3,201,125
GAME
Richard R. Vensel, Mount Lebanon Township, Allegheny County, Pa. (740 Washington Road, Pittsburgh 28, Pa.)
Filed Nov. 23, 1962, Ser. No. 239,643
4 Claims. (Cl. 273—95)



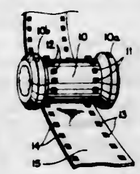
1. A game comprising a non-magnetic base, a transparent non-magnetic cover overlying the base, a hollow free-rolling non-magnetic target supported on the base and free to roll about over the base under the cover, a magnetic missile positioned under the cover, and a magnet outside the cover and movable over its outer surface for attracting the missile on the inner surface of the cover opposite the magnet, the magnetic force of the magnet retaining the missile on the inner surface of the cover and above the base as the magnet is moved on the cover outer surface, removal of the magnet from the outer surface of the cover terminating the force of attraction of the missile to the magnet whereby the missile drops toward the base and a target, the target having an opening therein large enough for the missile to fall through it and be received inside the target.

3,201,126
GAME APPARATUS WITH TARGET AND TRAMPOLINE
George P. Nissen, Cedar Rapids, Iowa, assignor to Nissen Corporation, Cedar Rapids, Iowa, a corporation of Iowa
Continuation of application Ser. No. 198,366, May 28, 1962. This application Jan. 30, 1964, Ser. No. 341,298
14 Claims. (Cl. 273—95)



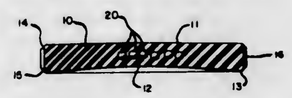
3. Recreational apparatus comprising, in combination, a trampoline having a horizontal bed, an elongated generally straight target pathway having horizontally spaced target portions defining said pathway, and means mounting said portions above said bed with said pathway extending generally horizontally across said bed at a height greater than the reach of a performer standing on the bed so that the performer must be suspended in mid-air above a standing position on the bed in order to propel an object along said pathway.

3,201,127
INDEXED MOTION TOY
Ross E. Hupp, 4961 La Gama Way, Santa Barbara, Calif.
Filed Jan. 23, 1963, Ser. No. 253,325
7 Claims. (Cl. 273—109)



1. A motion toy comprising, in combination: an elongated substantially inextensible, flexible strip having first and second rows of sprocket holes along its side edges respectively, at least one end of said strip being adapted to be held by a player; and a rotary member adapted to roll on one surface of said strip, said member having first and second circumferentially disposed sprocket teeth for indexing with said first and second rows of sprocket holes to prevent slippage between said member and said strip when said member is in engagement with said strip.

3,201,128
PITCHING DISC OPTIONALLY CAPABLE OF STICKING OR SLIDING
Joseph John Palovik, 4538 S. Harvard Ave., Tulsa, Okla.
Filed Mar. 18, 1963, Ser. No. 265,654
2 Claims. (Cl. 273—106)

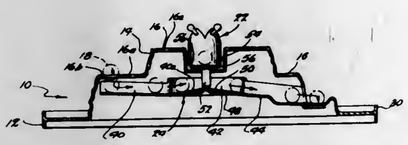


1. A pitching disc optionally capable of sticking or sliding on a horizontal target surface, said disc comprising a flexible, resilient, circular disc of a size and weight suitable to be grasped and thrown, having a diameter to thickness ratio of between five and ten, the edge of said disc being cylindrical so that the line of contact between two discs making an edge-to-edge impact is perpendicular to the plane of the discs, one side of said disc having a shape between flatness and a convexity of about 1/32 inch so as to slide without tendency to overturn, and the other side of said disc being concave substantially to the disc edge so as to leave a thin flexible peripheral rim capable of making contact with a flat surface along a continuous circular line.

3,201,129
GAME BOARD WITH APERTURED PATH AND MOVABLE GOAL MEMBER
Norman T. McFarland, Mayview, and Barton C. Meyer, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Mar. 1, 1963, Ser. No. 262,062
5 Claims. (Cl. 273—134)

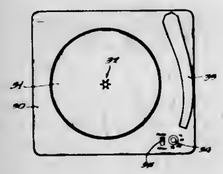
1. A game comprising a plurality of markers, a three-dimensional game board in the shape of a hill having paths with starting points near the base of the hill and terminating at a crest of the hill, said paths having a series of stations adapted to receive said markers and leading from said starting points to said crest, said stations including first stations constructed to retain said markers in position on the respective path and second stations randomly interspersed among the first stations and constructed a permit the passing of said markers from the respective path to the interior of said hill, a goal member near said crest, means affording passage of a marker from one of said second stations to said goal member,

said goal member including actuating means responsive to engagement by a marker being received by said goal member to move said goal member upwardly to retain the marker and indicate the winner of the game, said goal member also being constructed so that a marker entering



the goal and not engaging said actuating means is released from said goal member, and means for receiving said markers which pass from said second stations to the interior of the hill and those which are released from said goal member and for passing such markers to said first stations along the paths.

3,201,130
RECORD CHANGER
James L. D. Morrison, Los Angeles, and Michael D. Estkowski, Sun Valley, Calif.; said Estkowski assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Feb. 15, 1962, Ser. No. 173,465
17 Claims. (Cl. 274—10)



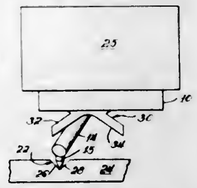
1. In a record changer, a spindle including record supporting fingers retractable into the spindle for dropping records one-by-one to a turntable, a tone arm for playing the records one-by-one as they are dropped to the turntable, and a cycling mechanism normally operative automatically upon completion of the playing of one record for raising the tone arm from the record, swinging the tone arm outwardly beyond the record, retracting said fingers to drop a second record to the turntable, swinging the tone arm inwardly to a position over the starting point of the second record and lowering the tone arm to the second record, said mechanism comprising a main element movable in cyclical path, clutch means between said main element and said tone arm selectively operable to couple the tone arm to said element for normal automatic operation and to uncouple said tone arm from said element, stop means associated with said element at the point in its cyclical path at which said fingers are retracted into said spindle, said stop means being selectively operable to accommodate normal movement of said element in said path and to stop said element at the said point in its path, and control means for operating both said clutch means and said stop means selectively to render said mechanism normally operative and to uncouple the tone arm from the mechanism and stop the mechanism in the position wherein said fingers are retracted into said spindle thereby to render the mechanism inoperative and to accommodate manual manipulation of the records and the tone arm.

3,201,131
RECORD-CHANGING GRAMOPHONES
Anders Ansar, Nykoping, Sweden, and Edward William John Caddy, Swindon, England, assignors to The Garrard Engineering & Manufacturing Company Limited, Swindon, England
Filed Sept. 18, 1962, Ser. No. 224,395
Claims priority, application Great Britain, Sept. 20, 1961, 33,697/61
13 Claims. (Cl. 274—10)



1. A record changing mechanism for a gramophone, comprising a vertically extending hollow spindle formed with a plurality of circumferentially distributed openings having end camming surfaces, respectively, a plurality of elongated latches respectively extending through said openings to be cammed by said camming surfaces thereof to outer positions extending beyond the exterior surface of said spindle during upward movement of said latches and inwardly at least to the exterior surface of said spindle during downward movement of said latches, said spindle having above said latches a surface inset from the exterior surface of the spindle and merging therewith at its lower edge in an inclined step down which a record, not otherwise supported, will slide by gravity, displaceable thrustor means being provided on the spindle level with, and on the opposite side of the spindle to, the inset surface and inclined step, and displacing means for displacing said thrustor means radially of the spindle away from the inset surface and retracting said latches downwardly so as to displace at least the lowermost record of the stack not supported on the latches laterally to be held against the inset surface and on the inclined step by pressure of said thrustor means whereby the record and any records above are supported independently of the latches, said displacing means then moving said latches upwardly to their positions extending outwardly of said spindle and retracting said thrustor means to allow the lowermost record to slide down over the inclined step on to the latches.

3,201,132
DRIVE YOKE FOR PHONOGRAPH PICKUPS
Robert J. Hammond, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Aug. 27, 1962, Ser. No. 219,574
3 Claims. (Cl. 274—37)



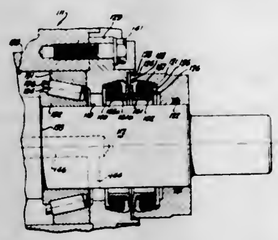
1. For use in a phonograph pickup, a drive yoke for transmitting motions from a stylus arm to transducing elements in the pickup, said yoke being generally of inverted V-shaped configuration and comprising a pair of downwardly projecting yoke ears which define therebetween an angle between the range of 105 degrees and 120 degrees, whereby a stylus arm seated between said yoke ears will move laterally relative thereto more readily than a corresponding stylus carried by said stylus arm will move laterally out of a record groove in which it is operatively engaged.

3,201,133
RECORD CHANGER DIAMETER ADAPTER
Kosuke Matsukata, 390 Tsurumi-cho, Tsurumi-ku, Yokohama, Japan
Filed July 23, 1962, Ser. No. 211,785
Claims priority, application Japan, May 7, 1962, 40/27,030
3 Claims. (Cl. 274—42)



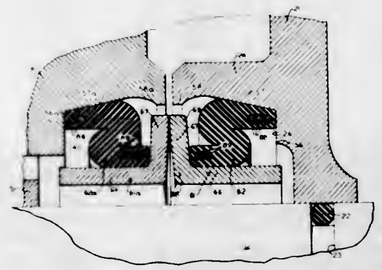
1. In combination, a phonograph record and a device holding the phonograph record, comprising a record adapter having an annular shape the outside diameter of which is greater than the record which is held and the inside diameter is slightly less than the outside diameter of the record, the adapter being placed over the record concentrically therewith, the inside edge of the annular adapter overlapping the outer edge of the record around the entire periphery thereof, the inside edge of the annular adapter being spiral in shape and having a substantially radially extending portion of a length such that it traverses only a few grooves in the record, said adapter having a spiral groove in the surface thereof which curves inwardly from the outer edge thereof to the said radially outwardly extending portion, and a record holder having an outside diameter substantially the same as the outside diameter of said adapter and supporting at least the peripheral portion of the surface of the record, and means detachably securing the adapter to the record holder with the record between the adapter and the record holder.

3,201,134
BEARING SEAL STRUCTURE
Allan A. Hayatian, Lomita, Calif., assignor to Westrac Company, Torrance, Calif.
Filed Dec. 31, 1962, Ser. No. 248,780
15 Claims. (Cl. 277—92)



1. In a seal construction, a shaft, a rotatable member mounted for rotation about said shaft, said rotatable member formed with a first annular recess adjacent one end of said member, a cap on said shaft at said end of said member, said cap formed with a second annular recess directly opposite and facing said first recess, each said recess having an inner shoulder and an outward-diverging conical surface outward of said shoulder, a first metal ring at least partially disposed in said first recess, a second metal ring at least partially disposed in said second recess, said metal rings each having a cylindrical portion encompassing said shaft and of greater diameter than said shaft and an abruptly outwardly projecting flange on one end of said cylindrical portion, the flanges of said metal rings being in intimate metal-to-metal sealing contact, a first resilient ring disposed around said cylindrical portion of said first metal ring and disposed in said first recess, a second resilient ring disposed around said cylindrical portion of said second metal ring and disposed in said second recess, each said resilient ring being stressed in assembled position and shaped with a resilient midsection of relatively large cross section, each said resilient ring having a large diameter outer cylindrical portion integrally joined to said midsection and extending outwardly from said midsection in a first axial direction and in sealing contact with said conical surface of the recess in which said resilient ring is located and terminating in a tip bearing against said shoulder, each said resilient ring having a small diameter inner cylindrical portion integrally joined with said midsection and projecting in an axially outward direction from said midsection opposite said outer cylindrical portion and sealing against the outside of said cylindrical portion of said metal ring and terminating in a tip bearing against the flange of the metal ring about which said resilient ring is disposed, said resilient rings urging said flanges into contact and floatingly mounting said metal rings approximately centrally relative to said shaft, said resilient ring disassembled being longer in an axial direction than the distance between said flange and said shoulder in assembled position.

3,201,135
BEARING SEAL STRUCTURE
Allan A. Hayatian, Lomita, Calif., assignor to Westrac Company, Torrance, Calif.
Filed June 9, 1964, Ser. No. 373,759
8 Claims. (Cl. 277—92)



1. In a seal construction, a shaft, a rotatable member mounted for rotation about said shaft, said rotable member formed with a first annular recess adjacent one end of said member, a cap on said shaft at said end of said member, said cap formed with a second annular recess directly opposite and facing said first recess, each said recess having an inner shoulder and an outward-diverging conical surface outward of said shoulder, a first metal ring at least partially disposed in said first recess, a second metal ring at least partially disposed in said second recess, said metal rings each having a cylindrical portion encompassing said shaft and of greater diameter

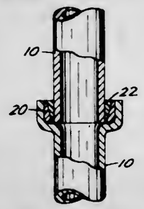
than said shaft and an abruptly outwardly projecting flange on one end of said cylindrical portion, the flanges of said metal rings being in intimate metal-to-metal sealing contact, a first resilient ring disposed around said cylindrical portion of said first metal ring and disposed in said first recess, a second resilient ring disposed around said cylindrical portion of said second metal ring and disposed in said second recess, each said resilient ring being stressed in assembled position and shaped with a resilient midsection of relatively large cross section, each said resilient ring having a large diameter outer cylindrical portion integrally joined to said midsection and extending outward from said midsection in a first axial direction and in sealing contact with said conical surface of the recess in which said resilient ring is located and terminating in a tip bearing against said shoulder, each said resilient ring having a small diameter inner cylindrical portion integrally joined with said midsection and projecting an axially outward direction from said midsection parallel and opposite said outer cylindrical portion and sealing against the outside of said cylindrical portion of said metal ring and terminating in a tip bearing against the flange of the metal ring about which said resilient ring is disposed, and a coil of spring wire imbedded in at least one said tip, said resilient rings urging said flanges into contact and floatingly mounting said metal rings approximately centrally relative to said shaft, said resilient ring disassembled being longer in an axial direction than the distance between said flange and said shoulder in assembled position.

3,201,136
PIPE JOINT OF CAST IN PLACE POLYURETHANE

George C. Harrison, Roseville, and Lester G. Axdahl, Maplewood, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Original application July 6, 1960, Ser. No. 41,152. Divided and this application Mar. 17, 1965, Ser. No. 440,466

4 Claims. (Cl. 277—198)



1. A method for casting in place on the end of a pipe section a solid, dimensionally stable, alkali and acid resistant, biologically inert, non-porous, unplasticized, polyurethane polymer rubber sealing gasket, which sealing gasket is adapted to interfit with a complementary gasket in an adjacent pipe section to seal the joint between sections, said method comprising (*a*) providing a mold form around the end of the pipe section on which the gasket is to be cast, (*b*) pouring into said form an elastomer forming liquid reaction mixture consisting essentially of an aromatic diisocyanate, a 1,2-polyalkylene ether glycol represented by the formula

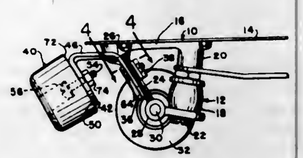
$$H(OR—OR')_nOH$$

wherein R and R' are members of the group consisting of alkylene radicals containing 3 to 4 carbon atoms whereby the glycol contains predominantly secondary hydroxyl groups, and *n* is an integer sufficiently large to provide a polyalkylene ether glycol having an average molecular weight of between about 750 and 4500, and a cross-linking member selected from the group consisting of organic triols and organic triisocyanates, said diisocyanate, polyalkylene ether glycol and cross-linking member being mixed with one another in a ratio of about 0.9:1.1 isocyanate groups for each reactive hydroxyl group, said reaction mixture having incorporated therein an inert solid filler and containing a catalyst causing the reactants to substantially completely react and solidify in no more than about 72 hours at a temperature range of about 45° F. to 100° F. to a solid, homogeneous elastomer, (*c*) curing the liquid reaction mixture to a solid gasket substantially free from further reactive groups and having a durometer of about 35 to 80 as measured by a Shore A2 needle penetrometer in a single stage continuous reaction at a temperature of from about 45° F. to about 100° F. and (*d*) removing said mold form after said gasket has cured to a solid self-sustaining state.

3,201,137
ACCESSORY FOR ROLLER SKATES

Riley R. Quick, Litchfield, Ill., assignor to Roller Derby Skate Corp., Litchfield, Ill., a corporation of Ohio

Filed Mar. 23, 1964, Ser. No. 353,965
6 Claims. (Cl. 280—11.2)



1. In combination with a roller skate structure having a sole plate, a hanger secured thereto and a wheel truck assembly including a support member angularly disposed with respect to the sole plate and pivotally engaging the hanger, a toe stop accessory comprising:

a contoured primary bracket member having a forward leg portion and a rearward leg portion having a flat upper part interconnected to the front leg portion by an intermediate portion,

a secondary bracket member,

securing members to retain said primary and secondary bracket members about the support member for pivotal movement therewith,

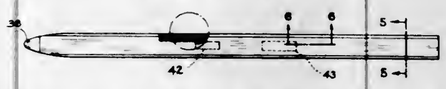
said flat upper part and intermediate portion having an aperture receiving the hanger portion of the pivotal connection with the front edge of the aperture disposed in slight surface contact with the hanger for free pivotal movement, and

a stop element secured to said forward leg of the primary bracket to sustain and transmit weight through said intermediate portion and contact directly to said hanger in a direction lengthwise of the sole plate.

3,201,138
LAMINATED SKI WITH A HONEYCOMB CORE

Culver S. Brown, Jr., 734 Melville Ave., Palo Alto, Calif.

Filed Sept. 10, 1962, Ser. No. 222,584
2 Claims. (Cl. 280—11.13)



1. An improved elongate ski, comprising a core of expanded honeycomb material, said honeycomb material including a plurality of flat ribbons bonded to one another at recurrent intervals to form a plurality of cells, said core forming top and bottom faces generally normal to the axis of said cells, each said ribbon of the core being disposed in an axis normal to the longitudinal axis of the ski, a top skin, means attaching said top skin to the top face of the core, a bottom skin, and means attaching said bottom skin to the bottom face of the core.

3,201,139
MERCHANDISE CART HAVING GROUND ENGAGEABLE ANTI-THEFT MEANS

William M. Turlington, 5612 Midwood Ave., Baltimore, Md.

Filed Aug. 12, 1963, Ser. No. 301,295
2 Claims. (Cl. 280—33.99)



1. A cart for transporting merchandise comprising in combination:

(a) a rigid frame having two tubular lower side portions extending throughout the length of the cart including a front end and a rear end, the two lower side portions of the frame having their portions adjacent the front and the rear ends in a substantially horizontal plane and an intermediate portion lying between the said front and rear ends and connected thereto, the intermediate portion having a section running in a horizontal plane below and parallel with the horizontal plane extending through the front and rear end portions of the tubular frame;

(b) the two lower tubular side portions of the frame having portions extending upwardly from the rear ends thereof for a predetermined distance;

(c) a basket supported on the upwardly extended side portions, said basket extending over and above the lower horizontal portions of the frame;

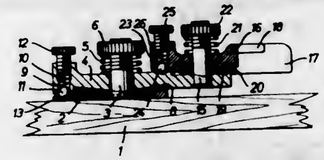
(d) a fixed wheel supporting means permanently and rigidly fixed to the rear end of each of the horizontal lower tubular side portions for receiving and supporting a rotatable wheel and a combination caster and wheel support adjacent the front end of the horizontal frame, said wheels adapted to movably support the cart upon a supporting surface, the wheels supporting the cart in a position whereby the lower intermediate portion of the frame is in close proximity to the supporting surface for the cart, for engaging irregularities in the supporting surface beyond a predetermined height as the cart is moved over the supporting surface.

3,201,140
SAFETY FRONT JAW FOR SKI BINDINGS OR FASTENINGS

Hannes Marker, Garmisch-Partenkirchen, Germany, assignor to Dr. h.c. Georg Von Opel, Frankfurt am Main, Germany

Filed Aug. 6, 1962, Ser. No. 215,121
Claims priority, application Germany, Aug. 12, 1961, M 38,960; May 30, 1962, M 53,058
16 Claims. (Cl. 280—11.35)

1. A safety jaw for ski bindings or fastenings capable of being deflected in a lateral direction upon the application thereto of an excessively large torque, comprising at least one swingable member mounted for rotation about a pivot pin rigidly secured to the ski and extending vertically upwardly in relation to the upper side of the ski, and preferably comprising at least one sole hold-down member capable of engaging the upper edge of the toe portion of a ski boot sole, said sole hold-down member being mounted for rotation in relation to said swingable member about a second pivot pin rigidly secured to said swingable member and extending at right angles to the upper side of the ski, there being provided spring means tending to retain the swingable member and the sole hold-down member in their normal positions and to return them into

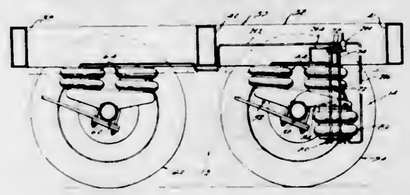


their normal positions after any lateral deflection therefrom, wherein at least one of the said swingable member and said sole hold-down member have formed thereon at least one plane surface which is inclined in relation to the axis of the associated pivot pin, said plane surface being spring-biased towards a normal position with a cooperation surface on the member supporting the associated pivot pin which is inclined at the same angle in relation to the axis of the respective pivot pin and which is non-rotatable relative to the pivot pin, said inclined surfaces being relatively movable in an axial direction against the biasing force of the spring.

3,201,141
TANDEM AXLE WHEEL SUSPENSION INCLUDING AXLE LIFT

Robert Bernstein, Omaha, Nebr., and Adrian F. Hulverson, Drayton Plains, Mich., assignors to Fruehauf Corporation, a corporation of Michigan

Filed June 26, 1962, Ser. No. 205,260
1 Claim. (Cl. 280—104.5)



A tandem axle wheel suspension for a heavy duty vehicle comprising

a frame,

a pair of axles having road engaging wheels at the ends thereof, respectively,

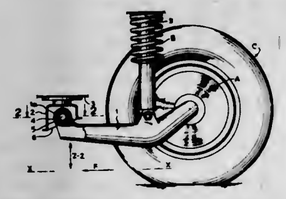
spaced pairs of load air springs extending between said frame and said axles, respectively,

an air spring support plate suspended from said frame in spaced underlying relationship relative to the one of said axles for supporting an air bag,

an axle lift air bag secured to and extending upwardly between said plate and the one axle of said wheel suspension, and an automatic pressure sensitive valve connected to said load air springs and said axle lift air bag, said valve being operable to vent the load air springs on said one axle upon the occurrence of a relatively low pressure therein and connect the axle lift air bag to a source of relatively high pressure air thereby to effect deflation of the load air spring and for said one axle and inflation of the air

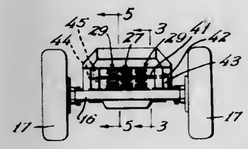
lift bag to increase the spacing between said plate and the one axle thereby to elevate the one axle relative to said frame.

3,201,142
AUTOMOBILE VEHICLE SUSPENSION
Marcel Dangauthier, Paris, France, assignor to Société d'Etudes et d'Applications Industrielles Commerciales et Immobilieres Inter-Technique, Paris, France, a corporation of France
Filed Sept. 5, 1963, Ser. No. 306,770
Claims priority, application France, Nov. 22, 1962, 916,620
3 Claims. (Cl. 280—106.5)



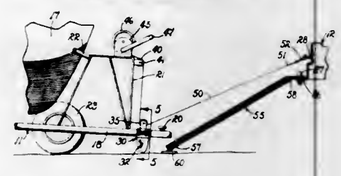
1. Rear wheel suspension for a vehicle comprising a vehicle body, trailing arms respectively carrying road wheels, a common cross-member on which the trailing arms are pivotally mounted and mounting means mounting the ends of the cross-member on said body, said means comprising for each end of said cross-member, a sleeve rigid with said body, a pin rigid with said cross-member, and at least one cylindrical annular mass of an elastomer interposed between said sleeve and said pin, said annular mass being indeformable vertically and transversely of said vehicle body and elastically deformable longitudinally of the vehicle body, thereby allowing displacements of said cross-member longitudinally of said body.

3,201,143
THREE POINT FRONT WHEEL SUSPENSION
Peter G. Drong, 2202 2nd Ave. E., Hibbing, Minn.
Filed Aug. 30, 1962, Ser. No. 220,489
3 Claims. (Cl. 280—112)



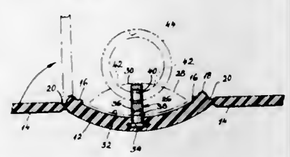
1. A front end suspension for heavy duty vehicles including in combination,
a front axle,
spaced wheels supported at opposite ends of said axle,
a vehicle frame including a front end portion overlying said axle,
a bearing plate supported by said frame above said axle,
a cooperable bearing plate supported by said axle beneath said first mentioned bearing plate,
a plurality of coil springs interposed between said bearing plates and connecting the center portion of the axle to the center portion of the frame,
said springs, including a center spring and a pair of additional springs, on opposite sides of said center spring,
means connected to said frame for holding said axle extending transversely of said frame,
said center spring being under greater compression than said additional springs.

3,201,144
TRAILER CONNECTING APPARATUS
James A. Smyser, Taft, Calif.
(2840 Pembroke Ave., Bakersfield, Calif.)
Filed May 29, 1962, Ser. No. 198,518
3 Claims. (Cl. 280—477)



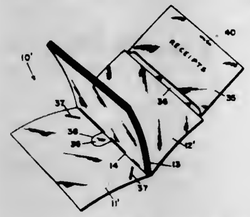
1. In combination with a draft vehicle having a draft hitch and a trailer having a forwardly extending tongue providing a hitch connector; a winch mounted on the trailer; cable guide means mounted on the tongue adjacent to the connector; a cable connected to the winch, threaded through the guide means and having an end extended forwardly from the tongue; an anchor mounted on the draft vehicle above the hitch thereof having the extended end of the cable connected thereto; a ramp having an end rested on the ground and an opposite end supported on the draft vehicle adjacent to the hitch providing a guide channel longitudinally thereof; and a channel follower mounted on the tongue in rearwardly spaced relation to the connector and downwardly extended from the tongue, the ramp having a follower receiving slot therethrough in alignment with the channel and spaced from the hitch substantially the same as the follower is spaced from the connector.

3,201,145
MOLDED PLASTIC LOOSE LEAF BINDERS
Milton E. Libby, Glen Rock, N.J., assignor to Milton M. Harris, Fair Lawn, N.J.
Filed June 11, 1963, Ser. No. 287,116
2 Claims. (Cl. 281—29)



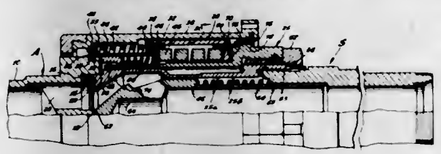
1. A loose-leaf binder comprising a rectangular-shaped plastic body including an elongated rectangular-shaped back portion and rectangular side cover members, said back portion and cover members being molded together, a pair of rivets with heads embedded in the material of the back portion, said rivets having transverse holes in the shanks thereof, a flattened tubular plate having a concave lower wall and a convex upper wall, said concave lower wall having a pair of longitudinally spaced holes therein, and said convex upper wall having a pair of transversely spaced holes disposed therein adjacent each end thereof in vertical alignment with the said longitudinally spaced holes in the said concave lower wall, the concave lower wall of said plate being secured in contact with the inner wall of said back portion by the said shanks of said rivets extending upwardly through the said longitudinally spaced holes therein in frictional engagement with walls defining said holes, and split rings extending through said pair of transversely spaced holes in the said convex upper wall and the transverse hole in the rivet shanks extending up the longitudinally spaced holes in the said concave lower wall for releasably holding leaves in position between the cover members of the body.

3,201,146
ACCOUNTING SYSTEMS
Webster Tilton, Jr., 2720 Wisconsin Ave. NW., Washington 7, D.C.
Filed Mar. 13, 1963, Ser. No. 264,877
2 Claims. (Cl. 281—31)



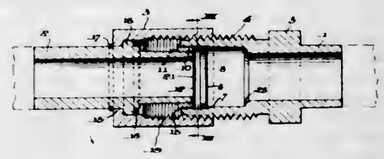
1. In an accounting system, a booklet having front and back covers and a set of leaves bound therebetween, said leaves forming pages having printed matter and blank spaces for recording of expenses, each of said covers having an inner edge where said leaves are bound, an outer edge opposite from said inner edge, and a pair of side edges spaced apart by a longitudinal dimension of the cover, a pocket for expense substantiating receipts integrally hinged to the outer edge of the back cover and superposed on the front cover when the booklet is closed, said pocket having a pair of free side edges and a free outer edge and being open in the direction of the outer edge of said back cover, the pocket being constituted by inner and outer pocket forming walls secured together along the side and outer edges of the pocket, said side edges of the pocket being spaced apart by a longitudinal dimension of the pocket which is less than said longitudinal dimension of said covers and the side edges of the pocket being spaced longitudinally inwardly from the side edges of the covers so that side edge portions of the front cover project longitudinally outwardly beyond the side edges of the pocket when the pocket is superposed on the front cover in the closed position of the booklet, said front cover being provided with a pair of diagonal slits in corner portions of the front cover defined by its inner and side edges, a pair of corner portions of said pocket defined by its inner and side edges being removably inserted in said slits, and a tongue struck out from said front cover adjacent its inner edge and centrally between its side edges, said tongue overlying said pocket and the outer wall of the pocket being formed with a slit through which the tongue is removably inserted into the pocket, said corner portions of the pocket inserted in said pair of slits and said tongue inserted in the pocket slit coacting to releasably retain said pocket in its superposed position on the front cover when the booklet is closed.

3,201,147
BREAKAWAY COUPLING
Herbert A. De Cenzo, Arcadia, Calif., assignor to Purolator Products, Inc., a corporation of Delaware
Filed Apr. 21, 1961, Ser. No. 104,690
11 Claims. (Cl. 285—1)



1. In a coupling assembly of the character described wherein a first coupling body has a rearwardly facing engagement shoulder and a cooperating second coupling body has engagement means radially movable to engage said shoulder to interconnect the two bodies and further has actuating means to lock said engagement means in its engaged position, said actuating means being retractable relative to the second coupling body rearwardly thereof against the force of a yielding means to release the engagement means, the improvement comprising: said second coupling body having a normal forward position relative to the engagement means and being movable rearwardly relative to said engagement means from said normal position when said engagement shoulder and said engagement means are locked in engaged position by said actuating means; a second yielding means exerting force between the second coupling body and the engagement means to normally hold the second coupling body at its normal forward position relative to the engagement means; and said actuating means having a portion for engagement by the second body to permit rearward movement of the actuating means therewith to unlock the engagement means, whereby the two coupling bodies may be released from each other either by retraction of the actuating means alone against the resistance of the first-mentioned yielding means or by retraction of the second coupling body together with the actuating means against the resistance of the second yielding means.

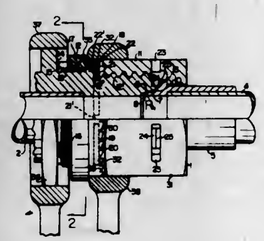
3,201,148
COUPLING MEANS FOR CONNECTING CONDUITS
Louis Charles Shurtleff, Austin, Tex., assignor to Chatleff Controls, Inc., Austin, Tex., a corporation of Texas
Filed May 16, 1963, Ser. No. 280,866
6 Claims. (Cl. 285—3)



1. Coupling means for connecting conduits, comprising an externally threaded first tubular fitting having a rear end for attachment to one end of a conduit and having a free front end, a thin metal disc inside the front end portion of said fitting and permanently secured thereto in a location spaced from said front end to seal the fitting against passage of fluid therethrough, a second tubular fitting having a rear end for attachment to one end of another conduit and having a free front end portion insertable in the front end portion of the first fitting in radially spaced relation therewith, said disc being larger in diameter than the front end of the second fitting, a sleeve encircling the outside of the front end of said second fitting and tightly engaging it, rupturable means forming a joint between the sleeve and second fitting, the sleeve being of a diameter small enough to enter the front end of the first fitting, a thin metal disc extending across the front end of the second fitting and permanently secured to the sleeve to seal the second fitting against passage of fluid therethrough, a coupling nut rotatably mounted on the second fitting and provided with internal threads for screwing it onto the first fitting to draw the two fittings toward each other in telescoping relation, and means in the first fitting outside the path of movement of the second fitting for limiting the distance said sleeve can move into the first fitting, said rupturable joint being breakable by the forwardly moving second fitting sliding forward in the sleeve after the sleeve has been stopped by said limiting means, said discs being weak enough to be ruptured by the pressure of the front end of the second fitting moving forward relative to the edges of the discs, the inside of the first fitting directly behind said

first-mentioned disc being large enough to receive the front end portion of the second fitting after the discs have been ruptured.

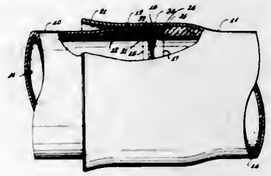
3,201,149
TUBE COUPLING
Kenneth R. Bragg, Manhattan Beach, Calif., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 1, 1961, Ser. No. 156,336
5 Claims. (Cl. 285—39)



1. A tube coupling having means providing for the attachment of at least one tube thereto, said coupling including a tube coupling body having an external screw thread at one end and a wrench engaging portion at the other end, a lock ring axially slidably mounted on said tube coupling body between the ends thereof and keyed thereto against relative rotation therewith, a nut threaded onto said external thread and having an adjacent end portion with ratchet teeth thereon, said nut also having a wrench engaging portion adjacent said teeth, a spring means disposed between said wrench engaging portion of said tube coupling body and said lock ring for urging said lock ring toward said nut, said lock ring having an end portion on which there are formed ratchet teeth engageable with said nut ratchet teeth for locking said nut against unthreading rotation, said lock ring also having an annular portion of greater diameter than said wrench engaging portion of said nut, whereby a wrench fitted to said wrench engaging portion of said nut may be moved axially therealong into engagement with said annular portion on said lock ring for moving said lock ring to disengage said teeth whereby said nut may be unthreaded from said body, said wrench engaging portion of said tube coupling body being of a diameter at least as great as said annular portion on said lock ring whereby a wrench may be fitted to said body wrench engaging portion without interference from said lock ring.

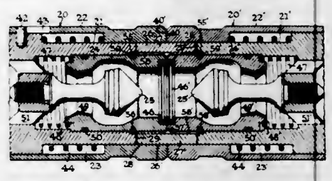
3,201,150
JOINT SEAL FOR CONCRETE-LINED PIPE
Max M. Aydelott, Azusa, Calif., assignor, by mesne assignments, to American Pipe and Construction Co., Monterey Park, Calif., a corporation of California
Filed Nov. 9, 1959, Ser. No. 851,869
7 Claims. (Cl. 285—55)

1. In a pipe joint, the combination of:
(a) a bell provided therein with a bell lining having an end face spaced axially inwardly from the outer end of said bell;
(b) a spigot axially insertable into said bell and provided therein with a spigot lining having an end face adapted to confront said end face of said bell lining;
(c) an elastomeric, annular bell seal within said bell and engaging said bell and said end face of said bell lining;
(d) said bell seal including an annular wall spaced radially inwardly from said bell and extending axially toward said outer end of said bell and terminating at its outer end in a radially-outwardly-extending, radially-outwardly-rolled, annular lip engaging said bell;



(e) means on said spigot and engageable with said annular lip upon insertion of said spigot into said bell for rolling said annular wall back upon itself and axially toward said end face of said bell lining; and
(f) an elastomeric, annular, outer sealing means engageable with said bell and said spigot between said outer end of said bell and said bell seal.

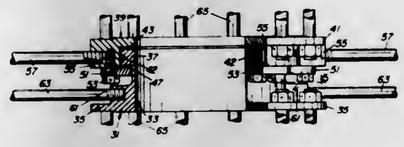
3,201,151
PIPE COUPLING HAVING LATCHING AND LOCKING MEANS
Robert C. Westveer, Kalamazoo, Mich., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Apr. 17, 1962, Ser. No. 188,125
11 Claims. (Cl. 285—73)



1. A coupling having two identical coupling units adapted to interlock with each other, each coupling unit comprising:
(a) a first tubular member carrying at one end a plurality of circumferentially-spaced longitudinally-extending identical latching prongs, each prong having a stem fixed at one end to the tubular member and provided at its other end with a circumferentially-extending latch portion, the latch portions lying in a common annular zone and extending in the same circumferential direction from their associated stem portions, the latching prongs being so arranged that when the two units are joined, the latching prongs of each unit are insertable longitudinally into the circumferential spaces between adjacent prongs of the other unit where, upon relative rotation of the two units in one direction, the latch portions are caused to interlock and prevent longitudinal separation of the units without relative rotation of the two units in the opposite direction;
(b) a second tubular member encircling the first tubular member and slidable in the longitudinal direction relatively thereto between first and second positions;
(c) a plurality of circumferentially-spaced identical fingers extending longitudinally from one end of the second tubular member and arranged so that one finger is positioned adjacent each prong on the side opposite the side from which the latch portion extends, at least a portion of each finger lying in said common annular zone;

(d) the circumferential space in said zone between the latch portion of each prong and the adjacent prong being large enough to receive at least one finger and one prong, and the circumferential distance between interlocked prongs being approximately equal to the combined circumferential width of two fingers;
(e) the locking fingers being positioned adjacent the said other ends of the associated prongs when the second tubular member is in the first position so that when the two units are joined and their prongs are interlocked the circumferential space between each adjacent pair of interlocked prongs is substantially filled by a pair of fingers in side engagement, each pair of fingers including a finger from each coupling unit, and the fingers being movable longitudinally a distance not less than one-half the length of said side engagement when the second tubular member is moved to said second position thereby permitting relative rotation of the interlocked coupling units in said opposite direction to disengage the prongs;
(f) and sealing means carried by the first tubular member and arranged to seal the resulting joint when the two coupling units are interlocked.

3,201,152
SWIVEL PIPE JOINT
John N. Coats, 2010 SW. Wembly Park Drive, Lake Oswego, Oreg.
Filed Apr. 10, 1963, Ser. No. 272,509
4 Claims. (Cl. 285—231)



1. A swivel joint for handling liquids having solids entrained therein, such as paper stock, said joint adapted to be bolted to the opposed standard bolting flanges of a pair of relatively rotatable pipes which carry such liquid, such joint comprising,
a first member in the form of an integral one-piece spool having a radial flange at each end, wherein one flange is of smaller diameter than the other,
a second member in the form of a cover ring formed with a counterbore of a diameter slightly larger than that of said smaller spool flange and of a depth greater than the thickness of said smaller flange,
said cover ring fitting over and enclosing said smaller spool flange,
said smaller spool flange having a groove formed about its periphery intermediate the end faces of said smaller flange,
an elastomer O-ring seal disposed in said groove and being of a size such that it is compressed between the bottom wall of said groove and the wall of said counterbore,
a plastic thrust washer on each side of said smaller flange and engaging the adjacent end face of said smaller flange,
one plastic thrust washer also engaging the bottom wall of said counterbore,
split ring means engaging the other plastic thrust washer and being secured to said cover ring,
the combined thickness of said thrust washers and said smaller flange being equal to the depth of said counterbore so that they fill such counterbore and prevent solids in the flowing liquid from gaining access to said elastomer O-ring seal,
said cover ring having a radial flange portion projecting outwardly beyond said counterbore and being formed with a plurality of axially extending bolt holes distributed along a predetermined concentric circle,
said radial flange portion having a thickness less than the depth of the counterbore and being disposed adjacent the face of said cover ring which is remote from said split ring means to provide space to accommodate nuts for the bolts receivable by said bolt holes and to accommodate the end portions of such bolts,
the larger spool flange being formed with a plurality of bolt holes distributed along a concentric circle of a diameter the same as the first mentioned bolt holes,
said larger spool flange being of a thickness approximating that of said radial flange portion and being disposed at the end of said spool which is remote from said covered ring to provide space to accommodate nuts for bolts receivable through the bolt holes of said larger spool flange and to accomodate the end portions of such bolts, whereby an axially compact swivel joint is provided despite the necessity of providing space to accomodate two sets of bolt end portions and two sets of nuts.

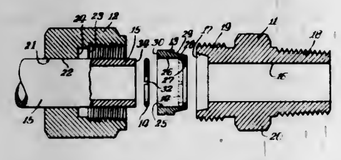
3,201,153
FLARELESS TUBE COUPLING FOR PLASTIC OR METAL TUBING
William E. Currie, Cleveland Heights, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 15, 1961, Ser. No. 110,197
3 Claims. (Cl. 285—249)



1. In a flareless tube coupling, the combination of a pair of threadedly engaged members defining therebetween an annular chamber that includes axially spaced end walls constituted by the respective members and of which at least one is a frusto-conical wedge surface; and a tubular ferrule in such chamber, the one end of said tubular ferrule adjacent said wedge surface having an outer diameter greater than the diameter of the radial inner end of said wedge surface and less than the diameter of the radial outer end of said wedge surface, whereby said one end of said ferrule will confront said wedge surface so as to be radially contracted thereby into sealing engagement with a tube adapted to be positioned within said ferrule when said ferrule is moved axially against said wedge surface, said ferrule being formed with a radially thickened portion axially spaced from such one end of said ferrule and said wedge surface, said other end wall of said threadedly engaged members having an inner diameter greater than said outer diameter of said one end of said ferrule and less than the outer diameter of said radially thickened portion, whereby one end of said radially thickened portion will contact said other end wall on a diameter greater than the diameter of contact between said one end of said ferrule and said wedge surface, said ferrule thus being moved axially upon screwing together of said members, the ends of said radially thickened portion being exteriorly beveled and interiorly undercut to provide deformable portions which are at least partially flattened, and thus radially contracted into tube gripping

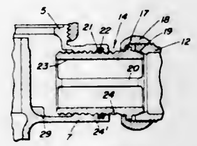
engagement upon application of axial forces on said ferrule, said undercutting constituting a pair of axially spaced internal annular groove means having a depth sufficient to provide such deformable portions as aforesaid, said radially thickened portion having a thick unrelieved portion between such annular groove means to resist outward bowing upon application of opposed axial forces on said ferrule.

3,201,154
BRAZED SEAL CONNECTOR
Marvin E. Holmgren, Prospect Heights, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois
Filed Nov. 29, 1960, Ser. No. 72,381
2 Claims. (Cl. 285—286)



1. A tube fitting comprising: a body having a bore therethrough defining at one end a recess having a frusto-conical, outwardly widening sealing surface; a nut having a straight bore for extension of a tube to be coupled therethrough including an outer portion, an inner, transversely enlarged portion, and an annular radial shoulder between said portions, said nut and body having co-operating threads for threading the nut to the body with said nut bore in coaxial alignment with said sealing surface; an annular sealing sleeve coaxially in said inner portion of the nut bore, said sealing sleeve having a bore therethrough including a cylindrical outer portion for receiving the end of a tube to be connected, an inner transversely reduced portion, and an annular radial shoulder between said sleeve bore portions, the diameter of said outer portion of the sleeve bore being slightly larger than the outer diameter of the tube to be connected to define a radially thin first annular space therebetween, the diameter of said inner reduced portion of the sleeve bore being substantially larger than the internal diameter of the tube to be connected, said sleeve having a frusto-conical inner end having sealing engagement with said surface of the body recess and a portion provided with a radial outer face for engtgement by the nut shoulder; and a ring of brazing material yieldingly retained in said outer portion of the sleeve bore adjacent said radial shoulder of the sleeve bore, the wire diameter of said ring being preselected to define a volume of said ring substantially equal to the sum of the volumes of said space, a second annular space axially outwardly of said radial shoulder of the sleeve having an axial length equal to the radial dimension of said first annular space, a first preselected concave annular fillet space at the axially outer end of said first space, and approximately 110% of the volume of a second preselected concave annular fillet space with said inner portion of the sleeve bore at the radially inner end of said second space and having a minimum inner diameter at least equal to the inner diameter of the tube to be connected, whereby when the tube end is inserted into said outer portion of the sleeve bore to abut the ring therein and heat is applied to liquify said ring, the ring material flows by capillarity to fill accurately said first annular space and allows the tube end to be moved into close juxtaposition with said radial shoulder of the sleeve to define said second annular space and said fillets, while precluding flow of the brazing material to within the bore of the tube to be connected.

3,201,155
ADJUSTABLE PLUMBING FITTINGS
Henry R. Billeter, Deerfield, and James R. Swartz, Berwyn, Ill., assignors to Sloan Valve Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 8, 1962, Ser. No. 236,227
2 Claims. (Cl. 285—350)



1. A plumbing fitting for rapidly connecting in high pressure sealing engagement and disconnecting two plumbing fixtures such as a flush valve and a control valve which may be spaced variable distances apart initially, and for rapidly making subsequent rapid non-destructive high pressure connections and disconnections between the plumbing fixtures within the range of adjustment of the fitting, said plumbing fitting comprising

a conduit, and

structure for connecting the conduit to a receiving structure in high pressure sealing engagement therewith, said structure including

a continuously advancing thread element formed on the periphery of the conduit,

the axial length of the thread element defining the range of adjustment of the conduit with respect to the receiving structure and flanking a high pressure sealing engagement band between the receiving structure and the conduit,

a second continously advancing thread element formed about the periphery of an aperture in the receiving structure,

the thread elements having opposed, interengaging crests and roots,

said thread elements being formed with a clearance therebetween sufficient to enable the elements to be quickly and easily rotated into and out of engagement with one another,

the overlap between opposed roots and crests being sufficiently deep to substantially prevent blow-out at high fluid pressures,

a peripheral recess coaxial with and having the side wall thereof normal to the axis of said conduit formed in one of the thread elements within the range of adjustment of the fitting, the axial length of the recess being at least equal to the pitch of said thread elements, and

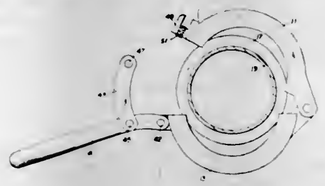
an annular elastomeric sealing member disposed within said recess,

said sealing member, in an undistorted condition, incompletely filling the recess and having an inner diameter less than the common pitch circle of the thread elements,

said sealing member, when distorted and in engagement with the recess and the root and crest of the opposing thread element, substantially filling the entire area defined by the recess and the root and crest of the thread element opposing said peripheral recess thereby overlapping and making sealing engagement with a complete turn of a thread element and forming a band of high pressure sealing engagement,

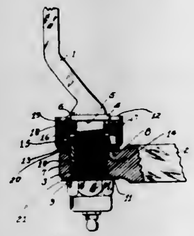
the roots and crests being sufficiently rounded to avoid destruction of the distortable member upon repeated assembling.

3,201,156
PIPE COUPLING HAVING CLAMPING FORCE ADJUSTING MEANS
John N. Coats, 1935 W. Washington Way, Longview, Wash.
Filed Nov. 7, 1960, Ser. No. 67,541
1 Claim. (Cl. 285—365)



In combination, a pair of aligned pipes having opposed flanges, sealing means between said flanges, and means for imposing a clamping force on said flanges forcing them toward one another comprising a pair of members having generally semicircular grooves to fit over and around said flanges, said grooves being defined at least in part by diverging side walls providing camming portions engaging said flanges and operable to exert an axial force on said flanges in response to inwardly radial movement of said members, and means for causing such inward radial movement of said members, the last-named means comprising means pivotally connecting one set of ends of said members and means for drawing the other set of ends of said members toward one another, the last named means comprising a hook on the free end of one member, a handle pivoted on the free end of the other member, a link pivoted at one end on said handle intermediate the length of the handle, and having its other end equipped with a pin received by said hook, and a pin-engaging member in the inner extremity of said hook and adjustable toward and away from said pin to vary the clamping pressure applied by said members to said flanges.

3,201,157
SEALED IDLER ARM TENSION DEVICE
Milton A. Moskovitz, 7 Chapel Hill, St. Louis County, Mo.
Continuation of application Ser. No. 147,413, Oct. 17, 1961. This application Nov. 21, 1963, Ser. No. 326,324
1 Claim. (Cl. 287—93)



A device adapted for adjustably tensioning an oscillatory interconnection between a first and a second member, said first member having an externally threaded plug that has a peripheral flange at its rear as an annular abutment face, said second member provided with an internally threaded eye for passage of said plug therethrough and with an annular abutment face about said eye, and a third member having external threads to cooperably engage the threads of said eye and internal threads cooperably receiving said plug; said device interposable between said abutment faces and including a cupped housing having a first open end to be adjacent said flange and with a radially inwardly-directed annular portion at its other end to be opposed to said abutment face of said second member, said last-mentioned annular portion of said housing terminating in an axially extending collar, low-friction bearing means in said housing to be about said third member, a yieldably compressible ring entirely within said housing to be between said bearing means and the opposed abutment face of said flange and adjustably engage the lateral bounding wall of said open end of said housing and the plug as a seal thereat and be radially compressed to constantly exert axial thrust between said bearing means and flange and be forced toward said bearing means by the rotation of the plug in the direction of the threaded opening in the third member, and a second yieldably compressible ring encircling said collar to engage the opposed faces of the annular abutment face about said eye and said other end of said cup and serve as a seal thereat.

3,201,158
SUCKER ROD COUPLING
Robert B. Meripol, Fort Worth, Tex., assignor to Liberty Manufacturing Co. of Texas, Fort Worth, Tex., a corporation of Texas
Filed Jan. 9, 1964, Ser. No. 336,741
7 Claims. (Cl. 287—117)



1. A sucker rod coupling having improved tension distortion resistance comprising:

a body member of tubular configuration having continuous internal threads substantially the full length of the internal wall thereof, with unthreaded portions at each end, the body member having parallel planor opposed ends;

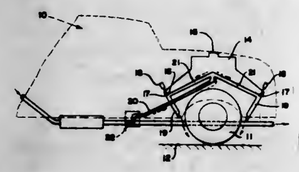
an externally threaded tubular member threadably positioned within the tubular body member intermediate the ends thereof, the tubular member being of short axial length relative to the body member leaving sucker rod receiving body threads to either side thereof, the tubular member having at least one slit in the wall thereof whereby the tubular member is radially externally expandable; and

an expander member of length substantially equal the length of the tubular member, the expander member forceably positionable in the tubular member to radially expand the tubular member against the internal wall of the body member to reinforce the deformation resistance of the intermediate portion of the body member.

3,201,159
VEHICLE WHEEL TRACTION MEANS
Augustus Williams, Detroit, Mich., assignor of fifty percent to Earl Safford, Detroit, Mich.
Filed Jan. 28, 1964, Ser. No. 340,680
2 Claims. (Cl. 291—3)

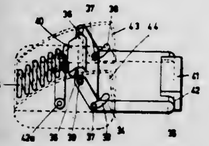
1. A vehicle wheel traction means for an automotive vehicle having wheels and an engine exhaust gas pipe, and having a storage container for containing a quantity

of sand-like material, with the container having a discharge nozzle opening into the area of a vehicle wheel, comprising, valve means for selectively diverting engine exhaust gases from said exhaust pipe to said nozzle for blowing said material through and out of said nozzle; said valve means including a short intake pipe normally arranged parallel and closely adjacent to said exhaust pipe, and an elongated opening formed in the exhaust pipe at the intake pipe and being of a size to receive the full length of the intake pipe; the intake pipe being movable in a radial direction into and out of the exhaust pipe; an inner elongated transversely curved plate fitted within said exhaust pipe and normally sealing off the entire opening from inside said exhaust pipe, said inner plate being secured to the intake pipe along the side portion of the intake pipe which is adjacent to the exhaust pipe; an outer



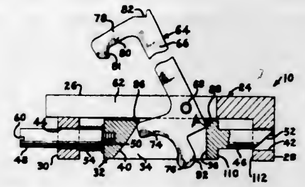
elongated transversely curved plate arranged on and secured to the side of the intake pipe remote from the exhaust pipe opening and being of a size to contact against the exhaust pipe when the intake pipe is arranged within the exhaust pipe to thereby seal off the entire opening from outside the exhaust pipe; one end of said intake pipe opening in a direction to receive normal flow of exhaust gases when the intake pipe is arranged within the exhaust pipe, and the opposite end of the intake pipe having an integral extension portion bent approximately radially outwardly, that is, extending away from the exhaust pipe; and a conduit having an end formed as a flexible hose portion connected to said extension and an opposite end connected to said nozzle for conducting exhaust gases to said nozzle; and means for selectively moving the intake pipe into and out of said exhaust pipe.

3,201,160
LOCKING DEVICE FOR DOORS, SHUTTERS AND THE LIKE
Gunnar Erik Werner Lewin, Hastangvagen 12, Viggbyholm, Sweden
Filed July 30, 1962, Ser. No. 213,435
4 Claims. (Cl. 292—71)



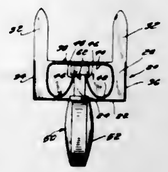
1. A locking device for doors, shutters and the like, comprising: a lock plunger; said lock plunger consisting of a lever having two rigidly connected arms, said arms forming an obtuse angle with each other, one of said arms being a locking arm having a free end, and the other being an operating arm having a free end; said lock plunger being provided at the vertex of said obtuse angle with two pins which protrude from the sides of the lock plunger; a casing enclosing said locking device; and having side walls; said two pins being slidable in slots provided in said side walls; the free end of said operating arm being hinged by a joint to one end of a pressure-loaded link; a lock means, such as a lock plate fastened to a door frame, or the like; said lock plunger being adapted to swing, during closing of the door or the like, around the free end of said locking arm, said lock means serving as bearing for said swing; said pins, at the same time, sliding in said slots in a direction away from said lock means, while the lock plunger turns simultaneously around said pins, said operating arm being simultaneously and gradually removed from its initial position, said removal of said operating arm being first counter-acted by said pressure-loaded link and being finally completed by the action of the latter.

3,201,161
LATCHES
Alfred B. Castle, 4104 Maryland Drive, Brookmont, Md.
Filed Mar. 25, 1963, Ser. No. 267,497
6 Claims. (Cl. 292—173)



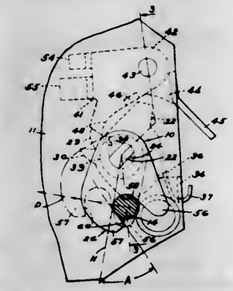
1. A latch comprising a base plate, a bolt having a slot therein mounted on said base plate for sliding movement relative thereto, a first end wall of said slot having a cam surface, and a second end wall of said slot spaced from said first end wall, urging means cooperating between said bolt and base plate for normally maintaining said bolt in a catch engaging position, said base plate having an opening therein aligned with the slot of the bolt, a lever comprising a projection, a pin located in said opening spaced from one end thereof pivotally mounting said lever in said base plate, said lever in a first position having a surface substantially flush with a surface of the base plate, said projection on said lever having a surface adapted to engage the cam surface of the first end wall of said bolt slot and retract said bolt from its catch engaging position when the lever is pivoted from its first position to a second position, said lever having a portion with a linear dimension greater than the least dimension between said spaced end walls, said portion on pivoting of said lever to the second position engaging said end walls and limiting further pivotal movement of said lever.

3,201,162
TURN LOCK ASSEMBLY
Melvin Paynor, Providence, R.I., assignor to Fulford Manufacturing Company, Providence, R.I., a corporation of Rhode Island
Filed Apr. 6, 1964, Ser. No. 357,626
6 Claims. (Cl. 292—202)



4. In a turn lock assembly, a housing including a top wall in which an opening is formed, a spring member located in said housing and including U-shaped portions that terminate in adjacent spaced ends, a lock member rotatably mounted in said housing and including a turn knob located exteriorly of said housing, and a shank portion joined to said turn knob and projecting through said opening into said housing, said shank portion including a stem and an enlarged head portion joined to said stem and defining a shoulder therewith, the U-shaped portions of said spring lying generally along planes parallel to the axis of said stem, said adjacent ends of said U-shaped portions engaging said shoulder and cooperating with said turn knob to limit axial movement of said lock member in said housing and to prevent removal therefrom.

3,201,163
DOOR LOCK
Joseph Pickles, Dearborn, Mich., assignor to Ferro Manufacturing Corporation, a corporation of Michigan
Filed Aug. 6, 1962, Ser. No. 214,917
4 Claims. (Cl. 292—216)



1. In a door lock for use with door and frame members relatively swingable in opposite latching and unlatching directions, a forked latching member mounted to pivot on one of said members into and out of position for straddling and latching engagement with a keeper member on the other of said members, said latching member having holding means fixed relative thereto to pivot therewith, a detent unit releasably engageable with said holding means to positively but releasably hold said latching member in latching engagement with the keeper member, and spring means urging said latching member and holding means out of said position of the latching member when said detent member is released from said holding means, said forked latching member having an actuating arm, a holding arm and a root portion midway between said arms, said root portion being engaged and restrained by said keeper member in one vertical direction when said latching member is in said position for said straddling and latching engagement, said holding arm being provided with an inclined holding surface then engaging said keeper member for a substantial distance about the latter from said root portion with a substantial component of force from the opposite vertical direction, said surface being at an inclination substantially acute and convergent with the direction of horizontal relative swing of the door and frame members in the latching direction, said component of force being normal to the direction of swing for the vertical restraint of the door member in said opposite direction by said keeper member.

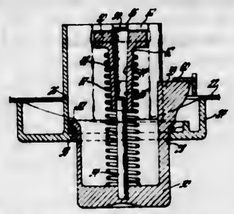
3,201,164
CLOSURE LATCH
Charles J. Griswold, Jr., Bloomfield Township, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 9, 1962, Ser. No. 208,193
3 Claims. (Cl. 292—280)

1. A closure latch comprising, latch means, detent means movable between latch engaging and latch releasing positions and including a swingable lever, outside operating means, means for selectively coupling said outside operating means to said lever to move said detent means to latch releasing position, first inside operating means directly coupled to said lever for moving said detent means to latch releasing position, a second swing-



able lever coaxial with said first lever, and second inside operating means adapted to be coupled to said first lever through said second lever and said selective coupling means for moving said detent means to latch releasing position.

3,201,165
DOOR LATCH ACTUATOR
Edgar G. Tradeau, Taylor, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 14, 1962, Ser. No. 223,686
4 Claims. (Cl. 292—336.3)

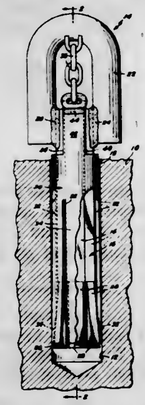


1. In a door having a door latch associated therewith, a door latch actuator comprising, an operating member slidably and rockably mounted on said door for axial movement between inoperative and latch actuating positions, said member including latch actuating means formed radially outwardly from one side thereof for operating said door latch upon movement of said member from said inoperative position to said actuating position, and cooperative guiding means on said door and said member having generally axially extending and mutually divergent guide portions permitting said member to cant during said movement thereof.

3,201,166
DEVICE FOR LIFTING HEAVY ARTICLES
Robert Boutin, North Stonington, Conn., assignor to Gencarelli, Inc., Westerly, R.I., a corporation of Rhode Island
Filed Feb. 4, 1963, Ser. No. 255,805
1 Claim. (Cl. 294—89)

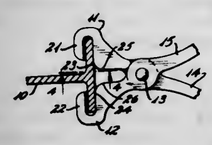
In a device for lifting a heavy article, an elongated shank having a polygonal cross sectional configuration that defines a plurality of longitudinally extending surfaces, a lifting element secured to one end of said shank, a plurality of tapered wedges secured to the other end thereof, each of said wedges overlying one of said surfaces, a sleeve encircling said shank having a plurality

of slots formed therein that define a plurality of flexible fingers, each of said fingers overlying one of said surfaces and having a tapered portion thereon on the free end thereof that is disposed in flush engagement with a tapered wedge and that is tapered in the opposite direction with respect thereto, wherein movement of said shank by an upwardly directed force applied to said lifting element will cause said fingers to be flexed into a gripping position, said lifting element defining an opening through which a lifting hook is inserted for applying the upwardly directed force on said shank, the lower ends of said lifting element being secured to opposite surfaces of said shank at the uppermost end thereof,



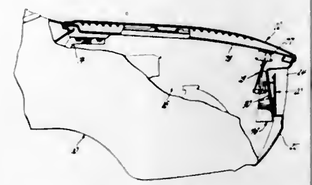
said sleeve being formed with opposed cut-out portions for receiving the lower ends of said lifting element therein, whereby the lower ends of said lifting element are located below the uppermost ends of said sleeve, so that the lifting element is positioned in close proximity to the article to be lifted when said device is inserted in a bore formed therein, opposed lugs formed on the uppermost ends of the uncut portions of said sleeve, and a withdrawal member joined to said lugs and extendable over said lifting element for engagement by an external hook, whereby said sleeve is adapted to be lifted vertically upwardly to remove the tapered portions of said fingers from engagement with said wedges and to withdraw said device from the bore in which it is inserted.

3,201,167
GRIPPING CLAMP
Robert R. Wampler, 5712 Pollock Ave., Evansville 15, Ind.
Filed Aug. 9, 1963, Ser. No. 301,055
4 Claims. (Cl. 294—118)



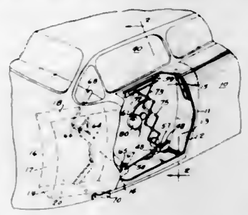
1. A material handling clamp comprising a pair of leverage members pivotally connected intermediate their ends, said members having inwardly opposed relatively wide gripping jaws on one end, link means pivotally connected to the opposite ends of said members, means for connecting said link means to apply force to said leverage members and move said gripping jaws toward each other, at least one of said jaws having an elongated generally planar guiding portion disposed generally radially with regard to said pivotal connection, an arcuate camming surface at the end of said planar portion remote from said pivotal connection, said arcuate camming surface terminating in an elongated substantially U-shaped recess extending outwardly generally at a right angle to said planar portion and having a depth substantially greater than the distance across the mouth of the recess when measured along a line extending radially of said pivotal connection, whereby the flange of a structural member may be slidingly engaged by said planar portion and guided into a position to be gripped by said jaws.

3,201,168
CLOSURE LATCH ARRANGEMENT
Walter L. Young, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 13, 1963, Ser. No. 308,754
3 Claims. (Cl. 296—1)



1. In a vehicle body having a closure mounted thereon for movement between open and closed positions a closure latch arrangement comprising in combination latch means mounted on one side of a body wall for holding said closure in closed position, a license plate supporting bracket movably mounted on the opposite side of said body wall, a license plate mounted on said bracket for movement therewith, and means operative through said wall upon movement of said bracket relative to said body to release said latch means and permit said closure to be moved to open position.

3,201,169
SAFETY DOOR FOR VEHICLES
Clifford O. Scott, 4015 Kittyhawk Drive, Dayton, Ohio
Filed July 12, 1963, Ser. No. 294,771
7 Claims. (Cl. 296—44)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a closed vehicle body having a vertically elongated opening for entrance and exit, the combination of:
(a) a vertically foreshortened recess formed within the confines of the body and disposed therein in communication with the lower part of the opening;
(b) a door structure normally adapted to close the opening and including an upper section having a portion thereof normally extending above the level of the recess and a lower section disposed to one side of said recess and beneath the upper section;
(c) actuating means carried by the lower section and operatively connected to the upper section for collapsing the upper section into the lower section;

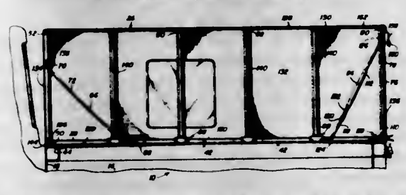
(d) spring loaded control means mounted on the vehicle body for sliding the collapsed door selectively into and out of the recess;
(e) means providing an operative connection between the control means and the actuating means for initially lowering the upper section into the lower section before moving the collapsed door into the recess; and
(f) jettisoning means between the rear vertical edge of said door and the vehicle body co-operating with said spring loaded control means enabling the said door to be jettisoned from the vehicle.

3,201,170
MOTOR VEHICLE SUN VISOR WITH ADJUSTABLE WINGS
Abraham Weingarten, 74—58 260th St., Glen Oaks, N.Y.
Filed Mar. 12, 1963, Ser. No. 264,615
4 Claims. (Cl. 296—97)



1. Means for adjustably mounting side wings on each side of the sun visor of a motor vehicle, comprising tapered sleeves connected to each side of said sun visor at the bottom edge thereof, two L-shaped members, one arm of each of said L-shaped members being tapered complementarily to said sleeves and rotatably mounted within said sleeves, second tapered sleeves being rotatably mounted on the other arms of said L-shaped members, said other arms being tapered complementarily to said second sleeves, and said second sleeves being connected to said side wings; a tension element provided between each of said arms and its respective sleeve to cause sufficient frictional engagement therebetween to prevent accidental angular dislodgement of said arms relative to their respective sleeves, each arm being nested within its respective sleeve in coaxial relationship, their respective tapers being oriented in the same direction, each of said arms being provided at its small end with a stop element, said tension element being provided between said stop element and the corresponding end of the sleeve to exert an axial thrust upon the arm and the sleeve, urging the arm in the direction of its smaller end and urging the sleeve in the direction of its larger end.

3,201,171
RETRACTABLE TRUCK BODY COVER WITH TENSION CONTROL
Harry A. Wickard, Rapid City, S. Dak., assignor to Re-Trac-To, Inc., a corporation of South Dakota
Filed Feb. 19, 1964, Ser. No. 345,900
3 Claims. (Cl. 296—100)



1. In combination with the load bed of a pickup truck of the type including upstanding side walls, a retractable flexible truck body cover assembly with tension control, said body cover assembly comprising a pair of elongated guide members secured to and extending along the upper marginal edge portions of said side walls, a plurality of follower members slidingly engaged with each of said guide members for movement longitudinally thereof, a plurality of inverted generally U-shaped bows each including a pair of depending legs interconnected at their upper ends by means of a bight portion and supported from their lower ends from corresponding pairs of said follower members, an elongated cover disposed over said bows with the latter secured to said cover at points spaced longitudinally thereof, the lower portions of the opposite sides of said cover including means spaced longitudinally thereof releasably securing said lower portions in fixed relation relative to said load bed at points spaced longitudinally therealong, each of said legs including a longitudinally extendable lower member yieldingly urged toward an extended position whereby said cover will be vertically and transversely tensioned, said cover assembly further including an additional bow also having longitudinally extendable lower end leg members yieldingly urged toward extended positions, the lower ends of said extendable members of said additional bow being secured and stationarily positioned relative to one pair of corresponding ends of said guide members, a pair of rigid inclined brace members including laterally outwardly offset upper ends secured to the upper ends of the legs of said additional bow and lower end portions secured to said guide members at points spaced from the lower ends of the last mentioned legs toward the other ends of said guide members, a second pair of elongated, inclined and longitudinally extendable braces secured at their lower ends to said guide members a spaced distance from said other ends thereof and removably secured at their upper ends to the upper ends of the legs of the rearmost movable bow from said additional bow, said second pair of extendable braces having urging means mounted thereon yieldingly urging said extendable braces toward extended positions.

3,201,172
CHAIR CONSTRUCTION
Charles O. Bliss, P.O. Box 47,607, Los Angeles 47, Calif.
Filed Aug. 9, 1963, Ser. No. 301,156
4 Claims. (Cl. 297—445)



1. A chair assembly comprising: a leg sub-assembly including two substantially tubular U-shaped members, each having two distal leg portions and a substantially rectilinear medial cross-portion, said members being fixedly interfitted so that said medial cross-portions intersect each other and said leg portions are cotextensive; a seat having a convex-upward undersurface and a socket portion extending downwardly from said undersurface, said socket portion including a plurality of pairs of downwardly extending longitudinal walls, each of said pairs of longitudinal walls being spaced apart by a distance substantially equal to the outer diameter of said medial cross-portions of said leg sub-assembly and adapted to receive a sub-portion of one of said leg medial cross-portions therebetween, and a plurality of downwardly extending transverse walls disposed between and extending from each of said pairs of longitudinal walls and each having a concave-upward lower surface adapted to mate with an upper surface of the sub-portion of said leg medial cross-portion disposed between the adjacent

pair of longitudinal walls; and a retaining plate disposed below said seat socket portion having concave-downward grooves therein which are complementary to said socket portion pairs of longitudinal walls, said grooves being substantially equal in width to the outer diameter of said medial cross-portions of said leg sub-assembly and adapted to receive a sub-portion of one of said leg medial cross-portions therein; said retaining plate being fixed to said seat socket portion, with said leg medial cross-portions being captured therebetween, partially in said grooves of said retaining plate and partially in said concave-upward lower surfaces of said socket transverse walls, said retaining plate also having an upwardly extending peripheral flange portion, enclosing said socket portion, and having apertures therein for the passage therethrough of said leg members.

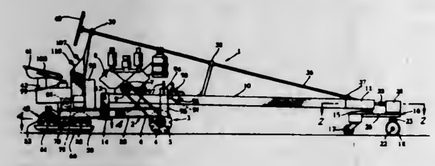
3,201,173

BUMP CUTTER WITH MEANS FOR REDUCING EFFECT OF BUMPS

Cecil W. Hatcher, West Covina, Calif., assignor to Concut, Inc., a corporation of California

Original application Nov. 3, 1961, Ser. No. 150,039. Divided and this application Apr. 11, 1963, Ser. No. 272,413

4 Claims. (Cl. 299—39)



1. In a self-propelled, vehicle-type, pavement-leveling machine, the combination of:

(a) frame means having longitudinally spaced front and rear ends;

(b) front wheel means connected to and supporting said frame means adjacent said front end thereof;

(c) rear wheel means connected to and supporting said frame means adjacent said rear end thereof;

(d) rotary cutter means mounted on said frame means intermediate said front wheel means and said rear wheel means, and rotatable about a horizontal axis extending transversely of said frame means, for leveling pavement over which the machine runs;

(e) means on said frame means and connected to said rotary cutter means and said rear wheel means for driving said rotary cutter means and said rear wheel means;

(f) said rotary cutter means being spaced forwardly from said rear wheel means a first longitudinal distance, and said front wheel means being spaced forwardly from said rotary cutter means a second longitudinal distance which is large as compared to said first longitudinal distance, so that any tendency of bumps encountered by said front wheel means to move said rotary cutter means vertically is reduced in proportion to the ratio of said first longitudinal distance to said second longitudinal distance;

(g) said front wheel means including a front wheel frame having tandem front wheels rotatably mounted thereon; and

(h) said front wheel frame being pivotally connected to said frame means for pivotal movement relative thereto about a transverse horizontal axis intermediate said tandem front wheels, so as to further reduce any tendency of bumps encountered by said front wheel means to move said rotary cutter means vertically.

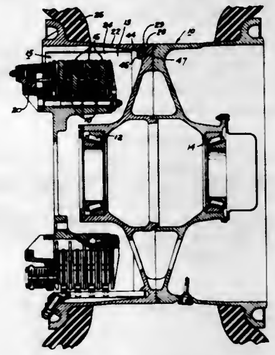
3,201,174

SAFETY DEVICE FOR AIRCRAFT WHEELS

George E. Stanton, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Filed June 22, 1959, Ser. No. 821,754

5 Claims. (Cl. 301—5)



1. In an aircraft wheel and brake, a wheel rim with a tubeless tire mounted thereon and having a plurality of openings therein which are spaced circumferentially at regular intervals around said rim, a brake cavity at the side of said wheel having said openings, shielding means located between the brake received in said cavity and the undersurface of the rim of said wheel to be a barrier to free transfer of heat between said wheel and brake but providing unlimited access of braking heat to the portion of said rim having said openings, a threaded stem including an enlarged head received in each said opening and held therein, a tapered through passage constructed in each said stem with the larger end thereof opening into the tire mounted in said rim to be exposed to the inflation pressure therein and a smaller end extending away from the tire and subject to atmospheric pressure, a metallic fuse composition forming a core within said passage and having a melting temperature at which said tire is prone to failure under its pneumatic inflation pressure, said fuse composition being expelled under pneumatic pressure to provide deflation of the tire under controlled non-explosive energy release when said melting temperature is reached and sustained over a predetermined period, means for attaching said stem on the aircraft wheel, and sealing means for preventing leakage of inflation pressure through said rim around said stem and effective to sustain inflation pressure at the pressure and temperature at which said fuse material is operative to deflate the tire.

3,201,175

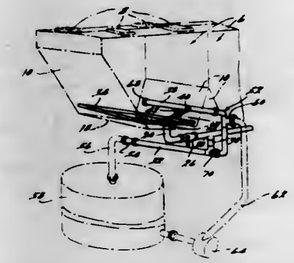
SALT SLURRY UNLOADING SYSTEM

Henry I. Keves, St. Clair, and Milton J. Rogers, Marysville, Mich., assignors to Diamond Crystal Salt Company, St. Clair, Mich., a corporation of Michigan

Filed Nov. 21, 1962, Ser. No. 239,262

2 Claims. (Cl. 302—14)

1. In an apparatus for unloading bulk quantities of a particulated substantially dry solid material from a transport vehicle, the combination including a transportable frame, a receptacle on said frame having the base thereof angularly contoured relative to a horizontal plane, said base formed with a drain outlet disposed in the lowermost region thereof, a drain conduit connected to said drain outlet, a distributor pipe disposed adjacent to said base and formed with a plurality of nozzles therein adapted to discharge a carrier liquid against said base for sweeping and entraining the lowermost stratum of said material toward said drain outlet, one of said nozzles disposed in alignment with said outlet means, a second nozzle in said drain conduit for discharging a high velocity stream of said carrier liquid axially of said drain conduit for sweeping the drained said liquid and entrained said material out of said drain conduit, conduit means connected to said distributor pipe and to said second nozzle, a supply conduit adapted to be removably connected to said conduit means



and including pumping means for withdrawing said carrier liquid from a receiving tank and supplying said pressurized carrier fluid to said distributor pipe and said second nozzle, and a discharge pipe adapted to be removably connected to said drain conduit for conveying a slurry of said liquid and the entrained said material to said receiving tank remotely disposed therefrom.

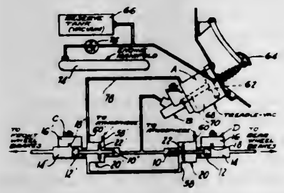
3,201,176

BRAKE BALANCING DEVICE FOR HYDRAULIC BRAKE SYSTEM

Robert R. Hager, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Original application Oct. 19, 1961, Ser. No. 146,101. Divided and this application Mar. 4, 1963, Ser. No. 262,441

6 Claims. (Cl. 303—6)



1. In a vehicle braking system and the like:

a brake structure for a front wheel of the vehicle;

a brake structure for a rear wheel of the vehicle;

a means for developing hydraulic fluid pressure, said means including a first hydraulic fluid displacement means operatively connected to a first fluid pressure motor that is adapted to be controlled by the operator of the vehicle;

a second hydraulic fluid displacement means operatively arranged between said first hydraulic fluid displacement means and one of said brake structures, said second hydraulic fluid displacement means operatively connected to,

a second fluid pressure motor operatively connected to said first fluid pressure motor such that an increase in control pressure in said first fluid pressure motor will effect a pressure in said second fluid pressure motor to oppose increasing brake pressure to said one of said brake structures.

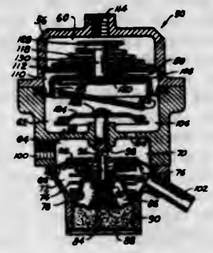
3,201,177

VACUUM SUSPENDED BOOSTER BRAKE MECHANISM

Maxwell L. Cripe, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Sept. 9, 1963, Ser. No. 307,448

3 Claims. (Cl. 303—6)



2. In a vehicle having a manually operated power brake servomotor for actuating a front wheel brake system thereof and including a secondary pressure responsive servomotor for actuating the rear brakes of said vehicle, a control means for said secondary servomotor comprising:

a first pressure responsive member operatively connected to a valve plunger to control the communication of power fluid to said secondary servomotor; and

a second pressure responsive member operatively connected to said first pressure responsive member by a constant-rate spring, said second pressure responsive member being held against said constant-rate spring by a variable-rate spring which variable-rate spring is arranged to have increased spring modulus proportional to movement of said first pressure responsive member to vary the rate of increase of control pressure for said secondary servomotor as regards control pressure for said manually operated servomotor.

3,201,178

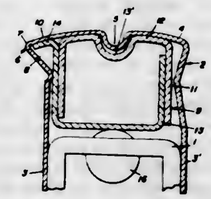
ELECTRIC DRY SHAVER HEAD HAVING TRIMMER EDGE

Masashi Okubo, Kadoma, Japan, assignor to Matsushita Electric Works, Ltd., Kadoma, Japan

Filed Aug. 17, 1964, Ser. No. 390,184

Claims priority, application Japan, Aug. 21, 1963, 38/62,746

1 Claim. (Cl. 30—34.1)



An electric dry shaver head comprising a comb member having a top wall having transverse slots therein, a trimmer projection along one side edge of said top wall and integral with said top wall and extending laterally of said top wall and coextensive therewith, a reentrant wall extending from the outer edge of said projection back beneath said projection at an acute angle to said projection, and downwardly extending comb walls ex-

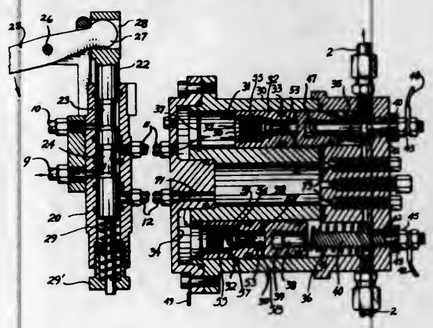
tending downwardly from the inner edge of said reentrant wall and the other side edge of said top wall and adapted to be secured to a dry shaver body, said projection and reentrant wall having slots therein aligned with the slots in said top wall, and a cutter assembly within said comb member and adapted to be driven back and forth along said comb member and having an inverted U-shaped cutter member having an upper cutter wall having a shape corresponding to the shape of the top wall of said comb member and having slots therein extending transversely thereof, and having downwardly depending side walls depending from the edges of said upper wall, and a U-shaped cutter member having upwardly extending side walls extending upwardly along the downwardly extending side walls of said inverted U-shaped cutter member, and having an upper cutter wall extending laterally from the top edge of one of the upwardly extending walls thereof parallel to and beneath the said projection on said top wall of said comb member, said upper cutter wall having slots therein, said upper cutter walls cooperating with said comb member for performing a cutting action when the cutter assembly moves back and forth along said comb member.

3,201,179
EMERGENCY DEVICE FOR PNEUMATICALLY OPERATED BRAKES
John T. Ostgaard, Los Angeles, Calif., assignor, by mesne assignments, to Royal Industries Inc., Pasadena, Calif., a corporation of California
Filed May 13, 1963, Ser. No. 280,018
4 Claims. (Cl. 303—71)



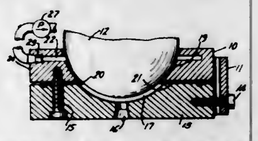
1. In a pneumatic braking system for a vehicle in which air pressure is used to hold the vehicle brakes in released position against the force of mechanical springs, an emergency brake releasing control device for enabling said brakes to be released in the event of loss of the normally supplied air pressure, comprising, in combination: a body member adapted to be secured to the dashboard of said vehicle including: a normal inlet passage for receiving normally supplied air pressure, an outlet passage for passing air received in said normal inlet passage to said brakes, an air exhaust passage, and an emergency air pressure inlet passage; first valve means in said body member adapted to close off said normal inlet passage from said outlet passage and place said exhaust passage in communication with said outlet passage when in a first position, and to place said inlet passage in communication with said outlet passage and close off said outlet passage from said exhaust passage when in a second position; a cartridge containing emergency air under pressure adapted to be inserted in said emergency air pressure inlet passage; and second valve means responsive to insertion of said cartridge to close off communication between said normal inlet passage and outlet passage and permit the air in said cartridge to be in communication with said outlet passage when said first valve means is moved to said second position.

3,201,180
FLUID PRESSURE CONTROL SYSTEM
Victor K. Lipp, 12205 1st NW., Seattle 77, Wash.
Filed Mar. 15, 1963, Ser. No. 265,562
5 Claims. (Cl. 303—84)



1. In a fluid pressure brake system having a plurality of separate fluid pressure actuated wheel brake units, a plurality of separate fluid pressure actuating circuits connected one to each of said units, fluid circuit means containing a pressure distribution chamber, a plurality of fluid barrier elements operatively interposed between said pressure distribution chamber and said actuating circuits for individually transmitting pressure of fluid in said distribution chamber simultaneously to fluid in said actuating circuits, means including a pressurizing unit selectively actuatable to apply pressure to fluid in said chamber, a low pressure fluid reservoir connected in said circuit means, recharging means for selectively bypassing all of barrier elements to supply said actuating circuits with fluid furnished from said reservoir and under pressure from actuation of said pressurizing unit, said recharging means comprising passages connecting said reservoir with each of said actuating circuits, check valves in said passages preventing flow of fluid from said actuating circuits into said reservoir, means blocking pressurization of distribution chamber fluid by said pressurizing unit and venting fluid pressure in said chamber to said reservoir, whenever said barrier elements are bypassed with fluid supplied by said recharging means to said actuating circuits, said barrier elements each comprising a plunger slidable in a bore that is open at one end to said chamber and at the other end to one of said actuating circuits, and means for releasably latching a plunger that has been displaced a predetermined distance in one direction along its bore, said plunger in latched position blocking the associated passage providing fluid communication between said low pressure reservoir and the associated actuating circuit.

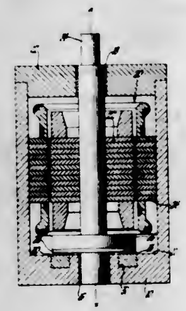
3,201,181
HYDROSTATIC BEARING
Justin Cherubim, Wyandanch, N.Y., assignor to Industrial Tectonics, Inc., Ann Arbor, Mich., a corporation of Michigan
Filed Feb. 28, 1963, Ser. No. 261,761
8 Claims. (Cl. 308—9)



1. In a hydrostatic bearing, the combination comprising:
(a) a base;

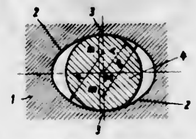
(b) an annular block surmounting said base;
(c) a bearing cavity provided within said base;
(d) said annular block including an inlet aperture axially communicating with said bearing cavity;
(e) an annular shim being disposed between said base and annular block, thereby disposing said base and annular block in spaced relation,
(f) at least one threaded member extending into said base and annular block, whereby said annular shim and annular block are affixed to said base;
(g) said bearing cavity receiving a fluid lubricant through said inlet aperture;
(h) said fluid lubricant forming a fluid film between the surface of said bearing cavity and the surface of a rotatable sphere received within said bearing cavity;
(i) said rotatable sphere being adapted to support a vertically disposed superstructure;
(j) the annular block including a laterally extending slot communicating between the bearing cavity and an exhaust passage, whereby said fluid lubricant may be removed from said bearing cavity;
(k) the cross-sectional area of the laterally extending slot being greater than the cross-sectional area between the adjacent surface of the bearing cavity and the surface of the rotatable sphere; and
(l) at least one V-block engaged with the external peripheries of said base and block, thereby maintaining in alignment the portions of the bearing cavity provided in said base and block.

3,201,182
THRUST BEARING
Harold M. Weissman, Peabody, Mass., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 28, 1962, Ser. No. 183,158
4 Claims. (Cl. 308—10)



1. A gas magnetic thrust bearing for resisting thrust forces along the spin axis of a rotating member, means associated with the member for providing rotation thereof about the spin axis, a first thrust plate of magnetic material mounted on the member coaxially of and normal to the spin axis for rotation therewith, a stationary thrust plate normal to the spin axis and located in close proximity to the first thrust plate defining a first spacing therebetween, the first thrust plate having a non-magnetic coating thereon defining a second spacing with the stationary thrust plate, a gaseous medium in the second spacing, whereby relative rotation of the plates produces hydrodynamic gas pressure in the second spacing for providing repelling forces between the plates, and a permanent magnet mounted to the stationary thrust plate for providing attractive forces in the first spacing between the plates, the first spacing being greater than the second spacing so that the rate of change of attractive forces as a function of displacement is different from the rate of change of repelling force due to gas pressure as a function of displacement, the plates being subject to relative rotation to be urged toward an axial disposition wherein the repelling and attractive forces are equalized.

3,201,183
SHAFT AND SLIDING BEARING ASSEMBLY
Alfred Buske, Neckarsulm, Wurttemberg, Germany, assignor to Karl Schmidt G.m.b.H., Neckarsulm, Wurttemberg, Germany, a German corporation
Filed Dec. 13, 1962, Ser. No. 246,292
Claims priority, application Germany, Dec. 16, 1961, Sch 30,721
13 Claims. (Cl. 308—78)

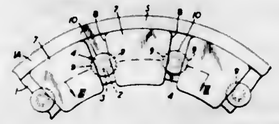


1. An assembly comprising a shaft and a sliding bearing therefor and in slide bearing engagement therewith, the bearing being in bearing engagement with the shaft at spaced loci about the shaft circumference, the bearing including a circumferentially extending bearing section for each locus of bearing engagement with the shaft, the bearing sections being rigidly secured together, said assembly being characterized in that the clearance of the shaft and bearing is less than zero the radii R of loci of bearing engagement of the bearing and the radii r of the loci of bearing engagement of the shaft being related in substantial accordance with the formula:

$$6\times10^{-3}>\frac{R-r}{r}>0.8\times10^{-3}$$

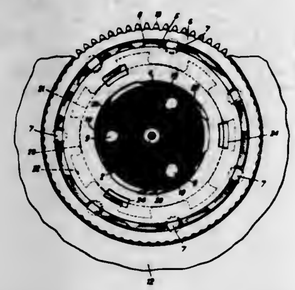
whereby the assembly of the shaft and bearing is prestressed resulting in elastic deformation of the bearing at loci of bearing engagement.

3,201,184
THRUST BEARINGS
Alfred Hill, Wembley, England, assignor to The Glacier Metal Company Limited, Wembley, England, a company of Great Britain
Filed Jan. 14, 1963, Ser. No. 251,143
Claims priority, application Great Britain, Jan. 19, 1962, 2,112/62
4 Claims. (Cl. 308—160)



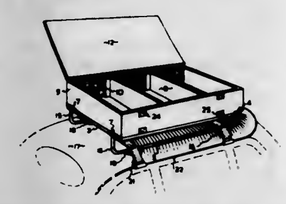
1. A thrust bearing assembly comprising a supporting member, an annular series of separate thrust pads the front faces of which form a working surface extending over substantially their entire circumferential extent and wherein there are formed in the adjacent sides of each adjacent pair of thrust pads, grooves displaced from the front and rear faces of each thrust pad, and a retaining pin carried and held against relative axial movement by said supporting member between each adjacent pair of thrust pads, each retaining pin having a head the oppositely projecting side portions of which extend respectively into said grooves in the sides of the adjacent pair of thrust pads and prevent the thrust pads from becoming detached from the supporting member by movement of the thrust pads relatively to said supporting member in a direction at right angles to said working surface.

3,201,185
BALL BEARING
Heinrich Stamm, Grenchen, Switzerland, assignor to ETA A.G. Ebauches-Fabrik, Grenchen, Switzerland, a company limited
Filed Oct. 3, 1963, Ser. No. 313,621
4 Claims. (Cl. 308—196)



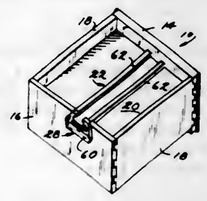
1. In a ball bearing having a race for the balls, in combination, a rigid body member carrying a section of the ball race wall, an annular flat spring blade having two side surfaces and two edges and carrying another section of the ball race wall along one of its edges, and projections on said body member exerting pressures, on the one hand, on one of said side surfaces of said spring blade in the vicinity of the other one of the edges thereof, and, on the other hand, on the other one of said side surfaces on a portion thereof extending between said edges, thus retaining said spring blade on said body member by clamping.

3,201,186
AUTOMOBILE LUGGAGE CARRIER AND TABLE
Walter K. Noonan, 2083 Rebecca St., Oakville, Ontario, Canada, and John Premi, 819 Garth St., Hamilton, Ontario, Canada
Filed Sept. 18, 1963, Ser. No. 309,791
6 Claims. (Cl. 312—241)



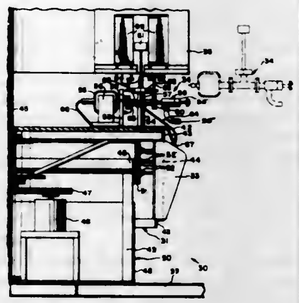
6. A combined luggage carrier and table top for mounting upon the top surface of an automobile body, comprising in combination, a rigid chest constituting a luggage receiving receptacle, a table top hingedly attached at one of its ends to the said chest and selectively swingable from a position extending in parallel relation to the chest to a position extending in right angle relation to the chest, and a table top supporting prop hingedly attached at one of its ends to the end of the table top remote from the table top's attachment to the said chest, the prop comprising a pair of legs spaced from one another and selectively swingable from a position in which the legs extend in parallel relation to the table top to a position in which they extend in right angle relation to the table top, the said prop then extending in parallel relation to said chest being in a position underlying the chest, and means associated with the said prop legs for attaching the prop when in said underlying position, and thereby the chest and the table top, to the top surface of an automobile body with the chest spaced from the said top surface of the automobile body.

3,201,187
DRAWER BACK BEARING
Raymond H. Reiss, Sr., Deal, and Paul R. T. Hahn, Westfield, N.J., assignors to Ronthor Reiss Corporation, New York, N.Y., a corporation of Delaware
Filed June 10, 1963, Ser. No. 286,544
12 Claims. (Cl. 312—346)



5. A sliding drawer comprising: vertical front, rear and side walls; a horizontal bottom wall joined to said front and rear walls; an elongated guide member disposed beneath said bottom wall and extending between said front and rear walls to define guide surfaces for slidably engaging a fixed guide on a piece of furniture; a tongue projecting rearwardly from the rear end of said guide member; a back bearing disposed adjacent the rear end of said guide member and in engagement with the rear surface of said rear wall, said back bearing having a depending portion having anti-friction surfaces adjacent the rear end of said guide member for engagement with the fixed guide, said back bearing further having a cavity therein, the walls of which tightly engage said tongue to accurately position said back bearing on said rear wall in a predetermined location with respect to said elongated guide member.

3,201,188
ROTARY EXHAUST APPARATUS
Joseph E. Byrne, Los Altos, and William F. Luck, Mountain View, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Mar. 29, 1961, Ser. No. 99,158
7 Claims. (Cl. 316—30)



1. A rotary exhaust apparatus for evacuating a hollow article including: a stationary support means having operating stations arranged thereon in circumferential sequential relation, a plurality of said stations including stationary electrical contact members; a plurality of power

supplies electrically connected to said stationary contact members, for supplying an electric current thereto; a turntable member mounted for movement relative to said support means having a plurality of sliding contact members arranged thereon in circumferential spaced relation; a plurality of closed vacuum systems mounted on said turntable for evacuating said hollow article, each of said closed vacuum systems including an article receiving exhaust tubulation and an electrical getter ion vacuum pump connected to said tubulation; means for sequentially electrically connecting each of said electric getter ion pumps to a respective one of said power supplies by means of said sliding contact members; and, means for continuously indexing said turntable member to thereby advance said hollow articles through successive operating stations and said sliding contact members in contact with said stationary contact members whereby electrical current is supplied to said electrical getter ion pumps.

CHEMICAL

3,201,189
PROCESS FOR DYEING POLYPROPYLENE FIBERS WITH ACID DYESTUFFS IN THE PRESENCE OF A WATER SOLUBLE THIOCYANATE
Henry R. Mautner, Leonia, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 5, 1963, Ser. No. 328,179
12 Claims. (Cl. 8—55)

1. A process for dyeing a polypropylene fiber comprising treating the fiber with an acidic aqueous medium consisting essentially of an aqueous solution of an acid dye and a water soluble thiocyanate.

3,201,190
DYED CELLULOSE ESTER TEXTILE MATERIALS RESISTANT TO CHLORINE FADING
Duncan G. Carmichael, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed May 28, 1962, Ser. No. 197,873
13 Claims. (Cl. 8—61)

11. A process for rendering an undyed cellulose acetate textile material resistant to chlorine fading when subsequently dyed with a water-insoluble disperse anthraquinone dyestuff normally tending to fade upon exposure to aqueous reactive chlorine which comprises incorporating 1% to 10% by weight of said textile material of 2,2-bis (p-hydroxyphenol)propane therein.

3,201,191
SEPARATION AND RECOVERY OF URANIUM FROM URANIUM-ALUMINUM ALLOYS
Herman S. Gile, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Mar. 12, 1952, Ser. No. 276,227
6 Claims. (Cl. 23—14.5)

1. A process for separating uranium from aluminum contained in uranium-aluminum alloys, comprising reacting said alloys with an aqueous solution of alkali metal hydroxide, alkali metal nitrate and alkali metal nitrite, adding barium nitrate to the solution formed, and separating an alkali aluminate-containing solution from a uranium oxide-containing residue.

3,201,192
PROCESS FOR THE PURIFICATION AND ACTIVATION OF TITANIUM TRICHLORIDE
Erhard Siggel, Laudenbach (Main), Gerhard Meyer, Obernburg (Main), and Wolfgang Rösener, Erlenbach (Main), Germany, assignors to Vereinigte Glanzstoff-Fabriken AG, Wuppertal-Elberfeld, Germany
No Drawing. Filed Sept. 5, 1961, Ser. No. 135,782
Claims priority, application Germany, Sept. 7, 1960, V 19,312
2 Claims. (Cl. 23—87)

1. A process for the activation of titanium trichloride which has been produced by the reduction of titanium tetrachloride which is contaminated with titanium tetrachloride, and which has thereafter been washed with an inert hydrocarbon, said titanium trichloride to be used for the polymerization of olefins, which process comprises: heating said titanium trichloride with agitation at a temperature not exceeding 100° C. in the absence of olefin but in the presence of an organometallic polymerization catalyst-inert hydrocarbon mixture, the amount of said organometallic polymerization catalyst in said vessel being from about 10 to about 200 mol percent based on the amount of titanium trichloride that is present in the vessel, separating off said organometallic polymerization catalyst-inert hydrocarbon mixture, and thereafter washing the titanium trichloride once again with an inert hydrocarbon, whereby an activated and substantially moisture and titanium tetrachloride free catalyst is obtained.

3,201,193
PRECIPITATION OF SOLUBLE P_2O_5 VALUES FROM NH_4F SOLUTIONS
Arthur N. Baumann, Lakeland, Fla., assignor to International Minerals & Chemical Corporation, a corporation of New York
No Drawing. Filed July 3, 1963, Ser. No. 292,747
10 Claims. (Cl. 23—88)

1. The method for the purification of an aqueous solution of ammonium fluoride containing a minor proportion of phosphatic impurities comprising reacting said solution with a compound of the group consisting of oxides, hydroxides, carbonates, and fluorides of Group IIB metals, at a pH in the range of 6.0 to 8.0, in an amount and for a time sufficient to precipitate a substantial portion of said phosphatic impurities as metal-ammonium phosphates, and separating said phosphates to recover a purified solution of ammonium fluoride.

3,201,194
PROCESS FOR PREPARATION OF COPPER AMMONIUM PHOSPHATE
Murrell L. Salutsky, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Dec. 17, 1964, Ser. No. 419,229
3 Claims. (Cl. 23—105)

1. Process for preparing a trace element fertilizer material consisting essentially of substantially pure crystalline copper ammonium phosphate monohydrate in a yield of about 97% of theory which comprises:

(a) Mixing an aqueous solution of a tetramminecopper (II) compound and an aqueous solution of ammonium phosphate, said ammonium phosphate solution having a mole ratio of ammonium ion to phosphate ion of about 1.5–3, in such proportions that the mole ratio of phosphate to copper in the resulting mixture is about 1–1.1, and maintaining the temperature, during mixing, below about 20° C.;

(b) Heating said resulting mixture to about 25–100° C. for about 4 hours to about 3 days to evolve ammonia from said mixture until the pH of said mixture is reduced to about 6–7, thereby precipitating crystalline copper ammonium phosphate.

(c) Recovering the copper ammonium phosphate product, washing said product with water, and drying said product at about 100° C.

3,201,195

PROCESS OF MAKING SUBSTANTIALLY PURE ALKALI METAL AND AMMONIUM PHOSPHATES FROM CRUDE PHOSPHORIC ACID

Hans Huber, Volkerstrasse 16, Wiesbaden-Biebrich, Germany, and Helmut Keller, Emserstrasse 1, Wiesbaden, Germany

No Drawing. Filed Jan. 14, 1960, Ser. No. 2,341
Claims priority, application Germany, Jan. 17, 1959, C 18,223; Jan. 24, 1959, C 18,275; Nov. 10, 1959, H 37,841
7 Claims. (Cl. 23—107)

1. In a process of producing substantially pure alkali metal and ammonium phosphate solutions from crude phosphoric acid solutions obtained by the wet process, the steps which comprise heating the crude phosphoric acid solution under elevated pressure to an elevated temperature exceeding the boiling temperature of the crude phosphoric acid solution at atmospheric pressure and higher than 110° C. by introducing steam under pressure, adding a neutralizing compound selected from the group consisting of an alkali metal hydroxide, ammonia, an alkali metal carbonate, and a trialkali metal phosphate, to adjust the pH-value of the heated solution at said elevated pressure to a pH between about 2.0 and about 3.5 thereby causing precipitation of insoluble phosphates from the neutralized phosphoric acid solution obtained, reducing the pressure on said neutralized solution to atmospheric pressure, thereby releasing pressure-steam, cooling the neutralized solution to a temperature below 100° C., and separating the precipitated phosphates from the solution of substantially pure alkali metal and ammonium phosphates.

3,201,196

FIBROUS SODIUM METAL SILICATES

Thurman E. Gier, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 18, 1962, Ser. No. 210,846
21 Claims. (Cl. 23—110)

1. A silicate consisting essentially of (1) sodium, (2) hydrogen, (3) at least one divalent metal of the group consisting of cobalt, magnesium and nickel, (4) at least one member of the group consisting of hydroxyl and fluorine, (5) oxygen, and (6) silicon, in the proportions, on an atom basis per 8 parts of silicon, 1.5–3.0 parts of sodium, 0.2–2.0 parts of hydrogen (excluusive of hydroxyl hydrogen), 5.0–6.0 parts of divalent metal, 2.0 total parts of hydroxyl and fluorine, the hydroxyl and fluorine individually being in the amount of 0–2 parts, and 22 parts of oxygen exclusive of hydroxyl oxygen.

3. A silicate of the formula $Na_xH_yM_z(Si_4O_{11})_2X_mX'_n$, wherein the M's are at least one divalent metal of the group consisting of cobalt, magnesium and nickel, X and X' are selected from the group consisting of hydroxyl and fluorine, x is 1.5–3.0, y is 0.2–2.0, z is 5.0–6.0, m and n are individually in the range of 0–2, $n+m=2$ and $x+y+2z=14$.

3,201,197

PREPARATION OF HYDROGEN CLAYS

William E. Showalter, Seal Beach, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed June 25, 1962, Ser. No. 204,748
8 Claims. (Cl. 23—112)

1. The preparation of a hydrogen clay from a clay having its ion-exchange sites occupied by alkali metal and alkaline earth metal cations that comprises:

(a) contacting said clay with a liquid medium comprising a mineral acid, an organic solvent and less than 25 percent water; said mineral acid being selected from the class consisting of hydro-halogen acids, sulfuric acid, nitric acid and mixtures thereof and comprising between about 0.01 and 4 volumes per volume of said organic solvent; said organic solvent being an organic liquid in which the alkali metal and alkaline earth metal salts of said mineral acid are soluble;

(b) the amount of said liquid reaction medium so contacted with said clay being sufficient to provide between about 1 and 10 equivalent weights of said acid per equivalent base exchange-capacity of said clay; and

(c) thereafter separating said reaction medium as a liquid from said clay to remove said alkali metal and alkaline earth metal cations from said clay and to prepare said hydrogen clay.

3,201,198

PROCESS FOR SIMULTANEOUS PRODUCTION OF METHACRYLAMIDE AND AMMONIUM BISULFATE

Ludwig Huter and Ulrich Reichau, Frankfurt am Main, and Karl Rinn, Darmstadt, Germany, assignors to Deutsche Gold- und Silber Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Apr. 9, 1962, Ser. No. 185,823
Claims priority, application Germany, Apr. 8, 1961, D 35,817
3 Claims. (Cl. 23—119)

1. A process for the simultaneous production of methacrylamide and ammonium bisulfate which comprises contacting a completely reacted reaction mixture of about equivalent quantities of acetone cyanhydrin and sulfuric acid with about ½ an equivalent of ammonia with reference to said sulfuric acid in the presence of up to 0.5 mol of water per mol of original acetone cyanhydrin and separating the resulting methacrylamide and ammonium bisulfate phases the formation of the methacrylamide and ammonium bisulfate and the separation of the phases being carried out at a temperature between 100 and 180° C. at which the components of the reaction mixture are in the liquid phase.

3,201,199

METHOD OF PRODUCING LOW SODA CONTENT ALUMINA

James Gordon Lindsay and William Peter Charles Kinsman, Arvida, Quebec, Canada, assignors to Aluminum Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed Mar. 6, 1962, Ser. No. 177,740
5 Claims. (Cl. 23—143)

1. A method of preparing low soda content alumina trihydrate which comprises forming a solution of alumina in aqueous caustic at an elevated temperature and effecting precipitation of alumina trihydrate, substantially free of soda, from said solution at a temperature lower than said elevated temperature and in the presence of added solid alumina trihydrate, said solution at said lower temperature being supersaturated with alumina trihydrate, said lower temperature being maintained during the precipitation of alumina trihydrate such that the amount of alumina supersaturation during the precipitation is not greater than 0.13 ratio unit above the equilibrium solubility of the alumina trihydrate in the aqueous caustic solution from which the alumina trihydrate is precipitated, said ratio unit being defined as the alumina/caustic ratio wherein alumina is expressed in terms of grams per liter Al_2O_3 and caustic is expressed in terms of grams per liter equivalent Na_2CO_3, and recovering as product the resulting precipitated, substantially soda free, alumina trihydrate having a soda content below about 0.10%.

3,201,200

MODIFIED CARBON BLACK PRODUCTION

Andries Voet, Joseph Iannicelli, and Archie C. Teter, Borger, Tex., assignors to J. M. Huber Corporation, Borger, Tex., a corporation of New Jersey

No Drawing. Filed Apr. 10, 1962, Ser. No. 186,364
17 Claims. (Cl. 23—209.4)

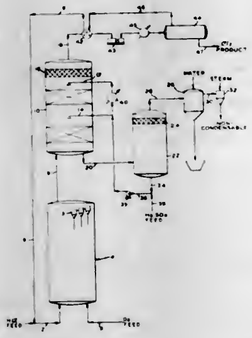
1. In the production of carbon black in a furnace operating continuously at high temperature, wherein a liquid hydrocarbon feedstock is fed continuously to the furnace and is vaporized and pyrolyzed therein to yield carbon, the method of continuously uniformly modifying the structure of the carbon black produced which comprises homogeneously dissolving in said feedstock a precisely proportioned minor amount of a mixture of an alkali metal salt of an organic acid selected from the group consisting of alkyl and cycloalkyl carboxylic and sulfonic acids and an oil-soluble free fatty acid that enhances the oil-solubility of said salt.

3,201,201

PROCESS FOR TREATING THE EFFLUENT GAS OBTAINED BY THE OXIDATION OF A HYDROGEN HALIDE GAS

Christiaan P. van Dijk and William G. Hudson, Westfield, N.J., assignors to Pullman Incorporated, a corporation of Delaware

Filed June 1, 1962, Ser. No. 199,330
14 Claims. (Cl. 23—219)



9. In a process wherein the chlorine gas is produced by the oxidation of a hydrogen chloride in the presence of an oxidation catalyst and an effluent gas containing water, hydrogen chloride and chlorine is produced, the improvement for treating the effluent which comprises: countercurrently contacting the effluent introduced into the lower portion of a drying zone packed with acid-resistant contact material with an aqueous solution of sulfuric acid, cooling and drying the effluent in the drying zone under adiabatic conditions to a water dew point of less than −30° F., recovering dried effluent gas from the drying zone, passing sulfuric acid having an increased heat content and containing sorbed water to a dehydrating zone, flashing at least the sorbed water from the sulfuric acid in the dehydration zone under adiabatic conditions and reduced pressure to restore at least the original concentration of the acid, cooling at least a portion of the reconcentrated sulfuric acid to a temperature below the temperature of the dried effluent leaving the drying zone and recycling said cooled, dehydrated sulfuric acid to the upper portion of said drying zone, recovering chlorine from the dried effluent removed from the upper portion of the drying zone by pressurizing the effluent and condensing the chlorine product from the uncondensed hydrogen chloride in the effluent, recycling uncondensed hydrogen chloride to the oxidation zone as part of the feed thereto and recovering chlorine as the product of the process.

3,201,202

DIAGNOSTIC PROCEDURE

Ronald L. Searcy, Monterey Park, and Lois M. Bergquist, North Hollywood, Calif., assignors to Hyland Laboratories, Los Angeles, Calif.

No Drawing. Filed Mar. 4, 1963, Ser. No. 262,316
2 Claims. (Cl. 23—230)

1. In a method for the quantitation of total proteins in a biological fluid specimen, the steps of:

(a) Adsorbing a measured aliquot of the specimen on an adsorbent material (1) which is capable of accepting the specimen so as to permit the proteins to react with a solution of the dye, Ponceau S, to form a protein-dye complex without leaching of the proteins into the dye solution, and (2) which permits the protein-bound dye to be eluted from the adsorbent material under alkaline conditions;

(b) Placing the specimen-containing adsorbent material on the surface of a solution of Ponceau S, to thereby cause all of the protein in the specimen to react with Ponceau S.

(c) Rinsing from the adsorbent material all of that amount of the Ponceau S that has not reacted with the protein.

(d) Eluting the protein-bound Ponceau S from the adsorbent material under alkaline conditions.

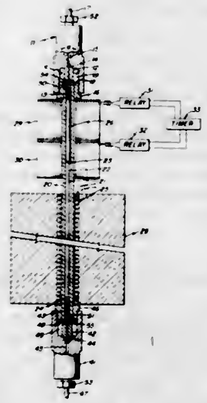
(e) Colorimetrically quantitating the eluted Ponceau S and converting the optical density readings thus obtained into total protein concentration.

3,201,203

HIGH PRESSURE CONTACTING APPARATUS

William J. Cerveny, Lansing, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

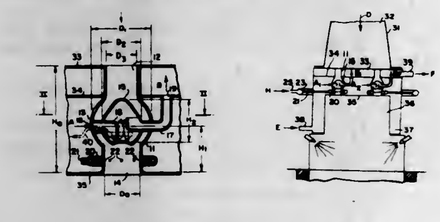
Filed July 17, 1961, Ser. No. 129,933
7 Claims. (Cl. 23—259)



1. An apparatus for contacting separate phases at high pressure, which apparatus comprises a pressure vessel having a tubular inlet, a high-pressure connector element comprising a solid cylinder having two ends, said two ends consisting of solid sections of cones having axis concentric with the axis of said cylinder, the cone of the first of said ends having an acute angle at its apex, the cone of the second of said ends having an obtuse angle at its apex, a conduit through said pressure connector element concentric with the axes of said cylinder and said cones, said

second end being positioned over the end of said tubular inlet whereby the conduit through said connector element communicates with said tubular inlet, a pressure cap over said second end and attached to said pressure vessel, a conic receptacle for said second end in said pressure cap, said pressure cap receiving said second end and urging said first end of said connector element in pressure sealing connection with the inlet tube, said receptacle having the angle of its apex at least as great as said acute angle, and a conduit through said cap from the narrow end of said receptacle, said conduits forming a continuous passage through said cap and said connector to said inlet.

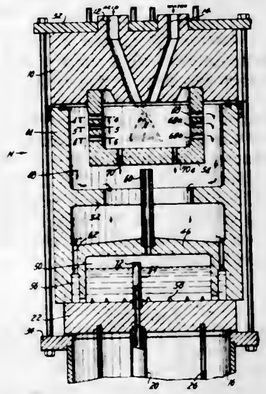
3,201,204
FURNACE APPARATUS FOR PRODUCING ACETYLENE FROM METHANE
Walter Billi, Milan, Italy, assignor to Montecatini Società Generale per Findustria Mineraria e Chimica, Milan, Italy
Filed July 25, 1961, Ser. No. 126,716
Claims priority, application Italy, Aug. 30, 1960, 15,243/60
4 Claims. (Cl. 23—277)



1. A furnace for pyrolytic production of acetylene from hydrocarbons, having a gas mixing chamber and a combustion chamber and distributor means forming a passage between said gas mixing chamber and said combustion chamber, said distributor means comprising a conduit structure through which said gas mixing chamber communicates with said combustion chamber, said conduit structure having a middle portion wider than the end portions, a throttling shield centrally mounted in said middle portion and forming together therewith an annular passage around said shield, said shield consisting of a hollow metal body and duct means communicating with the interior of said body to pass fluid coolant therethrough to maintain, when in operation, the gas-contacted surface of the body at a temperature at least 100° C. lower than the arriving temperature of the gas mixture to be cracked.

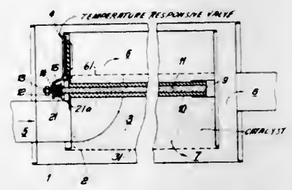
3,201,205
APPARATUS FOR DILUTING ACIDS AND ALKALIES
William M. Gaylord, Jr., New Canaan, Conn., and Joseph F. Knott III, Westchester, Ill., assignors to Union Carbide Corporation, a corporation of New York
Filed Mar. 15, 1961, Ser. No. 95,863
10 Claims. (Cl. 23—283)

1. In combination, a diluting header and a heat exchanger for diluting and cooling a highly concentrated solution of an acid or alkali of the type which reacts exothermically with a weak aqueous diluting solution; said header having a cover provided with angularly disposed inlet nozzle means for introducing said solutions as impinging fluid streams into said header and comprising an upper diluting chamber, a lower distribution chamber and passage means between said chambers; a mixer cap in said upper chamber mounted within the bottom of said cover below said inlet nozzle means, said mixer cap having a plurality of distribution ports therein; baffle means in said upper chamber; vapor venting means between said chambers for venting said upper chamber to said lower chamber and for equalizing the pressure between same;



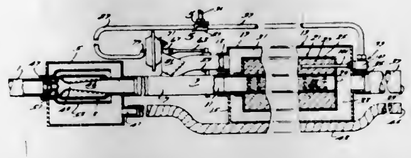
and means in said distribution chamber for distributing the diluted product from said header to said heat exchanger for cooling.

3,201,206
EXHAUST CLEANER FOR MOTOR VEHICLES
Erwin Wawrziniok, Ingolstadt, Germany, assignor to Auto Union G.m.b.H., Ingolstadt (Danube), Germany
Filed Apr. 20, 1961, Ser. No. 104,394
Claims priority, application Germany, Apr. 23, 1960, A 34,490
8 Claims. (Cl. 23—288)



1. In combination, a muffler, an exhaust cleaner located within said muffler and spaced from said muffler, a perforated wall located within said exhaust cleaner and separating the interior thereof into two inner spaces, a catalyst filling located within said exhaust cleaner and occupying one of said inner spaces, the other inner space constituting an inner chamber, an inflow conduit connected with said muffler and exhaust cleaner and opening into said inner chamber to transmit exhaust gases into said inner chamber, said exhaust cleaner having a perforated outer wall portion in contact with said catalyst filling, whereby exhaust gases passing from said inner chamber through said catalyst filling flow through said perforated outer wall portion into the space between said exhaust cleaner and the walls of said muffler, an outflow pipe connected with said muffler and communicating with the last-mentioned space, a valve carried by said exhaust cleaner adjacent the opening of said inflow conduit and adapted to open and close communication between said inner chamber and the last-mentioned space, and automatically operable temperature-responsive means extending through the entire length of the catalyst filling in contact therewith and connected with said valve for actuating said valve.

3,201,207
MUFFLER
Ervin C. Lentz, Jackson, Mich., assignor to Walker Manufacturing Company, a corporation of Delaware
Filed Sept. 15, 1961, Ser. No. 138,506
3 Claims. (Cl. 23—288)



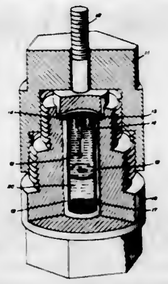
3. A conversion system for the combustion of unburned constituents in the exhaust gases of an internal combustion engine comprising a catalytic converter having an inlet for attachment to an exhaust pipe and a catalyst bed having an inlet side and an outlet side, valve means in the path of gas flow to said bed for selectively directing the gas to the inlet side or to the outlet side of said bed, valve operating mechanism for operating said valve means, said mechanism including bed temperature responsive means whereby said valve means is operated in response to changes in bed temperature, said valve means including a pressure responsive surface exposed to the pressure of incoming exhaust gas and arranged to urge said valve means toward a position wherein it directs gas to the outlet side of said bed whereby said valve means will fail-safe in the event of malfunction of said valve operating mechanism.

3,201,208
METHOD OF PRODUCING ANHYDROUS INORGANIC COMPOUNDS
Sidney M. Heins, Chicago, and Burton Strauss, Winnetka, Ill., assignors to Chemical Products Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed July 5, 1963, Ser. No. 293,198
8 Claims. (Cl. 23—300)

1. The method of dehydrating an aqueous solution of an inorganic alkaline earth metal halide selected from the group consisting of magnesium chloride and zinc chloride which comprises boiling the solution under a floated cover of mineral oil having at least a depth of about one inch after adding a quantity of a salt, from the group consisting of sodium chloride and potassium chloride, substantially equal to from 30 to 50 percent by weight of the total dehydrated product.

3,201,209
HYDROTHERMAL GROWTH OF ZINC OXIDE CRYSTALS
Anthony J. Caporaso, Summit, Ernest D. Kolb, New Providence, and Robert A. Laudise, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 27, 1963, Ser. No. 268,326
6 Claims. (Cl. 23—301)

1. A method of growing zinc oxide crystals from a hydrothermal solution which comprises maintaining a zinc oxide crystal seed and a mass of nutrient zinc oxide in an aqueous medium comprising lithium ions and a metal hydroxide selected from the group consisting of alkali metal hydroxides, strontium hydroxide and barium hydroxide and mixtures thereof, the lithium ion and the metal hydroxide having concentrations of 0.1 to 4.0 molal and 2 to 8 molal, respectively at a temperature of at least 300° C. at a pressure of at least 3200 p.s.i. while maintaining a temperature difference between said seed and said nutrient mass of from 5 to 100° C. without the nutrient hotter than the seed.

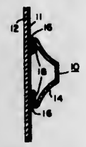


3,201,210
TRIM MEMBER ASSEMBLY
Thomas R. Harkins, Pittsburgh, and Donald R. Zaremski, Cheswick, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Jan. 3, 1963, Ser. No. 249,191
5 Claims. (Cl. 29—183.5)



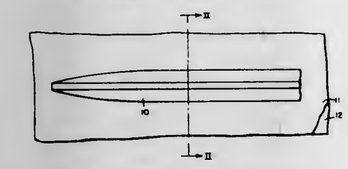
1. In a stainless steel trim member having an exposure surface of stainless decorative quality and at least one attachment surface disposed to be seated in assembled contact with a painted ferrous base body member that is less noble than stainless steel, said assembly being disposed to be subjected to normal weathering corrosion conditions and, when said paint is broken in the vicinity of said attachment surface, to galvanic reaction between said trim member and said body member, the improvement comprising, an adherent zinc coating having an initial thickness of from .000015 inch to .0001 inch carried by and continuously distributed over said attachment surface, and a thin in situ chemical reaction conversion coating extending over and carried by said zinc coating without increasing the initial thickness of said zinc coating, said conversion coating constituting only a minor portion of the initial thickness of said zinc coating whereby a continuous zinc coating is present beneath said conversion coating, said conversion coating being sufficiently dense to prevent dissipation of said zinc coating under normal weathering corrosion conditions encountered in service and having a permeable structure to permit a retarded sacrificial galvanic attack of said zinc coating when said breaks in said paint appear to thereby prevent a galvanic attack of said body member and the formation of red rust thereon in the vicinity of said trim member, said exposure surface being substantially free of said coatings.

3,201,211
STAINLESS STEEL TRIM MEMBER
William G. Renshaw, Natrona Heights, and Rush A. Lincoln, Pittsburgh, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed June 22, 1962, Ser. No. 204,333
2 Claims. (Cl. 29—183.5)



1. A stainless steel trim member for use with a panel structure made of metal that is less noble in the electromotive series than the stainless steel, said stainless steel member having an attachment face and an exposure face, said attachment face being disposed to abut said panel member when in assembled relationship therewith, and a coating of zinc on said attachment face, said coating having a thickness between the ranges of .0000006" to .00006" whereby the coating on the trim member when in assembled relationship will tend to retard and prevent galvanic action between the panel structure and the trim member so that discoloring oxidized products formed by any galvanic action are retarded.

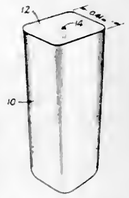
3,201,212
TRIM MEMBER
Donald R. Zaremski, Cheswick, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed June 22, 1962, Ser. No. 204,332
5 Claims. (Cl. 29—183.5)



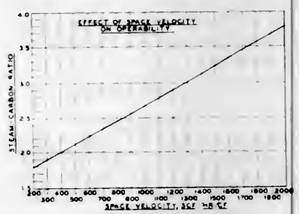
1. A stainless steel trim member for attachment to a member formed of a steel that is less noble than stainless steel comprising a formed stainless steel article having a contact face disposed to abut said less noble steel member and an exposure surface disposed to exhibit a stainless steel surface, a zinc coating disposed over said contact face and a thin, substantially invisible in situ chemical reaction chromate conversion coating disposed over said exposure surface and in direct contact therewith, whereby when the trim member is attached to the less noble steel, galvanic corrosion of the less noble steel will be prevented and the exposure surface of the stainless steel will have increased corrosion resistance.

3,201,213
METHOD OF FORMING THE UPPER END OF KILLED STEEL INGOT
Carl Kristian Werner, Vikmanshyttan, Sweden, assignor to Uddeholms Aktiebolag, Degerfors, Sweden, a Swedish corporation
Filed Apr. 13, 1959, Ser. No. 806,091
Claims priority, application Sweden, Dec. 1, 1955, 10,879/55
9 Claims. (Cl. 29—187)

1. A cast solid killed steel ingot adapted to be rolled to form a rolled billet bar of reduced cross-section, said ingot as cast comprising a body portion, a sink head at one end of said ingot, and an intermediate beveled section composed entirely of sound metal interconnecting said body portion and said sink head, said sink head including segregations of impurities and an unsound metal structure to be eliminated from said rolled billet bar, the surface of said beveled section forming with the central longitudinal axis of the ingot an angle of 20 to 45° and the length of said beveled section being such that the cross-sectional dimension of said ingot at the junction of said sink head and beveled section is from 40% to 80% of the corresponding cross-sectional dimension at the junction of said body portion and said beveled section.



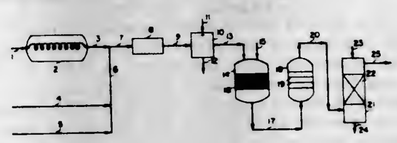
3,201,214
PRODUCTION OF DOMESTIC HEATING GAS
Joseph M. Fox 3rd, Green Village, and Joseph C. Yarze, Union, N.J., assignors to Pullman Incorporated, a corporation of Delaware
Filed Feb. 1, 1963, Ser. No. 255,579
8 Claims. (Cl. 48—214)



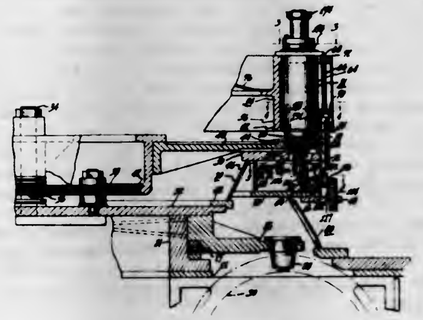
1. A method for producing domestic heating gas in one conversion step which comprises contacting naphtha and steam in the presence of steam reforming catalyst in an elongated conversion zone maintained at an outlet pressure of about 300 to about 1200 p.s.i.g., supplying the naphtha to said zone at a space velocity of about 400 to about 2150 volumes of naphtha expressed as methane equivalent at standard conditions per hour per volume of catalyst, supplying a controlled amount of steam to said zone to provide a steam-carbon ratio of at least 1.55 plus 0.00113 times said space velocity but not more than about 4.0, and externally heating at least the inlet end of said zone to obtain a fluid temperature at a point within said zone of at least about 1300° F. and an outlet fluid temperature lower than about 1390° F.

3,201,215
PRODUCTION OF COMBUSTIBLE GAS
John S. Negra, South Plainfield, and Arnold R. Bernas, Nixon, N.J., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed June 7, 1963, Ser. No. 286,296
7 Claims. (Cl. 48—215)

1. A process for the gasification of naphtha to produce a combustible gas which comprises vaporizing and preheating naphtha to a temperature in the range of 122° F. to 1000° F., superheating steam, and preheating air; combining said streams of naphtha, steam and air to form a mixed gaseous stream at an initial temperature of at least 1000° F., said mixed gaseous stream having a steam to carbon molar ratio of at least 1.5 and an air to carbon molar ratio of at least 0.1, reacting said mixture for an interval less than 1.0 second whereby the process stream temperature rises to a minimum of at least 1400° F. and said naphtha is simultaneously oxidized, cracked and partially reformed without accumulated deposition of free carbon, and quenching the process gas stream to a temperature below 800° F. by contact with a liquid quench agent, whereby a stable crude combustible gas mixture is produced comprising carbon dioxide, carbon monoxide, ethylene, methane, hydrogen and nitrogen, without accumulated deposition of free carbon.



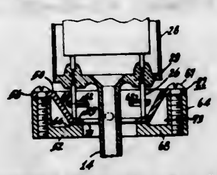
3,201,216
APPARATUS FOR PRODUCING ELECTRONIC TUBE STEMS
Richard Walter Handmann, Fair Lawn, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 19, 1960, Ser. No. 76,905
2 Claims. (Cl. 65—138)



1. In a vacuum tube stem making machine, an indexable turret, means for indexing said turret, holes in said turret at indexable positions thereof, a bull gear concentric with said turret, a plurality of stem head assembly units each comprising a pinion gear of a size that passes through said holes, and means for detachably fastening each of said units to said turret with the pinion gear extending through one of said holes and in mesh with said bull gear.

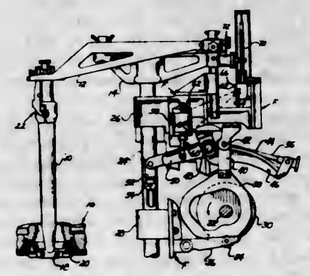
3,201,217
TUBULAR GLASS SEALING APPARATUS
John Lysak, Colonia, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 1, 1962, Ser. No. 191,586
4 Claims. (Cl. 65—270)

1. A tipping torch for use with an electron tube having a header wafer and a plurality of leads extending from said wafer, said leads being arranged in a circle, said torch comprising:
a hollow annular member of sectoral shape,
a first inner surface portion of said torch being frustro-conical in shape,
the large diameter end of said frustro-conical surface portion having a diameter larger than said lead circle, and another region of said frustro-conical surface portion having a diameter substantially the same as said lead circle for centering said leads with respect to said torch,
at least one gas tube communicating with the interior of said hollow member, said tube extending radially inwardly from said frustro-conical surface portion and terminating within said lead circle when said



leads are engaged with and centered by said frustro-conical surface portion,
a second inner surface portion connected with said frustro-conical surface portion and lying within a projection of said lead circle when said leads are engaged with and centered by said frustro-conical surface portion, said second surface portion having a slot extending outwardly therefrom and communicating with the interior of said hollow member, and
means to supply gas to the interior of said hollow member.

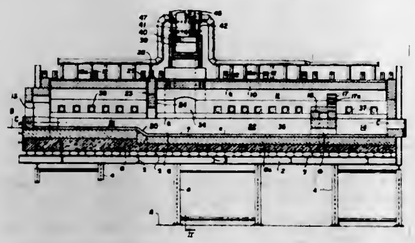
3,201,218
PLUNGER TYPE GLASS FEEDING APPARATUS
Frederick J. Wythe, Hebron, Conn., assignor to Emhart Corporation, a corporation of Connecticut
Filed Dec. 27, 1961, Ser. No. 162,335
3 Claims. (Cl. 65—330)



1. In glass feeding apparatus of the type which includes a bowl having a bottom opening for the discharge of molten glass as a result of vertical reciprocation of a plunger over the opening, and wherein plunger lifting is effected primarily by mechanical means connected with the plunger and including a rotating cam while downward movement is caused by gravity, improved means for assisting plunger movement in both directions and comprising a reversible fluid motor connected with the mechanical means, a two position control valve operatively connected with said fluid motor, and valve actuating means comprising a magnetic clutch having a housing mounted for movement with the plunger and also having a retarded shaft provided with a pinion, and the valve being provided with a rack engaged by the pinion whereby during initial downward movement of the plunger there is no relative rack and pinion movement so that the valve is placed in one position to effect a fluid motor assist to such plunger movement and thereafter the clutch slips to permit relative rack and pinion movement, and whereby during initial upward movement of the plunger there is no relative rack and pinion movement so that the

valve is placed in its other position to effect a fluid motor assist to such plunger movement and thereafter the clutch slips to permit relative rack and pinion movement.

3,201,219
GLASS MELTING FURNACE
John Earl Frazier and Nelson L. Murphy, Washington, Pa., assignors to Frazier-Simplex, Inc., Washington, Pa., a corporation of Delaware
Filed June 1, 1962, Ser. No. 199,485
5 Claims. (Cl. 65—347)



1. A glass melting furnace comprising a tank having a bottom and sides, an enclosure above the tank comprising sides and a roof forming a combustion chamber over the tank, the furnace having means at one end through which batch materials are charged into the tank, the tank having a melting zone at the charging end, a main zone into which glass flows from the melting zone and a refiner at the other end of the main zone, there being a submerged passage from the main zone to the refiner, the bottom of the tank in the melting zone being at a level appreciably above the level of the bottom in the main zone and refiner with the bottom having a steep drop from the melting zone to the main zone, the bottom of the tank in all of the zones being at a level to provide a level pool of molten glass in the tank from one end of the entire tank to the other with a change of depth in the pool at said steep drop, a transverse baffle across the combustion chamber with its lower edge above the level of the pool of glass maintained throughout the length of the tank, said baffle being located where the melting zone drops off into the main zone, fuel burners in the side walls of the enclosure along the melting zone above the tank, the side walls of the enclosure along the main zone and refiner above the tank, the furnace having opposed burned gas outlet ports in the side walls above the tank only in the main zone close to the baffle through which burned gases from all of the burners are removed, whereby gases from the melting zone travel rearwardly of the furnace away from the charging end under said baffle to said ports, and gases from the other burners travel forwardly toward said baffle to said ports with all of the gases being exhausted near the forward end of the main zone close to the baffle and remote from the refiner.

3,201,220
HERBICIDAL COMPOSITION AND METHOD
Herbert H. Harris, Painesville, and Arthur L. Galloway, Mentor, Ohio, Lawrence E. Limpel, Yonkers, N.Y., and Paul H. Schuldt, Mentor, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed Jan. 29, 1962, Ser. No. 169,680
4 Claims. (Cl. 71—2.6)

1. The method of regulating the growth of broadleaf weeds which comprises applying to the soil and weeds a herbicidal amount of a mixture of dimethyl 2,3,5,6-tetrachloroterephthalate and 2,4-dichlorophenoxy acetic acid, the ingredients being employed in such amounts as to be mutually activating.

3,201,221
PROCESS FOR THE PRODUCTION OF PHOSPHATE FERTILIZER
Clarence J. Woerther, Fair Oaks, Calif., and James G. Gilchrist, Jr., Bartow, Fla., assignors to International Minerals & Chemical Corporation, a corporation of New York
No Drawing. Filed Oct. 5, 1962, Ser. No. 228,763
7 Claims. (Cl. 71—11)

1. A process for the production of a phosphate fertilizer containing at least about fifty percent by weight available phosphoric acid, determined as P_2O_5, which comprises treating comminuted phosphate rock of at least 70% BPL with a normally liquid petroleum hydrocarbon in an amount of at least 2 lbs. per ton of rock, subsequently reacting the phosphate rock while still containing the normally liquid hydrocarbon with phosphoric acid containing at least 50% by weight P_2O_5, and recovering a product containing at least about 50% by weight available phosphoric acid, determined as P_2O_5.

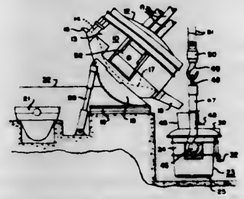
3,201,222
PROCESS FOR MAKING A SOIL FERTILIZING AND SOIL BUFFERING PRODUCT
Harold W. Wilson, El Paso, Tex., assignor to Wilson Laboratories, Inc., El Paso, Tex., a corporation of Texas
No Drawing. Filed Oct. 23, 1962, Ser. No. 232,576
5 Claims. (Cl. 71—45)

1. A process for making a soil fertilizing and soil buffering product which comprises: intermixing concentrated orthophosphoric acid with a slag obtained from the process of refining high iron content copper ores in a reverberatory furnace, said intermixing being effected in the absence of any extraneous additional water other than the water present in said acid, and the weight ratio of slag to acid is between 3 and 6 parts by weight of acid for each 5 parts by weight of slag and the concentration of the orthophosphoric acid is between 75% and 85.8%; and promptly thereafter, after the initial reaction between the acid and slag, heating the initially reacted materials to a temperature between 300° F. and about 650° F. and below the sintering temperature of said materials and maintaining said materials at said temperature for a time sufficient for all of the sulfur present to be eliminated from said heated initially reacted materials as sulfur dioxide and recovering the resulting soil fertilizing and soil buffering reaction product from which the sulfur has been expelled as sulfur dioxide and in which the iron in the mixture has been converted into ferrous orthophosphate.

3,201,223
METHOD OF PREPARATION OF SILVER POWDER HAVING A PROTECTIVE GUM COATING
Bohuslav Cuhra and Karel Grüner, Prague, Czechoslovakia, assignors to Tesla, narodni podnik, Prague, Czechoslovakia
No Drawing. Filed Nov. 6, 1963, Ser. No. 321,682
Claims priority, application Czechoslovakia, Nov. 15, 1962, 6,448/62
7 Claims. (Cl. 75—.5)

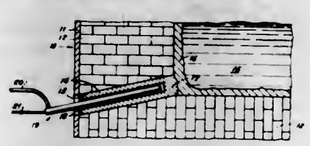
1. A method of preparing small silver particles which are suitable for use to coat the surface of materials, which method comprises dissolving in one liter of distilled water between 400 and 600 grams of silver nitrate and a sufficient amount of alkali hydroxide to react with the silver nitrate to form a precipitate of silver oxide, adding sufficient formaldehyde to reduce the silver oxide to metallic silver in two phases, and a water soluble particle protective gum, first heating the mixture to and maintaining the same at 20° to 40° C. to form silver formate, and then heating the mixture to and maintaining the same at 40° to 70° C. to dissociate the formate radical to produce gum protected metallic silver particles, and recovering the particles.

3,201,224
METHOD OF MAKING CLEANER ALLOY STEELS OR THE LIKE
Howard G. Grim, Munhall Borough, Pa., assignor, by mesne assignments, to Midvale-Heppenstall Company, Nicetown, Pa., a corporation of Pennsylvania, and Heppenstall Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 23, 1962, Ser. No. 239,669
11 Claims. (Cl. 75—13)



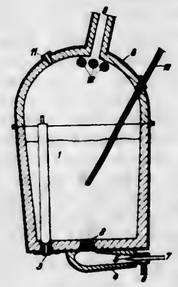
1. Method of making alloy metals, comprising, in combination, conventionally charging an electric arc furnace, melting and refining the charge in said furnace to provide a slag-covered bath of liquid metal, adding selected alloying addition agents, removing said slag, tapping off said molten metal in said bath substantially at finish temperature by tilting said furnace to a predetermined extent, collecting said tapped metal in a pouring box having a regulatable bottom opening, discharging metal from the bottom of said box into a previously evacuated pouring ladle, continuing the evacuation of said ladle during said discharge to remove occluded gases from said metal, returning said degassed metal to an electric arc furnace, supplying a non-oxidizing slag to said degassed metal in said last-named furnace, adding further alloying addition agents to said degassed metal to complete the refining of said degassed metal and bring it to finish specification, and tapping said degassed metal at selected tapping temperature.

3,201,225
METHOD AND APPARATUS FOR TAPPING FURNACES
John A. Haynes, Northridge, Calif., assignor to Jet Research Center, Inc., Arlington, Tex., a corporation of Texas
Filed Oct. 21, 1963, Ser. No. 317,566
11 Claims. (Cl. 75—28)



1. The method of tapping a furance having a tap hole extending through a wall of the furnace and a plug closing the tap hole, said furnace containing a body of molten metal and a layer of crust lying against the inner end of end of the plug and the inner surface of the furnace wall contiguous to the plug, which comprises:
(a) removing at least a portion of said plug to provide an elongated opening therein;
(b) positioning a shaped explosive charge in said opening with the jet-forming end of said charge facing the inner end of said opening;
(c) passing a stream of innocuous gas at high velocity over said charge to cool the same; and
(d) removing said stream of gas from the zone of said charge; and
(e) detonating said charge to form a jet that pierces the solid material between the inner end of said opening and said body of molten metal to provide communication between the interior of said furnace and said opening to allow said molten metal to drain from said furnace.

3,201,226
STEEL PURIFICATION VACUUM METHOD
Rudolf Spolders, Bochum, Wilhelm Breuing, Hattingen, and Heinz Pieper, Bochum, Germany, assignors to Ruhrstahl Hüttenwerke Aktiengesellschaft, Essen, Germany
Filed Aug. 6, 1962, Ser. No. 214,968
Claims priority, application Germany, Feb. 27, 1957, R 20,644; Mar. 29, 1959, R 25,283, R 25,284
15 Claims. (Cl. 75—49)



1. In a method of purifying molten steel, the steps of subjecting a mass of unkilled molten steel to a partial vacuum; blowing hydrogen gas into the bottom portion of said mass of unkilled molten steel; and simultaneously blowing into the interior of said mass of molten steel at a point located above said bottom portion thereof a second gas selected from the group consisting of argon and carbon monoxide while maintaining said partial vacuum.

3,201,227
METHOD OF PREPARING READILY DECOMPOSABLE MATERIALS
Frederick K. Heumann, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 26, 1961, Ser. No. 119,540
5 Claims. (Cl. 75—65)



1. The method of producing homogeneous bodies of readily decomposable materials which comprises: sealing appropriate proportions of the constituents of said material in an evacuated vessel; melting said constituents within said evacuated vessel to produce a melt of said material therefrom; cooling the material so produced within said vessel to cause the formation therein of a solid body of said material which completely fills the cross section of said vessel while being freely movable therein from the bottom to the top thereof; and lowering said sealed evacuated vessel with said body therein through a narrow heated zone to cause a narrow molten zone of said material to

traverse said body from the bottom to the top thereof, said narrow molten zone being confined between the adjacent solid portions of said body and the walls of said vessel.

3,201,228
METHOD FOR PRODUCTION OF METAL FABRICATIONS

John J. Grebe and John F. Miller, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

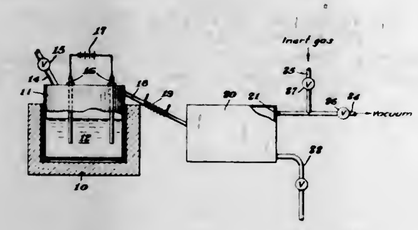
No Drawing. Filed Aug. 13, 1962, Ser. No. 216,296
7 Claims. (Cl. 75—65)

1. An improved method for the production of metal products of those metallic elements having a standard electrode potential falling between about 1.2 and about minus 0.85, which comprises: contacting an oxidized form of said metal selected from the group consisting of comminuted metal ores and materials containing reducible metal values and silicate glass forming fluxing agent with an alkali metal hydroxide and a solid carbonaceous reducing agent at temperatures from about 450 to about 1225° centigrade for a period of time sufficient to yield the solid metal substantially free from undesirable gaseous inclusions suspended in a continuous, fused alkali metal silicate glass-like thermoplastic slag, separating the major portion of the less dense slag, while in the molten state, from the solid metal product, heating said solid metal product into the molten state whereby the metal is compacted into a continuous mass and the remainder of the protective alkali metal silicate glass-like slag enveloping said mass rises to the surface of the melt thereby providing a protective cover for the substantially gas-free metal during the melting operation, and casting said molten metal.

3,201,229
CESIUM PRODUCTION

Robert D. Bise and Robert J. Mooleaar, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Dec. 20, 1961, Ser. No. 160,842
12 Claims. (Cl. 75—66)



1. A method of producing cesium from a cesium halide which comprises: heating a bath of cesium halide and an alkali metal halide wherein the alkali metal is other than cesium in a closed container to a temperature at which said bath is molten and maintaining said bath in a molten state at a temperature below the boiling point of cesium; positioning within said bath a pair of electrodes; electrically connecting said electrodes to a direct current source and passing current through said bath between said electrodes, thereby producing gaseous halogen and alkali metal; removing said gaseous halogen, as produced, from contact with said bath; disconnecting said direct current source; evacuating the container while heating the metal-salt bath mixture to a temperature above the boiling point of cesium, thereby distilling cesium from said bath mixture as it is reduced by said alkali metal produced from said electrolysis; and collecting said cesium.

3,201,230
AUSTENITIC STAINLESS STEEL

Joseph R. Mitchell, Chicago, and Mary E. Potter, Thornton Township, Cook County, Ill., assignors to United States Steel Corporation, a corporation of New Jersey

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,314
5 Claims. (Cl. 75—124)

1. An aluminum-bearing, non-age-hardening austenitic steel characterized by high temperature oxidation resistance, good cold formability and low temperature impact properties, said steel consisting essentially of

	Percent
Carbon	.25 to 1.0
Manganese	14.0 to 35.0
Silicon	.25 to 1.0
Chromium	4.5 to 8.75
Aluminum	3.5 to 8.75

Balance iron.

wherein the carbon, manganese, chromium and aluminum are balanced to provide an austenitic structure and wherein the chromium and aluminum are balanced within the following limits

Percent chromium=percent aluminum−1.5

to

Percent chromium=percent aluminum+1.5

with the total of percent chromium plus percent aluminum being less than 17.

3,201,231
STAINLESS STEELS

Norman R. Harpster, Canonsburg, Pa., assignor to Universal-Cyclops Steel Corporation, Bridgeville, Pa., a corporation of Pennsylvania

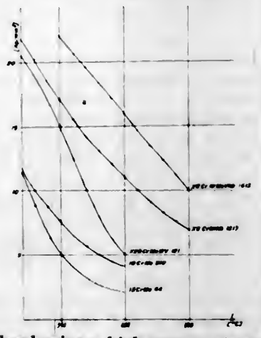
No Drawing. Filed Nov. 21, 1961, Ser. No. 154,047
2 Claims. (Cl. 75—126)

1. A straight chrome ferritic stainless steel consisting essentially, by weight, of 18.41 percent of chromium, 0.065 percent of carbon, 0.57 percent of manganese, 0.44 percent of silicon, 0.007 percent of sulfur, 0.018 percent of phosphorus, 0.89 percent of molybdenum and the remainder iron, said ferritic stainless steel being characterized by improved corrosion resistance.

3,201,232
USE OF STEEL INVOLVING PROLONGED STRESSING AT ELEVATED TEMPERATURES

Hermann W. R. Thier, Grevenbroich, Nordrhein, Germany, assignor to Gebr. Böhler & Co. Aktiengesellschaft, Vienna, Austria

Filed Mar. 29, 1962, Ser. No. 183,668
Claims priority, application Germany, Apr. 1, 1961, T 19,906
7 Claims. (Cl. 75—126)

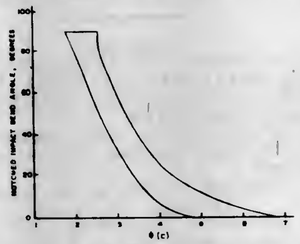


1. A steel alloy having a high creep resistance for very long time intervals up to 100,000 hours and good corrosion resistance in uses wherein said steel is stressed for prolonged periods of time at temperatures exceeding 500° C., consisting essentially of 0.12–0.25% carbon, 7.5–8.5% chromium, 1.5–2.5% molybdenum and up to 3% of an element selected from the group consisting of vanadium, tungsten, titanium, boron, columbium, tantalum, nitrogen, cobalt, and mixtures thereof, the balance being iron and the usual impurities including silicon, manganese, sulfur and phosphorus, there being less than 0.2% sulfur, less than 0.02% phosphorus and less than 0.3% silicon in said alloy.

3,201,233
CRACK RESISTANT STAINLESS STEEL ALLOYS

Frederick C. Hull, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 13, 1962, Ser. No. 202,220
11 Claims. (Cl. 75—128)



1. An austenitic stainless steel alloy of good weldability comprising, by weight, from 14% to 20% chromium, from 15% to 30% nickel, from 7.5% to 15% manganese, from 0.5% to 3.75% molybdenum, the total of manganese and molybdenum lying in the range from 9% to 16%, from 0.01% to 0.08% carbon, from 0.01% to 0.35% nitrogen, up to about 1% silicon, up to 1% vanadium, up to 0.03% boron, up to 0.06% zirconium, up to 1.5% columbium, up to 2.5% titanium and the balance iron and small amounts of incidental impurities, the $\phi(c)$ value of the alloy being greater than 1 to insure an adequate level of strength and rupture ductility and being less than 3.75 to insure that serious loss of impact strength after long time service at elevated temperatures does not occur, the $F(c)$ value of the alloy being greater than 14 to assure that the alloy is fully austenitic.

3,201,234
ALLOY AND METHOD OF PRODUCING THE SAME

Paul Joseph Scherbner, Boyertown, and Robert Eugene Saxtan, Reading, Pa., assignors to The Beryllium Corporation, Reading, Pa., a corporation of Delaware

Filed Sept. 25, 1961, Ser. No. 140,563
10 Claims. (Cl. 75—153)

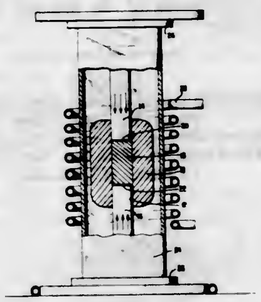
1. A copper base alloy containing as additives to the alloy titanium and cobalt, wherein the titanium is in the minimum range of from 0.02% to 0.20% and the cobalt is in the range of from about 0.1% to about 5% in an amount effective to react with the titanium to form at least one of the group consisting of TiCo, Ti_2Co and $TiCo_2$ intermetallic compounds to produce a fine grain structure.

3,201,235
HOT PRESS FABRICATION OF THERMOELECTRIC ELEMENTS

John J. Mueller and Winston Seetoo, Baltimore, Md., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed July 2, 1962, Ser. No. 206,715
9 Claims. (Cl. 75—201)

1. A method of simultaneously fabricating a thermoelectric element characterized by small grain size and high density and bonding the same to a metal electrode comprising the steps of: confining a mass of powdered lead telluride material in contact with an electrode formed of a material selected from the group consisting of; pure iron, 300 series stainless steel, an aluminum alloy steel, an aluminum chromium alloy steel, and an aluminum



chromium, titanium and columbium alloy steel, and simultaneously subjecting said confined mass and said metal electrode to a pressure of 1000 p.s.i. to 1700 p.s.i. at a temperature of 1450° to 1600° F., for a time period of from 5 to 10 minutes to coalesce the powder and to fuze the same to said metal electrode.

3,201,236
METHOD OF MAKING METAL BODIES INCORPORATED WITH NON-METALLIC REFRACTORY MATERIAL AND PRODUCT THEREOF

James S. Hill, Cranford, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed Aug. 24, 1962, Ser. No. 219,113
9 Claims. (Cl. 75—206)

1. The method of making a workable oxide incorporated metal body comprising isostatically compacting a metal powder to form a porous compact thereof, of a substantially uniform porosity impregnating the compact with a solution of an oxide-yieldable impregnant subtially uniformly throughout its mass, heat treating the impregnated compact to convert the liquid impregnant to an oxide deposited in the pores of the compact, sintering the compact at sintering temperatures, and thereafter working the sintered compact into desired form.

3,201,237
PHOTOGRAPHIC POLYMERIC IMAGES AND PROCESS FOR PRODUCING SAME

Edward Cerwonka, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 9, 1960, Ser. No. 74,787
19 Claims. (Cl. 96—35)

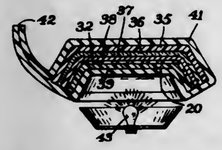
1. A process of producing a polymeric photographic image which comprises exposing to a pattern of actinic radiation in the ultraviolet to visible region of the spectrum a photographic element carrying on a suitable support a light sensitive layer comprising a monomer containing a terminal $CH_2{=}C{=}$ group and a light sensitive ferric salt of an organic acid dispersed in a photographic colloidal hydrophilic carrier material, to form by said exposing imagewise quantities of exposure activated iron salt; in said layer contacting the exposed material with a

solution of compound capable of supplying positive halogen, said compound being selected from the group consisting of alkali metal hypohalites, N-bromosuccinimide, the sodium salt of N-chloro-p-toluenesulfonamide, N,N-dichlorodimethylhydantoin, N - chlorosuccinimide and monochlorourea, whereby polymerization occurs in proportion to the amount of activated iron salt; removing by washing any residual unpolymerized monomer thereby leaving a polymerizable photographic image the density of which corresponds to the intensity of the exposing radiation pattern.

3,201,238
METHOD OF MAKING ODD SHAPED PRINTED CIRCUITS

Walter J. Dwyer, 17 Lee St., Nashua, N.H.

Filed Aug. 29, 1958, Ser. No. 758,159
1 Claim. (Cl. 96—36)



The method of successively reproducing printed circuits on odd shaped, metal covered supports of the type having a plurality of angularly disposed faces, which method comprises,

first molding clear transparent plastic material on one said support to form a solidified, pre-shaped skin of uniform thickness having a plurality of angularly disposed faces exactly conforming to the corresponding faces of said support;

then separating said skin from said support and firmly bonding a covering coating of solid, opaque material on the said angularly disposed faces of said skin;

then removing portions of said opaque coating down to the level of said skin by forming smooth, parallel, planar walled openings to expose the desired printed circuit design in the transparent material thereof;

then coating the metal covering of one of said supports with a photographic resist,

then nesting said skin into intimate contact with said resist covered support, enclosing the same in a flexible transparent bag, exhausting air therefrom to vaccum clamp said skin against said support without distortion and photographically printing the image of said printed circuit on the metal covering of said support;

then removing said skin and support from said bag, developing said image on said support, removing the resist coating from, and etching off all of the metal covering thereon except said image, and

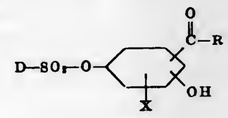
then repeating said steps to produce successive printed circuits from said skin as a negative.

3,201,239
ETCHABLE REPRODUCTION COATINGS ON METAL SUPPORTS

Wilhelm Neugebauer, Wiesbaden-Biebrich, Fritz Endermann, Wiesbaden, and Maximilian Karl Reichel, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Filed Sept. 1, 1960, Ser. No. 53,357
Claims priority, application Germany, Sept. 4, 1959, K 38,624
16 Claims. (Cl. 96—36)

1. A light-sensitive material comprising a metallic base material having a coating thereon comprising a non-hardenable, alkali-soluble, acid resistant novolak resin and a light sensitive compound, the resin being present in a quantity, by weight, at least equivalent to that of the light sensitive compound, the latter having the formula



in which D is a naphthoquinone-(1,2)-diazide radical, X is selected from the group consisting of hydrogen and hydroxyl and R is selected from the group consisting of hydrogen, alkyl, aryl, alkoxy, aryloxy, amino, and heterocyclic groups.

3,201,240
LIGHT-SENSITIVE POLYCYCLOPENTADIENE AND POLYCYCLOHEXADIENE COMPOSITIONS AND PRINTOUT ELEMENTS PREPARED THEREWITH

Jan W. H. Faber, Hilton, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Sept. 24, 1962, Ser. No. 225,648
18 Claims. (Cl. 96—48)

1. A light-sensitive composition comprising (1) a resinous linear polymer selected from the group consisting of a homopolymer of cyclopentadiene and a homopolymer of a cyclohexadiene, and (2) a halogenated methane sensitizing compound selected from those represented by the following general formula:



wherein R represents a member selected from the group consisting of hydrogen, bromine, iodine and chlorine, R_1 represents a member selected from the group consisting of hydrogen, bromine and iodine and each X represents a member selected from the group consisting of bromine and iodine, in the proportions of from 50 to 95% by weight of said polymer and from 50 to 5% by weight of said halogenated methane sensitizing compound.

3,201,241
DEVELOPER FOR DIAZO-TYPE PRINTING PLATES AND THE USE THEREOF

Johannes Munder and Hans Heiss, Wiesbaden-Biebrich, Gerhard Fritz, Wiesbaden, and Dieter Oswald and Hans Egon Heck, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J., a corporation of New Jersey

No Drawing. Filed July 11, 1961, Ser. No. 123,114
Claims priority, application Germany, July 29, 1960, K 41,325
26 Claims. (Cl. 96—49)

1. A developer for planographic printing plates of the type including a light-sensitive diazo compound comprising an aqueous solution of at least of about 0.3 to 5 percent by weight one alkaline-acting substance selected from the group consisting of alkali metal compounds, alkylamines and hydroxy-alkylamines and about 0.001 to 0.05 percent by weight of at least one compound of an element selected from the group consisting of beryllium, mercury, calcium, strontium, barium, bismuth, and lanthanum, capable of cation formation in an aqueous medium.

3,201,242
ACCELERATORS FOR REVERSAL COLOR DEVELOPMENT

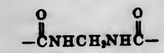
Judith A. Schwan and John R. Dann, both of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 11, 1961, Ser. No. 137,041
12 Claims. (Cl. 96—55)

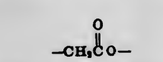
1. A photographic color developer comprising an aqueous alkaline solution of an arylenediamine color developer and a non-polymeric compound selected from those represented by the following general formula:

$$X[—CH_2CH_2—X_2(—X_3)_{d-1}(CH_2CH_2O)_{n-1}—R_1—R]_2$$

wherein R represents a member selected from the class consisting of a hydroxyl group, an alkoxyl group, and a carbamyl group, R_1 represents an ethylene radical, X represents a divalent radical selected from the class consisting of an oxygen atom, a sulfur atom



and the group $—X_1CH_2CH_2X_1—$, X_1 and X_2 each represents a divalent radical selected from the class consisting of an oxygen atom and a sulfur atom, provided at least one of the radicals selected from the class consisting of X, X_1 and X_2 represents a sulfur atom, X_3 represents the divalent radical



d represents a positive whole number of from 1 to 2 and *n* represents a positive whole number of from 1 to 3.

3,201,243
METHOD OF INHIBITING DISCOLORATION OF COLOR PHOTOGRAPHIC LAYERS CONTAINING DYE IMAGES AND RESULTING PHOTOGRAPHIC PRODUCTS

George W. Larson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 18, 1962, Ser. No. 231,557
4 Claims. (Cl. 96—56)

1. A method of inhibiting discoloration in a photographic element which has been exposed, processed to a photographic record comprising at least one dye image and in which residual silver and silver salts have been removed from said element, which comprises imbibing in the dye image areas of said photographic element and aqueous solution comprising a water-soluble salt of cysteine and drying said photographic element without substantial removal of said water-soluble salt.

3,201,244
METHOD OF INHIBITING DISCOLORATION OF COLOR PHOTOGRAPHIC LAYERS CONTAINING DYE IMAGES AND RESULTING PHOTOGRAPHIC PRODUCTS

George W. Larson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 18, 1962, Ser. No. 231,587
5 Claims. (Cl. 96—56)

1. A method of inhibiting discoloration in a photographic element which has been exposed, processed to a photographic record comprising at least one dye image and in which residual silver and silver salts have been removed from said element, which comprises dispersing in the dye image areas of said photographic element an aqueous solution comprising carbohydrazide and drying said photographic element without substantial removal of said carbohydrazide.

3,201,245
METHOD OF PREPARING LIQUID INFANT FORMULA

Robert E. Clark and Elmer R. Eckhardt, Lansing, and Elbert R. Spence and Rexford C. Stribley, Mason, Mich., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 10, 1963, Ser. No. 271,871
1 Claim. (Cl. 99—57)

In the process of producing a stable sterilizable liquid infant feeding composition containing electrodialyzed whey, as the major component, a source of casein, edible lactose and a mixture of edible fats, the improvement comprising the steps of sequentially:

(1) maintaining the temperature of the whey at between about 130° F. and not in excess of about 165° F. during evaporative concentration to a solid content of about 20 to about 31% prior to electrodialysis;

(2) electrodialyzing the concentrated whey by means of ion selective membranes until the ash content thereof is reduced to about 4%;

(3) blending the electrodialyzed whey with the said source of casein, edible lactose and the mixture of edible fats; and

(4) heat stabilizing the resulting composition at a temperature of about 190° F. to about 220° F. for a period of time of from about 4 to not more than 15 minutes, whereby the thus treated composition remains stable during sterilization at a temperature ranging from about 240° F. to about 270° F.

3,201,246
PHOTOGRAPHIC DEVELOPERS CONTAINING CALCIUM PRECIPITATION INHIBITORS

Charles F. H. Allen, John A. Ford, and Richard W. Henn, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 10, 1961, Ser. No. 101,663
10 Claims. (Cl. 96—61)

1. A photographic developer comprising an aqueous alkaline solution of a developing agent for photoexposed silver halide and a water-soluble salt of an acid selected from the class consisting of ethylenediamine-N,N,N',N'-tetramethylenephosphonic acid, nitrilo-N,N,N-trimethylenephosphonic acid, 1,2-cyclohexanediamine-N,N,N',N'-tetramethylenephosphonic acid, o-carboxyanilino-N,N-dimethylenephosphonic acid, 1,3-diaminopropanol-N,N,N',N'-tetramethylenephosphonic acid, 1,3-propanediamine-N,N,N',N'-tetramethylenephosphonic acid, 1,6-hexanediamine - N,N,N',N'-tetramethylenephosphonic acid, 2-pyridylamino-N',N'-dimethylenephosphonic acid and a compound represented by the following general formula:

$$RN(CH_2PO_3H_2)_2$$

wherein R represents a group selected from the class consisting of alkyl containing from 1 to 4 carbon atoms, aryl containing from 6 to 7 carbon atoms, aralkyl containing from 7 to 9 carbon atoms, cyclohexyl, cyclopentyl, pyrrolidylmethyl, pyrrolidylbutyl, benzothiazolylmethyl and tetrahydroquinolylmethyl.

3,201,247
SURFACE TREATED LITHOGRAPHIC PLATES AND PRODUCTION THEREOF

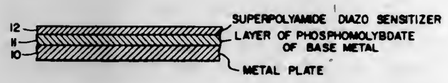
Robert F. Leonard, East Rockaway, N.Y., assignor to Litho Chemical & Supply Co., Inc., Lynbrook, N.Y., a corporation of New York

Continuation of application Ser. No. 27,240, May 6, 1960. This application Mar. 18, 1964, Ser. No. 352,825
15 Claims. (Cl. 96—75)

1. A method of preparing a phosphomolybdate treated lithographic plate which comprises immersing at a temperature of 155 to 180° F. a cleaned metal plate in an

aqueous bath consisting essentially of water, phosphomolybdate ions and cations therefor, said bath having a pH of about 4 to 6, to form on the plate surfaces the phosphomolybdate reaction product of the plate metal, sealing the coating thus formed by immersion in a sealing bath at a temperature of 200° F. to 212° F., drying the thus treated plate and applying thereto a water-soluble diazo resin sensitizer coating.

4. A presensitized plate suitable for lithographic printing and capable of being stored and then used up to months after manufacture comprising a thin metal sheet selected from the group consisting of aluminum, zinc and copper which has on at least one surface thereof a phosphomolybdate film of the plate metal which has been formed thereon by reacting at a temperature of 155° F. to 180° F. a surface of said plate with an aqueous solution consisting essentially of water, phosphomolybdate ions and cations

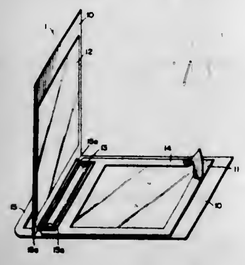


therefor and having a pH of about 4 to 6, said film overlying and being firmly bonded to said surface of said sheet and being substantially free from water-soluble material, said film having the capacity of causing an insolubilized superpolyamide diazo image to adhere strongly to the sheet surface, and over and in contact with said film a coating of a water-soluble superpolyamide diazo sensitizer which, upon exposure of the plate to ultraviolet light through a negative, will react in the exposed areas to form an alcohol- and water-insoluble hydrophobic and organophilic material tightly bonded to said film and providing a printing image, the light-sensitive material being readily washed away from the unexposed areas leaving the film bare in said areas and the film acting to prevent the metal from decomposing the superpolyamide diazo sensitizer, thereby providing long shelf life for the resulting presensitized plate.

3,201,248
FILM UNIT

Herman E. Erikson, Winchester, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Aug. 1, 1962, Ser. No. 213,929
10 Claims. (Cl. 96—76)

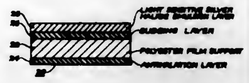


1. In a film unit comprising a first sheet material containing a light-sensitive layer, a second sheet material and a frangible container having a rupturable seal for releasing a processing composition between said first and second sheet materials as said unit is advanced through a pressure-providing processing device, the improvement which comprises an element secured to said unit and movable between a first position therein said element is arranged in an overlying relationship with said container to protect the latter from rupturing, and a second position away from said overlying relationship to provide means for gripping said film unit.

3,201,249
COMPOSITE FILM ELEMENT AND COMPOSITION THEREFOR INCLUDING ANTI-HALATION MATERIAL

George W. Pierce, Gale F. Nadeau, and Crayton B. Thompson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 25, 1961, Ser. No. 133,959
9 Claims. (Cl. 96—84)



7. A photographic film product comprising (1) a polyester film support, (2) at least one antihalation layer comprising (a) a water-insoluble, alkali-soluble resin, (b) a compound selected from the group consisting of antihalation dyes and antihalation pigments and (c) a compound selected from the group consisting of resorcinol, pyrocatechol, pyrogallol, hydroquinone, orcinol, chlororesorcinol, trichloroacetic acid, ethylene carbonate, chloral hydrate, chloro thymol, and o-cresol, said antihalation layer being firmly bonded to a surface of the polyester film support and (3) a light-sensitive silver halide emulsion layer said antihalation layer being bonded directly to a surface of the polyester film support and disposed on a side of the support opposite the light-sensitive layer.

3,201,250
DIMENSIONALLY STABLE GELATIN-CONTAINING FILM PRODUCT

George M. Coryell and Henry H. Fogler, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Jan. 12, 1959, Ser. No. 786,239
5 Claims. (Cl. 96—87)

1. A photographic film product having good dimensional stability comprised of

(A) a film base having a thickness of from about .004 to .008 inch selected from the group consisting of polystyrene film base and polyethylene terephthalate film base,

(B) at least one non-gelatin-containing sub layer on said film base, and

(C) a light-sensitive silver halide emulsion layer comprised of gelatin as the sole binder material, the gelatin content of said layer being from about 0.2 to 0.45 gram per square foot of film base,

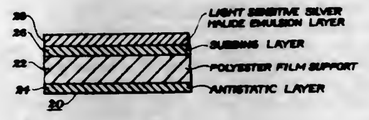
the total gelatin content of the photographic film product being less than about 0.90 gram per square foot of film base.

3,201,251
COMPOSITE FILM ELEMENT

Gale F. Nadeau, James S. Ruoff, and Crayton B. Thompson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 21, 1961, Ser. No. 132,712
9 Claims. (Cl. 96—87)

7. A photographic film product comprising (1) a polyester film support, (2) at least one antistatic layer comprising (a) a water-insoluble, alkali-soluble resin, (b) an antistatic compound, and (c) a compound selected from the group consisting of resorcinol, pyrocatechol, pyrogallol, hydroquinone, orcinol, chloroesorcinol, trichloroacetic acid, ethylene carbonate, chlorol hydrate, chloro thymol, and ortho-cresol, said antihalation layer being



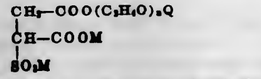
firmly bonded to a surface of the polyester film support but easily and readily removable in alkaline photographic processing solutions, and (3) a light-sensitive silver halide emulsion layer said antistatic layer being bonded directly to a surface of the polyester film support on the side opposite the light-sensitive layer.

3,201,252
GELATIN COMPOSITIONS CONTAINING SALTS OF HALF ESTERS OF SULFOSUCCINIC ACID AS COATING AIDS THEREFOR

William J. Knox, Jr., Rochester, N.Y., and Robert E. Sticker, Lawrence, Kans., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 9, 1961, Ser. No. 144,524
8 Claims. (Cl. 96—94)

8. A gelatin-silver halide photographic emulsion containing as a coating aid therein a compound having the formula



in which n=0–10, M is an alkali metal substituent and Q is a substituent selected from the group consisting of the branched-chain alkyl radicals of 10–16 carbon atoms with at least three points of branching and the alkaryl radicals,



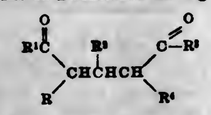
R' being a branched-chain alkyl radical of 8–14 carbon atoms with at least two points of branching.

3,201,253
PHOTOGRAPHIC EMULSIONS CONTAINING DELTA-POLYCARBONYL SENSITIZERS

Burton D. Wilson and Thomas F. Murray, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 29, 1961, Ser. No. 113,066
15 Claims. (Cl. 96—107)

1. A photographic silver halide emulsion containing a sensitizing amount of a sensitizer having the formula:



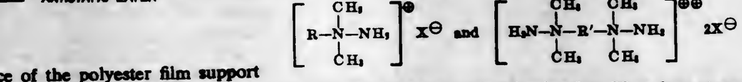
wherein R and R⁴ are selected from the group consisting of a hydrogen atom, an acyl radical and a carbamoyl radical; wherein R¹ and R³ are selected from the group consisting of an alkyl radical, and alkoxy radical having the formula —OR⁵ and wherein R⁵ is an alkyl radical and a hydrazino radical; and wherein R² is selected from the group consisting of a hydrogen atom and an alkyl radical.

3,201,254
PHOTOGRAPHIC SILVER HALIDE EMULSIONS SENSITIZED WITH 1,1-DIMETHYLHYDRAZINIUM SALTS

Delbert D. Reynolds, Rochester, N.Y., and Ruth M. Stewart, Laurel, Md., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 18, 1961, Ser. No. 124,800
12 Claims. (Cl. 96—107)

1. A photographic gelatino-silver halide emulsion containing a sensitizing amount of a sensitizer having a formula selected from the group consisting of



wherein R is an alkyl radical having 2 to 20 carbon atoms, R' is an alkylene radical having 2 to 20 carbon atoms and X is an anion.

3,201,255
PHOTOPOLYMERIZATION OF VINYL MONOMERS BY MEANS OF THALLIUM COMPOUNDS AS CATALYSTS

Fritz W. H. Mueller and Curt B. Roth, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 19, 1959, Ser. No. 834,630
14 Claims. (Cl. 96—115)

7. A process of producing by photopolymerization a polymeric photographic image which comprises irradiating at atmospheric pressure to a pattern of electromagnetic radiation having a wave length of from 10^{-1} to 10^{-10} centimeters of a photographic element comprising a support having thereon a radiation sensitive layer comprising a polymerizable compound containing the grouping

$$CH_2{=}C<$$

and a colloidal carrier therein and as the sole catalyst for the photopolymerization, a radiation sensitive material selected from the class consisting of thallous compounds and mixtures thereof with a salt of a metal selected from the class consisting of gold, rhodium and silver.

9. A process of producing by photopolymerization a polymeric photographic image which comprises irradiating at atmospheric pressure to a pattern of electromagnetic radiation having a wave length of from 10^{-1} to 10^{-10} centimeters, a photographic element comprising a support having thereon a radiation sensitive layer comprising a polymerizable compound containing the grouping $CH_2{=}C<$ and a colloidal carrier therein and as the sole catalyst for the photopolymerization, a radiation sensitive material consisting of thallous compounds admixed with a sensitizing dye.

ERRATUM

For Class 99—57 see:
Patent No. 3,201,245

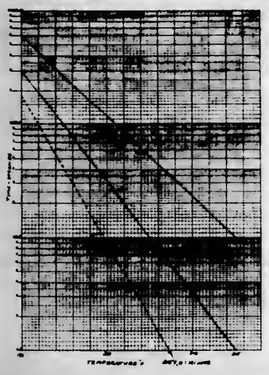
3,201,256
METHOD OF PREPARING LIQUID INFANT FORMULA

Robert E. Clark and Elmer R. Eckhardt, Lansing, and John B. Hanlon and Basford C. Shirley, Mason, Mich., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 10, 1963, Ser. No. 271,982
10 Claims. (Cl. 99—63)

1. In the process of combining non-fat milk with electrodialyzed whey, lactose, a fat mixture and minerals to produce a liquid infant feeding formula, the improvement comprising heating the non-fat milk component to a temperature of from 190 to 215° F. prior to blending with

other formula components, maintaining the non-fat milk component at this temperature for a period of time, said period of time being selected from a value within the



lower time limit and upper time limit defined on the graph constituting FIGURE 1 of the drawing for a selected preheat temperature.

3,201,257

EGG ALBUMIN COMPOSITIONS

Ray C. Hamon, St. Albans, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 17, 1963, Ser. No. 252,066
6 Claims. (Cl. 99—113)

1. A composition of matter comprising egg albumin and a stabilizing amount of a water-soluble, solid poly-(ethylene oxide) selected from the group consisting of: (a) poly(ethylene oxide) having a solution viscosity of at least about 225 centipoises in aqueous solutions of 5 weight percent said poly(ethylene oxide) concentration at 25° C.; and (b) poly(ethylene oxide) having a solution viscosity of at least about 2000 centipoises in aqueous solutions of 1 weight percent said poly(ethylene oxide (concentration at 25° C., incorporated therein.

3,201,258

WRAPPED PACKAGE

Louis Mastalio, Berwyn, Ill., assignor to Wm. Wrigley, Jr., Company, Chicago, Ill., a corporation of Delaware

Filed Feb. 18, 1963, Ser. No. 259,057
1 Claim. (Cl. 99—180)



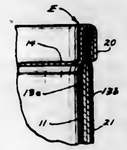
In a wrapped package for enclosing prewrapped and relatively thin gum sticks in stacked relationship and maintaining the gum sticks in a plurality of segregated stacks, the combination comprising, two stacks of like numbers of said gum sticks with the sticks of each stack in face-to-face relationship to one another and said stacks in adjacent side-by-side relationship, and a longitudinally continuous unscored sheet of wrapping material having normal flexibility and assuming close conformity to the stacks of prewrapped sticks and having a first end portion extending between the sticks of the stacks and engaged thereby to provide a barrier therebetween having a free end edge and which prevents the shifting of sticks from one stack to another, an intermediate portion of said wrapping material extending around the adjacent stacks in close contact with the prewrapped sticks, said wrapping material additionally having a second end portion opposite said first end portion which overlaps a part of the intermediate portion and is adhered thereto, said wrapping material also having side portions which extend beyond the ends of the sticks of both stacks and which are folded together at opposite ends of the stacks and adhered together, a continuous tear strip extending the full length of the wrapper through both of said end portions thereof at a position generally parallel to and near one end of the stacks to provide means for effecting severance of the wrapping material around and between the stacks to expose the ends of the sticks and leave a portion of the barrier between the sticks of the stacks, and said wrapping material comprising an inner layer of a metal foil and a second layer of a different sheet material bonded together with said tear strip disposed between said layers and bonded to both layers.

3,201,259

FROZEN LIQUID FOOD PACKAGE AND METHOD OF MAKING THE SAME

Jerome J. Galbierz, Donald H. Ellerbrock, and James D. Beckley, St. Louis, Mo., assignors to R.C. Can Company, St. Louis, Mo., a corporation of Missouri

Filed Apr. 14, 1961, Ser. No. 103,096
5 Claims. (Cl. 99—192)



1. A frozen liquid food package comprising a container with a frozen juice product contained therein, said container comprising a helically wound generally cylindrical fibrous body wall with liner material helically applied to the inside surface thereof out of register with the body wall and adhered thereto, the ends of said body wall being flared outwardly to stretch and enlarge the same, a metal end closure having a depressed central closure portion of a diameter slightly larger than the nominal diameter of said tubular body and forcibly pressed into the flared end portion of said body to project the enlarged circumferential portion of said body wall outwardly around said depressed portion to enlarge not only the inside diameter thereof but also the outside diameter of the adjacent body wall and the outer peripheral portion of said metal end being doubled back upon itself and crimped tightly against the enlarged outer wall to sealingly enclose the juice product confined therewithin and provide an outer bead to drivingly engage the toothed driving wheel of a conventional can opener to permit a cutter element of said can opener to be progressively moved around the outside of said central depressed portion to cut the same around the inside of the container wall and open the package.

3,201,260

PROCESS FOR MAKING A COOKED DEHYDRATED FISH PRODUCT

Edward A. M. Asselbergs, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a company

No Drawing. Filed May 3, 1962, Ser. No. 192,056
Claims priority, application Canada, Nov. 28, 1961, 837,000
6 Claims. (Cl. 99—209)

1. A process for the production of a dehydrated, cooked and readily reconstitutable fish-containing product comprising mixing together comminuted, cooked fish and a cooked carbohydrate material selected from the class consisting of mashed cooked potato, pre-cooked starches, pre-cooked cereals and mixtures thereof, forming a layer of the mixture thereby obtained, said layer having a thickness not greater than about fifteen thousandths of an inch and drying said layer to a moisture content of less than about fifteen percent by weight of the product.

3,201,261

PROCESS FOR PREPARING DRIED EGGS

Richard T. Carey and Robert M. Blanken, Syracuse, N.Y., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 29, 1963, Ser. No. 269,172
5 Claims. (Cl. 99—210)

1. A process of preparing dried whole egg solids of improved free-flowing characteristics, comprising comminuting dried egg albumen to produce a major portion of particles having a diameter of less than about 3.4 microns, and thereafter mixing the comminuted particles with a material selected from the group consisting of (1) dried egg yolk and (2) dried egg yolk mixed with dried egg albumen, said comminuted albumen being added in an amount sufficient to increase the free flowing characteristics of the mixture.

3,201,262

MEAT CURING PROCESS AND COMPOSITION THEREFOR

Thomas William Humphreys, North Plainfield, Joseph R. Wagner, Summit, and David F. Hinkley, Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 17, 1963, Ser. No. 273,552
10 Claims. (Cl. 99—222)

1. A method of curing meat to accelerate the rate of curing and to stabilize the color of the cured meat which comprises contacting the meat with at least 0.001% by weight of the meat of 2,3-dihydroxy-2-cyclohexene-1-one and a nitric oxide-producing curing medium in a pH range of about 5.0 to about 8.5.

3,201,263

MEAT CURING PROCESS AND COMPOSITION THEREFOR

Thomas William Humphreys, North Plainfield, and David F. Hinkley, Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 17, 1963, Ser. No. 273,553
10 Claims. (Cl. 99—222)

1. A method of curing meat to accelerate the rate of curing and to stabilize the color of the cured meat which comprises contacting the meat with at least 0.001% by weight of the meat of 1,2,3-cyclohexanetrione and a nitric oxide-producing curing medium in a pH range of about 5.0 to about 8.5.

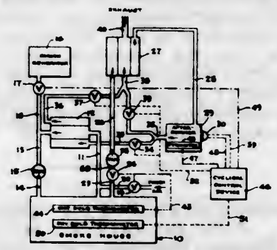
3,201,264

SMOKEHOUSE METHOD

Harvey R. Rasmussen and Harvey J. Rasmussen, Lodi, George W. Fisher, San Prairie, and Le Roy G. Moskal, Lodi, Wis., assignors to Alkar Engineering Corporation

Original application Apr. 9, 1962, Ser. No. 185,973. Divided and this application Feb. 1, 1965, Ser. No. 429,329
6 Claims. (Cl. 99—229)

1. The method of heating and smoking foods in an enclosure without discharging substantial quantities of smoke into the atmosphere including the steps of: introducing smoke into the enclosure; recirculating the air of the enclosure; withdrawing a portion of the air and smoke from the enclosure; heating said portion to a temperature sufficient to substantially eliminate the smoke from the portion; and using said heated portion



to heat by heat exchange the recirculated air and to preheat the portion withdrawn from the enclosure before it is heated to said temperature.

3,201,265

FIREPROOFING COMPOSITION

Olaus T. Hodnefield, Montrose, Calif., assignor of fifty percent to Kay O. Anderson

No Drawing. Filed Nov. 23, 1962, Ser. No. 239,810
11 Claims. (Cl. 106—15)

1. A non-aqueous fire-retardant composition consisting essentially of

(a) a dispersion medium consisting essentially of about
½–1% by weight coal oil,
1/10–7/100% by weight phosphatide,
1–1.5% by weight wetting agent,
1.2–1.6% by volume an organic solvent miscible with coal oil and capable of dissolving the phosphatide and wetting agent,
the foregoing percentages being based upon the final non-aqueous fire-retardant composition, and

(b) for each gallon of the final fire-retardant composition about
4–5 pounds alkali metal borate,
1.9–2.1 pounds inert fire-retardant mineral filler.

3,201,266

GLASS CERAMIC BODIES AND METHOD OF MAKING THEM

John F. MacDowell, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed July 23, 1962, Ser. No. 211,794
4 Claims. (Cl. 106—39)

1. A semicrystalline ceramic body particularly suitable for use as dinnerware having a coefficient of thermal expansion between 75.4–110.7×10⁻⁷/° C. and consisting essentially of crystals of nepheline and a dimorph of $BaO \cdot Al_2O_3 \cdot 2SiO_2$ selected from the group consisting of celsian and hexacelsian randomly dispersed in a glassy matrix, said crystals being substantially all smaller than 30 microns in diameter, constituting at least 50% by weight of the semicrystalline ceramic body, and being formed by crystallization in situ from a glass body consisting essentially, by weight, of 10–20% Na_2O, 1–20% BaO, 28–38% Al_2O_3, 30–55% SiO_2, and 5–12% TiO_2 as a nucleating agent, said glassy matrix consisting essentially of the uncrystallized portion of the glass remaining after the crystallization of said crystals.

2. A method of manufacturing a semicrystalline ceramic body particularly suitable for use as dinnerware having a coefficient of thermal expansion between 75.4–110.7×10⁻⁷/° C. and consisting essentially of crystals of nepheline and a dimorph of $BaO \cdot Al_2O_3 \cdot 2SiO_2$ selected from the group consisting of celsian and hexacelsian randomly dispersed in a glassy matrix, said crystals being substantially all smaller than 30 microns in diameter and constituting at least 50% by weight of the semicrystalline

body, which comprises melting a glass-forming composition essentially, by weight of 10–20% Na_2O, 1–20% BaO, 28–38% Al_2O_3, 30–55% SiO_2, and 5–12% TiO_2 as a nucleating agent, simultaneously cooling the melt below its transformation point and forming a glass shape therefrom, thereafter heating said shape at a rate not exceeding about 5° C./minute to a temperature of about 1000°–1160° C., maintaining thereat for at least one hour to attain the desired crystallization, and then cooling said shape to room temperature.

3,201,267
METHOD OF PRODUCING FUSION CAST, BASIC REFRACTORY BODIES
John I. Slaughter, Inglewood, Calif., assignor to Corhart Refractories Company, Inc., Louisville, Ky., a corporation of Delaware
No Drawing. Filed May 15, 1962, Ser. No. 194,984
3 Claims. (Cl. 106—59)

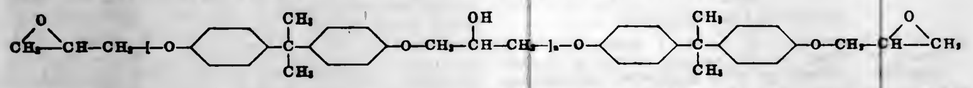
1. A method of producing a fusion cast, basic refractory article from a magnesia-chrome ore batch that has a lime content insufficient to provide at least 0.5% CaO in the cast article which comprises adding to such batch a sufficient amount of a compatible calcium compound to provide at least 0.5%, but not over about 6%, CaO in the cast article, fusing the calcium enriched batch, casting the melt into molds and solidifying the cast material by natural heat transfer through the mold walls.

3,201,268
STABILIZATION OF CLAY SOILS AND AGGREGATES WITH LEAD SALTS OF PHOSPHORIC AND SULFURIC ACIDS
John B. Heuwall, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 21, 1962, Ser. No. 204,089
2 Claims. (Cl. 106—68)

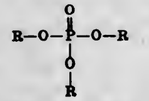
2. A mixture of an argillaceous soil having at least 15 weight percent clay and not more than 50 percent sand with a water-soluble lead salt and acid of the group consisting of phosphoric acid and its mixtures with sulfuric acid, said soil mixture having a proportion of from 0.1 to 5 weight percent of phosphorus as phosphoric acid on a dry soil weight basis, from 0.05 to 0.5 molar proportions of lead per mole of H_3PO_4 and 0 to 3.5 moles H_2SO_4.

3,201,269
ASPHALTIC CONCRETE PAVEMENT AND METHOD OF PREPARING SAME
Philip C. Doyle, Rocky River, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 12, 1963, Ser. No. 264,702
1 Claim. (Cl. 106—280)

A method for preparing an asphaltic concrete pavement exhibiting improved retained ductility comprising the steps of adding to an asphalt cement having a penetration of from 50–200 at 77° F., in an amount within the range



of 0.01 to 2 wt. percent based on the weight of asphalt cement, a phosphorus compound of the general formula:

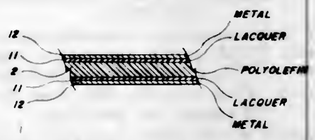


wherein R is selected from the group consisting of phenyl, and alkyl substituted phenyls in which the alkyl substituent contains a total of up to 12 carbon atoms, mixing from 4 to 8 parts by weight of said asphalt cement containing said phosphorus compound with from 96 to 92 parts by weight of aggregate at an elevated temperature of from 280° F. to 350° F., and while still at said elevated temperature, transporting the mixture from the site of mixing to the place the mixture is to be laid as an asphaltic concrete pavement, laying the mixture as an asphaltic concrete pavement.

3,201,270
INORGANIC COLORING MATERIALS
Robert E. Carpenter, Baltimore, Md., assignor to Pemco Division, The Glidden Company, Baltimore, Md., a corporation of Ohio
Filed Dec. 20, 1961, Ser. No. 160,885
15 Claims. (Cl. 106—302)

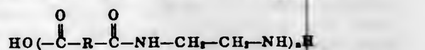
9. A crystalline black pigment which is the calcination product of starting material which consists essentially of a mixture of the oxides of cobalt, chromium and iron with a small amount of a boron-containing material containing the B_2O_3 grouping, said oxide mixture containing between about 15% and about 45% cobalt oxide, between about 20% and about 40% chromium oxide, between about 20% and about 45% iron oxide, the percentages being expressed in weight percent of the total metal oxides, and said boron-containing material being present in the starting material in an amount to supply between about 0.25% and about 5%, by weight, of B_2O_3 based on the weight of the metal oxides, said boron-containing material being selected from the group consisting of boric acid, the borates of the alkali metals, the borates of the alkaline earth metals and ammonium borate.

3,201,271
ORGANIC FINISHING SYSTEM FOR APPLICATION TO POLYOLEFINS AND POLYALLOMERS FOR VACUUM METALLIZING AND DECORATIVE PURPOSES
Irving F. Simmons, Jr., and Raymond G. Pinder, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 30, 1962, Ser. No. 191,295
4 Claims. (Cl. 117—47)



1. A metallized article comprising a substrate consisting essentially of a glow discharge treated polyolefin selected from the group consisting of polyethylene, polyallomer and polypropylene, an intermediate coating on said substrate of a lacquer, the non-volatile constituents of which comprise about 3.5–9.50% by weight of an epoxide having the typical structure:

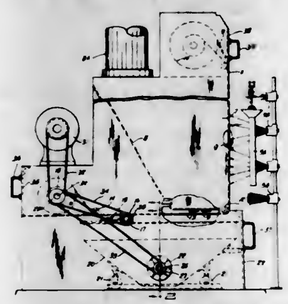
wherein n is a whole number from 1 to 5; 1.5–7.5% of a compatible resin comprising 60% of a copolymer consisting of 80–90% methyl methacrylate and 10–20% styrene with 40% melamine formaldehyde; 1.0–3.0% of a polyamide resin having the typical structure:



wherein n is a whole number from 5 to 15 and R is an alkyl group having from 5 to 20 carbon atoms and

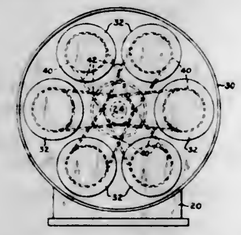
0.10 to 0.20% of an acid catalyst, and about 79.80 to 93.90% by weight of an organic solvent for the non-volatile constituents; and a vacuum deposited metal coating on said lacquer coated substrate.

3,201,272
METHOD AND MEANS FOR TRAPPING AND RECLAIMING PORCELAIN FRIT
Sheila Forshee, 1410 Iroquois, Detroit 14, Mich.
Filed Nov. 24, 1961, Ser. No. 154,715
10 Claims. (Cl. 117—102)



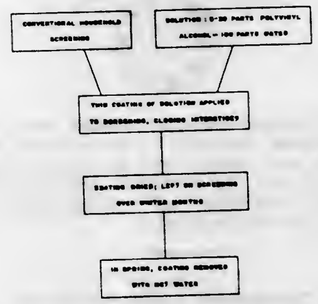
1. A continuous process of trapping and reclaiming porcelain frit which consists of the steps of providing a spray booth having one wall formed of a curtain of highly absorbent, air permeable media of high tensile strength, positioning an article to be porcelainized in said booth in front of said curtain wall, applying wet porcelain frit to said article in such manner that surplus porcelain frit is deposited on an exposed area of said curtain wall, moving the exposed area of said curtain to a drying station, drying the surplus frit on said previously exposed area and then removing said dried surplus frit from said dried curtain area for re-use.

3,201,273
MECHANICAL PLATING METHOD
James H. Maker, Bristol, and Theodore M. Adgate, Forestville, Conn., assignors to Associated Spring Corporation, Bristol, Conn., a corporation of Delaware
Filed Sept. 24, 1962, Ser. No. 225,780
1 Claim. (Cl. 117—109)



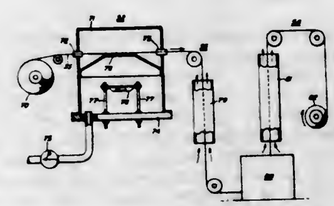
The method of mechanically plating the surface of articles, which comprises rotating the articles together with a mass of loosely particulated material in a drum about a first axis while concurrently rotating the drum about a second axis spaced from the first axis, the loosely particulated material comprising a mixture of spheroidal and non-spheroidal vitreous particles, a liquid carrier medium, a metallic plating powder and a promoter chemical, the spheroidal particles having a size range of 0.006 to 0.35 inch, the non-spheroidal particles having a size range of 0.03 inch to 0.75 inch, and the non-spheroidal particles comprising from about 5% to about 80% by volume of the mixture of spheroidal and non-spheroidal particles.

3,201,274
PROCESS FOR COATING SCREENS
William Hobbs, Jr., 2137 W. Ridge Drive, Lancaster, Pa.
Filed Oct. 3, 1960, Ser. No. 59,824
2 Claims. (Cl. 117—128.4)



1. A method of providing winter protection for a household having insect screening comprising mixing about 5 to 20 parts polyvinyl alcohol with 100 parts of water to form a gelatinous like solution, then applying said solution to the screening uniformly and in a limited amount to form a thin coating over the screen and closing the interstices in the screening, and then drying the coating to render the screening impervious to air, rain and weather, and then thereafter removing said coating to return the screening to its original condition, the thinness of said coating being such that it may be readily removed when desired by the application of hot water.

3,201,275
METHOD AND APPARATUS FOR MENISCUS COATING
Carlyle S. Herrick, Alplaus, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 21, 1961, Ser. No. 161,003
9 Claims. (Cl. 117—213)



1. A method of providing an improved flexible, optically-transparent thermoplastic tape comprising passing a polymer tape member through a solvent bath to remove surface impurities, devolatilizing said tape member by passing through a vacuum chamber, continuously evaporating an electrically conductive metal coating on said tape member by subjecting a restricted portion of said tape member to a high concentration of evaporating metal at temperatures above the melting point of said tape member while moving the tape through said chamber at a rapid pace to prevent melting thereof, chemically stabilizing said tape member during cooling thereof and meniscus coating said conductive layer with a thermoplastic layer.

3,201,276
INSULATED CONDUCTOR HAVING UNDERCOAT OF ISOCYANURATE MODIFIED POLYESTER AND OVERCOAT OF POLYETHYLENE TEREPHTHALATE

John F. Meyer and Edmund J. Zalewski, Schenectady, N.Y., assignors to Schenectady Varnish Company, Inc., Schenectady, N.Y., a corporation of New York

Filed Aug. 16, 1961, Ser. No. 131,736
10 Claims. (Cl. 117—218)

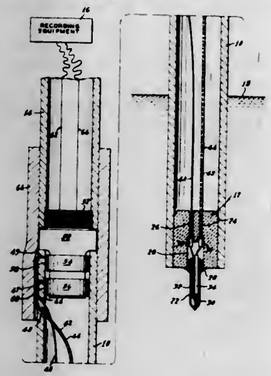


1. An electrical conductor provided with a first continuous coating comprising a polymeric ester of a polycarboxylic acid selected from the group consisting of terephthalic acid and isophthalic acid and tris (2-hydroxyethyl) isocyanurate, and a second continuous coating of polyethylene terephthalate.

3,201,277
IMMERSION THERMOCOUPLE

Donald H. Fish, Livingston, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed Aug. 17, 1961, Ser. No. 132,144
1 Claim. (Cl. 136—4)



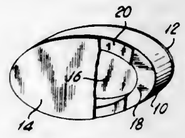
In a temperature measuring device for molten metal, a thermocouple, a protective assembly for the thermocouple including a vitreous tube encompassing the thermocouple and a head supporting the tube, lead-in wires connected to the thermocouple, and elongated tubular shielding means for supporting the head with the lead-in wires extending through it, the shielding means consisting of cardboard impregnated with silica and the head consisting of cardboard whereby the non-metallic materials of the shielding means, upon immersion into the molten metal, are subject to both carbonization and sintering.

3,201,278
HERMETICALLY SEALED FUSED-ELECTROLYTE CELL

Terrence J. Kurtzweil, Avon, and Marvin L. Kronenberg and Robert E. Hansen, Cleveland, Ohio, assignors to Union Carbide Corporation, a corporation of New York

Filed June 20, 1962, Ser. No. 203,813
7 Claims. (Cl. 136—4)

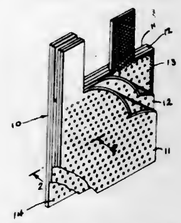
1. A hermetically sealed fused-electrolyte cell comprising: a ceramic member having at least one aperture therethrough, said aperture being at least partially filled with a fusible electrolyte, the surfaces of said ceramic member normal to the openings of said aperture being coated with metallic material that is firmly bonded to said ceramic member; two spaced-apart dissimilar electrodes disposed in opposite ends of said aperture with said electrolyte therebetween, said electrodes being in contact with said electrolyte; and a first retaining member in contact with one of said electrodes and a second retaining member in contact with the other of said electrodes, said first and second retaining members covering the openings of said aperture through said ceramic member and being firmly bonded to said coatings of metallic material around the openings of said aperture so as to hermetically seal said electrodes and said electrolyte in said aperture.



3,201,279
BATTERIES

John J. Root, Bronx, N.Y., assignor, by mesne assignments, to The Electric Storage Battery Company, Philadelphia, Pa., a corporation of New Jersey

Filed Feb. 23, 1960, Ser. No. 10,447
14 Claims. (Cl. 136—6)

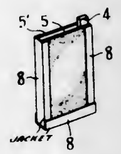


1. A battery comprising a positive electrode, a negative electrode, said electrodes being immersed in an electrolyte, an electrolyte-impervious separator between said electrodes, and a plurality of electrolytic paths formed by perforations through at least one of said electrodes and said separator, said electrode perforations and separator perforations being aligned.

3,201,280
LEAD-ACID STORAGE BATTERY

Ryoji Yumoto, No. 1 of 402 Akutagawa, Takatsuki, Japan

Filed Oct. 7, 1960, Ser. No. 61,234
Claims priority, application Japan, Jan. 14, 1960, 35/1,147
6 Claims. (Cl. 136—26)

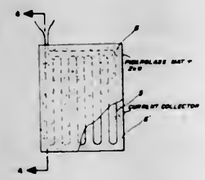


1. A lead-acid storage battery comprising a container having a substantially flat interior bottom surface upon which the battery plates are rested, electrolyte in said container, a pair of plates in said container, one of said plates having a pair of micro-porous separators on the opposite surfaces thereof, a jacket of acid-resistant electrically insulating material overlapping the side and bottom edges of said separators to define with said separators an enclosure for said one plate whereby said one plate is enclosed to prevent sedimentation from seeping out and short circuiting the plates resting on said bottom.

3,201,281
NEGATIVE ELECTRODE, METHOD AND MACHINE FOR MAKING THE SAME

Frank Solomon, Lake Success, N.Y., and Robert F. Esters, Hackensack, and Reanto Di Pasquale, Rutherford, N.J., assignors to Yardney International Corp., New York, N.Y., a corporation of New York

Filed Mar. 20, 1962, Ser. No. 180,952
8 Claims. (Cl. 136—30)

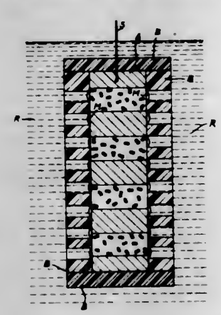


1. In a battery cell, an electrode comprising a sheet of an electromechanically active elemental metal; a fibrous electrically insulating mat overlying at least one surface of said sheet and mechanically secured thereto; and a mass of particles of an oxide of said metal substantially filling the interstices of said mat and contacting said sheet.

3,201,282
CATALYST ELECTRODE

Eduard Justi, Karl-Hermann Friese, and August Winsel, all of Braunschweig, Germany, assignors, by mesne assignments, to Varta Aktiengesellschaft and Siemens-Schuckert-Werke Aktiengesellschaft, Erlangen, Germany, both German corporations

Filed July 13, 1959, Ser. No. 826,812
Claims priority, application Germany, July 19, 1958, R 23,720
18 Claims. (Cl. 136—86)

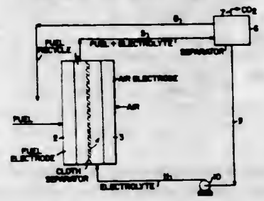


1. An electrode body, which comprises a catalytically active porous working layer and a catalytically inactive surface layer, a portion of said surface layer covering at least a portion of said working layer and being connected thereto, the portion of said surface layer covering said portion of said working layer being porous and having an average pore radius which is smaller than the average pore radius of said working layer.

3,201,283
METHOD AND APPARATUS FOR IMPROVED FUEL CELL OPERATION

Herbert P. Deagler, Fair Haven, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed May 11, 1961, Ser. No. 109,431
9 Claims. (Cl. 136—86)

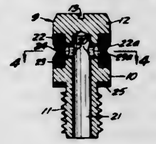


1. An improved method for operating a fuel cell having a liquid electrolyte and comprising an electrolyte chamber in contact with a fuel electrode and a cathode which comprises placing a porous barrier in said electrolyte chamber to form within said electrolyte chamber a first and second chamber, the first chamber contacting the fuel electrode and the second chamber contacting said cathode, withdrawing said electrolyte from an upper portion of said first chamber, passing said withdrawn electrolyte to a separator wherein fuel is removed therefrom, and recirculating the electrolyte without said fuel to said second chamber.

3,201,284
TWO-WAY VENT VALVE FOR BATTERIES

Grenville B. Ellis, Easthampton, Mass., assignor to Gould-National Batteries, Inc., a corporation of Delaware

Filed Nov. 5, 1962, Ser. No. 235,398
4 Claims. (Cl. 136—178)



1. In combination, a normally closed battery container subject to variable internal gas pressure, and a pressure vent valve comprising a tubular body having a lower end portion communicating with the interior of said container and a normally closed upper end portion extending to the exterior of said container and formed with an annular groove in its outer periphery, a plurality of flexible elastic sealing rings confined under lateral compression in said groove, each of said sealing rings having a valve seat surface contacting a valve seat surface of a second sealing ring, and a passage for gas extending through said upper end portion of said body to the exterior thereof adjacent to interior surfaces of said sealing rings, said valve seat surfaces being separable to vent the interior of said container upon the development of predetermined gas pressure differentials at the exterior and interior sides of said sealing rings.

3,201,285
BORONIZING BATH AND METHOD

Vernon L. Hill and Thomas F. Stapleton, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Mar. 15, 1962, Ser. No. 180,015
5 Claims. (Cl. 148—6.11)

1. The process which comprises dissolving metallic boron in a molten borate bath to provide a metallic boron concentration therein of at least about 1%, by weight,

immersing a metal part in said bath without electron connection to said part, said part being of a metal into which boron will diffuse, and continuing said immersion in said bath at a boron-diffusing temperature for a sufficient duration to impregnate said surface with boron.

3,201,286
METHOD OF BORONIZING
Vernon L. Hill and Thomas F. Stapleton, both of Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
No Drawing. Filed Mar. 15, 1962, Ser. No. 180,044
7 Claims. (Cl. 148—6.11)

1. The process which comprises introducing into a fused borate bath a metal having a higher free energy of oxide formation than that of boron so as to liberate metallic boron therein, placing a surface of a metal having a melting point temperature higher than the bath temperature in contact with said bath without external electron connection to impregnate the metal with said liberated boron, and maintaining said contact at a boron-diffusing temperature for a sufficient duration to impregnate said surface with boron.

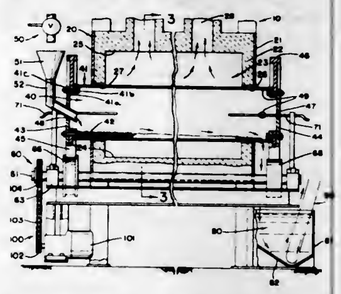
3,201,287
HEAT TREATING METHOD
Ab Flowers, Brighton Township, Beaver County, Pa., assignor to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
Original application July 7, 1959, Ser. No. 825,470, now Patent No. 3,109,044, dated Oct. 29, 1963. Divided and this application June 10, 1960, Ser. No. 35,867
5 Claims. (Cl. 148—11.5)

1. A method of producing strip having a variation from flatness not exceeding about 1% and comprising a high strength metal selected from the group consisting of titanium and alloys thereof comprising continuously moving said strip, heating said strip to a temperature of between about 1200° F. and about 1750° F. in a heating zone, applying tension to said strip longitudinally thereof while in said heating zone, applying opposed compressive forces to both sides of a transverse portion of the strip extending from edge to edge thereof while said strip is in said heating zone, quenching said strip to substantially room temperature by passing said strip through a cooling zone wherein both sides of said strip are contacted with a solid heat transfer medium having a heat capacity sufficiently great so as to substantially instantaneously extract from said strip the excess heat content thereof, maintaining the elevated temperature of the strip substantially unchanged until entry of the strip into the cooling zone, and applying a compressive force to both sides of said strip throughout the cooling zone.

3,201,288
METHOD OF TREATING STEEL TO PRODUCE A FINE-GRAINED CONDITION
Raymond A. Grange, Washington Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
No Drawing. Filed Nov. 1, 1963, Ser. No. 320,837
5 Claims. (Cl. 148—12.4)

3. A method of producing ultra-fine austenite grain size in steel comprising austenitizing the steel at between the lowest temperature at which it is completely austenitic and 300° F. thereabove, deforming said steel while at such temperature to reduce the cross-sectional area thereof at least 25% at a sufficiently rapid rate that deformation is completed prior to any recrystallization to produce elongated austenite grains therein and then holding said steel at a temperature below the said austenitizing temperature and above about its equilibrium transformation temperature to substantially recrystallize it prior to any transformation, the time at the recrystallizing temperature being just sufficient to complete said recrystallization thereby to produce equiaxed austenite grains therein having an austenite grain size no larger than ASTM #11.

3,201,289
METHOD OF HEAT TREATING METAL SHOT
Orald L. Stewart, Rocky River, Ohio, assignor to Cleveland Metal Abrasive Co., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 18, 1962, Ser. No. 167,021
2 Claims. (Cl. 148—13)



1. A method of heat treating metal shot of substantially spherical shape above a critical temperature comprising

substantially continuously dropping said shot to a first location adjacent one end of an elongated internally smooth metal supporting structure,

continuously rotating said structure thereby to obtain uniform particle heating and to move said shot from said first location to a second location adjacent the end opposite said one end and simultaneously to move substantially all of said shot rotationally about the individual shot particle centers,

continuously heating the exterior of said structure simultaneously to conduct heat directly to the shot in direct contact with said structure and to radiate heat uniformly to the shot moving between said first and second locations,

sensing the temperature within said structure,

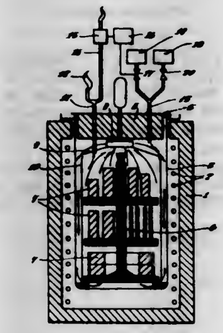
adjusting the heat applied to the exterior of the structure in response to the temperature sensed within said structure to a desired range of temperature therein,

dropping said shot substantially directly from said second location where the shot is above the critical shot temperature into a desired cooling medium.

3,201,290
PROCESS FOR AUTOMATICALLY CONTROLLED CARBURIZING OF THE SURFACE LAYER OF STEEL ARTICLES
Urs Wyss, Zurich, Switzerland, assignor to Maag Gear Wheel & Machine Company Limited, Zurich, Switzerland, a company of Switzerland
Filed Sept. 24, 1963, Ser. No. 311,134
Claims priority, application Switzerland, June 17, 1960, 6,934/60
20 Claims. (Cl. 148—16.5)

1. Process for automatically controlled carburizing of the surface layer of steel articles in a furnace chamber by gas carburizing in a gas atmosphere formed in such furnace chamber by thermal cracking at usual carburizing temperatures (850–1000° C.) characterised in feeding into such chamber a combination of organic substances, of which at carburizing temperature one yields a gas, producing a positive pressure, and another yields a carburizing gas, the combination of said substances being

such that, after the cracking and the carburizing reactions, the gases resulting therefrom and providing the gas atmosphere in the furnace chamber have substantially the same composition as each other and maintaining such



composition substantially constant by controlling the supply of the carburizing gas-providing substance by continuously determining the contents of one constituent of the gas atmosphere formed in the furnace.

3,201,291
DISPERSION-TYPE BLASTING EXPLOSIVES
Albert Schmidt, Freiburg, Germany, assignor to Fritz Frutiger, Bonstetten, Switzerland
No Drawing. Filed May 29, 1962, Ser. No. 198,458
Claims priority, application Switzerland, Nov. 27, 1958, 66,728; June 25, 1959, 74,922; May 29, 1961, 6,251/61
14 Claims. (Cl. 149—22)

1. In a dispersion-type blasting explosive composition, wherein the composition comprises a non-aqueous phase containing combustible material dispersed but not dissolved in a aqueous phase with the aqueous phase comprising water, a swelling agent and an oxygen carrier dissolved in the aqueous phase, the improvement which comprises that the amount of said oxygen carrier dissolved in the aqueous phase is sufficient to impart to such aqueous phase a positive oxygen balance of at least 10% by weight, said aqueous phase being present in the composition in an amount sufficient to at least compensate any oxygen deficiency of said composition upon detonation.

3,201,292
PROCESS FOR PRODUCING WELDING POWDERS
Gustav Miltschitzky and Walter Schindelin, Burghausen, Upper Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Bavaria, Germany, a corporation of Germany
No Drawing. Filed Mar. 20, 1962, Ser. No. 181,154
Claims priority, application Germany, Mar. 30, 1961, W 29,736/61; Jan. 23, 1962, W 31,526/62
13 Claims. (Cl. 148—26)

1. Process for producing welding powders with small powder densities (kg./liter) from known basic welding materials which have customary higher powder densities and which consist essentially of the following substances in the following proportions by weight: 30–55% SiO_2, 1–15% Al_2O_3, up to 15% TiO_2, 1–35% CaO, 0.5–25% MgO, up to 10% CaF_2, up to 10% MnO, up to 2% Fe_2O_3; which comprises compounding said basic welding material in the form of foam-like granules, and then coating said granules with an outer envelope consisting of the foregoing substances in the foregoing proportions.

3,201,293
COATED SILICON IRON SHEET STOCK
Victor W. Carpenter and John M. Jackson, Middletown, and Robert W. Squibb, Zanesville, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Original application Nov. 12, 1958, Ser. No. 773,419. Divided and this application Feb. 27, 1963, Ser. No. 261,270
1 Claim. (Cl. 148—31.55)



A silicon iron sheet stock containing substantially .5% to 3.8% silicon, having a carbon content not substantially in excess of 0.01%, being non-aging and characterized by an excellent die life, the said stock having a surface skin of light gray color derived during heat treatments from the silicon iron sheet stock itself, and characterized, under microscopic examination, by a layer of silica at about the mid-section of the surface skin and separated from the surface of the stock itself, as well as covered, by a softer material consisting in part at least of iron.

3,201,294
METHOD OF DECARBURIZING ELECTRICAL STEEL BY USING AN OXIDE FILM
John Hawkins, Merewether, New South Wales, and Brian Lawrence Rowe, Whitebridge, New South Wales, Australia, assignors to John Lysaght (Australia) Limited, Sydney, New South Wales, Australia
No Drawing. Filed Jan. 16, 1963, Ser. No. 251,719
Claims priority, application Australia, Jan. 19, 1962, 13,482/62
14 Claims. (Cl. 148—113)

1. A method of making an electrical steel lamination from a scale-free portion of lamination stock of electrical steel having a silicon content up to 4.5% by weight, comprising the steps of punch forming a lamination from the lamination stock, heating the lamination to an oxidizing temperature within the range of from 200° C. to 600° C., holding the lamination at said oxidizing temperature in an oxidizing atmosphere to form an oxide decarburizing medium on the surface of the lamination, heating the lamination in an inert atmosphere to an annealing temperature within the range of from 700° C. to 900° C. and holding the lamination at said annealing temperature and in said inert atmosphere at least until the said decarburizing medium decarburizes the lamination and relieves the stresses set up during the punch forming and cooling the lamination.

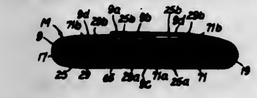
ERRATUM

For Class 149—22 see:
Patent No. 3,201,291

3,201,295
METHOD OF AND APPARATUS FOR MANUFACTURING ABSORBENT PADS
Irvin S. De Woskin, 1000 Washington Ave., St. Louis 1, Mo.
Original application Aug. 10, 1959, Ser. No. 832,589, now Patent No. 3,085,575, dated Apr. 16, 1963. Divided and this application July 20, 1962, Ser. No. 211,318
20 Claims. (Cl. 156—62.6)

1. In the manufacture of absorbent pads, the steps of feeding a continuous web of fluff and a strip of fluid-repellent material in a forward direction with the strip on one face of said web, said strip being narrower than said web and located between the side edges of said web,

and, as said web and strip are fed forward, folding the side marginal portions of said web which lie outward of the side edges of said strip around the side edges of the



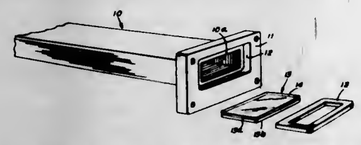
strip to form continuous pad material having the strip as a central layer and a fluff body surrounding the strip, and, as said continuous pad material continues being fed forward, segmenting it into individual pads.

3,201,296

METHOD OF MAKING A WAVEGUIDE WINDOW

Timothy J. Kilduff, Mount Rainier, and Asaf A. Benderly, Potomac, Md., assignors to the United States of America as represented by the Secretary of the Army

Original application Apr. 9, 1959, Ser. No. 805,350, now Patent No. 3,095,550, dated June 25, 1963. Divided and this application Mar. 5, 1963, Ser. No. 263,389
7 Claims. (Cl. 156—108)
(Granted under Title 35, U.S. Code (1952), sec. 266)



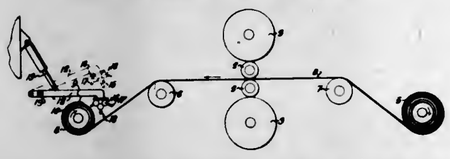
1. A method of making a window for a metallic waveguide structure coinprising the steps of:
(a) chemically treating the surface of a thin film of polytetrafluoroethylene to obtain a cementable film,
(b) coating said treated surface over its entire area with a thin-layer of a low viscosity epoxy adhesive,
(c) placing said adhesively coated surface of said film against an open end of a section of said waveguide thereby closing said open section, and
(d) curing said adhesive under heat and pressure to provide an effective seal between said waveguide section and said polytetrafluoroethylene film.

3,201,297

METHOD OF COILING TENSIONED STRIP MATERIAL ABOUT A CORE PORTION OF CEMENTED STRIP WRAPS

Kenneth R. Canfor, Dundas, Ontario, Canada, assignor to Dominion Foundries and Steel, Limited, Hamilton, Ontario, Canada

Filed Feb. 13, 1962, Ser. No. 173,061
5 Claims. (Cl. 156—184)



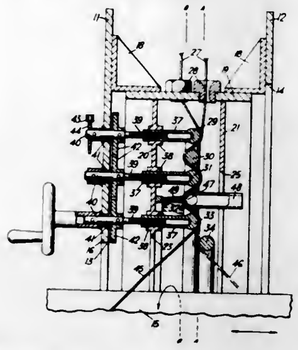
1. A method of providing an integral crush resistant core within a coil of tensioned strip material as the strip material is coiled upon a rotated supporting mandrel, the method including the steps of connectedly engaging the lead end of the strip with the mandrel, rotating the mandrel to effect coiling of the strip thereon, applying to at least one face of the lead end portion of the strip material, which portion constitutes the first several overlapping turns of the resultant coil, and as the said lead end portion is coiled upon the mandrel, an adhesive which bonds together said first several overlapping turns to form said crush resistant core, and thereafter coiling the remainder of the strip without adhesive between the turns thereof into a coil upon the thus formed laminated crush resistant core.

3,201,298

APPARATUS FOR HELICAL WINDING OF A PLURALITY OF THREADS

William Andrew Baker, Donald Arthur Shoemack, and Raymond Harold Richens, Bristol, England, assignors to Bristol Aeroplane Plastics Limited, Bristol, England, a British company

Continuation of application Ser. No. 812,175, May 11, 1959. This application Aug. 29, 1963, Ser. No. 305,299
Claims priority, application Great Britain, May 16, 1958, 15,825/58
10 Claims. (Cl. 156—431)



2. In apparatus for winding a number of threads helically, a thread guide for use with a mandrel surrounded by and coaxial with the thread guide and adapted for relative rotary movement and axial reciprocation therebetween, said thread guide including at least two circumferentially continuous annular guide surfaces a first of which faces axially in a first direction, and a second of which faces axially in a second opposite direction, one of the guide surfaces being formed with circumferential slit means, means to supply fluid resin to the slit means, a support for a number of thread packages, and means, including second guide means, to direct thread from packages carried by the support to the first thread guide, the guide surfaces being each tangent to one of a plurality of planes normal to the axis of the mandrel, the radial distance between the radially innermost and outermost of the guide surfaces being substantially greater than the distance between those of the planes that are furthest apart axially, and the second guide means being adjacent to the planes, whereby threads can be led inwards from said second guide means to the mandrel along sinuous paths in contact with the guide surfaces, the innermost circumferentially continuous guide surface being the most inward guiding means of the thread guide.

3,201,299

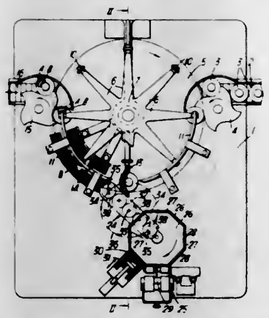
LABELLING MACHINES

Derek H. Fairest, Sheffield, England, assignor to Morgan Fairest Limited

Filed Jan. 16, 1963, Ser. No. 251,917
Claims priority, application Great Britain, Jan. 30, 1962, 3,386/62
5 Claims. (Cl. 156—485)

1. A labelling machine of the type described comprising a pick-up member with at least two apertures, drive means for intermittently rotating said pick-up member,

a gumming device for applying gum along each side of each aperture in turn, a label stack to apply a label across each aperture in turn, a transfer member continuously rotatable about an axis parallel to at least one of the positions of rest of the apertures of the pick-up member and having an arm that carries a transfer finger in an orbital path that intersects an aperture in said one position of rest, the transfer finger being rotatable about its own axis with respect to the arm and being provided with label-holding suction openings along the length of one of its faces, means to maintain said one face of the transfer finger always parallel to the part of the pick-up member containing the aperture temporarily occupying said one position of rest whereby said transfer finger is orientated on its carrying arm with said one face facing towards the aperture through which it is about to pass in said one position of rest, a feed path for generally cylindrical upright articles, conveyor means for feeding the articles in spaced relation past a labelling station positioned along said feed path, delivery means at said labelling station consisting of two wiper flaps disposed edge-



wise with a space between and in alignment with each other at each side of the center line of the feed path, said wiper flaps having label-holding suction openings in their faces directed oppositely to the direction of feed of articles along the path, said wiper flaps being pivoted on substantially vertical hinges at each side remote from the path, drive means for continuously rotating the transfer member so that the transfer finger is moved through an aperture of the pick-up member in said one position of rest, said transfer member being rotated in such a direction that said member enters said aperture on the side that carries the label whereby said label is carried through said aperture, said transfer member being so positioned that said orbital path of the transfer finger coincides with said feed path for the articles at said labelling station, said wiper flaps being parallel to said one face of said transfer finger whereby a label on said transfer finger is orientated to be received by said wiper flaps at said labelling station for delivery to an article.

3,201,300

POROUS NON-WOVEN LAMINATED FABRICS

Manfred T. Hoffmann, 187 High St., Newburyport, Mass.

Filed June 5, 1961, Ser. No. 114,968
The portion of the term of the patent subsequent to Nov. 27, 1978, has been disclaimed
4 Claims. (Cl. 161—62)

1. A porous non-woven laminated fabric comprising an iso-elastic base layer consisting of random oriented fibers and including elastic spot-bonds substantially limited to cross-over points of said fibers; a first lining layer of relatively loose fibers superimposed upon and coextensive with one side of said base layer, said first lining layer including fibers projecting substantially at right angles through said base layer and being held in position by a clamping action of said base layer resulting from stresses in said spot-bonds; a second lining layer of relatively loose fibers superimposed upon and coextensive with the other side of said base layer, said second lining layer including fibers projecting substantially at right angles through said base layer and being held in



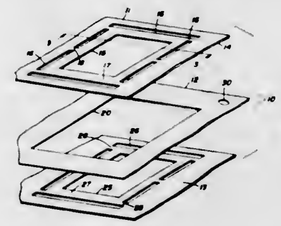
position by a clamping action resulting from stresses in said spot-bonds; said base layer and said first lining layer and said second lining layer jointly forming an integral sandwich structure by virtue of said clamping action of said base layer; and the thickness of said integral sandwich structure and the drape thereof adapting the same for use in wearing apparel.

3,201,301

LAMINATED TAPE STRUCTURE

Glen W. Offensend, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Nov. 24, 1961, Ser. No. 154,448
11 Claims. (Cl. 161—112)



1. A laminated tape structure for supporting a plurality of removable areas formed in one of the tape lamina comprising a first tape having an adhesive on one surface thereof, said tape being provided with a seriate pattern of slits defining a plurality of longitudinally spaced areas, and a second tape contiguous to the adhesive surface of said first tape and provided with a plurality of longitudinally spaced apertures at least of the same size as, and generally of the same shape as said areas defined by said slits in said first tape, each of said removable areas of said first tape being supported in registry with one of said apertures in said second tape by the portions of said first tape between the slit defining each removable area.

3,201,302

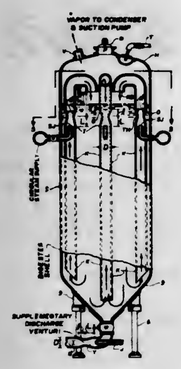
HEAT SEALING OF POLYOLEFIN FILMS

Robert F. Williams, Jr., Billy R. Dotson, and Raymond T. Jones, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 8, 1960, Ser. No. 74,452
6 Claims. (Cl. 161—252)

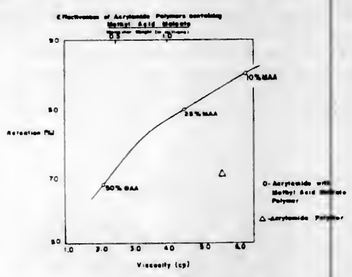
2. A bonded article comprising at least two surfaces of compression rolled polyolefin sheet material heat sealed together with a sealing aid selected from the group consisting of carbon tetrachloride, chloroethylene, propylene dichloride, dichlorobutane, 1,1-dichloro - 2 - methyl propane, tetramethylene dichloride, toluene, xylene, decalin, and tetralin.

3,201,303
VACUUM-VENTURI PROCESS OF RAPIDLY DIGESTING PULP
Walter L. Schmidt, King George, Va., assignor to Waverly Associates, Inc., King George, Va., a corporation of Virginia
Filed July 24, 1961, Ser. No. 126,106
2 Claims. (Cl. 162—53)

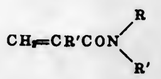


1. In a combination venturi-vacuum process of digesting pulp involving a more rapid pulping of chips of wood, cellulosic materials and fibrous compositions resulting in a maximum yield of cellulose under combined venturi-vacuum influence of lower temperatures from the treatment of larger quantities of raw materials in a shorter period of time than heretofore with the same amount of chemicals used as delignifying medium and without degradation of fibers, the improvement which comprises charging a digester with a fluid mass containing a delignifying medium and chips of the group consisting of wood, cellulosic materials and fibrous compositions and leaving an air and vapor space within the top of the digester and above the surface of the fluid mass; adjusting the fluid mass to provide an excess of fluid in proportion of several times the weight of the chips; sealing the digester against the atmosphere; applying a vacuum to said air and vapor space to maintain a pressure less than atmospheric pressure; establishing a plurality of small, separated and independent streams of fluid mass in the peripheral portion of said digester; moving each of said streams at high velocity upwardly; providing a venturi located in the upper part of each of said streams and having a single jet centrally located in the venturi throat to apply a solid jet of steam under pressure; disintegrating said chips in the fluid mass in each of said streams by continuously passing steam under pressure of about 10 p.s.i. to about 600 p.s.i. through each single jet in each venturi; forcing fluid mass from the plurality of streams under pressure from each venturi and impinging the same downwardly upon the top surface of the fluid mass in the digester to further disintegrate said chips while maintaining a vacuum to place each venturi under differential pressure and to remove volatile components released during delignification, water vapor, and excess steam to prevent dilution of the delignifying medium; maintaining a moderate temperature in said fluid mass of about 135° F. to about 185° F.; continuing disintegration of chips in each of said streams by continuously passing steam under pressure through each centrally located jet in each venturi and by continuously impinging chips upon the top surface of the fluid mass in the digester; discontinuing the passage of steam under pressure through each jet after the expiration of a short period of time within a range of about 3 minutes to about 30 minutes when said chips in the fluid mass are converted into pulp and the desired degree of delignification has been attained; and discharging said fluid mass from said digester whereby pulp is produced.

3,201,304
FLOCCULATION OF CELLULOSE FIBER SLURRIES WITH ACRYLAMIDE COPOLYMER
Francis S. Munjat, Philadelphia, Pa., assignor to E. F. Houghton & Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 16, 1961, Ser. No. 89,794
11 Claims. (Cl. 162—168)



1. A composition of matter comprising paper stock, a pigment and a flocculant essentially consisting of a copolymer in water, said copolymer having a molecular weight in the range between 250,000 and 2,000,000, said copolymer being the copolymer formed in water of between 40 and 95% of a water soluble acrylamide having the formula:



where

R is selected from the class consisting of hydrogen, methyl and ethyl; and
R' is selected from the class consisting of hydrogen and methyl;

with between 5 and 60% of a water soluble partially esterified acid ester having the formula:

$$XR^2$$

where

X is selected from the class consisting of partial maleate, partial fumarate and partial itaconate radicals;
R^2 is selected from the class consisting of methyl, ethyl, isopropyl, propyl, butyl,

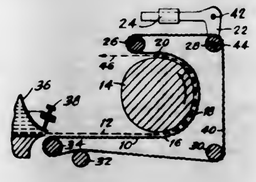
$$-(CH_2CH_2O)_nR^1 \text{ and}$$

n is a numeral selected from the class between 1 and 7, both inclusive; and
R^3 is selected from the class consisting of methyl, ethyl, isopropyl, propyl and butyl.

3,201,305
SHEET FORMING METHOD AND APPARATUS
David R. Webster, 1070 Graham Blvd., Apt. 1, Montreal, Quebec, Canada
Filed Nov. 5, 1962, Ser. No. 235,326
10 Claims. (Cl. 162—203)

1. Apparatus for forming a sheet from fibres in liquid suspension comprising in combination: a first substantially-horizontal segment of an endless-mesh means for traveling with and supporting a ribbon-like layer of fibres in liquid suspension; carrying rolls for said mesh means

including a drum mounted for rotation about a horizontal axis with the outer surface of said drum tangent to said horizontal segment of mesh; a second segment of said endless mesh means formed in a loop wrapped around a substantial arc of said drum for guiding said layer of fibres around said drum outer surface against centrifugal force; tension-control means acting on at least one of said carrying rolls and adjustably maintaining a substantially-constant tension throughout said mesh for providing a constant mesh-pressure acting on said fibres resisting centrifugal force and providing a magnitude of tension T in said horizontal segment of mesh; stock delivery means to set a magnitude M of fibre mass distributed on said horizontal segment of mesh; said horizontal segment of mesh having a magnitude N of frequency; and span adjustment means to set a magnitude L of wave length in



said first segment of mesh; whereby any three of said T, M, N, and L are chosen magnitudes and the remaining fourth magnitude is derived from the general wave formula

$$\sqrt{\frac{TG}{M}}=NL$$

in which each side of said formula represents wave velocity, and thereby is a means to predetermine the amount of vibration and thus fibre interlocking and quality of a self-supporting sheet.

9. The method of forming a sheet from fibres in liquid suspension comprising the steps of: delivering a substantially-horizontal and ribbon-like jet of fibres in liquid suspension to a substantially-horizontal free-span portion of an endless mesh means and supporting the fibres thereon; driving said horizontal-mesh portion in the same direction as said jet; imposing a wave velocity V in said free-span to control flocculation and interlocking of fibres by adjusting mesh tension T to a chosen value by tension-control means and mass M to a chosen value by mass control means, wherein said T and M values determine the value of V according to the classic wave formula

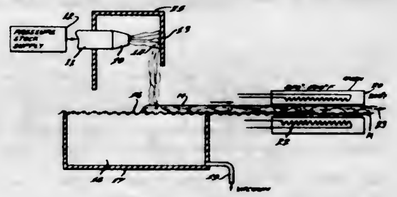
$$V=\sqrt{\frac{GT}{M}}$$

in which V is the wave velocity in ft./sec., G is the gravitational constant 32.2, T is the total mesh tension in pounds, and M is the mass of the mesh and fibres in liquid suspension per linear foot, and draining said fibres to form a continuous fibre layer; and removing said layer from said mesh means as a self-supporting sheet.

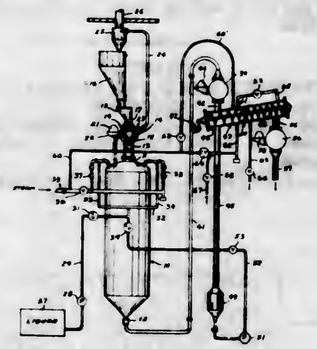
3,201,306
EXPANDED PULP ARTICLE AND METHOD OF MAKING SAME
Lloyd Hornbostel, Jr., Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed June 11, 1962, Ser. No. 201,648
9 Claims. (Cl. 162—213)

1. The method of forming a cushioning packaging material which comprises, directing a jet of liquid water mixed paper fiber stock against an impingement surface, permitting the stock to drop freely downwardly solely as a result of gravitational forces to a foraminous forming surface, applying a suction beneath the forming surface to hold the pulp on the forming surface, and drying the pulp.

9. A cushion pad for packaging comprising a lightweight resilient layer of paper fibers stacked far apart relative to a conventional molded pulp and formed by directing a jet of paper fiber stock against an impingement surface, permitting the stock to drop freely downwardly solely as a result of gravitational forces to a forming surface and removing moisture from the mat formed on the forming surface.



3,201,307
PULPING EQUIPMENT AND SYSTEM
Anton J. Herstman, Houghton, Mich., assignor to The Baker Bros. Co., a corporation of Ohio
Filed Oct. 26, 1962, Ser. No. 233,224
6 Claims. (Cl. 162—246)

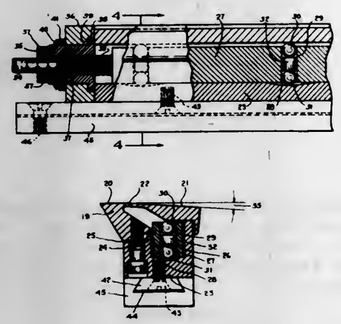


5. A pulping system including a digester and a drainer in series relation characterized by means to control the rate of throughput in said digester and to said drainer affording a pressure seal between said digester and said drainer and means forming relatively segregated drainer sections within said drainer each having inlet means in connection therewith to provide for independent fluid treatment of the materials which pass therethrough.

3,201,308
ADJUSTABLE DRAINAGE FOIL FOR PAPER MACHINE
Denis A. Goddard, Beloit, Wis., and Leslie Truxa, Montreal, Quebec, Canada, assignors to Dominion Engineering Works Limited
Filed Oct. 2, 1963, Ser. No. 314,584
2 Claims. (Cl. 162—352)

1. An adjustable drainage foil for a Fourdrinier machine having a forming wire travelling in a given direction, said foil extending under said wire transversely of said

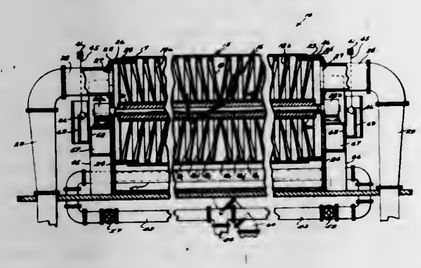
direction, said foil having a rigid leading portion and a rigid trailing portion joined by a thin-necked flexible portion, said leading portion, flexible portion and trailing portion having a continuous upper surface, said leading portion having an acute-angled leading edge and having a flat upper surface in supporting relationship to said wire, said leading portion being firmly attached to a fixed supporting body, said trailing portion having a flat upper surface divergent from said wire by an adjustable angle of divergence, an adjusting bar carried by said supporting body, projections and linear cam elements on said adjusting bar and said trailing portion, said linear cam elements operatively engaging said projections, whereby linear translation of said adjusting bar adjusts said angle of divergence of said flat upper surface of said trailing portion relative to said wire.



3,201,309
CYLINDER MOLD FOR PAPER MAKING MACHINE

Louis M. Stuebe and Joseph D. Parker, Beloit, Wis., assignors to Beloit Corporation, a corporation of Wisconsin

Filed Jan. 11, 1962, Ser. No. 165,696
9 Claims. (Cl. 162—357)



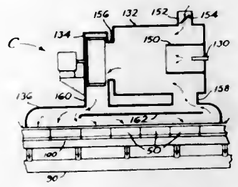
1. In a cylinder mold machine having a rotatable forming cylinder receiving white water therein, the improvement of axially spaced propeller-type blades in the cylinder extending radially from the axis of the cylinder for inducing water flow to both ends of the cylinder, each of said blades having an angle such that the blade angles of the blades at the ends of the cylinder are greater and the blade angles of the blades situated axially inwardly toward the center of the cylinder are progressively less so as to maintain a uniform water level in the cylinder and thereby effect uniform paper formation across the width of the machine.

3,201,310
APPARATUS FOR MOLDING AND DRYING PULP ARTICLES

Watson S. Eastman and Eugene M. Aleman, Portland, Oreg., assignors to Molded Container Corporation, a corporation of Oregon

Filed Apr. 29, 1963, Ser. No. 276,617
3 Claims. (Cl. 162—375)

1. In vacuum pump molding apparatus:
(a) conveyor means mounting at least one open faced vacuum die supporting a freshly formed, wet, molded pulp article,
(b) oven means positioned for traversal by the die on the conveyor means and comprising
(1) an open faced hood superimposed across the open faced die,
(2) furnace means communicating with the hood, and



(3) circulating means for circulating hot gases from the furnace means to the hood,
(c) and evacuating means connected to the die for pulling hot oven gases through the die and through the wet molded articles thereon.

3,201,311
ALGICIDAL AND SANITIZING COMPOSITIONS

Harold J. Antonides and Ralph L. Dietchweiler, Kankakee, Ill., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 19, 1962, Ser. No. 167,444
9 Claims. (Cl. 167—22)

1. A germicidal composition comprising a chlorine-releasing material and a nitrogenous composition consisting of substantially equal parts of (a) dodecylamine hydrochloride, (b) trimethyl alkyl ammonium chloride, and (c) methyl alkyl dipolyoxypropylene ammonium methyl sulfate; said chlorine-releasing material being selected from the group consisting of alkaline metal dichloro triazinetrione, alkaline metal trichloro triazinetrione, chlorine, the reaction product of dichloro triazinetrione and an alkaline agent, the reaction product of trichloro triazinetrione and an alkaline agent, and alkaline metal hypochlorite, the ratio of said nitrogenous composition to released-chlorine being from 18:1 to about 1:1.

3,201,312
HEPARIN DERIVATIVES AND METHODS FOR PREPARING SAME

Robert Bucourt, Clichy-sous-Bois, France, assignor to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Feb. 18, 1964, Ser. No. 345,572
Claims priority, application France, Feb. 26, 1963, 926,058
11 Claims. (Cl. 167—74)

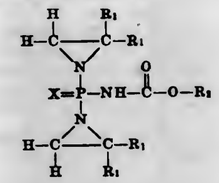
1. A compound selected from the group consisting of O-methyl-N-methyl heparinamide and its alkali metal salts.
10. Antilipemic compositions comprising a compound selected from the group consisting of O-methyl-N-methyl heparinamide and its alkali metal salts and a major amount of a pharmacological carrier.

3,201,313
INHIBITION OF CELLULAR REPRODUCTION

Thomas J. Bardos, Chicago, and Zinon B. Papanastassiou, Oak Lawn, Ill., assignors, by mesne assignments, to Armour Pharmaceutical Company, a corporation of Delaware

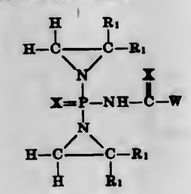
No Drawing. Filed Aug. 13, 1959, Ser. No. 833,397
20 Claims. (Cl. 167—78)

1. In a method of inhibiting the reproduction of living mitotic cells, the contacting of living mitotic cells with a compound of the formula



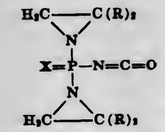
wherein:
X is selected from the group consisting of oxygen and sulfur;
R_1 is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms; and
R_2 is selected from the group consisting of alkyl of 1 to 4 carbon atoms, and benzyl.

7. A compound of the formula



wherein:
X is selected from the group consisting of oxygen and sulfur;
R is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms;
W is selected from the group consisting of $—OR_2$, $—SR_2$ and $—N(R_2)_2$ in which:
R_2 is selected from the group consisting of hydrogen, alkyl of 1 to 15 carbon atoms and benzyl.

13. A compound of the formula



wherein X is selected from the group consisting of oxygen and sulfur, and R is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms.

3,201,314
MULTICOLORED LIPSTICK AND PREPARATION THEREOF

Fred S. Mordhanner, Pompton Plains, N.J., and Samuel Kalish, New York, N.Y., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

Filed May 17, 1963, Ser. No. 281,216
4 Claims. (Cl. 167—85)

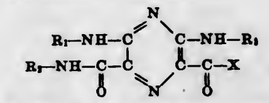
1. A method for the preparation of multi-colored unitary lipsticks which comprises preparing a lipstick base formulation, adding a first coloring agent to a first portion and a second coloring agent to a second portion of the lipstick base formulation, said first coloring agent being distinctively different and distinguishable in color by the naked, unaided eye from said second coloring agent, melting the separate lipstick base formulations with stirring to effect color distribution and thereafter combining the molten-colored base formulation into a unitary solid product having substantially complete color separation between the combined portions of base formulation.

3,201,315
3,5-DIAMINOPYRAZINE-2,6-DICARBOXYLIC ACID DERIVATIVES AS OPTICAL BRIGHTENING AGENTS IN COSMETIC FATTY CREAMS

Anthony Fenwick Daglish, Cheadle Hulme, England, Rodolphe Vonderwahl, Riehen, near Basel, Switzerland, and George Arnold Tillotson, Hale, England, assignors to J. R. Geigy A.-G., Basel, Switzerland

No Drawing. Original application May 23, 1958, Ser. No. 737,215, now Patent No. 3,043,700, dated July 10, 1962. Divided and this application Jan. 15, 1962, Ser. No. 168,868
Claims priority, application Switzerland, May 29, 1957, 46,700/57
6 Claims. (Cl. 167—90)

1. A composition of matter of improved appearance in daylight consisting of a cosmetic fatty cream and from 0.001 to 0.5% by weight of a 3.5-diamino-pyrazine-2.6-dicarboxylic acid amide of the formula:



wherein R_1, R_2 and R_3 each represents a member selected from the group consisting of lower alkyl and phenyl substituted methyl and X represents a member selected from the group consisting of primary amino, secondary amino, tertiary amino and ureido.

3,201,316
TRIFLUOROSTANNITE SALTS OF AMINES IN ORAL COMPOSITIONS FOR CARIES PROPHYLAXIS

Paul E. Norris, Cincinnati, Ohio, assignor to Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 28, 1962, Ser. No. 227,044
5 Claims. (Cl. 167—93)

1. An oral composition for caries prophylaxis comprising an amine trifluorostannite having the formula:



wherein R_1, R_2 and R_3 are each members selected from the group consisting of hydrogen, alkyl, hydroxyalkyl, and aminoalkyl groups, at least one of said R's being one of said groups containing from about 1 to about 18 carbon atoms, the total carbon content of said groups being less than 30 carbon atoms in a quantity sufficient to provide at least about 100 p.p.m. of fluoride ions but not more than 7500 p.p.m. total fluorine, and a fluoride compatible abrasive, the pH of said composition being within the range from about 3.5 to about 6.0 in aqueous solution.

3,201,317
ANTIFOAM BARIUM SULFATE SUSPENSIONS

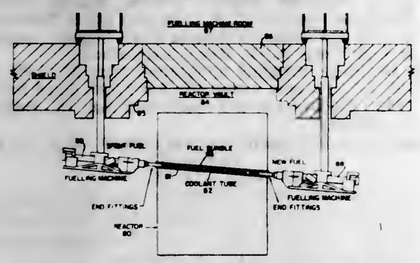
Roscoe E. Miller, R.R. 17, Box 503, Indianapolis, Ind.

No Drawing. Filed June 12, 1963, Ser. No. 287,177
6 Claims. (Cl. 167—95)

1. A powder suitable for admixture with aqueous media to form a radio-opaque suspension useful in X-ray examination of the esophagus and intestinal tract comprising a major amount by weight of barium sulfate and minor

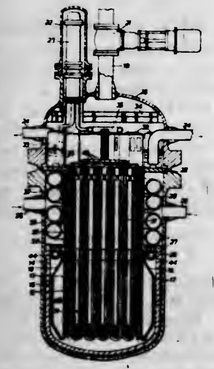
amounts by weight of magnesium montmorillonite, magnesium trisilicate, sodium carboxymethyl cellulose having a viscosity in the range 20–50 centipoises at 25° C. and an antifoam agent.

3,201,318
REACTOR WITH TUBES DISPLACED FROM CORE AXES
John R. Dickinson, Peterborough, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation
Filed July 8, 1963, Ser. No. 293,385
13 Claims. (Cl. 176—30)



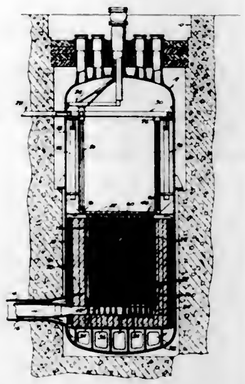
1. A nuclear reactor fuel channel lattice for a right circular cylindrical nuclear reactor core having a central axis, comprising a plurality of fuel channels each having a reference position, each of said fuel channels being skewed at an angle with respect to a normal to an end of the reactor core, each said reference position being at the same radius from said central axis as the ends of said fuel channel, and being located on the bisector of the angle subtended by the ends of said fuel channel, said reference positions forming a uniform reference lattice whereby said fuel channels are non-uniformly spaced at any cross section through said reactor, and are more closely spaced radially and longitudinally at the center of the reactor core than at the edges thereof.

3,201,319
NUCLEAR REACTOR WITH PRESSURIZER
Stanley Hackney, Fearnhead, near Warrington, and Ronald Peter Williams, Culcheth, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Nov. 19, 1962, Ser. No. 238,439
Claims priority, application Great Britain, July 5, 1962, 25,788/62
11 Claims. (Cl. 176—52)



1. A nuclear reactor wherein a secondary coolant is heated by fuel elements, said reactor comprising a vessel, means disposed in the vessel to contain in isolation from the secondary coolant both the fuel elements and a liquid primary coolant, a pressure chamber disposed in the vessel in communication with said means and affording a sufficient vertical dimension for the primary coolant to form a free surface therein over the range of its operating temperature, and means enabling gas to be admitted to the pressure chamber and trapped over such free surface for pressurisation of the primary coolant against bulk boiling.

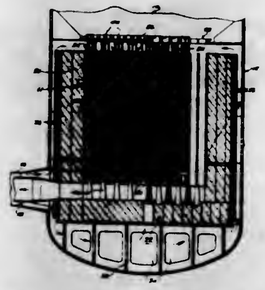
3,201,320
GAS COOLED NUCLEAR REACTOR WITH IMPROVED FUEL ELEMENT ARRANGEMENT
Peter Fortescue, Rancho Santa Fe, and Corwin L. Rickard, Solana Beach, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 7, 1960, Ser. No. 74,290
5 Claims. (Cl. 176—59)



1. In a gas-cooled nuclear reactor having a vertically disposed pressure vessel and a top grid plate supported with said vessel, a fuel element arrangement comprising a plurality of individual elongated vertically disposed fuel elements arranged in side-by-side relation to form a cluster, means tying together the lower ends of said fuel elements, a supporting frame structure releasably supported by said top grid plate, an upwardly extending elongated hanger at the top of each of said fuel elements which connects said fuel element in spaced depending relation from said supporting frame structure, at least a portion of each of said hangers being of substantially smaller horizontal cross section than the cross section of said fuel element, said fuel element cluster being unenclosed between said frame structure and the tops of said fuel elements thereby providing a transverse passageway for gaseous coolant between the lower surface of said supporting frame structure and said fuel elements, and means generally centrally located on said supporting frame structure affording engagement by fuel handling mechanism for transport of the fuel element clusters as a unit.

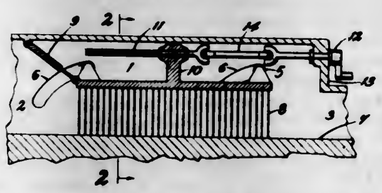
3,201,321
NUCLEAR REACTOR
Peter Fortescue, Rancho Santa Fe, and Corwin L. Rickard, Solana Beach, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 7, 1960, Ser. No. 74,291
4 Claims. (Cl. 176—59)

1. A gas-cooled nuclear reactor including a pressure vessel, means extending across said vessel intermediate its upper and lower ends providing a barrier to gas flow between upper and lower sections of the vessel, a plurality of elongated fuel elements depending from and spaced below said barrier-providing means, said fuel elements providing a reactor core and defining a plurality of vertical passageways therebetween, which passageways extend from the space below said barrier-providing means, through said reactor core, to a position below said fuel elements, means defining a conduit located between said reactor core and the side walls of said pressure vessel, which conduit extends from a lower position below said reactor core to the space between said fuel elements



and said barrier-providing means, inlet means in said vessel in communication with the lower end of said conduit, and outlet means in said vessel in communication with the lower ends of said passageways whereby a continuous path is provided for the circulation of gas-coolant upwardly in said conduit to said barrier-providing means, downwardly through said passageways and then out of said vessel, and whereby said upper section of said vessel is maintained in a relatively cool condition to accommodate fuel handling and storage apparatus.

3,201,322
NUCLEAR REACTOR FUEL ELEMENT FOR NITROGEN FIXATION
Willard L. Morrison, Lake Forest, Ill., assignor to The Union Stock Yard and Transit Company of Chicago, Chicago, Ill., a corporation of Illinois
Filed Feb. 13, 1958, Ser. No. 715,001
2 Claims. (Cl. 176—66)



1. A nuclear reactor fuel element comprising a chamber having an intake passage at one end portion and a discharge passage at the other end portion for the passage of fluid material to be reacted therethrough from the intake passage to the discharge passage, walls spaced one from the other crosswise within the chamber, a plurality of glass fibers enriched with fissionable material secured at their opposite ends to the spaced walls to extend crosswise of the chamber in spaced parallel relationship whereby the fibers extend substantially crosswise to the flow of the material through the chamber and out of contact one with another whereby the fibers are maintained out of contact one with the other for uniform flow of the material therebetween and means mounting the walls for movement laterally relative to each other and in a direction towards and away from each other for varying the spaced relationship between the fibers while still maintaining the fibers in spaced parallel relation.

3,201,323
PRODUCTION OF GLUTAMIC ACID
John D. Dourot, Jr., West Chester, and André R. Brilland and Robert W. Eltz, Media, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Original application Sept. 13, 1963, Ser. No. 308,637. Divided and this application Sept. 25, 1964, Ser. No. 399,357
9 Claims. (Cl. 195—1)

1. A process for the production of L-glutamic acid which comprises subjecting a hydrocarbon to the action of *Nocardia globerula* ATCC 15076 under aerobic conditions, and recovering the resulting L-glutamic acid.

3,201,324
PROCESS FOR THE MICROBIOLOGICAL OXYGENATION OF PROGESTERONE
Frederick R. Hanson and William D. Maxon, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed June 17, 1963, Ser. No. 288,520
12 Claims. (Cl. 195—51)

1. In the process for the microbiological conversion of comminuted progesterone having a particle-size distribution 90% smaller than 10 microns to 11α-hydroxyprogesterone using *Rhizopus nigricans* under submerged aerobic fermentation conditions, the improvement which comprises: carrying out the microbiological conversion at a substrate level within the range of from 15 to 40 grams per liter of a nutrient medium, wherein the assimilable nitrogen is provided by a member selected from the group consisting of soybean meal, cottonseed meal, fish meal, coconut meal, commercial yeasts, lactalbumin digests and mixtures thereof.

3,201,325
PROCESS FOR THE RECOVERY OF COLLAGENASE
Richard Russell Barton, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Feb. 15, 1963, Ser. No. 258,900
1 Claim. (Cl. 195—66)

A process for recovering a relatively uncontaminated collagenase product from a fermentation medium containing collagenase and other proteolytic enzymes, said collagenase being produced by fermentation of a growth medium with an anaerobic bacterial strain of *Clostridium histolyticum*, said process consisting essentially of

passing said fermentation medium through a phenolic anionic exchange resin containing secondary amine reactive sites,

said resin having been previously adjusted to a pH within a range of from about 6.0 to 7.4,

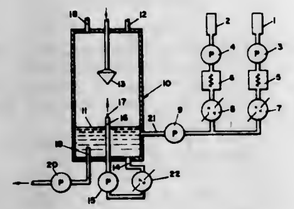
wherein said resin adsorbs a substantial portion of said other proteolytic enzymes and said collagenase passes through said resin and is recovered as a relatively uncontaminated product.

3,201,326
PROCESS FOR PREPARING LYSERGIC ACID
Alba Maria Amici, Anacleto Minghetti, and Celestino Spalla, Milan, and Antonio Tonolo, Rome, Italy, assignors to Societh Farmaceutici Italia, Milan, Italy, an Italian corporation
No Drawing. Filed July 9, 1963, Ser. No. 293,872
Claims priority, application Italy, July 12, 1962, 13,934/62
4 Claims. (Cl. 195—81)

1. A microbiological process for the preparation of lysergic acid, which comprises submitting a compound selected from the group consisting of lysergamide and isolysergamide, dissolved in an organic solvent, selected from the group consisting of dimethylformamide and

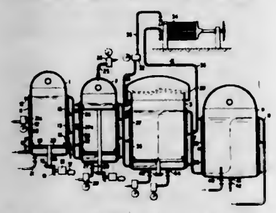
ethanol, to the enzymatic action of *Claviceps purpurea* (Fr.) Tul. under aerobic conditions and isolating the lysergic acid thus obtained, by extraction with an organic solvent selected from the group consisting of chloroform and n-butanol.

3,201,327
FERMENTATION APPARATUS AND PROCESS
Henry C. Beck, Wallingford, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Aug. 21, 1962, Ser. No. 218,411
3 Claims. (Cl. 195—109)



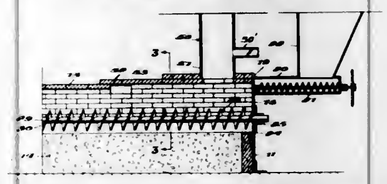
2. A process for the continuous aeration and dispersion of a two-phase fermentation broth having an aqueous phase and a water-immiscible liquid phase in a fermentor comprising continuously ejecting a stream of the broth upwardly against a perforate deflecting baffle, introducing a continuous stream of an aerating gas to said baffle and flowing it downwardly therethrough to contact the stream of broth and effect the fine dispersion of the water-immiscible liquid phase in the aqueous phase in the form of a spray against the sides of the fermentor in substantially sheet flow, and fermenting the resulting aerated broth.

3,201,328
CONTINUOUS FERMENTATION APPARATUS FOR BEER PRODUCTION
Rees Philip Williams, London, England, assignor to R. Ramsden & Son Limited, Darlington, England, and Charrington & Company Limited, London, England
Original application Mar. 24, 1961, Ser. No. 107,879. Divided and this application Feb. 5, 1962, Ser. No. 170,887
Claims priority, application Great Britain, Mar. 28, 1960, 10,855/60
4 Claims. (Cl. 195—141)



1. Apparatus for use in continuous fermentation production of beer, comprising a series of connected vessels of varying capacities in which the capacities are selected to provide a dwell time in each phase in said series of vessels corresponding to the dwell time in batch beer fermentation processes including a first vessel for making a mixture of sterile wort and yeast in a first phase, means for controlling the temperature of the contents of the first vessel, a second vessel in a second phase having an inlet and an outlet, the inlet being connected to the outlet of the first vessel, means for controlling the temperature of the contents of the second vessel, a third vessel in a third phase having an inlet and an outlet, the inlet being connected to the outlet of the second vessel, means for continuous removal of yeast from said second vessel, and means for controlling the temperature of fermented liquid in the third vessel, the capacity of each vessel being selected relative to the capacity of each vessel so that the relative dwell time of the contents in each vessel differs at constant feed and discharge rates, the dwell time in each vessel being comparable relative to each other vessel to the relative dwell times in a batch fermentation system.

3,201,329
CARBONIZING PROCESS AND APPARATUS
Lester C. Burt, El Paso, Tex., assignor to Burt and Redman, El Paso, Tex., a partnership of Texas
Filed June 10, 1963, Ser. No. 288,584
8 Claims. (Cl. 202—6)



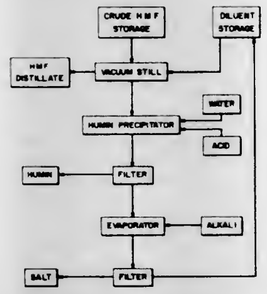
1. In the process of carbonizing waste carbonaceous vegetable matter comprising relatively readily volatilizable combustible constituents whereby to produce a charcoal product, in which process the vegetable matter is heated in an elongated generally horizontal heating zone to the volatilization temperature of said volatilizable constituents and the resulting vapors are burned, the improvement by which the process is made fully self-regenerative as to heat requirements by volatilizing said volatilizable constituents directly into an atmosphere containing enough and only enough free oxygen to effect complete combustion of said volatilized constituents by moving the vegetable matter through the heating zone in countercurrent direct contact with a moving current of burning volatilized components of said vegetable matter in an atmosphere containing oxygen in a lesser ratio than does atmospheric air whereby said readily volatilizable combustible constituents are volatilized and thereupon are burned in direct contact with said vegetable matter to provide all of the heat used in carbonizing said vegetable matter and excluding air from that portion of the heating zone wherein no further volatilization of readily volatilizable combustible constituents occurs.

2. Apparatus for carbonizing waste vegetable matter containing relatively readily volatilizable combustible components, which comprises an elongated generally horizontal roasting tunnel having side walls and roof and floor of refractory material, the floor of said roasting tunnel having formed therein at least one generally U-shaped trough from end to end of said tunnel, and heat-resistant inlet and outlet end walls; at least one main screw conveyor extending through said tunnel and being disposed in said trough, said main screw conveyor including a hollow shaft; means for forcing a coolant fluid through said hollow shaft; a stack operatively associated with said tunnel adjacent the inlet end of the latter; a feed hopper for a supply of raw waste vegetable matter; a feed-conveying means for conveying a continuous stream of such vegetable matter from said feed hopper to and through said inlet end wall and into the inlet end of said tunnel for discharging raw feed onto the flight of said main screw conveyor; adjustable air inlet means spaced along at least a portion of said tunnel for admitting a controlled limited amount of combustion air into said tunnel; a confined hopper member at the outlet end of said tunnel; a discharge orifice in the outlet end wall of said tunnel said orifice providing communication between the interior of said tunnel and said confined hopper member for receiving a continuous stream of solid carbonaceous residues from said tunnel; an elongated generally tubular discharge channel in communication adjacent one end thereof, with said confined hopper member, said channel extending upwardly from said confined hopper member at a sufficient inclination with respect to its length that the end thereof which is remote from said hopper member is at a level above said main screw conveyor; a secondary rotary screw conveyor in and operatively associated with said channel; and means for rotating said main and said secondary screw conveyors.

3,201,330
PROCESS OF FORMING A CARBON ARTICLE FROM FURFURAL ALCOHOL AND CARBON PARTICLES
Michael Stuart Thomas Price, Wantage, England, assignor to United Kingdom Atomic Energy Authority, London, England
No Drawing. Filed Nov. 28, 1958, Ser. No. 776,712
Claims priority, application Great Britain, Nov. 17, 1958, 36,960/58
8 Claims. (Cl. 202—26)

1. A process of manufacturing a carbon article having high density and low permeability comprising the steps of forming a mixture of carbon particles and up to about 20% by weight of a liquid binder material consisting essentially of furfuryl alcohol and being polymerizable to yield a thermosetting resinous material, and which gives a high yield of dense relatively low permeability carbon on decomposition by heat, extruding the formed mixture at room temperature and at an extrusion pressure of from about 8 to about 17 tons per square inch and without the introduction of non-carbonizable material, polymerizing the binder material in said mixture, and heating said mixture to carbonize the binder material.

3,201,331
PURIFICATION OF HYDROXYMETHYL FURFURAL
Robert H. Hunter, Mendenhall, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Oct. 17, 1962, Ser. No. 231,286
7 Claims. (Cl. 202—39.5)



1. In the purification of hydroxymethyl furfural by vacuum distillation the improvement of distilling the impure hydroxymethyl furfural in admixture with at least 5% of its own weight of a diluent having a boiling point, under the pressure at which said vacuum distillation is conducted, at least 10° C. greater than that of hydroxymethyl furfural, and selected from the group consisting of:

(a) polyethylene glycols;

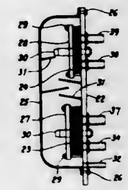
(b) block copolymers of ethylene and propylene oxides containing at least 60% by weight ethylene oxide;

(c) random copolymers of ethylene and propylene oxides containing at least 80% by weight of ethylene oxide;

(d) polyoxyethylene adducts of organic compounds containing active hydrogen, said adducts containing not more than 7% by weight of non-oxygen bonded aliphatic radical; and

(e) polyhydric alcohols containing at least 48% by weight of chemically combined oxygen.

3,201,332
PLATE HEAT EXCHANGER
Fritz Johan Wennerberg, Lund, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden
Filed Mar. 16, 1962, Ser. No. 180,155
9 Claims. (Cl. 202—172)



1. In a plate heat exchanger, the combination of a series of generally vertical heat exchange plates disposed in substantially parallel adjacent relation, first gasket means compressed between the opposing plates of each alternate pair of said plates and extending continuously along the marginal portions of said opposing plates to define therewith a closed heat exchange chamber surrounded by said gasket means, second gasket means compressed between the opposing plates of each of the other pairs of said plates and extending continuously along the marginal portions of said last opposing plates except along the upper portions thereof, whereby said other pairs of plates define with the intervening open gasket means second heat exchange chambers which are open along their upper edges but closed along their bottom and side edges, said plates having throughflow passages and coacting gaskets forming an inlet to and a separate outlet from each of said closed chambers and also forming an outlet leading from each of said open chambers between the open upper edge and the closed bottom edge thereof, and means forming a housing enclosing said plates and into which said open chambers open along said upper edges thereof.

3,201,333
BRINE PREPARATION
Walter J. Sakowski, Youngstown, N.Y., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Mar. 28, 1962, Ser. No. 183,148
1 Claim. (Cl. 204—99)

The method of cyclically controlling the volume of a body of aqueous sodium chloride brine from which aqueous brine is supplied to mercury cathode electrolytic cells which comprises:

(1) Continuously electrolyzing a portion of said body of aqueous brine in a mercury cathode electrolytic cell to produce sodium amalgam, chlorine gas and weak brine;

(2) Continuously removing water vapor from said weak brine to decrease the water content of the process;
(3) Continuously cycling said weak brine to a salt-dissolving zone containing solid sodium chloride and calcium sulfate to resaturate said weak brine;
(4) Intermittently adding make-up water to said salt-dissolving zone with sufficient speed to substantially saturate the make-up water with sodium chloride while leaving the calcium sulfate content of the salt substantially undissolved;
(5) Passing the resulting resaturated brine to step (1) above.

3,201,334
PROCESS FOR THE EXTRACTION OF COPPER FROM COPPER ORES

Henri A. I. Ben-Bassat, Bet-Hakerem, Jerusalem, Israel, assignor to Yissum Research Development Company, Jerusalem, Israel, a company of Israel

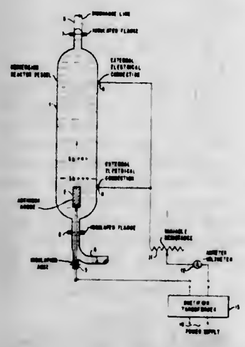
No Drawing. Filed July 2, 1963, Ser. No. 292,474
4 Claims. (Cl. 204—108)

1. In a process for the production of copper from copper ores containing other metals, the steps comprising leaching copper ore by contacting the ore with aqueous sulfuric acid and acetyl-acetone at a pH between 1 and 2; separating leach solution containing copper from the ore residue; adding sufficient alkali to adjust the pH of the leach solution to between 3 and 5 to precipitate solid copper diacetylacetonate from the leach solution; and separating the precipitate from the solution.

3,201,335
CORROSION PROTECTION

Adrian J. MacNab, Berkeley, and Richard S. Treseder, Oakland, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 25, 1962, Ser. No. 233,084
1 Claim. (Cl. 204—147)



In a hydrocarbon conversion process employing a molten salt Friedel-Crafts catalyst comprising antimony halide and aluminum halide, wherein the conversion is effected in a metallic vessel, the method of protecting the vessel from corrosion which comprises passing an impressed current from an anode consisting essentially of antimony through the molten salt to the metallic reaction vessel serving as the cathode, thereby releasing antimony ions from the anode to the catalyst and plating out antimony metal on the vessel surface in contact with the catalyst.

3,201,336
GRAFT POLYMERIZATION UTILIZING IONIZING RADIATION

Michel Magat, Adolphe Chapiro, and Jeanne Sebban Danon, Paris, France, assignors to Centre National de la Recherche Scientifique Ministere de l'Education Nationale, Paris, France, a corporation

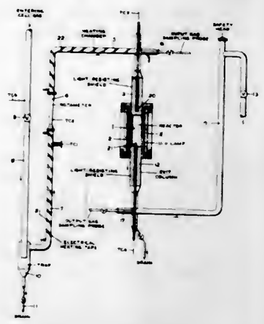
No Drawing. Filed July 19, 1957, Ser. No. 672,857
Claims priority, application France, July 27, 1956, 57,487
9 Claims. (Cl. 204—154)

1. In the process for producing graft polymers in which an organic polymer in the form of a crystalline material having crystal domains is subjected to high energy ionizing radiation in the presence of oxygen with an effective radiation dose to cause formation of active centers and thereafter the irradiated polymer is contacted with a first monomer polymerizable by free radicals, the improvement which comprises recovering the graft copolymer formed by said contacting still containing active centers, and thereafter, without further radiation treatment, contacting said graft copolymer with at least one different second monomer polymerizable by free radicals to thereby form a graft copolymer having a trunk corresponding to said polymer and graft branches corresponding to polymers of said first and second monomers, said contacting with one of said first and second monomers being effected at a temperature above the melting point of said crystal domains, and the contacting with the other of said first and second monomers being effected at a temperature below the melting point of said crystal domains.

3,201,337
PROCESS FOR REMOVING HYDROGEN FROM CHLORINE GAS

William C. Eichelberger, Syracuse, and Winslow H. Hartford, Fayetteville, Manlius, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed May 12, 1961, Ser. No. 109,692
5 Claims. (Cl. 204—157)

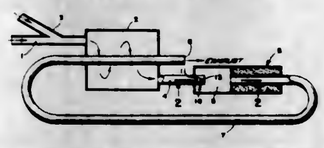


1. The process for removing hydrogen from impure chlorine gas containing, in proportions by volume on a dry basis at least about 80% chlorine, between about 0.3% and 4% hydrogen, between about 0.1% and about 5% oxygen, the balance inert gases, which comprises subjecting said chlorine gas to irradiation with ultraviolet light of wave lengths between about 3200 Angstrom units and about 4000 Angstrom units at a radiation intensity of at least about 4 watts per square foot of reactor irradiated, at temperatures between about 75° C. and about 125° C. for a residence time not greater than about 10 seconds sufficient to reduce the hydrogen content of the gas to below about 0.5% by volume.

3,201,338
EXHAUST PURIFYING ARRANGEMENT

William Pennington, 3834 Crestway Drive, Los Angeles 43, Calif.

Filed Mar. 28, 1960, Ser. No. 18,044
1 Claim. (Cl. 204—193)

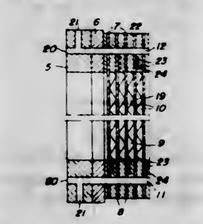


A smog eliminating arrangement comprising a conduit adapted to receive the exhaust of an internal combustion engine, an inlet to said conduit for introducing atmospheric air therein, a heat exchanger in said conduit downstream of said inlet for raising the temperature of the contents of said conduit, a reaction chamber connected to said conduit downstream of said heat exchanger for providing a reaction volume in which smog-producing substances are converted to nonsmog-producing substances, muffler means downstream of said chamber for attenuating sounds received therein, an exhaust conduit connected to said muffler means for discharging into the atmosphere, said exhaust conduit being connected to said heat exchanger for causing the contents of said exhaust conduit to supply heat to said heat exchanger, and sound generator means for producing a sound within said chamber.

3,201,339
ELECTRODIALYZER

Yoshio Tsunoda and Maomi Seko, Tokyo, and Masaaki Kato, Teruyuki Misumi, Masasi Mitsui, and Yutaka Toyoda, Nobeoka-shi, Japan, assignors to Ashi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed Mar. 15, 1961, Ser. No. 96,035
Claims priority, application Japan, Mar. 23, 1960, 35/9,023
10 Claims. (Cl. 204—301)

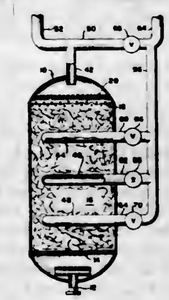


1. An electrodialysis apparatus comprising a plurality of alternating anion-permeable resin membranes and cation-permeable resin membranes and spacer frames between each two membranes, each of said membranes and frames having a plurality of holes therein along the upper and lower parts thereof which are aligned with corresponding holes in the other membranes and frames for forming conduits for feeding and discharging concentrating and diluting solutions from the apparatus, alternate conduits being for the concentrating solution, and the other conduits being for the diluting solution, each frame having solution path portions therein from alternate holes to the inside of the frame, the solution path portions in each frame being associated with a hole in the frame which is aligned with a hole in the next adjacent frames on either side of the respective frame which have no solution path portions associated therewith, whereby of a plurality of holes forming a conduit only the aligned holes in alternate frames have flow path portions associated therewith, said flow path portions each having at least one thin sheet on the frame and having a thickness less than that of the frame and a plurality of compressible projections on said sheet extending in at least one direction from said sheet and having a dimension in the direction of the thickness of the frame such that in the uncompressed condition they project beyond the surface of the frame and they are compressed to the thickness of the frame when the frames and membranes are assembled, the projections being positioned on the sheet to provide only broken paths between the hole and the inside of the frame and said sheet and projections being of insulating material.

3,201,340
METHOD AND APPARATUS FOR THE CATALYTIC REFORMING OF NAPHTHAS IN SERIES

William H. Decker, Chicago, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 23, 1962, Ser. No. 168,163
4 Claims. (Cl. 208—65)



1. In a process for catalytically reforming a naphtha hydrocarbon charge stock wherein a naphtha hydrocarbon stream and hydrogen are passed through a series of reaction zones containing separate fixed beds containing given amounts of a platinum-containing catalyst under reforming conditions of temperature, pressure, space velocity and hydrogen to hydrocarbon ratio, heating the naphtha hydrocarbon stream to reforming temperature prior to its introduction to each of said zones, the improvement which comprises continuing the reforming until there is decrease in hydrocarbon charge naphthene content and then passing the naphtha hydrocarbon stream through a lesser portion of said given amount of catalyst in at least the last reaction zone to optimized weight hourly space velocity for maximum liquid product yield while maintaining the operating continuity of the process, introducing recycle gas from said reforming process to the portion of catalyst through which the naphtha stream is not flowing, said lesser portion of catalyst in at least the last reaction zone being equal to $(FR/WHSV)-C_k$, where FR is the naphtha feed rate being employed, WHSV is the predetermined optimum weight hourly space velocity and C_k is the quantity of catalyst contained in all the reaction zones other than those in which the quantity of catalyst through which the naphtha stream flows is being varied.

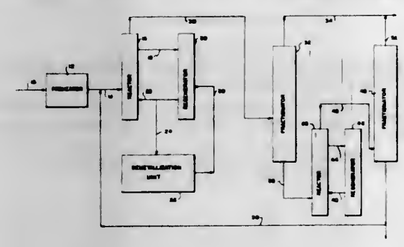
3,201,341
TWO STAGE CRACKING OF RESIDUALS

Arvin D. Anderson, Anaheim, Calif., Robert L. Foster, Homewood, Ill., and Howard G. Russell, Munster, Ind., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 21, 1960, Ser. No. 70,641
10 Claims. (Cl. 208—74)

1. A process for catalytically cracking a hydrocarbon feedstock to produce gasoline, said feedstock consisting essentially of residual petroleum hydrocarbon boiling

above about 600° F. and containing more than about 0.6 part per million nickel and more than 1.5 parts per million vanadium, which comprises subjecting said feedstock to first-stage catalytic cracking employing a synthetic gel, silica-based cracking catalyst at a temperature in the range of about 700 to 900° F., and a pressure of about 5 to 15 p.s.i.g., thereby depositing substantially all of said metallic impurities on said catalyst and converting about 30 to 45% of said petroleum stock to lower boiling materials, withdrawing from said first stage cracking system contaminated catalyst containing at least about 100 parts



per million nickel and at least about 250 parts per million vanadium, demetallizing the withdrawn catalyst and returning the demetallized catalyst to said first stage catalytic cracking system, fractionating the products from the first stage to separate a bottoms fraction boiling essentially above 400° F. containing no more than about 0.4 part per million nickel and no more than 0.8 part per million vanadium and a gasoline fraction, and subjecting the said bottoms fraction to second stage catalytic cracking employing a silica-based cracking catalyst at a temperature at least about 25° F. higher and at a higher cracking severity than used in said first stage.

3,201,342
METHOD OF MAKING A SUPERIOR JET FUEL

Kenneth C. Bachman, Westfield, N.J., Oral C. Behymer, Harry L. Langdon, John E. Lawson, Jr., Richard S. Manne, and William K. Robbins, Baytown, Henry H. Rosser, Highlands, and Richard C. Russell and James O. Scott, Baytown, Tex., assignors, by direct and mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Jan. 7, 1963, Ser. No. 249,668
9 Claims. (Cl. 208—89)

1. A process of making a jet fuel which comprises:

fractionating a paraffinic crude oil stream to obtain a charge stream boiling within the range of 355° F. to 510° F.;

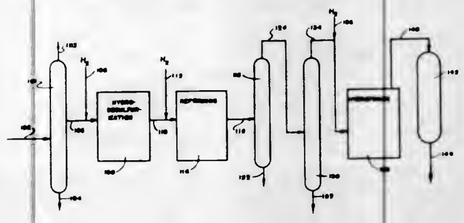
contacting said charge stream with hydrogen and a hydrodesulfurization catalyst under hydrodesulfurization conditions to obtain a desulfurized stream containing less than 0.01% sulfur by weight;

contacting said desulfurized stream with hydrogen and a reforming catalyst at a temperature from 825° F. to 900° F., a pressure from 150 p.s.i.g. to 450 p.s.i.g., and a space velocity from 0.2 to 2.0 v./v./hr., whereby naphthene aromatization and normal paraffin isomerization are maximized in obtaining a reformed stream;

extracting substantially all of the aromatic hydrocarbons from said reformed stream by contact with a solvent for aromatic hydrocarbons to obtain a raffinate containing less than 3% aromatic hydrocarbons;

hydrofining said raffinate by contact with hydrogen and a hydrofining catalyst under hydrofining conditions to obtain a hydrofined product; and

contacting said hydrofined product with an adsorbent for polar compounds to obtain a thermally stable jet fuel;



said jet fuel being subjected to at least one fractionation step during the course of said process whereby the Engler distillation 20% point thereof is within the range of 408° F. to 414° F. and the fuel boils within the range of 375° F. to 495° F.

3,201,343
DESICCANT MANUFACTURE AND THE USE OF SUCH DESICCANTS IN THE CONVERSION OF HYDROCARBONS

Edward J. Bicek, La Grange, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,696
15 Claims. (Cl. 208—95)

7. In a hydrocarbon conversion process wherein a catalyst is contacted with a substantially dry hydrogen-rich gas stream containing hydrogen sulfide, said gas stream having been treated with a desiccant to reduce the water content thereof, which desiccant normally effects the removal of hydrogen sulfide therefrom, the improvement which comprises passing said gas stream into contact with a desiccant prepared by saturating said desiccant with hydrogen sulfide, whereby the water content of said gas stream is reduced without substantially removing hydrogen sulfide therefrom.

3,201,344
REFINING HYDROCARBON LUBRICATING OILS

Donald B. Broughton, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Nov. 29, 1962, Ser. No. 241,034
11 Claims. (Cl. 208—143)

1. A process for recovering the components of lowest viscosity from a hydrocarbon mixture boiling in the lubricating oil range which comprises reacting said hydrocarbon mixture with hydrogen at hydrogenation reaction conditions sufficient to saturate substantially all unsaturated bonds in the hydrocarbon components thereof, thereafter contacting said mixture with a dehydrated, zeolitic, metal aluminosilicate molecular sieve containing pores which permit the entry of hydrocarbons having a mean molecular diameter of from about 10 to about 13 Angstrom units, withdrawing from the resulting molecular sieve containing selectively sorbed adsorbate component a raffinate comprising nonsorbed hydrocarbon component of the mixture, and contacting said molecular sieve particles containing adsorbate with a desorbent for the sorbed hydrocarbon component at desorption conditions whereby said adsorbate is displaced from said molecular sieve.

3,201,345
PROCESS FOR PREPARING JET FUELS

Harry A. Hamilton, Natrona Heights, Alfred M. Henke, Springdale, and Harry C. Stauffer, Cheswick, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

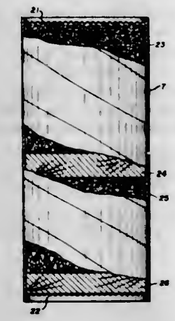
No Drawing. Filed June 14, 1962, Ser. No. 202,402
4 Claims. (Cl. 208—255)

1. The process for preparing a jet fuel which comprises contacting a petroleum distillate having a freezing point below about —45° F., a viscosity at —40° F. below about 15 centistokes, which includes substantial amounts of hydrocarbons boiling in the range between about 250 and 550° F. which are composed predominantly of a member of the group consisting of parafinic and naphthenic hydrocarbons, with hydrogen in the presenec of a hydrorefining catalyst at a temperature between about 500 and 800° F. at a pressure between about 100 and 2000 p.s.i.g. and at a liquid hourly space velocity between about 0.2 and 10, said reaction conditions being selected within the specified ranges to result in the hydrogenation of the gum-forming materials present in the feed stock without substantial conversion of the petroleum distillate into lower boiling hydrocarbons, and without substantial saturation of aromatic compounds, extracting deposit-inducing substances from the hydrogenated product with a solvent selected from the group consisting of furfural, diethylene glycol, dimethyl sulfoxide, acetonitrile, and sulfur dioxide, and recovering a jet fuel from the raffinate.

3,201,346
DEVICE AND METHOD FOR CLEANING CLEANER'S SOLVENT

Malcolm H. Benedict, Denver, Colo., assignor, by mesne assignments, to Lloyd A. Ottomeyer, Beverly Hills, Calif.

Filed Sept. 10, 1962, Ser. No. 222,599
6 Claims. (Cl. 210—24)



5. A method of treating used cleaning solvent in a continuous flow which comprises the successive steps of passing the cleaning solvent through a confined zone by gravitational flow, first removing discoloring constituents including dyes by passing the solvent through a layer of activated carbon in said zone, then removing discoloring constituents including dyes by passing the solvent through a layer of wood pulp in said zone, then removing odors and fatty acids by passing the solvent through a layer of magnesium silicate in said zone, and then removing discoloring constituents including dyes by passing the solvent through a second layer of wood pulp in said zone prior to discharge of the solvent in a cleaned condition from said zone.

3,201,347
ION-INCORPORATION OF POLAR SOLIDS AS LUBRICATION STABILIZER

John J. Chessick, Bethlehem, Pa., and John B. Christian, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Oct. 30, 1962, Ser. No. 235,174
3 Claims. (Cl. 252—25)

2. The composition of matter that consists of a lubricant containing in stabilizing amounts at 650° F. colloidal particles in the solid state and in major amounts and selected from the group that consists of silica, amorphous carbon, and iron oxide, and in a minor amount a substantially monolayer coating on the surface of the colloidal particles and which coating is selected from the group that consists of lead iodide, lead oxide, lead nitrate, mercuric iodide, thorium nitrate, zinc chloride, silver chromate and cerium nitrate.

3,201,348
MINERAL LUBRICATING OILS CONTAINING PHOSPHITE - MOLYBDENUM PENTACHLORIDE REACTION PRODUCTS

Edwin L. De Young, Milwaukee, Wis., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Dec. 19, 1960, Ser. No. 76,471
7 Claims. (Cl. 252—32.7)

4. A mineral lubricating oil containing from about 0.2 to about 0.5% of the reaction product obtained by reacting at a temperature of from 20 to about 140° C. 1 mole of molybdenum pentachloride and 3 moles of a phosphite having the formula $HOP(OR)_2$ wherein R is a C_{4-18} hydrocarbyl radical of the group consisting of alkyl and cycloalkyl radicals, and from about 0.002 to about 10% of a metal-containing neutralized reaction product of phosphorus sulfide and an olefin polymer wherein said metal is a member of the group consisting of alkali and alkaline earth metals.

3,201,349
EMULSIFIABLE OIL COMPOSITION

Richard L. Quanstrom, Chicago Heights, Ill., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 18, 1960, Ser. No. 70,140
2 Claims. (Cl. 252—33.4)

2. An emulsifiable oil composition consisting essentially of a mineral lubricating oil base with a viscosity of about 50 to 150 SUS at 100° F., about 8 to 20 percent of sodium mahogany sulfonate, about 1 to 3 percent of ethylene glycol, about 3 to 6 percent of potassium rosinate, about 0.1 to 1 weight percent of 2-amino-2-ethyl-1,3-propanediol, about 0.5 to 3 weight percent of sodium nitrite, about 0.5 to 3 weight percent tri-n-butylamine and about 1 to 5 weight percent water.

3,201,350
LUBRICANTS CONTAINING A SCHIFF BASE

Kenneth L. McHugh, Kirkwood, Mo., and John O. Smith, Swampscott, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 8, 1963, Ser. No. 271,498
7 Claims. (Cl. 252—51.5)

1. A composition consisting essentially of polyester lubricating oil and a minor proportion, sufficient to inhibit oxidation, of a condensation product of the formula



wherein R and R′ are selected from the class consisting of hydrogen, lower alkoxy and hydroxy and in which R and R′ when taken together represent the methylene-

dioxy radical, wherein R is alkoxy only when R' at the same benzene ring is hydroxy, and wherein only one of R and R' can be hydrogen when attached to the same benzene ring.

3,201,351
MINERAL OIL COMPOSITIONS
Joseph E. Fields and John H. Johnson, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed June 12, 1961, Ser. No. 116,247
8 Claims. (Cl. 252—56)

1. A mineral oil composition of improved viscosity index and hydrolysis stability comprising a major amount of mineral oil, a minor amount sufficient to improve the viscosity index of said mineral oil of oil-soluble isobutylene/dialkyl fumarate polymer, said dialkyl fumarate having an average number of not more than 10 carbon atoms in said alkyl groups but at least a sufficient average number of carbon atoms to give an oil-soluble polymer and said polymer and isobutylene existing in a 1 to 1 molar ratio in said mineral oil composition, and a minor amount of a barium-containing detergent additive.

3,201,352
PHOSPHORESCENT MATERIALS
Georg Jaynes and Gerhard Bauer, both of Darmstadt, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany
No Drawing. Filed Jan. 29, 1962, Ser. No. 169,598
Claims priority, application Germany, Feb. 2, 1961, J 19,360
25 Claims. (Cl. 252—301.2)

1. A phosphorescent composition consisting essentially of a homogeneous mixture, in parts by weight, of about 0.1–15 parts of an activating substance and of about 99.9–85 parts of a triazine compound, said activating substance being an organic compound other than a triazine compound and exhibiting fluorescence per se when irradiated by short wave light and additionally exhibiting a phosphorescence in solid solution and in absorbates, and said triazine compound being selected from the group consisting of cyanuric acid, the esters and salts thereof, and melamine, said composition having a phosphorescence which is extremely resistant to water and moisture.

15. A method of producing a phosphorescent composition, which method comprises melting together a mixture consisting essentially of about 0.1–15 parts of an activating substance and of about 99.9–85 parts of a triazine compound, said activating substance being an organic compound other than a triazine compound and exhibiting fluorescence per se when irradiated by short wave light and additionally exhibiting a phosphorescence in solid solution and in adsorbates, and said triazine compound being selected from the group consisting of cyanuric acid, the esters and salts thereof, and melamine.

3,201,353
MICRO-INCLUSIONS AND METHOD OF MAKING SAME
Leo D. Carlson, Oak Park, Mich., assignor, by mesne assignments, to American Agricultural Chemical Company, a corporation of Delaware
No Drawing. Filed June 14, 1960, Ser. No. 35,916
4 Claims. (Cl. 252—316)

1. A method which comprises admixing at a temperature in the range from about 10° C. to about 75° C. an aqueous gelatin solution containing a water-immiscible material dispersed therein with an aqueous solution of a water-soluble zirconyl salt to precipitate said gelatin as a hydrophobic zirconyl-containing gelatin complex, said gelatin complex being formed upon admixture of said aqueous zirconyl solution and said gelatin solution and said gelatin complex upon formation encapsulating said water-immiscible liquid.

3. A composition of matter consisting essentially of water-immiscible material encapsulated within a solid, hydrophobic zirconyl-containing gelatin complex.

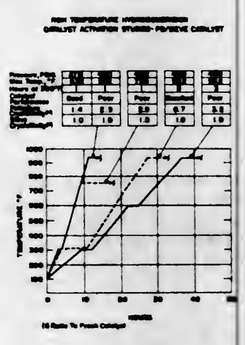
3,201,354
REDUCING THE CAKING OF NITROGEN-CONTAINING SALTS
Joseph F. Wilson, John C. Hillyer, and Van C. Vives, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Original application Aug. 18, 1960, Ser. No. 50,312, now Patent No. 3,116,185, dated Dec. 31, 1963. Divided and this application Mar. 25, 1963, Ser. No. 267,805
7 Claims. (Cl. 252—383)

1. A novel anti-caking agent for preventing the caking tendency of nitrogen-containing compounds, said agent consisting essentially of an admixture of kaolin into which has been incorporated an alkali metal salt of an alkylaryl sulfonic acid, said salt being present in the amount of from 0.25 to 12 weight percent, based on the total weight of the anti-caking agent, and having a total of 7–30 carbon atoms per molecule wherein the aryl portion of said molecule is selected from the group consisting of benzene and naphthalene.

3,201,355
REACTIVATION OF NOBLE METAL CATALYSTS WITH ANHYDROUS GASEOUS HALOGENS
Charles N. Kimberlin, Jr., and Elroy M. Gladrow, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Oct. 5, 1953, Ser. No. 384,336
3 Claims. (Cl. 252—411)

1. Method of reactivating a platinum-containing catalyst which has become deactivated in a process for converting hydrocarbons which comprises contacting the deactivated platinum-containing catalyst with gaseous nitrosyl chloride.

3,201,356
MOLECULAR SIEVE CATALYST ACTIVATION PROCESS
Herbert Kress, Julius Philip Bilisoly, and John Nelson Beard, Jr., Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Sept. 27, 1961, Ser. No. 141,129
9 Claims. (Cl. 252—455)



1. An improved process for activating a crystalline zeolitic molecular sieve catalyst composited with a noble metal component which comprises maintaining said catalyst under superatmospheric pressure, dehydrating said catalyst to a water content of less than 1.8% by weight of catalyst at a temperature below about 320° F. and thereafter heating said catalyst in the presence of hydrogen at temperatures above 320° F.

3,201,357
VINYLATION REACTIONS AND MERCURIC SALT CATION EXCHANGE CATALYSTS THEREFOR
Fabian T. Fang, Levittown, Pa., and Irwin S. Fierman, Levittown, N.J., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Apr. 25, 1962, Ser. No. 189,954
14 Claims. (Cl. 260—2.2)

1. A mercuric vinylation catalyst of the formula

$$R—SO_3HgSO_3—R$$

in which R represents a backbone of a macroreticular-structed ion exchange resin.

3,201,358
METHOD FOR PREPARING A POLYURETHANE FOAM
Fritz Hostettler and Eugene F. Cox, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Oct. 2, 1962, Ser. No. 227,943
4 Claims. (Cl. 260—2.5)

1. A method for producing a urethane foam which comprises reacting an organic polyisocyanate with a polyol in the presence of a catalyst and a foaming agent, wherein the catalyst is a mixture of 1,4-diazabicyclo[2,2,2]octane and a metal compound selected from the group consisting of antimony trichloride, titanium tetrachloride, and dioctyl lead dichloride, wherein the molar concentration ratio of said metal compound to said 1,4-diazabicyclo[2,2,2]octane varies from 100:1 to 1:10,000.

3,201,359
PROCESS FOR PREPARING WAX EXTENDED POLYURETHANE FOAMS
Elbert C. Herrick, Chesapeake, Va., and William J. Stout, Wilmington, and Steven G. Belak, Claymont, Del., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed June 19, 1964, Ser. No. 376,571
3 Claims. (Cl. 260—2.5)

1. A process for the production of a wax extended polyurethane foam comprising the steps of

(I) forming a part component comprising
  (a) a polyol containing active hydrogen and having a molecular weight ranging from about 500 to about 10,000 and
  (b) from 5 to 50 wt. percent based on the total foam ingredients of a blend of
    (1) a wax derived from petroleum processing having a melting point in the range of from 100° F. to 150° F.,
    (2) a waxy fatty organic material selected from the group consisting of high molecular weight organic fatty acids, fatty alcohols and fatty esters containing 10 to 40 carbon atoms and
    (3) a non-ionic emulsifier for (1) and (?),
(II) forming a second component containing an aromatic diisocyanate, a tertiary amine catalyst and an emulsifier for polyurethane foams,
(III) mixing the first and second components together in the presence of a liquefied halohydrocarbon blowing agent and
(IV) foaming the mixture at a temperature in the range of 40° F. to 200° F.

3,201,360
CURABLE MIXTURES COMPRISING EPOXIDE COMPOSITIONS AND DIVALENT TIN SALTS
William R. Proops, Charleston, and George W. Fowler, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 24, 1959, Ser. No. 861,765
12 Claims. (Cl. 260—18)

1. A curable mixture consisting essentially of (A) a divalent tin compound selected from the group consisting of stannous salts of aliphatic monocarboxylic and dicarboxylic acid having up to 54 carbon atoms and stannous compounds having the formula:

$$Sn(OR)_2$$

wherein R is selected from the group consisting of saturated and unsaturated, substituted and unsubstituted hydrocarbyl groups having from 1 to 18 carbon atoms, the substituents thereon being selected from the group consisting of hydroxy, halo and keto, (B) a polyepoxy compound selected from the group consisting of polyglycidyl polyethers of polyhydric phenols having a melting point range not greater than 160° C., butadiene dioxide, epoxleast 2 hydrogen atoms contiguously attached to nitrogen, polycarboxylic acids, polycarboxylic acid anhydrides, polyols having at least two hydroxyl groups selected from the group consisting of alcoholic and phenolic hydroxyl groups, polythiols, polyisocyanates, polythioisocyanates, polyacyl halides and mixtures of the aforesaid hardeners.

3,201,361
RUBBER COMPOUNDED WITH A RELEASING COMPOSITION CONTAINING A BRANCHED CHAIN ALCOHOL AND STEARIC ACID
Erwin Aron, Paterson, N.J., assignor to Technical Processing, Inc., Paterson, N.J., a corporation of New Jersey
No Drawing. Filed June 6, 1960, Ser. No. 33,901
13 Claims. (Cl. 260—23.7)

2. A composition of matter comprising a homogeneous mixture of an oleate salt of a metal selected from the group consisting of zinc, magnesium, lead and calcium, the oleate salt being in an amount such that the oleic acid equivalent thereof amounts to about 11 to 16% of the total mixture, about 50 to about 60% of a lubricant selected from the group consisting of petroleum jelly and paraffin wax, about 4 to about 6% monohydric branched-chain alkylol having from about 8 to about 18 carbon atoms, about 4.5 to about 6.7% potassium stearate, and about 14 to about 26% free stearic acid.

3,201,362
TEXTILE FINISHES
Herman Francis Mark, Brooklyn, N.Y., assignor to The Western Petrochemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 28, 1960, Ser. No. 65,594
6 Claims. (Cl. 260—28.5)

1. A textile finishing composition comprising a homogenized mixture of liquid dispersions of the ammonium salt of monooctylsebacate; polycthylene having a molecular weight between 12,000 and 15,000; and an intimate blend of a major amount of a microcrystalline wax and a minor amount of tacky poly(cis-isoprene).

3. A textile finishing composition comprising a homogenized mixture of liquid dispersions of an ester of polyoxyethylene glycol having an average molecular weight between about 500 and about 700 and lactic acid; isotactic polypropylene having a molecular weight in the range of about 10,000 and about 13,000; and an intimate blend of a major amount of a potassium hydroxide treated, air-blown microcrystalline wax and a minor amount of tacky butadiene-styrene-vinylpyridine polymer.

5. A textile finishing composition comprising a homog-

enized mixture of liquid dispersions of an ester of polyoxyethylene glycol having an average molecular weight of about 500 and about 700 and lactic acid; isotactic polypropylene having a molecular weight in the range of about 10,000 to 13,000; and an intimate blend of a major amount of a co-oxidized mixture of a microcrystalline wax and polyethylene and a minor amount of tacky butadiene-styrene-vinylpyridine copolymer.

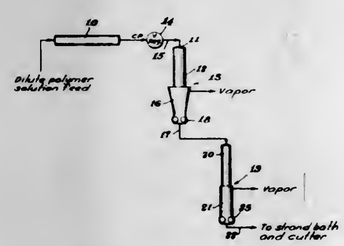
3,201,363
EXTRUSION AIDS FOR POLYETHYLENE
Harold M. Spurlin, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 20, 1962, Ser. No. 225,124
7 Claims. (Cl. 260—30.4)

1. A composition consisting essentially of a blend of high density transition metal-catalyzed polyethylene and 0.01 to 1.0% by weight of an inner anhydride of a polycarboxylic organic acid.

3,201,364
POLYPROPYLENE PLASTICIZED WITH MINERAL OIL
Ival O. Salyer, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Aug. 26, 1960, Ser. No. 57,367
5 Claims. (Cl. 260—33.6)

1. A plasticized composition comprising 50 to 95 parts of a highly stereoregular crystallizable polypropylene and correspondingly from 50 to 5 parts of mineral oil, said mineral oil being characterized by an initial boiling point above 200° C., and a solubility parameter from 7.0 to 9.5.

3,201,365
RECOVERING POLYMER FROM DILUTE POLYMER SOLUTIONS
Robert K. Charlesworth, Walnut Creek, and Stanley A. Murdock and Kernal Glenn Shaw, Concord, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 26, 1961, Ser. No. 119,531
12 Claims. (Cl. 260—34.2)



1. A process for concentrating a relatively dilute polymer solution consisting essentially of a thermoplastic polymer and a solvent for said polymer comprising heating said dilute polymer solution at an elevated pressure in a closed system filled with said dilute polymer solution to a temperature above the vaporization temperature of said solvent at a pressure lower than the pressure in said closed system; flashing said heated dilute solution to a lower pressure than in said closed system to created a two-phase mixture of vapor and liquid; introducing said mixture to a multi-passage heating zone, said zone being maintained at a temperature above the vaporization temperature of said solvent at the pressure in said zone, above the melting point of said polymer and below the temperature at which any substantial decomposition of the polymer will occur; passing said mixture through said heating zone; discharging said mixture from said zone into a receiver; withdrawing vaporized solvent from said receiver; and withdrawing from said receiver a polymer solution significantly richer in said polymer than said dilute polymer solution.

3,201,366
STABILIZATION OF POLY(VINYL ISOPROPYL ETHERS) WITH A BENZOTRIAZOLE AND A PHENOL
Frank A. Magnotta, Lancaster, Pa., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Filed July 13, 1960, Ser. No. 42,518
3 Claims. (Cl. 260—45.8)

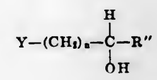
1. A stabilized poly(vinyl isopropyl ether) comprising poly(vinyl isopropyl ether), from 0.5% to 1% by weight of said poly(vinyl isopropyl ether) of the stabilizer-2,6-di-tert-butyl-4-methylphenol, and from 0.5% to 1% by weight of said poly(vinyl isopropyl ether) of the stabilizer - 2(2'-hydroxy-3',5' - dimethylphenyl) benzotriazole.

3,201,367
ALKYLENE OXIDE POLYMERS STABILIZED WITH UREA COMPOUNDS
Keith L. Smith, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Oct. 12, 1960, Ser. No. 62,162
11 Claims. (Cl. 260—45.9)

1. A composition comprising an ethylene oxide polymer wherein said polymer is prepared by the suspension polymerization of ethylene oxide in the presence of a catalyst selected from the group consisting of alkaline earth metal amides, alkaline earth metal hexammoniates, and alkaline earth metal amide-alcoholates, and a stabilizing amount of a compound selected from the group consisting of urea, arylurea, acylurea, N-acyl-N'-alkylurea, dichloralurea, N,N'-diarylurea, N,N-diarylurea, thiourea, alkenylurea, alkylthiourea, arylthiourea, acylthiourea, N,N'-dialkylthiourea, and N,N'-diarylthiourea.

3,201,368
POLYOLEFINS STABILIZED WITH AN (ALKYLPHENOL) MONOSULPHIDE AND A NICKEL ALKOXIDE
Charles H. Fuchsman, Cleveland Heights, Ohio, assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 25, 1960, Ser. No. 64,706
6 Claims. (Cl. 260—45.75)

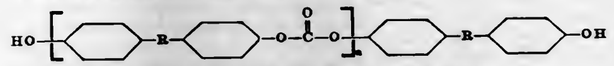
1. A polyolefin homopolymer composition containing in intimate admixture therewith (a) from about 0.05% to 5% by weight of o,o'-bis-(p-1,1,3,3-tetramethylbutylphenol) monosulphide, and (b) from about 0.02% to 3% by weight of a nickel alkoxide of an alcohol having the general formula



wherein Y is selected from the group consisting of —SR', —OH' and —OR'; R' is selected from the group consisting of a hydrocarbon group and a radical composed of carbon, hydrogen and oxygen; R'' is selected from the group consisting of hydrogen, a hydrocarbon group, a radical composed of carbon, hydrogen, and oxygen; and *n* is 1 or 2, the weight ratio of said alkoxide to said monosulphide being substantially about 2:1 to 1:2.

3,201,369
HEAT STABLE POLYCARBONATES CONTAINING METAL SALTS OF OXYACIDS OF PHOSPHORUS
Richard G. Dell, Hanover Township, Morris County, N.J., and Richard A. Meisner, Urbana, Ill., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed May 29, 1961, Ser. No. 113,146
5 Claims. (Cl. 260—45.75)

1. A bisphenol polycarbonate resin composition comprising (a) a polycarbonate resin of the formula



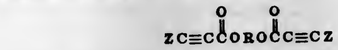
wherein R is a member selected from the group consisting of branched and unbranched hydrocarbon and halogenated hydrocarbon radicals, and *n* is an integer from 40 to 400 and (b) between about 0.01% and about 15% thereof by weight of a heat stabilizing agent of the general formula

MA

wherein M represents a member selected from the group consisting of magnesium, manganese, the alkali and the alkaline earth metals; and A represents an inorganic anion of an oxyacid of phosphorus, said stabilizing agent having, in aqueous solution, a pH value between about 2 and about 10.

3,201,370
REACTION PRODUCTS OF ACETYLENIC DIESTERS AND POLYOLS
John M. Butler and Lee A. Miller, Dayton, and George L. Wesp, Englewood, Ohio, assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Sept. 9, 1960, Ser. No. 54,814
10 Claims. (Cl. 260—47)

1. The method which comprises contacting in the presence of a basic, organic catalyst and an inert, organic liquid diluent, a diester of the formula



in which Z is selected from the class consisting of hydrogen, alkyl radicals of from 1 to 5 carbon atoms and aryl radicals of 6 to 10 carbon atoms and R is selected from the class consisting of bivalent hydrocarbon radicals and bivalent halohydrocarbon radicals of from 2 to 18 carbon atoms and is linked through diverse carbon atoms thereof to the remainder of the molecule of which it forms a part, with a substantially equimolar quantity of a compound of the formula HX—Y—XH where X is selected from the class consisting of oxygen and sulfur and Y is selected from the class consisting of hydrocarbyl and halohydrocarbyl radicals of from 2 to 18 carbon atoms and alkyleneoxyalkylene and polyalkyleneoxyalkylene radicals having from 2 to 4 carbon atoms in each alkylene group, a total of from 1 to 100 oxygen atoms and a total of from 2 to 101 alkylene radicals, and recovering an olefinic, linear polyester from the resulting reaction product.

3,201,371
PROCESS FOR THE PRODUCTION OF EUPOLYOXYMETHYLENES WITH THE AID OF CATALYTIC FILLERS
Jürgen Behrends, Hanau am Main, and Otto Schweitzer, Koenigstein, Taunus, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed Nov. 17, 1960, Ser. No. 69,817
Claims priority, application Germany, Nov. 20, 1959, D 31,926
11 Claims. (Cl. 260—67)

1. A process for the production of polyoxymethylenes comprising a polymerizing a formaldehyde compound selected from the group consisting of monomeric formaldehyde and lower molecular weight formaldehyde oligomers under substantially water free conditions and in the presence of catalytic quantities of a finely divided carbon black as a catalytic material.

3,201,372
BIURET POLYISOCYANATE BASED POLYURETHANES
Kuno Wagner, Am Kiesberg, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Dec. 5, 1963, Ser. No. 328,167
7 Claims. (Cl. 260—77.5)

1. In a process for the preparation of a polyurethane which comprises reacting an organic polyisocyanate with an organic compound having at least two reactive hydrogen containing groups as determined by the Zerewitinoff method, the improvement which comprises reacting a biuret polyisocyanate with the reactive hydrogen containing compound to form the polyurethane.

3,201,373
SYNTHETIC CHLORINE CONTAINING RUBBER-ACRYLATE TYPE POLYMERS
Samuel Kaizerman, Plainfield, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed June 19, 1962, Ser. No. 203,463
10 Claims. (Cl. 260—79.5)

1. A sulfur-vulcanizable synthetic elastomer obtained by copolymerizing in the presence of a free radical catalyst a mixture containing at least 70 weight percent of an alkylacrylate and sufficient vinylchloroacetate to produce in the elastomer a chlorine content of about 0.4 to about 3 weight percent chlorine, the alkyl groups in said alkylacrylate containing from 1–8 carbon atoms.

3,201,374
TERPOLYMERS CONTAINING AT LEAST 65% ETHYLENE
John A. Simms, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 21, 1961, Ser. No. 118,521
12 Claims. (Cl. 260—80.5)

1. A terpolymer of (a) at least 65% by weight of ethylene; (b) at least 5% by weight of an ester of the group consisting of alkyl acrylates, the alkyl methacrylates, the dialkyl maleates and the dialkyl fumarates of the lower (1–6 carbon) monohydric primary aliphatic alcohols; and (c) 0.01 to 10% by weight of a monomer of the group consisting of: the monoacrylates and monomethacrylates of glycols of the group consisting of ethylene glycol, 1,2-propylene glycol, 1,4-butanediol and 1,6-hexanediol; 2-hydroxy-3-aminopropyl allyl ether, allyl glycerol ether, 2-dimethylaminoethyl acrylate, 2-dimethylaminoethyl methacrylate and N-vinyl pyrrolidone; and acrylic and methacrylic acids, said terpolymer having been made by a free-radical initiated polymerization of a mixture of ethylene, said group (b) monomer and said group (c) monomer.

3,201,375
USE OF ACYL PEROXIDES AS CATALYSTS IN THE PREPARATION OF ACRYLONITRILE-STYRENE-ALPHA-METHYL-STYRENE TERPOLYMERS

Arnold B. Finestone, Leominster, and James S. Pavlis, Fitchburg, Mass., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 21,146, Apr. 11, 1960. This application Nov. 24, 1964, Ser. No. 413,649
10 Claims. (Cl. 260—80.5)

1. The method of preparing thermoplastic resinous compositions which comprises copolymerizing at a temperature between about 60° C. and about 125° C., in aqueous suspension, until the conversion of monomer is between 60% and 92%, based on total monomer charge, a polymerizable composition comprising by weight about 22 to 45 parts acrylonitrile, about 5 to 35 parts alpha-methylstyrene, and about 75 to 30 parts styrene in the presence of from about 0.02% to 2.0%, by weight of the combined weight of the monomers, of a water insoluble aliphatic peroxide catalyst having the general formula

$$[CH_3(CH)_nCO]_2O_2$$

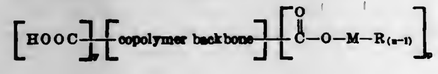
wherein n is an integer of at least 6, thereby forming thermoplastic resinous compositions readily moldable to substantially non-discolored products.

3,201,376
CURABLE COPOLYMERS CONTAINING CARBOXYL AND ORGANO-METALLIC CARBOXYLATE AND PROCESS FOR THEIR PREPARATION

Stephen W. Osborn, Yardley, and Arthur J. Yu, North Levittown, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed June 27, 1961, Ser. No. 119,799
16 Claims. (Cl. 260—82.1)

1. A liquid, curable, oragno-metallic copolymer selected from the group consisting of organo-metallic copolymers having the formulas



and



wherein M, M' and M² are metals selected from the group consisting of lead, tin, mercury, gallium, thallium, indium, platinum and germanium; n is the valence of the metal M, n' is the valence of the metal M' and n^2 is the valence of the metal M², and n, n' and n^2 are each whole numbers of 2 to 4; R, R' and R² are selected from the group consisting of alkyl, branched alkyl, aryl, alkaryl, aralkyl and alicyclic radicals; y is the amout of carboxyl groups on said backbone and is at least 0.02 gram equivalent per 100 grams of said organo-metallic copolymer and p is the amount of carboxylate groups on said backbone and corresponds to a value of approximately 0.02 up to 0.15–y gram equivalent per 100 grams of said organo-metallic copolymer in terms of carboxyl group content and p^1 plus p^2 equals p.

3,201,377
REACTION PRODUCT OF A RUBBER AND A POLYNITRILE DECABORANE

Joseph Green, Dover, Marvin M. Fein, Westfield, and Michael Israel, Morristown, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Sept. 29, 1960, Ser. No. 59,458
12 Claims. (Cl. 260—85.3)

1. A method for the production of an organoboron compound useful as a fuel which comprises reacting a borane selected from the group consisting of polynitrile decaboranes and polynitrile alkyldecaboranes with a material consisting essentially of an olefinic rubber, the polynitrile decaboranes being the reaction products of decaborane with a decyano unsubstituted alkane having from 1 to 12 carbon atoms, and the polynitrile alkyldecaboranes being the reaction products of a lower alkyl decaborane with a dicyano unsubstituted alkane having from 1 to 6 carbon atoms.

3,201,378
POLYMERIZATION PROCESS USING A REACTION VESSEL COATED WITH OXIDIZED ALUMINUM

Charles C. Ketterer, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 8, 1962, Ser. No. 229,158
3 Claims. (Cl. 260—85.5)

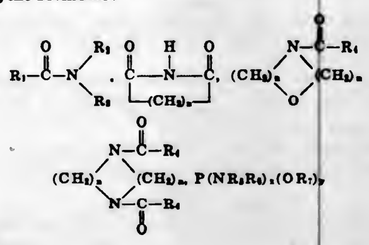
1. In a process for polymerizing a monomer composition comprised of a major proportion of acrylonitrile and a minor proportion of a copolymerizable monomer selected from the group consisting of a vinyl pyridine and a neutral ethylenically unsaturated monomer in the presence of a catalyzing amount of a peroxy catalyst and an activator selected from the group consisting of 1-thioglycerol and 1-thiosorbitol, the improvement which comprises polymerizing said monomer composition in a reaction zone substantially bounded by oxidized aluminum.

3,201,379
THREE-COMPONENT METAL HYDRIDE-TRANSITION METAL HALIDE CATALYST AND OLEFIN POLYMERIZATION PROCESS THEREWITH

Harry W. Coover, Jr., and Frederick B. Joyner, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 23, 1960, Ser. No. 77,835
The portion of the term of the patent subsequent to Sept. 1, 1981, has been disclaimed and dedicated to the Public
18 Claims. (Cl. 260—93.7)

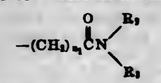
1. In the polymerization of α-olefins containing 2 to 10 carbon atoms to form solid crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalytic mixture consisting essentially of a hydride of a metal selected from the group consisting of alkali metals and alkaline earth metals, a halide of a transition metal selected from the group consisting of titanium, vanadium, zirconium, chromium and molybdenum and a third component selected from the amides having the formulas:



and



wherein R_1 is a radical selected from the group consisting of alkyl radicals containing 1 to 20 carbon atoms, phenyl, carboxyl, alkoxy, $—N(R)_2$ wherein R is an alkyl radical containing 1 to 4 carbon atoms and



wherein n_1 is an integer of 1 to 4, each of R_2 and R_3 is a radical selected from the group consisting of hydrogen, alkyl radicals containing 1 to 8 carbon atoms, phenyl and cyclohexyl and wherein R_4 is a radical selected from the group consisting of alkyl radicals containing 1 to 4 carbon atoms and phenyl and n is an integer of 1 to 4, and wherein R_5, R_6 and R_7 are alkyl radicals containing 1 to 8 carbon atoms, x and y are whole numbers from 1 to 3 and 0 to 2, respectively, the sum of x and y being 3 and x_1 and y_1 are whole numbers from 1 to 2, the sum of x_1 and y_1 being 3 the molar ratio of hydride to third component being within the range of 1:1 to 1:0.25.

3,201,380
PROCESS FOR THE PRODUCTION OF POLYETHYLENE

Georg Schmidt-Thomée, Heidelberg, Hans Ellbracht, Klaus Kinkel, and Hans Georg Trieschmann, Ludwigshafen (Rhine), Friedrich Urban, Limburgerhof, Pfalz, and Guenter Zoche, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Sept. 12, 1961, Ser. No. 137,536
Claims priority, application Germany, Sept. 16, 1960, B 59,393
3 Claims. (Cl. 260—94.9)

1. A process for the production of polyethylene having a density above 0.924 which comprises polymerizing ethylene in the absence of solvents at a pressure between 2000 and 4000 atmospheres and a temperature between 200° C. and 300° C. in the presence of 0.05 to 0.2 percent by weight, with reference to the ethylene, of hydrogen as regulator and 5–20 p.p.m. of O_2, based on the ethylene as the sole catalyst, and recovering polyethylene having a density above 0.924, said polyethylene being adapted for processing into films with high clarity and transparency.

3,201,381
EMULSIFIABLE POLYETHYLENE WAXES AND PROCESS OF PREPARATION

Hugh J. Hagemeyer, Jr., and Raymond L. Etter, Jr., Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 20, 1962, Ser. No. 203,700
13 Claims. (Cl. 260—94.9)

1. The method which comprises oxidizing a nonemulsifiable polyethylene wax with an oxygen-containing gas at a temperature in the range of about 100° to about 160° C. and a pressure up to 1,000 p.s.i.g., in the presence of an aliphatic monocarboxylic acid containing 2–20 carbon atoms, until the acid number of the wax is in the range of about 4 to about 25.

3,201,382
PROCESS FOR PREPARING A BIOCHEMICALLY ACTIVE POLYPEPTIDE FROM SHEEP PITUITARY GROWTH HORMONE

Joseph Bornstein, 305 Orrong Road, East St. Kilda S.16, Melbourne, Victoria, Australia

No Drawing. Filed July 6, 1961, Ser. No. 122,103
1 Claim. (Cl. 260—112)

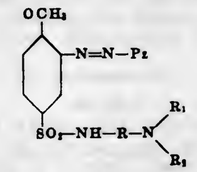
A process for preparing and isolating a biochemically active polypeptide which comprises subjecting growth hormone of sheep pituitary to partial acid hydrolysis at a pH between about 1.5 to about 2.5 in an extraction solvent consisting of 4 volumes of ethanol, 0.4 volume of butanol, 0.4 volume of toluene and 1 volume of water, recovering and drying the insoluble portion from the extraction solvent, extracting the dried insoluble portion with 0.1 M acetic acid, filtering the acetic acid extracts through an ultrafilter, passing the ultrafiltrate through a cation exchange resin on the hydrogen cycle, recovering the unabsorbed material by washing with water, adding to this aqueous solution an ethanol-ethyl ether mixture in an amount sufficient to precipitate the active polypeptide, recovering and drying the resulting precipitate, dissolving said dried precipitate in water and adjusting the pH of the solution to about 8.5 with ammonia, filtering the resulting solution, adding a mixture of ethanol and ether to the filtered solution, and recovering and drying the resulting precipitated active polypeptide product.

3,201,383
METALLIZED MONOAZO DYES

James M. Straley and Raymond C. Harris, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 5, 1962, Ser. No. 207,792
6 Claims. (Cl. 260—147)

1. The metallized monoazo compounds, containing one atom of a metal of the class consisting of nickel, cobalt, chromium and copper, in a complex union with two moles of a dye having the following general formula.



wherein

Pz=a 4-pyrazolyl-5-one radical free of carboxylic and sulfonic acid groups

R=a lower alkylene radical

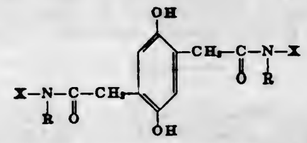
R_1 and R_2=lower alkyl radicals and together with the nitrogen atom to which they are attached represent the atoms necessary to complete a member of the class consisting of an N-morpholino radical and an N-piperidino radical.

3,201,384
HYDROQUINONE DIACETAMIDE AZO COMPOUNDS

Milton Green, Newton Center, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Oct. 23, 1962, Ser. No. 232,578
2 Claims. (Cl. 260—160)

1. A compound of the formula:



wherein each R is selected from the group consisting of hydrogen and lower alkyl radicals; and



is the radical of a member of the group consisting of phenylazo-naphthol, phenylazo-pyrazolone and phenylazo-naphthylazo-naphthol dyes of the formula

wherein X is the dye molecule exclusive of said



substituent and said nitrogen atom is bonded directly to a nuclear carbon atom of said dye molecule.

3,201,385
SYNTHESIS OF ARBUTIN

Arthur D. Jarrett, Watertown, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Feb. 11, 1963, Ser. No. 257,767
2 Claims. (Cl. 260—210)

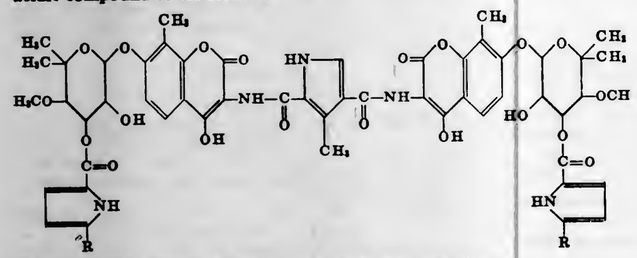
1. The process of preparing arbutin comprising (a) refluxing hydroquinone monobenzylether and β-d-glucose pentaacetate with phosphorus oxychloride to form benzylarbutin tetraacetate, (b) reacting said benzylarbutin tetraacetate with sodium and methanol to form benzylarbutin, and (c) hydrogenating said benzylarbutin to arbutin.

3,201,386
COUMERMYCIN AND SALTS THEREOF

Hiroshi Kawaguchi, Masanori Okanishi, and Takeo Miyaki, Tokyo, Japan, assignors to Bristol-Banyu Research Institute, Ltd., Tokyo, Japan, a Japanese corporation

Filed Aug. 25, 1964, Ser. No. 392,003
14 Claims. (Cl. 260—210)

5. A member selected from the group consisting of an acidic compound of the formula



wherein R is a member selected from the group consisting of hydrogen and methyl and both R groups are alike; and nontoxic, pharmaceutically acceptable cationic salts thereof.

3,201,387
5-TRIFLUOROMETHYLURACIL, DERIVATIVES THEREOF, AND PROCESSES FOR PREPARING THE SAME

Charles Heidelberger, Madison, Wis., assignor to the United States of America as represented by the Secretary of Health, Education and Welfare

Filed Sept. 18, 1963, Ser. No. 309,905
7 Claims. (Cl. 260—211.5)

3. 5-trifluoromethyl-2'-deoxyuridine.

3,201,388
METHOD OF PREPARING 5'-RIBONUCLEOTIDES

Yoshio Tsuchiya, Yokohama-shi, Kanagawa-ken, Tadao Takeuishi, Setagaya-ku, Tokyo, Tetsuya Kato, Kanagawa-ken, Hisao Mori, Setagaya-ku, Tokyo, and Masaharu Yoshikawa and Takehiko Ichikawa, Yokohama-shi, Kanagawa-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Filed Apr. 18, 1963, Ser. No. 273,821
Claims priority, application Japan, Apr. 20, 1962, 37/15,372; Sept. 10, 1962, 37/38,474
9 Claims. (Cl. 260—211.5)

1. A method of preparing a 5'-ribonucleotide from the corresponding ribonucleoside which comprises:

(a) reacting said ribonucleoside with phosporus oxychloride in the presence of a ketone of the formula

R'—CO—R''

wherein R' and R'' are hydrocarbon radicals selected from the group consisting of lower alkyl radicals and lower alkylene radicals, one of said R' and R'' being an alkylene radical when the other one is an alkylene radical, and said alkylene radicals being connected to form portions of a cyclohexane ring, whereby a 2',3'-O-alkylidene ribonucleoside-5'-phosphorodichloridate is produced;

(b) reacting said phosphorodichloridate with water to transform said phosphorodichloridate into the corresponding 2',3'-O-alkylidene-5'-ribonucleotide; and

(c) hydrolyzing said 2',3'-O-alkylidene-5'-ribonucleotide in an aqueous dilute acid solution.

3,201,389
METHOD FOR PREPARING RIBONUCLEOSIDE-5'-PHOSPHATES OR THEIR SALTS FROM RIBONUCLEOSIDES

Yasuo Fujimoto, Machida-shi, and Masao Naruse, Tokyo, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,879
Claims priority, application Japan, Sept. 24, 1962, 37/41,062, 37/41,063, 37/41,064, 37/41,065; May 14, 1963, 38/24,065, 38/24,066; May 31, 1963, 38/27,753, 38/27,752
19 Claims. (Cl. 260—211.5)

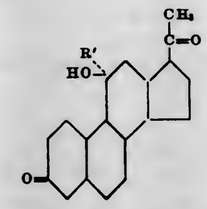
1. In a process for preparing 2',3'-O-substituted ribonucleoside by reacting the corresponding 2'-OH,3'-OH ribonucleoside with carbonyl compound in the presence of a catalyst, the improvement according to which the catalyst is concurrently catalyst for the condensation reaction involving the carbonyl compound and phosphorylating agent for the phosphorlyation of the 2',3'-O-substituted ribonucleoside resulting from said condensation, whereby isolation of the last-named nucleoside and separation of catalyst from the reaction mixture are rendered superfluous as a step antecedent to phosphorylation of the said nucleoside.

3,201,390
11α-RING - SUBSTITUTED - 11β - HYDROXYPREGNANE - 3,20 - DIONES AND PROCESS FOR THE PRODUCTION THEREOF

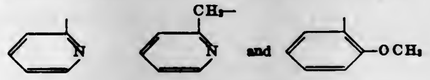
Gunther S. Fonken, Charleston Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 6, 1962, Ser. No. 200,297
12 Claims. (Cl. 260—239.5)

5. A compound of the formula



wherein R' is selected from the group consisting of

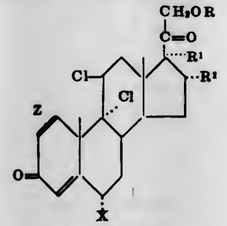


3,201,391
6α,9α,11β-TRICHLORO AND 6α-FLUORO-9α,11β-DICHLORO PREGNENES

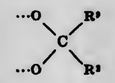
Albert Bowers, Mexico City, Mexico, assignor, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Feb. 18, 1960, Ser. No. 9,435
Claims priority, application Mexico, Feb. 18, 1959, 53,717; Oct. 20, 1959, 56,285
22 Claims. (Cl. 260—239.55)

1. A compound of the following formula:



wherein X is selected from the group consisting of fluorine and chlorine; Z is selected from the group consisting of a double bond between C–1 and C–2 and a saturated linkage between C–1 and C–2; R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms; R' is selected from the group consisting of hydroxy and a hydrocarbon carboxylic acyloxy group containing less than 12 carbon atoms; R^3 is selected from the group consisting of hydrogen, α-methyl, β-methyl, α-hydroxy and an α-hydrocarbon carboxylic acyloxy group containing up to 12 carbon atoms and R' and R^3 jointly represent the grouping



in which R^3 is selected from the grouping consisting of hydrogen, lower alkyl and aryl containing from 6 to 12 carbon atoms.

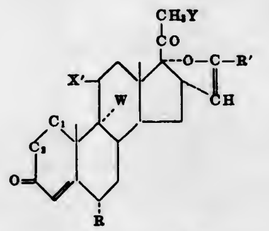
7. The 16,17-acetonide of 6α,9α,11β-trichloro-$\Delta^{1,4}$-pregnadiene-16α,17α,21-triol-3,20-dione.

3,201,392
PREGNANE-17α-OL-16α - ACETALDEHYDE 16β,17-CYCLIC ENOL ETHERS AND PROCESS FOR THE PRODUCTION THEREOF

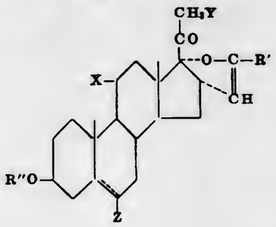
John E. Pike, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 3, 1963, Ser. No. 270,171
32 Claims. (Cl. 260—239.55)

1. A compound selected from the class consisting of compounds having the formulae:

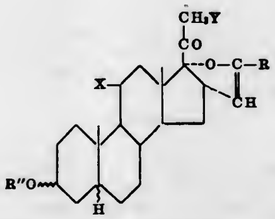


(I)



(II)

and



(III)

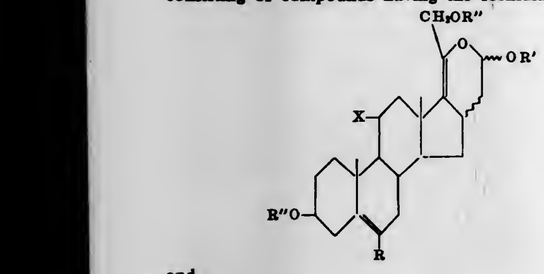
and the $\Delta^{6(7)}$ derivatives of the compounds of Formula I, wherein R is selected from the class consisting of hydrogen, fluorine, and methyl, R' is selected from the class consisting of hydrogen and lower-alkyl, R'' is selected from the class consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid containing from 1 to 12 carbon atoms, inclusive, W is selected from the class consisting of hydrogen and fluorine, X' is an 11-substituent selected from the class consisting of hydrogen, keto, and α- and β-hydroxy, and X' and W taken together represent a 9(11)-double bond, X is an 11-substituent selected from the class consisting of hydrogen, keto, α-hydroxy, β-hydroxy, and a 9,11-double bond, Y is selected from the class consisting of hydrogen, hydroxy, and acyloxy wherein acyl is as hereinbefore defined, Z is selected from the class consisting of hydrogen and methyl and —C_1—C_2— is a divalent radical selected from the class consisting of —CH_2—CH_2— and —CH=CH—.

3,201,393
3-KETO-5',6'-DIHYDRO ANDROSTANE - [17,16α - c]-PYRANS AND COMPOUNDS PRODUCED THEREFROM

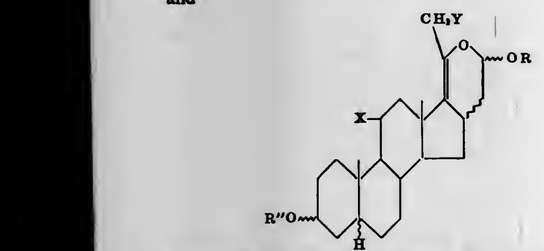
John E. Pike, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Original application Jan. 31, 1962, Ser. No. 170,262. Divided and this application June 15, 1964, Ser. No. 375,346
14 Claims. (Cl. 260—239.55)

14. A dihydroandrostanopyran selected from the class consisting of compounds having the formulae:



and



wherein R is selected from the class consisting of hydrogen and methyl, R' is lower-alkyl, R'' is selected from the class consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid containing from 1 to 12 carbon atoms, inclusive, X is an 11-substituent selected from the class consisting of hydrogen, keto, α-hydroxy, β-hydroxy, and a 9,11-double bond, Y is selected from the class consisting of hydroxy and acyloxy wherein the acyl radical is that of a hydrocarbon carboxylic acid containing from 1 to 12 carbon atoms, inclusive, and Z is selected from the class consisting of hydroxymethylene and carbonyl.

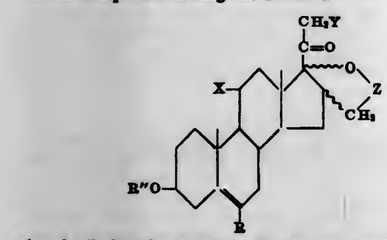
2. 3β,21-diacetoxy-17α-hydroxy-20-oxopregn-5-ene-16α-acetic acid γ-lactone.

3,201,394
LACTOL DERIVATIVES OF 16-(2-OXO ETHYL)-17-HYDROXY PREGNANE STEROIDS

John E. Pike, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application Jan. 31, 1962, Ser. No. 170,262. Divided and this application June 15, 1964, Ser. No. 375,374
7 Claims. (Cl. 260—239.57)

1. A compound having the formula:



wherein R is selected from the group consisting of hydrogen and methyl, R'' is selected from the class consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid containing from 1 to 12 carbon atoms, inclusive, X is an 11-substituent selected from the class consisting of hydrogen, keto, α-hydroxy, β-hydroxy, and a 9,11-double bond, Y is selected from the class consisting of hydroxy and acyloxy wherein the acyl radical is that of a hydrocarbon carboxylic acid containing from 1 to 12 carbon atoms, inclusive, and Z is selected from the class consisting of hydroxymethylene and carbonyl.

2. 3β,21-diacetoxy-17α-hydroxy-20-oxopregn-5-ene-16α-acetic acid γ-lactone.

3,201,395
Δ1,4-3-OXO-18-NOR- AND -18-OXYGENATED-ANDROSTADIENES

Albert Wettstein, Riehen, and Ernst Vischer and Jakob Urech, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 12, 1962, Ser. No. 223,256
Claims priority, application Switzerland, Sept. 21, 1961, 10,972/61
2 Claims. (Cl. 260—239.57)

1. The (18→11β)-lactone of Δ1,4-3:17-dioxo-11β-hydroxy-androstadiene-18-acid.

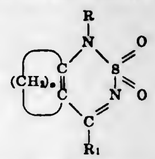
2. Δ1,4 - 3 - oxo - 11β:17β - dihydroxy - 17α - ethinyl-18-nor-androstadiene.

3,201,396
NOVEL 4,5-POLYMETHYLENE-(6H)-1,2,6-THIADIAZINE-1,1-DIOXIDES

John B. Wright, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Aug. 1, 1963, Ser. No. 299,177
7 Claims. (Cl. 260—243)

1. The compound of the formula



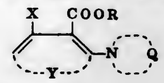
wherein R is selected from the group consisting of hydrogen and lower-alkyl; R_1 is selected from the group consisting of hydrogen, lower-alkyl, phenyl, lower-alkylphenyl, halophenyl, and lower-alkoxyphenyl; and *n* is an integer from 3 to 6, inclusive.

3,201,397
ALKYL ESTERS OF ALICYCLIC DIENE COMPOUNDS HAVING 7 TO 18 RING CARBON ATOMS AND HAVING A PYRROLIDINO RADICAL, A PIPERIDINO RADICAL, A MORPHOLINO RADICAL OR THE RADICAL OF HEXAMETHYLENEIMINE ATTACHED TO THE ALICYCLIC RING

Kent C. Brannock, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 31, 1962, Ser. No. 234,545
12 Claims. (Cl. 260—247.2)

1. A compound having the formula:



wherein R represents alkyl

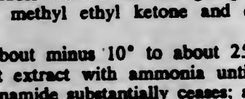


represents a member selected from the group consisting of pyrrolidino, piperidino, morpholino and hexamethyleneimino, X represents a member selected from the class consisting of hydrogen and —COOR, wherein R has the meaning previously assigned to it, Y represents alkylene of 3 to 14 carbon atoms and wherein when Y is

—$CH_2CH_2CH_2CH_2$—

X is —COOR.

8. A compound having the formula



wherein R represents alkyl and Y is —$CH_2(CH_2)_8CH_2$—.

3,201,398
PREPARATION OF 7-HALO-1,2,3,4-TETRAHYDRO-4-OXO-6-QUINAZOLINESULFONAMIDE

Herbert G. Arit, Jr., Ridgefield, Conn., and Gilmer T. Fitchett, Green Brook Township, Somerset County, and Francis X. Markley, Piscataway Township, Middlesex County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 3, 1962, Ser. No. 214,537
2 Claims. (Cl. 260—256.5)

1. In the preparation of 2-alkyl-7-halo-1,2,3,4-tetrahydro-4-oxo-6-quinazolinesulfonamide wherein "halo" is selected from chlorine and bromine and "alkyl" is selected from the alkyls of 1–4 carbon atoms; the improved procedure which comprises:

forming a reaction medium which, for about each mol of the corresponding 7-halo-2-alkyl-2,3-dihydro-4(1H)-quinazolinone as the starting material, consists essentially of

from about three to about eight mols of chlorosulfonic acid,

from about 0.75 to about four mols of an activator selected from

thionyl chloride and phosphorus pentachloride;

then at from about 10° to not over about 30° C., under agitation,

adding thereto said quinazolinone starting material at a rate such that the exotherm does not produce a temperature rise to above about 30° C.,

maintaining said agitation and a temperature of from about 10° to about 30° C., until reaction substantially ceases;

diluting resultant reacted mixture with sufficient ice and water to produce a temperature of from about minus 5° to about 0° C.; then

extracting the resultant slurry with a mixture of 100 parts by weight of a water-immiscible, lower alkyl ester of a lower alkanoic acid of about 1–3 carbon atoms with about 20 to 100 parts by weight of a water-soluble ketone of the group consisting of acetone, methyl ethyl ketone and diethyl ketone then

at from about minus 10° to about 25° C., treating resultant extract with ammonia until precipitation of sulfonamide substantially ceases; and

collecting resultant precipitate.

3,201,399
ONIUM TETRACYANOETHYLENIDES

Owen Wright Webster, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 20, 1960, Ser. No. 57,152
12 Claims. (Cl. 260—268)

1. An onium tetracyanoethylenide of the formula: $A^{\oplus}(C_6N_4)^{\ominus}$ wherein $A^{\oplus}$ is selected from the group consisting of $PR^1R^2R^3R^7$, $AsR^1R^2R^3R^7$, $SbR^1R^2R^3R^7$, $OR^1R^2R^3$, $SR^1R^2R^3$, $SeR^1R^2R^3$, and $TeR^1R^2R^3$, wherein R^1 is selected from the group consisting of hydrogen, alkyl of 1 to 20 carbon atoms and phenyl, R^2, R^3 and R^7 each is selected from the group consisting of alkyl of 1 to 20 carbon atoms and phenyl, and wherein when two of said groups R^2, R^3 and R^7 are joined to form a cyclic structure, said joined groups form a phenylalkylene of up to 40 carbon atoms.

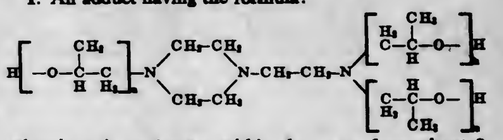
2. An onium tetracyanoethylenide of the formula $A^{\oplus}(C_6N_4)^{\ominus}$ wherein $A^{\oplus}$ is $NR^1R^2R^3R^4$, wherein R^1, R^2, R^3 and R^4 each is selected from the group consisting of hydrogen, alkyl of 1 to 20 carbon atoms, phenyl, phenyl and biphenyl both substituted with a member selected from the group consisting of halogen and alkyloxy, and alkyl of 1 to 20 carbon atoms substituted with a member selected from the group consisting of halogen, oxo, cyano, alkyloxy and alkyloxycarbonyl, said alkyl portion of said alkyloxy and alkyloxycarbonyl being lower alkyl.

3,201,400
PROPYLENE OXIDE ADDUCTS OF 1-{2[BIS(2-HYDROXYPROPYL)AMINO]ETHYL} - 4 - (2 - HYDROXYPROPYL)-PIPERAZINE

William C. Bedell, Jr., Houston, Tex., assignor to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

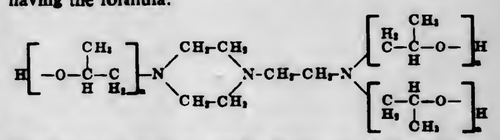
No Drawing. Filed July 16, 1962, Ser. No. 210,223
4 Claims. (Cl. 260—268)

1. An adduct having the formula:



wherein *n* is an integer within the range from about 2 to about 40.

3. A method which comprises the steps of reacting 1 - {2[bis(2 - hydroxypropyl)amino]ethyl} - 4 - (2 - hydroxypropyl)-piperazine with from about 6 to about 120 mols of propylene oxide in the presence of a base at a temperature within the range of about 110° to about 150° C. and a pressure within the range of about 40 to about 60 p.s.i.g. to provide a basic crude reaction product, contacting said basic crude reaction product with oxalic acid in an amount equivalent to the amount of said base initially employed, and filtering said neutralized reaction product to obtain a purified propylene oxide adduct of low ash content and odor, said propylene oxide adduct having the formula:



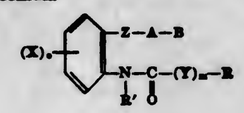
wherein *n* is a positive integer within the range of about 2 to about 40.

3,201,401
AMINOALKOXY AND AMINOALKYLTHIO-ANILIDE COMPOUNDS

John Krapcho, Somerset, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,266
13 Claims. (Cl. 260—268)

1. A compound selected from the group consisting of bases of the formula



and pharmaceutically-acceptable acid addition and quaternary ammonium salts thereof, wherein X is selected from the group consisting of hydrogen, halogen, trifluoromethyl, nitro, lower alkyl, lower alkoxy and lower alkanoyl; *n* is a positive integer less than four; A is lower alkylene; B is a member of the group consisting of amino, (lower alkyl)amino, di(lower alkyl)amino, (hydroxy-lower alkyl)amino, di(hydroxy-lower alkyl)amino, $(X)_n$-phenyl(lower alkyl)amino, N-(lower alkyl) - N - [$(X)_n$-phenyl(lower alkyl)]amino, alkylamino, dialkylamino, piperidino, (lower alkyl)-piperidino, di(lower alkyl)piperidino, (lower alkoxy)piperidino, piperidyl, (N-lower alkyl)piperidyl, pyrrolidino, (lower alkyl)-pyrrolidino, di-(lower alkyl)pyrrolidino, (lower alkoxy)pyrrolidino, pyrrolidyl, (N-lower alkyl) pyrrolidyl, morpholino, (lower alkyl)morpholino, di(lower alkyl)morpholino, (lower alkoxy)morpholino, thiamorpholino, (lower alkyl) thiamorpholino, di(lower alkyl) thiamorpholino, (lower alkoxy)thiamorpholino, piperazino, (lower alkyl) piperazino, di(lower akyl)piperazino, (hydroxy-lower alkyl) piperazino, (lower alkoxy)piperazino, (lower alkanoyloxy-lower alkyl)piperazino, (hydroxy-lower alkoxy-lower alkyl)piperazino, phenylpiperazino, (lower alkylphenyl)piperazino, (lower alkoxyphenyl)piperazino, (phenyl-lower alkyl)piperazino, (lower alkoxyphenyl-lower alkyl)piperazino, (halophenyl-lower alkyl)piperazino, 4-(pyridyl)piperazino and 4-(pyrimidyl)piperazino; Z is selected from the group consisting of oxa and thia; R' is selected from the group consisting of hydrogen, lower alkyl and phenyl-(lower alkyl); Y is selected from the group consisting of lower alkylene, lower alkenylene, and lower alkadienylene; *m* is selected from the group consisting of zero and one; and R is selected from the group consisting of hydrogen, lower alkyl, cyclic-lower alkyl, $(X)_n$-substituted phenyl, furyl, thienyl, pyridyl and piperonyl.

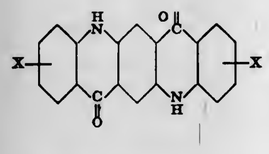
3,201,402
MONOCYCLIC CARBOCYCLIC AROMATIC AMINE

Hans Bohler, Rheinfelden, Fritz Kehrer, Basel, and Piero Maderni, Binningen, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland, a Swiss firm

No Drawing. Filed July 21, 1959, Ser. No. 828,469
Claims priority, application Switzerland, July 29, 1958, 62,362, amendments thereto, Nov. 28, 1958, Mar. 24, 1959; July 9, 1959, 75,538
13 Claims. (Cl. 260—279)

9. 2,5-di-(2'-nitro)-phenylamino terephthalic acid.

10. Symmetrical quinacridine-7,14-dione of the formula:



wherein the symbols X represent nitro groups.

11. In the preparation of di-arylamino-terephthalic acid compound, the improvement which consists essentially of (I) reacting, at a temperature between 70° and 160° C. and with a pH range of from 2 to 12 in contact with (A) copper catalyst, (B) acid-binding agent, and (C) polar solvent selected from the group consisting of water, low molecular alcohol of from 1 to 4 carbon atoms, glycerine, ethylene glycol, propylene glycol and polyethylene glycol, (1) one mole of a member selected from the group consisting of a 2,5-dihalogenoterephthalic acid and a 2,5-dihalogenoterephthalic acid ester with (2) one mole of a monocyclic carbocyclic aromatic amine, wherein from 1 to 2 of the positions ortho to the amino group are free, whereby a monohalogeno - monoarylamino - terephthalic acid compound is obtained, and (II) reacting, at a temperature between 70° and 160° C. and within a pH range of from 2 to 12 in contact with (A) copper catalyst, (B) acid-binding agent and (C) polar solvent selected from the group consisting of water, low molecular alcohol of from 1 to 4 carbon atoms, glycerine, ethylene glycol, propylene glycol and polyethylene glycol, (3) one mole of said monohalogeno-monoarylamino-terephthalic acid compound with (4) one mole of a member selected from the group consisting of (*a*) the same aromatic amine as employed in step I, (*b*) another monocyclic carbocyclic aromatic amine wherein from 1 to 2 of the positions ortho to the amino group are free, and (*c*) a mixture of said aromatic amines.

3,201,403
3 ALKOXY-SUBSTITUTED-N LOWER ALKANOYL MORPHINANS

Yoshiro Sawa, Hyogo Prefecture, and Naoki Tsuzi and Haruhiko Tada, Osaka Prefecture, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Apr. 3, 1963, Ser. No. 270,186
Claims priority, application Japan, Apr. 6, 1962, 37/14,060, 37/14,061
7 Claims. (Cl. 260—285)

1. 3-lower alkoxy-4-phenyloxy - N - lower alkanoyl-morphinan.

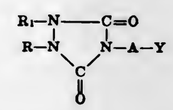
6. 3-lower alkoxy-6-oxo-14-hydroxy-N-lower alkanoyl-morphinan.

3,201,404
1-PHENYL-2-LOWERALKYL AND PHENYLLOWER-ALKYL - 4 - TERTIARY AMINO-3,5-DIOXO-1,2,4-TRIAZOLIDINES

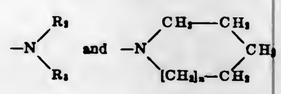
Heinrich Ruschig, Bad Soden, Taunus, and Karl Schmitt, Leopold Ther, and Gerhard Vogel, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 24, 1962, Ser. No. 212,161
Claims priority, application Germany, July 26, 1961, F 34,534
8 Claims. (Cl. 260—294)

1. A compound selected from the group consisting of basically substituted triazolidines of the formula



in which R represents phenyl, R_1 represents a member selected from the group consisting of lower alkyl and phenyl lower alkylene, A represents an alkylene group having 2 to 4 carbon atoms, Y represents a member selected from the group consisting of



wherein R_2 and R_3 each represent lower alkyl, *n* represents an integer from 0 to 1, inclusive, and physiologically compatible acid addition salts thereof.

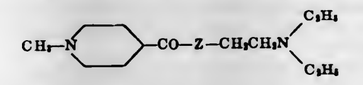
4. The 1-phenyl-2-methyl-4-(β - piperidino-ethyl)-3,5-dioxo-1,2,4-triazolidine.

3,201,405
PHARMACOLOGICALLY ACTIVE DERIVATIVES OF N-METHYL-ISONIPECOTIC ACID

Paolo Galimberti, Pavia, and Vittorina Gerosa and Max Marcello Melandri, Milan, Italy, and Martin J. H. Kramer, Berlin-Charlottenburg, Germany, assignors to Società Italiana Prodotti Schering, Milan, Italy

No Drawing. Filed Aug. 7, 1962, Ser. No. 215,276
Claims priority, application Great Britain, Sept. 12, 1961, 32,718/61
10 Claims. (Cl. 260—294)

1. A compound selected from the class consisting of N-methylisonipecotic acid derivatives of the formula:



wherein Z is a member of the class consisting of oxygen and NH, hydrohalide acid addition and methyl, ethyl and allyl halides quaternary ammonium salts thereof.

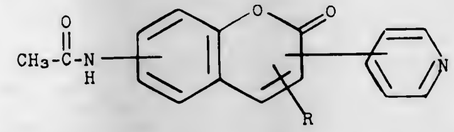
3. N-methylisonipecotic acid diethylaminoethylamide.

3,201,406
PYRIDYLCOUMARINS

Robert B. Moffett, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Feb. 11, 1963, Ser. No. 257,766
7 Claims. (Cl. 260—295)

1. A compound selected from the group consisting of (1) free base compounds of the formula



wherein R is selected from the group consisting of hydrogen, alkyl of from 1 to 4 carbon atoms, inclusive, and phenyl; (2) acid addition salts thereof; and (3) N-oxides thereof.

3,201,407
COMPOUNDS USEFUL IN THE PREVENTION OF DENTAL CARIES

Alexander Galat, 126 Buckingham Road, Yonkers, N.Y.

No Drawing. Filed Feb. 11, 1963, Ser. No. 257,743
4 Claims. (Cl. 260—297.5)

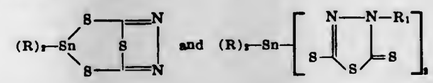
1. Monofluorophosphoric acid salts of members of the vitamin B_6 complex.

3,201,408
HETEROCYCLIC ORGANOTIN COMPOUNDS

Carl C. Greco, Bronx, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 5, 1963, Ser. No. 285,584
6 Claims. (Cl. 260—299)

1. A heterocyclic organotin compound selected from the group consisting of:



wherein R is selected from the class consisting of alkyl having from 1 to 10 carbon atoms and phenyl and R_1 is selected from the class consisting of lower alkyl and phenyl.

3,201,409
2-SUBSTITUTED AMINOTHIAZOLES

John D. Spivack, 19 Nansen Court, Spring Valley, N.Y., and Martin Dexter, 14 Soundview Ave., White Plains, N.Y.

No Drawing. Original application Apr. 24, 1961, Ser. No. 104,805. Divided and this application Dec. 28, 1962, Ser. No. 253,016
5 Claims. (Cl. 260—306.8)

1. 2-(N-phenyl-p-hydroxyanilino)-4-phenylthiazole.
2. 2-(p-hydroxyanilino)-4-t-butylthiazole.
3. 2-(o-hydroxyanilino)-4-t-butylthiazole.
4. 2-(2-hydroxy-5-t-octylanilino)-4-t-butylthiazole.
5. 2-(p-hydroxyanilino) - 4 - (p-n-dodecylphenyl)-thiazole.

3,201,410
CERTAIN 3-ARYL-2,4-OXAZOLIDINE DIONE COMPOUNDS

Georges Morel, Versailles, Yves Menoret, Montreuil-sous-Bois, and Robert Levy and Oleg Gryszkiewicz-Trochimowski, Vert-le-Petit, France, assignors to French State represented by the Minister of Armed Forces, Powder Department, and Institut National de la Recherche Agronomique, both of Paris, France, both French Government offices

No Drawing. Filed Nov. 17, 1958, Ser. No. 774,107
Claims priority, application France, Nov. 20, 1957, 752,044
4 Claims. (Cl. 260—307)

1. A chemical growth-controlling substance for plants constituted by parachlorophenyl 3-ethyl 5-oxazolidine dione 2,4.

2. A chemical growth-controlling substance for plants constituted by parachloropbenyl 3-isopropyl 5-oxazolidine dione 2,4.

3. A chemical growth-controlling substance for plants constituted by parachlorphenyl 3-methyl 5-oxazolidine dione 2,4.

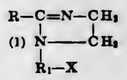
4. A chemical growth-controlling substance for plants constituted by orthochlorophenyl 3-methyl 5-oxazolidine dione 2,4.

3,201,411
REACTION PRODUCTS OF IMIDAZOLINES AND ALKYLENE IMINODIACETIC ACIDS

Arthur J. Freedman, Chicago Heights, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Original application July 17, 1959, Ser. No. 825,401, now Patent No. 3,060,007, dated Oct. 23, 1962. Divided and this application May 25, 1962, Ser. No. 218,472
4 Claims. (Cl. 260—309.6)

1. The reaction product obtained by reacting at a temperature of from about 70° F. to about 200° F., 1:1 molar proportions of (a) 1,2-disubstituted imidazoline having the formula



in which R represents unsubstituted aliphatic hydrocarbon of about 8 to about 20 carbon atoms selected from the group consisting of alkane hydrocarbon and alkene hydrocarbon, R_1 is selected from the group consisting of hydrogen and the group—CH_2CH_2—, and X is a polar group selected from the class consisting of hydroxy and amino when R_1 is —CH_2CH_2—, and (b) substituted alkylene iminodiacetic acid having the formula

$$RN[(CH_2)_xCOOH]_2$$

in which R is selected from the group consisting of (a) the acyl radical R'CO—in which R' represents unsubstituted alkane hydrocarbon of about 8 to about 30 carbon

atoms and (b) unsubstituted n-alkyl hydrocarbon of about 8 to about 30 carbon atoms, and x is the integer of from about 1 to 3 inclusive.

3,201,412
NOVEL PROCESS FOR RECOVERING COLOR-FORMING COUPLER FROM USED PHOTOGRAPHIC COLOR DEVELOPER SOLUTIONS

Courtenay D. Anscim, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 28, 1962, Ser. No. 176,445
6 Claims. (Cl. 260—310)

1. A process for recovering the color-forming coupler from the spent color-forming developer solution from photographic color development processes, said developer solution comprising water, an alkali, a primary aromatic amino color developer, and a water-soluble salt of said coupler selected from the class consisting of the sodium salt and the potassium salt, said coupler being selected from the class consisting of a phenolic coupler, a naphtholic coupler, a 2-pyrazolin-5-one coupler, and an acetoacetanilide coupler comprising the steps of:

(1) dissolving sufficient carbon dioxide gas in the said developer solution to cause the precipitation of said coupler, and

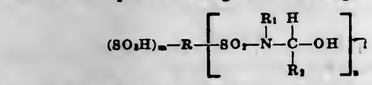
(2) separating the precipitated coupler from the said developer solution.

3,201,413
PHTHALOCYANINE DYES

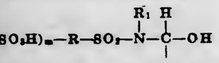
Armand I. G. Henrard, Ghent, Belgium, and George Shulman, Teaneck, and Edward O. Klotz, Westwood, N.J., assignors to Pfister Chemical Works, Inc., Ridgefield, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 6, 1961, Ser. No. 93,345
Claims priority, application Belgium, Mar. 7, 1960, 467,006; July 1, 1960, 470,736
3 Claims. (Cl. 260—314.5)

1. The compound having the following structure



wherein R is an unsubstituted phthalocyanine radical and said $-SO_2$ is linked directly to an aromatic ring of said dye, R_1 is a member of the group consisting of phenyl and naphthyl, R_2 is a radical of the class consisting of hydrogen, CH_3-, and another radical



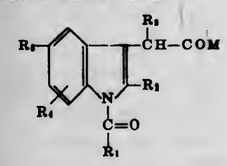
n is an integer from 1 to 4, and m is an integer from 0 to 2.

3,201,414
NEW 1-HETEROACYL-3-INDOLYL ALIPHATIC ACIDS

Tsung-Ying Shen, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed July 22, 1963, Ser. No. 296,451
16 Claims. (Cl. 260—319)

1. A compound of the formula



in which

R_1 is selected from the group consisting of thiophene, furan, pyrrole and substituted thiophene, furan and pyrrole in which said sustituents are selected from the group consisting of halogen, lower alkyl, lower alkenyl, lower alkylthio, lower alkoxy, monofluoromethyl, difluoromethyl, trifluoromethyl, phenoxy, phenyl, lower cycloalkyl, lower alkoxy phenyl, halogenophenyl, furyl, pyridyl, phenyl lower alkyl, lower alkanoyl lower alkyl, lower alkoxy lower alkyl benzoyl, cyanomethyl, di-lower alkyl sulfamyl, lower alkanoyl, di-lower alkyl carboxamido, cyano, carb-lower alkoxy, lower alkoxy phenylsulfonyl, lower alkylsulfonyl, phenylthio, benzylthio lower alkyl, benzyl sulfonyl lower alkyl, lower alkylthio lower alkyl, benzyloxy lower alkyl, furfurylthio lower alkyl, nitro, amino, di-(lower alkyl)amino, lower alkylamino lower alkanoylamino, hydroxy, and benzyloxy;

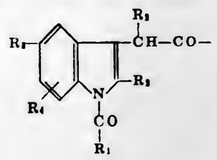
R_2 is selected from the group consisting of hydrogen, lower alkenyl and lower alkyl;

R_3 is selected from the group consisting of hydrogen and lower alkyl;

R_4 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, fluorine and trifluoromethyl;

R_5 is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower alkoxy, nitro, amino, lower alkylamino, di(lower alkyl) amino, lower alkanoylamino, lower alkanoyl, lower alkylamino, bis(hydroxy lower alkyl)amino, 1-pyrrolidino, 4-methyl-1-piperizinyl, 4-morpholinyl, cyano, amino lower alkyl, di-lower alkyl amino, lower alkyl, trifluoromethyl, halogen, di(lower alkyl)sulfamyl, benzylthio, lower alkylbenzylthio, lower alkoxybenzylthio, halogenobenzylthio, benzyloxy, lower alkylbenzyloxy, lower alkoxybenzyloxy, halogeno-benzyloxy, lower alkenyl, lower alkenyloxy, 1-azacyclopropyl, cyclopropyl(lower alkoxy)methyloxy, and cyclobutyl(lower alkoxy)-methyloxy and

M is selected from the group consisting of OH, NH_2, benzyloxy, lower alkoxy, OZ where Z is a cation selected from the group consisting of alkali metals, alkaline earth metals, aluminum, iron, magnesium, methyl ammonium, methyl cyclohexyl ammonium, morpholinium and glucose ammonium and OY where Y represents the structure

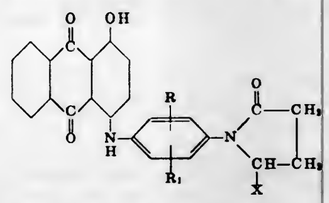


3,201,415
1-HYDROXY-4-N-[p-(2'-PYRROLIDONYL-1-)-PHENYL]-AMINO ANTHRAQUINONES

James M. Straley and David J. Wallace, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 31, 1962, Ser. No. 198,766
6 Claims. (Cl. 260—326.5)

1. An anthraquinone compound having the formula:



wherein R, R_1 and X each represents a member selected from the class consisting of hydrogen and methyl.

3,201,416
SIMPLIFIED PROCESS FOR THE PREPARATION OF ETHYLENE MONOTHIOLCARBONATE

Dee Lynn Johnson and Delbert Daniel Reynolds, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 8, 1962, Ser. No. 215,535
12 Claims. (Cl. 260—327)

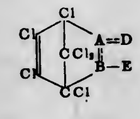
1. A process for preparing ethylene monothiolcarbonate which comprises heating a R-2-hydroxyethylthiolcarbonate in which R is a hydrocarbon group selected from the class consisting of alkyl radicals having 1–6 carbon atoms, aryl radicals and substituted aryl radicals in the presence of a metal salt catalyst of the formula M_aY_b, wherein M is chosen from the group consisting of aluminum, the metals of group IIIB and IVB of the periodic table, the lanthanides and the actinides, Y is chosen from the group consisting of acetate, alkoxide, halide and nitrate and a and b are integers corresponding to balanced valences.

3,201,417
NOVEL SULTONES FROM HEXAHALOBICYCLO-(2.2.1)HEPTADIENES

Edward D. Weil, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Oct. 17, 1962, Ser. No. 231,282
10 Claims. (Cl. 260—327)

1. A sultone of empirical formula $C_nH_{2n-12}Cl_6SO_3$, wherein n is from 7 to 23, prepared by the reaction of the starting compound of the formula:



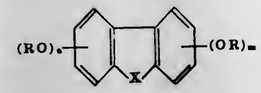
wherein A and B are carbon atoms, D is selected from the group consisting of hydrogen, lower alkyl and lower alkylidene, E is selected from the group consisting of hydrogen and lower alkyl, A and B being connected by a double bond when B is monovalent and by a single bond when B is divalent, and having a total of n carbon atoms, with a compound selected from the group consisting of sulfuric anhydride and oleum.

3,201,418
DIBENZOTHIOPHENE AND DIBENZOFURAN DERIVATIVES

Ernest Bryson McCall, Llangollen, and Terence James Rawlings, Johnstown, Wrexham, Wales, assignors to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Nov. 29, 1961, Ser. No. 155,801
Claims priority, application Great Britain, Dec. 1, 1960, 41,362/60
9 Claims. (Cl. 260—329.3)

1. A compound of the formula



where X is selected from oxygen and sulfur, n is an integer from 0 to 2, m is an integer from 1 to 2, and each R is monocyclic aromatic hydrocarbon of from 6 to 11 carbon atoms, said hydrocarbon being free of olefinic and acetylenic unsaturation.

3,201,419
PROCESS FOR THE MANUFACTURE OF 1,3,5-TRIOXANE

Kurt Sennewald and Wilhelm Vogt, Knapsack, near Cologne, and Hugo Gudernatsch, Hermülheim, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Apr. 11, 1963, Ser. No. 272,374
Claims priority, application Germany, May 4, 1962, K 46,651
3 Claims. (Cl. 260—340)

1. In the process for the manufacture of 1,3,5-trioxane wherein an aqueous solution containing about 30 to 70% by weight of at least one substance selected from the group consisting of formaldehyde and paraformaldehyde and about 0.05 to 2 mol percent of an acid is continuously heated in a fractionating stage, a mixture of trioxane, formaldehyde and water is removed at the top portion of said fractionating stage at a temperature of 89° to 92° C. under atmospheric pressure, the trioxane is extracted from said mixture in an extraction stage with the aid of a water-immiscible solvent, the resulting phases comprising a solution of trioxane in the water-immiscible solvent and an aqueous formaldehyde solution are separated, the aqueous formaldehyde solution is returned into the fractionating stage and the trioxane dissolved in the water-immiscible solvent is distilled off, the improvement which comprises extracting the trioxane in the extracting stage with α-chloronaphthalene as the extracting agent at a temperature of about 60 to 70° C., returning the aqueous formaldehyde solution after separation of the resulting phases into zones of equivalent formaldehyde concentration in the fractionating stage, introducing the solution comprising trioxane in α-chloronaphthalene approximately into the center portion of a first distilling stage; withdrawing at the top portion of said first distilling stage water, formaldehyde and a portion of the trioxane; returning said mixture into the extraction stage; introducing the trioxane and the α-chloronaphthalene as the sump product of the first distilling stage approximately into the center portion of a second distilling stage; distilling off pure trioxane at the top portion of said second distilling stage; and repumping the α-chloronaphthalene as the sump product of the said second distilling stage into the extracting stage.

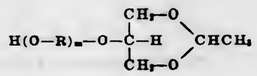
3,201,420
OXYALKYLATION OF ETHYLIDENE GLYCEROL AND COMPOSITIONS PRODUCED THEREBY

Stephen Fuzesi, Hamden, and Joseph V. Karabinos, Orange, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

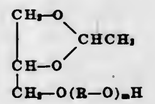
No Drawing. Original application July 27, 1962, Ser. No. 213,055. Divided and this application Oct. 22, 1962, Ser. No. 238,313
7 Claims. (Cl. 260—340.7)

1. An oxyalkylated ethylidene glycerol having the formula selected from the group consisting of

(A)



(B)



and

(C) mixtures of (A) and (B),

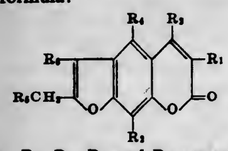
wherein m is an integer from 1 to 200 and wherein R is alkylene.

3,201,421
PREPARATION OF ALKYL PSORALENS

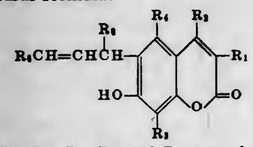
Kurt D. Kaufman, % Dept. of Chemistry, Kalamazoo College, Kalamazoo, Mich.

No Drawing. Filed May 9, 1962, Ser. No. 193,608
9 Claims. (Cl. 260—343.2)

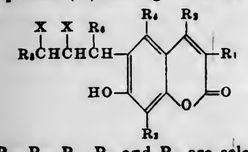
3. The method of preparing the compound (A) having the structural formula:



wherein R_1, R_2, R_3, R_4, R_5 and R_6 are selected from the group consisting of hydrogen and lower alkyl radicals which comprises (a) halogenating with a halogenating agent containing a halogen selected from the group consisting of bromine and chlorine the compound (B) having the structural formula:



wherein R_1, R_2, R_3, R_4, R_5 and R_6 are selected from the group consisting of hydrogen and lower alkyl radicals to form the compound (C) having the structural formula:



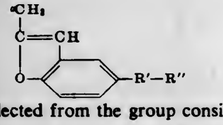
wherein R_1, R_2, R_3, R_4, R_5 and R_6 are selected from the group consisting of hydrogen and lower alkyl radicals and X is a halo radical selected from the group consisting of bromo and chloro radicals; and (b) treating said compound (C) with a strong alkaline material at an elevated temperature and (c) acidifying the alkaline material and separating the product compound (A).

3,201,422
BENZOFURANS AND PROCESS FOR PREPARING

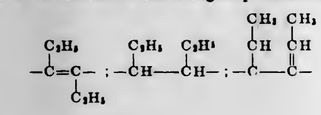
Emil Kaiser, Flossmoor, and Elemer Domba, Chicago, Ill., assignors, by mesne assignments, to Armour Pharmaceutical Company, a corporation of Delaware

No Drawing. Filed Jan. 15, 1962, Ser. No. 166,375
19 Claims. (Cl. 260—346.2)

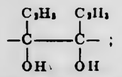
1. A compound selected from the class consisting of hexane, hexene, hexadiene derivatives, said compound having the structure:



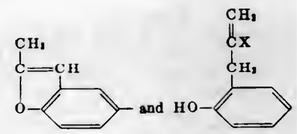
wherein R' is selected from the group consisting of;



and



and R'' is selected from the group consisting of



wherein X is selected from the group consisting of chlorine, bromine and iodine.

3,201,423
PROCESS FOR OXIDIZING ALKYL BENZENES TO PHTHALIC ANHYDRIDE

Ralph Landau, Northport, N.Y., assignor to Mid-Century Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 8, 1961, Ser. No. 158,123
10 Claims. (Cl. 260—346.4)

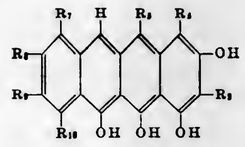
1. In the production of phthalic anhydride by the steps of vapor phase partial oxidation of a 1,2-dialkyl benzene containing 1 to 3 carbon atoms in the alkyl group with air in the presence of a vanadia catalyst in an oxidation zone, recovering crude phthalic anhydride contaminated with phthalide from the lean gas from said oxidation zone, heating the crude phthalic anhydride at an elevated temperature above its melting point to convert a portion of impurities in the crude phthalic anhydride to higher boiling materials, distilling crude refined phthalic anhydride from said converted impurities and distilling at reduced pressure phthalic anhydride product from said crude refined phthalic anhydride, the improvement comprising: subsequent to said heating of crude phthalic anhydride for conversion of impurities to higher boiling materials and prior to at least said distillation at reduced pressure oxidizing crude phthalic anhydride with gas containing molecular oxygen at a temperature above the melting point of crude phthalic anhydride in the presence of a catalyst comprising bromine and a heavy metal oxidation catalyst thereby leaving an oxidation product from which substantially phthalide free phthalic anhydride product is recovered by distillation.

3,201,424
DERIVATIVES OF 1,3,11,12-TETRAHYDROXYNAPHTHACENE AND 1,3,6,11-TETRAHYDROXYNAPHTHACENE-5,12-QUINONE

Jerry Robert Daniel McCormick, Spring Valley, and Jules Reichenthal, Brooklyn, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

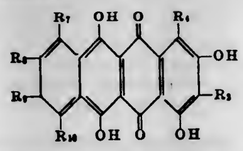
No Drawing. Filed Oct. 29, 1962, Ser. No. 233,944
13 Claims. (Cl. 260—351)

1. A compound of the formula:



wherein R_2 is selected from the group consisting of hydrogen, carboxamido and N-(lower alkyl)carboxamido, R_4 is selected from the group consisting of hydrogen and dimethylamino, R_5 is selected from the group consisting of hydrogen, lower alkoxy and lower alkyl, and R_7, R_8, R_9 and R_{10} are each selected from the group consisting of hydrogen, halogen, hydroxy, lower alkoxy, lower alkyl, amino, mono(lower alkyl)amino, di(lower alkyl)amino, nitro, nitroso, thiocyano and mercapto.

2. A compound selected from the group consisting of those of the formula:



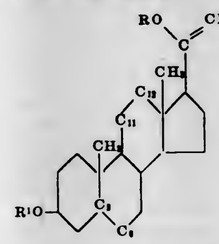
wherein R_2 is selected from the group consisting of hydrogen, carboxamido and N-(lower alkyl)carboxamido, R_4 is selected from the group consisting of hydrogen and dimethylamino, and R_7, R_8, R_9 and R_{10} are each selected from the group consisting of hydrogen, halogen, hydroxy, lower alkoxy, lower alkyl, amino, mono(lower alkyl) amino, di(lower alkyl)amino, nitro, nitroso, thiocyano and mercapto, and tautomers thereof.

3,201,425
20-ALKOXY-Δ^{20}-21-CARBOXALDEHYDES OF THE PREGNANE SERIES AND METHOD OF PREPARING THE SAME

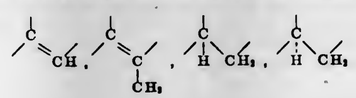
John Paul Dusza, Nanuet, N.Y., Joseph Peter Joseph, Cliffside Park, N.J., and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 10, 1963, Ser. No. 329,385
17 Claims. (Cl. 260—397.1)

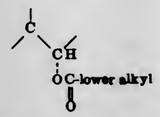
1. A steroid of the formula:



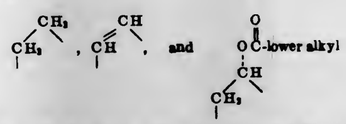
wherein R is lower alkyl, R^1 is selected from the group consisting of hydrogen and lower alkanoyl, C_5–C_6 is a trivalent radical selected from the group consisting of



and



and C_{11}–C_{12} is a divalent radical selected from the group consisting of



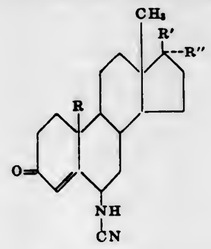
16. A method of preparing 3β-acetoxy-17β-carbomethoxyandrost-5-en which comprises contacting 3β-acetoxy-5-pregnen-20-one with trimethylorthoformate in the presence of perchloric acid and subsequently treating the reaction product with potassium permanganate and recovering said compound therefrom.

3,201,426
3-KETO-Δ^4-6-CYANOAMINO STEROIDS

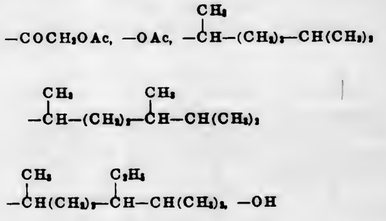
George A. Boswell, Jr., Newark, and Richard M. Scribner, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 27, 1963, Ser. No. 304,946
8 Claims. (Cl. 260—397.2)

1. A steroid of the formula



wherein R is selected from the class consisting of methyl and hydrogen; R' is selected from the class consisting of



and —CH(OAc)CH_3; R'' is selected from the class consisting of —H, —CH_3 and OAc, wherein Ac is acetoxy; and R' and R'' taken together represent =O.

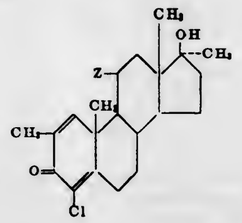
5. 6-cyanoamino-4-cholestene-3-one.

3,201,427
CHLORINE DERIVATIVES OF CYCLOPENTANOPHENANTHRENE AND PROCESSES FOR THEIR PREPARATION

Piero Gomarasca and Pietro Biazina, Milan, Italy, assignors to Laboratorio Farmaceutico Lofarma Limited Partnership

No Drawing. Filed Feb. 21, 1963, Ser. No. 260,313
Claims priority, application Italy, Mar. 13, 1962, 5,084/62
6 Claims. (Cl. 260—397.4)

1. Compounds of the formula:



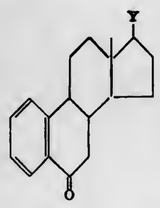
wherein Z is selected from the group consisting of oxygen, hydrogen, hydroxy and acetate.

3,201,428
6-KETO-3-DESOXY-$\Delta^{1,3,5(10)}$-ESTRATRIENES AND PROCESSES FOR THEIR PREPARATION

Albert Bowers and Otto Halpern, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Aug. 14, 1963, Ser. No. 302,008
Claims priority, application Mexico, Apr. 29, 1963, 71,709
13 Claims. (Cl. 260—397.4)

1. A compound of the following formula:



wherein Y is selected from the group consisting of a keto group and the grouping



wherein R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl radical of less than 12 carbon atoms; and R^1 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl and lower alkinyl.

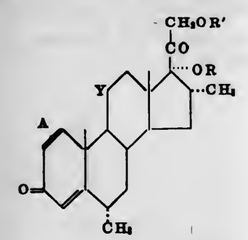
2. $\Delta^{1,3,5(10)}$-estratrien-17β-ol-6-one.

3,201,429
17,21-DIESTERS OF 6α,16α-DIMETHYL-Δ^4-PREGNEN-17α-21-DIOL - 3,20 - DIONE AND PROCESS THEREFOR

Carl Djerassi and Howard J. Ringold, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed July 8, 1959, Ser. No. 825,660
Claims priority, application Mexico, July 12, 1958, 51,550
8 Claims. (Cl. 260—397.47)

1. In the process of producing compounds of the following formula



wherein A is selected from the group consisting of a single and a double bond between C–1 and C–2; Y is selected from the group consisting of hydrogen, β-hydroxy and keto; R and R' are selected from the group consisting of hydrogen and hydrocarbon carboxylic acid acyl groups of up to 12 carbon atoms, the steps which comprise treating 6, 16α-dimethyl-Δ^4-pregnene-3β,17α-diol-20-one with 2 mols of bromine to produce 6,16α-dimethyl-5,6,21-tribromo-pregnane-3β,17α-diol-20-one, followed by treatment with sodium iodide and sodium acetate to form 6,16α-dimethyl-Δ^5-pregnene-3β,17α,21-triol-20-one 21 acetate, oxidizing with chromic acid to form 6,16α-dimethyl-Δ^5-pregnen-17α,21-diol-3,20-dione 21 acetate and then treating the latter compound with a mineral acid to form 6α,16α-dimethyl-Δ^4-pregene - 17α,21-diol-3,20-dione 21-acetate.

5. The 17,21-diesters of hydrocarbon carboxylic acids of up to 12 carbon atoms of 6α,16α-dimethyl-Δ^4-pregnen-17α,21-diol-3,20-dione.

3,201,430
SALTS OF PARTIAL AMIDES OF ALKYLENEPOLYAMINES WITH POLYETHYLENE GLYCOL CHLORIDE

Willard H. Kirkpatrick, Sugar Land, and Virgil L. Seale and Harold C. Noe, Jr., Houston, Tex., assignors to Nalco Chemical Company, Houston, Tex., a corporation of Delaware

No Drawing. Original application Aug. 17, 1956, Ser. No. 604,608, now Patent No. 3,047,495, dated July 31, 1962. Divided and this application Feb. 12, 1962, Ser. No. 172,771
2 Claims. (Cl. 260—404.5)

1. A partial amide of an alkylene polyamine selected from the group consisting of ethylene diamine, propylene diamine, 1,3-diamino butane, diethylene triamine, triethylene tetramine, tetraethylene pentamine, mixtures of polyethylene polyamines, and dipropylene triamine, the acyl groups of said partial amide consisting of the acyl groups of monocarboxylic fatty acids selected from the group consisting of lauric, myristic, palmitic, stearic, arachadic, behenic, ricinoleic, palmitoleic, oleic, linoleic, linolenic, and erucic acids and mixtures thereof, and at least one amino group of said partial amide being in the form of an amine salt with polyethylene glycol chloride having a molecular weight in the range of 200–800, said salt of said partial amide being a basic salt.

3,201,431
SELECTIVE HYDROGENATION OF MALVALIC AND STERCULIC ACIDS IN COTTONSEED OIL

Dwight R. Merker, Chicago, and Karl F. Mattil, Downers Grove, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Mar. 19, 1963, Ser. No. 266,214
10 Claims. (Cl. 260—409)

1. A process of selectively hydrogenating the cyclopropenyl double bonds of malvalic and sterculic acids present in cottonseed oil, which comprises: hydrogenating said oil between about 200–300° C. in the presence of a minor amount of a hydrogenating catalyst and agitating said oil in a hydrogen atmosphere at subatmospheric pressures and stopping said hydrogenation when said oil does not react to the Halphen test and before there is any appreciable saturation of the linoleic acid radicals in said oil.

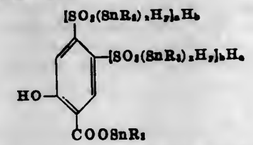
7. A process of selectively hydrogenating the cyclopropenyl double bonds of malvalic and sterculic acids present in cottonseed oil, which comprises: hydrogenating said oil between about 200–300° C. at a positive hydrogen pressure up to about 100 pounds gauge in the presence of a minor amount of a hydrogenating catalyst and a minor amount of a catalyst regulator selected from the group consisting of ammonia and ammonium hydroxide for a time sufficient to produce a negative Halphen test but insufficient to produce any appreciable increase in the saturation of the linoleic acid radicals of said oil.

3,201,432
TIN DERIVATIVES OF SULFOSALICYLIC ACIDS

John R. Leebrick, Roselle Park, N.J., assignor, by mesne assignments, to M. & T. Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 15, 1961, Ser. No. 159,738
16 Claims. (Cl. 260—429.7)

1. A composition of the formula



wherein *a*, *b*, *x*, and *y* are each selected from the group consisting of 0 and 1; $a+b=1$; $x+y=1$; and wherein R is a hydrocarbon radical.

3,201,433
PREPARATION OF AROMATIC ISOCYANATES FROM CYANIC ACID VAPORS

Milton Manes and Johnstone S. Mackay, Pittsburgh, Pa., assignors, by mesne assignments, to United States Steel Corporation, Pittsburgh, Pa., a corporation of New Jersey

No Drawing. Filed Feb. 26, 1963, Ser. No. 261,211
8 Claims. (Cl. 260—453)

1. A process of preparing an aromatic isocyanate comprising heating cyanic acid vapors at a temperature between 400 and 550° C. with vapors of a member of the group consisting of mesitylene, o-chlorotoluene, p-chlorotoluene, m-chlorotoluene, chlorobenzene, 2,4-dichlorotoluene, 2,6-dichlorotoluene, bis(p-chlorophenyl)methane, 1,5 - dichloronaphthalene, 3,3'-dimethoxy-4,4'-dichlorodiphenyl, 3,3'-dimethyl-4,4'-dichlorodiphenyl, 1,4-dichlorobenzene, 1,3 - dichlorobenzene, 4,4' - dichlorodiphenyl, 1,2,4-trichlorobenzene, 2,4,6-trichlorotoluene, 4,4',4''-trichlorotriphenylmethane, 2,4,4' - trichlorodiphenyl ether, p-chloroethylbenzene, o-nitrochlorobenzene, o-methoxychlorobenzene, and p-ethoxychlorobenzene.

3,201,434
DI(BETA ETHYLSULFONYL) SALTS

Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 25, 1960, Ser. No. 71,428
4 Claims. (Cl. 260—458)

1. Compounds corresponding to the structure

$$Q(SO_2CH_2CH_2Z)_y$$

where Q is an aliphatic radical having a molecular weight less than 250 and is a member selected from the group consisting of $-C_nH_{2n}-$ wherein *n* is greater than 2; and $-(C_nH_{2n}O)_mC_nH_{2n}-$ wherein *n* is greater than 1 and *m* is at least 1 and in which the number of unsatisfied valences is equal to *y* which has a value greater than one and Z is a polar residue derived from a reagent of weak nucleophilic character selected from the group consisting of the cation of a weak base having an ionization constant lower than 10^{-6} and the anion of a strong acid having an ionization constant greater than 10^{-6}.

3,201,435
PROCESS FOR THE PRODUCTION OF TRIMETHYL PHOSPHITE

Arthur C. Schulz, North Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Jan. 29, 1962, Ser. No. 174,334
21 Claims. (Cl. 260—461)

1. A method of producing trimethyl phosphite which comprises reacting an aryl substituted phosphite selected from the group consisting of aryl dimethyl phosphite, diaryl methyl phosphite, triaryl phosphite and mixtures thereof, wherein the aryl group is selected from the group consisting of phenol, o-cresol, m-cresol, p-cresol, 2,3-dimethylphenol, 2,4-dimethylphenol, 2,5-dimethylphenol, 2,6-dimethylphenol, 3,4 - dimethylphenol, 3,5 - dimethylphenol, 2,3,4 - trimethylphenol, 2,3,5 - trimethylphenol, 2,3,6 - trimethylphenol, 2,4,5-trimethylphenol, 2,4,6-trimethylphenol, 3,4,5-trimethylphenol, 2-ethylphenol, 3-ethylphenol, 4-ethylphenol, 2-n-propylphenol, 3-n-propylphenol, 4-n-propylphenol, 2-isopropylphenol, 3-isopropylphenol, 4-isopropylphenol, 3-ethyl-2-methylphenol, 4-ethyl-2-methylphenol, 5-ethyl-2-methylphenol, 6-ethyl-2-methylphenol, and methanol in the presence of an alkaline transesterification catalyst at a temperature up to and including the boiling point of trimethyl phosphite and methanol under the imposed pressure conditions to produce a transesterification reaction product containing trimethyl phosphite, the said corresponding phenol, methanol, trivalent phosphorus-containing compounds and non-reusable by-products; subjecting said reaction product to continuous flash vaporization to effect the concomitant vaporization of essentially all of the trimethyl phosphite, said phenol, methanol and trivalent phosphorus-containing compounds, avoiding the vaporization of said non-reusable by-products, continuously fractionally distilling said concomitantly vaporized products and continuously recovering substantially pure trimethyl phosphite and said phenol while continuously recycling recovered methanol and recovered trivalent phosphorus-containing compounds to the transesterification reaction.

3,201,436
HALOGENATED DERIVATIVES OF DIALKYL CYCLODODECADIENEPHOSPHONATES

Maximilian I. Fremery and Ellis K. Fields, Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed May 31, 1962, Ser. No. 198,727
3 Claims. (Cl. 260—461)

1. The reaction product obtained by refluxing one mole of diethyl cyclododecadienephosphonate with about 5 moles of bromotrichloromethane in the presence of benzoyl peroxide.

2. The reaction product obtained by initially admixing one mole of diethyl cyclododecadienephosphonate with about 5 moles of hexachlorocyclopentadiene and heating at about 120° C.

3. The reaction product obtained by treating diethyl cyclododecadienephosphonate in methylene chloride with a solution of bromine in methylene chloride until no more bromine is taken up at 30° C.

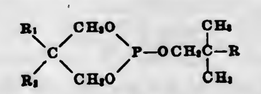
3,201,437
NEOALKYL PHOSPHITES

Lester Friedman, Beachwood, Ohio, assignor, by mesne assignments, to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 11, 1962, Ser. No. 201,249
8 Claims. (Cl. 260—461)

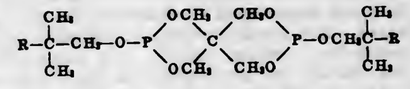
1. A compound having one of the formulae

(a)



and

(b)



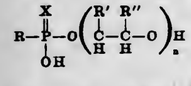
where R, R_1 and R_2 are alkyl groups.

3,201,438
METHOD OF PRODUCING A MONOESTER OF A HYDROCARBYL THIOPHOSPHONIC ACID AND A POLYALKYLENE GLYCOL

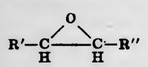
David D. Reed, Glenham, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 9, 1962, Ser. No. 215,811
5 Claims. (Cl. 260—461)

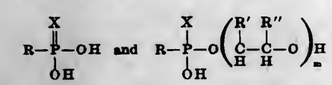
1. A process for preparing a polyglycol hydrocarbyl thiophosphonic acid ester of the formula:



wherein R is a monovalent hydrocarbyl derived from an aliphatic polyolefin having an average molecular weight between about 250 and 50,000, R′ and R″ are selected from the group consisting of hydrogen and an alkyl containing 1–6 carbon atoms, X is a member selected from the group consisting of sulfur and a mixture of a major portion of sulfur and a minor portion of oxygen and *n* has a value of 2 to 10 which comprises reacting an alkyl oxide of the formula:



wherein R′ and R″ are identified as above with a compound free from inorganic phosphorous acids selected from the group having the following formulae:



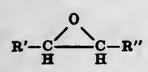
wherein R, R′ and R″ and X are identified as above and *m* has a value of 1 to 9 in the presence of a catalyst selected from the group consisting of alkali metals, alkaline earth metals, butylamine, t-octylamine, di-t-butylamine, morpholine, pyridine, stannic chloride, sulfuric acid, boron trifluoride, boron trifluoride etherate, titanium tetrachloride and phosphoric acid.

5. A process for preparing a polyglycol hydrocarbon thiophosphonic acid ester comprising:

(a) reacting P_2S_5 with an aliphatic polyolefin having an average molecular weight between about 250 and 50,000 at a temperature between about 100 and 320° C. in a non-oxidizing atmosphere, the P_2S_5 constituting between about 5 and 40 wt. percent of the reaction mass,

(b) containing the resulting P_2S_5-polyolefin hydrocarbon reaction mass with steam at a temperature between about 100 and 250° C. and removing formed inorganic phosphorus acids from the steam treated reaction mixture,

(c) contacting the resultant inorganic phosphorus acids removed, steam treated reaction mixture with an alkylene oxide of the formula:



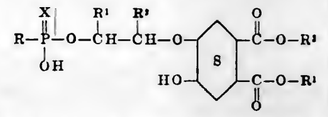
where R′ and R″ are selected from the group consisting of hydrogen and alkyl containing 1 to 6 carbon atoms in the presence of a catalyst selected from the group consisting of alkali metals, alkaline earth metals, butylamine, t-octylamine, di-t-butylamine, morpholine, pyridine, sulfuric acid, boron-trifluoride etherate, titanium tetrachloride, phosphoric acid and stannic chloride at a temperature between about 60 and 200° C.

3,201,439
DIALKYL HYDROCARBONTHIOPHOSPHONOXY-ALKOXYHYDROXYHEXAHYDROPHTHALATES AND PROCESS FOR MAKING SAME

James M. Petersen, Fishkill, David D. Reed, Glenham, and Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

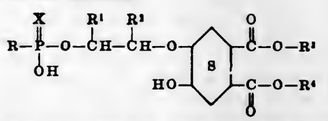
No Drawing. Filed Oct. 18, 1962, Ser. No. 232,645
7 Claims. (Cl. 260—461)

1. An alkoxyhexahydrophthalate derivative of the formula:

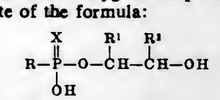


where R is a hydrocarbyl derived from an aliphatic polyolefin having an average molecular weight between about 250 and 50,000, R^1 and R^2 are selected from the group consisting of hydrogen and alkyl of from 1 to 6 carbons, R^3 and R^4 are alkyl of from 1 to 20 carbons, and X is a chalcogen selected from the group consisting of sulfur and a mixture of sulfur and oxygen.

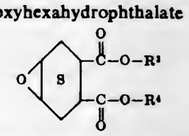
4. A method of preparing an alkoxyhydroxyhexahydrophthalate of the formula:



where R is a hydrocarbyl derived from an aliphatic polyolefin having an average molecular weight between about 250 and 50,000, R^1 and R^2 are selected from the group consisting of hydrogen and alkyl of from 1 to 6 carbons, R^3 and R^4 are alkyl of from 1 to 20 carbons, X is a chalcogen selected from the group consisting of sulfur and a mixture of sulfur and oxygen comprising contacting a thiophosphonate of the formula:



with a dialkyl epoxyhexahydrophthalate of the formula:



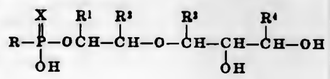
where R^1, R^2, R^3, R^4, and X are as heretofore defined at a temperature between about 25 and 150° C. and in the presence of catalyst in a mole ratio of said thiophosphonate to said phthalate to catalyst between about 0.1:1:0.001 and 2:1:0.1.

3,201,440
HALOALKYLDIHYDROXYOXAHEXYL HYDROCARBONTHIOPHOSPHONATES

David D. Reed, Glenham, N.Y., James M. Petersen, Fishkill, N.Y., and Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

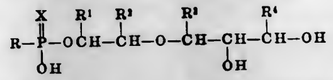
No Drawing. Filed Oct. 18, 1962, Ser. No. 232,646
8 Claims. (Cl. 260—461)

1. A haloalkyldihydroxyoxahexyl hydrocarbonthiophosphonate of the formula:

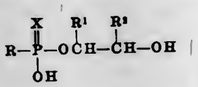


where R is hydrocarbyl derived from an aliphatic polyolefin having an average molecular weight between 250 and 50,000, R^1 and R^2 are selected from the group consisting of hydrogen, alkyl from 1 to 6 carbons and haloalkyl from 1 to 6 carbons, at least one of said R^1 and R^2 groups being said haloalkyl, R^3 and R^4 radicals selected from the group consisting of hydrogen and alkyl of from 1 to 6 carbons and X is a chalcogen selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen.

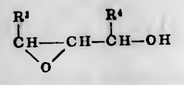
5. A method of preparing a haloalkyldihydroxyoxahexyl hydrocarbonthiophosphonate of the formula:



where R is hydrocarbyl derived from an aliphatic polyolefin having an average molecular weight between 250 and 50,000, R^1 and R^2 are radicals selected from the group consisting of hydrogen, alkyl of from 1 to 6 carbons and haloalkyl from 1 to 6 carbons, at least one of said R^1 and R^2 groups being haloalkyl, R^3 and R^4 are radicals selected from the group consisting of hydrogen and alkyl from 1 to 6 carbons and X is selected from the group consisting of sulfur and a mixture consisting of a major portion of sulfur and a minor portion of oxygen, said method comprising contacting a haloalkylhydroxyalkyl hydrocarbonthiophosphonate of the formula:



with a hydroxyepoxyalkane of the formula:



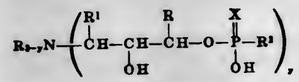
wherein R, R^1, R^2, R^3, R^4 and X as are heretofore defined, at a temperature of between about 25 and 150° C., in a mole ratio of said hydroxyepoxyalkane to thiophosphonate reactant of between about 0.1:1 and 5:1.

3,201,441
MONO-(AND BIS-)HYDROCARBONTHIOPHOSPHONOXYHYDROXYALKYL HYDROCARBYLAMINES

James M. Petersen, Fishkill, N.Y., Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., and David D. Reed, Glenham, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

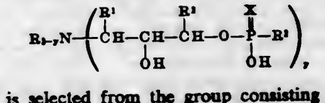
No Drawing. Filed Oct. 18, 1962, Ser. No. 233,180
13 Claims. (Cl. 260—461)

1. A thiophosphonoxy hydrocarbylamine of the formula:

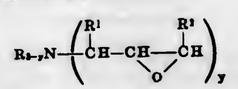


where R^3 is a monovalent hydrocarbon derived from an aliphatic polyolefin having an average molecular weight between about 250 and 50,000, X is selected from the group consisting of sulfur and a mixture of sulfur and oxygen, R is selected from the group consisting of alkyl, phenyl, alkylphenyl and phenylalkyl of from 1 to 20 carbons, R^1 and R^2 are selected from the group consisting of hydrogen and alkyl of from 1 to 6 carbons and y is an integer from 1 to 2, inclusively.

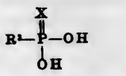
7. A process for preparing a thiophosphonoxy hydrocarbylamine of the formula:



where R is selected from the group consisting of alkyl, phenyl, alkylphenyl and phenylalkyl of from 1 to 20 carbons, R^1 and R^2 are selected from the group consisting of hydrogen and alkyl of from 1 to 6 carbons, R^3 is a monovalent hydrocarbon derived from an aliphatic polyolefin having a molecular weight between about 250 and 50,000, X is selected from the group consisting of sulfur and a mixture of sulfur and oxygen and y is an integer from 1 to 2, inclusively comprising reacting an epoxyamine compound of the formula:



with a thiophosphonic acid of the formula:



where R, R^1, R^2 and R^3 are as heretofore defined, at a temperature between about 25 and 175° C., at a mole ratio of said amine to said acid of between about 0.7:1 and 2:1.

3,201,442
PROCESS FOR PREPARING THE N-MONOMETHYLAMIDE OF O,O-DIMETHYLDITHIOPHOSPHORYLACETIC ACID

Cesare Augusto Peri, Milan, Italy, assignor to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed Dec. 24, 1962, Ser. No. 246,680
Claims priority, application Italy, Dec. 28, 1961, 23,426/61
2 Claims. (Cl. 260—461)

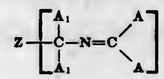
1. In a process for preparing the N-monomethylamide of O,O-dimethyldithiophosphorylacetic acid by reacting monomethylamine with an alkyl ester of O,O-dimethyldithiophosphorylacetic acid, the improvement which comprises carrying out the reaction in a medium consisting of a mixture of organic chlorofluorinated methane compounds, said mixture being unreactive with the reactants and with the end product and having a boiling point, at the reaction conditions between −15 and +10° C., continuously evaporating and condensing said medium to maintain a constant temperature during the course of the reaction.

3,201,443
MONO AND POLY(O,O-DIALKYL PHOSPHATO) AND (O,O-DIALKYL PHOSPHONATO) AZOMETHINE ESTERS

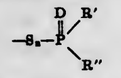
Hugo Malz, Leverkusen, Hans Holtschmidt and Engelbert Kühle, Cologne-Stammheim, and Otto Bayer, Leverkusen-Bayerwerk, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Jan. 10, 1963, Ser. No. 250,492
Claims priority, application Germany, Jan. 26, 1962, F 35,857
11 Claims. (Cl. 260—461)

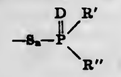
1. A compound of the formula



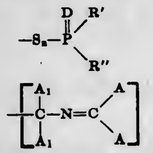
in which each A stands for a member selected from the group consisting of chlorine and



each A_1 stands for a member selected from the group consisting of chlorine, hydrogen and



and Z stands for a member selected from the group consisting of



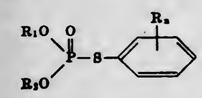
and chloroalkyl containing from 1 to 4 carbon atoms; wherein D is a chalcogen having at atomic number below 17, *n* is an integer from 0 to 1, and R′ and R″ stands for alkoxy containing from 1 to 4 carbon atoms.

3,201,444
O-ALKYL-O-CYCLOALKYL THIOPHOSPHORIC ACID S-PHENYLESTERS

Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Apr. 10, 1963, Ser. No. 271,878
Claims priority, amendment of May 26, 1962, application Germany, July 28, 1961, F 34,558
12 Claims. (Cl. 260—461)

1. A O-alkyl-O-cycloalkyl thiophosphoric acid-S-phenylester of the formula



in which

R_1 stands for a member selected from the group consisting of lower alkyl with 1 to 4 carbon atoms and lower alkenyl with 1 to 4 carbon atoms,

R_2 stands for cycloalkyl with 5 to 6 carbon atoms,

R stands for a member selected from the group consisting of halogen, lower alkyl with 1 to 4 carbon atoms and lower alkoxy with 1 to 4 carbon atoms, and

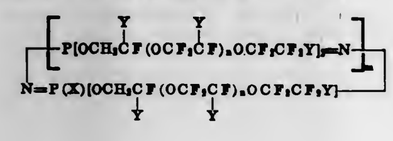
n stands for a member selected from the group consisting of 1 and 2.

3,201,445
CYCLIC PHOSPHONITRILATE ESTERS OF POLYFLUOROETHER ALCOHOLS

John J. Drysdale, Hockessin, Ronald E. Le Bleu, Wilmington, and John H. Fassnacht, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

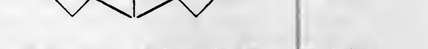
No Drawing. Filed May 20, 1963, Ser. No. 281,782
7 Claims. (Cl. 260—461)

1. A cyclic phosphonitrilate of the formula



wherein:

(A) X is a member of the group consisting of halogen atoms of atomic number 9 to 35 and



groups,

(B) Y is a member of the group consisting of a fluorine atom and a $-CF_3$ group,

(C) *n* is an integer of from 1 to 10, and

(D) *m* is an integer of from 2 to 3.

3,201,446
N-(DIETHOXYPHOSPHINOTHIOYL)-2,2,2-TRICHLOROACETAMIDE

Henry Tolkmith, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 10, 1964, Ser. No. 336,891
1 Claim. (Cl. 260—461)

N - (diethoxyphosphinothioyl) - 2,2,2 - trichloroacetamide.

3,201,447
ETHER AMINE SALTS OF DITHIOPHOSPHORIC ACID MONO AND DIESTERS

Henryk A. Cyba, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Nov. 29, 1962, Ser. No. 241,035
10 Claims. (Cl. 260—461)

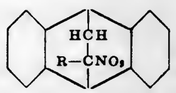
1. Dialkyldithiophosphate salt of dialkyldiaminodiphenyl ether in which the sulfur atoms are attached to the phosphorus atom.

3,201,448
SUBSTITUTED 9,10-ETHANOANTHRACENE COMPOUNDS AND METHOD FOR THEIR PREPARATION

Karl Klager, Sacramento, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed Dec. 21, 1959, Ser. No. 861,137
14 Claims. (Cl. 260—465)

1. As compositions of matter, the substituted 9,10-ethanoanthracene compounds having the general formula



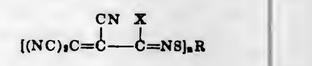
wherein R is a radical selected from the group consisting of halogen, lower ω-carboxyalkyl, and lower ω-formylalkyl radicals.

3,201,449
2-CHLORO-3,4,4-TRICYANO - 1 - PERHALOALKYLTHIO-1-AZA-1,3-BUTADIENES AND THEIR PREPARATION

Harris D. Hartzler, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 19, 1962, Ser. No. 224,841
16 Claims. (Cl. 260—465)

1. Compounds of the formula



wherein: X is halogen of atomic number 17–35, inclusive; R is selected from the group consisting of polyfluoroalkyl, polychloroalkyl, polyfluoroalkylene and polychloroalkylene of up to 10 carbons; and *n*, the valence of R, is an integer of from 1 to 2.

3,201,450
PREPARATION OF SOLID REACTION PRODUCTS OF NITRILES AND DECABORANE

Murray S. Cohen, Convent Station, and Marvin M. Fein, Westfield, N.J., assignors, by mesne assignments, to Thiokol Chemical Corporation, a corporation of Delaware

No Drawing. Filed Oct. 15, 1957, Ser. No. 690,407
15 Claims. (Cl. 260—465.1)

1. A process for preparing solid reaction products of nitriles and decaborane comprising reacting from 0.01 to 14 moles of a nitrile selected from the group consisting of acetonitrile, propionitrile, butyronitrile, isobutyronitrile, dimethylpropionitrile, valeronitrile, acrylonitrile, 3-butenenitrile, 4-pentenenitrile, succinonitrile, maleonitrile, adiponitrile, and B,B′-oxydipropionitrile, per mole of decaborane.

3,201,451
PURIFICATION OF ACETONITRILE

James D. Idol, Jr., Shaker Heights, and Janice L. Greene, Warrensville Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 23, 1962, Ser. No. 182,139
6 Claims. (Cl. 260—465.1)

1. A process for the purification of a crude acetonitrile composition containing both titratable cyanide and acrylonitrile impurities obtained as a byproduct of a process for the manufacture of acrylonitrile by the elevated temperature reaction of propylene and ammonia in the presence of oxygen, which comprises: (a) treating the crude with sodium hydroxide in an amount not less than that theoretically required to convert all of the titratable cyanide to sodium cyanide, whereby the acrylonitrile is converted to succinonitrile and derivatives thereof; (b) further treating the crude with ferrous sulfate in an amount not less than that theoretically required to complex as sodium ferrocyanide, any sodium cyanide remaining after step (a); and (c) separating the purified acetonitrile from the converted and complexed impurities.

3,201,452
HEXACYANOETHANE AND ITS PREPARATION

Blaine C. McKusick and Swistoslaw Trofimenko, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 16, 1960, Ser. No. 69,566
6 Claims. (Cl. 260—465.8)

1. Hexacyanoethane.

3,201,453
NITROSOCHLORIDE AND CHLORO OXIME DERIVATIVES OF POLYUNSATURATED ORGANIC COMPOUNDS

David T. Manning and Harry A. Stansbury, Jr., South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 18, 1961, Ser. No. 110,885
5 Claims. (Cl. 260—468)

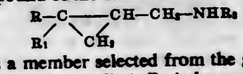
1. A compound selected from the group consisting of bicyclo[2.2.1] - 5 - heptene - 2 - methyl bicyclo[2.2.1]-5-heptene - 2 - carboxylate dinitrosochloride; di(bicyclo [2.2.1]-5-hepten-2-yl) sulfone dinitrosochloride; 5-chloro-6-hydroxyiminobicyclo-[2.2.1]heptane - 2(3) - methyl 5-chloro - 6 hydroxyiminobicyclo[2.2.1]heptane - 2(3)-carboxylate; and di(5 - chloro - 6 - hydroxyiminobicyclo [2.2.1]heptane-2(3)-yl) sulfone.

3,201,454
LOWER ALKYL N-(2-(LOWER ALKYL)CYCLOPROPYLMETHYL) CARBAMATES

William J. Considine, Franklin Township, Jack Bernstein, New Brunswick, and John C. Burke, Milltown, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Dec. 26, 1960, Ser. No. 78,870, now Patent No. 3,156,722, dated Nov. 10, 1964. Divided and this application Jan. 28, 1963, Ser. No. 254,437
4 Claims. (Cl. 260—468)

1. A compound of the formula



wherein R is a member selected from the group consisting of hydrogen and lower alkyl; R_1 is lower alkyl; and R_2 is carbo(lower alkoxy).

3,201,455
RESOLUTION OF DL-MENTHYL HYDROGEN PHTHALATE WITH 1-(α-NAPHTHYL) - ETHYLAMINE

Edward L. Russell, Louisville, Ky., and Kenneth A. Hanover, Westfield, N.J., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 2, 1962, Ser. No. 163,861
6 Claims. (Cl. 260—475)

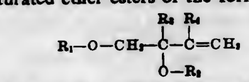
1. Method of obtaining an optically active isomer of DL-menthyl hydrogen phthalate which comprises: reacting DL-menthyl hydrogen phthalate with an optically active isomer of 1-(α-naphthyl)-ethylamine in an organic solvent comprising a major amount of an aliphatic hydrocarbon liquid and a minor amount of an aromatic hydrocarbon liquid, whereby an insoluble salt of an optically active isomer of said DL-menthyl hydrogen phthalate and said optically active isomer of 1-(α-naphthyl)-ethylamine is produced, separating said insoluble salt from the mother liquor, reacting said insoluble salt with aqueous acid to remove the 1-(α-naphthyl)-ethylamine therefrom, and separating the optically active isomer of DL-menthyl hydrogen phthalate from the aqueous acid.

3,201,456
UNSATURATED ETHER ESTERS AND PROCESS FOR THEIR PRODUCTION

Wilbert H. Urry, Chicago, Ill., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 19, 1962, Ser. No. 167,422
5 Claims. (Cl. 260—476)

1. Unsaturated ether esters of the formula:



where R_1 is a tertiary alkyl group selected from the group consisting of tertiary butyl, tertiary amyl and diisobutyl, R_2 is an acyl group selected from the group consisting of an acetyl group and a benzoyl group and R_3 and R_4 are independently selected from the group consisting of hydrogen and a methyl radical.

3,201,457
DIESTERS OF DIHYDROXY-DITHIOHEXANEDIAMIDE

Miklos Bodanszky, Princeton, and John T. Sheehan, Middlesex, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Application Sept. 12, 1961, Ser. No. 137,495, now Patent No. 3,065,240, dated Nov. 20, 1962, which is a division of application Ser. No. 47,129, Aug. 3, 1960, now Patent No. 3,040,054, dated June 19, 1962. Divided and this application June 29, 1962, Ser. No. 206,155
2 Claims. (Cl. 260—477)

1. The diester of 2,5-dihydroxy-dithiohexanediamide with a hydrocarbon carboxylic acid of less than eleven

carbon atoms selected from the group consisting of saturated and aromatic carboxylic acids.

3,201,458

HERBICIDAL ESTERS OF α,α-DICHLOROBUTYRIC ACID

Guenter Scheuerer and Horst Pommer, Ludwigshafen (Rhine), Herbert Stummeyer, Mannheim, and Adolf Fischer, Mutterstadt, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Oct. 23, 1961, Ser. No. 147,019
3 Claims. (Cl. 260—487)

1. An ester selected from the group consisting of β-chloroethyl-α,α-dichlorobutyrate and α-methyl-β-chloroethyl-α,α-dichlorobutyrate.

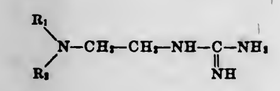
3,201,459

(2-N-ALKYL'-N-ALKYL"AMINOETHYL) GUANIDINE

Severina Coda, Vittorio A. Colo, and Alfredo Glaesser, Milan, and Claudio Pasini, Monza, Milan, Italy, assignors to Societa Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Filed Nov. 19, 1962, Ser. No. 238,798
Claims priority, application Italy, Nov. 23, 1961, 21,034/61
9 Claims. (Cl. 260—501)

1. A compound selected from the group consisting of 2-amino-(di-substituted)-ethyl-guanidines having the formula:



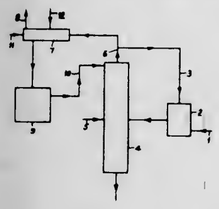
wherein R_1 and R_2 are different alkyl groups having from 1 to 7 carbon atoms, and the non-toxic acid addition salts thereof.

3,201,460

MANUFACTURE OF PERACETIC ACID

Stanley Beesley, Derby, and Donald Arthur Sharman, Coventry, England, assignors to British Celanese Limited, London, England, a British company

Filed Aug. 13, 1962, Ser. No. 216,473
Claims priority, application Great Britain, Sept. 7, 1961, 32,106/61
6 Claims. (Cl. 260—502)



1. A process for the production of peracetic acid by reacting acetaldehyde with oxygen in the vapour phase wherein the reaction is carried out in the presence of at least 17.5 percent by weight, based on the weight of the acetaldehyde, of a solvent for peracetic acid which has a boiling point not exceeding 80° C.

3,201,461

ALKYLHALONAPHTHALENE SULFONATES

Alfred F. Steinhauer, Midland, and Dale G. Brown, Beaverton, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 1, 1961, Ser. No. 106,446
3 Claims. (Cl. 260—505)

1. A product selected from the group consisting of the alkylhalonaphthalenesulfonic acid made by

(1) alkylating a 1-halonaphthalene wherein the halogen has an atomic number from 17 to 53, thus to form a monoalkyl-1-halonaphthalene wherein the alkyl radical contains 8–19 carbon atoms and

(2) sulfonating said monoalkyl-1-halonaphthalene, thus to form a monoalkyl-1-halonaphthalenesulfonic acid containing 1 to 2 sulfonic acid groups

and the alkali and alkaline earth metal salts thereof.

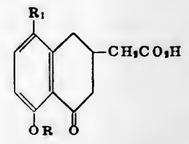
3,201,462

2-CARBOXYMETHYL 4-OXO-TETRAHYDRONAPHTHALENES

Raymond George Wilkinson, Montvale, N.J., and Andrew Steven Kende, Hartsdale, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Original application June 18, 1959, Ser. No. 821,093, now Patent No. 3,102,914, dated Sept. 3, 1963. Divided and this application Mar. 1, 1963, Ser. No. 262,253
3 Claims. (Cl. 260—520)

1. A compound of the formula:



wherein R_1 is selected from the group consisting of chlorine and bromine, and R is selected from the group consisting of hydrogen and lower alkyl.

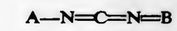
3,201,463

PREPARATION OF N,N'-DICYCLOHEXYL CARBODIIMIDE

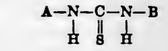
William R. Ruby, Rensselaer, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 26, 1962, Ser. No. 175,807
12 Claims. (Cl. 260—551)

1. A process of producing a carbodiimide of the following formula:



wherein A and B are selected from the class consisting of lower alkyl, lower cycloalkyl and phenyl which comprises reacting about 1 mole of a N,N'-disubstituted thiourea of the following f ormula:



wherein A and B are selected from the class consisting of lower alkyl, lower cycloalkyl and phenyl with about 1 mole of lead dioxide at a temperature of about 65–75° C. in an inert liquid solvent and in the presence of about ¼ to ½ mole of an alkali metal halide, filtering the reaction mixture and isolating said carbodiimide from the reaction mixture by distillation.

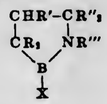
3,201,464

BORON COMPOUNDS

Michael Peter Brown, East Molesey, Howard B. Silver, Hinchley Wood, Anthony E. Dunn, London, and Brian John Ayres, Chessington, England, assignors to United States Borax and Chemical Corporation, Los Angeles, Calif.

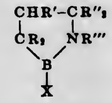
No Drawing. Filed Dec. 17, 1962, Ser. No. 244,946
Claims priority, application Great Britain, Jan. 31, 1962, 3,754/62
12 Claims. (Cl. 260—551)

1. A member of the class consisting of boron compounds of the formulae:



wherein R, R' and R" represent members of the class consisting of hydrogen, halogen, and alkyl groups of 1 through 4 carbon atoms, R''' represents a member of the class consisting of alkyl groups of 1 through 10 carbon atoms, and cycloalkyl groups having 5 through 7 carbon atoms in the ring, and X represents a member of the class consisting of hydrogen, alkyl groups of 1 through 10 carbon atoms, cycloalkyl groups having 5 through 7 carbon atoms in the ring, and dialkylamino groups in which the alkyl groups contain 1 through 4 carbon atoms.

6. A process for the preparation of an azaborolidine of the formula



which comprises reacting an N-substituted allylamine of the formula $CR_2{=}CR'{-}CR''_2{-}NHR'''$ with a boron compound selected from the group consisting of diborane, a mono-substituted borane of the formula BH_2X and dimers thereof, compounds of the formulae $R^{IV}{}_3N{\cdot}BH_2X$, $R^{IV}{}_2NH{\cdot}BH_2X$, $R^{IV}NH_2{\cdot}BH_2X$, $R^{IV}{}_2N{\cdot}BH_2$ and $R^{IV}NH{\cdot}BH_2$

where R, R' and R" are selected from the group consisting of hydrogen, halogen, and alkyl of 1 through 4 carbon atoms, R''' is selected from the group consisting of alkyl of 1 through 10 carbon atoms, and cycloalkyl groups having 5 through 7 carbon atoms in the ring, X is selected from the group consisting of hydrogen, alkyl groups of 1 through 10 carbon atoms, cycloalkyl groups having 5 through 7 carbon atoms in the ring, and dialkylamino in which the alkyl groups contain 1 through 4 carbon atoms, and R^{IV} represents alkyl of 1 through 4 carbon atoms.

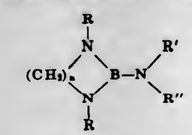
3,201,465

CYCLIC AMINOBORANE COMPOUNDS

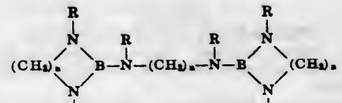
Michael Peter Brown and Howard Bernard Silver, Surrey, England, assignors to United States Borax & Chemical Corporation, Los Angeles, Calif.

No Drawing. Filed Jan. 17, 1963, Ser. No. 252,032
Claims priority, application Great Britain, Mar. 20, 1962, 10,708/62
16 Claims. (Cl. 260—551)

1. The compounds represented by the formulae

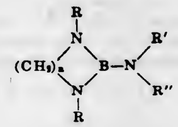


and

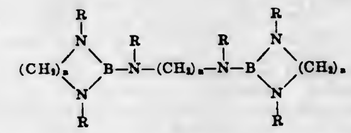


wherein R is selected from the group consisting of alkyl of 1 to 8 carbon atoms, cycloalkyl of 5–7 carbon atoms, phenyl, lower alkylphenyl, lower alkoxyphenyl, and halophenyl; R' is selected from the group consisting of hydrogen and alkyl of 1 to 5 carbon atoms; R" is alkyl of one to five carbon atoms; and *n* is an integer selected from 2 and 3.

7. The process for producing aminoboranes of the formulae



and



which comprises heating at a temperature of 100°–210° C. a mixture of a diamine of the formula

$$RNH{-}(CH_2)_n{-}NHR$$

and a tris(alkylamino)borane of the formula



in the absence of water and free oxygen, separating byproduce amine as it is formed, and isolating aminoborane from the reaction mixture, wherein R is selected from the group consisting of alkyl of 1 to 8 carbon atoms, cycloalkyl of 5–7 carbon atoms, phenyl, lower alkylphenyl, lower alkoxyphenyl, and halophenyl; R' is selected from the group consisting of hydrogen and alkyl of 1 to 5 carbon atoms; R" is alkyl of 1 to 5 carbon atoms; and *n* is an integer selected from 2 and 3.

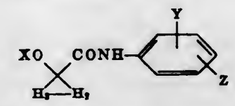
3,201,466

SUBSTITUTED CYCLOPROPANECARBOXANILIDE HERBICIDES

Kenneth P. Dubrovin, Leawood, Kans., assignor, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 8, 1963, Ser. No. 278,974
4 Claims. (Cl. 260—557)

1. A compound of the formula:



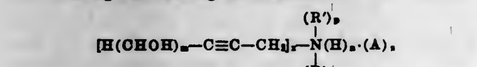
in which X is selected from the group consisting of 1 to 4 carbon alkyl and Y and Z are selected from the group consisting of methyl, chloro and chloromethyl located in positions on the phenyl ring selected from the group consisting of the 3,4- and 2,5-positions with respect to the point of attachment of the nitrogen atom.

3,201,467
PROPARGYLABIETYLAMINES

Billy D. Oakes, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 7, 1962, Ser. No. 192,973
8 Claims. (Cl. 260—563)

1. A compound having the formula



wherein R represents a radical selected from the group consisting of abietyl, dehydroabietyl, dihydroabietyl and tetrahydroabietyl radicals, R' represents an aliphatic hydrocarbon radical containing from 1 to about 20 carbon atoms, A represents an anion and *m*, *n*, *p*, *x*, *y* and *z* represent integers, *m* and *z* each being 0 to 1, *x* and *y* each being 1 to 3, *n* and *p* being 0 to 2, the values of *n*, *p*, *x*, *y* and *z* being such that they satisfy the equation

$$n+p+x+y-z=3$$

3,201,468
PREPARATION OF α-ISONITROSOKETONES BY NITROSATION OF KETONES

Luigi Marangoni, Limbiate, and Adriano Nenz, Milan, Italy, assignors, by mesne assignments, to Edison, Milan, Italy, a corporation of Italy

No Drawing. Filed Dec. 10, 1962, Ser. No. 243,580
Claims priority, application Italy, Dec. 14, 1961, 22,350/61
5 Claims. (Cl. 260—566)

1. A process for preparing isonitrosoketones of the following general formula:



wherein R represents a member selected from the group consisting of a hydrogen atom and an alkyl group having up to 3 carbon atoms, which comprises reacting a ketone of the following general formula:



wherein R has the meaning referred to above with nitrosyl chloride in the presence of calcium carbonate which reacts with hydrochloric acid as formed at a temperature in the range from —15° C. to +40°C.

3,201,469
POLYAMINES FROM DIPHENYL ETHER

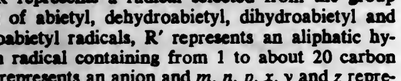
Lawrence F. Sounabend, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 6, 1963, Ser. No. 256,506
10 Claims. (Cl. 260—570.5)

1. The condensation product of:

(1) a halomethyldiphenyl ether selected from the group consisting of

(a) halomethyldiphenyl ethers of the general formula:



wherein *m* is an integer from 1 to 2, *n* is an integer from 0 to 2, and X being selected from the group consisting of chlorine and bromine, and

(b) mixtures thereof; with

(2) at least one alkylene polyamine of the general formula:

$$NH_2(C_aH_{2a}NH)_bH$$

wherein *a* is an integer from 2 to 6, and *b* is an integer from 1 to 4;

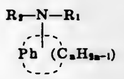
said reactants being used in such proportions that the mole ratio of alkylene polyamine to halomethyl groups is at least 1.5.

3,201,470
N-2-ALKYNYL-AMINO-BENZOCYCLO-ALKANES

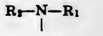
Charles Ferdinand Huebner, Chatham, N.J., assignor to CIBA Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 19, 1962, Ser. No. 203,436
7 Claims. (Cl. 260—577)

1. A member selected from the group consisting of a compound of the formula



in which Ph is a 1,2-phenylene radical, the group $-(C_nH_{2n-1})-$ is lower alkylene having between the 1-position and the 2-position of the 1,2-phenylene radical from three to five carbon atoms, and being substituted by



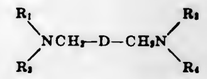
R_1 is lower alkynyl, in which the triple bond is separated from the nitrogen by alkylene, R_2 is a member selected from the group consisting of hydrogen and lower alkyl pharmaceutically acceptable acid addition salts thereof, lower alkyl quaternary ammonium salts thereof, and phenyl-lower alkyl quaternary ammonium salts thereof.

3,201,471
TETRALKYL DIMERIC FAT AMINES

Ralph Fisher, Walnut Creek, Calif., Leonard R. Vertnik, Minneapolis, Minn., Kirtland E. McCaleb, Oakland, Calif., and Ned M. Le Bard, Wayzata, Minn., assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Jan. 17, 1962, Ser. No. 166,946
4 Claims. (Cl. 260—583)

1. As a composition of matter a compound having the structure



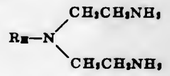
where R_1, R_2, R_3, and R_4 are selected from the group consisting of aliphatic hydrocarbon radicals of from 1 to 18 carbon atoms and hydroxy substituted aliphatic hydrocarbon radicals of from 1 to 18 carbon atoms, and D is a dimeric fat radical.

3,201,472
TERTIARY-AMINO-ALKYLATED PRIMARY AMINES

John D. Spivack, Spring Valley, N.Y., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Original application Dec. 2, 1958, Ser. No. 777,587. Divided and this application Mar. 28, 1962, Ser. No. 188,598
3 Claims. (Cl. 260—583)

1. A compound of the formula:



wherein R_H is alkyl of from 6 to 18 carbon atoms.

3,201,473
1-[BIS(2-HYDROXYPROPYL)AMINO]-2-BUTANOL

William H. Cook, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 11, 1962, Ser. No. 186,629
1 Claim. (Cl. 260—584)

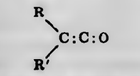
1-[bis(2-hydroxypropyl)amino]-2-butanol.

3,201,474
PROCESS OF MANUFACTURING DIALKYL KETENES

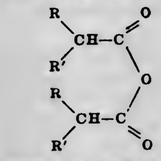
Robert H. Hasek and Edward U. Elam, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 24, 1959, Ser. No. 841,961
7 Claims. (Cl. 260—585.5)

1. A process of manufacturing a dialkyl ketene having the formula



which comprises subjecting to non-catalytic pyrolysis a dialkylacetic acid anhydride having the formula



R and R' being lower alkyl groups, at a temperature within the range of 400°–700° C.

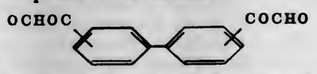
3,201,475
BISGLYOXALYLDIPHENYL DERIVATIVES

Guido Cavallini and Elena Massarani, Milan, Italy, assignors to Francesco Visnara S.p.A., Como, Italy, a firm

No Drawing. Filed July 11, 1960, Ser. No. 41,765
Claims priority, application Italy, Mar. 15, 1960, 4,536/60
8 Claims. (Cl. 260—592)

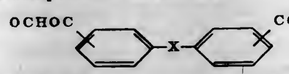
1. A chemical compound selected from the group consisting of

(1) a compound of the formula



(2) a nontoxic, pharmacologically acceptable alkali metal bisulfite addition compound thereof;

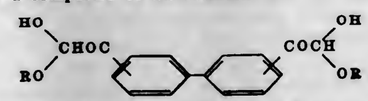
(3) a compound of the formula



in which X is a member selected from the group consisting of oxygen, sulfur, sulfonyl, sulfinyl, methylene, ethylene and vinylene;

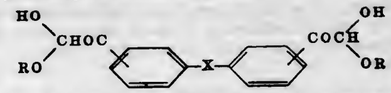
(4) a nontoxic pharmacologically acceptable alkali metal bisulfite addition compound of said last-named compound;

(5) a compound of the formula



in which R is a member selected from the group consisting of hydrogen and a lower hydrocarbon radical; and

(6) a compound of the formula



in which X and R have the same meaning given above.

3,201,476
OXIDATIVE CLEAVAGE OF OLEFINIC DOUBLE BONDS

Leonard M. Baker, Plainfield, and Wayne L. Carrick, East Brunswick, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 23, 1962, Ser. No. 218,838
6 Claims. (Cl. 260—597)

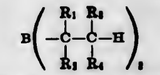
1. Method for oxidative cleavage of olefinic double bonds which comprises contacting a hydrocarbon having an olefinic double bond with a hexavalent chromium trioxide adsorbed onto a water-free support selected from the group consisting of alumina, silica, mixtures of alumina and silica, thoria, and zirconia, the reaction being carried out in a liquid hydrocarbon phase free of water whereby oxidation takes place solely at the carbon atoms which were olefinically bonded forming only primary oxidation products.

3,201,477
HYDROBORATION USING BORANE-ALUMINUM ALCOHOLATES

Janos Kollonitsch, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 28, 1963, Ser. No. 254,450
8 Claims. (Cl. 260—606.5)

1. A process for preparing organoborane compounds of the formula



where R_1, R_2, R_3 and R_4 are each selected from the group consisting of hydrogen and a hydrocarbon radical, which comprises reacting a borane-aluminum alcoholate having the formula

$$AlH_3(BH_3)_33[Al(OR)_3]$$

where each R is selected from the group consisting of alkyl, cycloalkyl and aralkyl, with an unsaturated organic molecule having the formula



where R_1, R_2, R_3 and R_4 are as defined above.

2. A process for preparing trioctylborane which comprises reacting a borane-aluminum alcoholate having the formula

$$AlH_3(BH_3)_33[Al(OR)_3]$$

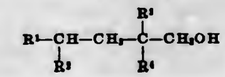
where each R is selected from the group consisting of alkyl, cycloalkyl and aralkyl, with octene-1.

3,201,478
METHOD OF PRODUCING A TERTIARY MONOHYDRIC ALCOHOL

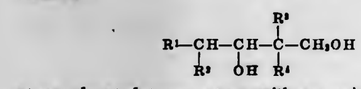
Harry Chafetz, Poughkeepsie, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 2, 1960, Ser. No. 33,401
9 Claims. (Cl. 260—618)

7. A process for preparing an alcohol of the formula



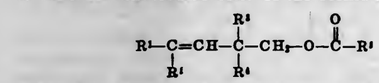
where R^1 and R^2 are selected from the group consisting of hydrogen, alkyl, aryl, alkaryl and aralkyl radicals and where R^3 and R^4 consisting of alkyl, aryl, alkaryl and aralkyl radicals comprising contacting a 1,3-diol of the formula



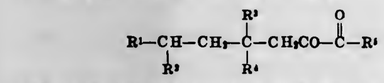
at an elevated temperature with an acid selected from the group consisting of R^5COOH and



to form an unsaturated ester of the formula



where R^5 is an alkyl radical of from 1 to 9 carbons, contacting said unsaturated ester with hydrogen in the presence of hydrogenation catalyst at an elevated temperature to form a saturated ester of the formula



and contacting said saturated monoester with a base to form said alcohol.

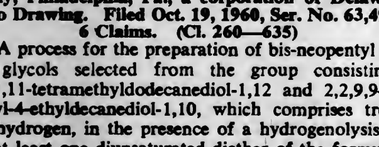
3,201,479

BIS-NEOPENTYL GLYCOLS

Marvin J. Hurwitz, Elkins Park, and Ellington M. Beavers, Meadowbrook, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

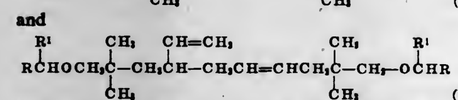
No Drawing. Filed Oct. 19, 1960, Ser. No. 63,494
6 Claims. (Cl. 260—635)

1. A process for the preparation of bis-neopentyl structure glycols selected from the group consisting of 2,2,11,11-tetramethyldodecanediol-1,12 and 2,2,9,9-tetramethyl-4-ethyldecanediol-1,10, which comprises treating with hydrogen, in the presence of a hydrogenolysis catalyst, at least one diunsaturated diether of the formula



(IVa)

and



(IVb)

in which R is selected from the group consisting of a hydrogen atom, a phenyl and an alkylphenyl group in which the alkyl substituent does not exceed 18 carbon atoms and R^1 is selected from the group consisting of phenyl and alkylphenyl in which the alkyl group does not exceed 18 carbon atoms, at a temperature within the range of 5 to 250° C. and a pressure within the range of 5 to 4000 p.s.i.

3,201,480

PROCESS FOR THE CONTINUOUS PRODUCTION OF TRI- AND POLY-BASIC ALCOHOLS

Harry Danziger, Krefeld-Bockum, and Karl Haeseler, Krefeld-Uerdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 8, 1963, Ser. No. 250,021
Claims priority, application Germany, June 4, 1959, F 28,613
3 Claims. (Cl. 260—635)

1. In the process for continous production of polyhydric alcohols by condensation of formaldehyde with a higher aliphatic aldehyde selected from the group consisting of acetaldehyde, propionic aldehyde, butyraldehyde, isovaleryl aldehyde and oenanthic aldehyde, in the presence of a condensation agent selected from the group consisting of an aqueous lithium, sodium and potassium hydroxide solution and an aqueous calcium and barium hydroxide suspension, the improvement of carrying out that process at a temperature from about 30° to about 90° C. in several stages with the use of 100 to about 110 percent of the theoretical amount of formaldehyde in such a manner that in the first stage the total amount of formaldehyde is introduced together with between about 40 and about 70 percent of the theoretical amount of the condensation agent and between about 30 and about 50 percent of the higher aliphatic aldehyde, the condensation agent, however, being present in excess with respect to said amount of the higher aliphatic aldehyde, in at least one subsequent stage between about 60 and about 30 percent of the theoretical amount of the condensation agent and between about 45 and 30 percent of the theoretical amount of the higher aliphatic aldehyde are added, the condensation agent again present in excess with respect to said higher aliphatic aldehyde, and finally, in a last stage, the remainder of said higher aliphatic aldehyde is added.

3,201,481

METHOD OF PREPARING 4-NITROSTILBENES

Sigmund C. Catino, Rensselaer, and Albert F. Strobel, Delmar, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,080
18 Claims. (Cl. 260—645)

1. In the method for the preparation of 4-nitrostilbenes by the condensation of a 4-nitrotoluene with an aromatic aldehyde in the presence of an alkaline catalyst, the improvement which comprises employing as said alkaline catalyst a composition containing a compound selected from the group consisting of alkali and alkaline earth metal salts of arylsulfonamides and an alkali carbonate.

3,201,482

STABILIZATION OF METHYL CHLOROFORM

Robert H. Fredenburg, Barberton, Ohio, assignor, by mesne assignments, to Pittsburgh Plate Glass Company

No Drawing. Filed Dec. 5, 1960, Ser. No. 73,491
8 Claims. (Cl. 260—652.5)

1. Methylchloroform stabilized with in combination an acetylenic alcohol having up to 8 carbon atoms, a saturated monohydric aliphatic alcohol having from 4 to 8 carbon atoms and a hydrocarbon containing from 5 to 15 carbon atoms.

3,201,483

METHOD OF FLUORINATING WITH ANTIMONY PENTAFLUORIDE

Ralph A. Davis, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 22, 1962, Ser. No. 218,532
6 Claims. (Cl. 260—653.8)

1. A process for the fluorination of straight chain, saturated hydrocarbons having from two to four carbon atoms and containing at least one bromine atom, comprising reacting said hydrocarbon, at a temperature of from about 20 to about 70 degrees centigrade, and at a pressure sufficient to maintain the reactants liquid, with a mixture containing antimony pentafluoride and from about one-fourth to about four times its weight of bromine, said mixture being further characterized in that the bromine is present in an amount sufficient to maintain said antimony pentafluoride and the antimony salts formed in the reaction in a liquid suspension thereby to selectively replace at least one bromine on said hydrocarbon with fluorine, and separating fluorinated hydrocarbon product from the reaction mixture thus formed.

3,201,484

REACTIONS OF CONJUGATED DIENES

William R. Myers, Dunbar and Roy L. Pruett, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 16, 1962, Ser. No. 230,987
33 Claims. (Cl. 260—666)

1. A process which comprises conducting a Diels-Alder reaction in the presence of from about 0.001 to about 25 weight percent, based on the weight of the reactants, of a compound selected from the group consisting of cyclopentadienyl nickel compounds and cyclopentadienyl cobalt compounds, said compound being capable of forming a homogeneous phase with the liquid phase reaction components; at a temperature of from about —10° C. to about 270° C.; and for a period of time sufficient to produce a Diels-Alder addition product.

21. A process which comprises contacting a conjugated diene with from about 0.5 to about 25 weight percent, based on the weight of said conjugated diene, of a compound selected from the group consisting of cyclopentadienyl nickel compounds and cyclopentadienyl cobalt compounds, said compounds being capable of forming a homogeneous phase with the liquid phase reaction components; at a temperature of from about 100° C. to about 220° C.; and for a period of time sufficient to produce a 1,2-divinylcyclobutane product.

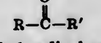
3,201,485

PROCESS FOR PREPARING POLYALKYLATED BENZENES FROM ALKYL KETONES

Stephen M. Kovach, Highland, Ind., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 15, 1961, Ser. No. 159,762
5 Claims. (Cl. 260—668)

1. A process for the preparation of a polyalkylated benzene which comprises reacting in the presence of molecular hydrogen an alkyl ketone having the structural formula:



wherein R is a lower alkyl radical and R' is a hydrocarbon radical of 1 to 12 carbon atoms in the vapor phase at a temperature of about 300–1000° F. and in the presence of a catalyst selected from the group consisting of alumina containing catalytic amounts of chromia and boria and silica-alumina containing catalytic amounts of chromia and zinc oxide.

3,201,486

ALKYLATION OF ALKYLATABLE ORGANIC COMPOUNDS

Mitchell S. Bielawski, Mount Prospect, and Julian M. Mavity, Palatine, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 19, 1960, Ser. No. 76,491
12 Claims. (Cl. 260—671)

1. A process for the alkylation of an alkylatable aromatic compound containing a replaceable hydrogen atom which comprises condensing the nucleus of said compound with an olefin at a temperature in the range of from about room temperature to about 400° C. and at a pressure in the range of from about atmospheric to about 100 atmospheres in the presence of a catalyst consisting of a mixture of from about 25 to about 10% by weight of a siliceous adsorbent and from about 75 to about 90% by weight of an oxygen acid of phosphorus having a P_2O_5 content of from about 79 to about 85 weight percent, said mixture having been calcined at a temperature in the range of from about 550° to about 900° C., said catalyst being characterized by containing a mole ratio of P_2O_5 to SiO_2 of from about 1.0 to about 3.0, and recovering the resultant alkylated aromatic compound.

3,201,487

AROMATIC ALKYLATION WITH A SILICA-ALUMINA-CHROMIA CATALYST

Stephen M. Kovach, Highland, Ind., and Glenn O. Michaels, Park Forest, Ill., assignors to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 19, 1961, Ser. No. 139,056
5 Claims. (Cl. 260—671)

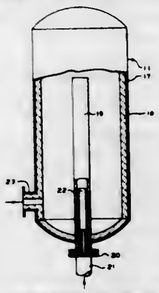
1. A process for the alkylation of aromatics with an alkylating agent which comprises contacting an alkylatable aromatic with an alkylating agent under alkylation conditions including a temperature of about 400 to 1000° F. and in the presence of a catalyst consisting essentially of about 25 to 50 weight percent chromia on a silica-alumina support.

3,201,488

PROCESS AND APPARATUS FOR NON-CATALYTIC REACTION

Fred T. Sherk and Rolland E. Dixon, both of Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 22, 1961, Ser. No. 161,518
9 Claims. (Cl. 260—672)



1. A thermal, non-catalytic dealkylation process comprising the steps of passing a sole feed stream comprising an alkylated aromatic hydrocarbon into a first central, generally cylindrical zone through a first end thereof, circulating said hydrocarbon through said first zone and from a second end thereof into a second zone comprising an unobstructed annular zone surrounding said first zone and in open communication therewith at said first and second ends, utilizing kinetic energy of the flow of said feed stream entering said first zone to recirculate a portion of said hydrocarbon directly from said second zone into said first end of said first zone, subjecting said hydrocarbon to dealkylation conditions of temperature and pressure, and removing a single effluent stream comprising a dealkylated component, said effluent stream being removed from said second zone.

3,201,489

RECOVERY OF AROMATIC HYDROCARBONS

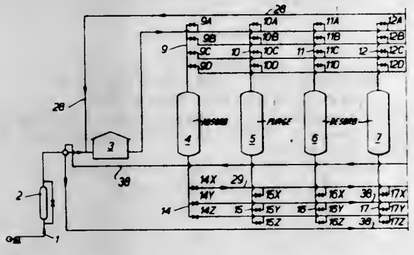
Donald Fred Knauck, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 27, 1960, Ser. No. 65,298
2 Claims. (Cl. 260—674)

1. A process for separating fluid aromatic hydrocarbons from fluid mixtures of aromatic hydrocarbons with saturated hydrocarbons, which comprises contacting said

mixture with an aqueous solution of a silver salt wherein the anion is selected from the class consisting of fluoborates, fluosilicates and combinations thereof, and wherein the silver salt solution is modified by the addition of a second metal salt wherein the cation is a metal of Group II of the Periodic Table of Elements and has an atomic number from 4 to 56 inclusive, and the anion is selected from the group consisting of fluoborates, fluosilicates and combinations thereof, and thereafter recovering the aromatic hydrocarbon from said solution.

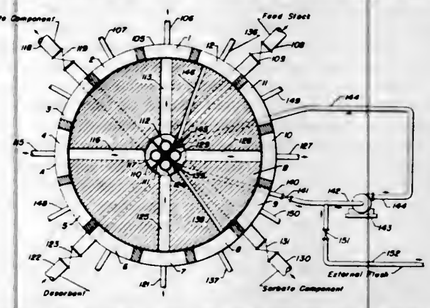
3,201,490
SEPARATION OF MIXTURES
Richard Norman Lacey, Alan Arthur Yeo, Roger Templeton Lewis Mowll, all of Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation
Filed Jan. 26, 1962, Ser. No. 168,981
Claims priority, application Great Britain, Feb. 2, 1961, 3,965/61
12 Claims. (Cl. 260—676)



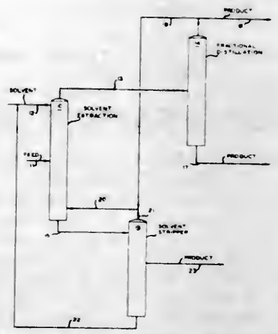
1. An isothermal process for the separation of straight-chain hydrocarbons from petroleum fractions boiling in the C_{10}–C_{20} range and pretreated to reduce the sulfur content to a value not exceeding 0.1% weight comprising contacting the fratcion with a number of fixed beds of a 5 A. molecular sieve in a first stage to absorb straight-chain hydrocarbons, contacting the sieve with a purging medium in a second stage to remove material adsorbed on the surface of the sieve or held interstitially between sieve particles, desorbing the absorbed hydrocarbons in a third stage using a desorbing medium selected from the group consisting of n-pentane and n-butane, all three stages being in the vapour phase and at a temperature in the range of 300–450° C., the pressure in the desorption stage being at least equal to the pressure in the absorption stage, the ratio of absorption, purge and desorption stages at any point of time is 1:1:2 and the ratio of the length of time of the absorption, purge and desorption stages is also 1:1:2 and recovering the desorbed straight-chain hydrocarbons in a purity of at least 95% weight.

3,201,491
CONTINUOUS SORPTION PROCESS WITH EMPHASIS ON PRODUCT PURITY
Lawrence O. Stine, Western Springs, and Donald B. Broughton, Chicago, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Sept. 5, 1962, Ser. No. 223,867
7 Claims. (Cl. 260—676)

1. In a process for continuously separating the components of a mixture of fluids, at least one of which is selectively retained by contact of the mixture with a solid sorbent and at least one other component of which is relatively less sorbed by the sorbent, in which process a feed inlet stream comprising said feed mixture is continuously and successively charged into each zone of a plurality of serially interconnected contact zones, each zone containing a fixed mass of said sorbent, a stream of desorbent capable of displacing selectively retained sorbate component from said sorbent is substantially simultaneously charged into a downstream contact zone containing sorbate component retained by the sorbent in the last previous cycle of operation, an outlet stream comprising relatively less sorbed component of said mixture is substantially simultaneously withdrawn from a zone between the inlet of said zone receiving the feed stream and the inlet of the zone receiving said desorbent, a mixture of sorbate component and desorbent is substantially simultaneously withdrawn through a sorbate outlet between the inlet of the zone receiving desorbent and the inlet of the zone receiving said feed stream, a recycle stream of fluid is continuously withdrawn from the outlet of one fixed mass of sorbent and charged at a higher pressure into the inlet of the next downstream fixed mass of sorbent in the series of zones, each of the influent and effluent streams being directed during the process into and out of each of the zones through a fluid distribution center which advances the inlet and outlet points for said streams simultaneously and equidistantly in a downstream direction, the improvement in said process which comprises charging a flush stream comprising a fluid separable from said feed stock into the fluid inlet next upstream relative to the feed stream inlet in an amount not substantially exceeding the volume of fluid in the line of flow between the feed inlet into the fluid distribution center and the feed inlet to the contact zone receiving said feed stream.



3,201,492
SEPARATION OF HYDROCARBONS POSSESSING VOLATILITY DIFFERENCES
Fred T. Sherk, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,469
5 Claims. (Cl. 260—681.5)



1. A separation process which comprises passing an organic feed mixture to a solvent extraction zone and therein contacting said organic feed, passing a selective solvent to said extraction zone, said selective solvent capable of extracting an intermediate fraction of said organic mixture, said intermediate fraction having a volatility intermediate of the remainder of said organic mixture, passing a raffinate stream from said solvent extraction zone to a fractional distillation zone, withdrawing an overhead product stream having a greater volatility than the volatility of said intermediate fraction from said fractional distillation zone, recycling as reflux a portion of said withdrawn overhead stream to the lower region of said solvent extraction zone, withdrawing from the lower region of said fractional distillation zone a product stream having a volatility less than the volatility of said intermediate fraction, passing a solvent stream containing said intermediate fraction from the lower region of said solvent extraction zone to a solvent stripping zone, withdrawing from said solvent stripping zone a volatile fraction, passing said withdrawn volatile fraction from said solvent stripping zone as reflux to said solvent extraction zone, passing a solvent stream from the lower region of said solvent stripping zone to said solvent extraction zone, and withdrawing from an intermediate region of said solvent stripping zone an intermediate volatile product stream comprising said intermediate fraction.

3,201,493
ISOMERIZATION OF OLEFINIC COMPOUNDS
Erwin E. Meisinger, Elmhurst, and Herman S. Bloch, Skokie, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Sept. 25, 1963, Ser. No. 311,302
10 Claims. (Cl. 260—683.2)

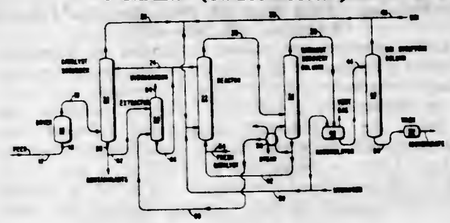
1. A process for the selective isomerization of an olefinic hydrocarbon containing from 4 to about 20 carbon atoms per molecule which comprises treating said hydrocarbon at a temperature in the range of from about 0° to about 25° C. and at a pressure in the range of from about atmospheric to about 200 atmospheres in the presence of a catalyst comprising an alkali metal amide disposed on a high surface area substantially anhydrous alumina containing an alkali metal promoter.

2. A process for the selective isomerization of an olefinic hydrocarbon containing from 4 to about 20 carbon atoms per molecule which comprises treating said hydrocarbon at a temperature in the range of from about 0° to about 25° C. and at a pressure in the range of from about atmospheric to about 200 atmospheres in the presence of a catalyst comprising an alkali metal amide disposed on a high surface area substantially anhydrous alumina support which has been promoted with a compound selected from the group consisting of the alkali metal salts, alkali metal hydroxides, alkaline earth metal salts and alkaline earth metal hydroxides and calcined.

3,201,494
HEXAFLUOROANTIMONIC ACID-CATALYZED HYDROCARBON CONVERSIONS
Jan M. Oelderik, Edzard L. Mackor, Joost C. Platteeuw, and Anton van der Wiel, all of Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 3, 1963, Ser. No. 284,806
Claims priority, application Great Britain, June 4, 1962, 21,498/62; Aug. 27, 1962, 32,851/62; Sept. 12, 1962, 34,854/62; Feb. 14, 1963, 6,087/63, 6,088/63
18 Claims. (Cl. 260—683.47)

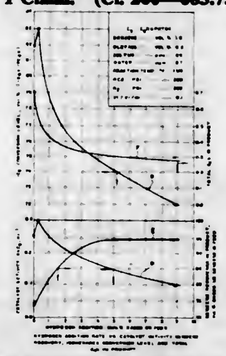
1. A process for the catalytic conversion of hydrocarbons with from 2 to 12 carbon atoms per molecule and mixtures thereof to other hydrocarbons which comprises contacting the hydrocarbons substantially in the liquid phase with a hexafluoroantimonic acid catalyst, the acid catalyst contacting materials of construction which are resistant to corrosion by said catalyst.

3,201,495
CATALYST RECOVERY USING SLUDGE EXTRACTION
Eugene B. Fountain, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 13, 1962, Ser. No. 244,408
6 Claims. (Cl. 260—683.74)



1. In an isomerization process wherein normal paraffins and naphthenes are contacted in a reaction zone with a molten salt catalyst comprising aluminum halide and antimony trihalide, a portion of the catalyst being deactivated to a hydrocarbon-insoluble sludge which is separated from active catalyst by scrubbing with hydrocarbon in a scrubbing zone, and reaction zone effluent being separated in a fractionation zone into a vaporous phase containing isomerization product, a liquid hydrocarbon phase containing catalyst components, and a liquid catalyst phase, the improvement which comprises contacting the liquid hydrocarbon phase from the fractionation zone in an extraction zone with sludge, withdrawing from the extraction zone liquid hydrocarbon substantially reduced in concentration of a catalyst components and sludge enriched in a catalyst component and passing the enriched sludge into the scrubbing zone wherein the catalyst is separated from the sludge.

3,201,496
ISOMERIZATION PROCESS
Boyd N. Hill, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Sept. 28, 1961, Ser. No. 141,369
1 Claim. (Cl. 260—683.75)



An improved isomerization process comprising contacting in a reactor a feedstock consisting essentially of normal paraffinic and cyclo paraffinic hydrocarbons having 4 to 7 carbon atoms per molecule, with as a sole added catalyst solid aluminum chloride and hydrogen chloride in the presence of hydrogen added in the amount of about 0.3 to 4.0 mol percent hydrogen per mol of feed and at a temperature in the range of about 110° F. to 145° F., the hydrogen chloride partial pressure being sufficient to maintain in the liquid phase in the reactor about 10 to 44 wt. percent hydrogen chloride based on the hydrogen chloride-hydrocarbon mixture.

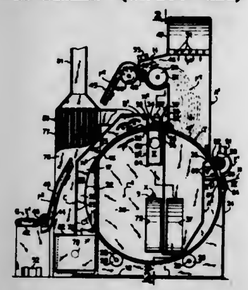
3,201,497
ADHESIVES COMPRISING EPOXY-HYDROXY POLYETHER RESIN AND EPOXY-CONTAINING COPOLYMER
Walden L. Heino, Grand Island, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 28, 1961, Ser. No. 141,316
8 Claims. (Cl. 260—837)

1. An adhesive composition comprising an 1,2-epoxy-hydroxy polyether; 2 to 45% by weight, based on said 1,2-epoxy-hydroxy polyether, of a film-forming copolymer of an ethylenically unsaturated 1,2-epoxy monomer and at least one ethylenically unsaturated 1,2-epoxy-free monomer, said copolymer having a molecular weight of at least 2,000, an elongation at break of at least 10%, and an oxirane oxygen content of 0.033 to 7% by weight; and a curing agent for said 1,2-epoxy-hydroxy polyether.

3,201,498
COMPOSITIONS OF POLYETHYLENE AND ETHYLENE/ETHYLACRYLATE COPOLYMERS FOR IMPROVED HEAT SEALABILITY
Marion O. Brunson and William D. McGillon, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed May 2, 1962, Ser. No. 192,010
6 Claims. (Cl. 260—897)

1. A hot melt composition containing 60–95 percent polyethylene having a molecular weight of 1,500–10,000, a density of 0.87 to 0.95 and a melt viscosity at 150° C. of less than 20,000 cps. and 5–40 percent ethylene/ethylacrylate copolymer having a melt index of 15–100, a density of .915–.95 and an ethylacrylate content of 5–30 percent.

3,201,499
METHOD AND MACHINE FOR PRODUCING A WEB OF TEXTILE FIBRES HELD TOGETHER BY A BINDER
Marcel Cassé, 69 Rue Feray, Corbeil-Essonnes, France
Filed Oct. 17, 1961, Ser. No. 145,607
Claims priority, application France, Dec. 7, 1960, 846,240, Patent 1,282,103
15 Claims. (Cl. 264—121)



1. Method of producing a web of fibres held together by a binder consisting of the steps of depositing at a first station directly on a rotating perforated cylindrical wall, loose fibres carried along in a stream of air directed through the perforated wall, spraying at a second station following the first station, relative to the direction of rotation of the perforated wall, a liquid binder directly onto the layer of fibres deposited on the perforated wall while creating a high suction on the side of the wall opposed to said layer in the region of the layer receiving the sprayed liquid binder so as to achieve substantial penetration of the liquid binder into the layer and a compression of the layer, drying the layer in a third station following the second station, relative to said direction of rotation by forcing a hot gaseous fluid directly onto the layer and through the latter and into the perforated wall, and removing, at a fourth station following the third station, the dried layer from the perforated wall in the form of a web of fibres bound together by a binder.

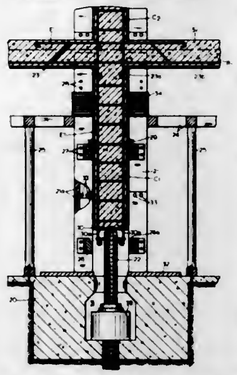
3,201,500
PROPELLANT POWDER MAKING PROCESS
Don W. Ryker, Alton, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Nov. 16, 1951, Ser. No. 256,827
6 Claims. (Cl. 264—3)

1. In the manufacture of propellants, the process which comprises forming nitrocellulose base propellent grains by an extrusion process, softening the surface of the grains by means of a solvent for nitrocellulose and thereafter removing the solvent therefrom, mixing the resulting case hardened grains with a solvent for nitrocellulose and consolidating this mass into a propellent grain by the dissolution of the smaller grains by the solvent.

3,201,501
METHOD OF IN SITU FABRICATION OF A MONOLITH REFRACTORY LINING
Maurice D. Cook, Oakdale, and Peter T. Troell, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed May 28, 1963, Ser. No. 283,716
8 Claims. (Cl. 264—30)

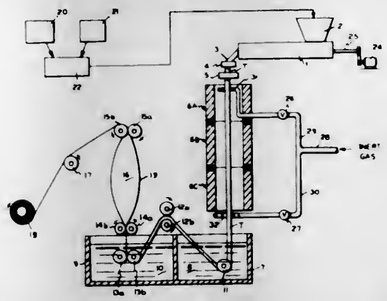
1. Method of gunning an unconsolidated basic refractory material on its situs of use, with a minimum of rebound, to form a basic refractory monolith, at least about 60% of the refractory material being chrome ore and magnesia, comprising the steps of size grading selected basic refractory material, adding from 0.5 to 5 parts, by weight, of fibrous asbestos to about 100 parts, by weight, of said size graded refractory material, the chemical components of said asbestos capable of chemically reacting with said refractory material at service temperatures substantially without impairing the refractoriness of the resulting monolith, mixing the refractory material and fibrous asbestos with an aqueous carrier fluid and forceful impacting the resulting slurry on the situs of use.

3,201,502
METHOD OF ERECTING CONCRETE STRUCTURES
Paul Plöckebaum, Am Sandacker 22, Duesseldorf-Hamm, Germany
Filed Sept. 14, 1962, Ser. No. 223,799
Claims priority, application Germany, Apr. 2, 1959, P 22,517; May 11, 1962, P 29,379
2 Claims. (Cl. 264—34)



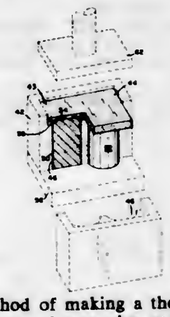
1. A method of erecting a concrete skeleton for a multistory building having a plurality of superposed one-story frameworks of slabs and columns, comprising the steps of:
(a) excavating a recess in the ground with a depth of at least one story and forming in the resulting excavation a foundation for said skeleton;
(b) erecting on said foundation an array of fixedly positioned upstanding support members, having a height of at least two stories, about the site of each column of a framework to be cast;
(c) temporarily mounting upon said support members a concrete-molding formwork including form boards for each column disposed within said array;
(d) inserting between said form boards a set of elongated generally vertical reinforcing members for each column, at least some of said reinforcing members having ends projecting downwardly into said excavation;
(e) monolithically pouring each column between said form boards and an overlying slab spanning all the columns so poured. thereby forming a framework for an uppermost story of the building;
(f) allowing said framework to harden into a structure sufficiently rigid to be elevated above said foundation;
(g) elevating said structure by lifting each column thereof to a second-story level with the aid of respective jacks disposed in said recess whereby said projecting ends extend downwardly below said level;
(h) temporarily retaining said structure on said second-story level by bracing it against said support members while withdrawing the jacks into said recess preparatorily to the pouring of a framework for the next-lower story of the building;
(i) and proceeding in like manner in the formation of a similar framework for each subsequent story, with the columns of all frameworks mutually aligned and with insertion of reinforcing members between the form boards for the lower columns in overlapping relationship with the ends of the reinforcing members from the upper columns.

3,201,503
PROCESS FOR FORMING CROSS-LINKED POLYETHYLENE FILM
Calvin J. Benning, Clarksville, Raznic S. Gregorian, Silver Spring, and Frank X. Werber, Rockville, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed Jan. 31, 1962, Ser. No. 170,214
21 Claims. (Cl. 264—95)



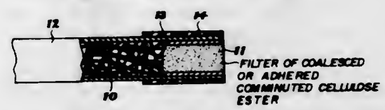
1. Process for continuous production of shrinkable polyethylene film which comprises forming a substantially homogeneous mixture of a normally solid polyethylene and from about 0.2 to about 4.0 percent by weight, based on the weight of the polyethylene, of a crosslinking agent; shaping said mixture into a tube by extruding the same at temperatures between the melting point of the polyethylene and the gel point of the mixture; feeding the extruded tube into a heated curing zone maintained at temperatures sufficient to heat the mixture above the decomposition temperature of the crosslinking agent; passing said tube through said curing zone at a rate sufficient to provide a residence time in said zone at least equal to about three half-lives of said crosslinking agent; cooling the thus cured tubing to a temperature below that at which it adheres to itself; reheating the cured, cooled tubing to temperatures at which it can be expanded and expanding said reheated tube to form tubular film therefrom.

3,201,504
METHOD OF MOLDING A THERMOELECTRIC COUPLE
Norman John Stevens, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Oct. 16, 1961, Ser. No. 145,088
2 Claims. (Cl. 264—104)



1. The method of making a thermocouple which consists in the steps of arranging at least a pair of spaced sleeve members formed of a dielectric material in side-by-side relation within a pressing die; supplying the first sleeve member with a quantity of material, in particle form, having preselected thermoelectric characteristics; supplying the second sleeve member with a quantity of material, in particle form, having thermoelectric characteristics opposite that initially supplied to the first sleeve member; introducing over one end of adjoining sleeve members a confined charge of granular material, in particle form, substantially free of thermoelectric characteristics; and applying to the assembly a compressive force sufficient to provide a self-sustaining rigid unitary structure including two thermoelectric bodies connected by a bridge portion serving as a thermal junction.

3,201,505
PROCESS FOR MOLDING ROD-LIKE CIGARETTE FILTER TIP OF CELLULOSE ESTER FLAKE
Lester W. A. Meyer, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 24, 1962, Ser. No. 197,305
8 Claims. (Cl. 264—109)



1. A process for the production of rod-like elements which may be used for cigarette filter tips which comprises the steps of treating particles of cellulose acetate with a relatively non-volatile material from the group consisting of heat sensitive monomers, partially polymerized polymers and organic esters having solvent action on said cellulose acetate, shaping the cellulose acetate thus treated into the desired rod-like element form, heat-

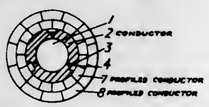
ing the form to cause the non-volatile material to further act on the cellulose acetate and severing the rod into desired lengths.

3,201,506
ADDITION OF MAGNESIUM SILICATE TO A POLYESTER IN THE MANUFACTURE OF ORIENTED FILM
William Douglas Bills, Circleville, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 9, 1962, Ser. No. 215,793
4 Claims. (Cl. 264—210)

1. In a proces of preparing a polymeric linear terephthalate ester film wherein an alkyl ester of terephthalic acid having from 1 through 7 carbon atoms in the alkyl group is reacted with a polymethylene glycol having from 2 through 10 carbon atoms under conditions whereby ester interchange is effected, the ester is subsequently polymerized, extruded into the form of a thin film and the film molecularly oriented by elongating said film in both the longitudinal and transverse directions to an extent of at least 2.0 times its original dimensions while being heated to a temperature within the range of 80 to 160° C., the improvement comprising: adding to said ester prior to polymerization from 1 through 5% by weight, based on the weight of said alkyl ester of terephthalic acid, of hydrated magnesium silicate having particle sizes within the range of 2 to 10 microns.

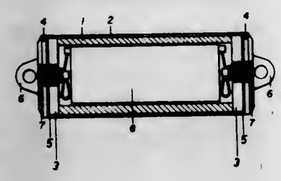
ELECTRICAL

3,201,507
HOLLOW CONDUCTOR FOR POWER CABLES
John N. Johnsen, Oslo, Norway, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 15, 1962, Ser. No. 237,861
Claims priority, application Norway, Dec. 7, 1961, 142,439
2 Claims. (Cl. 174—25)



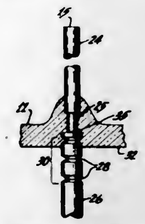
1. A hollow conductor for power cables comprising a circular tube having at least one groove in its surface and holes in the bottom of each said groove, the diameters of said holes being smaller than the width of said grooves whereby fluid flowing through said holes into said grooves is guided along said grooves, and at least one layer of profiled metal wires which are stranded over the conductor whereby the conductor cross-section is increased.

3,201,508
SUBMERSIBLE DOUBLE CYLINDRICAL CONTAINER WITH OUTER WELDED COVERS
Wolfgang Katzschner, Cologne-Mulheim, Germany, assignor to Felten & Guilleaume Carlswerk Aktiengesellschaft, Cologne-Mulheim, Germany
Filed Mar. 5, 1963, Ser. No. 262,892
Claims priority, application Germany, Mar. 15, 1962, F 36,276
2 Claims. (Cl. 174—50.51)



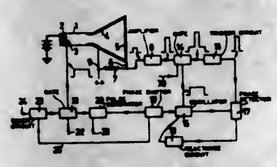
2. For use in submarine cable installations, a watertight submersible container adapted to hold and protect electrical apparatus and the like and to withstand water pressure when submerged, said container comprising, in combination, an inner, pressure-resistant thick-walled cylinder free of weld seams, said inner cylinder including a cylindrical peripheral wall having continuous outer and inner surfaces, and two transversal end walls at opposite ends of said cylindrical peripheral wall at least one of said two transversal end walls forming a removable cover, said walls consisting of pressure-resistant steel and being of substantial thickness so as to have high mechanical strength and be adapted to withstand water pressure when submerged in water; and an outer closed sealing cylinder including a thin tubular peripheral wall enclosing said cylindrical peripheral wall of substantial thickness of said inner pressure-resistant cylinder, supported by the same, and of two transversal end walls located outwardly from said transversal end walls of said inner pressure-resistant thick-walled cylinder supported by the same and welded to and watertightly closing along their edges the opposite ends of said thin tubular peripheral wall of said outer closed sealing cylinder, the walls of said outer closed sealing cylinder consisting of high grade austenitic steel, whereby said outer closed sealing cylinder will be supported by said inner closed thick-walled pressure-resistant cylinder while said outer closed sealing cylinder water-tightly encloses said inner pressure-resistant thick-walled cylinder.

3,201,509
ELECTRON TUBE STEM HAVING BREAK-AWAY LEADS
William K. Batzle, Bloomfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 12, 1962, Ser. No. 223,179
2 Claims. (Cl. 174—50.61)



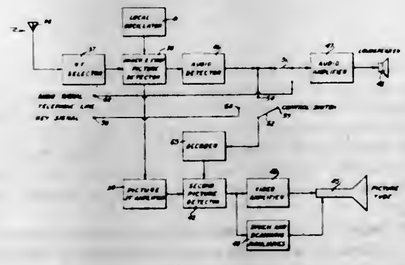
1. A stem for an electron tube comprising an insulating wafer having a pair of surfaces, and a plurality of conductors extending through said wafer and outwardly of said surfaces in vacuum tight relation with said wafer, said conductors each comprising a first rod and a second rod butt welded together, the joint between said rods being embedded within said wafer, one of said first rods, and only said first rods, having a length including a number of adjacently disposed cut-out portions, the ends of said length being disposed on opposite sides of one of said surfaces.

3,201,510
CIRCUIT ARRANGEMENT IN A COLOR TELEVISION RECEIVER OF THE BEAM INDEX TYPE
Jan Davidse, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 16, 1960, Ser. No. 29,268
Claims priority, application Netherlands, May 22, 1959, 239,475
10 Claims. (Cl. 178—5.4)



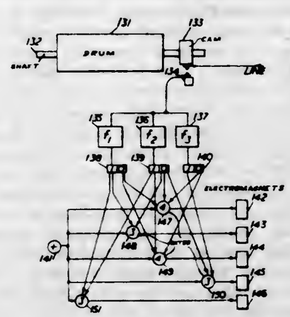
1. A color television receiver comprising an image reproducing device having a screen and electron gun means for directing a beam of electrons toward said screen, said screen comprising a plurality of groups of parallel phosphor stripes responsive to said beam to reproduce color information, said groups being separated by indexing stripes extending parallel to said phosphor stripes, said indexing stripes being responsive to said beam to produce an indexing signal, means for scanning said beam in a direction normal to said stripes, first gate circuit means, means applying said indexing signals to said first gate circuit means, a source of a video signal, second gate circuit means, means applying said video signal to said second gate circuit means, means applying the output of said second gate circuit means to said electron gun means to modulate said beam, means for opening said first and second gate circuit means comprising means providing gate signals, means applying said gate signals to said first and second gate circuit means, and means connected to the output of said first gate circuit means for controlling the frequency of said gate signals, the frequency of said gate signals being integrally related to and no greater than the rate at which said beam scans successive said indexing stripes.

3,201,511
SUBSCRIPTION TELEVISION SYSTEM HAVING KEYED GENERATION OF SYNC SIGNALS AT THE RECEIVER
Helias Doundoulakis, Brooklyn, N.Y., assignor to Teleglobe Pay-TV-System, Inc., New York, N.Y.
Filed July 20, 1960, Ser. No. 44,114
13 Claims. (Cl. 178—5.1)



1. In a television receiver, in combination, receiving means for receiving and reproducing a video signal and a key signal of substantially sinusoidal waveshape, said receiving means including picture detecting means for deriving the picture signal from a received video signal, means connected to said picture detecting means for reproducing a picture from the output of said picture detecting means, synchronizing and scanning means connected to said picture reproducing means, and receiver audio means for receiving and reproducing an audio signal in synchronism with said video signal, said receiver audio means comprising audio detecting means for deriving said audio signal from the received signal and means for reproducing said audio signal from the output of said audio detecting means; and decoding means for producing horizontal synchronizing signals from the received key signal so as to provide in said receiver a video signal including said horizontal synchronizing signals, said decoding means having an input connected to a common point between said audio detecting means and said audio signal reproducing means and an output connected to said picture detecting means and comprising first phase shifting and pulse forming means for converting said substantially sinusoidal key signal into a first series of substantially sharp pulses, first pulse shaping means for converting said first series of substantially sharp pulses into a first series of substantially square pulses, second phase shifting and pulse forming means for converting said substantially sinusoidal key signal into a second series of substantially sharp pulses, second pulse shaping means for converting said second series of substantially sharp pulses into a second series of substantially square pulses, and mixing means for combining said first and second series of substantially square pulses to provide a resultant series of horizontal synchronizing pulses.

3,201,512
FACSIMILE SYSTEM HAVING PROVISION FOR HIGH SPEED SKIPPING OF BLANK AREAS
Frederick Percival Mason, Graham John Lloyd Stevens, and Frank Gerald Smith, all of Croydon, Surrey, England, assignors to Creed & Company Limited, Croydon, England, a British company
Filed Aug. 31, 1961, Ser. No. 135,308
Claims priority, application Great Britain, Sept. 9, 1960, 31,171/60
7 Claims. (Cl. 178—6)



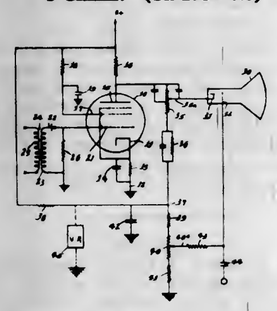
1. A facsimile system including a transmitter and a receiver, said transmitter including first and second means for scanning the content of a message-form or the like, said first scanning means being arranged to scan a plurality of consecutive positions on a message-form in advance of the second scanning means, means for effecting relative movement between the scanning means and the message-form during a scanning operation; said receiver including means for recording in fascimile the content of the message-form as scanned by the second scanning means, means for effecting relative movement between a second message-form or the like and the recording means during a recording operation; and electric circuit means operative by said first scanning means in the absence of information in the said plurality of consecutive posi-

tions on the message-form at the transmitter to cause said relative movements to be effected in synchronism at a speed in excess of normal scanning speed, and operative by the said first scanning means in the presence of information in one or more of said plurality of consecutive positions on the message-form at the transmitter to terminate said higher speed relative movements each time the second scanning means is in a position to scan the information present in one or more of the said plurality of consecutive positions on the message-form.

3,201,513
DIRECT CURRENT COUPLED CONTRAST CONTROL

Louis W. Schreiner, Palatine, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware

Filed Oct. 3, 1962, Ser. No. 228,125
5 Claims. (Cl. 178—7.5)



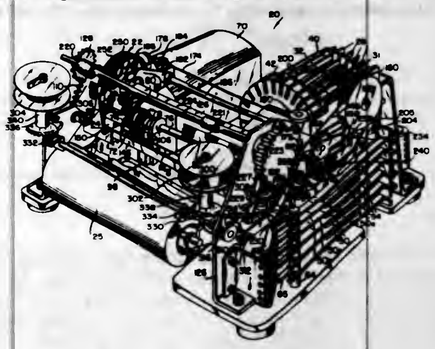
1. In a television receiver, a direct current coupled contrast control circuit of the character described, comprising: a video amplifier having cathode, control grid and anode electrodes; means establishing a reference potential; a source of operating potential positive with respect to said reference potential; means including an anode load connecting the anode-cathode circuit of said video amplifier between said source of operating potential and said reference potential; a voltage divider connected between said source of operating potential and said reference potential, having an intermediate point providing a stable operating potential less than the potential of said source; a video contrast control potentiometer having a resistor portion connected between said anode and said intermediate point; a brightness control potentiometer having a resistor portion connected in a voltage divider between said amplifier anode and said reference potential, said voltage divider having an intermediate point connected through a resistor with said positive source; a cathode ray display tube having a cathode and control grid elements; means connecting the tap of said contrast control potentiometer wtih the cathode of said display tube; and means connecting the tap of said brightness control potentiometer with the control grid of said display tube.

3,201,514
MINIATURE BULLETIN PRINTER

Edward E. Kleinschmidt, Miami Beach, Fla., and Wilbern F. Bradbury, Northbrook, Ill., assignors to SCM Corporation, New York, N.Y., a corporation of New York

Filed Oct. 19, 1961, Ser. No. 146,105
50 Claims. (Cl. 178—33)

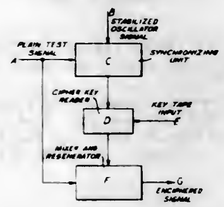
1. A printing telegraph receiver comprising: a movable type carriage; a rotatable positioning shaft; a type character selection device mounted on said movable carriage and slidably drive connected to said positioning shaft for longitudinal movement relative thereto and conjoint rotation therewith; means responsive to a code signal combination representative of a character to be printed to selectively position said shaft whereby said device is positioned for selection of a particular type character to be printed; means to cause said selected type character to be printed on a record medium; means to select and accomplish at least the machine functions of carriage return and line space and Letters and Figures shift of said carriage; said selecting means including two-position selection code members and operative shift bars selected by permutative positioning of said code members from a "home" position; and means adapted to connect to and ensure placement of all said code members and said selected bars to said "home" position prior to the start of each receiver cycle.



3,201,515
METHOD FOR SYNCHRONIZING CRYPTOGRAPHIC TELEPRINTER EQUIPMENT

Knare Ragnar Meisingset, Stabekk, Ivar Mo, Ovre Grorud, and Odd Kvingedal, Oslo, Norway, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 6, 1962, Ser. No. 177,788
3 Claims. (Cl. 178—53)



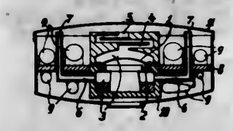
1. Apparatus for synchronizing the feed of a key tape in the receiver of cryptographic teleprinter equipment with the feed of a key tape in the transmitter of cryptographic teleprinter equipment, said teleprinter equipment having highly stabilized oscillating circuits for maintaining both the transmitter and receiver in synchronism during interruptions or attenuations of the transmission signals, comprising:

(a) means for storing sets of two teletype characters;
(b) means for evaluating said characters to determine if they are complementary;
(c) a first counter;
(d) first counter control means responsive to the storage of complements for setting said first counter in accordance with the first set of stored complements, said complementary characters corresponding to the start time of the key tape in the transmitter;
(e) tape feed control means; and
(f) means controlled by said first counter for operating said tape feed control means so that the key tape in the receiver is stepped along in synchronism with the key tape in the transmitter.

3,201,516
CAPSULE-ENCLOSED ELECTRO-ACOUSTIC TRANSDUCER AND TRANSISTOR AMPLIFIER

Bernhard Weingartner, Vienna, Austria, assignor to Akustische U. Kino-Gerate Gesellschaft m.b.H., Vienna, Austria, a firm

Filed May 14, 1962, Ser. No. 194,265
Claims priority, application Austria, Feb. 3, 1962, A 907/62
13 Claims. (Cl. 179—1)

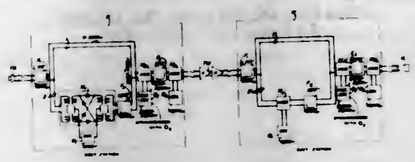


1. An electro-acoustic transducer assembly comprising, in combination, an encasing capsule; an annular disc extending completely across said capsule; a transistor amplifier having its components mounted on said disc; a noise compensating pressure gradient transducer disposed substantially within the center opening of said disc; means providing a pair of substantially equal coupling volumes each communicating with respective different faces of said transducer; and duct means communicating with each of said coupling volumes and having air openings located in a common plane substantially parallel to said transducer; said transducer having a sensitivity decreasing with sound frequency for sound waves having a plane sound field at the location of said transducer, and having a sensitivity varying substantially linearly with sound frequency for sound waves having a spherical field.

3,201,517
PRIVACY COMMUNICATION SYSTEM

Danforth K. Gannett, Mountain Lakes, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 12, 1944, Ser. No. 530,636
5 Claims. (Cl. 179—1.5)

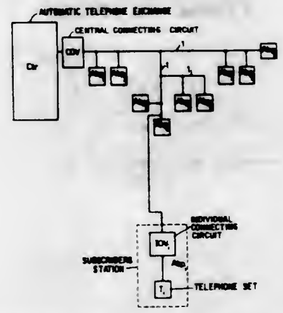


1. A privacy signaling system comprising a transmitting station and a receiving station connected by a wave transmission medium, said transmitting station comprising a source of signal waves to be transmitted and a signal translating device having input terminals connected to said source and output terminals connected to said medium, said receiving station comprising signal reproducing means and a signal translating device substantially identical with the signal translating device at the transmitting station, having its input terminals connected to said medium and its output terminals connected to said signal reproducing means, each of said translating devices comprising filtering means in its input for selecting a given band of frequencies from the input waves applied to its input terminals, means for producing from the selected band two contiguous frequency bands each carrying the intelligence of the selected band and varying in frequency in accordance with a predetermined secret code, synchronized at the two stations, means for selecting from the resulting wave a frequency band of width equal to that of said selected band including contiguous portions of said two contiguous frequency bands, means to shift the latter selected band to the same position in the frequency spectrum as the first selected band and to suply the frequency band so shifted to the output terminals of the device.

3,201,518
PARTY LINE

Jan Schalkwijk and Meindert Koomen, Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 23, 1960, Ser. No. 17,056
Claims priority, application Netherlands, Mar. 25, 1959, 237,528
7 Claims. (Cl. 179—17)



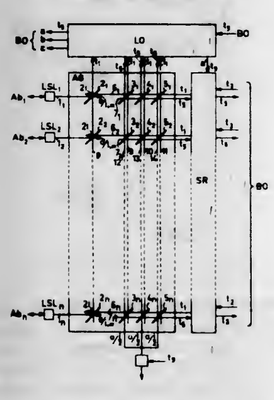
1. A telephone system comprising a telephone exchange, a central connecting circuit, a plurality of subscribers stations, and means connecting said telephone exchange to all of said subscribers stations by way of said central connecting circuit, each of said subscribers stations comprising a handset and a switch mechanically coupled thereto responsive to the lifting of said handset from a given position and the returning of said handset to said given position by an operator, said central connecting circuit comprising a source of a central busy signal, a source of a separate central identification signal corresponding to each subscribers station connected thereto, a source of a central ringing signal, and a source of a central release signal, each of said subscribers stations comprising a source of an individual busy signal, a source of an individual release signal, a source of telephone number signals, and means for generating first signals to an operation indicating that the respective subscribers station is being called, each of said subscribers stations further comprising means responsive to the lifting of the respective handset for transmitting said individual busy signal to the central connecting circuit only when the handsets of the other subscribers stations are in said given position and the respective subscribers station is not being called, means responsive to the receipt of a central busy signal for sending the respective individual identification signal to said central connecting circuit only when the respective handset is lifted from said first position, means responsive only to the receipt of the central identifying signal corresponding to the subscribers station for permitting the transmission of said telephone number signals to said central connecting circuit, means responsive to the receipt of said central ringing signal for generating said first signal only subsequent to the receipt of a central identifying signal corresponding to the respective sub-

scribers station, means for transmitting said individual release signal to said central connecting circuit when said handset is returned to said given position, said central connecting circuit comprising means responsive to said individual busy signal for generating said central busy signal, means responsive to said individual signal for generating said central release signal, means responsive to the receipt of an individual identification signal and to receipt of signals from said exchange for generating said central identification signal and means responsive to signals from said exchange for generating said central ringing signal.

3,201,519
AUTOMATIC TELEPHONE EXCHANGES HAVING A SUBSCRIBER'S MEMORY

Matthaus Jacobus Schmitz, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 9, 1961, Ser. No. 116,115
Claims priority, application Netherlands, July 12, 1960, 253,715
3 Claims. (Cl. 179—18)

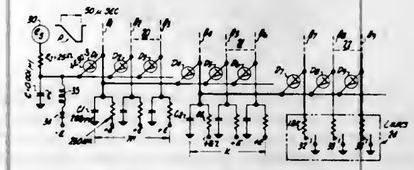


1. An automatic telephone exchange comprising a plurality of subscribers sets, a plurality of first storage elements having reading, writing and signal wire means, means coupling each subscribers set to the writing wire means of a separate first storage element whereby the open and closed loop states of said subscribers sets are stored in the respective first storage elements, a plurality of second storage elements corresponding to each of said first storage elements, logical circuit means, counting circuit means, said second storage elements having reading, writing and signal wire means, means connecting the reading wire means of said first and second storage elements to said counting circuit means whereby said first storage elements are sequentially read and said second storage elements are read with their corresponding first storage elements, means connecting the signal wire means of said first and second storage elements to said logical circuit means, means connecting the writing wire means of said second storage elements to said logical circuit means, control means connected to said counting circuit means for interrupting the sequential reading of said first storage elements and their corresponding second storage elements and for reading a selected first storage element and its corresponding second storage elements, means connecting said control means to said logical circuit means, said logical circuit means comprising means responsive to signals on said signal wire means of said first and second storage elements in the absence of interruption of sequential reading of said first and second storage elements for applying signals according to a first predetermined program to said writing wire means of said second storage elements, and means responsive to signals on said signal wire means of said first and second storage elements in the presence of interruption of sequential reading of said first and second storage elements for applying signals according to a second predetermined program different from said first predetermined program to said writing wire means of said second storage elements.

3,201,520
ELECTRONIC SWITCHING MATRIX

John Bereznak, Chicago, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Oct. 16, 1961, Ser. No. 145,220
20 Claims. (Cl. 179—18)

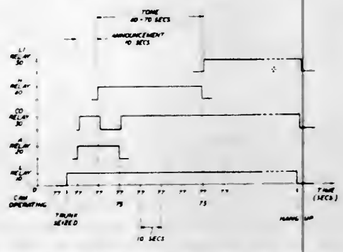


1. An automatic switching system comprising a plurality of cascaded matrices, each of said matrices including first and second multiples arranged to provide intersecting crosspoints, means responsive to a simultaneous marking of the ends of a desired path at a multiple in one of said matrices and a multiple in another of said matrices for initiating a systematic search sequentially and individually over a plurality of self-seeking paths extended via randomly selected crosspoints in said cascaded matrices, and means responsive to the completion of a first of said paths between said marked multiples for terminating said systematic search over said paths.

3,201,521
TELEPHONE SYSTEM PERMANENT SIGNAL TRUNK

Arthur A. Mayer, Brooklyn, N.Y., and Theodore D. Robb, Ridgewood, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 26, 1961, Ser. No. 161,905
5 Claims. (Cl. 179—27)

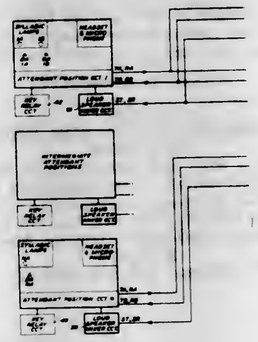


1. A permanent signal trunk comprising an announcement machine, means controlled by said announcement machine for providing first type pulses, each occurring between two successive announcements, and second type pulses occurring at a slower rate than said first type pulses, relay means operative in response to the connection thereto of a subscriber line, means responsive to the first pulse of said first type occurring after the operation of said relay means for connecting said announcement machine to said subscriber line, a tone generator, means responsive to the second pulse of said first type occurring after the operation of said relay means for disconnecting said announcement machine from said subscriber line and for connecting said tone generator to said subscriber line, an operator's position, and means responsive to the occurrence of two successive pulses of said second type after the operation of said relay means for disconnecting said tone generator from said subscriber line and for connecting said subscriber line to said operator's position.

3,201,522
COMMON CONTROL SWITCHING SYSTEM FOR RADIO CIRCUITS

Milton E. Ozenberger, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 6, 1962, Ser. No. 221,720
19 Claims. (Cl. 179—27)

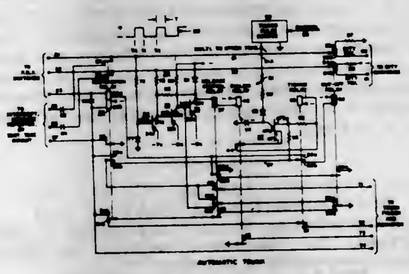


16. In a switching system,
a plurality of attendant positions,
a manually operable key at each of said positions,
a plurality of combinations of radio lines wherein each combination of radio lines is exclusively accessible to a preselected one of said positions,
and switching means responsive to the operation of said manually operable key at each of said positions for seizing the said combination exclusive thereto.

3,201,523
P.B.X TRUNK CIRCUIT FOR RESTRICTOR

William H. Blackfield, Galion, Ohio, assignor to North Electric Company, Galion, Ohio, a corporation of Ohio

Filed Nov. 20, 1961, Ser. No. 153,404
19 Claims. (Cl. 179—27)

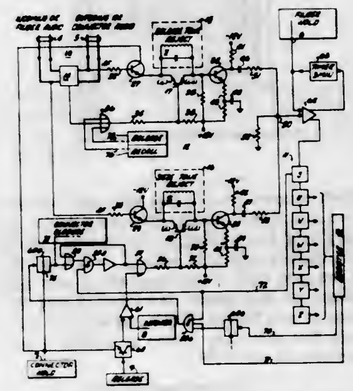


1. In an automatic telephone system including a private branch exchange for extending connections between stations in the exchange and a trunk circuit having a direct current communication path, a first switching means operative to seize said trunk circuit and extend a connection over a calling loop from a calling station to said path, a second switching means including said trunk circuit operative responsive to extension of a connection over said first switching means to said path from one of said stations to extend said path toward a second exchange, and means in said trunk circuit including a first switching means automatically operative to release said trunk a predetermined period after interruption of said calling loop at said station, and a second means for maintaining said first switching means operative to effect said release even if the calling loop is re-established from said station to the trunk circuit during said delay period.

3,201,524
MULTI-FREQUENCY TONE SIGNALING SYSTEM

Roger E. Arseneau, Chicago, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Mar. 27, 1961, Ser. No. 98,363
7 Claims. (Cl. 179—84)



6. A signaling system for use in an automatic telephone switching system that provides supervisory potentials indicating the progress of a call through the switching system, means for transmitting switch directing signals through said system via talking circuits, said signals appearing in the form of a plurality of multi-frequency tones, a plurality of bandpass filters tuned to said signal frequencies, means for intercoupling said talking circuits with said plurality of bandpass filters for controlling the extension of said talking circuits through said telephone system, said means for intercoupling comprising at least one band reject filter tuned to reject the frequency of at least one of said frequencies, and switch means individually associated with said band reject filter for selectively controlling the insertion or removal of said band reject filter in said means for intercoupling responsive to said supervisory potentials.

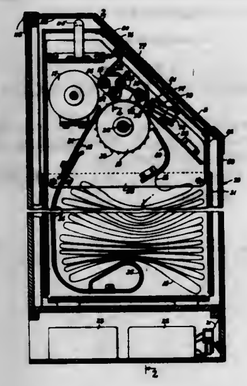
3,201,525
MULTI-CHANNEL SOUND RECORDING AND REPRODUCING DEVICE

Robert E. Boyden, 5606 Saltana, Temple City, Calif.

Filed June 30, 1960, Ser. No. 39,903
3 Claims. (Cl. 179—100.2)

1. A sound transducing device comprising an endless magnetic belt, a rotatable drum for advancing said belt, means including an electric motor for rotating said drum; an electromagnetic means for entraining said drum with said motor, a transducing head cooperable with said belt, a power circuit for said motor and said electromagnetic

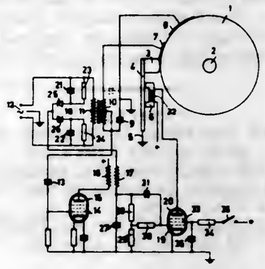
means including a switching device effective in a first position to maintain said power circuit completed; a cam lobe on said belt, means comprising said cam lobe for normally holding said switching device in a second position wherein said power circuit is incomplete and for moving said switching device to said second position after said belt completes a cycle of operation, means other than said switching device for momentarily completing said power circuit whereby to energize said motor to move said cam



lobe from cooperative relation with said switching device, a second selectively settable switching device, and means including said first switching device when in said second position thereof and said second switching device when set to energize said electromagnetic means whereby the momentum of said motor developed during the cycle of operation of said belt is effective to advance said cam lobe past said first switching means to initiate a second cycle of operation of said belt.

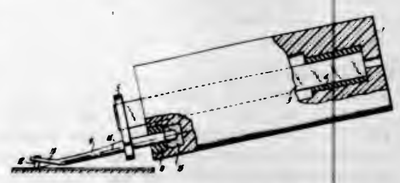
3,201,526
AUTOMATIC ADJUSTMENT OF MAGNETIC HEAD SPACING
Johannes Hendrik Wessels and Jacob Koornoef, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 23, 1960, Ser. No. 71,309
Claims priority, application Netherlands, Dec. 8, 1959, 246,212
1 Claim. (Cl. 179—100.2)

An arrangement for automatically adjusting the spacing between a magnetic surface and a magnetic head spaced from and movable with respect to the surface, comprising: metallic mounting means for said magnetic surface, a first metallic member attached to and movable with said head, a second metallic member fixed in position, each of said first and second metallic members being spaced from said magnetic surface and forming a capacitive coupling with the metallic mounting means, the capacitance of the capacitive coupling of the second metallic member being substantially greater than the capacitance of the capacitive coupling of the first metallic member, an electromagnetic control device cooperating with said head, energizing means for said device including a bridge circuit, the capacitance of said couplings being included in series in one arm of the bridge, circuit means for feeding said bridge with an alternating current source, a clamping circuit fed from said alternating current source, means for balancing said bridge when the spacing has a predetermined value, means for producing a control voltage for application to said control device, the output of said bridge varying the direct voltage at the neutral point of said clamping circuit and said control voltage in



response to changes in said spacing from said predetermined value, said control device acting to adjust said spacing in response to a change in control voltage.

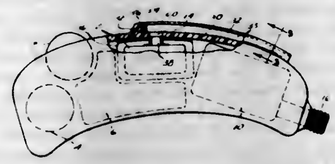
3,201,527
PHONOGRAPH PICKUP FOR GROOVED RECORDS
Erhard Ahrens, Kiel, Schleswig-Holstein, Germany, assignor to Electroacustic Gesellschaft mit beschränkter Haftung, Kiel, Germany, a corporation of Germany
Filed Oct. 29, 1958, Ser. No. 770,411
Claims priority, application Germany, Mar. 8, 1958, E 15,494
14 Claims. (Cl. 179—100.41)



1. A phonograph pickup for grooved records, comprising a mounting structure, a body of resilient material mounted in said structure and having a straight opening, an elongated rod-shaped substantially rigid stylus member having one end firmly seated in said opening and having a stylus rigidly secured to the other end, said member being straight and symmetrical to the axis of said opening over a major portion of the length of said member inclusive of said seated end, said stylus being angularly and universally deflectable together with said member relative to said structure about a center and in all directions of a plane perpendicular to said axis, and transducers mechanically linked with said member at a location close to the center of angular deflection and remote from said stylus to be actuated by step-down leverage, said transducers having respective main orientations each extending at a right angle to the other and at a right angle to said axis.

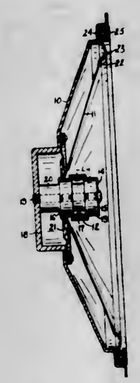
3,201,528
MULTI-DIRECTIONAL HEARING AID
Donald Lee Johanson, Wayland, and Clinton V. Hulse, Norwood, Mass., assignors to Audivox, Inc., Boston, Mass., a corporation of Delaware
Filed July 20, 1962, Ser. No. 211,199
7 Claims. (Cl. 179—107)

1. A hearing aid for a human comprising, a hollow body shaped to rest on the outer ear of the wearer and containing the components of a hearing aid sound transforming and amplifying system, said components including a microphone, said hollow body having a first hole exposed to said microphone and directed rearwardly and upwardly of the wearer's ear and a second hole directed



forwardly of the wearer's ear, and means defining a channel connecting said first and second holes whereby said microphone is exposed to sounds emanating from in front as well as behind of the wearer's ear.

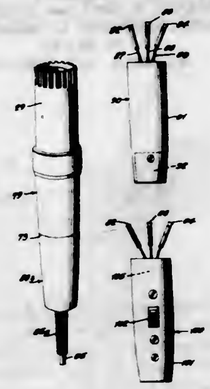
3,201,529
DYNAMIC SPEAKER
Philip C. Sarh, 115 Dwight St., New Haven, Conn.
Filed Nov. 16, 1962, Ser. No. 238,195
14 Claims. (Cl. 179—115.5)



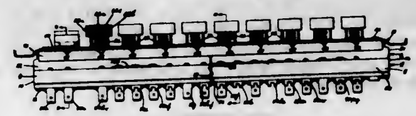
1. A dynamic speaker comprising a frame, a magnet assembly supported from said frame, said magnet assembly comprising axially aligned spaced apart, magnetically isolated magnets, a cylindrical voice coil form supported coaxially about said magnet assembly and axially movable with respect thereto, a substantially cylindrical voice coil on said form, said voice coil being operatively positioned on said voice coil form such that current in said coil sets up a magnetic field oppositely directed with respect to one of said magnets and similarly directed with respect to the other of said magnets, and a diaphragm mounted on said voice coil form.

3,201,530
MODULAR COMPONENT ASSEMBLY OF MICROPHONES
Sidney E. Levy and Bernard C. Sharp, White Plains, N.Y., assignors, by mesne assignments, to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed Sept. 12, 1961, Ser. No. 137,571
18 Claims. (Cl. 179—146)

1. A set of microphone assembly components, comprising at least two acoustically distinctively different microphone heads, at least two electro-mechanically different adaptor units, and at least one cable, said adaptor units mechanically and selectively interconnecting either microphone head to a cable to complete electrical connections therebetween, and electrical means contained within at least one member of the set of microphone heads and at least one member of the set of adaptor units for adjusting the output impedance.



3,201,531
MULTIPLE PUSHBUTTON SWITCH
Stewart A. Woodward, Stratford, Conn., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 42,815, July 14, 1960. This application July 23, 1963, Ser. No. 297,738
12 Claims. (Cl. 200—5)

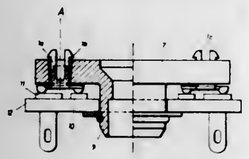


2. A multiple pushbutton switch comprising a housing, a plurality of actuators mounted in said housing for reciprocating movement therein between first and second positions, contact means including a plurality of movable contacts supported by said housing for operation by said actuators, first and second elongated sliders having opposed parallel faces and at least one asymmetrical aperture therein, the asymmetrical aperture of said first slider being in partial alignment with the asymmetrical aperture of said second slider, at least one of said actuators being mounted to fit into said asymmetrical apertures, spring means in said housing normally tending to move said asymmetrical apertures in the same direction along the axis of elongation of the sliders, the asymmetrical aperture of said first slider having a surface engaging said one actuator when said actuator is in it first position to resist movement of said actuator toward said second position, the asymmetrical aperture of said second slider having a surface engaging said actuator after movement thereof to said second position thereby to force said actuator to revert toward its first position, whereby said asymmetrical apertures of said first and second sliders cooperate to control the reciprocating movement of said one actuator.

3,201,532
ROTARY SWITCH WITH INTERCHANGEABLE CONTACT STRUCTURE FOR SHORTING AND NON-SHORTING POSITIONS

Heinz Georg Grundig, Nuraberg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 9, 1962, Ser. No. 229,460
Claims priority, application Germany, Oct. 12, 1961, W 30,869
5 Claims. (Cl. 200—11)

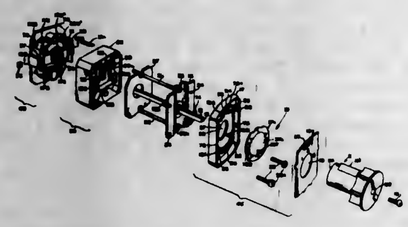


1. A multi-contact rotary switch for switching between different circuits, comprising a stator, a plurality of individual contacts mounted on said stator at a fixed distance from each other, each of said individual contacts permanently connected to different ones of said circuits, at least one contact ring on said stator permanently connected to one of said circuits that is to be selectively connected to the other ones of said circuits, rotor means in juxtaposition to said stator, slots in said rotor means, said slots shaped to be smallest at the stator side of said rotor and gradually expanding as said slots extend away from the stator side of said rotor, wiper means mounted in each of said slots so as to be simultaneously contiguous to said ring and said contacts, said wiper means consisting of U-shaped conductive metallic strips having legs and a center part, said legs being bifurcated, said bifurcated portion terminating in barbed hooks for holding said wipers in said slots, and said center parts having contact surfaces integral thereto, at least one of said contact surfaces being at least as long as said fixed distance thereby being capable of simultaneously bridging at least two of said individual contacts for said stator and at least another of said contact surfaces being shorter than said fixed distance thereby being capable of touching only one of said individual contacts on said stator at any one position of said rotor.

3,201,533
ROTARY TYPE CONTROL SWITCH

Einar H. Fredricson, Ambler, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 28, 1961, Ser. No. 122,058
12 Claims. (Cl. 200—16)

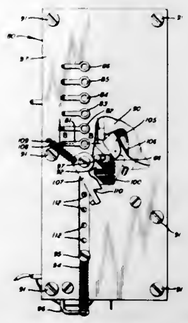


1. An auxiliary switch assembly having at least one contact stage, said contact stage comprising a molded base having channels and recesses, stationary contact members, a cam and movable contact members said stationary contact members being side mounted in said channels of said base; said movable contact members and said cam being side mounted in said recesses of said base; said cam controlling the positioning and movement of said movable contact members in one plane, said contact members each having a bridging contact mounted at opposite ends thereof and positioned for engagement and disengagement with said stationary contact members, biasing means mounted between said movable contact members and said molded base to bias said movable contact members in the direction of said cam, movable carrier members positioned between said movable contact members and said cam having first and second projections extending therefrom abutting said movable contact members for imparting translational movement to said movable contact members in response to rotational movement of said cam, said movable carrier members further having a third projection extending beneath said movable contact members and beneath a portion of said biasing means to cooperate with said biasing means for preventing said movable contact members, said biasing means, and said movable carrier members from being disengaged from said molded base.

3,201,534
SEQUENTIAL SWITCH FOR AN AUTOMATIC VENDING MACHINE OR THE LIKE

Kenneth John Brady, G2236 Baywood Ave., Hayward, Calif., and Neal Townsend, San Francisco, Calif.; said Townsend assignor to said Brady

Original application Mar. 14, 1957, Ser. No. 646,050, now Patent No. 3,001,670, dated Sept. 26, 1961. Divided and this application Sept. 25, 1961, Ser. No. 146,674
2 Claims. (Cl. 200—33)



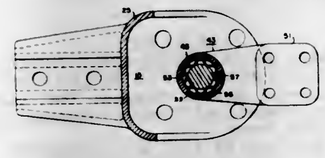
1. A sequential relay which comprises a bus bar, a series of terminals, a connector movable to establish connection between said bus bar and one of said terminals, means operative to effect movement of said connector sequentially from one terminal to another including a ratchet attached to said connector for movement therewith and an actuating pawl therefor mounted on an axially and rotatably displaceable plunger for operative engagement with said ratchet.

3,201,535
CONDUCTING STRUCTURE AND ELECTRIC SWITCH

Victor F. Sabol and George Siviy, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 12, 1962, Ser. No. 244,147
15 Claims. (Cl. 200—48)

13. A switch comprising a contact arm, a tubular conductor, a second conductor disposed within said tubular conductor, at least one of said conductors being movable relative to the other to move said contact arm, a resilient sheet-metal type conducting sleeve disposed over said second conductor and within said tubular conductor to carry

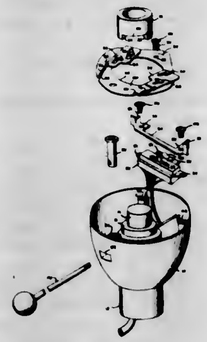


current from one to the other of said conductors, and the resilience of said conducting sleeve serving to bias said conducting sleeve against said second conductor and against the internal surface of said tubular conductor.

3,201,536
TURN SIGNAL APPARATUS WITH AUTOMATIC PREMATURE PREVENTION CANCELLING MEANS

William H. Fisher, Vandercook Lake, Mich., and Weichien Chow, Park Forest, Ill., assignors to Spartan Corporation, Jackson, Mich., a corporation of Ohio

Filed May 21, 1962, Ser. No. 196,350
6 Claims. (Cl. 200—61.34)

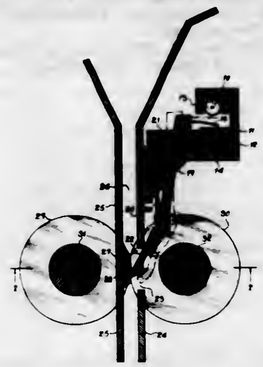


1. Turn signal switch actuating apparatus comprising, in combination, a vehicle steering shaft having abutment means affixed thereto, a switch, a switch actuator movably mounted with respect to said shaft and connected to said switch for opening and closing said switch, manual positioning means connected to said switch actuator, releasable detent means retaining said actuator in the selected position, a switch actuator reset dog mounted upon said switch actuator and movable into an engagable position with the steering shaft abutment means upon closing of said switch, means mounting said dog upon said actuator for movement thereon whereby said dog when engagable with said abutment means overrides said abutment means regardless of the initial direction of rotation of said steering shaft, said means mounting said dog on said actuator including means permitting said abutment to shift said dog on said actuator to a cocked position capable of resetting said actuator only upon said dog being engaged by said abutment means while said steering shaft is rotated in the direction of the indicated turn, engagement of said abutment means and said dog when in the cocked position during rotation of the steering shaft in the opposite direction to the indicated turn shifting said switch actuator to the position opening said switch.

3,201,537
HIGH SPEED MAGNETIC ELECTRIC SWITCH

Henry B. Klatte, Yonkers, N.Y., and John V. Olivera, Greenwich, Conn., assignors, by mesne assignments, to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Jan. 10, 1964, Ser. No. 336,947
8 Claims. (Cl. 200—61.41)

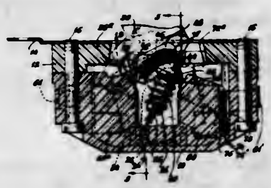


1. A high speed electric switch which comprises a magnet, switch elements comprising a pair of normally spaced reed contacts positioned to be sprung into contact by magnetic flux from said magnet, an actuating lever having a curtain of magnetic flux intercepting material and a pivotal support for said lever comprising a flat spring positioned normally to hold said lever in position with said curtain between said magnet and said switch and to flex to pivot said lever to withdraw said curtain from its position between said magnet and said switch.

3,201,538
SNAP ACTING ELECTRIC TOGGLE SWITCH

William W. De Vore, Jr., Palos Verdes Estates, Calif., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut

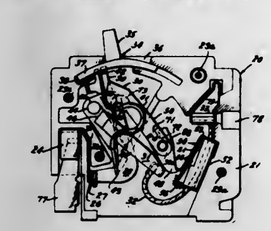
Filed Mar. 7, 1963, Ser. No. 263,472
9 Claims. (Cl. 200—67)



1. A snap action switch which comprises housing means; rigid bearing race means pivotally mounted within said housing means; means for mounting and selectively pivoting said bearing race means; toggle bar means pivotally mounted within said housing means and spaced from said bearing race means; means for pivotally mounting said toggle bar means about an axis parallel to the axis of pivoting of said bearing race means; bearing means contacting said bearing race means and positioned between said bearing race means and said toggle bar means; resilient means intermediate said toggle bar means and said bearing means compressively urging said bearing means against said bearing race means into contact therewith; means for moving said bearing means relative to and in response to pivoting of said bearing race means; means for pivoting said toggle bar means in response to

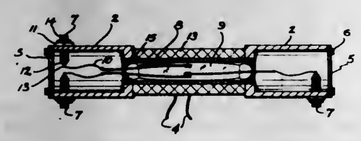
movement of said bearing means relative to said bearing race means; and electrical switching contact means actuated by said toggle bar means.

3,201,539
SINGLE TURN TRIP COIL HAVING NOVEL CORE AND ARMATURE CONFIGURATIONS
James H. Leonard, Cedar Rapids, Iowa, assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 23, 1963, Ser. No. 253,432
13 Claims. (Cl. 200—87)



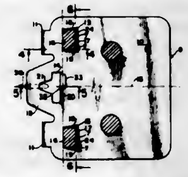
12. A device of the class described comprising a generally U-shaped magnet member having a web and arms extending forwardly from said web, first means defining a pivot extending transverse to the planes in which said arms are disposed, an armature member mounted at its first end to said pivot, second means biasing the second end of said armature to a position forward of said arms when said magnet is deenergized; said armature when in its deenergized condition separated from the pole faces of said magnet by a substantially V-shaped gap, having a minimum dimension at the pivot, and progressively increasing in gap-separation towards said second end; one of said members having a portion at said second end extending into the V-shaped gap; said last-mentioned portion dimensioned to reduce the gap-separation at said second end, corresponding to said deenergizing condition, while permitting the armature when energized to close the V gap in the vicinity of said pivot end.

3,201,540
SHIELDED REED SWITCH
Allen G. McNamara, Ottawa, Ontario, Canada, assignor to National Research Council, Ottawa, Ontario, Canada, a corporation of Canada
Filed Mar. 19, 1963, Ser. No. 266,361
1 Claim. (Cl. 200—87)



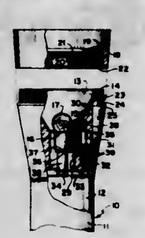
A shielded reed switch for small currents comprising:
(a) an enclosed, metallic, non-magnetic housing formed of two box-like end structures, interconnected by a tubular neck of reduced diameter,
(b) a reed switch having electrical terminals positioned in the said tubular neck,
(c) sealing compound filling the space between said reed switch and inner wall of said tubular neck,
(d) an operating coil wound around the said tubular neck,
(e) at least two coaxial type connectors each comprising central and outer conductors passing through the walls of the said box-like end structures, and
(f) electrical connections from the terminals of said reed switch to the central conductors of said coaxial connectors.

3,201,541
PIVOTAL BEARING ARRANGEMENT FOR ELECTROMAGNETIC OPERATOR
Walter Johannes Richert, Princeton, Ind., assignor to American Machine and Foundry Company, a corporation of New Jersey
Filed May 15, 1963, Ser. No. 280,517
7 Claims. (Cl. 200—87)



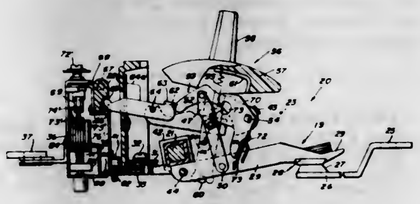
1. In an electromagnetic operator of the type described, the combination of
an electromagnet including an exposed pole piece;
a flat frame member disposed beside said electromagnet and having an end portion extending in the same direction as said pole piece, said end portion being provided with
a first straight bearing edge spaced laterally from said pole piece, and
a projection extending at right angles to said first bearing edge,
said projection having a side surface directed away from said electromagnet,
said first bearing edge lying at least substantially in the plane defined by said side surface;
a magnetic armature having a flat body portion, said body portion being provided with an opening through which said projection extends,
one face of said body portion being disposed in pivotal engagement with said first bearing edge, said first bearing edge pivotally supporting said armature for movement between an energized position and a deenergized position,
said body portion of said armature being of material thickness,
said opening having a straight side adjacent said side surface of said projection, said straight side intersecting said one face of said body portion to define a second bearing edge,
the shape and dimensions of said opening being such that said opening loosely surrounds said projection;
resilient means connected to said armature and biasing the same both pivotally, about said first bearing edge in a direction toward deenergized position, and rectilinearly, in a direction transverse to said first bearing edge to maintain said straight side engaged with said side surface of said projection, said electromagnet being operative to pivot said armature to said energized position; and
resilient stop means, said stop means being so constructed and arranged as to resiliently oppose the pivotal biasing effect of said resilient means when said armature is in said deenergized position,
said first bearing edge and said pole piece being so disposed that, when said armature is in said energized position, said second bearing edge is engaged with said side surface of said projection and is in at least substantial alignment with said first bearing edge.

3,201,542
MAGNETIC MECHANICAL SWITCH
Homer T. Hutchison, Getchell Mine, Golconda, Nev.
Filed July 23, 1963, Ser. No. 296,989
9 Claims. (Cl. 200—87)



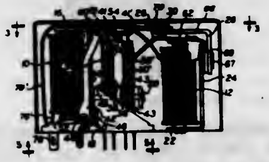
1. In a flashlight, a mechanical switch comprising a body having a hollow portion, a first non-magnetic contact plate carried by said body and extending into said hollow portion a distance substantially more than half the length thereof, a second non-magnetic contact plate carried by said body and extending into said hollow portion a distance substantially less than half the length thereof, said second contact plate being in alignment with and spaced from said first contact plate, a pair of magnetic slugs located within said hollow portion and disposed in a position to attract each other, and said slugs being of a length less than the length of said first contact plate, whereby rapid movement of said body will cause said magnetic slugs to move by momentum to one end of said hollow portion to complete or interrupt the flow of electrical energy through said contact plates.

3,201,543
OVERLOAD SENSING DEVICE EMPLOYING INDEPENDENTLY OPERATED THERMAL AND MAGNETIC TRIP MEANS
James H. Leonard, Cedar Rapids, Iowa, assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 4, 1961, Ser. No. 100,734
14 Claims. (Cl. 200—88)



1. A device for interruption of A.C. current, including a first and a second terminal, a current path between said terminals including a current sensing circuit and circuit means connected in series, said circuit means including cooperating contacts operable into and out of engagement, with said contacts in engagement, said circuit means offering substantially less impedance to current flow than offered by said current sensing circuit, said circuit means having an impedance to current flow which is substantially independent of current magnitude, said current sensing circuit comprising first and second parallel current paths, said first current path having a greater resistance than said second current path, said second current path including impedance means for making the impedance of said second current path substantially greater than the impedance of first current path, the resistance impedance ratio of said parallel current paths providing a predeterminedly controlled current distribution between said parallel current paths during low magnitude current conditions, the impedance of said impedance means being inversely proportional to current flowing therethrough, causing substantially all of the current to be channelled through said first current path during low magnitude current conditions and substantially all of said current to be channelled through said second current path during high magnitude current conditions, said impedance means being a reactor, and means operatively coupled to said first current path and said contacts for opening of the latter responsive to predetermined current conditions in said first current path.

3,201,544
COMPACT LATCHING RELAY EMPLOYING AN IMPROVED LATCHING MECHANISM
Henri B. Diamant, State College, Pa., assignor to HRB-Singer, Inc., State College, Pa., a corporation of Delaware
Filed Dec. 14, 1962, Ser. No. 244,656
1 Claim. (Cl. 200—98)



A latching relay comprising
an insulative base,
a plurality of stationary contacts secured to said base,
movable contacts also secured to said base and adapted to make alternating contact between respective stationary contacts, said movable contacts having an extension on the side away from said base,
an actuating coil and a releasing coil,
means mounting said coils to said base,
said coils being arranged in substantially parallel directions,
an actuating armature pivotally mounted with respect to said actuating coil,
and a releasing armature pivotally mounted with respect to said releasing coil,
contact switching means coupled to said actuating armature and engageable with said extensions to control the position of said movable contacts,
and means including a pivoted latch arm having a detend head secured to said releasing coil armature to engage said contact switching means,
the axes of said coils and said contacts being aligned in substantially parallel directions, an insulative wafer connected to said movable contact means having at least one recess to receive said detent head,
said insulative wafer being positioned so that said recess is aligned with said detent head only when said actuating armature is moved as a result of actuation of said armature coil,
said actuating armature being substantially L shaped consisting of transverse and upright portions, with the transverse portion of said armature positioned transverse to the actuating coil axis, and the said wafer being attached to the upper part of said upright portion,

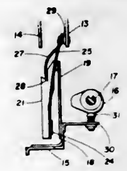
first and second L shaped frames secured to said insulated base and insulatively supporting said coils,
and first and second spring means secured to respective first and second L shaped frames biasing said actuating and releasing armatures,
said detent means being movable to any one of three positions,
said first position being in abutting relationship to the bottom of said wafer,
said second position being in engagement with a corresponding recess of said wafer,
said third position being spaced from said wafer to allow return movement of said wafer.

3,201,545
ELECTRIC CONTROL DEVICE
Zelko J. Kruzic, New Brighton, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 28, 1962, Ser. No. 176,345
5 Claims. (Cl. 200—106)



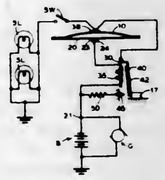
1. An electrical control device comprising, in combination, a control mechanism and a latch mechanism, said control mechanism comprising a stationary contact structure, a movable contact structure, a contact carrier movable to move said movable contact structure, a first biasing means biasing said contact carrier in a first direction to a first position, an electromagnet, means mounting said latch mechanism on said control mechanism, said latch mechanism comprising an energizing coil, a generally tubular magnetic member fixedly supported generally within said coil, a generally tubular armature movably supported generally within said coil, a latch carrier movably supported generally within said magnetic member and said armature, a latching arm movably supported on said latch carrier, a second biasing means biasing said armature axially in a direction opposite from said first direction and away from said magnetic member, a third biasing means biasing said latch carrier axially in the same direction as said armature is biased, a fourth biasing means biasing said latch arm in a latching direction, said latching arm having a cam surface thereon, said third biasing means biasing said latch carrier into engagement with said contact carrier, said first biasing means being stronger than said third biasing means whereby when said contact carrier is in said first position said latch carrier is maintained in a first position, said electromagnet upon energization thereof operating to move said contact carrier away from said latch carrier to a second position whereupon said third biasing means operates to move said latch carrier to a second position wherein said latching arm is moved by said fourth biasing means into latching engagement with said magnetic member to thereby latch said latch carrier in said second position and said contact carrier in said second position, thereafter upon energization of said coil said armature moving toward said magnetic member to engage said cam surface on said latching arm to cam said latching arm to an unlatching position whereupon said first biasing means operates to move said contact carrier and said latch carrier back to said first position against the bias of said third biasing means.

3,201,546
POWER CONTROLLING DEVICE FOR ELECTRICAL HEATING ELEMENTS
Douglas William Richardson, Aurora, Ontario, Canada, assignor to Hart Manufacturing (Canada) Limited, Aurora, Ontario, Canada
Filed July 24, 1961, Ser. No. 126,173
1 Claim. (Cl. 200—113)



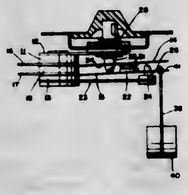
A power controlling switch structure for electric cooking stoves and the like and comprising: a base; a cantilever-like spring rigidly mounted at one end on said base; a current conducting bimetal fastened substantially to the other end of said spring and extending in further cantilevered manner therefrom; a heat conducting compensating bimetal fastened at one end thereof to said spring substantially with said current conducting bimetal; manually adjustable cam means engageable with the other end of said compensating bimetal for adjusting the position thereof and the free end of said spring and said current conducting bimetal to a predetermined position sensitive to the heat in said compensating bimetal conducted thereto by the current conducting bimetal due to the passage of electrical current therethrough; a snap action contact arm structure rigidly mounted on the other end of said current conducting bimetal and having a contact member thereon moveable from one snap position to another snap position; a housing structure rigidly mounting said base; a switch contact in said housing engageable by the contact member of said snap action contact structure; and a switch stop in said housing spaced a predetermined distance from the switch contact therein for effecting snap action of said snap action structure according to manual adjustment of said cam means and the heat developed by electrical current passing through said current conducting bimetal from said base to said snap action structure, the switch contact thereon and the switch contact of said housing.

3,201,547
COMPENSATED THERMOMOTIVE FLASHER
Arthur F. Bleiweiss, Great Neck, George Colombo, East Rockaway, and John B. Dickson, Kew Gardens, N.Y., assignors to Signal-Stat Corporation, Brooklyn, N.Y., a corporation of New York
Filed Aug. 11, 1961, Ser. No. 130,949
10 Claims. (Cl. 200—122)



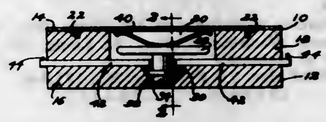
1. A thermomotive circuit breaker comprising, in combination, an insulating base, a snap action element supported from said base and normally constrained to assume a pre-set restored position, a relatively elongated heat expansible electric resistance element secured to said snap action element and, in its cold and contracted state, constraining said snap action element snapped to a stress-deformed position, said snap action element snapping to its restored position upon pre-set expansion of said resistance element, a pair of load circuits controlling contacts in electric circuit connection with said resistance element, one of said contacts being fixedly mounted with respect to said base, the other of said contacts being mounted to said snap action element and resistance element assembly for movement therewith, said contacts being closed in one position of said snap action element, for flow of current through said snap action element and resistance element assembly, and being open in the other position of said snap action element, an input terminal carried by said base and electrically connected to said one of said contacts, a shunt circuit including a fixed resistance and normally open switch means in series with said fixed resistance, said shunt circuit being electrically connected across said input terminal and said snap action element, said shunt circuit operable, when closed, to complete a circuit in parallel electric circuit connection with said snap action element, said resistance element and said contacts, switch operating means operatively associated with said switch means for controlling same, and circuit means interconnecting said switch operating means and said one of said contacts and effective to apply to said switch operating means, a potential proportional to any potential applied across said contacts, said switch operating means, when said potentiol exceeds a pre-set value, closing said normally open switch means to complete said shunt circuit.

3,201,548
THERMOSTAT AND TIP-OVER SWITCH
Charles S. Mertler, Mansfield, Ohio, assignor to Stevens Manufacturing Company, Inc., a corporation of Ohio
Filed Apr. 3, 1961, Ser. No. 100,384
5 Claims. (Cl. 200—138)



1. A combined thermostat and tip-over switch, comprising in combination, a base first and second resilient contact members having one portion thereof carried relative to said base, first and second contacts carried on said first and second contact members, respectively, for mutual cooperation, temperature responsive means carried relative to said base to relatively vary the position of said first and second contacts, adjustment means carried relative to said base and cooperating to relatively vary the temperature of actuation of said contacts between first and second conditions, a weighted pendulum having a mounting end, a pivot axle mounting said mounting end relative to one of said contact members, cam means connected to be actuated in accordance with movement of said pendulum to directly act between said contact members, a cam lobe and a cam null on said cam means, said pendulum being acted upon by gravity to attempt to hang in a vertical position and said thermostat normally being mountable in an attitude wherein said pendulum vertical one of said cam null and cam lobe cooperates with said contacts to establish said contacts in said first condition, and tipping of said thermostat in a first direction establishing the other of said cam null and cam lobe in cooperation with said contacts to establish said contacts in said second condition.

3,201,549
THERMAL SWITCH UTILIZING A HOUSING WITH AN OPENING IN WHICH A THERMAL ELEMENT SUPPORTS A SPRING BY A CONTACT MEANS
James H. Lowe, Falls Church, Va.
(2646 Woodwardia Road NE., Atlanta, Ga.)
Filed May 15, 1961, Ser. No. 109,913
2 Claims. (Cl. 200—142)



1. A thermal switch for an electrical circuit or the like comprising a closed housing, bars projecting outwardly from opposite ends of said housing, circuit terminals fixed on the outer ends of said bars, a truncated opening in said housing, a fusible element positioned within said opening, a rod with a ring attached intermediate its ends supported by said fusible element between and in spaced relation with respect to said bars, said ring having an outer diameter larger than the smallest diameter of the truncated opening and moveable in a direction towards said smallest diameter, a flat disc conductor mounted on said rod in spaced relation from said bars, and a means connected to said conductor including generally U-shaped spring means urging said conductor into contact with the ends of said bars for closing the electrical circuit to which said circuit closer is attached, said ring cooperating with said opening to guide said rod through said opening to assure electrical contact between said flat disc and said conductors.

3,201,550
CIRCUIT BREAKER WITH VENT OPENING
James H. Leonard, Cedar Rapids, Iowa, assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 3, 1964, Ser. No. 357,049
7 Claims. (Cl. 200—144)



1. A circuit breaker comprising:
cooperating contact means;
operating means;
a housing, said housing comprising first and second housing members mounted in abutting relationship to form a chamber wherein said cooperating contact means and operating means are disposed,
each of said housing members being box-like in structure and comprising a substantially flat surface and a first, second, third, and fourth wall surrounding and extending from said flat surface, the first wall of said first housing member extending for a major portion thereof a lesser distance from said flat surface than said second, third, and fourth walls, confronting faces of said first walls of said housing members forming an elongated vent opening, said confronting faces of said first walls being defined by

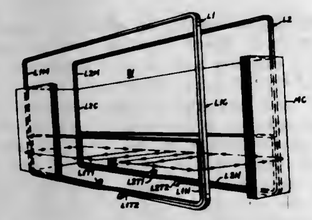
a length which corresponds to the length of said major portion and a width which corresponds to the thickness of said first walls, the face of said first wall of said second housing member having a greater width than the face of said first wall of said first housing member, the difference in width of said confronting faces serving to direct arcing gases from said chamber through said vent opening.

3,201,551

AIR-MAGNETIC TYPE CIRCUIT INTERRUPTER HAVING PLANAR BLOWOUT COILS AND PRIMARY CONDUCTOR MOUNTED PUFFER MEANS

Carl E. Mercier, Bellefontaine Neighbors, Mo., assignor to Moloney Electric Company, St. Louis, Mo., a corporation of Delaware

Filed Mar. 23, 1962, Ser. No. 181,946
17 Claims. (Cl. 200—147)



1. In a circuit interrupter having a pair of contacts adapted when separated to produce an electric arc therebetween; arc extinguishing means comprising an arc chute having a lower region through which the arc first moves and an upper region in which the arc is thereafter moved, a first compound coil on one side of said arc chute, a second compound coil on the side of said arc chute opposite said first coil, each coil comprising two loops of conductive material, the first loops being located on opposite sides of said arc chute adjacent said lower region, the second loops being located on opposite sides of the arc chute adjacent both the lower and upper regions of said arc chute, the loops in said first coil being substantially coplanar, the loops in said second coil being substantially coplanar, the planes of each of said coils being substantially parallel, first and second arc runners positioned within said chute adjacent opposite ends thereof, and first and second spaced-apart intermediate arc runners within said chute respectively spaced inwardly away from said first and second arc runners, each of said coils having first and second electrical terminals, said first terminals being commonly connected to said first intermediate arc runner, said second terminals being commonly connected to said second intermediate arc runner whereby at least a portion of the current carried by the arc is conducted in parallel through said coils and magnetic fields are thereby developed by said coils for magnetically moving said arc upwardly in said chute.

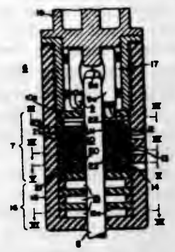
3,201,552

ARC-EXTINGUISHING GRID STRUCTURE FOR LIQUID-TYPE INTERRUPTER

Enrico Baldini, Bergamo, Italy, assignor to Magrini Societa per Azioni, Bergamo, Italy, a corporation of Italy

Filed Apr. 10, 1962, Ser. No. 186,442
Claims priority, application Italy, Apr. 11, 1961, 12,174/61
6 Claims. (Cl. 200—150)

1. A circuit interrupter of the liquid-break type including an arc-extinguishing chamber, relatively stationary contact structure including a plurality of finger contacts disposed adjacent one end of said arc-extinguishing chamber including an elongated contact finger extending a greater distance toward the other end of said chamber than the other stationary finger contacts, a movable cooperable rod-shaped contact separable from said relatively stationary contact structure to establish an arc interiorly of the arc-extinguishing chamber, extinguishing means including a stack of apertured contiguously-disposed plate portions having an end insulating closure plate with an aperture therein, through which said movable rod-shaped contact moves with slight clearance, said aperture in said end closure plate having a lateral communicating groove opening on one side thereof through which the tip portion of said elongated contact extends with slight clearance,



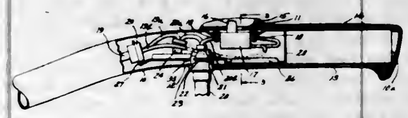
said extinguishing means defining an unvented pressure pocket (10) on the other side of said movable contact, said unvented pressure pocket in part defined by said closure plate and by another plate portion spaced therefrom axially along said chamber, said extinguishing means defining an axial groove (11) in the plane of said lateral opening in the end closure plate and adjoining plate portions communicating with the apertures through the several plate portions, lateral venting means extending out of said chamber and disposed at a location spaced axially toward the other end of said chamber from said unvented pressure pocket (10), whereby a pre-acceleration of the liquid occurs along said groove and out of said lateral venting means prior to clearance of the tip of the movable contact past such venting means.

3,201,553

APPLIANCE SWITCH AND CONDUCTOR ASSEMBLY

Ernest R. Scott, Richmond Heights, Ohio, assignor to General Electric Company, a corporation of New York

Filed Mar. 20, 1963, Ser. No. 266,750
7 Claims. (Cl. 200—157)



1. An appliance switch and conductor assembly comprising:
(a) a hollow handle for manual manipulation of the appliance;
(b) a switch mounted within said handle and providing means for external actuation thereof;
(c) first and second conductors extending into said handle, said conductors being electrically connected within said handle to one another and to said switch;
(d) a mounting bracket defining a first aperture, said mounting bracket being disposed within said handle; and

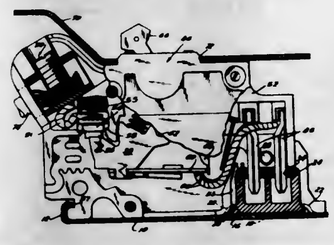
(e) resilient means projecting through a second aperture in said handle for engaging the peripbery of said first aperture in said bracket for securing said bracket within said handle and for externally connecting said second conductor to said handle to provide strain relief of said second conductor.

3,201,554

CIRCUIT BREAKERS WITH ROCKING PRE-BIASED CONTACTS

Alexander R. Nordea, New York, N.Y., assignor to Federal Pacific Electric Company, a corporation of Delaware

Original application Feb. 26, 1958, Ser. No. 717,647, now Patent No. 3,120,592, dated Feb. 4, 1964. Divided and this application Mar. 15, 1963, Ser. No. 272,176
3 Claims. (Cl. 200—166)



1. A circuit breaker for heavy current operation including a companion pair of contacts one of which is operable into and out of engagement with the other, including spring means for biasing said other contact toward the operable contact, guide means confining said other contact against excessive lateral motion, said guide means being free of restraining effect that would inhibit rocking of said other contact, and a pair of shoulders interposed in the path of said other contact when moving under spring bias so as to limit the movement thereof, said shoulders being at different levels relative to a plane of reference defined by the faces of the contacts when fully engaged and enforcing initial contact engagement and disengagement at one side of the contacts and rocking action during contact operation between initial engagement at one side and full face-to-face engagement, and said spring and shoulders providing firm contact pressure from the initial engagement of the contacts to their fully closed operating configuration and maintaining firm pressure until the instant of parting.

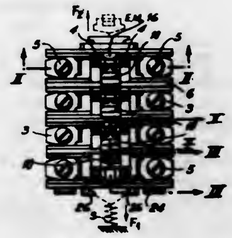
3,201,555

ELECTRIC CONTACT DEVICE HAVING MEANS FOR LIMITING CONTACT PRESSURE

Guy H. Lacau, Saint-Germain-en-Laye, Seine-et-Oise, and André G. Faillart, Nanterre, Seine, France, assignors to La Telemecanique Electrique, Seine, France, a company of France

Filed Apr. 11, 1963, Ser. No. 272,361
Claims priority, application France, Apr. 14, 1962, 894,512; Mar. 11, 1963, 927,527
20 Claims. (Cl. 200—166)

1. An electric contact device comprising a frame having longitudinal guiding means, fixed contact means carried by said frame on the path determined by said guiding means, a member reciprocable relative to said frame along said path between two positions, a movable contact assembly on said member comprising a contact arm pivotally carried by said member about an axis transverse with respect to said path, movable contact means on said arm engageable with said fixed contact means in a first position of said member, stop means on the member for limiting the the rotation of said contact arm towards said fixed contact means, a spring having one end engaging said contact arm for applying prescribed pressure to said contact means when in engagement, a follow-up arm pivoted to said member about an axis parallel to said transverse axis and engaged by the opposite end of said



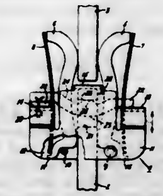
spring, and stop means on the frame for limiting the rotation of said follow-up arm away from the fixed contact means, whereby movement of the member towards said first position will be accompanied by a follow-up rotation of the follow-up arm away from the fixed contact means to restrict the amount of deformation sustained by the spring between said positions.

3,201,556

SELF-ALIGNING DISCONNECT ASSEMBLY

Leslie L. Baird, Swarthmore, Pa., assignor to General Electric Company, a corporation of New York

Filed July 19, 1963, Ser. No. 296,332
12 Claims. (Cl. 200—166)

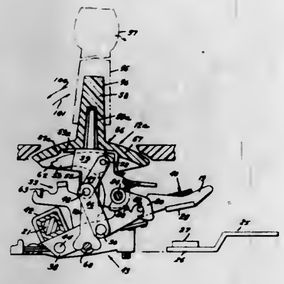


1. A disconnect assembly adapted separably to interconnect two proximate conductors, one of the conductors having an aperture formed therein adjacent one end, said disconnect assembly comprising:
(a) a frame including a central member,
(b) a pair of spaced contact members resiliently mounted in said frame and adapted to receive from opposite directions the two conductors, said contact members being disposed on opposite sides of and biased toward said central member for separably embracing the conductors therebetween,
(c) means including a removable key for detachably fastening said frame and contact members to the apertured conductor, said key extending through gaps in said contact members and being constructed and arranged to facilitate pivoting of said disconnect assembly with respect to the apertured conductor, and
(d) means to removably secure said key to said frame to effect fastening of said disconnect assembly to the apertured conductor.

3,201,557
CIRCUIT BREAKER HANDLE ASSEMBLY WITH IMPROVED FORCE TRANSFER CHARACTERISTICS

Wilson W. Poulton, Jr., Broomall, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 13, 1962, Ser. No. 172,985
5 Claims. (Cl. 200—172)

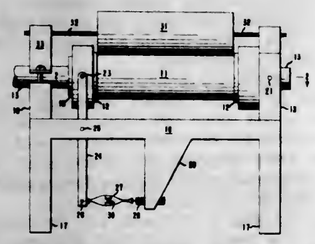


1. A circuit breaker unit, comprising in combination, an operating handle assembly and a circuit breaker operating mechanism connected thereto; said operating mechanism having a cradle member, said cradle member movable between its operating conditions by said handle assembly; high energy biasing means operatively connected to said cradle member for exerting substantial forces during at least portions of said movement; said assembly comprising a handle member having a base portion and a projecting handle portion integral therewith; said projecting handle being accessible outside of the circuit breaker cover, at least one projecting pin extending from said cradle member, said base portion having at least one recess; said recess receiving said projecting pin; said projecting pin and said recess dimensioned to fixedly secure said handle to said operating mechanism and transfer substantially all of the strain imposed upon said operating handle by said substantial forces during operating thereof to said operating mechanism.

3,201,558
TEMPERATURE CONTROLLED DEVICE

Elmer Henry Lasebrink, New Shrewsbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 24, 1963, Ser. No. 283,078
7 Claims. (Cl. 219—10.61)



1. A temperature controlled device for thermally treating a sheet comprising in combination
(a) a core of high magnetic permeability having a cylindrical section,
(b) a frame for supporting said core,
(c) an electrically conducting coil connected to a source of alternating current and surrounding a portion of said core,
(d) a tubular metal roller having a high coefficient of expansion, good thermal conductivity, low specific heat and low electrical resistivity surrounding the cylindrical section of the core and journalled on spaced insulating bearing blocks mounted on said core,
(e) one end of said roller being restrained from axial movement and the other being free to move axially, and
(f) a switch in the electrical circuit for the coil for energizing and deenergizing the coil in response to axial movement of the free end of said roller.

3,201,559
APPARATUS AND METHOD FOR FORMING HELICALLY WELDED TUBING

Jack Morris, Monsey, N.Y., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 1, 1963, Ser. No. 255,563
8 Claims. (Cl. 219—62)



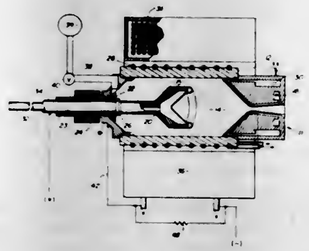
1. Method for forming tubing with a helically-extending weld line, which comprises: advancing a metal strip longitudinally in a direction at an angle to the axis of the tubing being formed, such angle corresponding to the pitch angle of the helical weld line, while causing portions along one edge of the strip to have imparted thereto a transverse curvature substantially corresponding to the cross-sectional curvature of portions of the walls of the tubing being formed; then further advancing the strip in the direction of said axis, while gradually imparting a transverse curvature to the other portions of the strip for bringing same gradually around into a position whereby the opposite edge of the strip comes into a position opposing said one edge and whereby tubing of C-shaped cross-section is formed; further advancing the latter along the direction of said axis while maintaining a helically-extending V-shaped gap between the opposed edges, with the apex of such gap at a weld point; and applying high frequency current to flow along the edges of such gap in advance of said point for heating same to welding temperature at said point and while applying pressure to opposite sides of the tubing at the region of said point for bringing said edges into welded relation.

3,201,560
ELECTRIC-ARC HEATER

Robert F. Mayo, Huntsville, Ala., and Milton A. Wallio and William L. Wells, Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Mar. 12, 1963, Ser. No. 264,729
6 Claims. (Cl. 219—121)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An electric-arc heater comprising: a cylindrical wall electrode defining an axially extending chamber; a head member enclosing the forward end of said chamber; a nozzle assembly positioned at the after end of said chamber; a second electrode positioned within said cylindrical wall electrode and extending coaxially therewith; said second electrode being supported in said head member; an electrical circuit including a uni-directional current source connecting said coaxial electrodes; a coil surrounding said wall electrode for providing a magnetic field directed axially of said chamber having a flux intensity of

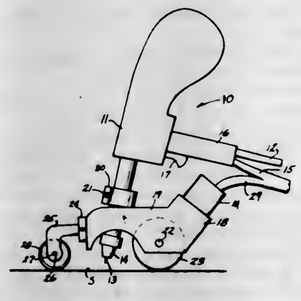


the order of 7.5 gauss per ampere of arc current in the region between said coaxial electrodes; said coil being connected in said circuit in series with said electrodes for providing highly stable, self-regulating arc operation; and means for introducing a pressurized fluid medium into said chamber whereby said fluid medium will be heated upon passage through the arc established between said electrodes.

3,201,561
WELDING APPARATUS

Lloyd E. Damon, Wallingford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Nov. 27, 1964, Ser. No. 414,270
6 Claims. (Cl. 219—125)

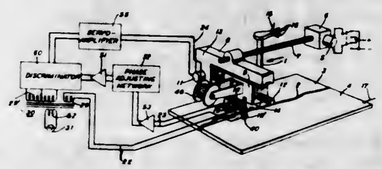


1. A compact, self-propelled, semi-automatic welding apparatus for welding a seam, comprising
(A) a chassis,
(B) a single drive wheel supported by said chassis at a rear portion thereof and being knurled for biting engagement with the surface to be welded,
(C) power means supported on said chassis and operatively connected to said drive wheel for supplying drive power to said drive wheel,
(D) means for supplying electric power to said power means,
(E) a weld seam guide wheel supported by said chassis at a front portion thereof for engagement with said seam, said guide wheel having a periphery of a configuration mating with said seam,
(F) a manually-operated MIG welding gun supported on said chassis, comprising
(1) a welding tip in adjustable relationship with said seam
(2) a welding wire,
(3) a welding wire supply means operatively connected to said welding tip and said welding wire for feeding said welding wire at a controlled rate to said welding tip,
(4) inert gas
(5) inert gas supply means operatively connected to said welding tip for feeding said inert gas at a controlled rate to said welding tip;
(G) control means for coordinating said power means, said welding wire supply means, and said inert gas supply means,
whereby actuation of said welding gun supplies a controlled delivery of welding wire and inert gas to said seam while the welding apparatus is propelled at a controlled rate along said seam.

3,201,562
STABILIZED EDDY CURRENT SEAM FOLLOWER

Nelson Edward Anderson, Berkeley Heights, N.J.; Severa B. Anderson, administratrix of said Nelson E. Anderson, deceased, assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 28, 1963, Ser. No. 261,675
7 Claims. (Cl. 219—125)



1. In an eddy current seam follower, in combination, a U-shaped magnetic core, a pair of pick-up coils mounted on the two opposite legs of the said core, an exciter coil mounted on the middle portion of the said core, the position of said exciter coil along said core relative to said pick-up coils being such that a magnetic field set up in said core in the absence of nearby metal objects by said exciter coil induces voltages substantially in phase with each other in said pick-up coils, and the relative positions of said pick-up coils along said core relative to said exciter coil being such that a magnetic field set up in said core by said exciter coil in the absence of nearby metal objects induces substantially equal magnitudes of voltages in said two pick-up coils, and means connecting said pick-up coils in phase opposing relationship.

3,201,563
WELDING ELECTRODE

Gunther Lehnert, Hannover-Bothfeld, Germany, assignor to Hackethal Draht- und Kabel-Werke AG, Hannover, Germany, a corporation of Germany

Filed Apr. 17, 1962, Ser. No. 188,145
Claims priority, application Germany, Apr. 18, 1961, H 42,330
2 Claims. (Cl. 219—145)

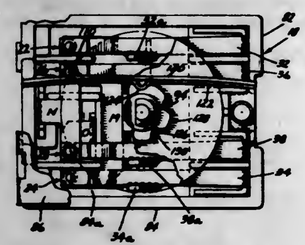
1. A welding electrode for direct current self welding of butt seams in thin metal sheets comprising a major cylindrical portion of a given diameter, a cylindrical welding end portion of a diameter less than said given diameter, and a conical portion interconnecting said

major and cylindrical end portions, wherein the diameters of said cylindrical major and cylindrical end portions are in the ratio of about 2.5:1.0; the ratio of the diameter



of said end portion to its length is about 1.0:2.5; and the sides of said conical portion form an angle of about 20°.

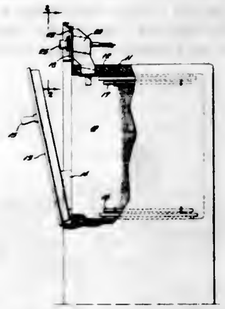
3,201,564
CONTROL SYSTEM FOR ELECTRIC COOKING OVENS
Philip Hatt, Milford, Conn., assignor to General Electric Company, a corporation of New York
Filed Dec. 11, 1962, Ser. No. 243,773
4 Claims. (Cl. 219—398)



1. In a control system for an electric oven, supply conductor means; a first resistance element having at least two parts; a second resistance element; and means including first, second, and third switches for selectively connecting the resistance elements in circuit with the supply conductor means; a first circuit for obtaining a baking heat condition within said oven, said first circuit including across said supply conductors a series arrangement of the two parts of said first resistance element in parallel combination with said second element, and said first and second switches in series with said parallel combination; and a second circuit for obtaining a broiling heat condition within said oven, said second circuit including across said supply conductor means said third switch connected to a point common to both parts of said first element, and a parallel combination of said first switch and one part of said first resistance element with said second switch and the other part of said first resistance element, said second resistance element being connected essentially at zero potential in said second circuit.

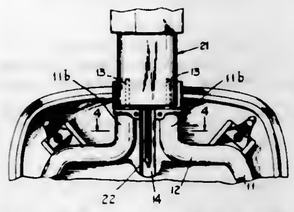
3,201,565
OVEN HEATING SYSTEM
Daniel E. Clapp, Churchville, Pa., assignor, by mesne assignments, to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Filed Jan. 3, 1962, Ser. No. 164,070
30 Claims. (Cl. 219—413)

12. In an electric oven, a heating system comprising a heating element, a thermally operable control switch for said heating element having a pair of relatively movable contact means and a thermomotive member for varying the relative positions of said contact means arranged to be responsive both to heat derived from the heating element and also to heat derived from a resistance heater connected in circuit with the contact means,



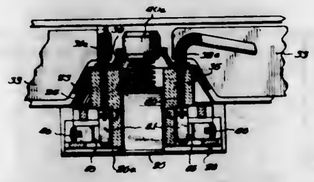
and dual adjustment means comprising manual means for varying the relative position of the contact means and means for varying the ambient temperature surrounding said switch.

3,201,566
THERMOSTATICALLY CONTROLLED ELECTRICALLY HEATED COOKING UTENSIL
Edward Peter Schreyer, % Whitfield Laboratories Inc., Box 293, Bethel, Conn.
Filed Feb. 18, 1964, Ser. No. 345,719
4 Claims. (Cl. 219—441)



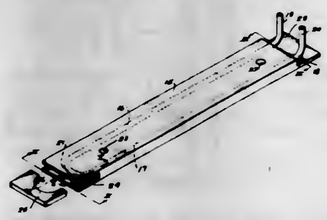
2. An electrically heated cooking utensil comprising, in combination:
(a) a metal container having embedded in its bottom an electrical heating element,
(b) electrical contacts carried by the container and connected to said heating element,
(c) a detachable connector plug adapted to be removably carried by the container, said plug having contacts cooperable with those of the container to supply electric current to the heating element thereof,
(d) thermostatically controlled switch means carried by the connector plug,
(e) a heat-receiving probe on the connector plug, disposed in heat exchanging relation to the said switch means to effect actuation of the same in response to heating and cooling of the probe,
(f) said container bottom having an elongate open groove adapted to receive the control probe, said groove being otherwise completely exposed and accessible from the exterior of the container,
(g) the probe of the plug when the latter is carried by the container being located in and spaced from the walls of said groove whereby contact therewith is random and of questionable intimacy, and whereby the probe is only partially surrounded by the metal of the container and is subjected to heat radiated from the container and to heat carried by the convection from the container for the purpose of actuating the thermostatically controlled switch.

3,201,567
HEATING UNIT
Leroy C. Hanson, Elmhurst, Ill., assignor to Ferro Corporation, a corporation of Ohio
Filed June 9, 1961, Ser. No. 116,112
7 Claims. (Cl. 219—450)



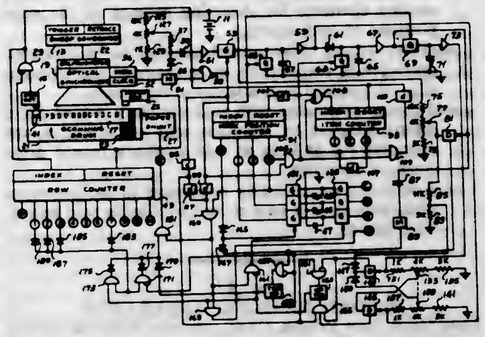
3. In an electrical heating unit, the combination comprising: a support in the form of a drip pan having a central opening defined by an upstanding continuous flange; a heating element; a lower terminal block on said support in vertical alignment with said opening; a closure plate mounted on said lower terminal block for movement between open and closed positions; and an upper terminal block on said heating element, said upper terminal block being operatively positioned overlying said lower terminal block and having a downwardly extending continuous flange encasing the support flange to retard passage of drippings into said opening; and means on said upper terminal block for moving said closure plate to open position as said terminal blocks are being operatively positioned.

3,201,568
HEATING UNIT WITH EMBEDDED TUBULAR ELEMENT
William H. Norton, deceased, late of Mundelein, Ill., by Lynn W. Norton, administratrix, Mundelein, Ill., assignor to Thermal Incorporated, Franklin Park, Ill., a corporation of Delaware
Filed Nov. 29, 1962, Ser. No. 241,069
7 Claims. (Cl. 219—538)



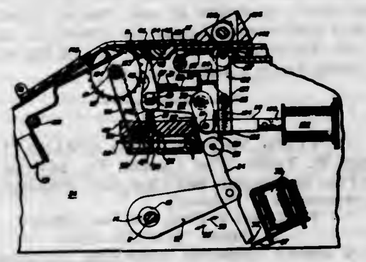
1. An electric heater comprising in combination,
an elongated resistor,
a thermally conductive tube enclosing the resistor and formed with linear sides and a lateral base connecting the sides,
an electrically insulative material surrounding the resistor within the tube,
an elongated one-piece retainer bar for the tube having a pair of linear elongated axially extending holes therethrough for containing the sides of the tube, said bar having a recess at one end opening linearly from the bar and containing the base of said tube,
and a close fitting heat conducting plug in said recess having an axially facing concave recess providing a surface for being in surface-to-surface engagement with the tube to be in heat conductive relationship with the base of said tube.

3,201,569
MARK SELECTION CIRCUIT
Gregory F. Conron, New Canaan, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 12, 1961, Ser. No. 116,352
21 Claims. (Cl. 235—61.7)



1. A mark selection circuit including in combination means for serially reading the intensity of marks in an item having a plurality of marking positions, means for providing a first signal in accord with the mark intensity of the position presently being read, means for providing a second signal in accord with the greatest mark intensity of the positions previously having been read, a device having two stable states, means for comparing the first and second signals, the comparing means selectively providing a first output when the ratio of the first signal to the second signal exceeds a first number which is greater than unity and providing a second output when said ratio is less than the first number but greater than a second number which is less than unity, means responsive to the first output for forcing the device to a first state, and means responsive to the second output for forcing the device to the second state, the comparing means permitting the state of the device to remain constant when said ratio is less than said second number.

3,201,570
RECORD SENSING AND FEEDING APPARATUS
Guillermo Perez, Bristol, and Leon Gryk, New Britain, Conn., assignors to Royal McBee Corporation, New York, N.Y., a corporation of New York
Filed Dec. 27, 1961, Ser. No. 162,388
7 Claims. (Cl. 235—61.11)



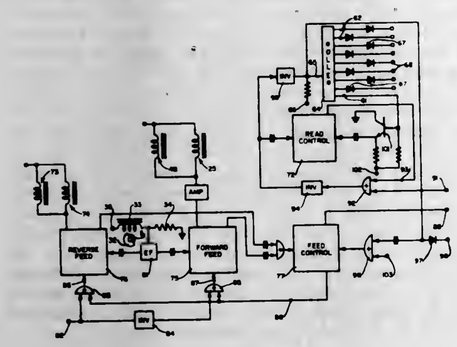
2. Record processing apparatus having record sensing elements normally biased into a record channel thereby to sense the presence or absence of perforations in a record passing therethrough and retractable from said record

channel to permit movement of a record operatively positioned therein, comprising
means for retracting said elements,
cyclically operable means,
means for coupling said cyclically operable means to said retracting means,
means in said record channel downstream of said record sensing elements for detecting passage of the edge portions of said record,
auxiliary record drive means adapted to be rendered operative in response to the passage of the terminal edge of a record past said detecting means,
and means associated with said auxiliary record drive means adapted to maintain said retracting means operative for as long as said auxiliary record drive means is operative,
said detecting means being responsive to the operative positionment of a new record to disable said record drive means.

3,201,571
RECORD READING APPARATUS

Leon Gryk, New Britain, Conn., assignor to Royal McBee Corporation, New York, N.Y., a corporation of New York

Filed Jan. 18, 1962, Ser. No. 166,997
7 Claims. (Cl. 235—61.11)



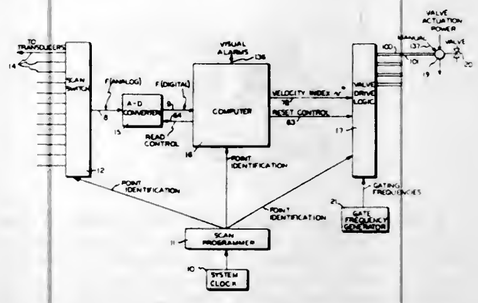
1. Apparatus for reading records having data items recorded therein in columns transverse the direction of movement of said records,
means for sensing said data items in response to a control signal,
means for feeding said record after a sensing interval,
a continuously operable shaft,
means for generating pulses at said shaft rate,
and means responsive to said control signals and to said shaft generated pulses for operatively connecting and disconnecting said shaft to said record feeding means during a shaft cycle.

3,201,572
CONTROL METHOD AND APPARATUS

Edward W. Yetter, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 8, 1961, Ser. No. 108,521
6 Claims. (Cl. 235—151)

1. A control apparatus comprising, in combination, a transducer generating a signal which is a function of a condition upon which control is to be based, means sampling repetitively said signal, computer means receiving as an input said signal generated by said transducer adapted to compute a corrective action based on said signal, means providing a plurality of predetermined velocity pattern corrective actions proportioned to cause said condition to approach a predetermined value within the entire range of variation for said condition during the time interval existing between successive sampling

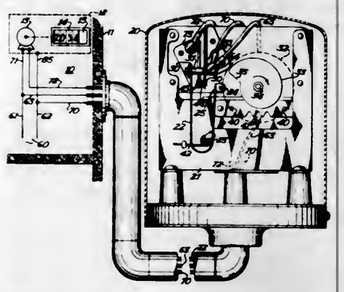


operations, means choosing one of said plurality of predetermined velocity pattern corrective actions matching the value of said corrective action determined by said computer, and means effecting a direct alteration in said condition responsive to the chosen one of said plurality of predetermined velocity pattern corrective actions.

3,201,573
FUEL DEMAND METER WITH POWER FAILURE INDICATING DEVICE

Donald L. Roth, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Feb. 19, 1962, Ser. No. 173,902
1 Claim. (Cl. 235—151)

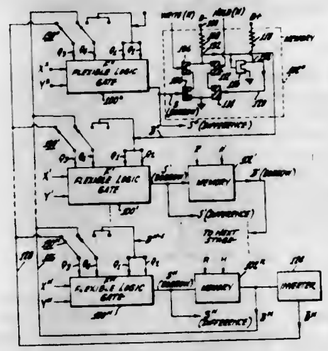


In a fuel demand meter for indicating the needs for fuel of a building over a predetermined period, an outdoor unit having a constantly energized cycling means, a temperature responsive switch means responding to the temperature of said outdoor unit, means connecting said cycling means to vary the control point of said temperature responsive means so the time of operation of said temperature responsive switch means is indicative of the temperature of said outdoor unit, a motor driven counter, means connecting said switch means to control the energization of said counter depending upon the total time said switch means is closed, a power failure indicating means comprising a flag which is pivoted about a base member to be spring biased in a first position, a bimetal operated latching means, a heater associated with said bimetal latching means, means connecting said heater to said source of power whereby upon energization of said heater said bimetal operated latching means holds said flag in a second position when manually reset against the force of said spring whereby upon power failure said bimetal latching means unlatches said flag to provide a power failure indication after a period of time determined by the time required for said bimetal to cool and move to an unlatching position.

3,201,574
FLEXIBLE LOGIC CIRCUIT

Michael E. Szekely, Belle Mead, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Oct. 7, 1960, Ser. No. 61,167
9 Claims. (Cl. 235—175)

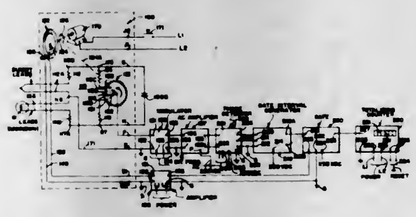


8. A parallel binary subtractor comprising, in combination, *n* binary subtraction stages, each for receiving a borrow, minuend and subtrahend binary quantity of different rank, and each for producing a borrow output; *n* memories, each for receiving and storing a borrow output of different rank, and each for applying its stored borrow quantity to the subtraction stage of next higher rank; and means for converting each said binary subtraction stage to a binary adder stage after all borrow outputs are stored, whereby each said stage produces a difference output quantity of different rank.

3,201,575
LINEARIZING MULTI-CHANNEL DIGITIZER

Frank D. Werner, Earl A. Grindheim, and Byron L. Sadler, all of Minneapolis, Minn., assignors to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota

Filed July 7, 1960, Ser. No. 41,301
2 Claims. (Cl. 235—197)

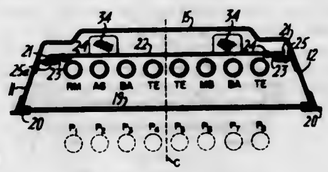


1. The system comprising a signal sensor for providing a sensor signal which varies non-linearly in respect to the function being sensed from a low reference value to a high reference value, a comparator circuit for providing a comparator signal, said circuit including means for varying said signal from said low reference value to said high reference value, comparator means in said comparator circuit and connected to said sensor for sensing when the signal of the comparator circuit equals the sensor signal, a pulse generator connected to said means for varying said comparator circuit so as to be operated coincidentally therewith for transmitting pulses from the time the comparator signal varies from said low reference value to said high reference value, the number of pulses generated from the time the comparator signal equals said low reference value until it reaches the value of said sensor signal being proportional to the value said sensor signal would have if the sensor signal and comparator signal each varies linearly from said low reference value to said high reference value, a pulse counter and gate means for connecting the pulse counter to the pulse generator from the time the comparator signal is at said low reference value until the comparator signal equals said sensor signal, said gate means including a gate control system connected to the comparator circuit so as to be operated thereby, said gate control system including a modulator connected to the comparator circuit and to an A.C. reference for providing an output signal in phase with the A.C. reference when the comparator signal has a value between said low reference value and when it equals said sensor signal and for providing an output signal out of phase with said A.C. reference when the comparator signal has a value between said sensor signal value and said high reference value.

3,201,576
FLUORESCENT LIGHTING FIXTURE

Howard W. Scott, Greenwich, Conn., and William H. Houston, Warren, Pa., assignors to Verilux Inc., New York, N.Y., a corporation of New York

Continuation of application Ser. No. 30,358, May 19, 1960. This application Nov. 19, 1964, Ser. No. 432,912
3 Claims. (Cl. 240—1.1)



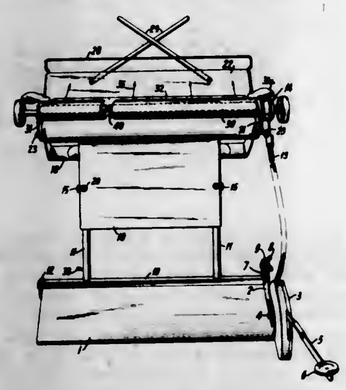
1. Apparatus comprising, a lighting fixture, a plurality of at least six light sources in said fixture and consisting entirely of fluorescent tubes, a plurality of at least three compositionally different phosphors separately contained by said tubes, a first of said three contained phosphors being included among a minority of said tubes characterized by fluorescence properties with an X chromaticity coordinate value of less than 0.277, a second of said three contained phosphors being included among a larger number of said tubes characterized by fluorescence properties with an X chromaticity coordinate value of more than 0.328, and the third of said three contained phosphors having a fluorescence property with an X chromaticity coordinate value intermediate those of the fluorescence properties of said first and second phosphors, and the variation with wavelength in the fluorescent property of each tube and the lumens output rating thereof being in weighted relation with the same properties of each of the other tubes to be adapted together to produce from all said tubes an overall light output which has an X chromaticity coordinate value in the range extending between and including the X values of 0.320 and 0.336, and which has a Y chromaticity coordinate value extending between and including the Y values of 0.334 and 0.350 and which, further has a spectral energy distribution curve which is simulative of natural overcast northlight.

3,201,577
RUNWAY LIGHTING DEVICES
George E. Brackett, Candia, N.H., assignor to Basic Products Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed July 9, 1962, Ser. No. 208,199
1 Claim. (Cl. 240—1.2)



A runway lighting device comprising a body having a lamp recess in its upper side, a one-piece cover for the recess, the cover extending over the entire upper surface of the body, the cover having a central portion to obstruct the emission of light vertically and, on opposite sides of the central portion, depressed portions forming light channels, and a shoulder between the central portion and each of said depressed portions, each shoulder having an opening through which light may be emitted horizontally through said channels, and the channels having side walls to direct the light in opposite directions, said cover extending beyond the body to seat on the runway and said body having a depending rib to extend into the runway.

3,201,578
ILLUMINATED COPY HOLDER
James D. O'Donnell, 1955 79th St., Jackson Heights, N.Y.
Filed Sept. 21, 1962, Ser. No. 225,430
1 Claim. (Cl. 240—2)



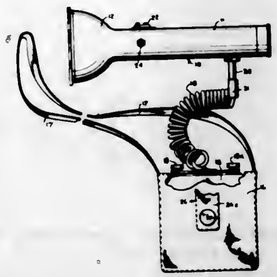
A copy holding device including
a flat base, a leg member pivotally connected to the base, a support member connected to the leg,
a driven roller rotatably mounted on the support, driving means for rotating the roller, the driving means having control means, the support extending over the base at least three inches beyond the leg and parallel to the base,
a shade member connected to the support member, an elongated bulb of less than 20 watts power mounted on the shade so that it is positioned between the shade and the support, and means to supply electric power to the bulb,
wherein the shade covers the bulb except for light in the upward and the directly downward directions, the downward light falls only on the platen of a typewriter placed on the base, and the paper is moved between the bulb and the support by the roller.

3,201,579
ILLUMINATED BUILDING AND SIGN
Robert J. Harper, Scarsdale, N.Y., assignor to Northwestern Refining Co., St. Paul, Minn., a corporation of Minnesota
Filed July 11, 1963, Ser. No. 294,325
10 Claims. (Cl. 240—2)



8. An illuminated building structure comprising a pair of relatively angularly disposed plane roof sections intersecting each other along a horizontal line to form a roof having a valley along said horizontal line, and diverging upwardly symmetrically to the vertical plane of said line, said roof sections having light reflecting lower surfaces, supporting means for said roof sections comprising a pair of relatively spaced parallel rows of columns disposed symmetrically on opposite sides of said vertical plane, a horizontal stringer extending along and interconnecting the upper ends of the columns of each said row, the roof sections respectively being supported by and secured to said stringers, each roof section overlying one of said stringers, a longitudinal structural member supported by each said row of columns beneath one of said stringers and its overlying roof section and in the plane of the relatively remote said roof section, a plurality of banks of lights supported beneath said roof sections, each said light bank comprising a rigid open rectangular frame disposed beneath one of said roof sections in the same plane as and constituting a visual extension of the other said roof section, and a plurality of relatively spaced parallel fluorescent light tubes in said frames, each said frame being secured to the roof substantially along said line of intersection and secured to one of said longitudinal structural members to cooperate with one of said roof sections and its supporting columns in defining a rigid structural triangle, whereby the lights from said tubes may be reflected laterally outwardly between said columns by the said lower surfaces of the roof sections.

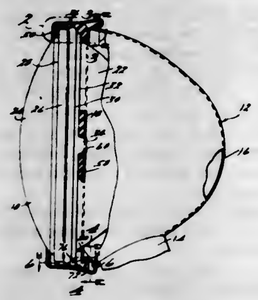
3,201,580
FLASHLIGHT
Robert F. Moore, Rte. 1, Box 308, Shelby County, near Waldron, Ind.
Filed Apr. 14, 1964, Ser. No. 359,613
1 Claim. (Cl. 240—10.6)



A flashlight comprising the combination with
a body,
a lamp bulb normally operated on a rated voltage and mounted at one end of the body; and

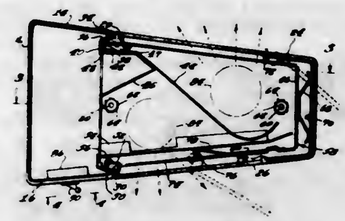
a switch mounted on the body:
of
a portable battery having a rated output voltage higher than that of said bulb;
a jack carried by said body;
a plug removably received by said jack;
a flexible cable interconnecting said battery and said plug;
a rheostat carried by said body and operated by a shaft;
said plug engaging said jack at approximately a right angle to said body;
said shaft extending from said body at approximately a right angle thereto at a position approximately ninety degrees around from the plug and spaced intermediate the plug and said bulb;
said switch being spaced at approximately one hundred eighty degrees around from said plug and intermediate said plug and said bulb; and
a circuit from said battery through said cable including in series said lamp, said switch, said rheostat, and said jack;
said rheostat normally set to provide minimum current flow through said lamp upon a closed switch, and, upon turning of said shaft permitting increased battery voltage to be impressed upon said lamp bulb.

3,201,581
RESILIENTLY SUPPORTED LAMP
Harry D. Hirsch, Detroit, Mich., assignor to C. M. Hall Lamp Company, a corporation of Michigan
Filed Aug. 22, 1961, Ser. No. 133,157
12 Claims. (Cl. 240—41.5)



1. In a lamp assembly including a lamp lens having a circumferential bead, the combination of a lamp body having a forwardly located inwardly directed circumferential flange and a plurality of circumferentially spaced, rearwardly located and radially outwardly extending protuberances formed on the outer surface of said lamp body adjacent said flange, a bezel having an inner surface and adapted to surround the circumferential bead on the lens in spaced relationship therewith, said bezel further including a rearwardly located flange portion engaging said lamp body only at said protuberances thereby operatively supporting said bezel on said lamp body and an inwardly directed circumferential lip located forwardly of the circumferential bead on the lens to prevent forward movement of the lens relative to said lamp body, and a resilient grommet including a circumferential portion located between the inner surface of said bezel and the circumferential bead on the lens, said grommet further including a forward portion engaging the circumferential bead on the lens and a rearwardly located portion engaging said forwardly located flange on said lamp body for resiliently supporting the lens relative to said lamp body.

3,201,582
TWO-WAY HOSPITAL LIGHT
Al L. Siegel, 2095 Central Drive N., East Meadow, Long Island, N.Y.
Filed July 3, 1963, Ser. No. 292,634
3 Claims. (Cl. 240—73)

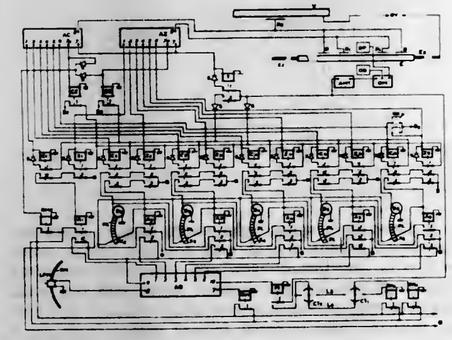


1. A two-way hospital light comprising, in combination a chassis having a back wall, top and bottom walls formed with inturned flanges, and end walls extending outwardly of said top and bottom walls, said end walls having free end portions, a one piece diffuser of translucent resilient sheet material formed with a front panel and bottom and top panels, said top and bottom panels having edges extending parallel to said front panel, retaining clips detachably securing said edges to said inturned flanges, the lower of said clips being pivotally connected to their respective flanges, a pair of diffuser inserts intimately contacting said front panel and extending part way across the top and bottom panels, a pair of spaced leaf springs secured to said free end portions of the end walls, said springs engaging said inserts for biasing said retaining clips against said inturned flanges of the top and bottom walls, a reflector secured to one of said inturned flanges and extending into said diffuser and forming upper and lower light chambers therein, a pair of socket plates spacedly secured to each of said end walls inwardly of said diffuser, aligned lamp sockets secured to each of said end walls above and below said reflector, respectively, and switch means for selectively controlling a current supply to said sockets.

3,201,583
SAFETY PROCESS AND APPARATUS FOR RAILWAY SERVICES
Pierre René Haas dit Rolle, 13 Avenue de la République, Paris, France
Filed Feb. 16, 1959, Ser. No. 793,462
Claims priority, application France, Feb. 18, 1958, 758,467, Patent 78,891; May 6, 1958, 764,878, Patent 82,752; Dec. 23, 1958, 782,474, Patent 1,381,202
13 Claims. (Cl. 246—30)

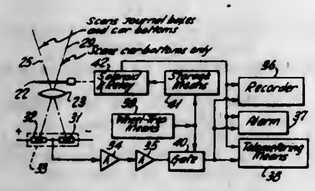
1. In a safety automatic train control system comprising both beacons and feeder means for transmitting information from the track to the train in the form of modulations imposed upon carrier frequencies, the improvement which comprises means for automatically adapting the vehicle equipment to the correct reception of said information regardless of whether it is transmitted by said feeder means or by successive beacons, said adapting means comprising means in the track installations for causing an additional modulation of at least one of said carrier frequencies, two beacons at the transition points of the track where the vehicle passes from a section with information by feeder to a section with information by beacons, one of said two beacons being located on the side of the track section corresponding to beacon information and transmitting the said at least one carrier frequency with said additional modulation, while the other of said two beacons is located on the side of the track section corresponding to continuous feeder information and transmits the same carrier fre-

quency without said additional modulation, a receiving amplifier on the vehicle for one carrier frequency, a filter circuit for passing said additional modulation through said amplifier, means for storing information received through said receiving amplifier and relay means connected to said filter-circuit and fed by the current



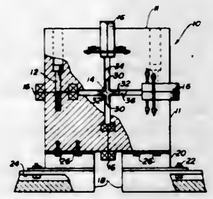
resulting from said additional modulation to act on said storing means, said relay means connecting said storing means to said amplifier when energized when said amplifier is receiving beacon information, and cutting off said storing means when not energized because said amplifier is receiving feeder information.

3,201,584
HOT BOX DETECTOR
Keith E. Mallenger, Mamaroneck, N.Y., assignor to Servo Corporation of America, Hicksville, N.Y., a corporation of New York
Filed Nov. 21, 1961, Ser. No. 153,998
11 Claims. (Cl. 246—169)



1. In combination, a length of railroad track, a railroad car on said track, said car having a body and an axle and journal boxes connecting said axles to said body, and a hot-box detecting device fixedly mounted alongside one of the rails of said track and below the level of said axle, said detecting device comprising first and second spaced heat-sensitive detector elements each of which produces an electrical signal in response to incident radiant energy, optical means imaging said detector elements along separate upwardly inclined axis directed at the underside of the body of said car and generally in the longitudinal direction of said track, the aspect of the first of said axes being such as to image said first detector element on corresponding sides of journal boxes on that side of the track defined by said one rail, the aspect of the second of said axes being such as to image said second detector element on the underside of the body of said car at all times that said first detector element is imaged on a journal box, and means continuously differentially evaluating the outputs of said detector elements with respect to each other.

3,201,585
MAGNETIC MOMENTUM ANALYZING SLIT WITH CURRENT CONDUCTING STRIPS SECURED TO THE MAGNETIC POLES
Joseph Ballam and En-Lung Chu, Palo Alto, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 30, 1963, Ser. No. 320,240
5 Claims. (Cl. 250—41.9)



1. In a magnetic momentum analyzing slit for isolating particles having a desired momentum range from a particle beam, including magnetic field generating means having a series of magnetic poles spaced in circumjacent relation about an axis to define an axially-extending aperture of substantially rectangular cross section in the region along said axis, coil windings disposed about portions of said magnetic poles, and current source means coupled to said coil windings to generate a magnetic field across said aperture the improvement comprising;

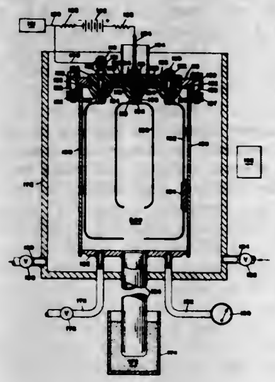
(a) a plurality of current conducting strips secured in integral relation along the lengths of said series of spaced magnetic poles along the edges thereof nearest the axis and in the region of said axially extending aperture, said strips further defining a plurality of facing parallel pairs of strips circumjacently disposed about said axis;

(b) a current source connected to said plurality of current conducting strips for introducing electrical current thereto;

(c) said current source being connected to alternate pairs of strips of said plurality of current conducting strips in opposing polarity relation to generate a compensating magnetic field in said axially extending aperture, said compensating magnetic field disposed to cancel the fringe magnetic field generated within said centrally extending aperture by said coil windings to define an effectively field-free region of finite volume there along, the lateral boundaries of said field-free region being defined by sharp magnetic field changes of opposite polarity.

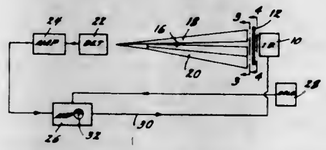
3,201,586
METHOD AND APPARATUS FOR RADIOACTIVE GAS ANALYSIS USING NEUTRONS OF TWO ENERGY LEVELS
Eugene T. Booth, New York, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed May 27, 1948, Ser. No. 29,437
8 Claims. (Cl. 250—43.5)

2. An apparatus useful for determining the composition of a gaseous sample which comprises an hermetically sealable gas container enclosing a set of electrodes, a source of direct current voltage, electrical connectors connecting said source of voltage and members of said set of electrodes to impress said voltage between members of said set, a current pulse detector connected to at least one of the members of said set, means for maintaining each succeeding gaseous sample at the same pressure, means exter-



nal to said container for disposing a neutron moderator jacket ambient to said gas container and for removing said jacket therefrom, and a source of relatively high energy neutrons positioned to cause a flux of neutrons to permeate said gas container.

3,201,587
INFRARED VAPOR MONITORING SYSTEM WITH MEANS TO CONTROL THE INFRARED EMISSION FROM THE SOURCE
Laurence R. Alexander, Armonk, and Stanley Wallack, Jackson Heights, N.Y., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Dec. 20, 1962, Ser. No. 246,089
1 Claim. (Cl. 250—43.5)



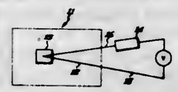
An infrared vapor monitoring system comprising three members two of which are positionable at any one time at equal distances from a common point, one of said members containing a sample gas to be analyzed, another of said members including a reference material and the third of said members including a calibration material, infrared source means for directing infrared energy in the direction of said members and means positioned between said source means and said members for sequentially defining a single light transmission path between only two of said chambers, source detector means positioned to receive infrared energy passing through said members and means responsive to said detector means for indicating the degree of transmission of infrared energy through said members, the means for sequentially defining a path comprising an apetured chopped wheel with apertures spaced from each other at a distance equal to the diameter of said apertures, the means for indicating the level of infrared energy transmission being coupled to said source to control the temperature and the resulting infrared emission from said source, a temperature responsive device positioned to indicate the temperature of said source and coupled to said indicating means to deliver a signal thereto indicative of said temperature, and a further signal representing the degree of transmission of infrared energy through the members, said indicating means combining said first mentioned signal with said further signal, thereby accurately to control the temperature of said source.

3,201,588
ELECTROSTATIC IMMERSION OBJECTIVE COMPRISING AN IMPROVED INTERMEDIATE ELECTRODE
Heinrich Düker, Stuttgart-Mohringen, Germany, assignor to Trub, Tauber & Co. A.G., Zurich, Switzerland
Filed Nov. 16, 1962, Ser. No. 238,239
Claims priority, application Switzerland, Nov. 22, 1961, 13,599/61
8 Claims. (Cl. 250—49.5)



1. An electrostatic immersion objective comprising a cathode, an intermediate electrode, a control electrode, and an anode, said cathode, intermediate electrode, control electrode and anode being serially arranged in spaced relation in the aforesaid order, the intermediate and control electrodes and anode having aligned bores, said cathode and intermediate electrode having flat parallel surfaces which face one another and are spaced apart a determinable distance, said intermediate electrode having a thickness at said bore and a diameter of said bore related to the distance between the flat surfaces of the cathode and the intermediate electrode to provide a homogeneous field in the bore of the intermediate electrode, said diameter of the bore of the intermediate electrode being less than one-fifth of said distance between the flat surfaces of the cathode and the intermediate electrode while said thickness of the intermediate electrode at said bore is less than one-fifth of the aforesaid distance.

3,201,589
INTEGRATED NEUTRON FLUX INDICATOR
Frederick W. Kuether, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 26, 1961, Ser. No. 161,795
9 Claims. (Cl. 250—83.1)

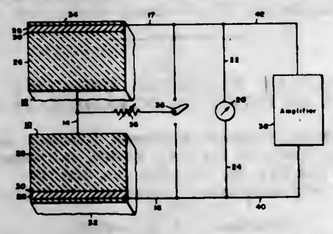


1. An integrated neutron flux indicating means comprising at least three members of dissimilar metals joined together to form thermocouple pairs, at least a first of said members being selected from a group which undergoes a change in composition upon exposure to a neutron environment, and at least a second of said members possessing low neutron capture capabilities; and means associated with said thermocouple pairs to measure the resulting E.M.F. outputs of said thermocouple pairs.

3,201,590
DISCRIMINATING RADIATION DETECTOR FOR DETERMINING A GIVEN RADIATION IN THE PRESENCE OF OTHER RADIATIONS
Kuan H. Sun, Wilkinsburg, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 4, 1958, Ser. No. 778,116
12 Claims. (Cl. 250—83.3)

1. A radiation detector comprising opposed semiconductor devices, each of said devices having P and N type regions and a junction therebetween, circuit means for

connecting the outputs of said devices in opposition, a quantity of neutron-reactive material, said material being supported by one of said devices in proximity to its output region, a quantity of neutron insensitive material, said last-mentioned material being supported by the other of said devices in proximity to its output region, and means for measuring the differential output of said devices.

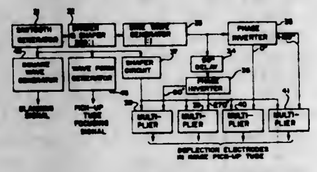


3,201,591

HORIZON DETECTION AND SCANNING SYSTEM

Ronald W. Froelich, Gardena, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Sept. 30, 1960, Ser. No. 59,770
3 Claims. (Cl. 250—83.3)



2. A horizon measuring device comprising means for sensing radiating energy from an object, means for storing a substantially circular symmetric image of said radiating energy in the form of a stored circular pattern substantially in the centermost portion of a thermal-sensitive storing surface, means for scanning said surface along a plurality of paths each defining a diameter of said surface, means for angularly displacing each of said diameters from each other for scanning said entire surface, means cooperating with said scanning means for generating an output signal for each scan in response to said stored image, means for generating a continuous signal varying as the time duration of said output signal varies whereby said signal represents the continuous measure of distance between said object and said storing surface, means for detecting the position of said output signal relative to each scan, each of said output signals being indicative of the exact location of said stored circular pattern with respect to the center of said image storing surface, and means for generating continuous signals varying as the position of the output signal varies with respect to each scan to thereby indicate roll and pitch information of said storing surface with respect to said object.

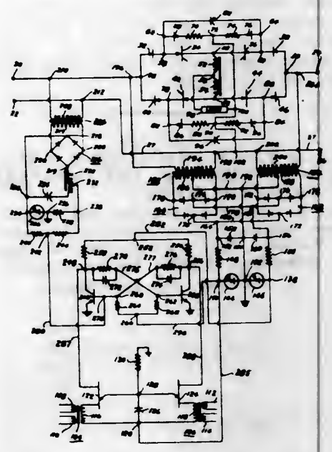
3,201,592

CONTROL SYSTEM FOR TRANSFERRING A LOAD FROM ONE POWER SOURCE TO A SECOND POWER SOURCE

Owen E. Reinert, St. Louis County, and Richard T. Daly, Jr., Town and Country, Mo., assignors to Sperry Rand Corporation, a corporation of Delaware

Filed July 24, 1961, Ser. No. 126,187
20 Claims. (Cl. 307—64)

1. A control system that can normally connect a load to a first A.C. power source while isolating that load from a second A.C. power source and that can automatically and promptly transfer said load from said first A.C. power source to said second A.C. power source and can isolate said load from said first A.C. power source while substantially continuously supplying power to said load and that can subsequently automatically and promptly transfer said load from said second A.C. power source to said first A.C. power source and can isolate said load from said second A.C. power source while substantially continuously supplying power to said load and that comprises a controlled rectifier that will normally be rendered conductive to enable it to connect said load to said first A.C. power source but that can be selectively rendered non-conductive to isolate said load from said first A.C. power source, a second controlled rectifier that will normally be rendered non-conductive to enable it to isolate said load from said second A.C. power source but that can be selectively rendered conductive to connect said load to said second A.C. power source, a capacitor that is connected in generally parallel relation with said load and in series with the first said controlled rectifier whenever the first said controlled rectifier is conductive and that is connected in generally parallel relation with said load and in series with said second controlled rectifier whenever said second controlled rectifier is conductive, said capacitor storing energy therein as the first said controlled rectifier connects said load to said first A.C. power source and responding to rendering of said second controlled rectifier conductive to apply an inverse voltage to the first said controlled rectifier to render the first said controlled rectifier non-conductive, whereby the rendering of said second controlled rectifier conductive will automatically and promptly isolate said load from said first A.C. power source, said capacitor storing energy therein as said second controlled rectifier connects said load to said second A.C. power source and responding to rendering of the first said controlled rectifier conductive to apply an inverse voltage to said second controlled rectifier to render said second controlled rectifier non-conductive, whereby the rendering of the first said controlled rectifier conductive will automatically and promptly isolate said load from said second A.C. power source, an inductor that is connected to said controlled rectifiers to limit the flow of cross currents whenever said controlled rectifiers are simultaneously conductive, a signal source that can supply "firing" signals to the gate of the first said controlled rectifier or that can supply "firing" signals to the gate of said second controlled rectifier, and a detector that is responsive to the normal condition of said first A.C. power source to cause said signal source to supply "firing" signals to the gate of the first said controlled rectifier but that is responsive to a change in the condition of said first A.C. power source to cause said signal source to supply "firing" signals to the gate of said second controlled rectifier and that will respond to restoration of the said condition of said first A.C. power source to normal to again supply "firing" signals to the gate of the first said controlled rectifier.

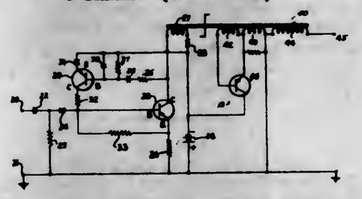


3,201,593

LOW POWER DRAIN PULSE FORMERS

Wilmer C. Anderson, Greenwich, Conn., and Sanford J. Demby, New York, N.Y., assignors to General Time Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 4, 1961, Ser. No. 100,663
6 Claims. (Cl. 307—88)



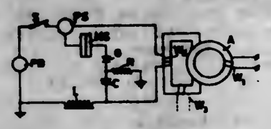
1. In a saturable core pulse former having a core magnetizing winding and a direct current power source, first and second normally open electronic switching devices each having a control electrode, means for connecting the control electrode of the first device to a source of triggering impulses for closing the first device for the duration of each impulse, said first switching device being connected in circuit with said magnetizing winding and said power source, said second switching device coupling said power source with the control electrode of said first device to maintain said first switching device closed when the second switching device is closed, said first switching device also coupling said power source to the control electrode of the second switching device to close the second switching device when the first switching device closes, and time delay means for uncoupling the input electrode of the second device a given interval after the first switching device is closed to successively open the second and first switching devices and terminate the magnetizing winding current.

3,201,594

CIRCUIT FOR LINEARLY CHANGING THE MAGNETIZATION OF A CORE

Willem Boogaerdt, Adrianus Johannes Wilhelmus Maria van Overbeek, and Theodorus Joannes Tulp, all of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 5, 1961, Ser. No. 108,069
Claims priority, application Netherlands, May 12, 1960, 251,541
5 Claims. (Cl. 307—88)



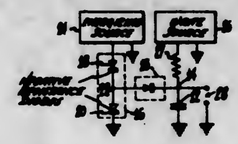
2. A circuit arrangement for linearly changing the remanence condition of a magnetic circuit, comprising: a magnetic circuit including a magnetic element having magnetic remanence properties, a winding inductively coupled to said magnetic circuit, supply means for supplying a controllable number of pulses to said winding through a normaly closed gate circuit and a series connected auxiliary inductance, each of said pulses causing a slow and a rapid change in the magnetic flux density of said magnetic circuit, a trigger circuit for controlling said gate circuit, said trigger circuit being coupled to said auxiliary inductance, said trigger circuit operating after the start of each pulse in response to a pulse produced by said auxiliary inductance by a rapid change in magnetic flux density of said magnetic circuit to open said gate circuit, whereby the size of each pulse applied to said winding varies according to the rapid change in magnetic flux density produced by said pulse.

3,201,595

MEMORY SYSTEMS USING TUNNEL DIODES

James Cobean Miller, Hamilton Square, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed June 16, 1959, Ser. No. 820,672
16 Claims. (Cl. 307—88.5)



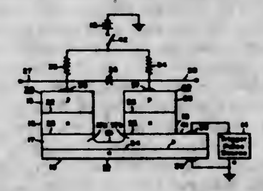
1. A memory system comprising a field effect storage device having two operating states, a hold circuit including a negative resistance diode element, said diode having a high and a low voltage operating state corresponding to the one and the other of said storage device operating states, a decoupling element connecting said diode to said storage device, means coupled to said storage device and also coupled across said diode to set said storage device to one of its two operating states and to also set said diode in the corresponding one of said high and low states, and means for applying energizing signals across said diode to maintain said set state.

3,201,596

SEQUENTIAL TRIP SEMICONDUCTOR DEVICE

Richard L. Longini, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

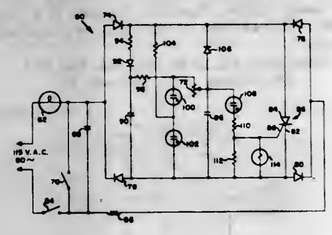
Filed Dec. 17, 1959, Ser. No. 860,174
10 Claims. (Cl. 307—88.5)



1. A semiconductor device comprising a body of semiconductive material having a first continuous layer of a first conductivity type and a second continuous layer of a second conductivity type adjacent and forming a rectifying junction with said first continuous layer, said second continuous layer having a first portion and a second portion mutually separated by a portion of restricted thickness, each of said first and second portions of said second continuous layer having disposed thereon physically separated regions of material of said first conductivity type thereby forming first and second breakdown junctions,

separated regions of said second conductivity type disposed on the remote surface of said separated regions of said first conductivity type; means to apply a voltage across said semiconductor body sufficient to cause breakdown of said first breakdown junction, means to apply a triggering pulse to said second continuous layer to cause breakdown of said second breakdown junction, and circuit means coupled to extinguish said first element upon the firing of said second element.

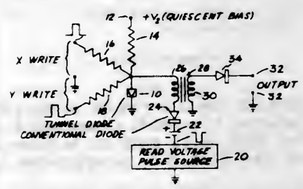
3,201,597
DIMMER FOR ELECTRIC LIGHTS
Isadore Bekus, 18249 Robson, Detroit 35, Mich.
Filed Nov. 1, 1960, Ser. No. 66,471
2 Claims. (Cl. 307—88.5)



2. A circuit for controlling the portion of an alternating current cycle passed from an alternating current source to a load, comprising: a solid state rectifier bridge having its inputs disposed in series with said load across said alternating current voltage source; a controlled rectifier having its anode and cathode across the midpoints of said bridge, whereby upon the firing of said controlled rectifier a path is established from the source through the load through one of two rectifier paths of the bridge; means for converting the voltage appearing across the midpoints of the bridge to a direct current voltage supply; a capacitor; a variable resistance disposed in series with said capacitor across said direct current voltage supply so as to control the rate of charging of said capacitor; a rectifier connecting said capacitor across the anode-cathode circuit of said controlled rectifier so as to discharge said capacitor upon the firing of said controlled rectifier; a neon breakdown switching device connected to said capacitor so as to experience substantially the entire voltage across said capacitor when in an unbroken-down state, and connected to the gate of said controlled rectifier so as to supply said controlled rectifier with a voltage in excess of its firing voltage upon the breakdown of said switching device; and a temperature sensitive resistance element having an inverse temperature resistance characteristic disposed in the gate-cathode circuit of said controlled rectifier so as to effectively short said gate-cathode circuit and prevent firing of the controlled rectifier upon the temperature of the circuitry exceeding a predetermined value and to thereby maintain said voltage breakdown switching device in a sustaining voltage condition for certain settings of said variable resistance.

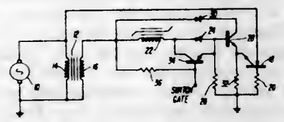
3,201,598
MEMORY
Abraham I. Pressman, Elkins Park, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 12, 1961, Ser. No. 82,320
3 Claims. (Cl. 307—88.5)

1. A memory comprising, in combination, a voltage controlled negative resistance element; means coupled to said element for applying a quiescent current thereto at a level at which operation in either the high or low voltage state is possible; a positive resistance unidirectionally conducting element effectively connected in shunt with the negative resistance element in the same polarity as the negative resistance element; means for writing a binary digit into the negative resistance element com-



prising means for applying current pulses to said negative resistance element; and means for reading the information stored in said negative resistance element comprising means for applying a voltage pulse to said positive resistance element, and a transformer winding in series with one of said elements.

3,201,599
MAGNETIC TRIGGER CIRCUIT
Cole H. Baker, Greenwich, and F. Sutherland Macklem, New Canaan, Conn., assignors to Ovitron Corporation, Newburgh, N.Y., a corporation of Delaware
Filed May 25, 1961, Ser. No. 112,627
7 Claims. (Cl. 307—88.5)

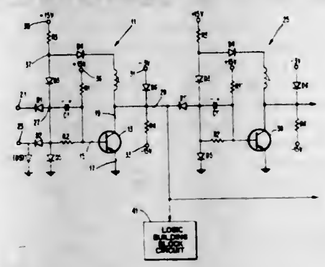


1. A magnetic trigger circuit comprising a saturable reactor containing a load winding and a ferro-magnetic core; a first diode and a first resistor coupled in series with said load winding to form a first current loop circuit; a first transistor having base, collector, and emitter electrodes, the collector-emitter circuit thereof being coupled in series with a second diode and a second resistor to form a second current loop circuit and the base electrode thereof being coupled to one end of said first resistor; an alternating current signal source coupled to said first and second current loop circuits; a second transistor having base, collector, and emitter electrodes, the collector-emitter circuit thereof being coupled in parallel with said first diode with the forward current direction of said emitter-collector circuit opposing the forward current direction of said first diode, and the base electrode thereof being coupled through a third resistor to said alternating current signal source.

3,201,600
TRANSISTOR SWITCHING CIRCUIT WITH MEANS TO NEUTRALIZE MINORITY CARRIER STORAGE
Baden L. Cosby, Penn Square Village, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 19, 1961, Ser. No. 139,199
8 Claims. (Cl. 307—88.5)

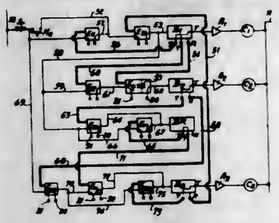
1. A logic building block circuit comprising:
(a) a transistor having an input element, an output element, and a control element;
(b) first biasing means coupled to said control element;
(c) input signal means coupled to said first biasing means;
(d) second biasing means adapted to be connected to a voltage source;

(e) first and second current path means common-connected to said second biasing means, said first current path means coupled to said first biasing means to conduct current from said second biasing means to said first biasing means in response to an input signal being applied to said input signal means and further conducting said last mentioned current through said first biasing means to said control element upon the termination of an input signal, said second current path means further coupled to said output element to conduct current from said second biasing means to said output element when said transistor is non-conducting;



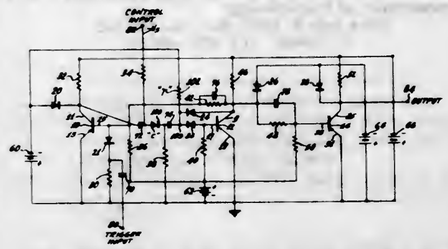
(f) said first current path means functioning to provide turn-off current to said control element through said first biasing means in response to the termination of an input signal thereby neutralizing minority carriers in said transistor and hence accelerating turn-off;
(g) and said second current path means functioning to cause said turn-off current to be steered to said output element thereby developing a bias to block current flow in said first current path in the absence of an input signal being applied to said input signal means.

3,201,601
ELECTRICAL CONTROL CIRCUITS FOR SEQUENTIAL ENERGIZATION AND DEENERGIZATION OF PROGRAMMED APPARATUS
Michel Chevalier and Gerard Cottrez, Rueil, Seine et Oise, France, assignors to La Telemecanique Electrique, Nanterre, Seine, France
Filed Sept. 29, 1961, Ser. No. 141,889
Claims priority, application France, Oct. 12, 1960, 841,003
5 Claims. (Cl. 307—88.5)



1. An electrical circuit arrangement for controlling the sequential energization and deenergization of a plurality of controlled elements, comprising: a plurality of monostable flipflops each having an input and two outputs and adapted to provide a voltage at a first one of said outputs if a voltage is applied to said input, and to provide a voltage at the second output if no voltage is applied to said input; means connecting said first outputs of some of said flipflops with respective ones of said controlled elements; a plurality of chains of AND-gates each associated with a respective one of said flipflops for controlling shifting thereof; each of said AND-gates having first and second inputs and one output; one single, direct connection between the first input of each AND-gate and a selected one output of one flipflop; means interconnecting the output of at least an end one of the AND-gates of each chain and the input of the associated flipflop; means connecting the outputs of the other AND-gates to said second inputs of some of said AND-gates; means connecting the said second input of the initial AND-gate of each chain to a feed voltage and means for selectively applying a command signal to said second input of an initial AND-gate of at least one of said chains, the pattern of said interconnecting means ensuring that application of said command signal produces the desired sequential energization and deenergization of the controlled elements.

3,201,602
MULTIVIBRATOR EMPLOYING VOLTAGE CONTROLLED VARIABLE CAPACITANCE ELEMENT IN A COUPLING NETWORK
Robert H. Norwalt, Sherman Oaks, Calif., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 10, 1962, Ser. No. 165,425
4 Claims. (Cl. 307—88.5)

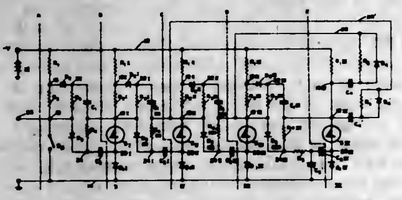


1. A multivibrator circuit comprising first and second active electron devices each having input and output electrodes; a first coupling network coupled from the output electrode of said second device to the input electrode of said first device; a second coupling network, exhibiting a time constant and including a timing capacitance element providing a capacitance that varies as a function of a voltage applied thereacross, coupled between the output electrode of said first device and the input electrode of said second device; means biasing said first device normally to be cut-off; means biasing said second device normally to be conducting; means to apply a trigger signal to said first device to drive it into conduction, and means to apply a control voltage across said timing capacitance element to control its capacitance and the time constant of said second coupling network to control the conduction time of said first device.

3,201,603
SWITCHING CIRCUITS
Albrecht Gerlach, Freiburg im Breisgau, Germany, assignor to Clevite Corporation, a corporation of Ohio
Filed May 23, 1962, Ser. No. 197,229
Claims priority, application Germany, May 31, 1961, J 20,006
9 Claims. (Cl. 307—88.5)

1. A switching circuit comprising: a plurality of current paths connected in parallel between a potential source and return, each of said current paths containing a bistable circuit element having a Thyratron character-

istic and distinct stable conditions of conduction and non-conduction; circuit means coupling said current paths in cascade; and logic circuit means associated with the first said circuit means responsive to the switching of the bistable diode in one of said circuit paths only from a



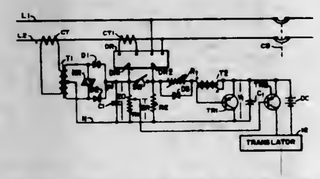
state of non-conduction to a state of conduction for effecting switching of the bistable diode in the next succeeding current path from a state of conduction to a state of non-conduction or from a state of non-conduction to a state of conduction depending upon the initial condition of the diode in said succeeding current path.

3,201,604

TIMING STATIC DEVICE

Paul J. Schwanenflugel, Belleville, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 9, 1962, Ser. No. 208,241
5 Claims. (Cl. 307—88.5)



1. In a timing device, a pair of input terminals, means for deriving from the input terminals a direct first voltage having a first magnitude which varies as a function of the magnitude of a variable magnitude alternating constant-frequency electric quantity applied to the input terminals, means for deriving from said input terminals a direct second voltage having a second magnitude which varies as said function of the magnitude of a variable electric quantity applied to said input terminals, delay means for deriving from the first voltage a direct third voltage which increases in magnitude as a function of time and at a rate dependent on the magnitude of the first voltage following application of said first voltage thereto, and translating means responsive to the difference between said second and third voltages.

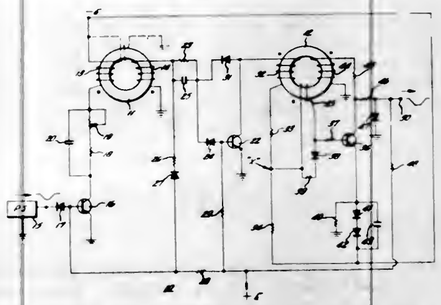
3,201,605

MAGNETIC CORE FLUX COUNTER

Edwin S. Lee III, Altadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed July 30, 1962, Ser. No. 213,189
11 Claims. (Cl. 307—88.5)

1. A counter comprising a quantizing magnetic core having a substantially rectangular hysteresis loop and at least an input and an output winding coupled to the core, a source of pulses to be counted, first normally non-conductive switching means coupled to said source and arranged to be rendered conductively responsive thereto for coupling the pulses to said input winding, impedance means coupled between said switching means and said input winding, second normally non-conductive switching means arranged to be rendered conductive in response to the signal induced in said output winding in response to the switching of the magnetic core from one magnetic stable state to another magnetic stable state to thereby provide quantized output pulses to be counted, circuit means coupled and arranged between said output winding and said second switching means, a counting magnetic core having a substantially rectangular hysteresis loop and an input, output, and a feedback winding coupled to the core, said input winding being connected to said second switching means for receiving the quantized pulses therefrom to step the counting core along its hysteresis loop from one stable state to the other stable state in preselected increments in response to each quantized pulse, impedance means connected in series circuit relationship with the input winding for said counting core



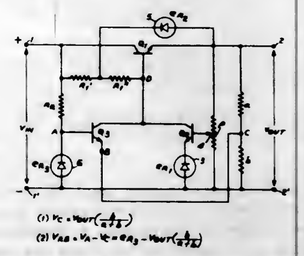
and receiving said quantized pulses, third normally non-conductive switching means coupled between one of the terminals of each said output and feedback windings, the other terminal of said feedback winding being connected to said latter mentioned impedance means to maintain said third switching means non-conductive during the intervals the count core is being stepped between stable states and to be rendered conductive in response to the switching of the count core to the other stable state and thereby cause the count core to be reset to said one state, and means coupled to said third switching means for providing an output pulse from the count core only during the switching thereof from said other stable state back to said one state.

3,201,606

OVERLOAD PROTECTION IN TRANSISTORIZED POWER REGULATING CIRCUITS

Michel Mamon, Nutley, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Dec. 21, 1962, Ser. No. 246,436
4 Claims. (Cl. 307—88.5)



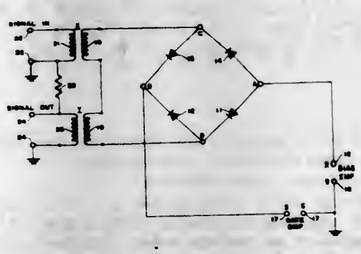
1. A regulating circuit for delivering regulated D.C. power from an unregulated D.C. source to a load comprising in combination
an input terminal,
an output terminal,
a high power transistor connected in series between said input and output terminals,
a common terminal for connection with said input terminal across an unregulated source of D.C. voltage and for connection with said output terminal across a load,
a low power regulating network connected between said input terminal and said common terminal, said network having a constant current node connected to the base of said high power transistor, said constant current node being coupled to said common terminal through the series combination of a first regulating transistor and a first voltage-reference diode,
a voltage divider network connected between said output and common terminals and including an intermediate reference voltage junction, and
means normally inoperative under ordinary load conditions connected between said constant current node and said reference voltage junction of said voltage divider network for conducting current away from said constant current node upon occurrence of a severe overload condition between said output and common terminals, said last-named means including an overload-protection transistor, the potential of the base electrode of said overload-protection transistor being determined by a second voltage-reference diode, said second voltage-reference diode being coupled between said base electrode and said common terminal.

3,201,607

ELECTRONIC SWITCHING CIRCUIT

John G. Richer, Colton, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 26, 1962, Ser. No. 247,422
4 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



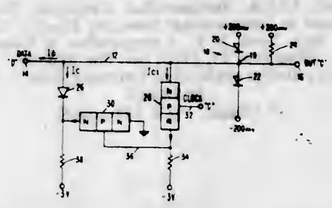
1. An electronic switching circuit for gating signals of short duration with gating signals of any time duration and which operates in both normally transmitting and normally nontransmitting modes, comprising:
(a) first and second separate pulse transformers, the primary winding of each of said separate pulse transformers having one and connected to ground,
(b) a damping resistor connected across the primary winding of said second pulse transformer,
(c) a diode bridge-rectifier network having a pair of input and a pair of output terminals,
(d) the secondary windings of said transformers being connected together in series adding and across the input terminals of said diode bridge-rectifier network,
(e) a pair of terminals to which a source of bias E.M.F. is applied connected between one of said pair of diode bridge output terminals and ground,
(f) a pair of terminals to which a source of gate E.M.F. is applied connected between the other of said pair of diode bridge output terminals and ground, said gate E.M.F. being a signal of any width, and being any one of a sine wave signal and a D.C. signal of either polarity,
(g) the signal input being applied across the primary winding of said first pulse transformer,
(h) the signal output being taken from across the primary winding of said second pulse transformer,
wherein said switching circuit will handle both positive and negative signal polarities and require only mono polarity bias E.M.F. and gate E.M.F.

3,201,608

FEEDBACK CONDITIONED COINCIDENT PULSE RESPONSIVE BISTABLE CIRCUITS

David H. Chung and Philip M. Marino, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 28, 1962, Ser. No. 247,971
8 Claims. (Cl. 307—88.5)



1. In a trigger circuit, the combination comprising:
a bistable device adapted to provide a high voltage state in response to a first input and a low voltage state in response to a second input;
an input circuit coupled to said bistable circuit and adapted to accommodate first and second data signal levels;
a clock circuit coupled to said bistable circuit and adapted to provide timed signals;
a control circuit coupled to said clock circuit and input circuit and operatively responsive to the voltage state of said bistable device, said control circuit conditioned by a low voltage output from said bistable device to be operative, upon the simultaneous application of said first data signal level at said input circuit and a timed signal from said clock circuit to produce a first output to cause said bistable device to assume its high voltage state, said control circuit further operative when conditioned by said high voltage state from said bistable device, to respond to a timed signal from said clock circuit to produce a second output whereby said bistable device assumes its low voltage state.

3,201,609

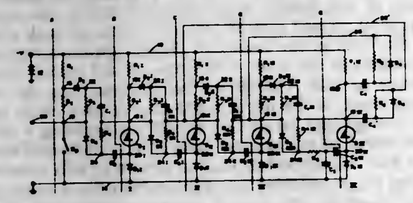
EXCLUSIVE-OR CIRCUIT UTILIZING CONSTANT CURRENT TO THE EMITTERS OF MULTIPLE TRANSISTORS

Raymond William Clarke, Smallfield, Horley, and David Kensingham, Waimate, Marlborough, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 31, 1962, Ser. No. 248,588
Claims priority, application Great Britain, Jan. 5, 1962, 534/62
6 Claims. (Cl. 307—88.5)

1. A logical circuit comprising: a pair of transistors each having base, emitter and collector electrodes, means for coupling said emitter electrodes, a pair of signal input terminals each connected to one of said base electrodes, means for supplying a constant current to both emitter electrodes, a logic output terminal, a pair of asymmetri-

istic and distinct stable conditions of conduction and non-conduction; circuit means coupling said current paths in cascade; and logic circuit means associated with the first said circuit means responsive to the switching of the bistable diode in one of said circuit paths only from a



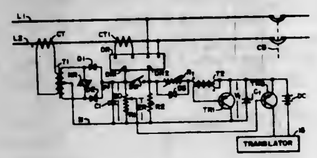
state of non-conduction to a state of conduction for effecting switching of the bistable diode in the next succeeding current path from a state of conduction to a state of non-conduction or from a state of non-conduction to a state of conduction depending upon the initial condition of the diode in said succeeding current path.

3,201,604

TIMING STATIC DEVICE

Paul J. Schwarzenbach, Belleville, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 9, 1962, Ser. No. 208,241
5 Claims. (Cl. 307—88.5)



1. In a timing device, a pair of input terminals, means for deriving from the input terminals a direct first voltage having a first magnitude which varies as a function of the magnitude of a variable magnitude alternating constant-frequency electric quantity applied to the input terminals, means for deriving from said input terminals a direct second voltage having a second magnitude which varies as said function of the magnitude of a variable electric quantity applied to said input terminals, delay means for deriving from the first voltage a direct third voltage which increases in magnitude as a function of time and at a rate dependent on the magnitude of the first voltage following application of said first voltage thereto, and translating means responsive to the difference between said second and third voltages.

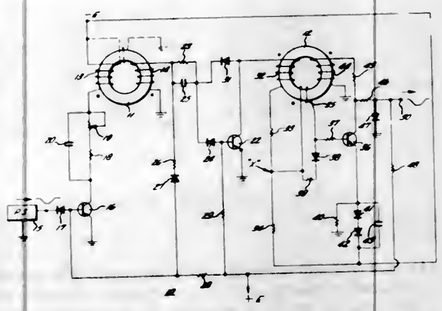
3,201,605

MAGNETIC CORE FLUX COUNTER

Edwin S. Lee III, Altadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed July 30, 1962, Ser. No. 213,189
11 Claims. (Cl. 307—88.5)

1. A counter comprising a quantizing magnetic core having a substantially rectangular hysteresis loop and at least an input and an output winding coupled to the core, a source of pulses to be counted, first normally non-conductive switching means coupled to said source and arranged to be rendered conductively responsive thereto for coupling the pulses to said input winding, impedance means coupled between said switching means and said input winding, second normally non-conductive switching means arranged to be rendered conductive in response to the signal induced in said output winding in response to the switching of the magnetic core from one magnetic stable state to another magnetic stable state to thereby provide quantized output pulses to be counted, circuit means coupled and arranged between said output winding and said second switching means, a counting magnetic core having a substantially rectangular hysteresis loop and an input, output, and a feedback winding coupled to the core, said input winding being connected to said second switching means for receiving the quantized pulses therefrom to step the counting core along its hysteresis loop from one stable state to the other stable state in preselected increments in response to each quantized pulse, impedance means connected in series circuit relationship with the input winding for said counting core



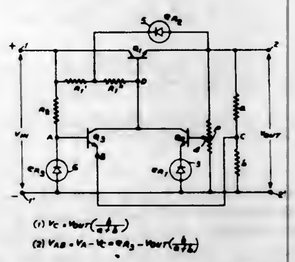
and receiving said quantized pulses, third normally non-conductive switching means coupled between one of the terminals of each said output and feedback windings, the other terminal of said feedback winding being connected to said latter mentioned impedance means to maintain said third switching means non-conductive during the intervals the count core is being stepped between stable states and to be rendered conductive in response to the switching of the count core to the other stable state and thereby cause the count core to be reset to said one state, and means coupled to said third switching means for providing an output pulse from the count core only during the switching thereof from said other stable state back to said one state.

3,201,606

OVERLOAD PROTECTION IN TRANSISTORIZED POWER REGULATING CIRCUITS

Michel Mamon, Nutley, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Dec. 21, 1962, Ser. No. 246,436
4 Claims. (Cl. 307—88.5)



1. A regulating circuit for delivering regulated D.C. power from an unregulated D.C. source to a load comprising in combination

an input terminal,

an output terminal,

a high power transistor connected in series between said input and output terminals,

a common terminal for connection with said input terminal across an unregulated source of D.C. voltage and for connection with said output terminal across a load,

a low power regulating network connected between said input terminal and said common terminal, said network having a constant current node connected to the base of said high power transistor, said constant current node being coupled to said common terminal through the series combination of a first regulating transistor and a first voltage-reference diode,

a voltage divider network connected between said output and common terminals and including an intermediate reference voltage junction, and

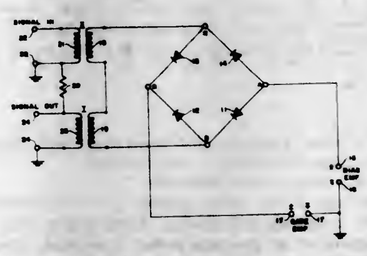
means normally inoperative under ordinary load conditions connected between said constant current node and said reference voltage junction of said voltage divider network for conducting current away from said constant current node upon occurrence of a severe overload condition between said output and common terminals, said last-named means including an overload-protection transistor, the potential of the base electrode of said overload-protection transistor being determined by a second voltage-reference diode, said second voltage-reference diode being coupled between said base electrode and said common terminal.

3,201,607

ELECTRONIC SWITCHING CIRCUIT

John G. Richer, Colton, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 26, 1962, Ser. No. 247,422
4 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An electronic switching circuit for gating signals of short duration with gating signals of any time duration and which operates in both normally transmitting and normally nontransmitting modes, comprising:

(a) first and second separate pulse transformers, the primary winding of each of said separate pulse transformers having one and connected to ground,

(b) a damping resistor connected across the primary winding of said second pulse transformer.

(c) a diode bridge-rectifier network having a pair of input and a pair of output terminals,

(d) the secondary windings of said transformers being connected together in series adding and across the input terminals of said diode bridge-rectifier network,

(e) a pair of terminals to which a source of bias E.M.F. is applied connected between one of said pair of diode bridge output terminals and ground,

(f) a pair of terminals to which a source of gate E.M.F. is applied connected between the other of said pair of diode bridge output terminals and ground, said gate E.M.F. being a signal of any width, and being any one of a sine wave signal and a D.C. signal of either polarity,

(g) the signal input being applied across the primary winding of said first pulse transformer,

(h) the signal output being taken from across the primary winding of said second pulse transformer,

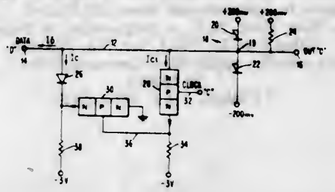
wherein said switching circuit will handle both positive and negative signal polarities and require only mono polarity bias E.M.F. and gate E.M.F.

3,201,608

FEEDBACK CONDITIONED COINCIDENT PULSE RESPONSIVE BISTABLE CIRCUITS

David H. Chung and Philip M. Marino, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 28, 1962, Ser. No. 247,971
8 Claims. (Cl. 307—88.5)



1. In a trigger circuit, the combination comprising:

a bistable device adapted to provide a high voltage state in response to a first input and a low voltage state in response to a second input;

an input circuit coupled to said bistable circuit and adapted to accommodate first and second data signal levels;

a clock circuit coupled to said bistable circuit and adapted to provide timed signals;

a control circuit coupled to said clock circuit and input circuit and operatively responsive to the voltage state of said bistable device, said control circuit conditioned by a low voltage output from said bistable device to be operative, upon the simultaneous application of said first data signal level at said input circuit and a timed signal from said clock circuit to produce a first output to cause said bistable device to assume its high voltage state, said control circuit further operative when conditioned by said high voltage state from said bistable device, to respond to a timed signal from said clock circuit to produce a second output whereby said bistable device assumes its low voltage state.

3,201,609

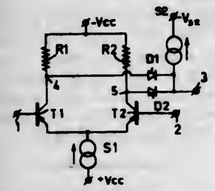
EXCLUSIVE-OR CIRCUIT UTILIZING CONSTANT CURRENT TO THE EMITTERS OF MULTIPLE TRANSISTORS

Raymond William Clarke, Smallfield, Horley, and David Kensingham, Walmate, Marlborough, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 31, 1962, Ser. No. 248,588
Claims priority, application Great Britain, Jan. 5, 1962, 534/62
6 Claims. (Cl. 307—88.5)

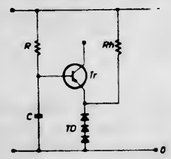
1. A logical circuit comprising: a pair of transistors each having base, emitter and collector electrodes, means for coupling said emitter electrodes, a pair of signal input terminals each connected to one of said base electrodes, means for supplying a constant current to both emitter electrodes, a logic output terminal, a pair of asymmetri-

cally conductive paths each connecting one collector electrode to said output terminal, and means for supplying



to said output terminal a constant current in a direction corresponding to the forward direction of conduction of said asymmetrically conductive paths.

3,201,610
BASIC CIRCUIT COMPRISING A CHAIN OF TUNNEL DIODES
Friedrich Ulrich, Stuttgart-Bad Cannstatt, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 23, 1963, Ser. No. 253,406
Claims priority, application Germany, Feb. 3, 1962, St 18,822
7 Claims. (Cl. 307—88.5)



1. A basic tunnel diode circuit configuration comprising:

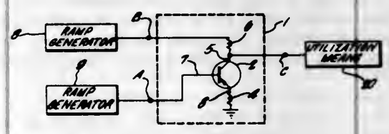
a chain of series connected tunnel diodes having different peak and valley current characteristics, a source of bias current coupled to said chain, said bias current having an amplitude intermediate the smallest peak current amplitude and the greatest valley current amplitude associated with the tunnel diodes of said chain,

switching means coupled to said chain for selectively adding pulses of additional current to the bias current flowing from said source into said chain, the sum of the amplitudes of said additional and bias currents exceeding the largest peak current amplitude associated with the tunnel diodes of said chain, and

control means coupled to said switching means and to said chain of tunnel diodes for rendering said switching means ineffective immediately after one tunnel diode changes its operating point, said control means rendering said switching means ineffective for a predetermined time duration so that only one tunnel diode can change its operating point in response to each input pulse.

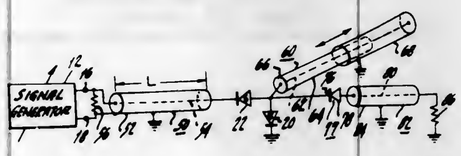
3,201,611
STAIRCASE-WAVEFORM GENERATOR EMPLOYING TWO CONTROLLABLE RAMP SIGNAL GENERATORS COMBINED AT THE OUTPUT
Thomas Mollinga, Sierra Madre, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 18, 1963, Ser. No. 259,329
9 Claims. (Cl. 307—88.5)

1. In combination, a first ramp generator comprising a constant current source, a timing circuit responsive to the constant current source, a buffer amplifier for isolating the timing circuit from an output circuit, a switch connected to the output of the buffer amplifier, the switch being responsive through the buffer amplifier to the voltage level at the output of the timing circuit, a low impedance path, and means for connecting the timing circuit to the low impedance path through the switch; a second ramp generator comprising a constant current source, a timing circuit responsive to the constant current source, a buffer



amplifier for isolating the timing circuit from an output circuit, a switch connected to the output of the buffer amplifier, the switch being responsive through the buffer amplifier to the voltage level at the output of the timing circuit, a low impedance path, and means for connecting the timing circuit to the low impedance path through the switch; and means responsive to the outputs from the first and the second generators for combining the outputs to produce a signal having a staircase waveform.

3,201,612
STORAGE-DIODE PULSE GENERATOR EMPLOYING TUNING TRANSMISSION LINE FOR ALTERING SHAPE OF OUTPUT PULSES
Juan J. Amodei, Levittown, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 26, 1963, Ser. No. 268,196
9 Claims. (Cl. 307—88.5)



1. A pulse generator for generating high frequency output pulses comprising in combination,

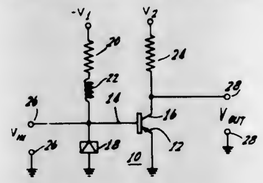
an alternating signal generator,

a storage diode, means including a transmission line for coupling said storage diode across said signal generator to generate pulses from said alternating signals, and

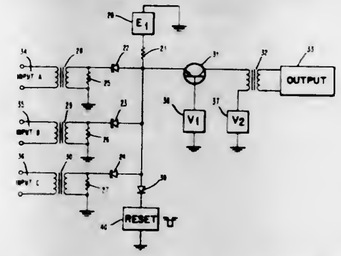
means including a tuning transmission line coupled across said storage diode to receive and reflect said generated pulses back to said storage diode to control the waveshape of said output pulses.

3,201,613
ELECTRICAL CIRCUIT
Juan J. Amodei, Levittown, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 8, 1961, Ser. No. 94,366
12 Claims. (Cl. 307—88.5)

1. In combination, a transistor; means for applying an operating voltage to the transistor; and means connected to the base of the transistor and responsive to an input pulse of relatively low amplitude for first applying to the base of the transistor a signal of substantially larger amplitude than said input pulse and of sufficient magnitude to produce relatively heavy conduction through the transistor, then, still during the input pulse interval, reducing the amplitude of said signal applied to the base of the transistor to a substantially lower value but still sufficient to support substantial conduction of current through the transistor, and, when the input pulse terminates, sharply reducing the amplitude of the signal applied to said base of said transistor to a value well beneath that required to support conduction through the transistor.

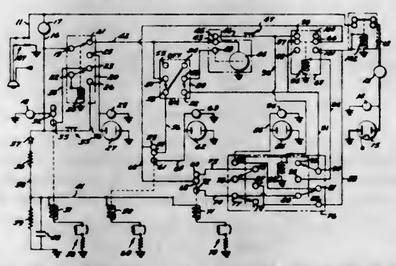


3,201,614
LOGIC CIRCUIT
Jack Saul Cubert, Willow Grove, Pa., and Francine Joy Weintraub, Somerdale, N.J., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 27, 1962, Ser. No. 219,555
8 Claims. (Cl. 307—88.5)



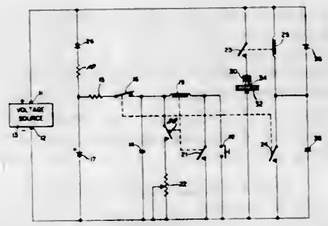
1. A logic circuit comprising, a plurality of tunnel diodes, a plurality of input means, one electrode of each of said tunnel diodes connected to a different one of said input means respectively, a transistor, another electrode of all of said tunnel diodes connected to a first electrode of said transistor, a potential source connected to a second electrode of said transistor, and output means connected to a third electrode of said transistor.

3,201,615
REACTION CONTROL DEVICE
William G. Jackson, North Muskegon, Mich., assignor to Burdick and Jackson Laboratories, Inc., Muskegon, Mich., a corporation of Michigan
Filed May 27, 1960, Ser. No. 32,342
3 Claims. (Cl. 307—116)



1. A monitoring and regulating device comprising: a plurality of sensing leads; a circuit connected to each of said leads through relay connections; a power outlet serving selectively as an audible signal, visual signal or work outlet energized and deenergized by each of said circuits in accord with the opening or closing of said leads; and a timer circuit providing selected interval on or off control over said circuits and superimposed on at least one of said circuits to override set conditions in one of said sensing leads thereby inverting the control function of said one of said sensing leads.

3,201,616
TIMING AND CONTROL CIRCUIT FOR WELDING APPARATUS
Grover K. Houpt, Lansdale, Pa., assignor to Automatic Timing & Controls Inc., King of Prussia, Pa., a corporation of Pennsylvania
Filed June 26, 1961, Ser. No. 119,651
4 Claims. (Cl. 307—141)



4. A control circuit comprising:

(a) a source of substantially fixed uni-directional voltage,

(b) a first switching means which is nomally closed,

(c) a capacitor normally coupled to said source via said first switching means,

(d) inductive means having a first terminal thereof coupled to said capacitor,

(e) second switch means in series with said capacitor and said inductive means and being constructed normally to be open,

(f) resistance means having a first terminal coupled to said capacitor,

(g) third switching means which is normally open and is coupled to a second terminal of said resistance means and to said first terminal of said inductive means,

(h) fourth switching means which is normally open, said first, second, third and fourth switching means being responsive to the passage of current through said first inductive means,

(i) a second inductive means in series with said fourth switching means, said series circuit being in parallel with said source,

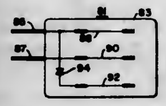
(j) a fifth switching means is normally open and adapted to be closed in response to the passage of current through said second inductive means and

(k) a utilization circuit in series with said fifth switching means, the series combination being parallel with said voltage source.

3,201,617
CONNECTOR INCLUDING A RECTIFIER FOR VOLTAGE REDUCTION
Valentine W. Pacoroni, Bridgeport, and Auguste E. Smith, Southport, Conn., assignors, by mesne assignments, to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 20, 1962, Ser. No. 189,089
2 Claims. (Cl. 307—146)

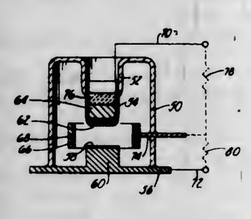
2. A connector comprising an insulative hollow housing, a pair of conductive members located in the cavity of said housing and extending outwardly of said housing

for connection to a power source, another pair of conductive members located in said cavity for connection to a load device, an additional conductive member located in said cavity for connection to a load device, and one of said other pair of conductive members and said additional conductive member being substantially equally spaced from the other of said other pair of conductive members to provide for receipt of a plug either in engagement with said other pair of conductive members or



in engagement with said other member and said additional member, a rectifier located in said cavity and serially connected from one member of the first mentioned pair of conductive members to said additional conductive member, the conductive members of the first mentioned pair being respectively electrically continuous with the conductive members of the last-mentioned pair, and means for supporting said conductive members relative to said housing.

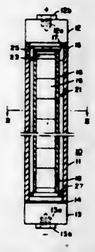
3,201,618
THERMIONIC CONVERTER
John H. Coleman, Palm Beach, Fla., assignor to Radiation Research Corporation, a corporation of Florida
Filed Mar. 10, 1959, Ser. No. 798,552
3 Claims. (Cl. 310—4)



1. A thermionic electric generator having an electron emissive cathode for emitting electrons in response to the application of heat, an anode for collecting electrons emitted by said cathode, a substantially gas-free space between said cathode and said anode, a thermionic ion source heated by heat derived from said cathode for supplying neutralizing ions to said space, a heat conducting body between said cathode and said ion source for establishing a temperature gradient therebetween, and electrical connections for connecting said anode and said cathode to a useful load.

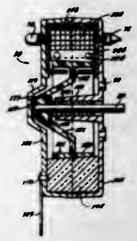
3,201,619
NUCLEAR THERMIONIC CONVERTER
Charles H. Gleason and Gene R. Feaster, Horseheads, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 7, 1960, Ser. No. 34,410
6 Claims. (Cl. 310—4)

1. A fuel element-converter, adapted for use in a nuclear reactor, said converter comprising a generally tubular anodic envelope, a cathodic cladding tube spaced inwardly of said envelope and capable of electron emission, means for sealing the ends of said envelope and said tube respectively, means for electrically insulating said envelope from said tube a mass of fissile material contained within said tube, means for making electrical contact to said tube and to said envelope and an ionizable material contained in the space between said tube and



said envelope, said material being capable of ionization by the gamma radiation normally associated with said reactor.

3,201,620
TRIBOELECTRIC GENERATOR FOR IONIZING AIR
Earle W. Ballentine, 27 Packet Road, Portuguese Bend, Calif.
Filed Dec. 21, 1959, Ser. No. 860,912
10 Claims. (Cl. 310—7)



1. A triboelectric generator for generating ion particles, including, a rotatable member made of plastic, a resilient member made of a fibrous mesh of insulating material of a type providing for a triboelectric potential upon contact with the plastic forming said rotatable member, a layer of conductive material covering at least a portion of the fibers forming the fibrous mesh of said resilient member for removing any charges developed on the fibrous mesh due to its contact with said rotatable member, means coupled to said rotatable member for continuously rotating said rotatable member to successively contact said resilient member with different portions of said rotatable member to develop charges of opposite polarity on said members, and a hollow electrode enclosing a portion of said rotatable member and through which the successive portions of said rotatable member are passed as said rotatable member rotates for developing a cumulative charge having the same polarity as the charge developed on said rotatable member.

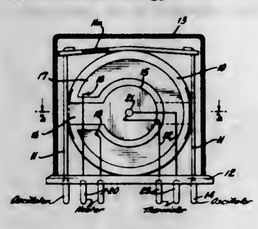
3,201,621
THERMALLY STABILIZED CRYSTAL UNITS
Consuelo Stokes Milner, Hollis, N.Y., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 18, 1963, Ser. No. 266,109
13 Claims. (Cl. 310—8.9)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A rapid temperature stabilized piezoelectric structure including a crystal mounted on a support structure, said crystal having oppositely partially electroded active

faces, the electroded portions of said faces being generally circular and centrally disposed which comprises:

(a) a generally horseshoe-shaped heating electrode disposed in intimate contact with one of said faces, coaxial with and spaced from said electroded portions,

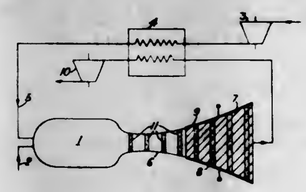
(b) a source of electrical energy,



(c) a temperature sensitive resistance supported proximate said crystal for sensing the temperature of said crystal,

(d) electrical means operatively connecting said resistance, the ends of said heating electrode and said source whereby said resistance will vary the heating energy supplied to said heating electrode in accordance with the temperature of said crystal.

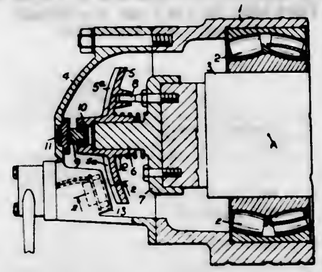
3,201,622
GENERATION OF ELECTRICITY
Meredith Wooldridge Thring, Sheffield, England, assignor to National Research Development Corporation, London, England
Filed Feb. 29, 1960, Ser. No. 11,657
Claims priority, application Great Britain, Mar. 3, 1959, 7,425/59
15 Claims. (Cl. 310—11)



6. Apparatus for generating electricity comprising means for producing a heated gas and for passing it in a continuous stream at high velocity through a magnetic field, and means for creating in said stream a succession of thin layers of superheated gas, said layers extending normal to the direction of flow of said stream.

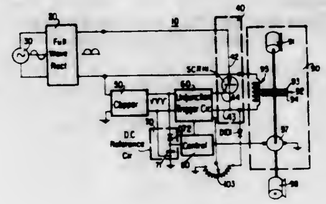
3,201,623
ALTERNATING CURRENT GENERATORS
Maurice James Allport, Pedmore, Stourbridge, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed July 17, 1962, Ser. No. 210,497
4 Claims. (Cl. 310—75)

1. An alternating current generator comprising in combination, a casing, a toothed rotor in the casing, an axle, means mounting said rotor on said axle, so as to prevent relative rotation while permitting relative axial movement, a relatively fixed stop in the casing, a spring urging the rotor away from the axle into contact with said relatively fixed stop, a relatively fixed pick up unit having teeth presented to the teeth of the rotor, said rotor being in the form of a crown wheel having radial teeth on its face remote from the axle, said radial teeth having crests which have an arc of curvature in a radial direction struck from a point on the axle lying on the axis of the adjacent supporting bearing of the axle whereby the gap between the



teeth of the rotor and the teeth of the pick up will be maintained substantially constant irrespective of the angle of the axis of the axle.

3,201,624
TRANSISTORIZED REGULATOR
Alan W. Wilkerson, Racine, Wis., assignor to The Louis Allis Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 2, 1962, Ser. No. 235,086
7 Claims. (Cl. 310—95)



1. In a regulating circuit for controlling the amount of power supplied to a load device furnishing output power, the combination of:

a power supply furnishing cyclically fluctuating direct current voltage;

a load device;

a gated diode;

a load circuit including said load device and supplied with power from said power supply through said gated diode in accordance with the gating thereof during each cycle;

limiter means connected to the power supply for producing a limited amplitude cyclical direct current voltage of the same duration as the cyclically fluctuating direct current voltage;

a firing circuit energized from the output of said limiter means for providing a gating signal to said diode during each cycle at the instant determined by the magnitude of a control signal furnished thereto;

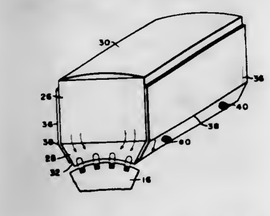
means for providing a constant non-fluctating direct current voltage from the output of said limiter means; and

control means energized by said direct current voltage to furnish a control signal to said firing circuit.

3,201,625
DYNAMOELECTRIC MACHINES

James E. Smith, Tonawanda, and Peter J. Sweeny, Bowmansville, N.Y., and Richard M. Miller, Little Silver, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 30, 1961, Ser. No. 99,602
6 Claims. (Cl. 310—154)

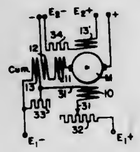


1. A dynamoelectric machine having a rotatable armature and a stationary field structure, the field structure having a plurality of salient pole members thereon, each of said pole members including a permanent magnet portion and a pole tip portion adjacent the armature, the longitudinal sides of said pole tip portion tapering inward toward the armature so that the width of the pole tip portion circumferentially of the armature is less than the width of the permanent magnet portion.

3,201,626
DIFFERENTIAL BIAS AUXILIARY COMMUTATING FIELD

Daniel M. Calabrese, Pitcairn, and Maurice J. Pasculle, Wilkinsburg, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 29, 1962, Ser. No. 169,321
6 Claims. (Cl. 310—186)



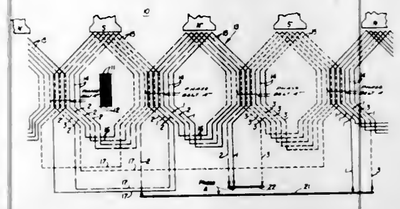
1. A variable speed direct current motor including an armature, a shunt type field winding, a shunt field excitation circuit including means for varying the excitation of said shunt type field winding over a considerable range, a series compensating winding, a series commutating winding, a first auxiliary commutating winding, means for energizing the auxiliary commutating winding from the excitation circuit of the shunt type field winding, and a second auxiliary commutating winding, said second auxiliary commutating winding being wound differential to the first auxiliary commutating winding.

3,201,627
POLYPHASE GENERATORS

Dean B. Harrington, Saratoga, N.Y., assignor to General Electric Company, a corporation of New York

Filed Oct. 6, 1960, Ser. No. 61,008
18 Claims. (Cl. 310—198)

18. A dynamoelectric machine comprising a polyphase winding and a multi-slot core therefor, each phase of said winding including three parallel connected circuits arranged in a plurality of series connected sections respectively disposed in a number of four phase belts, each circuit in each phase of said winding including eight series connected coils each having two coil sides and arranged in corresponding ones of the slots in said core, in each phase of said winding each phase belt including six of the coils thereof, the coil sides of said winding being arranged in a predetermined pattern, wherein, in each phase of said winding, the adjacent coil sides in a first phase belt are disposed in the sequence: 311121, and the

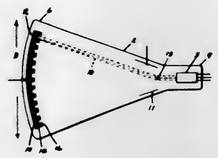


adjacent coil sides in a second phase belt are disposed in the sequence: 212131, and the adjacent coil sides in a third phase belt are disposed in the sequence: 232232, and the adjacent coil sides in a fourth phase belt are disposed in the sequence: 133323; where the numerals "1," "2" and "3" respectively indicate the coil sides of the respective ones of the three parallel connected circuits in the phase.

3,201,628
TARGET ELECTRODE FOR BARRIER GRID STORAGE TUBE

Cyril L. Day, Huntington, Ind., assignor to International Telephone and Telegraph Corporation

Original application June 28, 1957, Ser. No. 668,671, now Patent No. 3,020,622, dated Feb. 13, 1962. Divided and this application Apr. 24, 1961, Ser. No. 104,959
1 Claim. (Cl. 313—68)

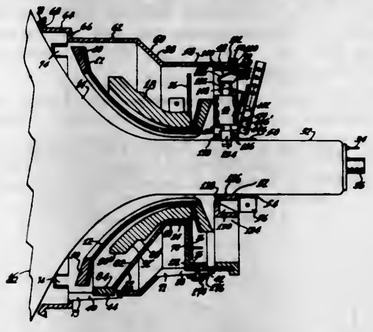


A barrier grid storage tube comprising: an envelope, an electron gun at one end arranged to produce an electron beam; deflecting elements for deflecting said beam; a faceplate at one end; and an imperforate spherical target electrode spaced from said deflecting elements and adjacent said faceplate and arranged to be scanned by said beam, said target electrode having the locus of its radius of curvature located approximately at the center of deflection of said beam, said target electrode comprising a relatively thin spherical metal backing plate formed of a material maintaining a relatively stable curvature under different temperature conditions and having a smoothly ground inner surface, a relatively thin layer of secondary electron emissive dielectric material on the inner surface of said backing plate; and a relatively thin fine wire mesh spherical metal electrostatic barrier grid in contact with the side of said dielectric layer remote from said backing plate and adapted to control the passage of electrons into and from said dielectric material.

3,201,629
MOUNT FOR DEFLECTION YOKE AND CONVERGENCE EXCITER

John M. Ammermann, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed Sept. 20, 1962, Ser. No. 224,922
7 Claims. (Cl. 313—77)

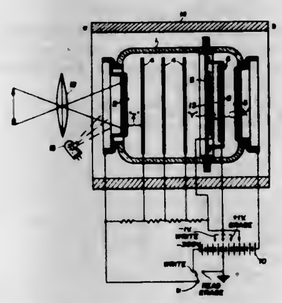


1. An adjustable holder for a deflection yoke for a picture tube comprising:
a housing,
a yoke mount,
a support for the rear of said housing,
said housing having a forward end shaped to conform with the bell of a picture tube,
said yoke mount being formed to support a deflection yoke including horizontal and vertical deflection coils and the magnetic core thereof,
said yoke mount extending for not more than 180° circumferentially,
said yoke amount being formed to fit slidably within said housing, and
said rear support comprising means to hold said housing concentrically with the neck of said picture tube.

3,201,630
CHARGE STORAGE SHEET WITH TAPERED APERTURES

Richard K. Orthuber and Charles V. Stanley, Fort Wayne, Ind., assignors to International Telephone and Telegraph Corporation

Filed Mar. 30, 1955, Ser. No. 497,846
4 Claims. (Cl. 313—95)



1. For use in an electron discharge image tube, a storage screen comprising a sheet-like member of insulating material having flat parallel faces, a plurality of apertures through said member, said apertures being tapered inwardly from one face of said member to the other, the degree of aperture taper being sufficient to prevent flood electrons from impinging upon the aperture walls, and a coating of conductive material on said one face.

3,201,631
SHORT FOCUS LENS AT FOCAL POINT OF LONG FOCUS LENS

Alfred J. Gale and John C. Nygard, Lexington, Mass., assignors to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts

Filed Jan. 2, 1959, Ser. No. 784,573
2 Claims. (Cl. 313—84)



1. Apparatus for obtaining a fine focal spot comprising an alternating gradient magnetic focusing system of relatively long focal length and of relatively small angular aperture, and in combination therewith an alternating gradient focusing system of relatively short focal length and of larger angular aperture, said second focusing system being placed in the neighborhood of the focal point of said first focusing system, wherein the term "the focal point of the first focusing system" means that point at which the spot size in the plane of the second focusing system varies symmetrically about a minimum for the maximum useful energy range.

3,201,632
ELECTROLUMINESCENT ELEMENT EMPLOYING A CHROME IRON BASE PLATE WITH MATCHING GLASS ENAMELS

Hendrik Jacobus Maria Joormann, Gesinus Diemer, Hendrik Anne Klasens, and Willem Westerveld, all of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 1, 1961, Ser. No. 86,534
Claims priority, application Netherlands, Feb. 4, 1960, 248,089
14 Claims. (Cl. 313—108)



1. An electroluminescent element comprising a metal carrier and a glass enamel layer in which the electroluminescent material is embedded and which is covered with a conductive layer on each side, the conductive layer on the side remote from the carrier being permeable to the radiation emitted by the electroluminescent layer upon applying a voltage between the two conductive layers, characterized in that the metal carrier consists of chromeiron.

3,201,633
ELECTROLUMINESCENT CAPACITOR

Albert Lieb, Stuttgart-Bad Cannstatt, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 29, 1962, Ser. No. 240,805
Claims priority, application Germany, Dec. 2, 1961, St 18,634
13 Claims. (Cl. 313—108)

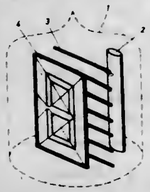
1. An electroluminescent capacitor to indicate symbols comprising a pair of equidistant electrically conductive layers, one of said conductive layers being transparent,

first and second dielectric layers arranged between said conductive layers, said second dielectric layer being in the form of said symbols and having a dielectric constant



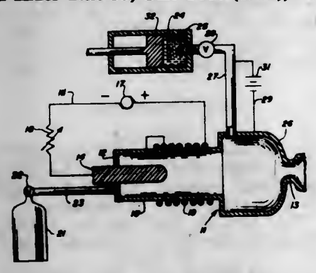
higher than that of said first dielectric layer, and electroluminescent material included in one of said dielectric layers.

3,201,634
ELECTRON TUBE FOR INDICATING SYMBOLS, LETTERS, NUMERALS, AND THE LIKE
Joachim Weidel, Am Feuchter Brucklein, and Werner Bauer, Bonn-Duisdorf, Finkenhof, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 11, 1962, Ser. No. 201,347
Claims priority, application Germany, June 16, 1961, St 17,961
5 Claims. (Cl. 313—109.5)



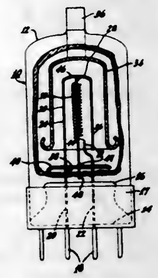
1. An electron tube display device comprising a space-charge producing cathode, a plurality of anodes presenting separate adjacent segments disposed in an area in substantially a common plane, each anode including a conductive layer having predetermined portions coated with a fluorescent substance in the form of a symbol portion, means applying voltage to selected anodes, and a grid disposed between the cathode and anodes, said grid forming the space-charge to correspond to the size of said area of said anodes and permitting emission to only said selected anodes causing said fluorescent portions thereof to glow and together form a complete symbol.

3,201,635
METHOD AND APPARATUS FOR PRODUCING A PLASMA
Arlen F. Carter, Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Mar. 7, 1962, Ser. No. 178,215
3 Claims. (Cl. 313—156)
(Granted under Title 35, U.S. Code (1952), sec. 266)



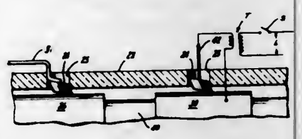
1. An apparatus for producing a highly conductive plasma jet comprising: means for striking and maintaining an electrical arc; means for conveying a fluid to said electrical arc, thereby producing a high temperature, gaseous jet; a reservoir containing a material having a low ionization potential; a settling chamber positioned adjacent said first named means and having an inlet for the ingress of the high temperature, gaseous jet and an outlet for the discharge thereof; conduit means communicating said reservoir with said settling chamber; and means to force said ionizing material from said reservoir through said conduit means into said settling chamber to mix with and seed said jet, thereby increasing the conductivity of the jet.

3,201,636
HIGH VOLTAGE ELECTRON DISCHARGE TUBE
William R. Weyant, Nixon, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,452
4 Claims. (Cl. 313—240)



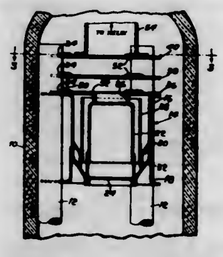
1. An electron discharge tube particularly suitable for use at high voltages comprising a stem, a pair of leads extending through said stem and providing a pair of spaced filament supports within the tube, an elongated coiled filamentary cathode secured to and between said supports, an anode disposed around said cathode, a shield secured to one of said leads and disposed between said anode and said stem, said shield having an opening therethrough, and an insulated damping rod, said rod being secured at one end thereof to one of said supports and extending through said cathode and adjacent to the other of said supports, the other end of said rod extending through said opening in said shield.

3,201,637
CATHODE RAY TUBE GUN ASSEMBLY
John William Snyder, Hatfield, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 24, 1961, Ser. No. 147,270
8 Claims. (Cl. 313—256)



1. In electron gun structure: a tubular electrode; a tubular member of electrically non-conductive material enclosing said electrode and having a common axis therewith; means defining a plurality of apertures extending transversely through said tubular member; and electrode supporting bracket means affixed to said tubular electrode, said bracket means comprising a plurality of rod elements each extending into an associated one of said apertures and each inclined as respects the major axis of its associated aperture and having portions of substantially lesser cross sectional area than said apertures, an end portion of each said inclined rod element being affixed to said electrode and oppositely disposed axially spaced lateral portions thereof disposed in frictional electrode supporting engagement with walls of said apertures.

3,201,638
CAGED ELECTRON GUN
Herbert Louis Levin, Paterson, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Aug. 30, 1962, Ser. No. 220,521
10 Claims. (Cl. 313—256)

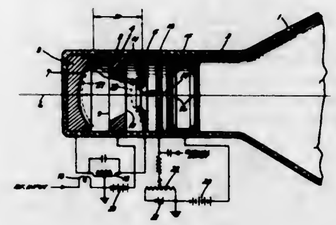


1. An electron beam device comprising:
an envelope;
a plurality of longitudinal insulator rods positioned about the inner surface of said envelope, said rods having a plurality of spaced indentations;
a plurality of transverse beam control electrodes spaced from said envelope surface and having peripheral indentations engaging corresponding indentations in said rods for axial, radial and circumferential alignment;
an electron beam forming cathode positioned coaxial with and adjacent said electrodes; and
a longitudinal cathode support cage surrounding said cathode and forming a unitary structure therewith, said cage comprising a cathode support spaced from said envelope surface and having peripheral indentations at each end engaging said rods for circumferential alignment, said rods and envelope providing radial alignment for said cathode, cathode support and electrodes.

3,201,639
THERMIONIC DISPENSER CATHODE
Roberto Levi, New York, N.Y., assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 487,842, Feb. 9, 1955. This application Feb. 7, 1963, Ser. No. 258,108
17 Claims. (Cl. 313—346)

1. A thermionic dispenser cathode comprising a porous body of refractory metal having at least one surface portion adapted to act as an electron-emissive surface and provided with a large number of small passageways connecting the interior of said body to said surface, and a barium-producing material dispersed within said body and constituted by a fused mixture of barium oxide, at least one oxide selected from the group consisting of aluminum oxide and boron oxide, the mole ratio of barium oxide to said latter oxide being in excess of 1:1, and an emission-enhancing additive constituted by an oxide of an alkaline earth metal other than barium, said additive oxide being present in an amount at which the cathode has an emission at zero field at least twice that of a similarly constituted cathode without said additive oxide.

3,201,640
ELECTRON GUN IN THE FORM OF A MULTIPACTOR
Philo T. Farnsworth, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Mar. 7, 1962, Ser. No. 178,129
7 Claims. (Cl. 315—12)

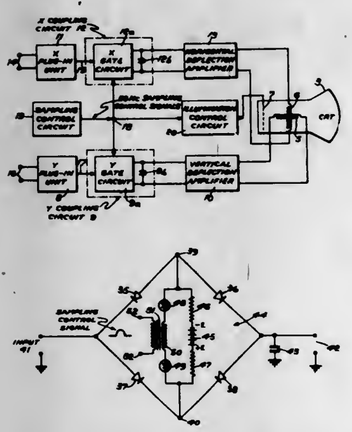


1. In an electron gun comprising an envelope, a pair of spaced-apart electrodes therein, a first of said electrodes being adapted to emit secondary electrons on impact by a primary electron, a second of said electrodes having an aperture through which electrons may flow, means for converging said electrons toward said second electrode in the vicinity of said aperture, said means including a concave surface on said first electrode, an intermediate electrode having a conically shaped opening tapering toward said aperture, an oscillatory circuit connected to said pair of electrodes, means for supplying alternating current to said oscillatory circuit to cause said electrons to oscillate between said pair of electrodes and to make repeated secondary electron-generating impacts with said first electrode and cause a portion of said electrons to penetrate said aperture.

3,201,641
STROBOSCOPIC DISPLAY WITH SAMPLE-AND-HOLD CIRCUIT
Robert L. Thorne, Los Angeles, Calif., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Feb. 27, 1963, Ser. No. 261,307
3 Claims. (Cl. 315—22)

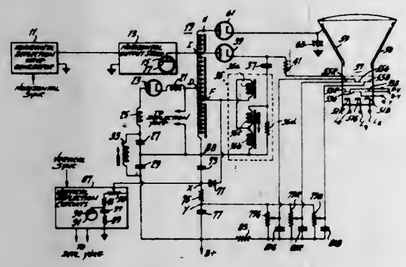
1. In an indicating system, the combination of:
means for producing an indicating spot;
a coupling circuit coupled to said spot producing means;
said coupling circuit comprising:
a normally disabled bridge circuit having first and second pairs of diagonally opposed terminals;
means for applying an input signal to one terminal of said first pair of terminals;
means connected to the other terminal of said first pair for storing a signal;
first means connected between the terminals of said second pair of terminals for applying sampling control signals, having amplitudes in excess of a given amplitude, to said bridge; and
second means connected across the said second pair of terminals for applying a constant bias potential in series aiding with the sampling control signals applied by said first means and in shunt circuit with signals conveyed between said one and said other terminals of said first pair rela-

tive to said first means, for establishing a bias between said second pair of terminals which tends to reduce the said given amplitude above which said control signals are transferred by said first means; and



a source of constant frequency, constant duration, control signals, coupled to said first means of said coupling circuit, and to said spot producing means, for intermittently actuating said bridge circuit to couple signals between said one and said other terminals of said first pair, while coincidentally inhibiting production of said indicating spot.

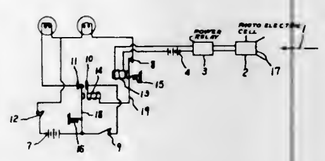
3,201,642
AUGMENTED B-BOOST VOLTAGE SUPPLY
John Stark, Jr., Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 8, 1963, Ser. No. 263,786
4 Claims. (Cl. 315—27)



1. In combination with a cathode ray tube deflection circuit including a source of deflection waves having periodically recurring retrace portions, a deflection wave transformer comprising a winding including an input terminal and an end terminal, said deflection wave source being coupled between said input terminal and a point of reference D.C. potential, and means for connecting a deflection wave utilization means between said end terminal and a first tap on said transformer winding intermediate said input and end terminals thereof;

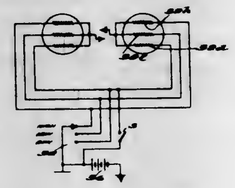
a voltage supply comprising the combination of:
a damper diode having a cathode connected to said first tap and an anode connected to a point of positive D.C. potential relative to said reference D.C. potential;
a first capacitor connected between said damper diode anode and said end terminal, periodic conduction of said damper diode developing a charge across said first capacitor;
an additional diode having anode and cathode electrodes;
means for connecting the anode electrode of said additional diode to a second tap on said transformer winding located intermediate said first tap and said end terminal;
a second capacitor connected between the cathode electrode of said additional diode and said end terminal, periodic conduction of said additional diode developing a charge across said second capacitor of a magnitude not exceeding the magnitude of the charge developed across said first capacitor;
and means for utilizing the junction of said additional diode and said second capacitor as a voltage supply output terminal providing an output D.C. potential equivalent to the sum of said positive D.C. potential, the charge across said first capacitor and the charge across said second capacitor.

3,201,643
ELECTRIC CIRCUIT FOR DIMMING VEHICLE LIGHTS
Jitsuo Hanano, 3 2-chome, Ohike-cho, Suma-ku, Kobe-shi, Hyogoken, Japan
Filed Dec. 16, 1959, Ser. No. 859,899
2 Claims. (Cl. 315—83)



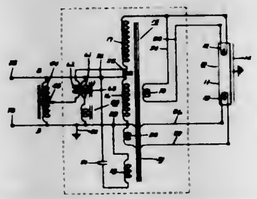
1. An electrical circuit device for use in vehicles and the like, comprising, in combination:
a source of electrical energy;
a high filament and a low filament;
circuit means, including manually actuable switch means, for connecting said filaments with said energy source and including
filament control means including a light sensitive means for controlling said circuit into a condition in which said high filament is disconnected from said source and said low filament is connected to said source when light of a predetermined intensity reaches said light sensitive means and for retaining said circuit in this condition ever after said light sensitive means ceases to detect light of the predetermined intensity, said filament control means comprising first means, including an electromagnet, for holding said high filament connected to said source upon actuation of said manually actuatable switch means until disconnection by said light sensitive means, a two position switch for connecting said low filament with said source in one position and for connecting said high filament with said source when in the other position, and a device for biassing said two position switch toward said one position, said electromagnet being capable of holding the two position switch in said other position by magnetic attraction.

3,201,644
DEVICE FOR AUTOMATICALLY TURNING ON LIGHTS OF AUTOMOTIVE VEHICLES
Henry A. Simpson, Geneva, Fla.
Filed Oct. 17, 1961, Ser. No. 145,715
5 Claims. (Cl. 315—83)



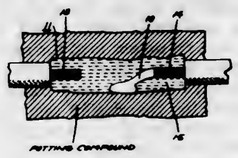
1. In a vehicle having headlights with bright and dim filaments, a source of electricity, and manually operable switch means to connect said bright and dim filaments selectively to said source, a connection from said dim filament to said source in parallel with said switch means, and a vehicle responsive switch in said connection for automatically energizing said dim filament when the vehicle speed exceeds a predetermined value.

3,201,645
DIMMING CIRCUIT AND APPARATUS FOR GASEOUS DISCHARGE LAMPS
Charles E. Strecker, deceased, late of Danville, Ill., by Jeanne E. Strecker, executrix, Marietta, Ohio, assignor to General Electric Company, a corporation of New York
Filed Sept. 2, 1959, Ser. No. 838,019
12 Claims. (Cl. 315—98)



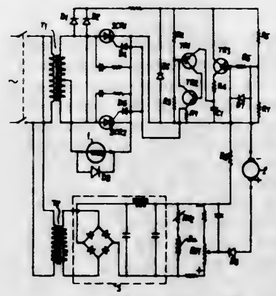
1. A dimming control system for operating a hot cathode fluorescent lamp at various brightness levels from an alternating power supply including a low and a high side, said system comprising first and second input leads connected to said low and high side respectively, a high leakage reactance transformer having a primary connected across said input leads and a high leakage reactance secondary, a linear reactor, a fluorescent lamp, a nonlinear transformer having a primary and a secondary, a pair of transformer output leads, one of said output leads connecting one end of said high leakage reactance secondary with one end of said lamp and the other of said output leads connecting said primary to the other end of said lamp, said linear reactor and said primary of the nonlinear transformer being connected in series across said input leads, and circuit means connecting said secondary of the nonlinear transformer, said high leakage reactance secondary and said lamp in series circuit relationship across said adjustable tap and said first input lead.

3,201,646
BALLAST APPARATUS UTILIZING TEMPERATURE RESPONSIVE FUSE
Walter C. Mansfield, Jr., Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Oct. 3, 1960, Ser. No. 59,867
3 Claims. (Cl. 315—239)



1. A ballast apparatus for operating at least one fluorescent lamp from an alternating current source comprising a high reactance ballast transformer including a magnetic core, a primary winding and a secondary winding mounted on said core, a pair of input leads for connection to said power supply, a pair of output leads for connection to said lamp, said primary winding being connected across said input leads, a fusible link connected in circuit with one of said windings and providing a current conduction path thereto, said fusible link having a predetermined melting temperature range and being activated to a molten state in response to the temperature of the ambient environment of said fusible link, a fuse body having a melting temperature no greater than said predetermined melting range and substantially encasing said fusible link, said fuse body providing a liquid medium when heated to said predetermined temperature range wherein the molten link can freely flow and open the circuit, a ballast case enclosing said transformer, said link and said fuse body, and a thermally conductive potting compound substantially filling said ballast case and surrounding said transformer and fuse body, said thermally conductive potting material supporting said fuse body.

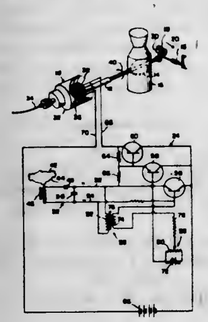
3,201,647
SPEED CONTROL SYSTEM
Edward Horace Albert Prescott, Cambridge, England, assignor to Pye Limited, Cambridge, England, a British company
Filed Nov. 13, 1961, Ser. No. 151,977
Claims priority, application Great Britain, Nov. 18, 1960, 39,706/60
4 Claims. (Cl. 317—5)



1. A speed control system for controlling the output speed of an electromagnetic induction coupling device, comprising a tachometer generator driven from the output shaft of the coupling device and producing a voltage proportional to the speed of said output shaft, a full wave

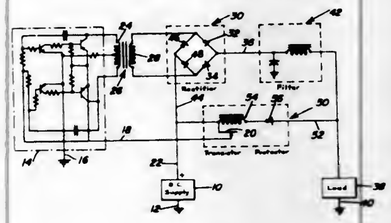
rectifier circuit producing the excitation current fed to the excitation coil of said electromagnetic coupling device and comprising a pair of silicon controlled rectifiers, a pulse generator circuit for producing pulses for controlling the firing angle of the silicon controlled rectifiers, said pulse generator circuit including a capacitor, a first transistor whose conductance is controlled by the charge on said capacitor, a second transistor connected to the first transistor and whose conductance is controlled by the first transistor, an output load for said second transistor across which is developed the firing pulses for the silicon controlled rectifiers, a third transistor whose conductance controls the charging of said capacitor, a feedback resistor controlling the conductance of said third transistor, means for applying the output voltage from the tachometer generator and a reference voltage representing the desired running speed for said coupling in opposition across said feedback resistor, to control the conductance of said third transistor and hence the charging rate of said capacitor which in turn determines the conductance state of said first and second transistors and the duration of the firing pulses produced across the output load of said second transistor, whereby the conductance of said rectifiers controls the excitation current fed to the coupling and hence its speed as a function of the reference voltage.

3,201,648
ELECTRIC GOVERNOR
Fred S. Kerr, Royal Oak, Mich., assignor to Holley Carburetor Company, Van Dyke, Mich., a corporation of Michigan
Filed Dec. 21, 1959, Ser. No. 860,790
6 Claims. (Cl. 317—5)



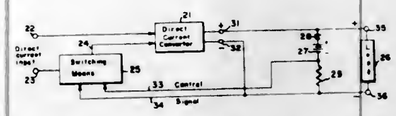
1. An engine speed governor comprising mechanical control means for regulating the speed of an engine to be governed in accordance with the magnitude of an electrical signal applied to the control means, signal developing means for producing an electrical governing signal the magnitude of which is proportional to the speed of the engine to be governed and for applying said developed signal to said control means, bias means connected to said signal developing means for applying bias to the signal developing means to prevent application of the developed signal to the control means before the developed signal has reached a predetermined magnitude and separate means responsive only to the rate of change of the developed signal connected between the signal developing means and the bias means for varying the bias applied to the signal developing means by the bias means to change the predetermined signal magnitude in accordance with the rate of change of the developed signal as it approaches the predetermined signal magnitude.

3,201,649
TRANSISTOR PROTECTION CIRCUIT
Aurelio Ferri, Norwich, Conn., assignor to Alpha Instrument, Inc., New London, Conn., a corporation of Connecticut
Filed Apr. 20, 1960, Ser. No. 23,465
7 Claims. (Cl. 317—18)



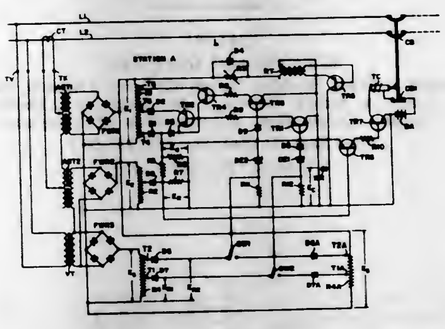
1. In combination with a transistorized voltage converting device having a low, D.C. voltage source, a high A.C. voltage output, a rectifier connecting said output to a load, a protective system for the voltage converting device comprising, means conductively coupling said low D.C. voltage source to said load for developing a unidirectional energizing current in response to an abnormally low impedance of the load, and means responsive to said energizing current in the conductive coupling means for open-circuiting said low voltage source with respect to the voltage converting device, said conductive coupling means including rectifying means connecting the open-circuiting means to the load preventing flow of current from the high voltage output to the open-circuiting means.

3,201,650
SHORT PROTECTOR CIRCUIT
Robert T. Schultz, 1250 N. Tressy Ave., Glendora, Calif.
Filed Mar. 9, 1959, Ser. No. 798,176
12 Claims. (Cl. 317—23)



1. In a direct current power supply having a load connected to first and second terminals thereof, a circuit for protecting said power supply from excess current flow therethrough as a result of an abnormal current demand from said load, said protecting circuit comprising: a zero impedance detecting means connected to said first terminal of said power supply; a source of sensing voltage having a substantially constant magnitude which is less than the magnitude of the voltage supplied by said power supply during normal operating conditions; means connecting said source of sensing voltage to said detecting means, said detecting means being operative in response to normal operation of said power supply to maintain said source of sensing voltage electrically ineffective, said detecting means being operative in response to an abnormal current demand on said power supply to render said source of sensing voltage electrically effective; protection means connected to said second terminal of said power supply; and means connecting said protection means to said source of sensing voltage, said protection means being operative only in response to the electrical effectiveness of said sensing voltage source to remove said abnormal current demand from said power supply thereby to protect said power supply from said abnormal current demand, said protection means further being operative to automatically restore said power supply and load to normal operation in response to said source of sensing potential becoming electrically ineffective.

3,201,651
DISTANCE RELAYING ASSEMBLY
Howard J. Calhoun, Sayreville, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 2, 1962, Ser. No. 206,904
12 Claims. (Cl. 317—36)



12. A protective relaying assembly designed to be energized in accordance with the alternating voltage and alternating line current of an alternating current transmission line for distance discrimination between faults occurring on the line, comprising a circuit breaker for segregating portions of the line, means for deriving a first direct voltage having a magnitude dependent on the magnitude of the alternating line current, means for deriving a second direct voltage having a magnitude dependent on the magnitude of the alternating voltage, means for deriving from said alternating current an alternating potential difference dependent on such current, means for deriving a third direct voltage dependent on a resultant function of said alternating voltage and said alternating potential difference, translating means responsive for operation to said first direct voltage, restraining means for restraining operation of the translating means in dependence on said third direct voltage, a capacitor unit, resistive circuit means for energizing said capacitor unit in accordance with the first direct voltage to develop a capacitor voltage across the capacitor unit, means responsive to an increasing value of said first direct voltage for substantially discharging said capacitor unit, and means responsive to a first difference between the capacitor voltage and the second direct voltage for increasing the ratio of the effect on said translating means of the first direct voltage to the effect on said translating means of the third direct voltage, said translating means comprising tripping means effective in response to operation of the translating means for tripping the circuit breaker, and means responsive to a second difference between the capacitor voltage and the second direct voltage for further increasing said ratio.

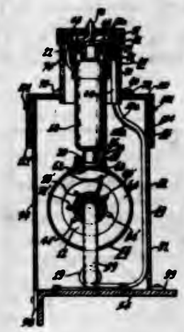
3,201,652
TRANSFORMER-RECTIFIER COMBINATION
Gordon E. Skerup, Collingswood, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 4, 1962, Ser. No. 192,453
5 Claims. (Cl. 317—99)

1. The combination of,
a high voltage transformer and a rectifier device having a plurality of electrodes, said transformer comprising,
a rod of magnetic material,
a coil of annular disk shape surrounding at least a portion of said rod, and having a high potential end at its outer periphery and a low potential end at its inner periphery,
a wired connection to said low potential end of the coil,
and a female electrical connector mounted on the outer periphery of said coil and electrically connected to said high potential end of said coil;



said rectifier device having a male electrical connector integral therewith, mounted on the exterior thereof and connected to one of said plurality of electrodes; said connectors being formed to fit one into the other, and being in direct electrical contact with each other.

3,201,653
SHIELD
Walter M. Nuss, Medford Lakes, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 4, 1962, Ser. No. 192,530
6 Claims. (Cl. 317—99)



1. In a television receiver including (1) a cathode ray tube and (2) a transformer having a high voltage winding, and a high voltage output terminal comprising a female connector mounted on the periphery of said winding and dimensioned to permit electrical contact-establishing reception of a rectifier tube anode cap therein, said receiver further including (3) means, comprising (a) a high voltage rectifier tube having a cathode electrode connected to a pin in the base thereof and an anode electrode connected to a conductive cap at the end of said tube remote from said base, (b) a rectifier tube socket having a sleeve for receiving said cathode base pin, and (c) a high voltage lead connected to said cathode base pin receiving sleeve, for delivering an accelerating voltage to said cathode-ray tube when said transformer is energized

and contact is established between said anode cap and said transformer output terminal, and (4) a shielding arrangement for said transformer;

the improvement wherein said shielding arrangement comprises the combination of:

a first shield member partially enclosing said transformer but having an opening providing access to said transformer;

a second shield member serving as both an adjustable closure for the opening in said first shield member and as a support for said rectifier tube socket, and being dimensioned such that, when said second shield member is in a position substantially fully closing said opening in said first shield member, the anode cap of a rectifier tube mounted in said socket is received in said transformer output terminal in electrical contact-establishing relationship;

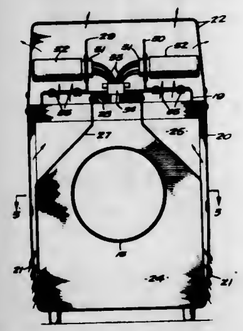
said first and second shield members being provided with mechanically cooperating means for permitting restricted movements of said second shield member relative to said first shield member, said restricted movements including (A) a sliding motion of said second shield member relative to said first shield member permitting adjustment of said closure between said position substantially fully closing said opening and a partially closing position whereat said anode cap is disengaged from said transformer output terminal and electrical contact therebetween is broken, and (B) a rotating motion of said second shield member relative to said first shield member permitting adjustment of said closure between said partially closing position and a substantially fully open position providing access to said transformer and said rectifier tube socket from the exterior of said first shield member.

3,201,654

IMAGE CONVERTER CAMERA

George L. Clark and J Perry Smith, Hawthorne, Calif., assignors, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio

Filed Dec. 26, 1961, Ser. No. 161,794
8 Claims. (Cl. 317—100)



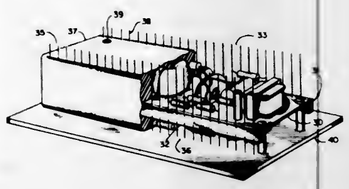
1. An image converter tube sensitive to magnetic field variations and adapted to provide means for observing high speed phenomenon, an interchangeable electronic chassis juxtapositioned vertically above said image converter tube and located thereon for maintaining interconnecting leads as short as possible, said chassis containing a sub-chassis adapted to support a plurality of electron discharge devices in a horizontal plane over said image converter tube, said chassis having openings substantially below said electron discharge tubes for allowing convection cooling currents to pass from under said chassis up to and around said electron discharge devices, a magnetic shielding material surrounding said image converter tube, and a cover having louvers on the lowermost portion and ventilating openings on the uppermost portion thereon, said cover and said magnetic shielding material being in close relationship to define a passageway for circulating convection currents of air from said louvers through said opening in said chassis and out said ventilating openings whereby said electron discharge devices are cooled without utilizing mechanical means.

3,201,655

ELECTRONIC MODULES

Albert J. Bradt, Boulder, Joseph T. Curry, Littleton, and Robert A. Estock, Denver, Colo., assignors to Martin-Marietta Corporation, a corporation of Maryland

Filed Sept. 1, 1961, Ser. No. 135,503
4 Claims. (Cl. 317—101)



1. An electrical circuit module comprising a flat insulating member having a generally rectangular shape, a first and second plurality of substantially parallel conductors mounted on and retained by said insulating member, said first and second pluralities of conductors extending from opposite longitudinal edges of said insulating member and being electrically isolated from each other, electrical components attached to said conductors providing interconnection therebetween, and insulating material encapsulating said member, said conductors and said components, at least one of said conductors extending beyond said insulating material to provide means for connecting to other electrical equipment, whereby an easily replaceable module substantially free from moisture and vibration is provided for an electrical system.

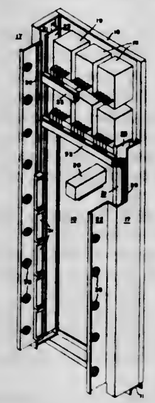
3,201,656

SWITCHBOARD OF A MODULAR CONSTRUCTION

James P. Houck, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 29, 1960, Ser. No. 25,675
8 Claims. (Cl. 317—117)

1. A basic panel assembly for use in any one of a plurality of different types of switchboard structures, said assembly comprising a panel having electrical apparatus thereon with terminals at the rear of the panel and two vertical side members attached to the panel, each side member having one channel-shaped portion opening inwardly toward said terminals to form a first wiring channel and another channel-shaped portion connected to said one channel-shaped portion and opening outwardly away from said terminals to form a second wiring channel, terminal blocks mounted on the second wiring channel, wires extending from said second wiring channel to said terminal blocks and additional wires extending from said terminal blocks into said first wiring channel and thence to said apparatus terminals, said additional wires being preassembled on said panel assembly to electrically connect said terminal blocks and said apparatus terminals.

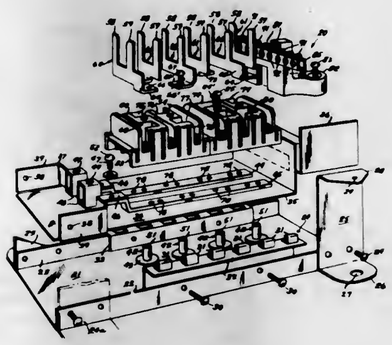


3,201,657

PANELBOARD FOR BOLTED AND PLUG-IN CIRCUIT BREAKER

James F. Meacham, Atlanta, Ga., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 8, 1960, Ser. No. 34,782
5 Claims. (Cl. 317—119)



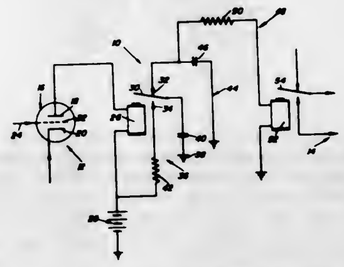
1. A panelboard including a first and a second mounting ledge parallel to each other and spaced apart a distance sufficient to permit mounting of two bolted circuit breakers in end to end relationship with each of these circuit breakers having a line terminal which projects beyond an end of the circuit breaker housing, a plurality of spaced elongated bus bars positioned between said ledges and extending generally parallel thereto, an insulating block having grooves in a back surface thereof through which said bus bars extend, a plurality of straps having rigid portions extending into recesses of said block in a front surface thereof, first means engaging said rigid portions and electrically connecting each of said straps to one of said bus bars, each of said straps also having another portion constructed to have two circuit breakers electrically connected thereto, said recesses operatively positioned and constructed to receive straps having threaded apertures for connection of bolted circuit breakers as well as straps having blades constructed and positioned to receive plug-in circuit breakers having housing lengths equal to the housing lengths of the previously recited bolted circuit breakers, each of said straps having threaded apertures being so constructed that the replacement thereof by straps having blades does not require the repositioning of said mounting ledges in order to mount plug-in circuit breakers.

3,201,658

CONTROL RELAY CIRCUIT

Willard S. Reynolds, Hollywood, Fla., assignor to Telectron Company, Division of Elliott & Evans, Inc., Fort Lauderdale, Fla., a corporation of Ohio

Filed Mar. 9, 1962, Ser. No. 178,773
3 Claims. (Cl. 317—151)



1. In combination with an output circuit of a current control device rendered conductive by an input signal, a source of potential for said output circuit, an external control circuit, and a relay system for closing said external control circuit in response to input signals to the current control device, said relay system comprising, a signal relay coil in said output circuit energized when said current control device is rendered conductive, relay switch means actuated from a discharge position to a charged position upon energization of said relay coil, a grounded charge transferring capacitor connected to said relay switch means, a voltage dropping resistor connected between said source of potential and the relay switch means in the charge position to limit charging of the charge transferring capacitor, a grounded storage capacitor connected to the relay switch means in the discharge position thereof for accumulating charges from the charge transferring capacitor, grounded relay circuit means operatively connected by a current limiting resistor to the storage capacitor, and control relay means operatively connecting said relay circuit means to the external control circuit for closing thereof.

3,201,659

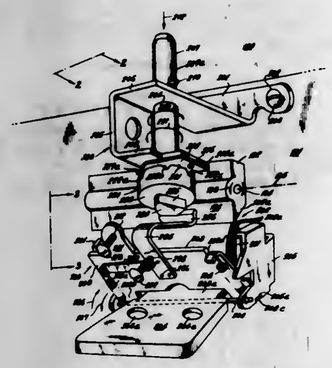
ARMATURE ADJUSTING STRUCTURE

Wilson W. Poulton, Jr., deceased, late of Broomall, Pa., by Mary K. Poulton, executrix, Broomall, Pa., and Albert Strobel, Cherry Hill, N.J., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

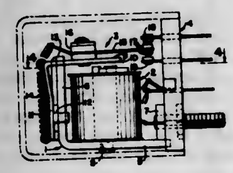
Filed Nov. 20, 1962, Ser. No. 239,096
5 Claims. (Cl. 317—176)

1. Manually operable armature positioning means for adjusting the air gap of a circuit breaker magnetic trip assembly comprising bracket means for mounting said adjusting means to a circuit breaker; an adjusting rod, said bracket means receiving therein said adjusting rod to enable rotation of said rod about its central axis; first means

secured to said rod for abutting said bracket means; second means secured to said bracket means for abutting said adjusting rod; said first and second means preventing said adjusting rod from any linear movement along its central axis; one end of said adjusting rod having a cam surface; a first member having an extending arm; said member positioned for securement to the magnetic trip armature; said extending arm positioned to slidably engage said cam surface; said adjusting rod constructed to move said first member substantially in a linear direction due to the rotation of said adjusting rod for positioning the magnetic trip assembly armature.

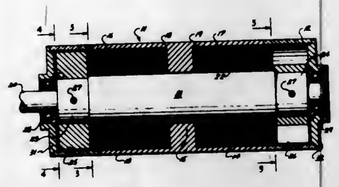


3,201,660
ELECTROMAGNETIC RELAY WITH SHADING RING
Roy B. Stewart, Jr., Princeton, Ind., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Jan. 18, 1963, Ser. No. 252,444
6 Claims. (Cl. 317—184)



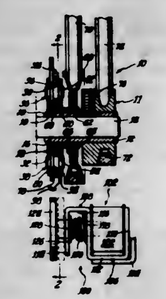
1. In an electromagnetic relay of the type described, the combination of
a magnetic frame having a flat base portion having a rectangular opening;
an electromagnet comprising a core, a bobbin through which said core extends, and a coil wound on said bobbin,
said core comprising a plurality of thin flat laminations each having a rectangular main body portion and an end portion projecting through said opening in said base,
said bobbin comprising a tubular body having a bore of rectangular cross section larger than said opening in the base portion of said frame, and a pair of flat parallel annular end flanges, one of said end flanges being adjacent said base portion of said frame,
said laminations extending through said bobbin body and the other end portions of said laminations projecting beyond the other end flange of said bobbin,
said core being embraced by said bobbin body and completely filling the bore thereof,
said other end portions of said laminations each having a notch opening endwise of the core, said notches being aligned to provide a groove extending transversely across the end of said core opposite said base portion of said frame; and
a flat shading ring overlying said other end flange of said bobbin,
said shading ring having a portion extending through said groove;
said first-mentioned end portions of said laminations being deformed into fixed engagement with said base portion of said frame member,
said portion of said shading ring extending through said groove being deformed into fixed clamping engagement with said other end portions of said laminations,
said bobbin being clamped in compression between said shading ring and said base portion of said frame,
said main body portions of said laminations each extending from said shading ring to said base portion of said frame in continuous unbroken fashion.

3,201,661
ROTARY SOLENOID HAVING A RECTANGULAR STATOR MEMBER
Rodrick J. Koutnik, Vista, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Jan. 11, 1963, Ser. No. 250,872
5 Claims. (Cl. 317—189)



3. An electromagnetic actuator comprising an elongate stator of magnetic material, said stator having a substantially square cross section, a longitudinally extending cylindrical bore in said stator, a shaft of magnetic material rotatably mounted in said stator concentrically of said bore, an armture of magnetic material on said shaft, said armature extending within said bore and adjacent one end of said stator, a coil in said bore intermediate said armature and the opposite end of said stator, two diametrically opposite corners of said stator adjacent said armature being removed whereby to form two diametrically opposite magnetic pole pieces adjacent said armature in the remaining two corners of said stator, said pole pieces cooperating with said armature whereby magnetic flux induced in said stator, said shaft and said armature by said coil will tend to rotate said armature from a position generally out of alignment with said pole pieces to a position generally in alignment with said pole pieces, the corners of each said pole piece and said armature which are adjacent each other when said armature is in said first mentioned position, diverging from each other at approximately 45 degrees.

3,201,662
SOLENOID CLUTCH CONTROL HAVING AN S-SHAPED SUPPORT MEMBER
Roy C. Bowers, Bellwood, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application Mar. 11, 1959, Ser. No. 798,660, now Patent No. 3,080,027, dated Mar. 5, 1963. Divided and this application June 28, 1961, Ser. No. 120,414
1 Claim. (Cl. 317—191)



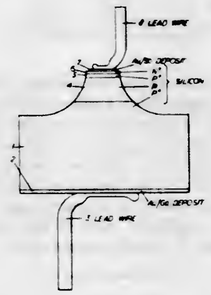
Control means comprising:
a substantially S-shaped bracket being formed of first, second and third portions,
a solenoid coil mounted between said first and third portions,
a plunger projecting through said second and third portions,
plunger retaining means mounted on said plunger and adapted to be positioned substantially against said second portion,
biasing means between said retaining means and said third portion for urging said plunger to a first position when said solenoid is not energized, and
means on said second portion for positioning said plunger in a second position when said solenoid is energized.

3,201,663
MAGNETIZING METHOD
James W. Milligan, West Lafayette, Ind., assignor to Duncan Electric Company, Inc., Lafayette, Ind., a corporation of Indiana
Original application Oct. 16, 1958, Ser. No. 767,560, now Patent No. 3,114,582, dated Dec. 17, 1963. Divided and this application Sept. 27, 1963, Ser. No. 318,468
6 Claims. (Cl. 317—201)



6. The method of magnetizing a permanent magnet to produce sharp contrast between a pole face thereof and an adjacent surface, comprising applying close to the permanent magnet a magnetizer having a coil and constructed to cause flux to pass through the magnet and said pole face, passing a current through said coil, and contemporaneously inhibiting passage of flux through the surface of the permanent magnet adjacent to its pole face on the side thereof in the direction of intended displacement of an opposing pole face.

3,201,664
SEMICONDUCTOR DIODE HAVING MULTIPLE REGIONS OF DIFFERENT CONDUCTIVITIES
Fritz Gunter Adam, Aldwych, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 5, 1962, Ser. No. 177,427
Claims priority, application Great Britain, Mar. 6, 1961, 8,084/61
6 Claims. (Cl. 317—234)



1. A semiconductor diode comprising a first region of one conductivity type material and a second region of the opposite conductivity type material, said second region comprising a first, a second and a third subregion in order of increasing distance from the junction between said first and second regions, said first region and each subregion having relatively constant predetermined impurity concentrations therein different from each adjacent subregion, said second subregion being of a lower conductivity and impurity concentration than said first and third subregions, and a pair of electrodes making low resistance connections to said first region and third subregion.

3,201,665
SOLID STATE DEVICES CONSTRUCTED FROM SEMICONDUCTIVE WHISKERS
John D. Venables, Parma, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Nov. 20, 1961, Ser. No. 153,530
4 Claims. (Cl. 317—235)

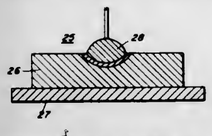


1. A semiconductor device comprising: a whisker of semiconductor material of one conductivity type, said whisker having a diameter in the range of about 10 microns to about 1000 microns, a hexagonal cross section and six longitudinal faces; a region of opposite conductivity type covering substantially the entire surface of one of said longitudinal faces and forming a rectifying contact therewith; and two ohmic contacts, one on each of the other non-adjacent longitudinal faces and each ohmic contact covering substantially the entire surface of each said face.

3,201,666
NON-RECTIFYING CONTACTS TO SILICON CARBIDE

Robert N. Hall, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Original application Aug. 16, 1957, Ser. No. 678,740, now Patent No. 3,030,704, dated Apr. 24, 1962. Divided and this application Dec. 18, 1961, Ser. No. 159,932
4 Claims. (Cl. 317—237)

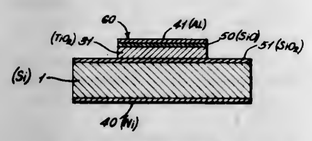


1. A semiconductor device comprising: a body of monocrystalline silicon carbide of a selected conductively type; a base member of a material selected from a group consisting of molybdenum, tungsten, and alloys therebetween; and, an intermediate layer between and in intimate mechanical and non-rectifying electrical broad area contact with said body and said base member, said layer consisting essentially of a eutectic alloy of the materials of said body and the material of said base member.

3,201,667
TITANIUM DIOXIDE CAPACITOR AND METHOD FOR MAKING SAME

Joseph E. Varga, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 20, 1960, Ser. No. 77,204
9 Claims. (Cl. 317—258)

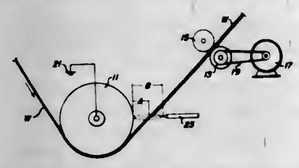


1. A capacitor having a pair of electrodes and composite dielectric material disposed between said electrodes, said material being comprised essentially of vapor deposited silicon dioxide, titanium dioxide and silicon monoxide, said silicon dioxide being preponderantly disposed adjacent to and in contact with one of said electrodes, said silicon monoxide being preponderantly disposed adjacent to and in contact with the other one of said electrodes and said titanium dioxide being preponderantly disposed between said silicon dioxide and said silicon monoxide.

3,201,668
ELECTROSTATIC CHARGING APPARATUS

Joseph R. Brady and Robert G. Cunningham, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 27, 1960, Ser. No. 32,223
2 Claims. (Cl. 317—262)

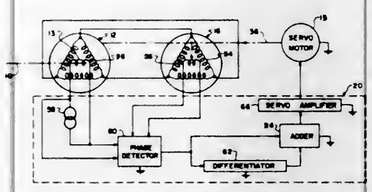


1. In an apparatus for depositing an electrostatic charge on a web of nonconducting material, a roller mounted for rotation about an axis for guiding said web, said roller being comprised of an electrically conductive material and being electrically grounded, a corona discharge device in spaced relation with respect to said grounded roller, said corona discharge device being operatively associated with said roller and being so located with respect thereto as to maintain an ionized zone between said device and a first portion of the periphery of said roller, means for moving said web about said roller in surface contact with a second peripheral surface portion of said roller independent of said first surface portion and for moving said web between said roller and said corona discharge device, said second peripheral portion comprising all of the surface of the roller in contact with the web, whereby said web is passed through said ionized zone for deposition of an electrostatic charge thereon, and whereby the relative spacings of said web and said corona discharge device from said roller may be varied to achieve optimum charging efficiency.

3,201,669
SERVO TYPE INTEGRATOR WITH MEANS FOR MINIMIZING THE EFFECTS OF FRICTION

Hans E. Hollmann, Studio City, Calif., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Original application Apr. 8, 1960, Ser. No. 22,077. Divided and this application Dec. 17, 1962, Ser. No. 252,542
3 Claims. (Cl. 318—30)



1. An integrator comprising: fixed support means; a Selsyn receiver having a stator including a winding fixed to said support means and a rotor including a winding rotatably carried on said support means; a Selsyn transmitter having a stator including a winding fixed to said support means and a rotor including a winding rotatably supported from said Selsyn receiver rotor; means to apply an alternating voltage to said Selsyn transmitter rotor winding; means to connect said stator windings electrically; means for producing an error signal proportional to the difference between the amplitudes of said applied voltage and the voltage induced in said Selsyn receiver rotor winding; and means responsive to said error signal for rotating said Selsyn receiver rotor in a direction tending to reduce said error signal to zero.

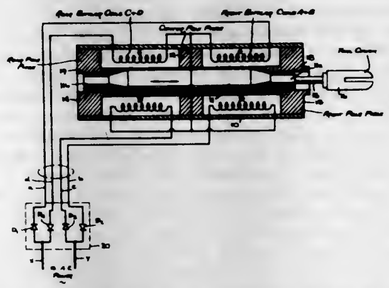
3,201,670
RECIPROCATING ELECTROMAGNETIC MECHANISM

Elman B. Myers, Wayne, N.J., assignor to Fuller-Myers, Spokane, Wash., a partnership composed of Cecil R. Fuller, Spokane, Wash., and Elman B. Myers, Wayne, N.J.

Filed May 24, 1962, Ser. No. 197,535
4 Claims. (Cl. 318—125)

2. An electromagnetic drive system comprising a pair of magnetic circuits in axial alignment constituted by a tubular casing having annular front and rear pole pieces enclosing the ends thereof and an annular pole piece disposed centrally therein, and a plunger coaxially disposed within said casing and extending through said central pole piece, said plunger being reciprocable relative to the front and rear pole pieces, a first winding

surrounding said plunger in the area between said center piece and said front piece, a second winding surrounding said plunger in the area between the front piece and said rear piece, each of said windings being constituted by a



pair of bi-filar wound coils, connected in series in the same sense, and means alternately energizing said first and second windings with unidirectional current to alternately pull said plunger in opposing directions.

3,201,671
ROTOR CONTROLLED STEP MOTOR

Werner Schiebeler, Eutingen, Baden, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 17, 1961, Ser. No. 145,720
Claims priority, application Germany, Oct. 27, 1960, St 17,052
3 Claims. (Cl. 318—138)



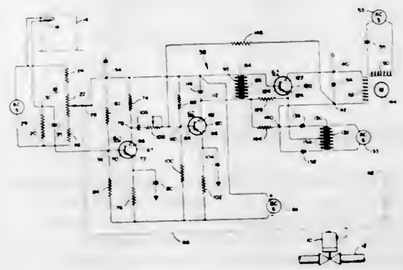
2. A controllable and synchronizable perforated tape drive for achieving high tape speeds, comprising: a stepper servo motor having associated magnet coils and contacts actuated by a motor driven camplate, an amplifier coupled between each said motor contact and said associated magnet coil for energizing said associated magnet coil in the rhythm of the closing times of the said motor contacts whereby the signals applied to said motor coils and said contacts are more effectively controlled, a switching element in shunt with each said motor contact, and means for alternately operating said switching elements at the rated speed of said motor so that the period of closure of said switching elements corresponds to the closing times of the said motor contacts at the said rated speed, and otherwise leads or lags the said closing times to provide an appropriate speed correction.

3,201,672
PULSATING D.-C. BIAS CIRCUIT FOR TRANSISTORIZED SERVO AMPLIFIER

John R. Louis, Cleveland, Ohio, assignor to Bailey Meter Company, a corporation of Delaware

Filed May 23, 1960, Ser. No. 30,835
5 Claims. (Cl. 318—287)

5. In a control system, the combination comprising:
a two phase reversible induction motor having a control winding and a power winding;
an energizing circuit connecting said power winding to an A.-C. source;
an alternating current amplifier having an input circuit adapted to receive a variable alternating input signal;
a transformer having a primary and secondary winding, said primary winding connected to the output of said alternating current amplifier;
a transistor having a base electrode connected to the secondary winding of said transformer, a collector electrode connected to the control winding of said motor and an emitter electrode;

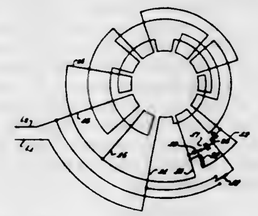


a source of pulsating direct current connected in series with the control winding of said motor and the collector and emitter electrodes of said transistor; and
a second source of pulsating direct current connected in series with the secondary winding of said transformer between the base electrode and emitter electrode of said transistor.

3,201,673
INDUCTION MOTOR STARTING CIRCUITS

Jacob V. Williford, 136 H St. NE., Ephrata, Wash., and Horace B. Ford, Abilene, Tex.; said Ford assignor to said Williford

Filed Aug. 28, 1961, Ser. No. 134,530
13 Claims. (Cl. 318—221)

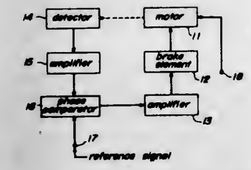


1. An alternating current induction motor including a wound stator and a rotor therein, said stator being wound with adjacent groups of coils distributed about the stator in chorded relation and adapted to be connected together for polyphase operation of the motor, two of said groups of coils being connected together to provide a main, both starting and running, winding for single phase operation of the motor; and a third group of coils adjacent said first two groups of coils and also distributed about the stator in chorded relation, said third group of coils being displaced substantially 90 degrees from said first two groups of coils and having an accessible tapped point intermediate its ends.

3,201,674
EDDY CURRENT BRAKE TO CONTROL MOTOR SPEED

Sadaharu Wada, Hirakata-shi, Osaka, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Mar. 5, 1962, Ser. No. 177,275
Claims priority, application Japan, Mar. 8, 1961, 36/8,339; Oct. 21, 1961, 36/53,099, 36/53,101; Nov. 9, 1961, 36/40,583; Dec. 20, 1961, 36/63,310, 36/63,311
6 Claims. (Cl. 318—362)



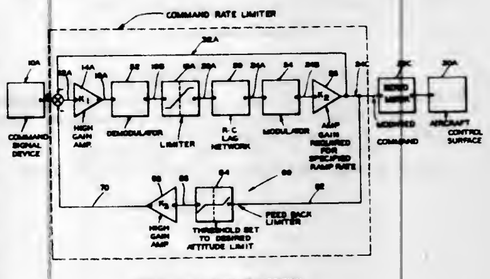
3. In an image recording and reproducing system for recording broad-band video signals consisting of a magnetic tape which is linearly driven by an electric motor, a rotating head drum containing magnetic transducers and an electro-mechanical brake apparatus comprising means for producing reference signals in accordance with the rotation of said rotating head drum, means for deriving control signals in accordance with said reference signals, means for recording said control signals on one side of said magnetic tape, an electro-mechanical brake means for controlling the rotating speed of said electric motor which drives said magnetic tape, said electro-mechanical brake means being of the type utilizing magnetic material of fluid nature, said brake element being energized from a source of constant current supply during the recording operation and by the signals produced in response to said error signals during the reproducing operation, for causing said electro-mechanical brake element to exert a predetermined value of braking effect on said electric motor according to the electrical input given to said brake element during the recording operation, means for causing said braking effect to make said motor rotate at a constant speed during the recording operation, means for reproducing said control signals recorded on said magnetic tape during the reproducing operation, means for producing error signals by comparing the phase of electrical signals produced in accordance with said reproduced control signals with the phase of said reference signals, means for changing the rotating speed of said motor through controlling said electro-mechanical brake element by said error signals, and means for controlling the running speed of said magnetic tape by said last-mentioned means to maintain the normal reproducing operation.

3,201,675
MAXIMUM COMMAND LIMITER DEVICE FOR AN AUTOMATIC FLIGHT CONTROL SYSTEM

Peter F. Curran, Maywood, and William W. Medlinski, Clifton, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Nov. 1, 1962, Ser. No. 234,734
12 Claims. (Cl. 318—489)

1. A control apparatus for an aircraft having attitude changing means, comprising an attitude command signal device having a signal output, a first high gain amplifier having a signal input operatively connected to the signal output of the attitude command signal device, said first high gain amplifier having a signal output, a demodulator having a signal input operatively connected to the signal output of the first high gain amplifier, said demodulator having a signal output, a limiter having an input operatively connected to the signal output of the demodulator, said limiter having a signal output and being so arranged as to apply thereto a predetermined maximum output signal, the limiter being so arranged that upon the signal applied to the input thereof being less than said predetermined maximum the limiter has negligible effect on said signal applied thereto and therethrough to the output of the limiter, a resistance-capacitance lag network having a signal input operatively connected to the signal output of said limiter, said network having a signal output, a modulator having a signal input operatively connected to the signal output of said network, said modulator having a signal output, a second amplifier having a signal input operatively connected to the signal output of said modulator, said second amplifier having a signal output and being so arranged as to vary the signal applied to the output of said amplifier with the variance in the amplitude of the signal applied to the input of the second amplifier so that the gain provided by the second amplifier effects a predetermined output signal effecting a curve at a variance from that of the curve of the signal applied to the input of the second amplifier, a servomotor to



THE FULL TIME COMMAND MODIFIER

operatively position said attitude changing means, the signal applied to the output of said second amplifier controlling operation of said servomotor, a high gain feedback circuit leading from the output of the second amplifier to the signal input of said first high gain amplifier so as to retard controlling action of the command signals applied by the attitude command device to the first high gain amplifier, said high gain feedback circuit including a threshold limiting device having an input connected to the output of the second amplifier and a signal output, said threshold limiting device being arranged to permit the passage of a signal from its input to its output upon the input signal exceeding a predetermined value corresponding to a preset attitude limit of the aircraft, a third high gain amplifier having an input operatively connected to the output of the threshold limiting device, and said third high gain amplifier having an output connected to the input of the first high gain amplifier and being arranged to apply a high gain feedback signal to the input of said first high gain amplifier acting in opposition to the output signal from the attitude command device and tending to limit the positioning of said attitude changing means by said servomotor to said preset attitude limit of said aircraft.

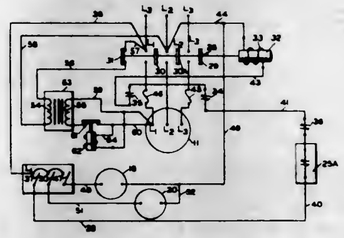
3,201,676
REFRIGERATING COMPRESSOR

Richard E. Fuhrman, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Sept. 26, 1957, Ser. No. 686,542
2 Claims. (Cl. 318—558)

1. In a refrigerating compressor assembly of the type wherein the compressor and its associated motor are

hermetically sealed within a casing, an electrical system comprising windings for said motor, a source of electrical energy connected with said windings in an electrical circuit, a transformer including primary and secondary windings, means connecting said secondary transformer windings and said motor windings in an electrical circuit, means connecting said primary transformer windings and said source of electrical energy in an electrical circuit, switch means for breaking the circuit between said electrical source and said primary transformer

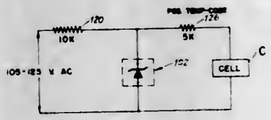


windings while making the circuit between said electrical source and said motor windings or for alternately breaking the circuit between said electrical source and said motor windings while making the circuit between said electrical source and said primary transformer windings, normally closed switch means in said circuit between said secondary transformer windings and said motor windings, and means operative to open said switch to break said circuit upon a predetermined voltage being applied to said circuit.

3,201,677
TEMPERATURE COMPENSATED VOLTAGE CONVERTER

Herbert L. Hardy, Monroe, and William J. Mahoney, Darien, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Jan. 3, 1961, Ser. No. 80,345
2 Claims. (Cl. 321—16)

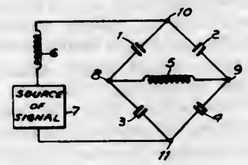


1. A temperature compensated voltage converter for converting A.C. to pulsating D.C. voltage of constant amplitude comprisings, a pair of A.C. input terminals for receiving an A.C. voltage to be converted to D.C., a zener diode and a biasing resistor for said diode connected in series across said terminals, said zener diode being adapted to limit the positive and negative half cycles of an A.C. voltage applied to said terminals to a predetermined amplitude, a load impedance and a current limiting resistor for said load impedance connected in series therewith, said current limiting resistor and said load impedance being connected in shunt across said zener diode, said current limiting resistor having a temperature coefficient of resistance of a value corresponding to both the temperature coefficient of said zener diode when operating in a forward direction and the temperature coefficient of said zener diode when operating in the zener direction.

3,201,678
ELECTRICAL BRIDGE NETWORKS AND CIRCUITS INCLUDING SAID NETWORKS

Oliver S. Meixell, Caldwell, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Jan. 3, 1961, Ser. No. 80,437
11 Claims. (Cl. 321—69)



1. A bridge circuit comprising:
a bridge network having a given voltage sensitivity consisting of
a first terminal,
a second terminal,
a first circuit connected between said first and second terminals consisting of first and second reactance means connected in series relationship with respect to each other, each of said first and second reactance means having a given sign and a given reactance magnitude at a predetermined frequency, and
a second circuit connected between said first and second terminals consisting of third and fourth reactance means connected in series relationship with respect to each other, each of said third and fourth reactance means having said given sign and said given reactance magnitude at said predetermined frequency; and
means to substantially increase said given sensitivity of said bridge network consisting of
a third circuit connected between the junction of said first and second reactance means and the junction of said third and fourth reactance means consisting of a first conjugate reactance means having a sign opposite to said given sign and a reactance magnitude equal to said given reactance magnitude at said predetermined frequency, and
a fourth circuit connected between said first and second terminals consisting of a source of signals and a second conjugate reactance means connected in series relationship with respect to each other, the signal of said source of signal having a frequency equal to said predetermined frequency, and said second conjugate reactance means having a sign opposite to said given sign and a reactance magnitude equal to said given reactance magnitude at said predetermined frequency.

3,201,679
SOLID-STATE CONTROLLED RECTIFIER VOLTAGE REGULATING SYSTEM

James L. Buchanan and William B. Zelina, Erie, Pa., assignors to General Electric Company, a corporation of New York

Filed Nov. 15, 1962, Ser. No. 237,803
5 Claims. (Cl. 322—25)

1. A system for regulating the voltage and limiting the current of a direct current generator to a preset value by controlling the power supplied to the shunt field winding thereof, comprising:
(a) a solid-state controlled rectifier having an anode, a cathode and a control electrode;

(b) means for connecting the generator output in series with said shunt field winding and the anode-cathode elements of said controlled rectifier;

(c) variable-frequency relaxation oscillator control circuit means including a multi-layer semiconductor diode device for applying a gating signal directly to said control electrode of sufficient amplitude to initiate conduction in said controlled rectifier;

(d) circuit means including a relay for supplying shunt field current and for initially rendering said controlled rectifier conductive during generator build-up;

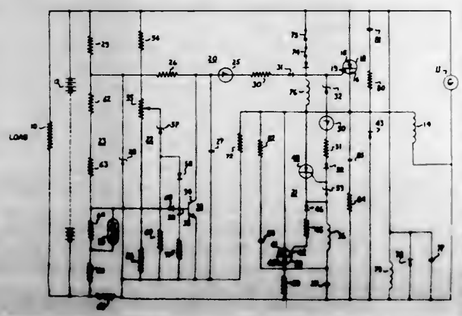
(e) commutation circuit means shunting said field winding for terminating conduction in said controlled rectifier a fixed time after initiation of conduction therein, said means comprising

a series resonant inductance-capacitance circuit,

a second solid-state controlled rectifier having an anode, a cathode and a control electrode,

means connecting said series resonant circuit and the anode-cathode elements of said second controlled rectifier in series circuit with the anode-cathode elements of said first controlled rectifier,

means for applying a gating signal to the control electrode of said second controlled rectifier when

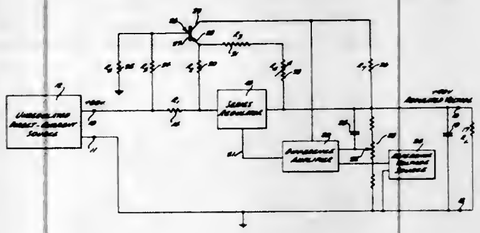


3,201,680

REGULATED TRANSISTOR POWER SUPPLY WITH AUTOMATIC SHUTOFF

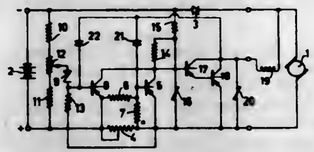
Erno H. Ross, Anaheim, Calif., and Edward J. Baxa, Manitowoc, Wis., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Dec. 6, 1960, Ser. No. 75,068
3 Claims. (Cl. 323—9)



1. A voltage-regulated supply comprising first and second input terminals adapted to be responsive to a source of unregulated direct-current power of positive polarity, said second input terminal being connected to a first junction maintained at a first reference potential that is negative with respect to the potential of said first input terminal; first and second output terminals adapted to be connected across an output load impedance, said second output terminal being connected to said first junction; a current sensing resistor and a series regulator serially connected in the order named from said first input terminal to said first output terminal, said series regulator having a control input terminal; means for providing a second reference potential different from said first reference potential; a difference amplifier having an output coupled to said control input terminal of said series regulator and responsive to said second reference potential and to the voltage appearing at said first output terminal for controlling the flow of current through said series regulator; means including an overcurrent transistor connected to provide at least a portion of the current for said difference amplifier and responsive to the voltage drop across said current sensing resistor for changing the state thereof from saturated to open thereby to switch off current flow

deriving a second direct voltage proportional to the voltage applied to said load by said source, the base-emitter circuit of said second transistor being coupled to the series circuit combination of said second means and a reference direct voltage source of opposite polarity, and circuit means for applying said first direct voltage between the base and emitter of said second transistor, said first direct



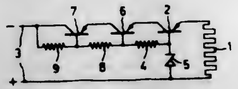
voltage being applied with the same polarity as said reference direct voltage source, the collectors of said first and second transistors being coupled to the base of a third transistor, the emitter-collector circuit of the third transistor comprising a control impedance for controlling the voltage supplied by the source, whereby current limitation by said first transistor is abruptly replaced by voltage limitation by said second transistor.

3,201,682

VOLTAGE STABILIZATION USING A PLURALITY OF TRANSISTORS AND A ZENER DIODE

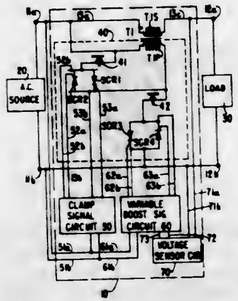
Maurice W. Johnson, Plympton, South Australia, Australia, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 23, 1960, Ser. No. 58,127
2 Claims. (Cl. 323—22)



1. A voltage stabilizer circuit comprising: a direct voltage source, a first transistor having base, emitter and collector electrodes, said emitter being connected to one terminal of a load, the other terminal of the load being connected to one terminal of said source, said collector being connected to the other terminal of said source

operative during the first half of each half cycle of the alternating current voltage for closing said first gate means and bypassing said primary winding; voltage sensor means responsive to the output voltage being less than said predetermined voltage for providing a corresponding control signal; and second switch means selectively operated



by said control signal for closing said second gate means during the last half of each half cycle of the alternating current voltage for a period determined by said control signal, whereby a voltage is developed in said transformer secondary winding corresponding to the amount said output voltage is less than said predetermined voltage.

3,201,684

DUAL VOLTAGE TRANSFORMER WINDING CONNECTION

Raymond T. Nygren, Hickory Township, Mercer County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 29, 1961, Ser. No. 141,719
4 Claims. (Cl. 323—49)



(b) means for connecting the generator output in series with said shunt field winding and the anode-cathode elements of said controlled rectifier;

(c) variable-frequency relaxation oscillator control circuit means including a multi-layer semiconductor diode device for applying a gating signal directly to said control electrode of sufficient amplitude to initiate conduction in said controlled rectifier;

(d) circuit means including a relay for supplying shunt field current and for initially rendering said controlled rectifier conductive during generator build-up;

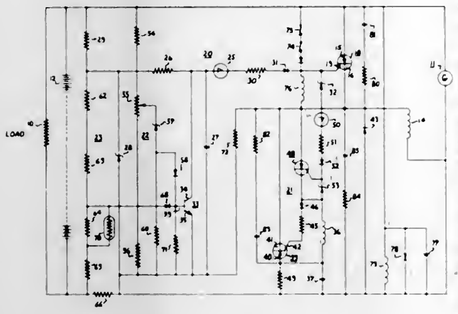
(e) commutation circuit means shunting said field winding for terminating conduction in said controlled rectifier a fixed time after initiation of conduction therein, said means comprising

a series resonant inductance-capacitance circuit,

a second solid-state controlled rectifier having an anode, a cathode and a control electrode,

means connecting said series resonant circuit and the anode-cathode elements of said second controlled rectifier in series circuit with the anode-cathode elements of said first controlled rectifier,

means for applying a gating signal to the control electrode of said second controlled rectifier when



the voltage across said field winding exceeds a predetermined level for rendering said second controlled rectifier conductive and energize said series resonant circuit,

means including a third solid-state controlled rectifier adapted to be rendered conductive by the energy stored in said capacitance for discharging said capacitance into said field winding thereby terminating conduction in said first and second controlled rectifiers,

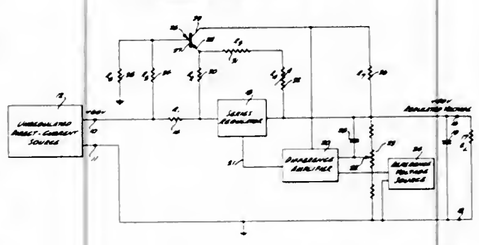
and a resistance shunting said capacitance providing a second discharge path therefor,

the time constant of said resistance-capacitance combination being long compared to the frequency of said series resonant circuit and short compared to the time constant of said field winding;

(f) first and second circuit means for developing control feedback signals indicative respectively of the deviation in the generator output voltage and current from preset values;

(g) and means for applying said feed-back signals to said control circuit to vary the repetition rate of the gating signals applied to the control electrode of said first controlled rectifier.

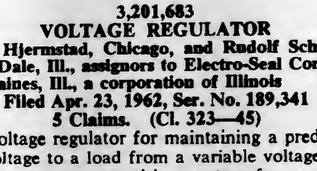
3,201,680
REGULATED TRANSISTOR POWER SUPPLY WITH AUTOMATIC SHUTOFF
Erno H. Ross, Anaheim, Calif., and Edward J. Baxa, Manitowoc, Wis., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Dec. 6, 1960, Ser. No. 75,068
3 Claims. (Cl. 323—9)



1. A voltage-regulated supply comprising first and second input terminals adapted to be responsive to a source of unregulated direct-current power of positive polarity, said second input terminal being connected to a first junction maintained at a first reference potential that is negative with respect to the potential of said first input terminal; first and second output terminals adapted to be connected across an output load impedance, said second output terminal being connected to said first junction; a current sensing resistor and a series regulator serially connected in the order named from said first input terminal to said first output terminal, said series regulator having a control input terminal; means for providing a second reference potential different from said first reference potential; a difference amplifier having an output coupled to said control input terminal of said series regulator and responsive to said second reference potential and to the voltage appearing at said first output terminal for controlling the flow of current through said series regulator; means including an overcurrent transistor connected to provide at least a portion of the current for said difference amplifier and responsive to the voltage drop across said current sensing resistor for changing the state thereof from saturated to open thereby to switch off current flow to said difference amplifier in response to a current flow in excess of a predetermined current through said current sensing resistor and thereby switch off current flow through said series regulator; and a resistor dividing network connected in shunt with said series regulator and having an intermediate junction thereof connected to said overcurrent transistor for maintaining said overcurrent transistor in an open condition thereby to maintain current flow to said difference amplifier switched off until a current less than said predetermined current would flow through said current sensing resistor.

3,201,681
SUPPLY CIRCUIT AND ABRUPT CURRENT AND VOLTAGE LIMITING MEANS THEREFOR
Jacob Van Wilgen, Jan Nijmeyer, and Albert Cornelis Lampe, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 26, 1961, Ser. No. 112,898
Claims priority, application Netherlands, June 24, 1960, 253,080
8 Claims. (Cl. 323—20)

1. A current and voltage limiter comprising: a voltage source, a load supplied by said source, a first transistor, first means for deriving a first direct voltage proportional to the current supplied to said load by said source, said first means being connected between the base and emitter of said first transistor, a second transistor, second means for deriving a second direct voltage proportional to the voltage applied to said load by said source, the base-emitter circuit of said second transistor being coupled to the series circuit combination of said second means and a reference direct voltage source of opposite polarity, and circuit means for applying said first direct voltage between the base and emitter of said second transistor, said first direct



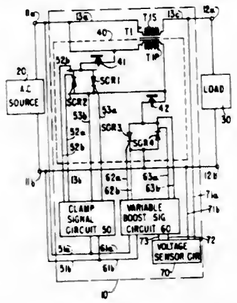
voltage being applied with the same polarity as said reference direct voltage source, the collectors of said first and second transistors being coupled to the base of a third transistor, the emitter-collector circuit of the third transistor comprising a control impedance for controlling the voltage supplied by the source, whereby current limitation by said first transistor is abruptly replaced by voltage limitation by said second transistor.

3,201,682
VOLTAGE STABILIZATION USING A PLURALITY OF TRANSISTORS AND A ZENER DIODE
Maurice W. Johnson, Plympton, South Australia, Australia, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 23, 1960, Ser. No. 58,127
2 Claims. (Cl. 323—22)

1. A voltage stabilizer circuit comprising: a direct voltage source, a first transistor having base, emitter and collector electrodes, said emitter being connected to one terminal of a load, the other terminal of the load being connected to one terminal of said source, said collector being connected to the other terminal of said source through the collector-emitter path of at least one additional transistor, said source biasing the emitter in the forward direction and the collector in the reverse direction, said base being connected to said other terminal of said source through a plurality of series-connected resistors equal in number to the total number of transistors, said base also being connected to said one terminal of the source through a Zener diode, the base electrode of each additional transistor being directly connected to a corresponding junction point of the series-connected resistors.

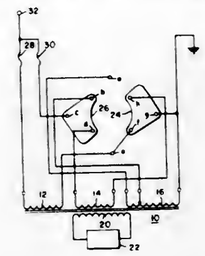
3,201,683
VOLTAGE REGULATOR
Hans U. Hjernstad, Chicago, and Rudolf Schumacher, Wood Dale, Ill., assignors to Electro-Seal Corporation, Des Plaines, Ill., a corporation of Illinois
Filed Apr. 23, 1962, Ser. No. 189,341
5 Claims. (Cl. 323—45)

1. A voltage regulator for maintaining a predetermned output voltage to a load from a variable voltage alternating current source comprising: a transformer including a primary winding and a secondary winding; means connecting said secondary winding in a series loop with said load and said alternating current source; means connecting said primary winding in parallel across said secondary winding and said load; first gate means for bypassing said primary winding; second gate means for causing conduction through said primary winding; first switch means operative during the first half of each half cycle of the alternating current voltage for closing said first gate means and bypassing said primary winding; voltage sensor means responsive to the output voltage being less than said predetermined voltage for providing a corresponding control signal; and second switch means selectively operated



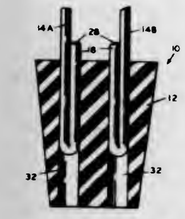
by said control signal for closing said second gate means during the last half of each half cycle of the alternating current voltage for a period determined by said control signal, whereby a voltage is developed in said transformer secondary winding corresponding to the amount said output voltage is less than said predetermined voltage.

3,201,684
DUAL VOLTAGE TRANSFORMER WINDING CONNECTION
Raymond T. Nygren, Hickory Township, Mercer County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 29, 1961, Ser. No. 141,719
4 Claims. (Cl. 323—49)



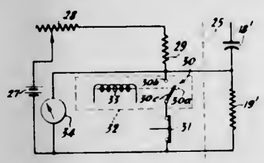
1. A dual voltage multi-winding transformer having a plurality of primary windings and a secondary winding, a switch operable to connect the transformer primary windings in a series circuit relationship or a parallel circuit relationship between an alternating current potential and ground, a first and second fuse, said first and second fuses being connected between said plurality of primary windings and said alternating current potential such that said first fuse is connected between said alternating current potential and said plurality of primary windings when said plurality of primary windings are connected in series circuit relationship and both of said first and second fuses are connected between said alternating current potential and said plurality of primary windings when said plurality of primary windings are connected in parallel circuit relationship, said first and second fuse being operable to prevent overvoltage at the secondary winding output on a primary winding-to-ground fault.

3,201,685
CONDUCTIVITY PROBE
Ronald E. Meyer, Tulsa, Okla., assignor to Remwood Chemical Company, Tulsa, Okla., a corporation of Oklahoma
Filed Sept. 22, 1961, Ser. No. 140,029
2 Claims. (Cl. 324—30)



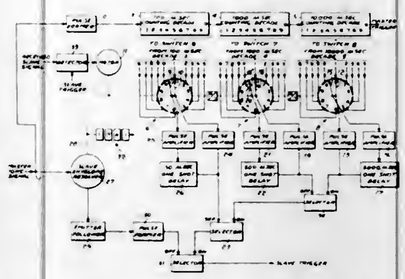
1. A conductivity probe for use in detecting the conductivity of a chemical solution, comprising, a body of inert insulating material; a first and a second metallic conductivity conductor supported within said body, said conductivity conductors composed of a metal chemically inert to said solution, said first and second metallic conductivity conductors each having an end portion extending beyond the exterior surface of said body in spaced relationship with each other adaptable for contacting said solution; and first and second insulated detector conductors each having one end extending within said body in juxtaposed relationship to said metallic conductivity conductors, said detector conductors having a metal core covered with an insulating cover, and said metal core of said first detector conductor electrically contacting said first metallic conductivity conductor within said body and said metal core of said second detector conductor electrically contacting said second metallic conductivity conductor within said body, said insulated detector conductors and said conductivity conductors extending from the same surface of said body and substantially in the same plane.

3,201,686
CORONA TEST SET CALIBRATOR HAVING A MERCURY WETTED RELAY SWITCH FOR PROVIDING A SQUARE WAVE CALIBRATION SIGNAL
Charles J. Salle, Norristown, Pa., assignor to James G. Biddle Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 18, 1962, Ser. No. 188,387
5 Claims. (Cl. 324—54)



1. A corona test set comprising a transformer; a standard capacitance and calibrating resistor connected in series across the transformer secondary; terminals for connecting a sample which comprises a dielectric material across the transformer secondary; terminals adapted to connect a power supply across the transformer primary; a power separation filter across the transformer secondary; means for detecting and measuring a first signal received at the power separation filter indicative of corona signal across the sample and for detecting and measuring a second signal received at the power separation filter indicative of a calibration signal similar to the corona signal introduced through the standard capacitance; and a calibrator for applying said calibration signal in the form of a square wave to the standard capacitance across the calibrating resistor including a direct current source, a mercury wetted relay switch in parallel with the calibrating resistor across the direct current source, means for opening and closing the switch at a high frequency, a direct current meter in parallel with the calibrating resistor and switch to measure the voltage amplitude.

3,201,687
DIGITAL DELAY SYSTEM UTILIZING VARIABLE DECADE SCALERS AND AMBIGUITY ELIMINATING CIRCUITRY
Claude J. Pasquier, New York, N.Y., and Frank K. Luteran, North Caldwell, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed June 9, 1961, Ser. No. 120,864
8 Claims. (Cl. 324—68)

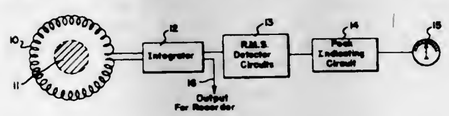


8. A system for digitally varying the time of generation of a desired pulse signal at a desired repetition frequency to coincide with a given signal of the same frequency, comprising a source of sine wave signals, means to convert said sine wave signals into pulse signals, a plurality of counting decades, means successively coupling the output of one said counting decade to the input of the following counting decade to divide said pulse signals into groups of other pulse signals of lower frequencies including said repetition frequency, a plurality of switching means, each one of said plurality of switching means being coupled to a counting decade, means respectively coupling a plurality of outputs of each said counting decade to the plurality of inputs of a corresponding switching means, each of said switching means having two outputs, means delaying one of said outputs of each said switching means, means coupling to the outputs of the first two of said switching means and associated delay means to first selector means, means coupling the output of said first selector means and the output of another of said switching means and associated delay means to second selector means, means coupling the output of said second selector means and said pulse signals derived from said sine wave signals to third selector means to select from said pulse signals the desired pulse signal having a desired time delay to coincide with said given signal.

3,201,688
CIRCUIT FOR MEASURING RMS VALUE OF PULSES USING AN INTEGRATING CIRCUIT WITH PREDETERMINED TIME CONSTANT
Hugo S. Ferguson, Averill Park, N.Y., assignor to Duffers Associates, Inc., Wynantskill, N.Y., a corporation of New York
Filed Jan. 17, 1961, Ser. No. 83,232
12 Claims. (Cl. 324—103)

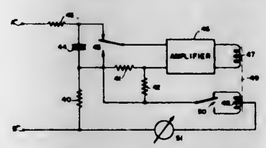
1. A meter for indicating the R.M.S. value of A.-C. pulses of the type described which comprises an integrating circuit, means for supplying said A.-C. pulses to said integrating circuit to produce corresponding integrated

signals, means for removing from said integrating circuit the integrated signal corresponding to one pulse prior to the integration of a succeeding pulse, the time constant



of said integrating circuit being predetermined to yield integrated signals substantially proportional to the R.M.S. values of respective A.-C. pulses supplied thereto, and indicating means responsive to said integrated signals.

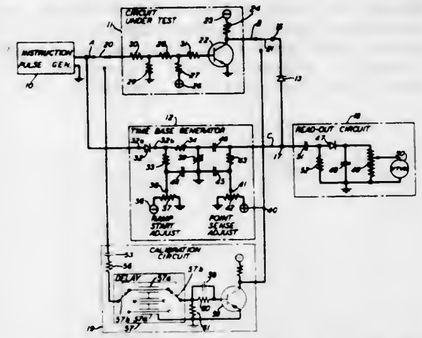
3,201,689
MEASUREMENT AMPLIFIER FOR SMALL DIRECT VOLTAGES
Ulrich Knick, Milinowskistrasse 35, Berlin-Zehlendorf, Germany
Filed Oct. 19, 1960, Ser. No. 63,641
Claims priority, application Germany, Oct. 24, 1959, K 39,000; Apr. 23, 1960, K 40,491; May 14, 1960, K 40,706
9 Claims. (Cl. 324—120)



6. A measurement amplifier circuit for measuring small D.C. voltages, comprising two-way switching means constituting a converter, means for applying the D.C. voltage to be measured to the converter and thereby converting it into an A.C. voltage, an amplifier, means for applying the A.C. voltage output of the converter to the amplifier, two-way switching means constituting a rectifier, means for applying the amplifier output to the rectifier, means for operating the converter switching means and the rectifier switching means in synchronism with one another, a measuring instrument, filter means, means for applying the rectifier output to the measuring instrument in circuit with such filter means, a D.C. feed-back circuit cooperating with the filter means and feeding back from the rectifier output to the input side of the amplifier, and a mixed A.C.-D.C. feed-back circuit feeding back from the amplifier output through the rectifier switching means and through the converter switching means to the input of the amplifier.

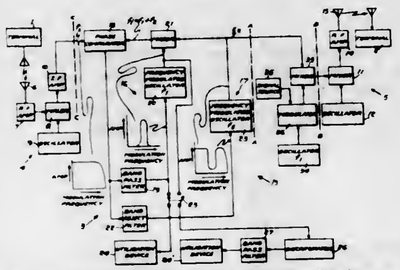
3,201,690
WAVE TRANSIENT TIME INTERVAL MEASURING CIRCUIT WITH WAVE COMPARISON FUNCTION
Milton L. Embree, Laureldale, and Liber J. Montone, Reading, Pa.; said Embree assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York, and said Montone assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 9, 1960, Ser. No. 13,961
20 Claims. (Cl. 324—158)

9. A time interval measuring circuit comprising a circuit under test which produces an output voltage that changes between first and second levels in response to an input voltage impulse, a source of voltage impulses, means producing a timing wave having a predetermined amplitude variation, means applying each of said impulses to said test circuit and to said producing means, a diode connected between the output of said circuit under test and the output of said producing means for limiting excursions of one polarity of the timing wave, and means



connected to one electrode of said diode for indicating the peak amplitude attained by said wave.

3,201,691
REPEATER TERMINAL
Zeno G. Lyon, Plainfield, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Mar. 23, 1962, Ser. No. 181,994
17 Claims. (Cl. 325—11)

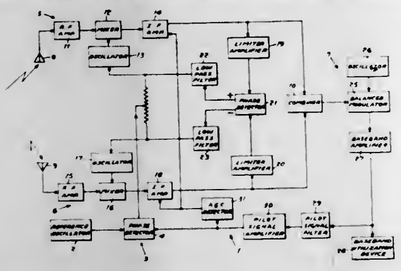


1. A repeater terminal for a communication system transmitting a composite signal comprising:
a receiver for said composite signal;
a transmitter for said composite signal;
a network including two signal paths coupled in shunt relationship, each of said paths including a source of signal of predetermined frequency cooperating to produce a resultant signal having a frequency predeterminedly related to the frequency of said composite signal;
means coupled to the output of said receiver and the output of said network to produce a control signal;
means to couple said control signal to the input of said network to control the frequency of both said signal sources to cause the frequency of said resultant signal to follow the frequency of said composite signal; and
means to couple said transmitter to said network.

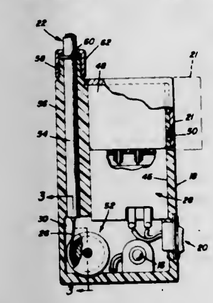
3,201,692
SINGLE SIDEBAND COMMUNICATION SYSTEM
William Sichak, Nutley, and Zeno G. Lyon, Plainfield, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Sept. 9, 1960, Ser. No. 55,034
20 Claims. (Cl. 325—17)

1. A single sideband suppressed carrier receiver comprising an antenna to receive signals including a single

sideband suprressed carrier signal and a pilot signal having a frequency related to the frequency of said suppressed carrier, a heterodyne means coupled to said antenna, a demodulator means coupled to said heterodyne means to demodulate said single sideband suppressed carrier signal and said pilot signal, a source of reference signal having a frequency substantially equal to the frequency of said demodulated pilot signal, means coupled to said demodulator means and said source of reference signal to compare said demodulated pilot signal and said reference signal and produce a control signal proportional to the frequency means to couple said control signal to at least one of said heterodyne means and said demodulator means to means coupled to said antenna responsive to said control signal to compensate said frequency drift for substantially distortionless demodulation of said single sideband signal.



3,201,693
EMERGENCY TRANSMITTER DEVICE
Steve J. Vacek, 220 Holder St., and Charles J. Perry, 1035 Peabody Ave., both of San Antonio, Tex.
Filed Aug. 20, 1962, Ser. No. 217,826
6 Claims. (Cl. 325—119)



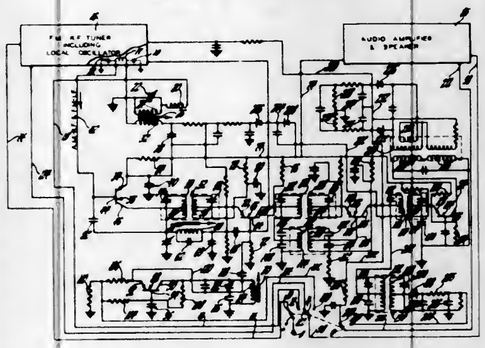
1. A distress signal emitting device for emergency use comprising, a compartmented enclosure including an exposable battery and circuit compartment, and an antenna compartment, said compartments having a partition wall therebetween, rotatable means mounted by said partition wall in both compartments, displaceable antenna means mounted in said antenna compartment for varying the effective range of signal radiation, battery-powered transmitter circuit means mounted in the battery and circuit compartment, said rotatable means comprising a code wheel mounted within one of said compartments and cable reel means mounted in the other of said compartments, a conductive cable connecting said reel means to the antenna means within said antenna compartment, signal producing switch means operatively actuated by the code wheel, said reel means and switch means being electrically connected to the circuit means for producing and radiating a distress signal, and motor means drivingly connected to said code wheel and electrically connected to said battery-powered circuit means for energization thereof, said signal producing switch means comprising a single rigid contact element and a plurality of spaced flexible contact elements of different lengths, said contact elements being fixedly mounted on the partition wall and the code wheel for squential contact with each other for prolonged and short contact intervals in response to rotation of the code wheel.

3,201,694
PHASE-NEUTRALIZED LIMITER, AND TRANSMITTER NEUTRALIZATION THEREWITH
Leonard R. Kahn, 81 S. Bergen Place, Freeport, N.Y.
Filed Dec. 14, 1961, Ser. No. 159,417
16 Claims. (Cl. 325—137)



1. Electronic circuitry comprising:
(a) radio frequency signal limiter means producing from an amplitude and phase modulated signal input a substantially constant amplitude, phase modulated signal output;
(b) a signal passing circuit through which the amplitude and phase modulated radio frequency signal passes prior to appearing as an input to said signal limiter means; and
(c) signal envelope responsive variable reactance means in said signal passing circuit varying the reactance thereof responsive to the envelope of the amplitude and phase modulated signal and phase modulating said signal in said signal passing circuit to substantially neutralize the phase modulation induced in the signal by said signal limiter means without substantial change in the phase modulation of the signal.

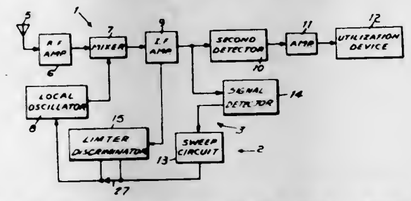
3,201,695
AM-FM ALL TRANSISTOR RADIO RECEIVER
Jerry M. Mason and James R. Hogan, Kokomo, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,402
7 Claims. (Cl. 325—315)



2. In combination AM-FM radio receiving apparatus having an antenna, a tunable antenna circuit connectible thereto for AM signals, and an FM-RF tuning means developing an intermediate frequency modulated signal alternately connectible to said antenna, a single electronic amplifying stage connected to both the FM-RF tuning means and to the tunable antenna circuit for the AM-RF signals to amplify either the FM-IF signals or the AM-RF signals, said electronic amplifying stage including a transistor having a base, emitter and collector electrode, said base electrode being connected to the tunable antenna circuit for AM signals and to the FM-RF tuning means so that either AM-RF signals or FM-IF signals may be impressed on the transistor, additional amplifying means connected to the collector electrode to amplify the output of the single electronic stage and capacity feedback means connected between the collector and base electrodes to smooth out AM-RF overload characteristics when this stage is operated to amplify AM signals and to provide neutralizing feedback to cancel out undesired feedback effects in the transistor when the stage is operating to amplify FM signals.

5. In combination AM-FM radio receiving apparatus having an antenna, a tunable antenna circuit connected thereto for AM signals, an FM-RF tuning means including a local oscillator, alternately connectible to the antenna, an amplifying stage including a transistor having a base, emitter and collector electrode, means for connecting said base electrode to the tunable antenna circuit for AM signals, means for connecting said emitter electrode to the FM-RF tuning means for applying an FM-IF signal thereto, a separate tunable local oscillator connected to the base electrode of the transistor to provide a difference frequency to mix with the AM-RF signals and produce an AM-IF signal in this amplifying stage, said stage operating in a common base mode for amplifying FM signals and in a common emitter mode for amplifying and mixing AM signals and an output circuit connected to the collector electrode for both AM and FM-IF signals.

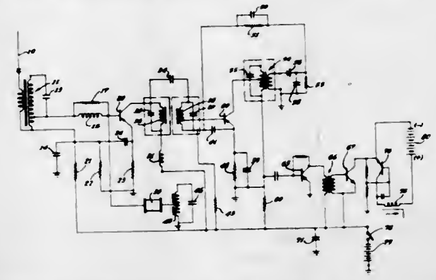
3,201,696
RADIO RECEIVERS
Douglas M. Sharp, Wyckoff, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed May 29, 1962, Ser. No. 198,628
22 Claims. (Cl. 325—423)



19. A radio receiver comprising a signal channel tuneable through a given frequency range, a sweep circuit coupled to said channel for tuning said channel through said frequency range at a given rate, said sweep circuit including means including a variable impedance element responsive to received signals for slowing down said tuning rate.

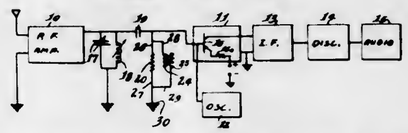
3,201,697
NARROW BAND TRANSISTOR RADIO EMPLOYING CRYSTAL CONTROLLED OSCILLATOR
J. L. Whisenhunt, Reseda, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California
Filed Aug. 29, 1960, Ser. No. 52,576
11 Claims. (Cl. 325—451)

1. In a radio receiver for an amplitude modulated carrier of particular frequency, an antenna; a first tuned circuit coupled to said antenna having a maximum response at said particular frequency; a combined mixer and oscillator stage including a transistor having base, emitter and collector electrodes, a second tuned circuit coupled to said collector electrode and tuned to a predetermined frequency different than said particular frequency, said second tuned circuit including a first inductor, biasing means including said first inductor coupled to said collector electrode, biasing means coupled to said emitter electrode, a regenerative feedback circuit including a piezoelectric crystal having one end coupled to the base electrode and the other end coupled inductively to the collector-biasing



means, a second inductor coupled between said first tuned circuit and said base electrode having an impedance greater than the resonant impedance of the crystal but less than the base-to-emitter impedance of the transistor, biasing means including said second inductor coupled to said base electrode; and an amplifier stage inductively coupled to said first inductor.

3,201,698
RECEIVER IF TRAP USING A BIFILAR WINDING
Herman Frederick Irelan, Bartlett, Ill., assignor to Oak Manufacturing Co.
Filed Nov. 19, 1962, Ser. No. 238,620
2 Claims. (Cl. 325—477)

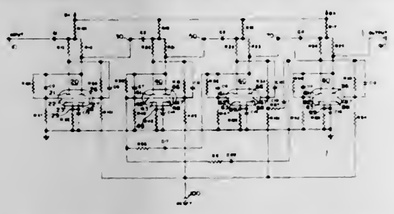


2. In a radio signal receiver, signal handling filter circuit means including: means establishing a signal handling channel having a signal conductor and a reference conductor, said channel including a generally cylindrical circuit element having two terminals and shunt connected across said channel, one of said terminals being connected with each of said signal channel conductors; and a filter comprising a pair of bifilar windings mounted on said circuit element, each winding having corresponding first and second ends, one of said windings having its first end connected with one of the terminals of said circuit element and its second end unconnected, the other winding having its first end unconnected and its second end connected with the other terminal of said circuit element, the distributed capacity between said windings resonating with the effective inductance thereof forming a series resonant network at the frequency to be filtered.

3,201,699
ELECTRONIC COUNTING APPARATUS WITH FEEDBACK CIRCUITS TO PREVENT MISCOUNTING
Robert J. Maring, Grand Rapids, Mich., assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Dec. 8, 1960, Ser. No. 74,610
2 Claims. (Cl. 328—45)

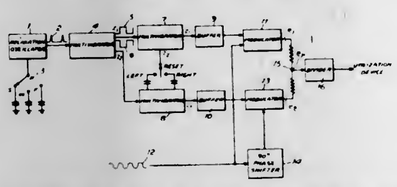
2. An electric decade impulse counter comprising first, second, third and fourth bistable flip-flop circuits;

each of said circuits including input means and output means; means coupling the outputs of said first, second and third bistable circuits to the input means of said second, third and fourth bistable circuits, respectively; first feedback means capacitive connecting an output of said third bistable circuit to a point in said input means



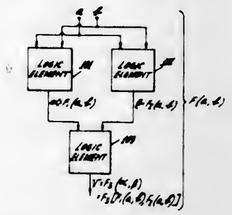
of said second bistable circuit; second feedback means capacitive connecting an output of said fourth bistable circuit to said input means of said third bistable circuit; and third feedback means capacitive connecting an output of said fourth bistable circuit to said point in the input of said second bistable circuit.

3,201,700
PHASE SHIFTING SYSTEM
Claude J. Pasquier, New York, N.Y., and John C. Graebner, Glen Rock, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed May 10, 1961, Ser. No. 109,159
7 Claims. (Cl. 328—55)



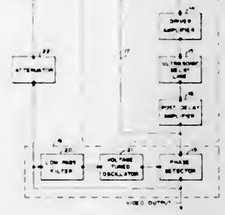
1. A system to shift the phase of a signal in discrete increments comprising a relaxation oscillator, means to control the frequency output of said relaxation oscillator, a first bistable multivibrator, means coupling the output of said relaxation oscillator to said first bistable multivibrator to produce as the two outputs thereof square waves 180 degrees out of phase with each other, second and third bistable multivibrators, means connecting one output of said first multivibrator to said second multivibrator, means connecting the second output of said first multivibrator to said third multivibrator, the outputs of said second and third multivibrators being square waves wherein the square wave output of said second multivibrator is in quadrature relation to the square wave output of said third multivibrator, means to control the quadrature relation of the outputs from said second and third multivibrators, a source of sine wave signals, first and second modulators, means coupling the output of said second multivibrator and said sine wave signals to said first modulator, means coupling the output of said third multivibrator and said sine wave signals phase shifted 90 degrees to said second modulator, and means to combine the outputs of said first and second modulators, said combined output being the original sine wave signal phase shifted to discrete steps of 90 degrees, the rate of said phase shift being proportional to the frequency of the output of said relaxation oscillator and in a direction dependent upon said quadrature relation of the square wave outputs of said second and third multivibrators.

3,201,701
REDUNDANT LOGIC NETWORKS
Karuna K. Maitra, Pittsford, N.Y., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 16, 1960, Ser. No. 76,181
6 Claims. (Cl. 328—94)



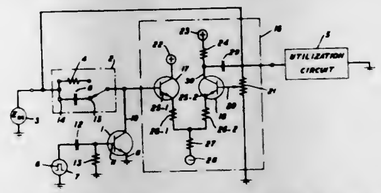
1. A logic circuit comprising, in combination, three two-input, logic gates all performing the same logic function interconnected so that the outputs of the first and second gates serve as the inputs to the third gate, and the inputs to the first and second gates are connected to receive, in parallel, a common pair of input signals indicative of binary digits, each said gate comprising a pair of diodes, poled in the same direction, each diode of a pair of diodes receiving a different input signal indicative of a binary digit.

3,201,702
INTEGRATOR FOR PERIODICALLY RECURRING SIGNALS
Joseph D. Hanulec, Woodbury, and Carl E. Schwab, Farmingdale, N.Y., assignors to Hazeltine Research Inc., a corporation of Illinois
Filed Aug. 24, 1961, Ser. No. 133,652
5 Claims. (Cl. 328—127)



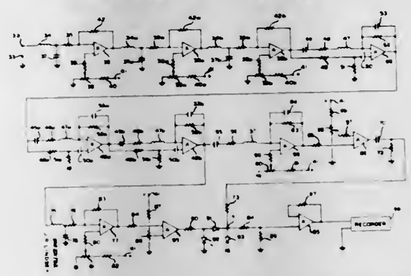
1. An integrator for improving the signal-to-noise ratio of periodically recurring signals comprising:
means for producing a radio-frequency carrier signal;
means for causing the recurring signals to produce, during successive repetition periods, a cumulative phase change of said carrier signal;
means, for detecting said phase change to provide an enhanced replica of said recurring signals, including a source of reference phase oscillations, means for varying said reference phase to correspond with the average phase of said radio-frequency carrier signal and a phase detector responsive to the instantaneous phase difference between said reference phase oscillations and said carrier signal;
and means for subtracting a portion of said enhanced replica from said recurring signals so as to degeneratively control the cumulative phase change of said carrier signal.

3,201,703
WAVE SAMPLING APPARATUS EMPLOYING COMMON POTENTIAL SWITCH
Floyd K. Becker, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 7, 1960, Ser. No. 20,751
4 Claims. (Cl. 328—150)



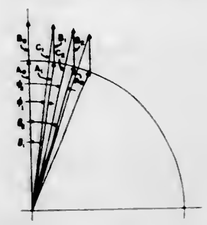
1. A circuit for sampling and holding the input signal of a source, which comprises storage means having first and second terminals, the first terimnal of said storage means being connected to said source, switching means for causing the momentary magnitude of said input signal to be stored in said storage means, said switching means being activated by a switching signal and interconnecting the second terminal of said storage means with a common ground point of said circuit and differencing means having first and second input terminals respectively connected to the first and second terminals of said storage means for obtaining, during the absence of said switching signal, an output signal proportional to the difference between the instantaneous amplitude of said input signal and the amplitude of the sampled signal held in storage as augmented by said input signal.

3,201,704
PEAK SIGNAL CIRCUIT WITH PARTICULAR FILTER MEANS
Joe P. Lindsey, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 18, 1961, Ser. No. 132,429
2 Claims. (Cl. 328—150)



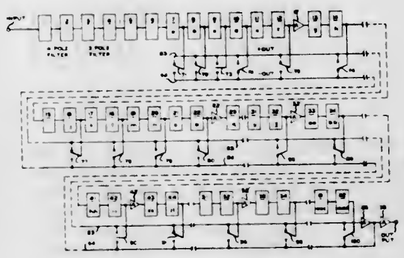
1. Apparatus for use in measuring peak values of electrical signals comprising a phase corrected first Butterworth filter means adapted to pass frequencies less than a preselected value, a derivative phase corrected second Butterworth filter means, means to transmit a signal to be measured through each of said filter means, whereby the output signal from said second filter means is 90° out of phase with the output signal from said first filter means, a differentiating circuit having the input thereof connected to the output of said second filter means, output circuit means, means connecting the output of said differentiating circuit means to said output circuit means, unidirectional current flow means connecting the output of said first filter means to said output circuit means, to pass current from said first filter means to said output circuit means, and signal clipping means connected to the outputs of said first and second filter means.

3,201,705
INTEGRATOR FOR PERIODICALLY RECURRING SIGNALS
Joseph D. Hanulec, Woodbury, and Carl E. Schwab, Farmingdale, N.Y., assignors to Hazeltine Research, Inc., a corporation of Illinois
Filed Apr. 28, 1961, Ser. No. 106,332
8 Claims. (Cl. 328—165)



1. An integrator for improving the signal-to-noise ratio of periodically recurring signals comprising:
means for supplying an unmodulated carrier signal;
means for causing the recurring signals to periodically modulate said carrier signal so as to produce a cumulatively modulated carrier signal, the cumulative modulation thereof being detectable as an enhanced replica of said recurring signals;
and means for adding said supplied unmodulated carrier signal to the cumulatively modulated carrier signal so as to degeneratively control said cumulative modulation.

3,201,706
TUNING SYSTEM
Raymond G. Piety, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed May 9, 1960, Ser. No. 27,654
4 Claims. (Cl. 328—167)

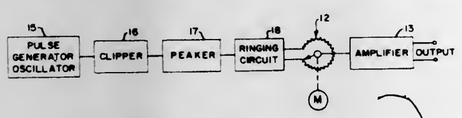


1. A delay line filter comprising a low pass section having a three-pole Butterworth filter connected in cascade with a four-pole Butterworth filter, said low pass section being constructed to pass frequencies in the range of 0 to 100 cycles per second, and an all pass phase adjusting network connected in series with said Butterworth filters; an all pass filter section connected in series with said low pass section, said all pass filter section comprising a plurality of cascade-connected all pass filter networks having one half the time delay of said phase adjusting network; first and second output signal buses; switching means to connect the outputs to selected ones of said all pass filter networks selectively to said first and second buses; and means connected to said buses to combine the signals applied to said first and second buses so that signals applied to said second bus are substracted from the signals applied to said first bus.

3,201,707
DEVICE FOR PRODUCING A SIGNAL FOR ACTUATION OF ACOUSTIC MINES

Marcel J. Aucremanne, Rockville, and Daniel D. Woolston, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed June 28, 1957, Ser. No. 668,832
3 Claims. (Cl. 328—223)
(Granted under Title 35, U.S. Code (1952), sec. 266)



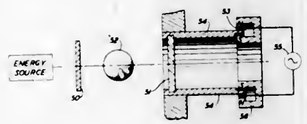
1. A device for producing a signal for the actuation of acoustic mines comprising; first means for generating pulses, said first means comprising a multivibrator, a clipping circuit connected to clip the output of said multivibrator and a peaking circuit connected to said clipping circuit, second means connected to said first means for producing exponentially decaying sine waves in response to pulses from said first means; and third means for linearly varying the amplitude of successive waves from said second means from a minimum to a maximum, the output thereof providing said signal.

3,201,708
CONTINUOUS OPERATION TWO LEVEL D.-C. PUMPED MASER AMPLIFIER WITH SEMICONDUCTOR INTERFACE

Elias Burstein, Narberth, Penn Valley, Pa., assignor to International Telephone and Telegraph Corporation,

[illegible] and second modulators, means coupling the output of said second multivibrator and said sine wave signals to said first modulator, means coupling the output of said third multivibrator and said sine wave signals phase shifted 90 degrees to said second modulator, and means to combine the outputs of said first and second modulators, said combined output being the original sine wave signal phase shifted in discrete steps of 90 degrees, the rate of said phase shift being proportional to the frequency of the output of said relaxation oscillator and in a direction dependent upon said quadrature relation of the square wave outputs of said second and third multivibrators.

a pair of curved, partially transparent mirrors of given radius of curvature whose centers of curvature lie along a common axis;
a nonlinear birefringent crystal of spherical shape having a given radius disposed between said mirrors with its center along said axis;
said crystal having at least one optical axis;
means for rotating said sphere about its center for varying the angle between its optical axis and said common axis;



means for applying an electromagnetic wave to said crystal through one of said mirrors;
and means for adjusting the distance between said mirrors for tuning said resonator within its stable region of operation as defined by the ratio of the radius of curvature of said mirrors to the radius of said sphere.

3,201,710
WIDE BAND AMPLIFIER

Thomas R. O'Meara, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

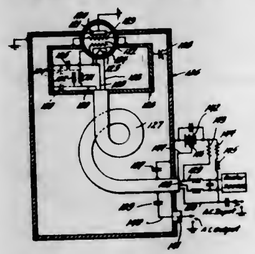
[illegible] Ser. No. 127,734

phase change of said carrier signal;
means, for detecting said phase change to provide an enhanced replica of said recurring signals, including a source of reference phase oscillations, means for varying said reference phase to correspond with the average phase of said radio-frequency carrier signal and a phase detector responsive to the instantaneous phase difference between said reference phase oscillations and said carrier signal;
and means for subtracting a portion of said enhanced replica from said recurring signals so as to degeneratively control the cumulative phase change of said carrier signal.

3,201,711
HIGH FREQUENCY POWER CIRCUIT

Charles J. Weidknecht, Willow Grove, Pa., assignor, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware

Original application Oct. 21, 1959, Ser. No. 847,814, now Patent No. 3,074,024, dated Jan. 15, 1963. Divided and this application Sept. 22, 1961, Ser. No. 140,129
17 Claims. (Cl. 330—56)



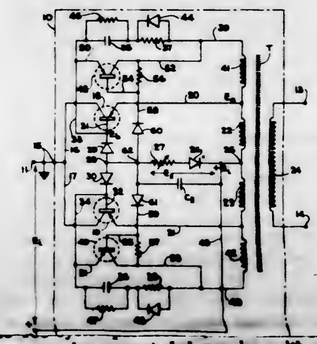
1. In a high frequency electronic circuit, an electron valve having a plurality of elements wherein electrons flow to a power carrying elements from a second element and at least one additional element regulates the intensity of the electron flow, an inner cavity container forming an electrical shielded enclosure for said second element and said additional elemeat and being directly connected to one of said elements enclosed, means for injecting a high frequency signal into the inner cavity and applied across the elements enclosed therein, an outer cavity container directly connected to said power carrying element and enclosing said inner cavity, tuned circuit output means interconnecting said inner cavity [illegible] to be measured through each of said filter means, whereby the output signal from said second filter means is 90° out of phase with the output signal from said first filter means, a differentiating circuit having the input thereof connected to the output of said second filter means, output circuit means, means connecting the output of said differentiating circuit means to said output circuit means, unidirectional current flow means connecting the output of said first filter means to said output circuit means, to pass current from said first filter means to said output circuit means, and signal clipping means connected to the outputs of said first and second filter means.

number of impedance maxima in impedance versus operating frequency characteristic of said line which are closely spaced in frequency compared with said operating frequencies, means for applying a positive potential to said groups of anode segments to produce oscillations at frequencies corresponding to impedance maxima of said line section and means for adjusting the magnitude of said positive potential to cause operation of said oscillator successively at frequencies corresponding to successive ones of said maxima.

3,201,713
REGULATED TRANSISTOR POWER SUPPLY FOR CONVERTING D.C. TO A.C.

Boris Stefanov, Glendale, Calif., assignor to Kauke & Company, Inc., a corporation of California

Filed Nov. 2, 1959, Ser. No. 850,202
3 Claims. (Cl. 331—113)

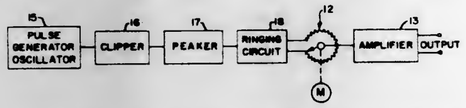


[illegible] ing network connected in series with said Butterworth filters; an all pass filter section connected in series with said low pass section, said all pass filter section comprising a plurality of cascade-connected all pass filter networks having one half the time delay of said phase adjusting network; first and second output signal buses; switching means to connect the outputs to selected ones of said all pass filter networks selectively to said first and second buses; and means connected to said buses to combine the signals applied to said first and second buses so that signals applied to said second bus are substracted from the signals applied to said first bus.

3,201,707
DEVICE FOR PRODUCING A SIGNAL FOR ACTUATION OF ACOUSTIC MINES

Marcel J. Ancrenaenne, Rockville, and Daniel D. Woolston, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed June 28, 1957, Ser. No. 668,832
3 Claims. (Cl. 328—223)
(Granted under Title 35, U.S. Code (1952), sec. 266)

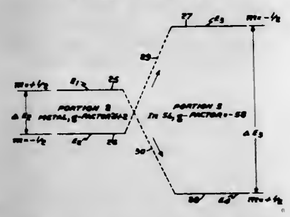


1. A device for producing a signal for the actuation of acoustic mines comprising; first means for generating pulses, said first means comprising a multivibrator, a clipping circuit connected to clip the output of said multivibrator and a peaking circuit connected to said clipping circuit, second means connected to said first means for producing exponentially decaying sine waves in response to pulses from said first means; and third means for linearly varying the amplitude of successive waves from said second means from a minimum to a maximum, the output thereof providing said signal.

3,201,708
CONTINUOUS OPERATION TWO LEVEL D.-C. PUMPED MASER AMPLIFIER WITH SEMICONDUCTOR INTERFACE

Elias Burstein, Narberth, Penn Valley, Pa., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Sept. 8, 1960, Ser. No. 54,802
4 Claims. (Cl. 330—4)



1. An amplifier of electromagnetic waves comprising a body including a first material having a positive g-factor, a second material having a negative g-factor and an interface disposed between said first and second materials, said first and second materials each having two energy levels, a source of direct current voltage having one terminal connected to said first material and its other terminal connected to said second material for inducing energy transition from the energy levels of one of said materials to the energy levels of the other of said materials to cause said body to exhibit a negative temperature characteristic at a given frequency, and means supplying to and extracting from said body electromagnetic waves having said given frequency.

3,201,709
TUNABLE OPTICAL RESONATOR FOR HARMONIC GENERATION AND PARAMETRIC AMPLIFICATION

Gary D. Boyd, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 19, 1963, Ser. No. 331,864
11 Claims. (Cl. 330—4.5)

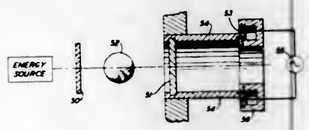
1. A tunable resonator comprising:

a pair of curved, partially transparent mirrors of given radius of curvature whose centers of curvature lie along a common axis;

a nonlinear birefringent crystal of spherical shape having a given radius disposed between said mirrors with its center along said axis;

said crystal having at least one optical axis;

means for rotating said sphere about its center for varying the angle between its optical axis and said common axis;



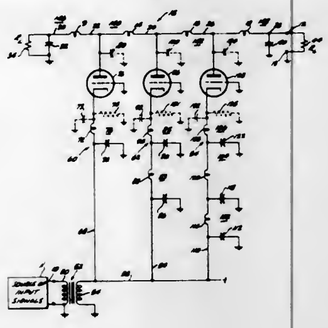
means for applying an electromagnetic wave to said crystal through one of said mirrors;

and means for adjusting the distance between said mirrors for tuning said resonator within its stable region of operation as defined by the ratio of the radius of curvature of said mirrors to the radius of said sphere.

3,201,710
WIDE BAND AMPLIFIER

Thomas R. O'Meara, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed July 28, 1961, Ser. No. 127,734
7 Claims. (Cl. 330—54)

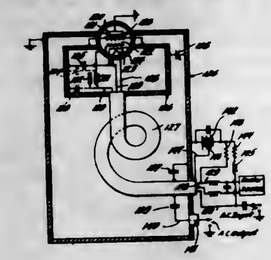


1. A wide band amplifier comprising a source of signals, a load, a terminating impedance, a series path including a plurality of delay sections coupled between said load and said terminating impedance, and a plurality of paths each coupled between said source of signals and a different one of a plurality of selected points of said series path, said plurality of paths each including a tube having a grid coupled to a source of reference potential and an anode to cathode path coupled to a selected number of delay sections, the selected number of delay sections of each path terminated at the cathode of the corresponding tube, the points in said series path and the number of delay sections in said plurality of paths selected so that signals transmitted from said source through said plurality of paths and through said series path from said selected points to said load have substantially equal time delays.

3,201,711
HIGH FREQUENCY POWER CIRCUIT

Charles J. Weidknecht, Willow Grove, Pa., assignor, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware

Original application Oct. 21, 1959, Ser. No. 847,814, now Patent No. 3,074,024, dated Jan. 15, 1963. Divided and this application Sept. 22, 1961, Ser. No. 140,129
17 Claims. (Cl. 330—56)

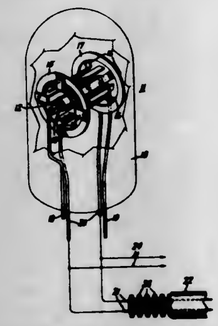


1. In a high frequency electronic circuit, an electron valve having a plurality of elements wherein electrons flow to a power carrying elements from a second element and at least one additional element regulates the intensity of the electron flow, an inner cavity container forming an electrical shielded enclosure for said second element and said additional element and being directly connected to one of said elements enclosed, means for injecting a high frequency signal into the inner cavity and applied across the elements enclosed therein, an outer cavity container directly connected to said power carrying element and enclosing said inner cavity, tuned circuit output means interconnecting said inner cavity container and outer cavity container, and output terminal means coupled to said tuned circuit means and to said outer cavity container for conveying an alternating output signal.

3,201,712
TUNABLE MAGNETRON APPARATUS

Philip H. Peters, Jr., and Donald A. Wilbur, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed June 8, 1953, Ser. No. 360,328
9 Claims. (Cl. 331—90)

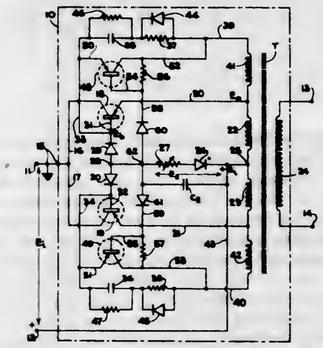


1. A multi-frequency magnetron oscillator comprising a magnetron discharge device of a type having two groups of anode segments surrounding an elongated cathode, an output circuit comprising a two-conductor reflective transmission line section having the conductors at one end thereof respectively connected to said two groups of anode segments, said transmission line section being electrically long compared to a wave length at the operating frequencies of said oscillator to provide a large number of impedance maxima in impedance versus operating frequency characteristic of said line which are closely spaced in frequency compared with said operating frequencies, means for applying a positive potential to said groups of anode segments to produce oscillations at frequencies corresponding to impedance maxima of said line section and means for adjusting the magnitude of said positive potential to cause operation of said oscillator successively at frequencies corresponding to successive ones of said maxima.

3,201,713
REGULATED TRANSISTOR POWER SUPPLY FOR CONVERTING D.C. TO A.C.

Boris Stefanov, Glendale, Calif., assignor to Kanke & Company, Inc., a corporation of California

Filed Nov. 2, 1959, Ser. No. 850,202
3 Claims. (Cl. 331—113)

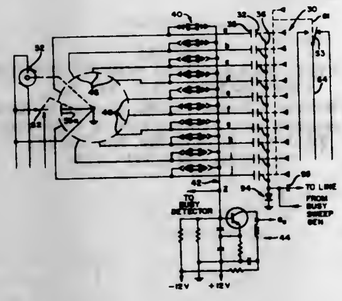


1. A regulated transistor power supply circuit for converting a direct input voltage to an alternating output voltage comprising, in combination: a thermally conductive casing; a first input terminal grounded to said casing; a second input terminal for receiving said direct input voltage; first and second switching transistors having emitter, collector, and base terminals, said collector terminals being commonly grounded to said first input terminal and casing thereby providing a heat sink for said transistors; a saturable core transformer having split primary winding halves with a center tap therebetween, said second input terminal connecting to said center tap, said emitter terminals connecting to the opposite ends of said winding halves respectively; a pair of feed back coils in flux coupling relationship with said winding halves respectively; connecting means between first ends of said feed back coils and base terminals for feeding back current to said base terminals respectively, the other ends of said feed back coils connecting to said opposite ends of said winding halves respectively; a common junction point connected to said base terminals; a regulating zener diode connected at one end to said connection of said second input terminal to said center tap; a variable resistance connected in series with said zener diode between the other end of said diode and said junction point to hold the voltage difference between said input terminal and said junction point at a constant value determined by the setting of said variable resistance and the voltage at which said zener diode conducts, whereby the voltage applied across each split primary winding halve is constant during conduction through the corresponding emitter terminal connected thereto to provide a regulated voltage at said primary; a secondary winding in said transformer; and output terminals extending from said casing and connected to said secondary winding to provide said alternating output voltage.

3,201,714
CRYSTAL SELECTOR MECHANISM FOR AN OSCILLATOR NETWORK

Elmer Dean Border, Salinas, and Robert A. Pfenning, Pebble Beach, Calif., assignors, by mesne assignments, to Strata Industries, Inc., El Cajon, Calif., a corporation of California

Filed May 4, 1962, Ser. No. 192,580
1 Claim. (Cl. 331—161)



In a communications system of the type described, a crystal selector mechanism comprising a plurality of radio frequency crystals having different characteristic frequencies, each crystal having first and second terminals, an oscillator network, said first terminals of said crystals being electrically connected in common to said network, manual means for selectively coupling the second terminal of any one of said crystals to said oscillator network comprising a pair of conductive plates for each crystal, each pair comprising first and second plates adjustably spaced apart between an uncoupled position and a coupled position, manual means for selectively adjusting a pair of plates to the coupled position, a first plate of each pair being connected to said oscillator network, said second plates being connected to the second terminals, respectively, of said crystals, whereby the second terminal of the selected crystal is connected to said network through the associated pair of plates in coupled position; and automatic means for selectively operatively coupling the second terminal of any one of said crystals to said network comprising a plurality of stator plates connected to the second terminals, respectively, of said crystals, a movable plate supported for movement successively into and out of coupled positions with said stator plates, said movable plate being effectively electrically connected to said oscillator network, a motor connected to said movable plate for moving the latter relative to said stator plates, and electrical control means for energizing and de-energizing said motor.

ERRATUM

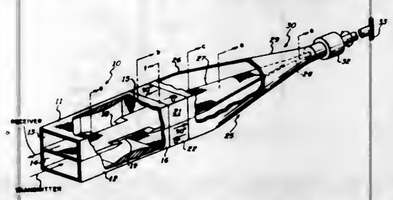
For Class 332—16 see:
Patent No. 3,201,718

3,201,715
COAXIAL TO WAVEGUIDE MODE-CONVERTING DUPLEXER EMPLOYING NONRECIPROCAL PHASE SHIFTING MEANS

Maurice E. Brosse, Huntington, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Oct. 25, 1961, Ser. No. 147,545
9 Claims. (Cl. 333—1.1)

1. A waveguide network for performing a duplexing operation between uniconductor and coaxial waveguides, comprising the combination of a uniconductor waveguide hybrid junction having two pairs of terminals, waves coupled into either one of the terminals of the first one of said pairs of terminals dividing equally and propagating from both terminals of the second pair of terminals, two adjacently-positioned uniconductor waveguides having a common broad wall therebetween respectively coupled to the terminals of said second pair of terminals, differential phase shifting means coupled between at least one of the terminals of said second pair of terminals and its respective adjacently-positioned uniconductor waveguide, the electrical distance from a first terminal of said first pair of terminals to a first one of said uniconductor waveguides being 180° longer than the

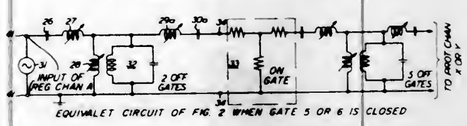


electrical distance to the other one of said uniconductor waveguides for waves propagating in one direction and the electrical distance from the second terminal of said first pair of terminals to the other one of said uniconductor waveguides being 180° longer than the electrical distance to the first one of said uniconductor waveguides for waves propagating in the opposite direction, and a uniconductor-to-coaxial waveguide transition section coupled to the end of said two uniconductor waveguides, said transition section having a center conductor coupled to the common broad wall of said two uniconductor waveguides and tapering in width throughout its length substantially to the dimensions of a center conductor of a coaxial waveguide.

3,201,716
PLURAL CHANNEL SWITCHING SYSTEM WITH IMPEDANCE OF ON GATE AND OFF GATES FORMING A BANDPASS FILTER

Adolf J. Giger, Springfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 28, 1961, Ser. No. 98,853
8 Claims. (Cl. 333—3)



EQUIVALET CIRCUIT OF FIG. 2 WHEN GATE 5 OR 6 IS CLOSED

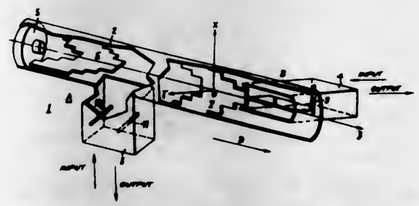
1. In a radio relay station having at least an input channel and a plurality of output channels to carry signal information and a switching means for alternatively connecting the input channel with one of the output channels and connecting at least one of said output channels to a resistor, said switching means comprising a first pair of terminals connected to said input channel, a plurality of second pairs of terminals, series arms and shunt arms having predetermined impedance characteristics so as to constitute a bandpass filter at the signal frequency between said first pair of terminals and each of said second pairs of terminals, a plurality of gate means equal in number to the plurality of output channels operable between a high and a low impedance state and each having a pair of input terminals and a pair of output terminals and presenting to either of said pair of terminals a circuit equivalent to inductance and capacitance in parallel when in the high impedance state and a substantially pure

resistance when in the low impedance state, and means connecting the input terminals of each gate individually to a respective second pair of terminals and connecting the output terminals of each gate individually to a different one of said output channels, and biasing means to bias one of said gates into the low impedance state and the other gates into the high impedance state at any one time, whereby in the high impedance state of any gate the impedance across said pair of input terminals thereof appears as a shunt element of the bandpass filter.

3,201,717
JUNCTION BETWEEN CIRCULAR WAVE-GUIDE AND TWO RECTANGULAR WAVE-GUIDES OF DIFFERENT POLARIZATIONS

Marcel Grosbois, Thiais par Mitry-Mory, Seine-et-Marne, and Guy Billon, Brunoy, France, assignors to Compagnie Francaise Thomson-Houston, Paris, France, a corporation of France

Filed Oct. 16, 1961, Ser. No. 145,140
Claims priority, application France, Oct. 19, 1960, 841,579, Patent 1,277,376
2 Claims. (Cl. 333—9)

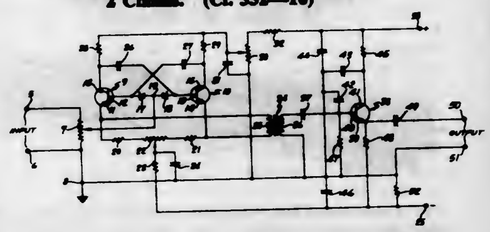


1. In a wave guide system, a junction arrangement between a first wave guide of rectangular cross-section, a second wave guide of rectangular cross-section, and a third wave guide of circular cross-section communicating with the ends of said first and second wave guides at positions spaced axially along said third wave guide, the axis of each guide being perpendicular to those of both the others and the broader dimension of the end of each rectangular guide communicating with the circular guide being parallel to the axis of the circular guide, said arrangement comprising a reflection-free device closing one end of said circular guide, a first member located in the circular guide between said end device and the nearest rectangular guide, said member reflecting a first wave whose polarization plane is perpendicular to the broader dimension of said nearest rectangular guide while not disturbing the propagation of a second wave whose polarization plane is perpendicular to that of said first wave, and a second member similar to the first member located in the circular guide between the positions at which said circular wave guide communicates with said rectangular guides, said second member being in a direction perpendicular to that of said first member, the equivalent short-circuit plane of each of said members being, respectively, in coincidence with one of the characteristic planes of the assemblies constituted by the circular guide and the first rectangular guide on the one hand and by the circular guide and the second rectangular guide on the other hand, each of said first and second members being constituted by a conducting sheet diametrically disposed in the circular guide, said sheet having a shape symmetrical with respect to its longitudinal axis, its longitudinal dimension being approximately constant and its transverse dimension being at its minimum at both ends of the sheet and at its maximum at the center of said sheet.

3,201,718
FREQUENCY MODULATION CIRCUIT

Emil A. Trojak, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed July 2, 1962, Ser. No. 206,928
2 Claims. (Cl. 332—16)

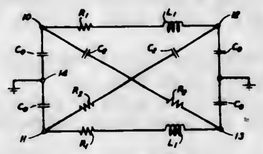


1. A frequency modulating circuit comprising:
a transistor multivibrator circuit including a pair of transistors with cross-coupled capacitors, said transistors each having an emitter, a base and a collector, each of said cross-coupled capacitors connected between the collector of one transistor and the base of the other transistor;
a pair of forward-biased semiconductor diodes connected between the bases of said transistors, said diodes connected in series opposition and having a junction point therebetween;
a modulating signal source connected to the junction point between said diodes, said semiconductor diodes coupling directly said modulating signal source to the bases of said transistors;
an output transformer having a primary and a secondary, the primary of said transformer connected across the emitters of said transistors; and
a transistor impedance converter connected across the secondary of said transformers.

3,201,719
SIMULATION NETWORK

Robert W. De Monte, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 20, 1961, Ser. No. 146,501
6 Claims. (Cl. 333—23)



1. A network for simulating the image admittance Y_I and the propagation of a section of transmission line in the form of a pair of conductors with a surrounding sheath comprising a lattice and two capacitive shunt branches connected to the respective ends thereof, the capacitance of each shunt branch being equal to half of the distributed capacitance C_0 between the conductors and the sheath of the line section, each series branch of the lattice comprising a resistor equal in value to one-half of the direct-current resistance of the two conductors of the line section connected in series, and the admittance of each diagonal branch of the lattice being equal to

$$Y_1 \tan h\frac{P}{2} - C_0\omega_0/2$$

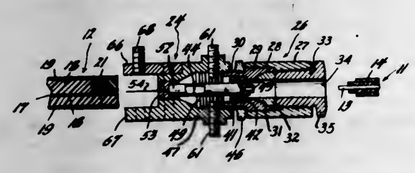
at a selected radian frequency ω_0 within the operating range, where P is the propagation constant of the line section at ω_0.

3,201,720
SLOW WAVE FILTER HELIX STRUCTURE
Dean C. Bradford, Butler, and Louis J. Krzych, Garfield, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Feb. 11, 1960, Ser. No. 8,032
10 Claims. (Cl. 333—31)



1. A slow wave filter helix structure for a traveling wave tube comprising a metallic helix forming a transmission line for electromagnetic waves, parallel insulating support rods contacting said helix longitudinally, and a plurality of electrical loading elements in the form of metal fasteners each rigidly affixing only one of said rods to said helix and forming an integral structure and direct electrical connection therewith, said elements being arranged on each rod in groups periodically spaced along said helix to establish selective pass-band characteristics of space harmonic components in the propagation of said waves through said tube.

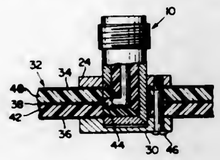
3,201,721
COAXIAL LINE TO STRIP LINE CONNECTOR
Rudolph W. Voelcker, Greensboro, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,175
6 Claims. (Cl. 333—33)



1. A coaxial line to strip line connector, comprising
a body including a conductive path between the lines and defining a cavity which comprises a portion of the path,
means for tuning the cavity to compensate for impedance mismatch of the lines, and
means for adjusting the cavity to compensate for the phase shift in a signal being transmitted along the lines.

3,201,722
TRANSMISSION LINE ADAPTER FOR CONNECTING COAXIAL AND STRIP TRANSMISSION LINES AT RIGHT ANGLES
Charles B. May and Richard D. Jeffery, Ridgecrest, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 17, 1963, Ser. No. 317,096
6 Claims. (Cl. 333—84)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A connector for joining a coaxial transmission line to one of the "strip" type, said coaxial line being made up of a tubular outer conductor and an inner conductor electrically separated from the outer conductor by an annular spacer of dielectric material, said strip line being made up of a pair of planar outer conductors lying face-to-face in spaced apart parallel relationship with a center conductor also of planar configuration lying therebetween and respectively separated therefrom by two spacers of dielectric material lying to each side of the center conductor, being adapted to join said coaxial line to said strip line at any point along the latter, said strip line having formed therein an opening in the region where the connection to said coaxial line is to be effected, the dimensions of said opening being slightly greater than those of the tubular conductor of said coaxial line, the tubular outer conductor and the dielectric material of said coaxial line being cut at an angle of 45° to the longitudinal axis of the coaxial line at the extremity thereof where the connection to said strip line is to be made, the inner conductor of said coaxial line extending beyond the plane at which the outer conductor is so cut and having a relatively smooth 90° bend therein in the region where the 45° cut in said outer conductor is made, said connector including:
a further coaxial transmission line segment of a type and with dimensions similar to that of the said transmission line, said segment having one end which terminates as the rounded surface of a cylinder the axis of which lies essentially normal to the longitudinal axis of such segment and another end which terminates in a plane which lies at an angle of 45° to such axis, said further line segment being made



up solely of a tubular outer conductor and of an annular insert of dielectric material;
means for joining said further transmission line segment to said coaxial line so that the 45° terminations of each abut one another to form in effect a 90° bend in said coaxial line, with the inner conductor of said coaxial line extending into said segment and terminating on the same rounded cylindrical surface on which the tubular outer conductor of said segment terminates;
the combination of said coaxial line and its terminating segment being receivable in the opening formed in said strip line so that the terminal portion of the inner conductor of said coaxial line lies in essentially linear relationship with the center conductor of said strip line, and with the outer tubular conductor of said coaxial line segment contacting both of the planar outer conductors of said strip line;
whereby the electrical characteristics of the connector are such as to maintain a substantially uninterrupted path for current flowing in either direction through said strip line and said coaxial line; and
whereby the standing wave ratio of the assembly is maintained essentially "flat" throughout a wide range of operating frequencies.

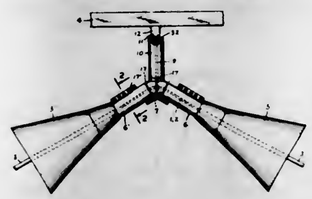
3,201,723
CORRUGATED WAVEGUIDES
Helmut Martin, Hannover, and Günter Möhring, Langenhagen, Hannover, Germany, assignors to Hackethal Draht- und Kabel-Werke Aktiengesellschaft, Hannover, Germany
Filed May 14, 1963, Ser. No. 280,314
9 Claims. (Cl. 333—95)

1. A waveguide comprising a tubular member for transmitting polarized electromagnetic waves having axially related first and second sections, each of said sections being helically corrugated, the corrugations in the first section having one sense of rotation for rotating the plane of polarization of said electromagnetic waves moving through said first section in one direction, the corrugations of the second section having a sense of rotation opposite



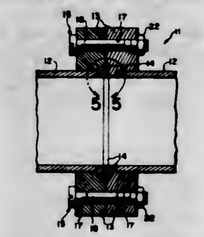
in direction to that of said first section for rotating the plane of polarization of said electromagnetic waves moving through said second section in the other direction.

3,201,724
SUSPENSION SYSTEM FOR SURFACE WAVE TRANSMISSION LINE
Theodore Hafner, 1501 Broadway, New York 36, N.Y.
Filed Jan. 7, 1964, Ser. No. 336,282
8 Claims. (Cl. 333—95)



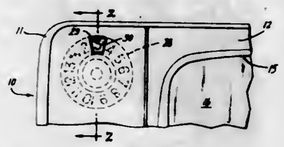
1. In a communications system for high voltage power lines, a number of high voltage transmission towers, a surface wave conductor including a steel core, a conducting layer surrounding said steel core and a dielectric coating surrounding said conducting layer, and defining a surface wave of predetermined field diameter; said surface wave conductor extending continuously through at least one of said towers at an opening thereof corresponding to a substantial portion of said field diameter, said surface wave conductor over at least a portion of its passage through said tower having removed said dielectric coating from said conducting layer, a coaxial line formed around said uncoated portion, having an outer conductor which is slotted to receive said surface wave conductor; said surface wave conductor forming the inner conductor of said coaxial line at said uncoated portion, and means for attaching said surface wave conductor to said tower by said uncoated portion of surface wave conductor.

3,201,725
COUPLING MEANS
Floyd O. Johnson, Mountain View, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Dec. 17, 1962, Ser. No. 245,068
2 Claims. (Cl. 333—98)



1. A coupling means for joining together in a vacuum-tight, pressure-tight and electrically continuous manner two waveguide sections having reduced waveguide ends, said sections and ends having outer and inner peripheries forming outer and inner surfaces, the inner peripheries of said sections and said ends being in alignment, comprising a flange member made of rigid material having a tongue projecting outwardly beyond said reduced waveguide end, said flange member fixedly mounted on the outer surface of each reduced waveguide end, said waveguide ends being reduced such that said flange member tongues lie closely adjacent the inner surfaces of said waveguide sections without weakening said waveguide sections, a compressible bakeable washer having an inner periphery conforming to and initially slightly greater than the inner periphery of said reduced waveguide ends disposed between said flange members, and means for clamping said flange members together such that the inner periphery of said compressible washer is brought into alignment with the inner peripheries of said reduced waveguide ends so as to create a seal and form an electrically continuous path between said sections along said inner peripheries.

3,201,726
TUNING APPARATUS
Joseph E. Laschenski, Philadelphia, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Sept. 2, 1960, Ser. No. 53,773
7 Claims. (Cl. 334—29)

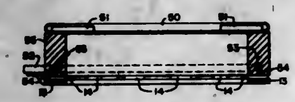


1. Tuning apparatus comprising channel selecting means including a shaft mounted for progressive step-by-step rotation to select a plurality of station channels successively, tuning means including a member displaceable for effecting fine tuning to the selected channels, an electric motor drivingly connected to said shaft to rotate the same, a turret structure connected to said shaft and rotatable with respect to said member, circuit means for supplying electrical energy to said motor and including a switch disposed adjacent said structure, said structure having a plurality of screw-threaded rotatable elements representing said channels, one end portion of each of said elements being adapted for engagement with said tuning member, the other end portion of each of said elements being adapted for engagement with said switch, and means for rotatably adjusting said elements individually either in positions for engagement of said one end portion with said tuning member for fine tuning adjustments thereof or in positions for engagement of said other end portion with said switch to operate the same.

3,201,727
INDUCTIVE APPARATUS FOR UTILIZING GASEOUS DIELECTRICS
Paul Narbut, Sharpsville, Gregory A. Monito, West Middlesex, and Paul Voytik, Sharpsville, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Original application Sept. 12, 1958, Ser. No. 760,743. Divided and this application June 21, 1961, Ser. No. 118,629
6 Claims. (Cl. 336—57)

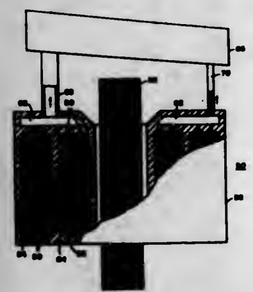
1. A transformer structure, comprising; a winding; a pressure collar member disposed on said winding; an electrostatic shielding conductor disposed within said pressure collar member in close proximity to said winding to prevent flashover and corona effects from said winding and improve the dielectric strength of said pres-

sure collar member; said shielding conductor being tubular and adapted to receive a liquid dielectric coolant; said



pressure collar member and said tubular conductor having a plurality of orifices formed therein to allow distribution of said liquid dielectric coolant over said winding.

3,201,728
EVAPORATIVE COOLED INDUCTIVE APPARATUS HAVING CAST SOLID INSULATION WITH COOLING DUCTS FORMED THEREIN
James H. McWhirter, Sharon, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 23, 1962, Ser. No. 219,040
8 Claims. (Cl. 336—60)



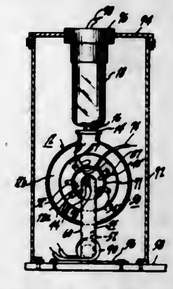
1. In electrical apparatus, a winding assembly having electrical coils, insulating means comprising thermosetting resin, said electrical coils being embedded in said insulating means, cooling ducts formed in said thermosetting resin, with said thermosetting resin extending from said electrical coils to said cooling ducts and forming the walls of said cooling ducts, fluid cooling means disposed within said cooling ducts, heat exchanger means, means providing a closed circuit between said cooling ducts and said heat exchanger means to confine said fluid cooling means to said cooling ducts and heat exchanger means, said fluid cooling means cooling the electrical apparatus by circulation between said cooling ducts and said heat exchanger means.

3,201,729
ELECTROMAGNETIC DEVICE WITH POTTED COIL
Serge Bianchi, 48 Ave. Alfred de Musset, Le Vesinet, France, and Roger Lacour, 86 Rue Myrrha, Paris, France
Filed Feb. 26, 1960, Ser. No. 11,272
3 Claims. (Cl. 336—83)



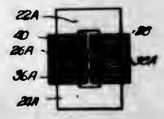
1. An electromagnetic device comprising a unitary body consisting of a non-conductive mass of a synthetic resin having a multiplicity of ferromagnetic particles distributed therein, a conductive coil imbedded in and surrounded by said mass, said coil having at least two terminal leads extending wholly within said mass, at least two terminals respectively connected with said leads and projecting from said body while being firmly mounted thereon, said mass permeating the interior of said coil and forming a core therein integral with the portion of said mass surrounding said coil, and a tube of magnetically permeable sheet material surrounding said core and separating it from said coil, said tube being provided with perforations permeated by said mass.

3,201,730
HIGH VOLTAGE TRANSFORMER AND RECTIFIER TUBE WITH DIRECT CONNECTION THEREBETWEEN
Forrest E. Brooks, Moorestown, N.J., and Charles C. Iden, Cambridge, Ohio, assignors to Radio Corporation of America, a corporation of Delaware
Filed May 4, 1962, Ser. No. 192,528
6 Claims. (Cl. 336—107)



2. The combination of a transformer, a rectifier and a shield comprising,
a two part shield,
one shield part having an opening therein and the second shield part serving to close said opening,
a socket having pin-receiving openings in a face thereof so mounted on said second shield part that said face of said socket is exposed to the interior of said shield,
a transformer having a terminal,
said transformer being mounted within said shield in such manner that said terminal extends towards said face,
a rectifier tube having base pins and a cap connection,
said base pins being inserted into said pin-receiving openings and said cap connection being in electrical contact with said terminal.

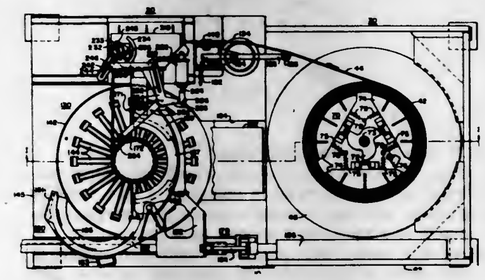
3,201,731
TRANSFORMER CORE AND LAMINATION THEREFOR
Robert C. Baenziger, Northbrook, and John F. Rieger, Wilmette, Ill., assignors to Electro-Netic Steel, Inc., Schiller Park, Ill., a corporation of Illinois
Filed Nov. 27, 1962, Ser. No. 240,276
2 Claims. (Cl. 336—212)



1. A core type transformer which comprises a first stack of laminations including a first leg portion, a second leg portion and a bight portion joining said first and

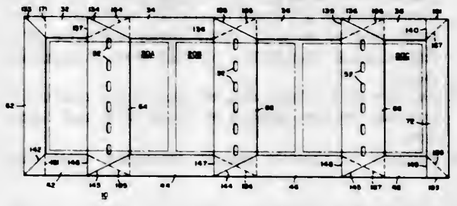
second leg portions; said first leg portion of said stack being longer than said second leg portion by an amount corresponding substantially to the width of said bight portion; said laminations of said first stack being joined so that the free ends of said stacked first and second leg portions define a planar mating face; a second stack of laminations including first leg portion, a second leg portion and a bight portion joining said leg portions and constructed so as to complement the configuration of said first stack of laminations; said laminations of said second stack being joined so that the free ends of said stacked first and second leg portions define a planar mating face that complements the mating face defined by the free ends of said stacked leg portions of said first stack of laminations; said mating faces of said first and second leg portions of said respective stacks being intimately abutted so that a substantially rectangular core configuration is defined by said abutted stacks; and first and second transformer windings overlying and encompassing respective ones of said abutted mating faces and adjacent segments of said stacked leg portions so as to minimize leakage flux and confine lines of stray flux to said core type transformer during the operation thereof.

3,201,732
WOUND MAGNETIC CORE HAVING TURNS WHICH ARE GIVEN A PREDETERMINED SET IN RADIUS BEFORE WINDING
Willy Olsen, Lynchburg, Va., and Belvin B. Ellis, Pulaski, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Original application Sept. 25, 1959, Ser. No. 842,295, now Patent No. 3,081,962, dated Mar. 19, 1963. Divided and this application July 20, 1961, Ser. No. 125,482
1 Claim. (Cl. 336—213)



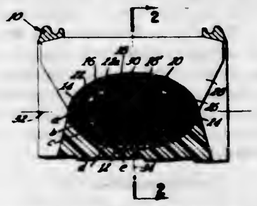
A magnetic core loop comprising,
a plurality of continuously contiguous superposed turns of magnetic strip material formed from a continuous strip of magnetic material,
said magnetic core loop having a generally ring-shaped configuration,
each of said plurality of turns having a first predetermined radius in said magnetic core loop,
the magnitudes of the first predetermined radii of each of said plurality of turns increasing from the inner turn to the outer turn of said magnetic core loop in a substantially uniform manner,
each of said plurality of turns having a predetermined set which would cause each of said turns to assume a second predetermined radius smaller in magnitude than its first predetermined radius if unrestrained,
the magnitudes of the second predetermined radii of each of said plurality of turns increasing from the inner turn to the outer turn of said magnetic core loop in a substantially uniform manner,
the set in each of said plurality of turns enabling said magnetic core loop to retain its ring-shaped configuration.

3,201,733
MAGNETIC CORE STRUCTURES
Roy L. Brown, Sharon, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 14, 1960, Ser. No. 69,079
1 Claim. (Cl. 336—217)



A magnetic core comprising a plurality of stacked layers of laminations formed from magnetic material, said stacked layers forming first and second outer leg members, at least one intermediate leg member, and yoke members connecting the ends of said leg members, the ends of the laminations in each of said stacked layers being cut at predetermined angles, said leg members being disposed substantially parallel to and spaced apart from one another and assembled with the cuts on the ends of the leg laminations meeting matching cuts on the ends of the laminations in said yoke members to form a substantially rectangular core, the joints formed between the meeting matched cuts being overlapped by the laminations in adjacent layers, and bonding means, said bonding means being disposed between the plurality of layers of laminations which form said intermediate leg member, in the portion of said intermediate leg member which is disposed intermediate the associated yoke members, to bond the laminations which form said intermediate leg member into a substantially unitary member.

3,201,734
TRANSFORMER CORE AND WINDING
Andrew A. Halacsy, Elizabeth, N.J., assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed Aug. 3, 1960, Ser. No. 47,200
7 Claims. (Cl. 336—221)



1. An electrical transformer having a toroidal winding of steel strip forming a magnetic core, the wide face of the strip being parallel to the toroidal axis, and a winding of wire extending around said core, said core and winding generating an essentially elliptical cross section, the major axis of the ellipse being parallel to the axis of the toroidal core, and the ratio of the major axis of the ellipse to its minor axis being between 2 and 3.6.

3,201,735
ELECTRICAL PRESSURE TRANSDUCER
George J. Brown and Hazel H. Barrett, both of Riverside, Calif., assignors to Beeman, Inc., a corporation
Filed July 20, 1961, Ser. No. 125,542
12 Claims. (Cl. 338—6)

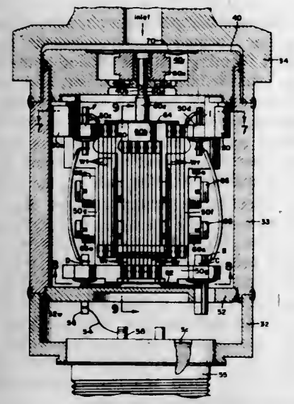
1. A displacement-sensing instrument comprising:
first means, comprising relatively fixed frame means;

a plurality of insulated discrete electrically-conductive terminal devices fixedly supported by said frame means;

second means, comprising movable armature means and a displacement-transmitting means constructed and arranged to transmit to said armature a displacement to be sensed by the instrument, and means supporting the armature means for rectilinear movement relative to said frame under influence of a displacement transmitted by said force-transmitting means;

a plurality of insulated discrete electrically conductive terminal devices secured to move with said armature;

a plurality of discrete equally tensioned wires each

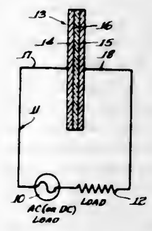


respectively secured to and electrically connected adjacent one end thereof to a said terminal device secured to move with said armature and secured to and electrically connected adjacent the other end thereof to a said terminal device fixedly supported by said frame means, said wires being thus connected electrically in series and arranged substantially parallel to the line of displacement of said armature, whereby a displacement transmitted by said displacement-transmitting means produces a change in tension and a corresponding change in electrical resistance of the wires indicative of the magnitude of the transmitted translation;

and electrical connections to terminal ones of said terminal devices.

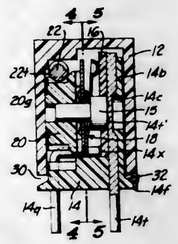
3,201,736
TEMPERATURE RESPONSIVE RESISTANCE DEVICE
Stanford R. Ovshinsky, Detroit, Mich., assignor, by mesne assignments, to Energy Conversion Devices, Troy, Mich., a corporation of Delaware
Filed May 28, 1962, Ser. No. 198,281
18 Claims. (Cl. 338—25)

1. A temperature responsive resistance current controlling device for controlling an electrical circuit in accordance with temperature conditions affecting said device comprising, spaced apart metallic electrodes, a body of at least one lithium compound selected from the group consisting of lithium oxide, lithium hydroxide and lithium carbonate and a self-supporting solid diluent and having a substantial negative temperature-resistance coefficient interposed between and in electrical contact with said electrodes, and means connected to said electrodes for connecting said body in series with the electrical circuit for controlling the current flow therethrough in accordance with the temperature of said body as affected by the



temperature conditions to increase the current flow upon an increase in temperature and to decrease the current flow upon a decrease in temperature.

3,201,737
GEAR-ADJUSTED VARIABLE RESISTOR
Victor G. Mathison, Riverside, Calif., assignor to Bourns, Inc., a corporation of California
Filed Nov. 13, 1962, Ser. No. 237,022
16 Claims. (Cl. 338—174)



1. A variable resistor comprising:

a base member of molded electrically insulative material, said base member including a flat wall-like portion and an integral outstanding portion disposed at a right angle to said wall-like portion;

a rod-like conductive terminal member mounted in said outstanding portion of said base member and having a portion exposed at the exterior of said outstanding portion;

a conductive stud having a base portion disposed on said outstanding portion of said base and fusion-united to the exposed portion of said terminal member, whereby to support the stud perpendicularly of said terminal member and electrically connect the stud to said terminal member;

rotary means, including a rotary contact device, having a contact, rotatably mounted on said stud and conductively connected therewith;

resistance means, including a resistance element secured to said base member and disposed to be brushed by said contact and having at least one terminal;

means, including cover means cooperating with said base member to enclose said rotary means and resistance element for protection of the latter;

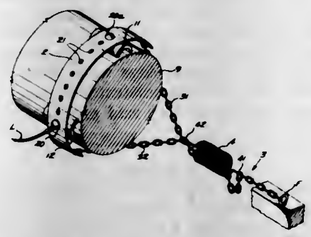
and driver means rotatably supported on said cover means and engaging said rotary means for rotating said rotary means, whereby the resistance exhibited between said terminal and said terminal member is varied between limits incident to rotation of said rotary means by said driver means.

3,201,738
ELECTRICAL HEATING ELEMENT AND INSULATION THEREFOR
Stephan P. Mitoff, Elmora, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 30, 1962, Ser. No. 241,378
1 Claim. (Cl. 338—238)



An electrical resistance heating element comprising, an electrically resistive conductor through which electricity flows, an insulating ceramic consisting of magnesium-oxide containing dissolved amounts of lithium-oxide up to the solid solubility limit thereof effective to give said insulating ceramic a fraction of ionic conductivity no higher than about 0.6 at 1000° C., said ceramic surrounding said resistive conductor, and a protective jacket enclosing said ceramic.

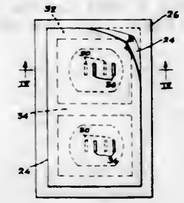
3,201,739
BRUSH ASSEMBLY FOR ROTATABLE SHAFT
John W. Caldwell, Seattle, Wash., assignor to The Bunker Hill Company, Seattle, Wash., a corporation of Delaware
Filed Aug. 17, 1962, Ser. No. 217,571
2 Claims. (Cl. 339—5)



1. Means for establishing electrical contact with a rotatable shaft comprising a resilient conductive band of generally arcuate configuration, a pair of brushes, means removably mounting said brushes at spaced points along said band, conductive means connected to said band for transmitting current to a stationary point, a flexible non-extensible Y-shaped element having its base fixedly anchored and its branched ends connected to the ends of the conductive band, and helical spring means connected between two spaced points on said non-extensible element to yield under tension to the extent permitted by the length of non-extensible element between said two spaced points.

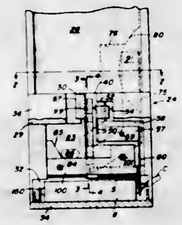
3,201,740
ADHESIVELY ATTACHED RESILIENT SAFETY DEVICE FOR ELECTRICAL CONNECTORS
George J. Rubens, Woodland Hills, Calif.
(8304 Melody Court, Bethesda, Md.)
Filed July 17, 1964, Ser. No. 383,477
5 Claims. (Cl. 339—40)

2. A safety device for mounting between an electrical plug having prongs and a wall socket having an escutcheon plate, comprising a sheet of insulation material having a wall surface adapted to cover said socket, said material being made of uniform thickness, said material having a plurality of individual openings extending through said thickness one opening for each prong of the plug, said material having a high degree of compressibility capable of being squeezed by the plug when inserted into the socket, said wall surface of the sheet of material having an adhesive coating for securing the periphery of said sheet to said escutcheon plate, an area of said wall surface around the openings being



free of adhesive to permit said area to be moved relative to said socket when the plug is inserted therein.

3,201,741
LAMP SOCKET FOR PHOTOFLASH UNIT
Clifford G. Vroom, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 3, 1962, Ser. No. 241,626
7 Claims. (Cl. 339—45)



5. A lamp socket for releasably retaining a flash lamp having a globe portion tapering to a flattened base, a first electrical terminal extending from one side of said base and a second electrical terminal extending from the other side of said base, said socket comprising in combination:

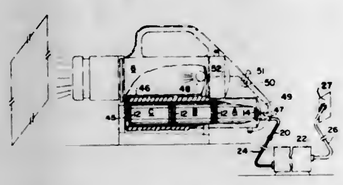
(A) a supporting block having adjoining side and top walls in substantially right angular relation,

(1) said side wall provided with an elongated recess opening into said top wall and into which recess the flattened base of said lamp is adapted to be inserted sidewise with said electrical terminals facing opposing walls of said recess with the globe portion extending above said top wall,

(B) first and second electrical contacts respectively located in said recess adjacent opposite sides thereof and spaced apart by a distance such that each contact is adapted to frictionally engage opposite ones of said electrical terminals on said lamp when it is inserted into said recess,

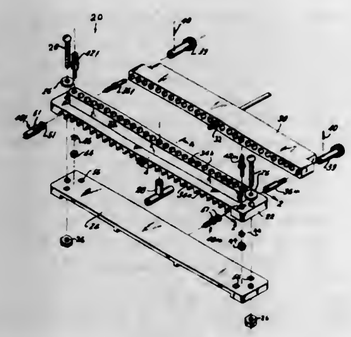
(C) a spring loaded lamp ejector mounted in said recess to be engaged and moved from a normal lamp ejecting position to a tensioned position by the base of a lamp when it is inserted sidewise into said recess, and comprising a double-ended lever pivoted intermediate its ends about an axis located below and extending substantially at right angles to the flattened base of a lamp when inserated into said recess, one end of said lever located in said recess to engage one end of the lamp base as it is inserted into said recess, and a spring acting on the other end of said lever to normally urge the lever to the lamp ejecting position.

3,201,742
ELECTRIC CONNECTOR
Howard D. English, Cockeysville, Md., assignor of one-half to Frederick A. Ramia, Baltimore, Md.
Filed Mar. 8, 1962, Ser. No. 178,333
1 Claim. (Cl. 339—58)



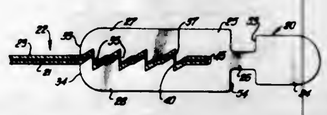
An electric connecting device for replacement for an exhausted dry battery in the battery compartment of a battery operated apparatus whereby rectified and stepped down voltage from house current may be fed through a combination transformer and rectifying unit to operate the apparatus, the invention comprising a tubular connector closed at its opposite ends formed of plastic, centrally located positive and negative contacts in the closed ends of said connector corresponding to the contacts on the exhausted dry battery, electric wires from said combination transformer and rectifying unit extending through the wall of said tubular connector and secured to the respective contacts in said connector, and means connectible between said unit and the source of house current.

3,201,743
ELECTRICAL CONNECTOR
John H. Huber, Harrisburg, and William L. Schumacher, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 31, 1963, Ser. No. 320,456
14 Claims. (Cl. 339—92)



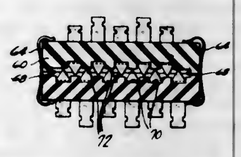
14. A coaxial connector comprising the combination of a one-piece shielding shell having a main portion adapted to be formed into a tube having a seam along one side of the resulting tube and further having a branch portion of a closed tubular shape opening off from said main portion, a conductor having a branch portion joined thereto at the same angle that the branch portion of the shell makes with its main portion, a dielectric spacer adapted to receive said conductor and insulatingly support it centered within said shell, whereby said main tubular portion of said shell can be formed over said spacer to a closed tubular shape after said conductor, together with said spacer, has been properly seated within the shell.

3,201,744
CONTACT TERMINAL FOR AN ELECTRICAL CONDUCTOR MEMBER
Gordon W. Dean, Alhambra, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Feb. 15, 1961, Ser. No. 89,538
6 Claims. (Cl. 339—97)



1. A contact terminal and conductor member attached thereto and said contact terminal adapted to mate with another terminal, said combination comprising: a member of conductive material having front and rear ends, said member having a forward contacting portion adapted to mate with another terminal, a pair of clamping arms extending rearwardly from said contacting portion in generally parallel relationship to each other, said arms having opposed inner surfaces, and a conductor member held between said clamping arms, means provided on said inner surfaces for retaining said conductor member between said inner surfaces against longitudinal relative displacement, wherein said means includes a tooth projecting from each of said respective inner surfaces and longitudinally spaced from each other, and wherein each of said teeth embodies an edge wall extending from the point of the tooth back into the clamping arm and the arm is cut out adjacent the edge wall to provide a notch, which notch accommodates a tooth projecting from the opposite arm, the adjacent edge walls lying in generally parallel proximity, and the conductor member is frictionally engaged between and by said proximate walls.

3,201,745
ANGULAR CONTACT CONNECTOR
Nathaniel C. Williams, Saugatuck, Conn., assignor to Burndy Corporation, a corporation of New York
Filed July 27, 1962, Ser. No. 212,913
2 Claims. (Cl. 339—99)



1. A connector for flat flexible cable of the type including a plurality of parallel spaced apart strip conductors within a supporting body of flexible dielectric material, comprising:

a housing including a front surface and a cavity extending inwardly therefrom for longitudinally receiving a flat flexible cable in fixed position relative to said housing; said cavity including two substantially parallel spaced apart cable supporting surfaces for receiving said flat cable therebetween; a plurality of spaced apart grooves parallel to the longitudinal axis of said cable in each said supporting surface, the grooves in each said surface being disposed opposite the spaces between grooves in the other said surface; a base surface in each said groove; a plurality of contact elements formed of resilient conductive strip material each disposed in part in contact with the base surface of one of said grooves and in part extending angularly therefrom and inwardly into said cavity; means on said housing for fixedly securing thereto a portion of each said contact element part disposed in said grooves; each said angularly and inwardly extending contact part having a free end bearing against the cable supporting surface opposite the groove containing said contact, and adapted to flex inwardly and away therefrom; a sharpened edge on each said free end adapted to penetrate the dielectric jacket of a cable inserted into said cavity between said sharpened edge and said cable support surface, in response to movement of said cable in the direction opposite to insertion.

3,201,746
TEST PROBE WITH GRAPPLER
Crawford S. Askew, 5120 SW. 98th Ave. Road, Miami, Fla.
Filed July 31, 1963, Ser. No. 299,020
6 Claims. (Cl. 339—108)



6. A probe comprising a hollow cylindrical housing of electrically insulating material with a reciprocal and rigid conductor having a hook and exteriorly of one end of said housing with the other end of said conductor in the housing, operating means for said conductor located exteriorly of the housing and connected to said conductor through a lateral opening in the housing to move the hook end of the conductor an equal distance relative to all points of the housing between a first extended position and a second retracted position in close association with an end of said housing, the other end of the conductor being in the housing at all times on movement of the conductor between the first and the second position, an electrical terminal carried at the other end of said housing to adapt the probe for receiving an electrical lead from test equipment, conductor means in the housing intermediate the conductor and the terminal to communicate current between the conductor and the shaft in the retracted position to test a wire electrically, and guide means carried by the housing to limit the shaft to movement of translation only in the housing.

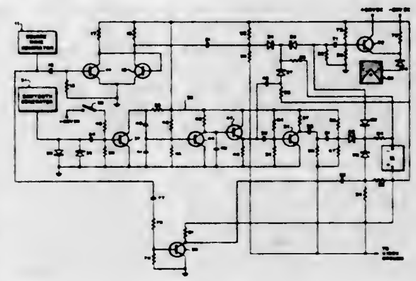
3,201,747
MIXED TYPE TERMINAL SUPPORTS, AND CORRESPONDING TERMINAL BARS
Lucien Blanchet, 35 Rue du Cinq Mars, Colombes, Seine, France
Filed Dec. 29, 1961, Ser. No. 163,199
Claims priority, application France, Jan. 5, 1961, 848,911, Patent 1,284,660; Dec. 14, 1961, 882,002, Patent 80,791
The portion of the term of the patent subsequent to Feb. 12, 1979, has been disclaimed
5 Claims. (Cl. 339—198)

1. A terminal-carrying bar for attachment to a transverse rail, said bar comprising an integral outer member of resilient electrically insulating material provided with depending snap-attaching means for snapping it directly onto said rail an elongated integral inner member of elec-



trically conductive material gripped within and covered by said outer member, electrical contact means near the opposite ends of and permanently electrically connected by said inner member, and an electrical terminal carried on and projecting upwardly from said outer member, said terminal being seated in a portion of said outer member above said inner member and being insulated thereby from said inner member, said outer member extending below said inner member and insulating it from contact with said rail.

3,201,748
SYMBOL GENERATOR CIRCUIT FOR AIRCRAFT
George H. Balding, Fremont, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 26, 1962, Ser. No. 240,188
5 Claims. (Cl. 340—27)



1. An electronic symbol generator comprising:

a horizontal sweep means;

first means to insert a pulse during a predetermined portion of a horizontal sweep;

second means to insert a pulse during a portion of said horizontal sweep less than the portion in said first means;

a vertical sweep means;

third means to insert a pulse during a portion of a vertical sweep;

fourth means to insert a pulse during a portion of said vertical sweep less than the portion in said third means;

first "and" circuit means receiving pulses from said first means and said fourth means and passing a pulse upon the simultaneous occurrence of pulses from said first and fourth means;

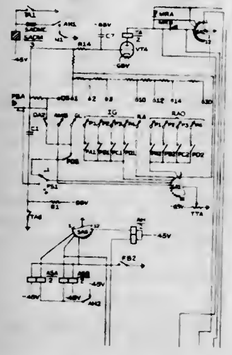
second "and" circuit means receiving pulses from said second means and said third means and passing a pulse upon the simultaneous occurrence of pulses from said second and third means; and

means to send from either "and" circuit means a display of the pulses passed therethrough.

3,201,749
SIGNALLING SYSTEMS FOR THE CONTROL OF STREET TRAFFIC

Alan Leslie Range, Liverpool, England, assignor to Automatic Telephone & Electric Company Limited, Liverpool, England, a British company

Filed May 31, 1960, Ser. No. 32,804
Claims priority, application Great Britain, June 26, 1959, 21,932/59
10 Claims. (Cl. 340—41)

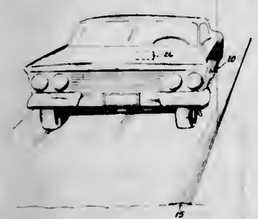


1. In a street traffic signalling system, a master controller, a plurality of local controllers respectively associated with intersections on a main highway, a signaling line extending from said master controller to each of said local controllers, a plurality of sets of visual signals respectively controlled by said local controllers and arranged to selectively accord and deny right of way, means for transmitting simultaneously from said master controller to said local controllers a discrete signal of one type for initiating the termination of the right-of-way period accorded by said visual signals to traffic on said main highway, means for transmitting simultaneously from said master controller to said local controllers a discrete signal of a different type for initiating the termination of the right-of-way period accorded by said visual signals to traffic on streets crossing said main highway, and timing devices in said local controllers which are set in operation in response to said signals and serve to control said visual signals to terminate said right-of-way periods respectively on completing their operation.

3,201,750
AUTOMOBILE SWERVE ALARM SYSTEM

Lawrence Morin, P.O. Box 1284, Sierra Vista, Ariz.

Filed Jan. 2, 1962, Ser. No. 163,651
2 Claims. (Cl. 340—52)



1. In an automobile danger alarm system:

(a) a pair of generally tubular support members on an automobile so that one such tubular support is pointed in a general direction forwardly toward the pavement and to the left of the automobile, and the other tubular support at an angle thereto but toward a center portion of the pavement,

(b) a light-sensitive cell supported in each such tube in a position not to receive direct light from passing vehicles,

(c) an alarm device,

(d) circuit means for actuating said alarm device when the light reflected from the pavement to said cells has a predetermined differential value,

(e) a light source,

(f) means for supporting the light source on the vehicle to reflect light from said source to and from the pavement in substantially equal intensity to each light-sensitive cell,

(g) a Wheatstone type bridge with two legs, each of which includes one of said cells,

(h) adjustable potentiometer means for balancing said bridge circuit with a predetermined resistance value for each cell,

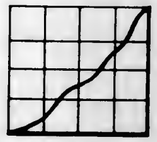
(i) an amplifying circuit including a power source, said bridge circuit and a relay coil, so that imbalance of said bridge circuit will cause a current to flow, and said current to be amplified to energize said relay coil,

(j) signal means responsive to energization of said relay coil and actuation of the relay armature to signal to the automobile driver when one of said cells is receiving radiations from a road dividing marker.

3,201,751
OPTICAL CHARACTER READING MACHINE WITH A PHOTOCELL MOSAIC EXAMINING DEVICE

Jacob Rabinow, Bethesda, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed June 6, 1961, Ser. No. 115,267
23 Claims. (Cl. 340—146.3)



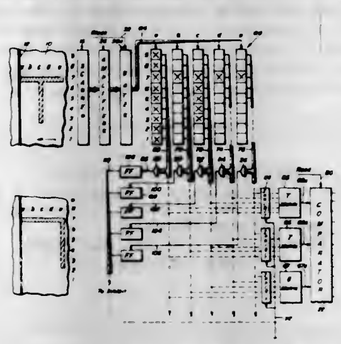
1. In a reading machine, an examination device having a field of view across which an unknown character passes, means continually providing analog intelligence outputs from said device as said character passes, analog storage means for each of a plurality of characters to be identified, analog correlation means responsive to said outputs for impressing signals on said storage means corresponding to the intelligence outputs for predetermined groupings of the areas of said examination device, a portion of said intelligence-output-providing means also constituting means responding to the full occupancy of the character in said field view to provide a trigger signal, and means responding to said trigger signal to interrogate each storage means and yield a signal which identifies the storage means having the optimum stored signal at the time of said trigger.

3,201,752
READING MACHINE WITH MARK SEPARATION

Jacob Rabinow, Bethesda, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed June 11, 1962, Ser. No. 201,376
12 Claims. (Cl. 340—146.3)

6. In a reading machine for characters on an optically contrasting area where said area has at least one additional mark whose reflectance is similar to the characters and whose location relative to a character can vary such that the mark may touch a character, said machine having means to form an image of said area, a photosensitive examination device on which said image is formed, said device being sensitive to an unknown character and said mark of said area-image, processing means providing outputs which correspond to both said character and mark, means responsive to said outputs to provide signals by



which to identify said unknown character, and a comparator responsive to said signals to identify the unknown character, the improvement comprising:

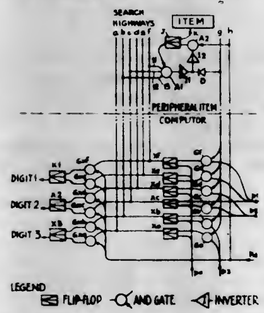
(a) means to detect the mark; and

(b) means operatively connected with said processing means for suppressing said detected mark ahead of said comparator.

3,201,753
SELECTION OF PERIPHERAL EQUIPMENT IN COMPUTER SYSTEM

Jack Connett, Swinton, England, assignor to Associated Electrical Industries (Manchester) Limited, a company of Great Britain

Filed Nov. 30, 1959, Ser. No. 856,273
2 Claims. (Cl. 340—147)

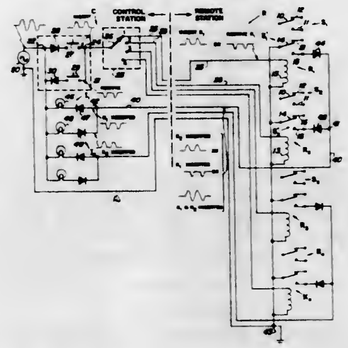


1. Electronic computing apparatus comprising a computer, a plurality of peripheral equipments arranged for intermittent connection with the computer for transfer of data, said equipments being grouped for searching in half groups and successively halved sub-groups until individual equipments are reached, a plurality of pairs of search highways, those forming the first pair being respectively connected to the two half groups and those forming other pairs being respectively connected to successively lower sub-groups so that each peripheral equipment is connected to a different combination of highways, means whereby on transmission of an interrogating signal along one of the first pair of highways a result signal is transmitted to the computer, means whereby on reception of a result signal indicating that no equipment in the half group connected to said first highway requires attention the computer is connected to the second highway of the first pair, and means for repeating said interrogation sequence on the pairs of search highways connected to successively lower sub-groups until an individual equipment is reached.

3,201,754
REMOTE CONTROL AND INDICATION SYSTEM

Fred Reiner, Pikesville, and Wayne S. Linfield, Baltimore, Md., assignors to Aircraft Armaments, Inc., Cockeysville, Md., a corporation of Maryland

Filed May 10, 1962, Ser. No. 193,840
1 Claim. (Cl. 340—147)



A remote control and indicating system comprising:

(a) a pair of polarized control switches connected in parallel with polarities in opposition to form a control unit;

(b) a pair of relays each having a relay coil and a movable contactor that is engageable with one contact when the current through the coil is in one direction and engageable with another contact when the current through said coil is reversed;

(c) means for selectively connecting one end of said control unit to one end of either relay of said pair of relays;

(d) a source of A.C. potential;

(e) means connecting the other end of both the relay coils of said relays to one end of said source;

(f) means connecting the other end of said source to the other end of said control unit;

(g) a diode in series with each of said movable contractors and with one contact to define a pair of polarized switches;

(h) means connecting said polarized switches in parallel with said polarities in opposition to define a controlled unit;

(i) a pair of polarized indicators connected in parallel with polarities in opposition to define an indicator unit;

(j) a single wire connecting one end of said indicator unit to one end of said controlled unit;

(k) means connecting the other end of said indicator unit to said other end of said control unit; and

(l) means connecting the other end of said controlled unit to said one end of said source.

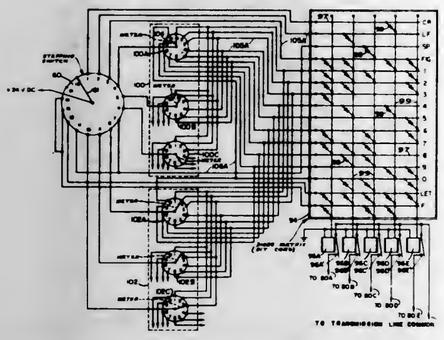
3,201,755
TELEMETERING SYSTEM FOR USE WITH TELEGRAPH TRANSMISSION

William H. Brixey, 405 S. Zurich, Tulsa, Okla.

Filed Jan. 8, 1960, Ser. No. 1,331
1 Claim. (Cl. 340—151)

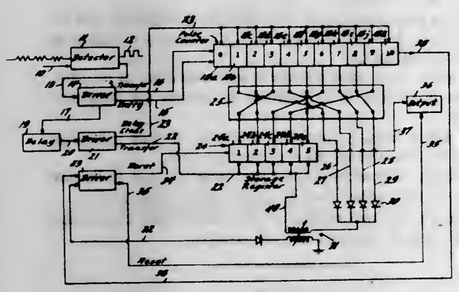
A telemetering reporting station comprising a terminal adapted to be connected to a transmission line, a cyclic distributor, said distributor having a plurality of segments and a wiper, said wiper being connected to said terminal,

means connected to said terminal for sensing an electrical pulse code, means for generating a pulse train, said sensing means actuating said generating means, a stepping switch, means actuating said stepping switch through a complete cycle in response to said pulse train, a plurality of multi-positioned value indicating switches, the position of the movable contact of each switch being correlated to a predetermined value, a source of voltage, means connecting said stepping switch to said plurality of switches for applying said voltage to each movable contact in sequence, a diode matrix having a plurality of input con-



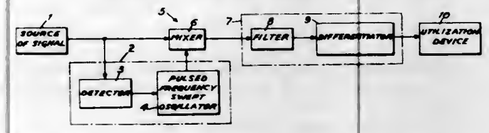
ductors and a plurality of output conductors, means coupling said plurality of switches in parallel and to said plurality of input conductors, a plurality of relays, one of each said relays being connected to one of said output conductors, each of said relays grounding a respective segment of said distributor when energized by said voltage, means for cycling said distributor wiper once for each actuation of said stepping switch, whereby a telegraphic code is transmitted for each value indicating switch in sequence in response to reception of said electrical pulse code.

3,201,756
MAGNETIC PULSE GROUP DECODER
Edward W. Young, Trevose, Pa., assignor, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware
Filed July 18, 1962, Ser. No. 210,692
10 Claims. (Cl. 340—164)



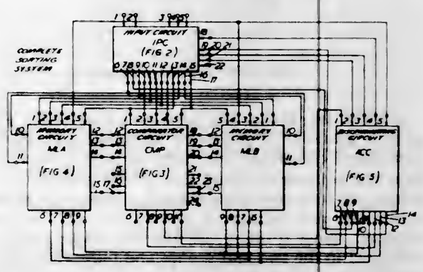
1. A pulse code analyzer for successively receiving groups of pulses corresponding to different digits of a multidigit number and being preconditioned to respond only to one given multidigit code number comprising: a counter for counting the impulses of each group and provided with a plurality of output lines each for producing a pulse when a different number of impulses has been counted by the counter, a storage register, means for isolating the counter from the storage register during the application of each group of pulses to the counter, said means including; normally open switch means interconnecting preselected ones of the output lines of the counter with the storage register, input means for applying said groups of impulses to said counter in serial fashion and time delay means responsive to said input means for operating said switching means only after each said group of impulses has been entered into the counter, thereby to prevent any energization of said storage register during the application of said groups of impulses to said counter.

3,201,757
IDENTIFICATION SYSTEM
Leon Himmel, Cedar Grove, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Sept. 29, 1960, Ser. No. 59,299
20 Claims. (Cl. 340—171)



1. An identification system for a first signal having a frequency within a given band comprising first means to provide said first signal, second means coupled to said first means responsive to said first signal to produce a second signal having a varying frequency characteristic in said given band, said varying frequency characteristic including therein a reference frequency, and third means coupled to said first and second means responsive to said first and second signals to identify the relative position of the frequency of said first signal with respect to said reference frequency.

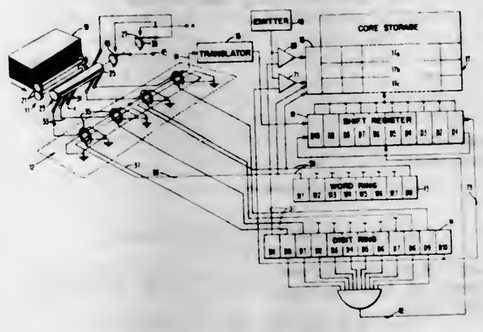
3,201,758
ELECTRICAL SORTING SYSTEM
Willy Hortense Prosper Pouliart and Guillaume van Mechelen, Antwerp, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 13, 1959, Ser. No. 805,841
Claims priority, application Netherlands, Apr. 16, 1958, 226,874
13 Claims. (Cl. 340—172.5)



9. An electrical sorting circuit, to be used in conjunction with a record sorting system which utilizes the binary collation process, into which first the normal form of a binary signal train n digits in length, and then the inverse or complementary form of the same binary signal train are fed representing sorting and satellite numbers on record carriers comprising: two electrical shift registers each of at least $2n+1$ stages; means for progressively

recording different ones of said n digit signals trains in each of said registers; comparing means for each register coupled between the first and the $(n+1)$th stages thereof for detecting an error between the normal and complementary forms of the said signal trains applied to the respective registers, and common comparing means coupled to both of said registers for comparing the signal trains stored therein.

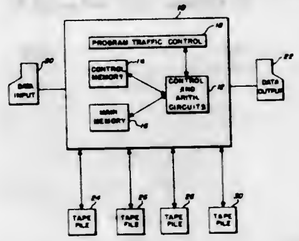
3,201,759
DATA INPUT DEVICE
Martin J. Kelly, Endwell, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1959, Ser. No. 863,025
2 Claims. (Cl. 340—172.5)



1. A device for transferring data characters from a storage medium to a storage means wherein said characters are contained in a plurality of columns and coded by the presence of bits in selected rows of said columns, means for sensing said bits by row, means for translating each bit sensed in a particular row into a coded indication of said row, a register including a plurality of stages for accumulating a plurality of columns of coded indications from said translating means, a storage means connected to receive said coded indications from said register, selection means for determining the location in said storage to which the contents of said register will be transferred, means responsive to the row of data then being sensed to control said selection means, means included in said last-mentioned means operating said selecting means to provide the same storage location for selected rows of data, means for stepping said register whereby successive serial indications are stored in said register, means responsive to a number of indications equal to the number of stages in said register for simultaneously transferring the entire contents of said register to the selected position in said storage, and means for simultaneously transferring the entire contents of a selected position in storage to said register in timed relation to the coded indications to be stored in the same position from a succeeding row in said storage medium.

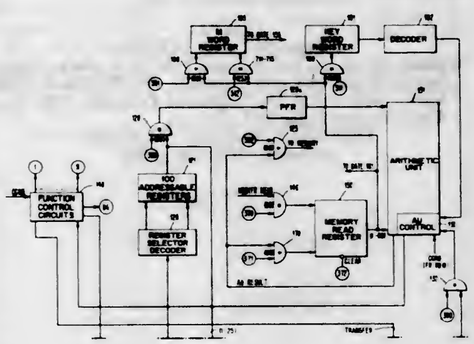
3,201,760
INFORMATION HANDLING APPARATUS
Henry W. Schrimpf, Waltham, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Feb. 17, 1960, Ser. No. 9,273
9 Claims. (Cl. 340—172.5)

1. Apparatus for controlling a programmed data processing system comprising a control memory, means connected to said control memory to select control data therefrom, special function sensing means adapted to be switched automatically to an active state upon the occurrence of a system operation directed by a program order but which operation involves a function that is independent of the normal operation directed by the program order, means connected to said special function sensing means when active to select automatically a predetermined address in said control memory, output means



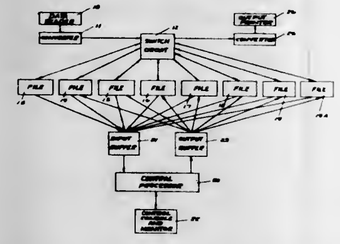
connected to said control memory to receive control data signals therefrom, and automatically operative means connected to said output means to add prefixed data signals thereto define control data uniquely identifying the special function which has become active.

3,201,761
INDIRECT ADDRESSING SYSTEM
William Francis Schmitt, Wayne, and Mary Anne Breslin, Philadelphia, Pa., and Mary Lou Moore, Livermore, Calif., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 17, 1961, Ser. No. 132,044
14 Claims. (Cl. 340—172.5)



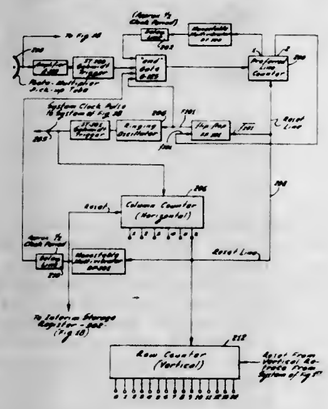
1. An indirect addressing device comprising: a multiple address storage means wherein information relating to at least two addresses can be stored; control circuitry means coupled to said multiple address storage means to make a selection of one of said addresses and to selectively terminate said selection process; keyword storage means to store a keyword having a plurality of digits, the interpretation of each of said keyword digits respectively determining a different selection of said one of said addresses and eventually said termination of said selection process; interpreting means coupled between said keyword storage means and said control circuitry to interpret each of said keyword digits and in response to each interpretation enable said control means to make a different selection of one of said addresses from at least two of said addresses and finally to enable said control means to terminate said selection process in response to a keyword digit interpretation indicating termination.

3,201,762
ELECTRICAL DATA PROCESSING APPARATUS
Henry W. Schrimpf, Waltham, Mass., assignor, by mesne assignments, to Honeywell Inc., a corporation of Delaware
Filed Jan. 25, 1957, Ser. No. 636,256
63 Claims. (Cl. 340—172.5)



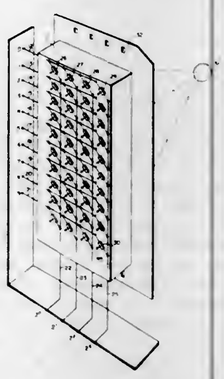
1. In a data processing machine, the combination comprising an input buffer storage circuit and having an input and an output adapted to receive data representing signals from an external means, an output buffer storage circuit and having an input and an output adapted to deliver data representing signals to said external means, a central machine high speed storage means, circuit means connecting the output of said input buffer circuit to said central storage means and said central storage means to the input of said output buffer circuit, and control means actuated by a single set of control signals connected to said circuit means to simultaneously transfer data representing signals from said central storage means to said output buffer circuit and from said input buffer circuit to said central storage means.

3,201,763
TRANSDUCING SYSTEM
William H. Libaw, Los Angeles, Iver A. Sonderby, Manhattan Beach, and James Jenkins, Jr., Woodland Hills, Calif., assignors to The Magnavox Company, Torrance, Calif., a corporation of California
Filed Sept. 6, 1960, Ser. No. 54,315
3 Claims. (Cl. 340—173)



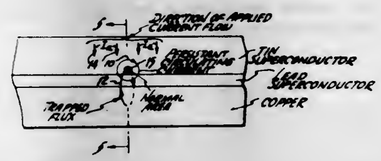
3. A system for reading digital information recorded on a recording medium in at least one data field, the data fiekd including a plurality of series of digital markings with at least one marking in each series representing a clock marking, the system including: scanning means disposed in coupled relationship with the recording medium for sequentially scanning successive series of digital markings in the data field and the digital markings in each successive series a plurality of times, transducer means disposed in coupled relationship with the scanning means during the sequential scanning of each particular series of digital markings and in response to such scannings to produce series of electrical signals representing the digital markings in each of the series, utilizing means responsive to the electrical signals from the transducer means for providing an indication of the information recorded in the respective series of digital markings scanned by the scanning means, electrical circuit means coupled to the transducer means and to the utilizing means and operative upon becoming activated to pass the electrical signals from the transducer means to the utilizing means, control means for producing a series of clock pulses at a particular repetition frequency, means including a counter coupled to the transducer means and to the control means for applying an activating signal to the control means in response to the scanning of the clock markings in the successive series and after a particular number of scans in each series, and means coupled to the control means and to the electrical circuit means and responsive to the clock pulses from the control means for enabling the electrical circuit means to pass the electrical signals from the transducer means to the utilization means.

3,201,764
LIGHT CONTROLLED ELECTRONIC MATRIX SWITCH
Carlyle V. Parker, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 30, 1961, Ser. No. 157,946
7 Claims. (Cl. 340—173)
(Granted under Title 35, U.S. Code (1952), sec. 266)



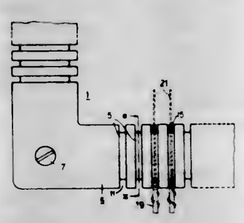
1. In a light-sensitive electronic matrix system capable of performing both a permutation and radix change simultaneously, the network combination of, a plurality of input conductors, a plurality of output conductors representing a binary radix, said plurality of output conductors being sufficient to represent in binary form the number of input conductors, individual switching means connecting each input conductor to each output conductor, said switching means comprising a photo-sensitive semiconductor in controlling connection to a bistable semiconductor, a source of energy for actuating said photo-sensitive semiconductor, means to program the permutation and radix change by controlling which photo-sensitive semiconductor will be actuated by said source of energy, and means for resetting said bistable semiconductor.

3,201,765
APPARATUS, WITHOUT MOVING PARTS, FOR MOVING A STORAGE AREA ALONG A STORAGE MEDIUM
Judea Pearl, New Brunswick, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 16, 1963, Ser. No. 302,498
14 Claims. (Cl. 340—173.1)



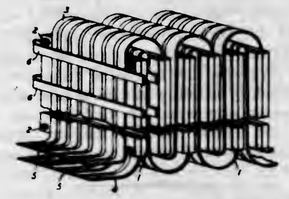
1. In combination,
a length of superconductor material;
means for establishing a persistent current in a restricted area of said material; and
electrical means coupled to said material for causing the restricted area in which persistent current flows to move along the length of the superconductor material.

3,201,766
MEMORY MATRIX WITH INSULATING FRAME
Pieter Gerrit Stevenhagen, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 23, 1961, Ser. No. 133,451
Claims priority, application Netherlands, Sept. 22, 1960, 256,150
4 Claims. (Cl. 340—174)



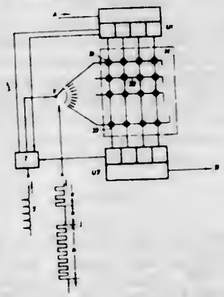
3. An insulating frame for a memory core matrix, said frame comprising a first and second batten of open rectangular construction, a plurality of identical transverse grooves in one major surface of each said batten, said grooves extending from the opening in said frame to the outer marginal edge thereof, the ends of said grooves extending through the thickness of said battens at the edges thereof, means securing said battens in sandwiched relation with the grooves of one said batten opening into the interface therebetween and the grooves of the other said batten opening outwardly of said frame, a plurality of connecting pieces within the grooves opening into said interface, said connecting pieces having oppositely directed projections within said ends of said grooves embracing each said batten for securing said battens against relative movement in the plane of said interface, an offset soldering tag at one end of each said connecting lug extending outwardly from said frame, and the adjacent connecting lugs of said frame being alternately inverted whereby the associated soldering tags are in spaced parallel relation.

3,201,767
MAGNETIC STORAGE DEVICES
Edward Michael Bradley, Stevenage, England, assignor to International Computers and Tabulators Limited, London, England
Filed Sept. 7, 1961, Ser. No. 136,461
Claims priority, application Great Britain, Sept. 23, 1960, 32,750/60
7 Claims. (Cl. 340—174)



2. An information storage device, including a substrate; an area of information storage magnetic thin film supported on said substrate; first and second flexible electrically-insulating tapes; a first conductor mounted on the first tape; a second conductor mounted on the second tape and overlying said first conductor and insulated therefrom, the tapes being positioned with a first portion of each of said conductors lying adjacent said film area and with a second portion of each of said conductors positioned beyond said film area, the first portion of each conductor being magnetically coupled to said film area; and a layer of electrically-conductive foil insulated from said conductors and interleaved only between the second portion of said first conductor and the second portion of said second conductor to reduce the inductance of the conductors.

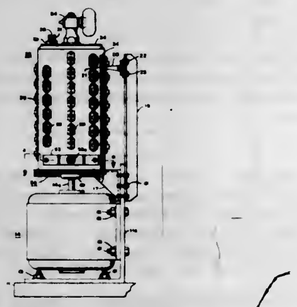
3,201,768
MAGNETIC CORE MATRIX STORAGE SYSTEMS
Gerhard Merz, Rommelshausen, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Original application Jan. 21, 1959, Ser. No. 788,178. Divided and this application Oct. 8, 1964, Ser. No. 392,064
Claims priority, application Germany, Feb. 7, 1958, St 13,425
2 Claims. (Cl. 340—174)



1. A buffer storage system for temporarily storing incoming information comprising a magnetic core storage matrix arranged in columns and rows, each of said cores having a first and a second stable state, primary winding means interconnecting all of the cores in each of said columns, secondary winding means interconnecting all of the cores in each of said rows, and tertiary winding means interconnecting all of the cores in each of said rows and connected to the secondary winding but being opposite in direction to said secondary winding means, said tertiary winding means having at least twice as many

turns as said secondary winding means, distributor means operated responsive to timing pulses to cyclically connect to said secondary winding, binary converter means operated responsive to said incoming information to selectively connect to said primary winding means, gating means normally transmitting operating pulses through said distributor means and said secondary winding means to said tertiary winding means to drive said cores to said first stable state, means operated responsive to the connection of said binary converter means to said selected primary winding for transmitting said operating pulses to said selected primary winding means to drive said cores simultaneously receiving said operating pulses over said primary and secondary winding means to said second stable state, and means connected to said primary windings for reading out stored information by detecting the change of cores from said second to said first stable state.

3,201,769
INFORMATION STORAGE DEVICE
Lawrence G. F. Jones, Baltimore, Md., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Original application May 4, 1951, Ser. No. 224,610, now Patent No. 2,787,756, dated Apr. 2, 1957. Divided and this application June 6, 1956, Ser. No. 589,617
15 Claims. (Cl. 340—174.1)



1. In combination, magnetic transducer means, a cylindrical magnetic recording medium adapted for rotation about its axis and past said transducer means, a member supporting said transducer means and enclosing said medium in spaced relationship thereto, a fluid interposed between said medium and said member, said fluid being moved along with said medium at a speed sufficient to provide bearing support between said medium and said member for maintaining said transducer means in spaced relationship to said medium during rotation of said medium.

3,201,770
MAGNETIC TRANSDUCING SYSTEM
Wayne R. Johnson, Los Angeles, and Charles L. Vice, Pasadena, Calif., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed June 8, 1959, Ser. No. 818,810
12 Claims. (Cl. 340—174.1)

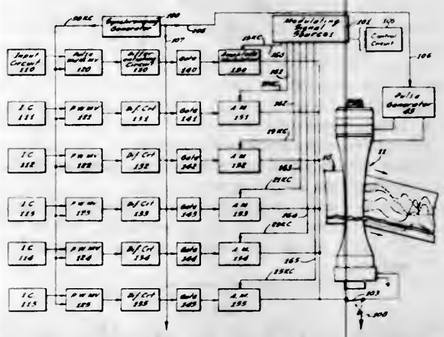
4. In a system for recording and reproducing variable information upon a recording medium movable in a first direction,

means for receiving a number of different variable input signals each representing a different one of a plurality of parameters,

means coupled to said receiving means for periodically sampling each of the variable input signals,

means coupled to said sampling means for modulating the successively sampled signals for each of the variable signals with an identifying signal having a frequency different from the identifying signals for the other variable signals,

transducing means coupled to said modulting means and disposed relative to said recording medium for recording said modulated signals on said recording medium, the transducing means being constructed to provide a recording of information on the medium at positions in a direction transverse to the first direction in accordance with the characteristics of the variable input signals and upon an enabling of the transducing means,



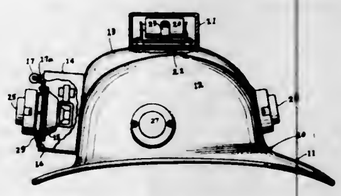
means coupled to the transducing means and the sampling means for obtaining an enabling of the transducing means at the same time as the sampling of the variable input signals,

means coupled to said recording medium for reproducing said recorded modulated signals,

means coupled to said reproducing means for separating said reproduced modulated signals in accordance with said identifying signals, and

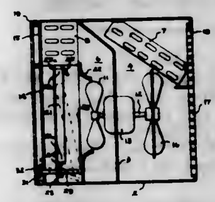
means coupled to said separating means for developing from each of said separated signals a variable output signal which corresponds to the associated variable input signal.

3,201,771
FIREMAN'S HELMET
John J. Proulx, Glenwood Ave., Middlebury, Conn.
Filed Dec. 8, 1961, Ser. No. 158,143
5 Claims. (Cl. 340—227)



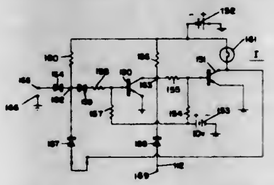
1. In a fireman's helmet having the usual brim and crown in combination with a warning system, of a casing mounted on said crown and having an electrically operated audible signal unit, a battery carried by said helmet, and plurality of heat-detector units positioned about the outside of said helmet and arranged in parallel with each other and in series with the battery and the audible signal unit so that when one or more of the heat-detector units is operated to close the circuit the audible signal unit will be energized.

3,201,772
FILTER OBSTRUCTION SIGNAL ARRANGEMENT FOR AIR CONDITIONING APPARATUS
William T. Ladusaw, Jeffersontown, Ky., assignor to General Electric Company, a corporation of New York
Filed Dec. 22, 1961, Ser. No. 161,470
1 Claim. (Cl. 340—239)



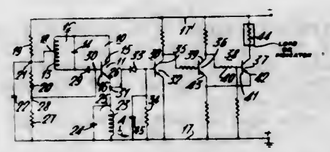
An air conditioning apparatus for an enclosure comprising a case, air inlet and outlet openings in said case through which enclosure air is circulated through said case, air moving means mounted in said case for circulating a stream of enclosure air through said case, a filter, support means in said case for supporting said filter in a substantially vertical position across said air stream circulating through said case, said support means comprising means for retaining the upper edge of said filter against horizontal movement from said support means adjustable spring members engaging the outer periphery of said filter to apply a force on said filter substantially along the plane thereof thereby presenting only a lateral frictional force against the force of said air stream flowing through said filter so that the bottom edge of said filter may move from said support means when the resistance to air flow through said filter due to obstruction of said filter by particles captured from said air stream becomes greater than said frictional force of said support means, an open space on the downstream side of said filter adapted to receive said filter as it moves from said support means, a weight responsive device in said open space adapted to receive the weight of said filter when said filter moves from said support means into said space, an indicating means actuated by said weight responsive device for signalling when said filter has moved from said support means thereby calling attention to the operator of the apparatus that said filter has become obstructed by particles.

3,201,773
VISUAL INDICATOR FOR BISTATE UNITS
James H. Magee, Southampton, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 30, 1961, Ser. No. 134,972
2 Claims. (Cl. 340—248)



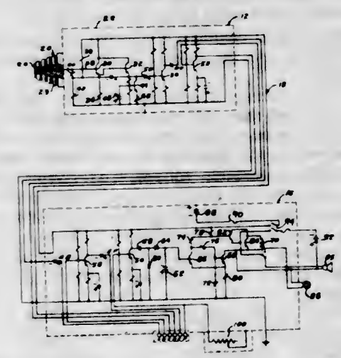
1. An indicator arrangement comprising a first transistor, a first potential-divider network in the input circuit of said transistor and providing a forward or reverse bias therefor in dependence upon the state of a bistate signal applied to its input circuit, a second transistor, a second potential-divider network including resistance means directly connecting the collector of said first transistor to the base of said second transistor, said second potential-divider network providing for said second transistor a bias opposite to the bias concurrently provided by said first potential-divider network for said first transistor, a low-voltage filament type indicator bulb in the output circuit of said second transistor and energized when said second potential-divider network provides a forward bias, and a memory circuit including a diode connected between the output circuit of said second transistor and the input circuit of said first transistor for maintaing said indicator bulb in energized state after discontinuance of the input signal state which initially shifted with consequent shift transistor from forward to reverse with consequent shift of said bias on the second transistor from reverse to forward.

3,201,774
ELECTRICAL SENSING APPARATUS
Mikio Uemura, Ukyo-ku, Kyoto, Japan, assignor to Tateisi Denki Kabushikikaisha, Ukyo-ku, Kyoto, Japan, a corporation of Japan
Filed Dec. 26, 1962, Ser. No. 247,254
6 Claims. (Cl. 340—258)



1. Electrical sensing apparatus comprising an oscillator, including a transistor having an inductance-capacitance tank circuit connected in its collector-to-base circuit, a resonant feedback circuit connected between the emitter of said transistor and ground and comprising inductive and capacitive elements, and a feedback connection between ground and said tank circuit, a detector unit including one of the elements of said feedback circuit and having a field thereabout the presence of an object in which causes feedback impedance of said circuit to change through a critical value necessary for maintenance of oscillations, and indicator means connected to said emitter and responsive to predetermined changes in oscillation conditions in said oscillator.

3,201,775
VOLTAGE PROXIMITY DETECTOR
Robert D. Pedersen, Omaha, Nebr., assignor to Teale & Company, Omaha, Nebr., a partnership
Filed Mar. 8, 1963, Ser. No. 263,899
7 Claims. (Cl. 340—258)



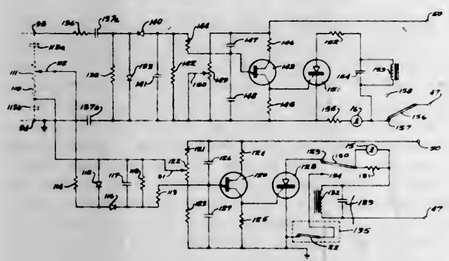
1. A transistorized voltage proximity detector comprising:

a probe circuit having a high impedance output;
a temperature stabilizing transistorized impedance matching circuit;
a transistorized amplification circuit;
said temperature stabilizing transistorized impedance matching circuit coupling said probe circuit to said transistorized amplifier circuit;
a rectifier circuit for peak rectification of the signal from said amplifier circuit thereby causing a direct current output signal;
a trigger circuit connected to the output of said rectifier circuit and biased to cut off at a predetermined input voltage level;
a power means, relay, indicating light means and an alarm means, said relay adapted to be energized by said output of said trigger circuit below cutoff and close a circuit including said light means, and said relay adapted to be de-energized upon said trigger circuit being driven to cut off, thereby, instantaneously closing a circuit comprising said alarm means and said power means.

3,201,776
CONTINUOUS VIBRATION MONITOR DEVICE

Robert S. Morrow, Worthington, and Glen H. Thomas, Columbus, Ohio, assignors to International Research and Development Corporation, Worthington, Ohio, a corporation of Ohio

Filed Apr. 24, 1963, Ser. No. 275,423
3 Claims. (Cl. 340—261)

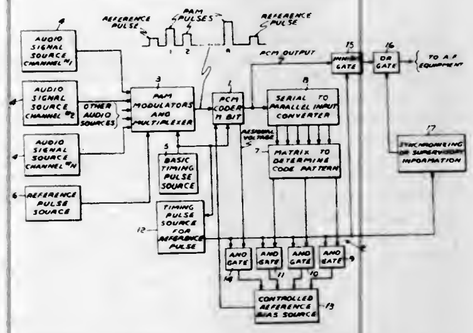


1. A compact vibration monitor for continuously observing mechanical vibrations of rotating machinery comprising:
a pair of input terminals;
voltage generating means adapted to generate at said input terminals an oscillatory input signal corresponding in amplitude to the amplitude of the said mechanical vibrations;
a first signal lamp being normally extinguished and a second signal lamp being normally ignited;
a pair of signal channels connected between said input terminals and the respective first and second signal lamps;
the signal channel connected between said input terminals and the said first signal lamp including (a) circuit means responsive to the said input voltage for continuously comparing the said input voltage with a first comparison voltage; (b) circuit means responsive to said input voltage in excess of said first comparison voltage for igniting said first signal lamp for a predetermined period of ignition; and (c) circuit means for extinguishing said first signal lamp after it has been ignited for the said period of ignition;
the other of said signal channels including means for rectifying the said oscillatory input signal;
a capacitor charged by current passing through said rectifying means;
a normally non-conducting unijunction transistor coupled to said capacitor;
means for causing said unijunction transistor to produce an oscillatory output signal when the voltage falls below a predetermined magnitude;
a normally energized signal lamp;
and means including a silicon-controlled rectifier coupled to the unijunction transistor for periodically deenergizing said signal lamp when oscillations are produced by the unijunction transistor.

3,201,777
PULSE CODE MODULATION CODER

Warren G. Brown, River Vale, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed June 8, 1962, Ser. No. 201,080
20 Claims. (Cl. 340—345)

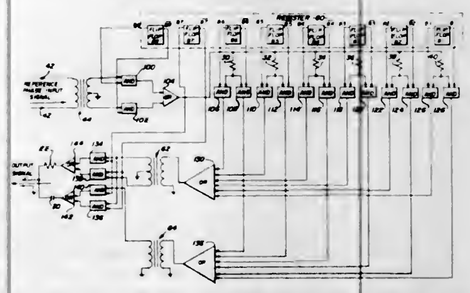


1. An arrangement to stabilize the output signal of pulse code modulation coders comprising:
a pulse modulation coder producing a given code group of pulses during the absence of information signals;
means coupled to said coder to activate said coder during predetermined repetitious periods to check the production of said given code group of pulses; and
means rendered operative during said checking periods coupled to said coder to ensure the production of said given code group of pulses during the absence of information signals.

3,201,778
DIGITAL COMMUNICATION SYSTEM

Kenneth W. Porter, Jr., and Dwight L. Pringle, Phoenix, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Apr. 26, 1960, Ser. No. 24,823
6 Claims. (Cl. 340—347)



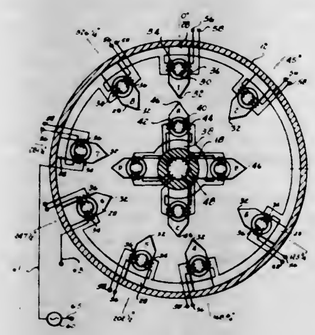
1. A system for converting digital information into equivalent analog information including in combination: input circuit means for receiving a reference input signal,

output circuit means for producing an output signal in response to such input signal and including a first path and a second path, said first path including means shifting the phase of the current therein relative to the phase of the current in said second path, means for combining the currents in said first and second paths to form an output signal having a phase relative to said input signal determined by the relative magnitudes of the current flow in said first and second paths, a plurality of resistors connected to a common input terminal which is connected to said input circuit means, said resistors each having an output terminal with the values of resistance between said input terminal and said output terminals varying in accordance with a binary code, control means coupled to said output terminals of said resistors and actuable for selectively connecting said output terminals to said first path and to said second path of said output circuit means, said control means applying current from said resistors to said first and second paths and controlling the relative magnitudes of the current flow in said first and second paths, and means for receiving digital information coupled to said control means to actuate said control means in accordance with the magnitude of the binary number represented by the received digital information at any instant.

3,201,779
MAGNETIC ENCODER

Claude L. Emmerich, Scarsdale, N.Y., and Martin J. Goldberg, Stamford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Apr. 13, 1962, Ser. No. 187,269
10 Claims. (Cl. 340—347)

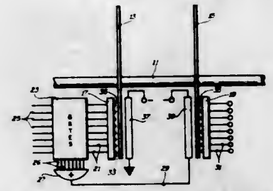


1. An encoder including in combination a first member, a second member, a plurality of equally spaced teeth carried by said first member, a plurality of unequally spaced teeth carried by said second member, means mounting said members for relative movement whereby the teeth of said first member can register with the teeth of said second member, the spacing of said teeth of said first member and the spacing of said teeth of said second member being such that only a single first member tooth registers with a single second member tooth in any relative position of said members, and respective signal producing means carried by the teeth of said first and second members, each of said signal producing means providing a signal in response to registry of its tooth with another tooth whereby respective unique signal pairs each including a signal from a first tooth signal producing means and a signal from a second tooth signal producing means are provided at a plurality of relative positions of said members.

3,201,780
CODE TO CODE CONVERTERS

Leon Gryk, New Britain, Conn., assignor to Royal McBee Corporation, New York, N.Y., a corporation of New York

Filed July 13, 1962, Ser. No. 209,598
1 Claim. (Cl. 340—347)



Apparatus for converting first system parallel digit binary codes into corresponding second system parallel digit binary codes comprising
a continuously driven shaft,
first and second discs mounted for rotation with said shaft, said first and second discs having perforated therein on equi-angularly spaced radial lines all of said first and all of corresponding second system code patterns respectively, corresponding first and second system code patterns being oriented at the same relative locations on said discs,
a light source on one side and a transducer assembly comprising photosensitive bit detectors on the other side of each of said discs positioned to simultaneously sense corresponding code patterns, said light source associated with said first system code disc continuously energized whereby bit signal patterns corresponding to said recorded first system code patterns are continually serially generated,
bit coincidence gate means,
means for applying a first system code signal pattern to be converted and first system code signal patterns generated by the transducer assembly associated with said first system code disc to said gate means thereby to generate a signal over the interval of coincidence of all bits in the code patterns applied thereto,
and means for applying the signal generated by said coincidence gate means to energize said light source associated with said second disc, whereby the transducer assembly associated with said second disc generates all the bits of the second system code signal pattern corresponding to the first system code signal pattern to be converted in the coincidence interval.

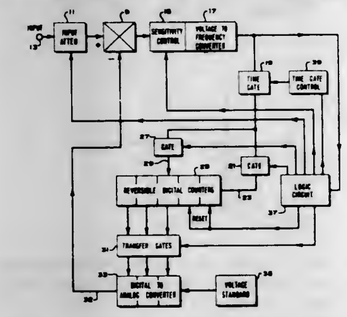
3,201,781
ANALOG TO DIGITAL TRANSDUCERS

Edward R. Holland, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed July 23, 1962, Ser. No. 211,771
9 Claims. (Cl. 340—347)

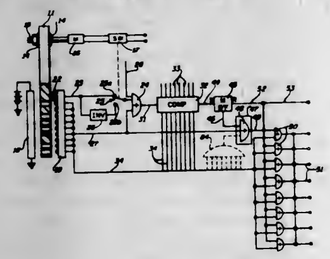
7. Apparatus for producing a digital indication of an applied signal, said apparatus comprising pulse-forming means forming pulses having a repetition rate which is variable within a first range during a predetermined time in response to the amplitude of an input signal, a gate, control means for enabling said gate, a counter having a first section for counting selected more-significant digits according to a preselected radix and a second section for counting less-significant digits according to said radix, the first section of said counter being triggered one count for each number of pulses related to a multiple of said radix applied to the second section, first means including said gate for applying said pulses having a repetition rate within said first range to the first section of said counter,

means connected to the pulse-forming means for altering, after said predetermined time, the relationship between repetition rate and applied signal provided by said pulse-forming means to produce pulses after said predetermined time having a repetition rate which is variable



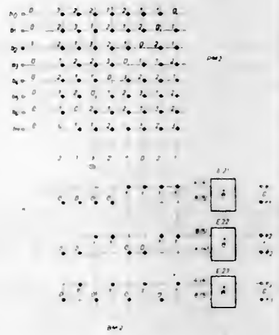
within the second range in response to said input signal, and means connected to said second section of the counter for applying pulses thereto having a repetition rate within said second range, the limits of said first range being related to the limits of said second range by said radix.

3,201,782
CODE TO CODE CONVERTERS
Ferdinand G. von Kummer, Bloomfield, Conn., assignor to Royal McBee Corporation, New York, N.Y., a corporation of New York
Filed Nov. 16, 1962, Ser. No. 238,120
9 Claims. (Cl. 340—347)



1. Apparatus for converting code patterns of one code system to code patterns of other code systems comprising an endless record having a plurality of groups of parallel bit combinational codes serially recorded thereon, each group comprising a first system code and other system codes representing the same data,
identification indicia associated with said first system codes,
means for driving said record,
transducer means periodically generating signals in accordance with the bit patterns of said codes and said identification indicia as said record is driven,
a comparator conditionable by and over the interval of said identification signals for generating an output pulse upon coincidence of the bit signal patterns of a recorded first system code and a first system input code,
bistable means settable in response to the trailing edge of said comparator output pulse,
normally blocked gate means adapted when gated to pass bit signal patterns to a utilization device for processing,
control means operative when conditioned by said set bistable means to generate a gate pulse in response to the generation of a following selected code signal pattern in the group including said coincident first system code pattern,
and means connecting said gate pulse to said bistable means whereby said bistable means is reset in response to the trailing edge of said gate pulse.

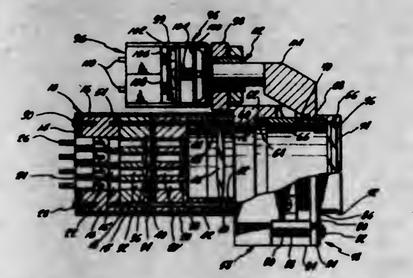
3,201,783
SELF-CORRECTING CODING CIRCUIT, AND CIRCUIT ARRANGEMENT FOR DECODING BINARY INFORMATION
Farhang Zendeh, Kornwestheim, Württemberg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 6, 1963, Ser. No. 300,307
Claims priority, application Germany, Nov. 27, 1962, St 20,004
2 Claims. (Cl. 340—347)



1. A self-correcting circuit arrangement for coding information in any suitable binary code, said arrangement comprising a test matrix with coupling elements arranged at predetermined cross-points therein, the relative values of said coupling elements being determined as functions of the binary code to be produced; means for supplying to the input of said test matrix the information to be encoded; a signification matrix with coupling elements arranged at predetermined cross-points therein, said elements having values to produce the desired binary code, said signification matrix being coupled to the output of said test matrix and including 2^n input columns and n double output rows, wherein "n" is equal to the number of variables; output means coupled to the output of said signification matrix for selecting which output leads of said output means are to be marked in accordance with the desired code; said test matrix including 2^n rows and columns and having relative values of coupling elements determined by multiplying in matrix form the binary code to be produced by the respective transponent thereof so as to alter the normal input to the signification matrix to preclude an improper marking as a result of a column failure.

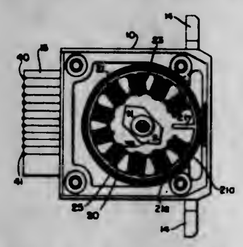
3,201,784
DISPLAY APPARATUS
John E. Hendricks, Encino, and David M. Platt, Reseda, Calif., assignors to Industrial Electronics Engineers, Inc., a corporation of California
Filed Sept. 29, 1961, Ser. No. 141,795
7 Claims. (Cl. 340—378)

2. In a display apparatus including a housing, a viewing screen, and a plurality of individually operable projection systems mounted within the housing for projecting images onto the viewing screen, the combination of: mounting means coupled to the housing for mounting the viewing screen for limited movement relative to the housing in response to a force applied to the viewing screen, the mounting means including means for supporting the screen in a predetermined position relative to the housing whereby an image projected by a projection system is focused



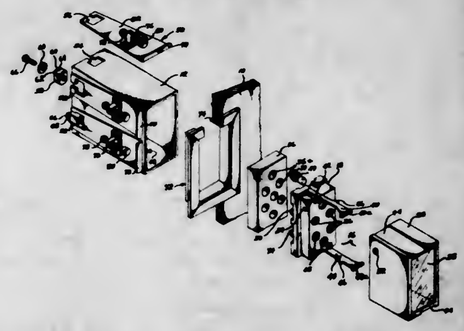
on the viewing screen; and means operatively associated with the viewing screen for sensing the movement of the viewing screen to actuate means for selectively energizing one of the projection systems.

3,201,785
INDICATING DEVICE
Aloysius E. Knotowicz, Terrington, Conn., assignor to The Patent Button Company, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 23, 1963, Ser. No. 310,005
2 Claims. (Cl. 340—378)



1. An electromagnetic indicator comprising:
a panel having a window,
a stator having an annular ferromagnetic core for establishing any one of a plurality of discretely oriented magnetic fields, the core having a plurality of inwardly protruding radial poles, the radial poles being spaced around the core so that no radial pole is diametrically opposite another radial pole, the stator including a plurality of windings, each winding being mounted upon a different radial pole and being arranged to be separately energizable by an electrical signal,
a rotor having a magnet encircled by the stator's annular core, the rotor being pivotally mounted to permit the magnet to turn about an axis at the core's geometric center, the magnet having two diametrically opposed salient poles of opposite magnetic polarity, the rotor including a drum upon whose periphery symbols are marked, the drum being positioned to present the symbols in the window of the panel, each electrically energized winding of the stator being operative to produce a turning force upon the magnet which constrains the magnet to rotate into alignment with the radial pole of the energized winding, each different aligned position of the magnet causing the drum to be stationed so that a different symbol is centered in the panel's window, and the magnetic circuit established through the core by the magnet's flux causing the magnet to be held in the aligned position when the stator is electrically de-energized.

3,201,786
MULTIUNIT ELECTRIC TERMINAL AND INDICATOR PANEL ASSEMBLY AND COMPONENTS
James H. Anderson, Mountlake Terrace, and Maurice D. Fuller, Seattle, Wash., assignors to Kerry Manufacturing Co., Seattle, Wash., a corporation of Washington
Filed June 12, 1961, Ser. No. 116,528
23 Claims. (Cl. 340—381)

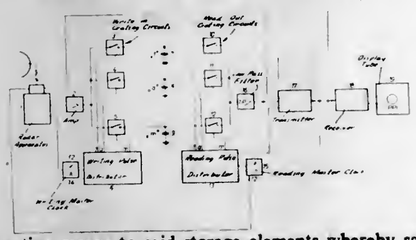


1. An indicator assembly comprising an open-end housing device, a complementally formed indicator device removably insertable into the housing device into seated position therein through its open end, said indicator and housing devices having cooperable electric terminal elements therein, the inserted indicator device having an outer-end display face and having oppositely situated side faces spaced slightly inwardly from the respectively adjacent housing inner side faces, and internally contained manually disengageable latch means operable to hold the indicator device seated in the housing device, including at least one resiliently acting elongated latch arm having an inner end portion secured to one of the devices to project therefrom lengthwise through and along one side space between such devices to be manually accessible at the open end of the housing device, said latch arm being adapted for manual actuation by deflection of the arm parallel to said side face, said latch means further including a latch element carried by the arm and a cooperable latch element carried by the other of said devices to be engaged by the arm-carried latch element accompanying seating movement of the indicator device, and adapted to be disengaged manually by such arm deflection.

3,201,787
METHOD OF SUPPRESSING NOISE, COMPRESSING BANDWIDTH, AND EVALUATING RADAR-PICTURE SIGNALS OR SIMILAR PERIODIC TRAINS OF IMPULSES
Theodor Grewe, Echterdorfe, Tankred von Hantelmann, Stuttgart-Degerloch, Rudolph Hunz, Esslingen (Neckar)-Zollberg, Kurt Jotzitus, Kornwestheim, Wolfgang Kaiser, Stuttgart-Vaihingen, Karl Waldau, Stuttgart, and Heinz Wollmann, Stuttgart-Zuffenhausen, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 22, 1960, Ser. No. 44,677
Claims priority, application Germany, July 23, 1959, St 15,381
30 Claims. (Cl. 343—6)

1. A system for noise suppression, bandwidth compression and evaluation of radar pulse-type signals for transmission over channels of smaller bandwidth comprising a radar transmitter including a rotating antenna for transmitting radar pulses, a radar receiver including said rotating antenna for receiving echoes of said radar pulses and for providing said pulse-type signals, a plurality of storage elements, each said storage element representing a discrete quantity, the number of said storage elements

being limited in accordance with the probability of accuracy of the evaluation, a write-in pulse distributor, a plurality of gating means, means coupling said pulse-type signals and the output of said pulse distribtuor to said plurality of gating means, means coupling the output of



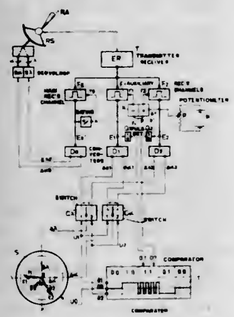
said gating means to said storage elements whereby said pulse-type signals are sequentially written in to said storage elements at a first frequency determined by said pulse distributor and means to read out said stored signals from said storage elements at a second frequency.

3,201,788

APPARATUS FOR FINDING THE RELATION BETWEEN A MISSILE TRAJECTORY AND A TARGET

Helmut Hertwig, Bonn, Germany, assignor to Contraves A.G., Zurich, Switzerland

Filed Aug. 28, 1961, Ser. No. 134,423
2 Claims. (Cl. 343—7.3)



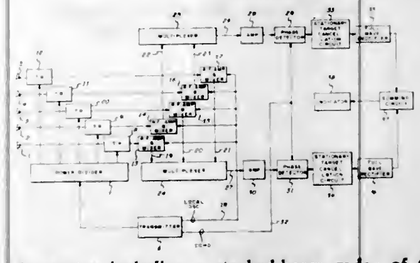
1. Radar scanning apparatus for finding the relation between a missile trajectory and a target, comprising, in combination, radar scanning means including a movable radar antenna emitting a radar beam, a main receiving channel connected with said antenna for receiving echo signals, and a servo-loop deriving from said echo signals electric signals for controlling the movement of said antenna so as to track a target causing said echo signals, said scanning means further including first gating means preventing response of said main receiving channel to echo signals caused by objects located at a distance from said antenna differing substantially from the distance of a particular target being tracked; a first and a second auxiliary receiving channel connected in parallel with said main receiving channel, each of said auxiliary receiving channels including auxiliary gating means adjustable for permitting response of the respective auxiliary receiving channel only to echo signals caused by movable objects located at selected first and second distances, respectively, from said antenna differing by greater and lesser predetermined amounts, respectively, from the distance of the target being tracked; and indicator means cooperating with said auxiliary receiving channels for indicating in relation to said radar beam the positional coordinates, respectively, of a missile passing through said radar beam at either one of said selected first and second distances, said indicator means comprising a cathode ray oscillograph having deflector means and a long-afterglow screen for displaying at substantially the same time in elevational and azimuthal coordinates said echo signals caused by a missile when located at said first and second distances, respectively, and control circuit means connecting said oscillograph with said first and second auxiliary receiving channels for deriving therefrom component signals respectively, of echo signals received by whichever one of said auxiliary receiving channels, and for applying such component signals to said oscillograph, whereby it is possible to determine by interpolation from said two visually exhibited indications of missile positions the relative position of such missile with respect to the target at the moment when the missile is at a distance substantially equal to that of the target.

3,201,789

MOVING TARGET INDICATOR FOR A STACKED-BEAM COHERENT RADAR

Arnold M. Fine, Plainview, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Dec. 21, 1960, Ser. No. 77,472
5 Claims. (Cl. 343—7.7)



1. Apparatus including a stacked-beam radar of the coherent type having a multiplicity of receivers, each receiver separately receiving target signals intercepted by a respective one of a multiplicity of antennas comprising the stacked antenna array of said radar, a plurality of multiplexers, each multiplexer being connected to respective ones of said receivers for additively combining the output signals thereof, a plurality of means for coherently phase detecting the output signals of said multiplexers, each said means being connected to a respective one of said multiplexers, a plurality of stationary target signal cancellation circuits, each said cancellation circuit being connected to the output of a respective one of said means, a signal summing circuit, and a plurality of full wave rectifiers, each said rectifier connecting the output of a respective one of said cancellation circuits to said summing circuit.

3,201,790

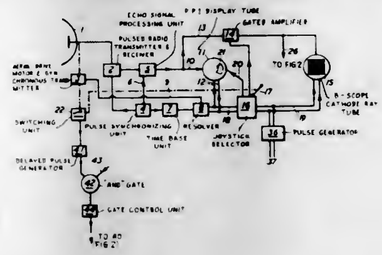
RADAR SYSTEMS

Eric Eastwood, Little Baddow, England, assignor to The Marconi Company Limited, London, England, a company of Great Britain

Filed Apr. 25, 1961, Ser. No. 105,511
Claims priority, application Great Britain, May 3, 1960, 15,539/60
11 Claims. (Cl. 343—11)

1. A radar system comprising means for repeatedly exploring a volume of space with transmitted radio energy successive explorations occurring at a normal predetermined repetition rate; means for producing from each exploration a set of radio echo signals representative of

radio reflecting targets in said volume and encountered during that exploration; a signal store comprising in combination a cathode ray storage tube of the kind having a storage target and a matrix of storage elements; means for storing in said store a plurality of said sets of radio echo signals produced from a succession of explorations, said sets being stored in said store at the intervals at which they are produced and said store being arranged, when



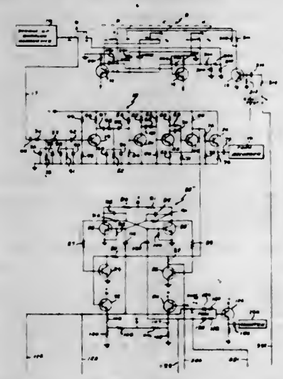
once filled, to accept further successive sets in successive replacement of the sets already in said store when filled whereby said store remains filled with the last produced plurality of sets; means for cyclically and continuously taking off from said store the signals stored therein at a rate such that the number of sets of signals taken off per unit of time is high in relation to the number of sets of signals placed in said store per unit of time; and means for displaying the signals taken off.

3,201,791

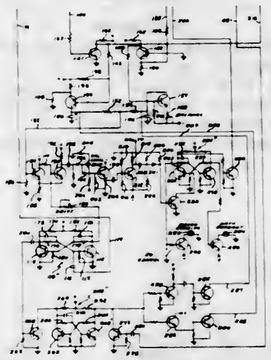
NEAR MISS DISTANCE SCORING SYSTEM USING DOPPLER EFFECT

Homer F. Roland, Fort Walton Beach, Fla., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Feb. 13, 1964, Ser. No. 344,795
6 Claims. (Cl. 343—12)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A system for indicating the minimum distance between a target and a projectile fired at the target comprising: a source of Doppler frequency signals effective when the target and projectile are within a predetermined distance of each other to produce signals of increasing wavelength as the projectile moves toward the target and of decreasing wavelength once the target and projectile pass each other, differential voltage producing means responsive to each pair of successive Doppler cycles for producing a differential voltage continuously of one polarity as the projectile moves toward the target and a differential voltage continuously of the opposite polarity once the target and the projectile pass each other, a counter energized in unit steps by each Doppler frequency signal produced, signal cancellation means effective following the generation of said each pair of successive Doppler cycles for cancelling any differential component of said differential voltage producing means in a manner



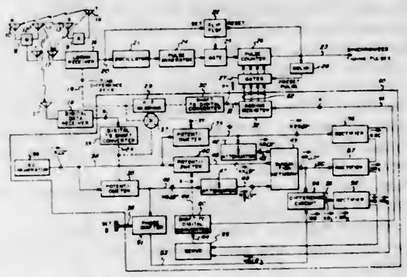
that the instantaneous polarity of said differential voltage is dependent on the instantaneous positions of said target and projectile relative to each other, and cancellation means supplied with said differential voltage for terminating the counting operation of said counter when said differential voltage changes from said one polarity to said opposite polarity thereby yielding miss distance directly related to the readout of said counter.

3,201,792

TIMING SIGNAL SYNCHRONIZING SYSTEM

Winslow Palmer, Amityville, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed June 5, 1962, Ser. No. 200,279
6 Claims. (Cl. 343—103)



1. A receiver for producing a locally generated series of pulsed signals simultaneously with the occurrence at a first distant transmitter of a first series of pulsed signals, said receiver receiving said first signals, a second series of pulsed signals from a second distant transmitter synchronized to said first transmitter, and a third signal representing the propagational delay between said transmitters, said receiver comprising

means for producing a fourth signal representing the time difference between the receptions of said first and second signals,

a computer adapted to receive said third and fourth signals and a fifth signal representing the bearing of said receiver relative to the base line between said trans-

mitters for computing the propagational delay between said first transmitter and said receiver and producing a sixth signal proportional thereto,

a source of said locally generated pulsed signals,

and means connected to said source and adapted to receive said sixth signal for controlling the timing of said locally generated pulsed signals in accordance with said sixth signal.

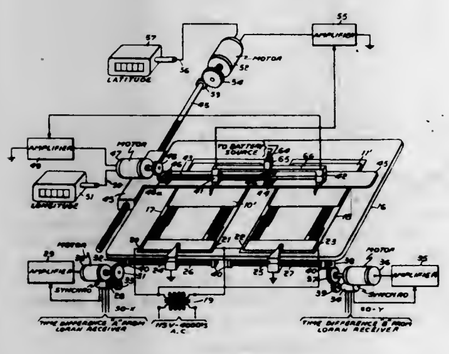
3,201,793

COORDINATE CONVERSION DEVICE

Claude J. Pasquier, New York, N.Y., and Fredrick T. Gutmann, West Caldwell, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed June 20, 1962, Ser. No. 203,941

10 Claims. (Cl. 343—112)



3. A coordinate conversion device for a Loran receiver to convert first and second time difference signals indicative of hyperbolic coordinates and representing the position of an object to a different coordinate system comprising,

first and second members of dielectric material,

first and second families of conductive hyperbolic lines,

means disposing said first and second families of conductive hyperbolic lines on said first and second supporting members respectively, said hyperbolic conductive lines being extended to one edge of each said supporting member in a linear scale of hyperbolic coordinates, the coordinate lines in said linear scale being parallel,

means disposing said first and second dielectric members in side-by-side relation,

a resistive material disposed over said conductive hyperbolic lines and said extended lines of said linear scale,

a source of electric energy,

means coupling said energy to the conductive lines of each member so that a potential difference exists across the conductive lines of each said member,

first and second contact members adapted to move respectively over the extended line of said first and second members respectively and coupled to a point of zero potential,

means responsive to the first and second time difference signals to cause said first and second contact members to move over said extended conductive lines,

and means responsive to said movement of said contact members to derive the position of said object in a different coordinate system.

3,201,794

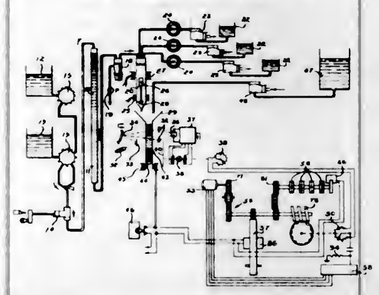
APPARATUS FOR RECORDING DATA

David H. Simmonds, Brisbane, Queensland, and Robert J. Rowlands, North Balwyn, Victoria, Australia, assignors to The University of Adelaide, Adelaide, South Australia, Australia

Filed Nov. 21, 1961, Ser. No. 153,974

Claims priority, application Australia, Nov. 24, 1960, 66,934/60

8 Claims. (Cl. 346—31)



1. Apparatus for recording data transmitted from an ultra-photometer responsive to the color density of each of a series of liquid samples pumped through the ultra-photometer in turn, including a base, a print-out servo motor on the base, a receiving potentiometer on the base, a transmitting potentiometer on the base, a data servo motor mechanically coupled for drive to the transmitting potentiometer, an electrical connection coupling the receiving and transmitting potentiometers, speed reduction means mechanically coupling the moving arm of the receiving potentiometer to the print-out servo motor whereby the print-out servo motor drives the moving arm of the receiving potentiometer, signal amplifying means electrically coupling the receiving potentiometer to the print-out servo motor whereby print-out servo-motor operation is responsive to unbalance between said potentiometers, print-out mechanism movable on the base, data recording means movable on the base, the print-out mechanism including type members mechanically coupled to the servo motor, solenoid controlled print-out operating means between the frame and the print-out mechanism operable to urge the print-out mechanism into contact with the data recording means, mechanically operated timing switch means electrically coupled to the print-out operating means, the timing switch means being operable to periodically energize the print-out operating means, and indexing means on the base operable to index the data recording means while the print-out operating means is de-energized.

3,201,795

SUPPORT FOR A PLURALITY OF EYE EXAMINATION INSTRUMENTS

Curt Cüppers, Giessen, and Kurt Kirchhübel, Dutenhofen, Germany, assignors to Oculus Optikgerate G.m.b.H., Wetzlar, Germany

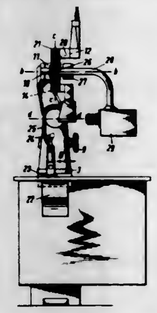
Filed Apr. 7, 1961, Ser. No. 101,505

Claims priority, application Germany, Apr. 12, 1960, O 7,346

2 Claims. (Cl. 351—38)

1. Apparatus for the examination of the eyes comprising a casing and having a horizontal plate secured thereon, a cross slide guide mounted on the plate and slidable in a plurality of directions on the plate, a pedestal base mounted on the cross slide guide, a carrying arm secured on the upper end of the pedestal base by means of a joint on a first horizontal axis, a plurality of arms mounted on the carrying arm around a second axis which is perpendicular to the first axis but spaced thereabove,

an eye examination instrument mounted on each of said plurality of arms and having the optical axis of each instrument as a third axis in its position of use perpendicular to the first axis and in the same plane therewith and outside of the second axis, each instrument in use being also swingable around a vertical axis as a fourth



axis, said fourth axis being in the same plane as the first axis and the third axis is vertical to the first axis so that the first axis as well as the third axis and the fourth axis will cut each other in a common point, and a chin rest for a head of a patient so arranged that the middle point of the eye is in the cutting point of the first, third and fourth axes.

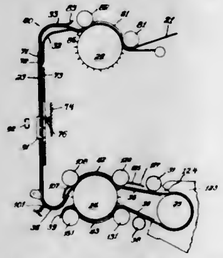
3,201,796

AUTOMATIC FILM THREADING DEVICE

Bruno Michaels, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Original application Dec. 29, 1958, Ser. No. 783,248. Divided and this application Oct. 9, 1963, Ser. No. 323,537

4 Claims. (Cl. 352—30)



1. In a sound projector including a sprocket, a sound drum spaced from the sprocket, and a pair of stabilizing rollers for engaging the top and bottom portions of a film extending in a path from the upper side of the sprocket to the upper side of the drum and from the bottom side of the drum to the bottom side of the sprocket, the combination therewith of a first threading member extending between the sprocket and the drum and movable from a retracted position inside said path and spaced therefrom to a threading position extending from the upper side of the sprocket to the upper side of the drum, a second threading member extending between the sprocket and the drum and movable from a retracted position inside said path and spaced therefrom to a threading position extending from the lower side of the drum to the lower side of the sprocket, and a generally U-shaped guide extending loosely around the drum from the upper side of the drum to the lower side of the drum, said first threading member serving when in its threading position to guide the forward end of the film from the upper sprocket into the U-shaped guide and to move one of the stabilizing rollers away from the path of the film, the second threading member serving when in its threading position to guide the film end from the bottom side of the drum to the bottom side of the sprocket and move the other stabilizing roller out of the path of the film.

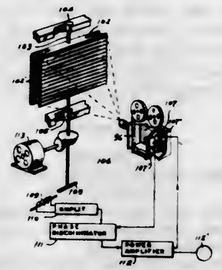
3,201,797

STEREOSCOPIC CINEMA SYSTEM

Alexander Roth, 166 S. 2nd Ave., Fort Walton Beach, Fla.

Filed Oct. 25, 1962, Ser. No. 233,078

5 Claims. (Cl. 352—86)



1. In a stereoscopic system, means for recording images including a film camera and reflective surfaces spaced from the camera and rotating about their vertical axes from which images are recorded, means for running the film of the camera in timed response with the rotation of said reflective surfaces, means for projecting the images recorded upon the film including a projector and horizontally-ribbed reflecting viewing surfaces rotating about their vertical axes in same timed relation to the running of projected films so that the camera film is timed with respect to the reflective surfaces.

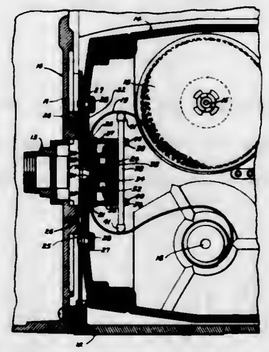
3,201,798

LOOP FORMER IN SHORT GATE CAMERA

Peter J. Mayer, Jr., Chicago, and Arthur C. Mueller, Niles, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Feb. 20, 1963, Ser. No. 259,961

7 Claims. (Cl. 352—159)



7. In a motion picture camera including

an exposure aperture;

film supply and takeup means;

film gate means including a pressure plate mounting block;

film moving means engageable with film in the gate means for effecting intermittent film feed through said gate means and continuous film takeup at said

film takeup means, the improvement which comprises:

squared corners formed on said block to form entrance and exit ends for said gate means in the path of movement of film passing from said supply to said takeup means;

a rod freely slidably positioned behind said film gate means and having a first end portion projecting beyond said block for enegagement with the run of film adjacent the entrance end of said gate means to form a loop of film ahead of said gate means;

said rod having a second end portion projecting beyond the block for engagement with the run of film adjacent the exit end of said gate; and

said second end portion and said rod being adapted to be periodically moved toward said entrance end by movement of the film passing from the gate means to the takeup means just prior to the movement of the film through the gate means by the film moving means.

3,201,799

DISPENSER MECHANISM FOR MOLDING APPARATUS

Eugene I. Croyle, San Angelo, Tex., assignor to American Research and Development Company, San Angelo, Tex., a corporation of Texas

Filed Apr. 22, 1963, Ser. No. 274,547
9 Claims. (Cl. 18—30)

1. A molding apparatus for footwear, comprising,

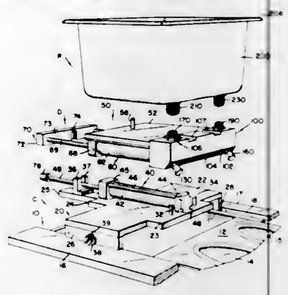
(a) a table having an open central section;

(b) a pair of horizontally disposed matched open molds within said central section;

(c) a carriage supported at one end of said table above and adjacent said molds and movable horizontally thereover;

(d) a fluid power cylinder mounted on said carriage and having a piston rod which extends outwardly in a horizontal direction away from said molds;

(e) a liquid molding material dispenser for each of



said mold cavities directly supported on said carriage;

(f) each of said dispensers having an activating piston and an elongated rod, said rod being parallel and connected to said power cylinder piston rod so that movement thereof will activate said dispensers;

(g) and a reservoir supported on said carriage and connected to said dispensers for supplying liquid molding material to said dispensers.

DESIGNS

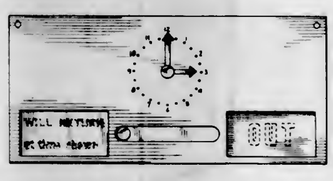
AUGUST 17, 1965

201,946

CHANGEABLE INDICATOR SIGN

John R. Harding, Waynesboro, Va., assignor to Acme Visible Records, Inc., Crozet, Va., a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 78,083
Term of patent 14 years
(Cl. D1—12)

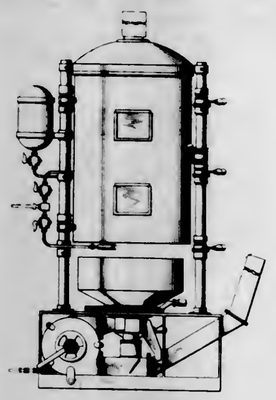


201,947

AUTOMATIC COFFEE ROASTING MACHINE

Juan C. La Torre Rodriguez, Calle 30, 15–32, Palmira, Colombia

Filed Oct. 18, 1963, Ser. No. 77,028
Term of patent 14 years
(Cl. D2—3)

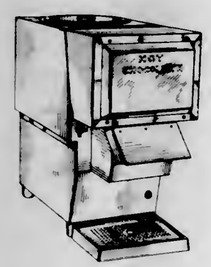


201,948

DRINK DISPENSER OR THE LIKE

Richard J. Skiera, Chicago, Ill., assignor to Karma Corp., Addison, Ill., a corporation of Illinois

Filed Aug. 28, 1964, Ser. No. 81,499
Term of patent 14 years
(Cl. D2—3)

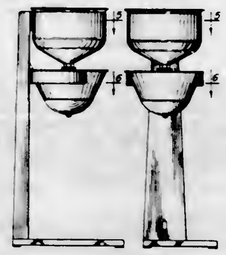


201,949

COFFEE MAKER

Harold Bloomfield, Chicago, Ill., assignor to Bloomfield Industries, Inc., Chicago, Ill., a corporation of Illinois

Filed Nov. 16, 1964, Ser. No. 82,636
Term of patent 14 years
(Cl. D2—3)

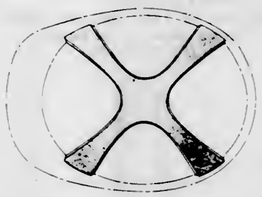


201,950

SAFETY HELMET

John R. Andrews III, North Uxbridge, Mass., assignor to Welsh Manufacturing Company, a corporation of Rhode Island

Filed May 20, 1964, Ser. No. 80,085
Term of patent 14 years
(Cl. D3—13)

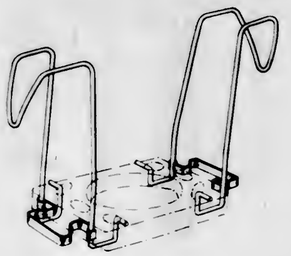


201,951

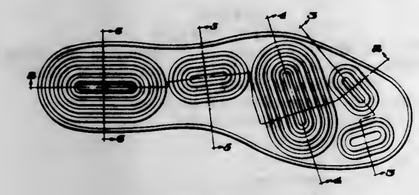
COMBINED TUMBLER AND TOOTHBRUSH HOLDER

Leslie E. Lanczi, 5360 Walkley Ave., Apt. 18, Montreal, Quebec, Canada

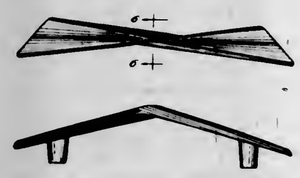
Filed June 21, 1963, Ser. No. 75,464
Term of patent 7 years
(Cl. D4—3)



201,952
SHOE SOLE
Richard B. Johns, R.F.D. 4, Freeport, Maine
Filed July 28, 1964, Ser. No. 81,040
Term of patent 14 years
(Cl. D7—5)



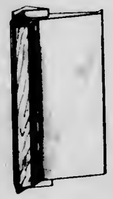
201,953
FURNITURE PULL OR THE LIKE
Nolan Kent Rhoades, Beloit, Wis., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Apr. 21, 1964, Ser. No. 79,622
Term of patent 14 years
(Cl. D10—8)



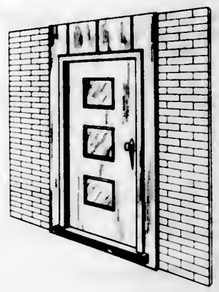
201,954
DOOR PULL
Harry B. Neal and Raymond V. Burnham, Atlanta, Ga., assignors to Anaconda Aluminum Company, Louisville, Ky., a corporation of Montana
Filed Dec. 14, 1964, Ser. No. 83,013
Term of patent 14 years
(Cl. D10—8)



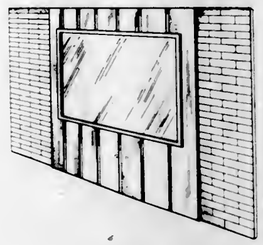
201,955
DOOR PULL
Harry B. Neal and Raymond V. Burnham, Atlanta, Ga., assignors to Anaconda Aluminum Company, Louisville, Ky., a corporation of Montana
Filed Dec. 14, 1964, Ser. No. 83,022
Term of patent 14 years
(Cl. D10—8)



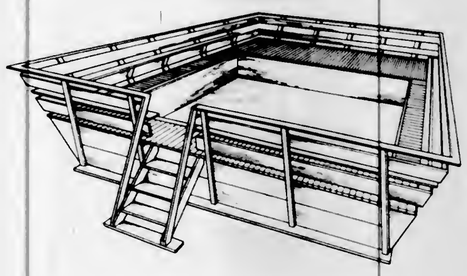
201,956
DOOR AND PANEL COMBINATION FOR A PREFABRICATED HOUSE
David C. Seman, 638 Brown Ave.; Colman J. Seman, 1409 Springlake Drive; and Fredrick P. Seman, 1034 Montpelier Ave., all of Erie, Pa.; and John G. Seman, E. Main Road, North East, Pa.
Filed Mar. 1, 1962, Ser. No. 69,044
Term of patent 14 years
(Cl. D13—1)



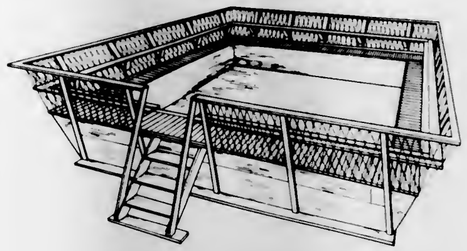
201,957
WINDOW AND PANEL COMBINATION FOR A PREFABRICATED HOUSE
David C. Seman, 638 Brown Ave.; Colman J. Seman, 1409 Springlake Drive; and Fredrick P. Seman, 1034 Montpelier Ave., all of Erie, Pa.; and John G. Seman, E. Main Road, North East, Pa.
Filed Mar. 8, 1962, Ser. No. 69,142
Term of patent 14 years
(Cl. D13—1)



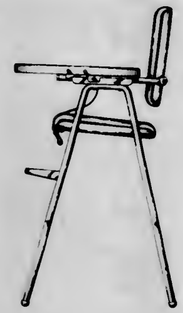
201,958
SWIMMING POOL
Henry Fischler, Bayside, N.Y., assignor to International Swimming Pool Corporation, Roslyn Heights, N.Y., a corporation of New York
Filed Apr. 8, 1963, Ser. No. 74,335
Term of patent 7 years
(Cl. D13—1)



201,959
SWIMMING POOL
Henry Fischler, Bayside, N.Y., assignor to International Swimming Pool Corporation, Roslyn Heights, N.Y., a corporation of New York
Filed Apr. 8, 1963, Ser. No. 74,336
Term of patent 7 years
(Cl. D13—1)



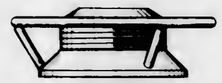
201,960
HIGH CHAIR
Ralph B. Lay, Donald L. Bates, and Jerry L. Neal, Columbus, Ind., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed Oct. 13, 1964, Ser. No. 82,159
Term of patent 14 years
(Cl. D15—1)



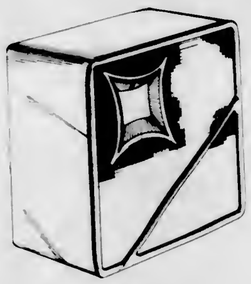
201,961
AUTOMOBILE HEADREST
Edwin E. Lohn, 231 S. Peck Drive, Beverly Hills, Calif.
Filed Dec. 24, 1963, Ser. No. 77,916
Term of patent 14 years
(Cl. D15—8)



201,962
HANDLE FOR ACCOMMODATING PRESSURIZED CYLINDER CLOSURES
Frederic W. Hammesfahr, Bethlehem, Pa., assignor to J. T. Baker Chemical Company, Phillipsburg, N.J., a corporation of New Jersey
Filed Nov. 7, 1963, Ser. No. 77,325
Term of patent 14 years
(Cl. D16—2)



201,963
CASING FOR AN AEROSOL DISPENSER
George Robert Boller, Robert F. Armstrong, and James W. Russell, New Canaan, Conn., assignors to Products International, Inc., New Canaan, Conn., a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 78,386
Term of patent 14 years
(Cl. D16—2)



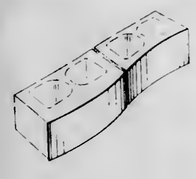
201,964
COMBINED MOBILE LABORATORY TABLE AND CABINET UNIT
Arthur W. Carlson, Muskegon, Mich., assignor to E. H. Sheldon & Company, Muskegon, Mich., a corporation of Michigan
Filed Aug. 3, 1964, Ser. No. 81,129
Term of patent 14 years
(Cl. D16—2)



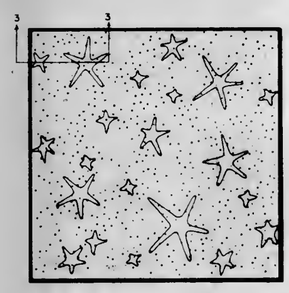
201,965
HOLDER FOR NOTES
Orson Warren Lake, 289 N. Greece Road, Hilton, N.Y.
Filed Nov. 13, 1962, Ser. No. 72,454
Term of patent 14 years
(Cl. D17—3)



201,966
WALL BLOCK UNIT
Verne Frese, 7265 E. Marginal Way, Seattle, Wash.
Filed Sept. 19, 1963, Ser. No. 76,647
Term of patent 14 years
(Cl. D18—2)



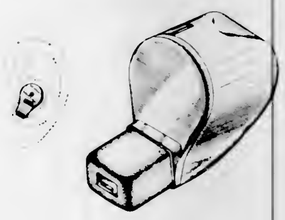
201,967
ACOUSTICAL CORRECTION TILE
James R. Radcliffe, 40 Evans St., Williamsville, N.Y.
Filed Oct. 10, 1963, Ser. No. 76,936
Term of patent 14 years
(Cl. D18—2)



201,968
DENTAL TRAY SUPPORT ARM OR SIMILAR ARTICLE
John M. Gardella, Staten Island, N.Y., assignor to The S. S. White Dental Mfg. Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 29, 1963, Ser. No. 77,201
Term of patent 14 years
(Cl. D24—1)



201,969
HEARING AID
Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 1, 1965, Ser. No. 84,564
Term of patent 14 years
(Cl. D26—14)



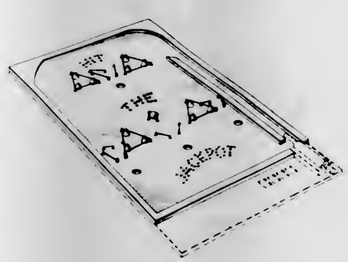
201,970
FIREARM
Carl H. Benson, New Haven, Conn., assignor to O. F. Mossberg & Sons, Inc., North Haven, Conn., a corporation of Connecticut
Filed Apr. 28, 1964, Ser. No. 79,726
Term of patent 14 years
(Cl. D30—1)



201,971
DESK
Holland Duane Mohon, Box 20A, Teasley Lane, Denton, Tex.
Filed Aug. 7, 1964, Ser. No. 81,196
Term of patent 7 years
(Cl. D33—7)



201,972
PINBALL GAME BOARD
Clifton L. Johnson, 147 S. Ridge Road, San Francisco, Calif.
Filed Mar. 30, 1964, Ser. No. 79,257
Term of patent 14 years
(Cl. D34—5)



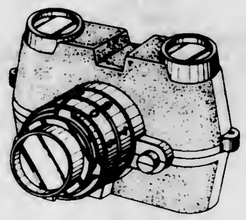
201,973
TOY HOOP ROLLER
James W. Harp, 4950 E. Florence Ave., Southgate, Calif.
Filed Sept. 2, 1964, Ser. No. 81,565
Term of patent 14 years
(Cl. D34—5)



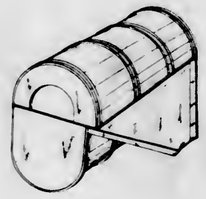
201,974
COMBINED COIN REPOSITORY AND CALCULATOR OR SIMILAR ARTICLE
Eugene P. Bell, 9662 Nadine, Temple City, Calif.
Filed July 1, 1964, Ser. No. 80,659
Term of patent 14 years
(Cl. D34—11)



201,975
TOY BANK
Thomas E. Brown, Woonsocket, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 84,019
Term of patent 14 years
(Cl. D34—11)



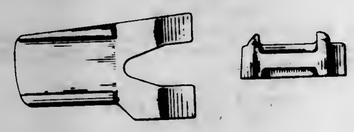
201,976
FARM WAGON BOX
Joseph B. Kucera, Traer, Iowa
Filed Dec. 4, 1963, Ser. No. 77,663
Term of patent 14 years
(Cl. D35—2)



201,977
COMBINATION GARDEN SPADE, HOE AND WEEDING TOOL
Arthur M. Mitchell, 2200 Michigan Blvd., West Sacramento, Calif.
Filed May 12, 1964, Ser. No. 79,939
Term of patent 14 years
(Cl. D35—2)



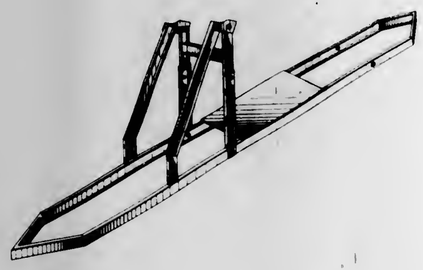
201,978
EXCAVATOR TOOTH FOR EARTH WORKING EQUIPMENT
Robert E. Dickinson, Indianapolis, Ind., assignor to Mobile Drilling Company, Inc., Indianapolis, Ind., a corporation of Indiana
Filed July 24, 1964, Ser. No. 80,992
Term of patent 14 years
(Cl. D39—1)



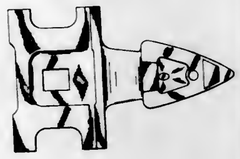
201,979
LEDGER PLATE
James R. Sutherland, Minneapolis, Minn., assignor to Viking Corporation, Minneapolis, Minn.
Filed May 6, 1964, Ser. No. 79,852
Term of patent 14 years
(Cl. D40—1)



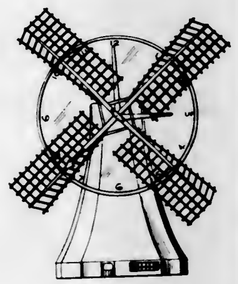
201,980
FRAME FOR A MOBILE IRRIGATION DEVICE
David Kane, 5036 Roosevelt Ave., San Antonio, Tex.
Filed Nov. 4, 1964, Ser. No. 82,474
Term of patent 14 years
(Cl. D40—1)



201,981
MOWER GUARD
James R. Sutherland, Minneapolis, Minn., assignor to Viking Corporation, Minneapolis, Minn.
Filed July 9, 1964, Ser. No. 80,786
Term of patent 14 years
(Cl. D40—1)



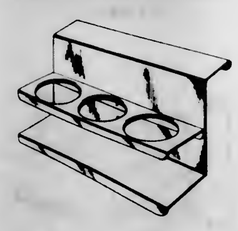
201,982
CLOCK
Raleigh J. Frederickson, 3114 S. Norton, Sioux Falls, S. Dak.
Filed Aug. 3, 1964, Ser. No. 81,138
Term of patent 14 years
(Cl. D42—7)



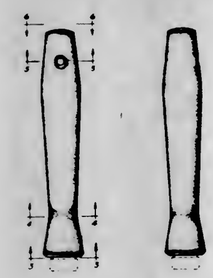
201,983
POWER UNIT FOR A FOOD MIXER
Dave Chapman and Robert C. Le Sueur, Chicago, Ill., assignors to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Oct. 19, 1964, Ser. No. 82,230
Term of patent 14 years
(Cl. D44—1)



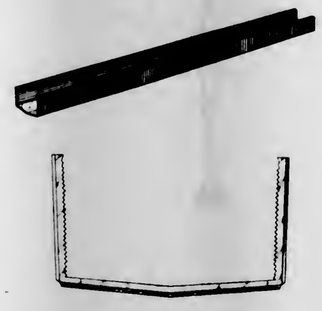
201,984
BEVERAGE RACK
Eugene Harvey, 4847 Don Drive, Dallas, Tex.
Filed July 29, 1964, Ser. No. 81,059
Term of patent 14 years
(Cl. D44—29)



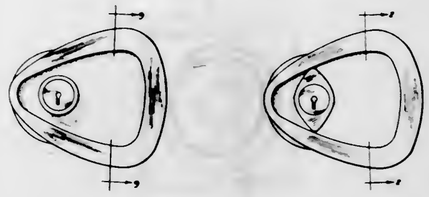
201,985
HANDLE FOR CULINARY IMPLEMENTS OR THE LIKE
Austin H. Munson, Arlington Heights, Ill., assignor to Ekco Products Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 1, 1964, Ser. No. 81,982
Term of patent 14 years
(Cl. D44—29)



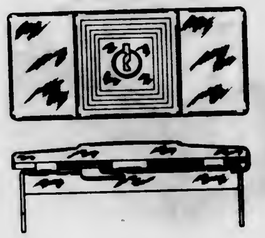
201,986
REFRACTOR FOR LIGHTING FIXTURES AND THE LIKE
Vearl S. Wince, Newark, Ohio, assignor to Holophane Company, Inc., a corporation of Delaware
Filed Dec. 11, 1963, Ser. No. 77,757
Term of patent 14 years
(Cl. D48—16)



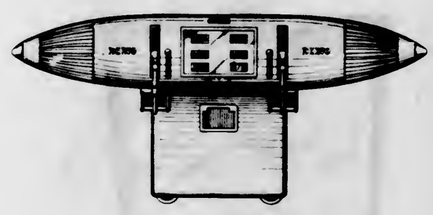
201,987
LOCKSET HANDLE
Desmond E. C. Webster, P.O. Box 255, Dublin 2, Ireland
Filed July 8, 1964, Ser. No. 80,769
Claims priority, application Great Britain Jan. 20, 1964
Term of patent 14 years
(Cl. D50—3)



201,988
LUGGAGE LOCK OR SIMILAR ARTICLE
Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Filed Mar. 25, 1964, Ser. No. 79,171
Term of patent 14 years
(Cl. D50—7)



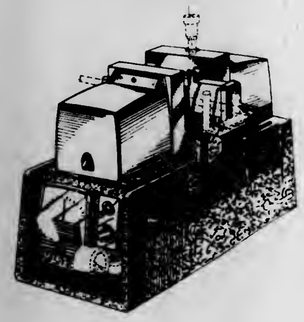
201,989
GASOLINE PUMP
Duncan McRae, White Lake, Mich., assignor to John Wood Company, New York, N.Y., a corporation of Delaware
Filed June 2, 1964, Ser. No. 80,245
Term of patent 14 years
(Cl. D52—2)



201,990
ATMOSPHERIC CONDITION INDICATING INSTRUMENT DIAL
Clarence Foster Aldridge, Perinton, and Joseph B. Federico, Rochester, N.Y., assignors to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Filed Apr. 5, 1963, Ser. No. 74,311
Term of patent 14 years
(Cl. D52—6)



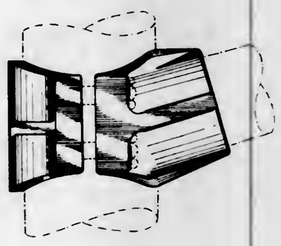
201,991
WIRE DIAMETER GAUGE
Roger B. Kerr, Topsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed June 28, 1963, Ser. No. 75,571
Term of patent 14 years
(Cl. D52—6)



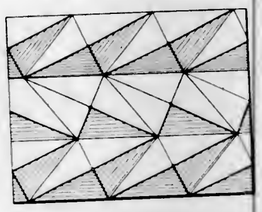
201,992
BATH SCALE OR SIMILAR ARTICLE
Elmer L. Reibold, Park Ridge, Ill., assignor to E. L. Reibold Agency, Inc., Chicago, Ill., a corporation of Illinois
Filed July 6, 1964, Ser. No. 80,715
Term of patent 14 years
(Cl. D52—10)



201,993
BRACKET FOR POSTS
Francis G. Schlosser, Ridgefield Park, N.J., assignor to Pfaff and Kendall, Newark, N.J., a corporation of New Jersey
Filed July 15, 1964, Ser. No. 80,884
Term of patent 14 years
(Cl. D54—1)



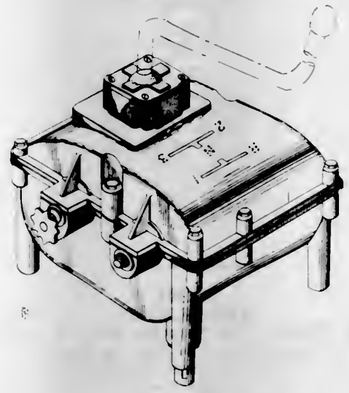
201,994
ARCHITECTURAL PANEL
Richard T. Cann, Rochester, Thomas R. Hinckley, Pittsford, and Francis O. Gardner, Webster, N.Y., assignors to Erdle Perforating Company, Rochester, N.N.Y., a corporation of New York
Filed Oct. 28, 1964, Ser. No. 82,359
Term of patent 14 years
(Cl. D54—2)



201,995
FORK OR SIMILAR ARTICLE OF FLATWARE
Siro R. Toffolon, Meriden, Conn., assignor to The International Silver Company, Meriden, Conn., a corporation of Connecticut
Filed Dec. 10, 1964, Ser. No. 82,979
Term of patent 14 years
(Cl. D54—12)



201,996
MULTI-SPEED TRANSMISSION
Orly Musgrave, Springfield, Ohio, assignor, by mesne assignments, to Mast-Foos Manufacturing Company, Inc., Springfield, Ohio, a corporation of Ohio
Filed Mar. 16, 1964, Ser. No. 79,030
Term of patent 14 years
(Cl. D55—1)



201,997
DISPENSING BOTTLE
Warren J. Luedtke, Racine County, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Sept. 18, 1964, Ser. No. 81,785
Term of patent 14 years
(Cl. D58—6)



201,998
BOTTLE OR SIMILAR ARTICLE
Tage Kay Kirsby, Birkerod, Denmark, assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed June 24, 1964, Ser. No. 82,444
Claims priority, application Republic of South Africa Dec. 27, 1963
Term of patent 14 years
(Cl. D58—6)

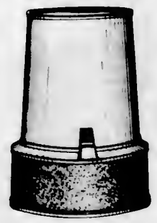


817 O.G.—44

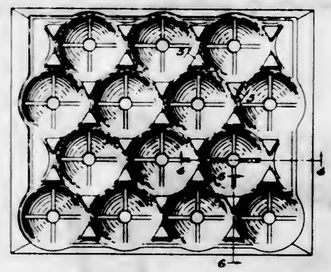
201,999
BOTTLE
Cedric C. Rau, Indianapolis, Ind., assignor to The Future Bottle Corporation, Aberdeen, S. Dak., a corporation of South Dakota
Filed Oct. 8, 1964, Ser. No. 82,095
Term of patent 14 years
(Cl. D58—8)



202,000
PACKAGING BOX FOR AN ELECTRIC SHAVER OR SIMILAR ARTICLE
Jerold R. Peterson, Roselle, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed July 9, 1963, Ser. No. 75,717
Term of patent 14 years
(Cl. D58—11)



202,001
PRODUCE TRAY
Hugh R. Weiss, Montclair, N.J., assignor to The Pantasote Company, Passaic, N.J., a corporation of New Jersey
Filed Aug. 20, 1964, Ser. No. 81,384
Term of patent 14 years
(Cl. D58—13)



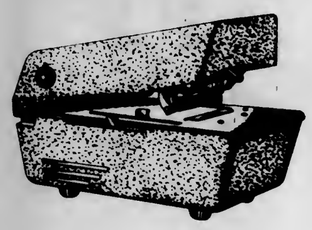
202,002
DISPENSING CONTAINER OR SIMILAR ARTICLE
Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 83,813
Term of patent 14 years
(Cl. D58—17)



202,003
DISPENSING CONTAINER OR SIMILAR ARTICLE
Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Mar. 4, 1965, Ser. No. 84,077
Term of patent 14 years
(Cl. D58—17)



202,004
NUMBERING MACHINE
Shuichi Amano, Yokohama, Japan, assignor to Amano Tokusin Kikai Kabushiki Kaisha, Yokohama, Japan, a corporation of Japan
Filed Apr. 8, 1964, Ser. No. 79,414
Claims priority, application Japan Oct. 12, 1963
Term of patent 14 years
(Cl. D64—11)



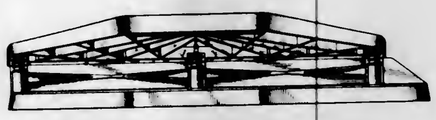
202,005
REVOLVING SAFETY REFLECTOR SIGNAL
Henry Lang, New York, N.Y., assignor to L. Batlin & Son, Inc., New York, N.Y., a corporation of New York
Filed Mar. 23, 1964, Ser. No. 79,109
Term of patent 14 years
(Cl. D72—1)



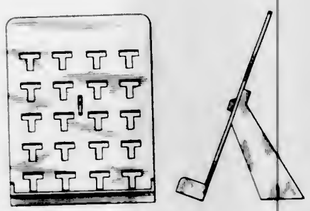
202,006
BAR OF SOAP
Gladys R. Slipian, 5828 Nashville Ave., St. Louis, Mo.
Filed Sept. 14, 1964, Ser. No. 81,697
Term of patent 14 years
(Cl. D73—1)



202,007
PAPER PUNCH
Gilbert Donald Murray, Ogdensburg, N.Y., assignor to Natser Corporation, doing business as Acco Products, Ogdensburg, N.Y., a corporation of Nevada
Filed June 4, 1964, Ser. No. 80,281
Term of patent 14 years
(Cl. D74—1)



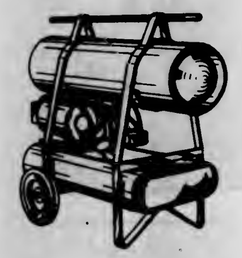
202,008
STAND FOR JEWELRY OR THE LIKE
Noble H. Baker, 5628 Lydia, Kansas City, Mo.
Filed May 1, 1964, Ser. No. 79,776
Term of patent 14 years
(Cl. D80—9)



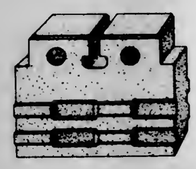
202,009
PORTABLE SPACE HEATER
Everett L. Schofield and Grant E. Hatcher, Lee's Summit, and Coy H. Hicks, Kansas City, Mo., assignors to Sam Mulkey Company, Lee's Summit, Mo., a corporation of Missouri
Filed June 22, 1964, Ser. No. 80,510
Term of patent 7 years
(Cl. D61—20)



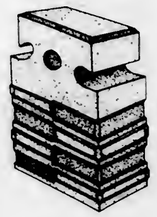
202,010
PORTABLE SPACE HEATER
Everett L. Schofield and Grant E. Hatcher, Lee's Summit, and Coy H. Hicks, Kansas City, Mo., assignors to Sam Mulkey Company, Lee's Summit, Mo., a corporation of Missouri
Filed June 29, 1964, Ser. No. 80,630
Term of patent 7 years
(Cl. D61—20)



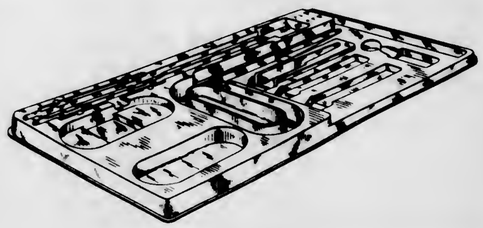
202,011
REFRACTORY TILE
Robert W. Jones, Birmingham, Mich., assignor to Bigelow-Liptak Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 2, 1964, Ser. No. 82,005
Term of patent 14 years
(Cl. D61—25)



202,012
REFRACTORY TILE
Robert W. Jones, Birmingham, Mich., assignor to Bigelow-Liptak Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 2, 1964, Ser. No. 82,006
Term of patent 14 years
(Cl. D61—25)



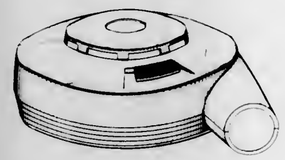
202,013
TRAY FOR MEDICAL EQUIPMENT
Donald A. Hamilton, Burbank, Calif., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Dec. 28, 1964, Ser. No. 83,188
Term of patent 14 years
(Cl. D83—1)



202,014
ASH TRAY
Frank W. Steinbock, Flushing, N.Y., assignor to Wm. Teacher & Sons Limited, Glasgow, Scotland, a corporation of Great Britain
Filed Feb. 27, 1963, Ser. No. 73,740
Term of patent 14 years
(Cl. D85—2)



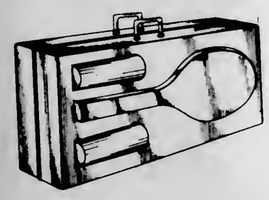
202,015
HAIR DRYER BLOWER
Alfred W. Madl, Mequon, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed May 27, 1963, Ser. No. 75,073
Term of patent 14 years
(Cl. D86—10)



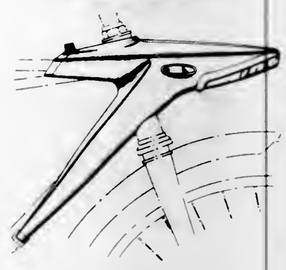
202,016
HAIR CLIP
Nathan L. Solomon, P.O. Box 550, Englewood, N.J.
Filed July 17, 1963, Ser. No. 75,854
Term of patent 14 years
(Cl. D86—10)



202,017
CARRYING CASE FOR TENNIS EQUIPMENT OR THE LIKE
Kenneth D. Taylor, Bethany, Okla., assignor to Industrial Plastics Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed July 27, 1964, Ser. No. 81,033
Term of patent 14 years
(Cl. D67—5)



202,018
BICYCLE ACCESSORY TANK
Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Filed May 6, 1964, Ser. No. 79,841
Term of patent 14 years
(Cl. D90—8)



202,019
TABLECLOTH
Francesco P. Castorani, West Whiteland, Exton, Pa., assignor to Quaker Lace Company, Philadelphia, Pa.
Filed Dec. 1, 1964, Ser. No. 82,858
Term of patent 14 years
(Cl. D92—26)



202,020
PLACE MAT OR THE LIKE
Vera Way Marghab, 250 W. 57th St., New York 19, N.Y.
Filed Jan. 8, 1964, Ser. No. 78,131
Term of patent 14 years
(Cl. D92—26)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 17TH DAY OF AUGUST, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

American Cyanamid Co.: *See*—
Growich, John A., Jr., and Deduck. Re. 25,840.
Gingher, Carl E. Clothes hanger. Re. 25,841, 8–17–65, Cl. 223—88.
Growich, John A., Jr., and N. Deduck, to American Cyanamid Co. Tetracycline fermentation. Re. 25,940, 8–17–65, Cl. 195—80.

LIST OF DESIGN PATENTEES

Acco Products: *See*—
Murray, Gilbert D. 202,007.
Acme Visible Records, Inc.: *See*—
Harding, John R. 201,946.
Aldridge, Clarence F., and J. B. Federico, to Taylor Instrument Companies. Atmospheric condition indicating instrument dial. 201,990, 8–17–65, Cl. D52—6.
Amano, Shuichi, to Amano Tokushu Kikai Kabushiki Kaisha. Numbering machine. 202,004, 8–17–65, Cl. D64—11.
Amano Tokushu Kikai Kabushiki Kaisha: *See*—
Amano, Shuichi. 202,004.
Anaconda Aluminum Co.: *See*—
Neal, Harry B., and Burnham. 201,954.
Neal, Harry B., and Burnham. 201,955.
Andrews, John R., III, to Welsh Mfg. Co. Safety helmet. 201,950, 8–17–65, Cl. D3—13.
Armstrong, Robert F.: *See*—
Boller, George R., Armstrong, and Russell. 201,963.
Baker, J. T., Chemical Co.: *See*—
Hammesfahr, Frederic W. 201,962.
Baker, Noble H. Stand for jewelry or the like. 202,006, 8–17–65, Cl. D60—9.
Bates, Donald: *See*—
Lay, Ralph B., Bates, and Neal. 201,960.
Batlin, L., & Son, Inc.: *See*—
Lang, Henry. 202,005.
Bell, Eugene P. Combined coin repository and calculator or similar article. 201,974, 8–17–65, Cl. D34—11.
Benson, Carl H., to O. F. Mossberg & Sons, Inc. Firearm. 201,970, 8–17–65, Cl. D30—1.
Bigelow-Liptak Corp.: *See*—
Jones, Robert W. 202,011.
Jones, Robert W. 202,012.
Bloomfield, Harold, to Bloomfield Industries, Inc. Coffee maker. 201,949, 8–17–65, Cl. D2—3.
Bloomfield Industries, Inc.: *See*—
Bloomfield, Harold. 201,949.
Boller, George R., R. F. Armstrong, and J. W. Russell, to Products International, Inc. Casing for an aerosol dispenser. 201,963, 8–17–65, Cl. D16—2.
Brown, Thomas E., to Rexall Drug and Chemical Co. Toy bank. 201,975, 8–17–65, Cl. D34—11.
Burnham, Raymond V.: *See*—
Neal, Harry B., and Burnham. 201,954.
Neal, Harry B., and Burnham. 201,955.
Cann, Richard T., T. R. Hinckley, and F. O. Gardner, to Erdle Perforating Co. Architectural panel. 201,994, 8–17–65, Cl. D54—2.
Carlson, Arthur W., to E. H. Sheldon & Co. Combined mobile laboratory table and cabinet unit. 201,964, 8–17–65, Cl. D16—2.
Castorani, Francesco P., to Quaker Lace Co. Tablecloth. 202,019, 8–17–65, Cl. D92—26.
Chapman, Dave, and R. C. Le Sueur, to Scovill Mfg. Co. Power unit for a food mixer. 201,983, 8–17–65, Cl. D44—1.
Colgate-Palmolive Co.: *See*—
Douglas, Livingston C. 202,002.
Douglas, Livingston C. 202,003.
Kirsby, Tage K. 201,998.
Dahlberg Electronics, Inc.: *See*—
Geib, Robert L. 201,969.
Dickinson, Robert E., to Mobile Drilling Co., Inc. Excavator tooth for earth working equipment. 201,978, 8–17–65, Cl. D39—1.
Douglas, Livingston C., to Colgate-Palmolive Co. Dispensing container or similar article. 202,002, 8–17–65, Cl. D58—17.
Douglas, Livingston C., to Colgate-Palmolive Co. Dispensing container or similar article. 202,003, 8–17–65, Cl. D58—17.
Ekco Products Co.: *See*—
Munson, Austin H. 201,985.
Erdle Perforating Co.: *See*—
Cann, Richard T., Hinckley, and Gardner. 201,994.
Federico, Joseph B.: *See*—
Aldridge, Clarence F., and Federico. 201,990.
Fischler, Henry, to International Swimming Pool Corp. Swimming pool. 201,958, 8–17–65, Cl. D13—1.
Fischler, Henry, to International Swimming Pool Corp. Swimming pool. 201,959, 8–17–65, Cl. D13—1.
Frederickson, Raleigh J. Clock. 201,982, 8–17–65, Cl. D42—7.
Freese, Verne. Wall block unit. 201,966, 8–17–65, Cl. D16—2.
Future Bottle Corp., The: *See*—
Rau, Cedric C. 201,999.
Gardella, John M., to The S. S. White Dental Mfg. Co. Dental tray support arm or similar article. 201,968, 8–17–65, Cl. D24—1.
Gardner, Francis O.: *See*—
Cann, Richard T., Hinckley, and Gardner. 201,994.
Gebrie, Charles S., to Presto Lock Co., Inc. Luggage lock or similar article. 201,988, 8–17–65, Cl. D50—7.
Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 201,969, 8–17–65, D26—14.
General Electric Co.: *See*—
Kerr, Roger B. 201,991.
Hamilton Cosco, Inc.: *See*—
Lay, Ralph B., Bates, and Neal. 201,960.
Hamilton, Donald A., to Pharmaseal Laboratories. Tray for medical equipment. 202,013, 8–17–65, D63—1.
Hammesfahr, Frederic W., to J. T. Baker Chemical Co. Handle for accommodating pressurized cylinder closures. 201,962, 8–17–65, D16—2.
Harding, John R., to Acme Visible Records, Inc. Changeable indicator sign. 201,946, 8–17–65, D1—12.
Harp, James W. Toy hoop roller. 201,973, 8–17–65, D34—5.
Hatcher, Grant E.: *See*—
Schofield, Everett L., Hatcher, and Hicks. D202—9.
Schofield, Everett L., Hatcher, and Hicks. D202—10.
Hervey, Eugene. Beverage rack. 201,984, 8–17–65, D44—29.
Hicks, Coy H.: *See*—
Schofield, Everett L., Hatcher, and Hicks. D202—9.
Schofield, Everett L., Hatcher, and Hicks. D202—10.
Hinckley, Thomas R.: *See*—
Cann, Richard T., Hinckley, and Gardner. D201—994.
Holophane Co., Inc.: *See*—
Wince, Vearl S. 201,986.
Industrial Plastics Co.: *See*—
Taylor, Kenneth D. 202,017.
International Silver Co., The: *See*—
Toffolon, Siro R. 201,995.
International Swimming Pool Corp.: *See*—
Fischler, Henry. 201,958.
Fischler, Henry. 201,959.
Johns, Richard B. Shoe sole. 201,952, 8–17–65, D7—5.
Johnson, Clifton L. Pinball game board. 201,972, 8–17–65, D34—5.
Johnson, S. C., & Son, Inc.: *See*—
Luedtke, Warren J. 201,997.
Jones, Robert W., to Bigelow-Liptak Corp. Refractory tile. 202,011, 8–17–65, D61—25.
Jones, Robert W., to Bigelow-Liptak Corp. Refractory tile. 202,012, 8–17–65, D61—25.
Kane, David. Frame for a mobile irrigation device. 201,980, 8–17–65, D40—1.
Karma Corp.: *See*—
Sklera, Richard J. 201,948.
Kerr, Roger B., to General Electric Co. Wire diameter gauge. 201,991, 8–17–65, D52—6.
Kirsby, Tage K., to Colgate-Palmolive Co. Bottle or similar article. 201,998, 8–17–65, D58—6.
Kucera, Joseph B. Farm wagon box. 201,976, 8–17–65, D35—2.
Lake, Orson W. Holder for notes. 201,965, 8–17–65, D17—3.
Lanczi, Leslie E. Combined tumbler and toothbrush holder. 201,951, 8–17–65, D4—3.
Lang, Henry, to L. Batlin & Son, Inc. Revolving safety reflector signal. 202,005, 8–17–65, Cl. D72—1.
La Torre Rodrigues, Juan C. Automatic coffee roasting machine. 201,947, 8–17–65, Cl. D2—3.
Lay, Ralph B., D. Bates, and J. L. Neal, to Hamilton Cosco, Inc. High chair. 201,960, 8–17–65, Cl. D15—1.
Le Sueur, Robert C.: *See*—
Chapman, Dave, and Le Sueur. 201,983.
Lohn, Edwin E. Automobile headrest. 201,961, 8–17–65, Cl. D15—8.
Luedtke, Warren J., to S. C. Johnson & Son, Inc. Dispensing bottle. 201,997, 8–17–65, Cl. D58—6.
Madl, Alfred W., to John Oster Mfg. Co. Hair dryer blower. 202,015, 8–17–65, Cl. D86—10.
Marghab, Vera W. Place mat or the like. 202,020, 8–17–65, Cl. D92—26.
Mast-Foos Mfg. Co., Inc.: *See*—
Musgrave, Orly. 201,996.
McRae, Duncan, to John Wood Co. Gasoline pump. 201,989, 8–17–65, Cl. D52—2.

Mitchell, Arthur M. Combination garden spade, hoe and weeding tool. 201,977, 8–17–65, Cl. D35—2.
Mobile Drilling Co., Inc.: *See*—
Dickinson, Robert E. 201,978.
Mohon, Holland D. Desk. 201,971, 8–17–65, Cl. D33—7.
Mossberg, O. F., & Sons, Inc.: *See*—
Benson, Carl H. 201,970.
Mulkey, Sam, Co.: *See*—
Schofield, Everett L., Hatcher, and Hicks. 202,009.
Schofield, Everett L., Hatcher, and Hicks. 202,010.
Munson, Austin H., to Ekco Products Co. Handle for culinary implements or the like. 201,985, 8–17–65, Cl. D44—29.
Murray, Gilbert D., to Natser Corp., d.b.a. Acco Products. Paper punch. 202,007, 8–17–65, Cl. D74—1.
Murray Ohio Mfg. Co., The: *See*—
Schreckengost, Viktor. 202,018.
Musgrave, Orly, to Mast-Foos Mfg. Co., Inc. Multi-speed transmission. 201,996, 8–17–65, Cl. D55—1.
National Lock Co.: *See*—
Rhoades, Nolan K. 201,953.
Natser Corp.: *See*—
Murray, Gilbert D. 202,007.
Neal, Harry B., and R. V. Burnham, to Anaconda Aluminum Co. Door pull. 201,954, 8–17–65, Cl. D10—8.
Neal, Harry B., and R. V. Burnham, to Anaconda Aluminum Co. Door pull. 201,955, 8–17–65, Cl. D10—8.
Neal, Jerry L.: *See*—
Lay, Ralph B., Batea, and Neal. 201,960.
Oster, John, Mfg. Co.: *See*—
Madl, Alfred W. 202,015.
Pantasote Co., The: *See*—
Weiss, Hugh R. 202,001.
Peterson, Jerold R., to Sunbeam Corp. Packaging box for an electric shaver or similar article. 202,000, 8–17–65, Cl. D58—11.
Pfaff and Kendall: *See*—
Schlosser, Francis G. 201,993.
Pharmaseal Laboratories: *See*—
Hamilton, Donald A. 202,013.
Presto Lock Co., Inc.: *See*—
Gehrie, Charles S. 201,988.
Products International, Inc.: *See*—
Boller, George R., Armstrong, and Russell. 201,963.
Quaker Lace Co.: *See*—
Castorani, Francesco P. 202,019.
Radcliffe, James R. Acoustical correction tile. 201,967, 8–17–65, Cl. D18—2.
Rau, Cedric C., to The Future Bottle Corp. Bottle. 201,999, 8–17–65, Cl. D58—8.
Reibold, E. L., Agency, Inc.: *See*—
Reibold, Elmer L. 201,992.
Reibold, Elmer L., to E. L. Reibold Agency, Inc. Bath scale or similar article. 201,992, 8–17–65, Cl. D52—10.
Rexall Drug and Chemical Co.: *See*—
Brown, Thomas E. 201,975.
Rhoades, Nolan K., to National Lock Co. Furniture pull or the like. 201,953, 8–17–65, Cl. D10—8.
Russell, James W.: *See*—
Boller, George R., Armstrong, and Russell. 201,963.
Schlosser, Francis G., to Pfaff and Kendall. Bracket for posts. 201,993, 8–17–65, Cl. D54—1.
Schofield, Everett L., G. E. Hatcher, and C. H. Hicks, to Sam Mulkey Co. Portable space heater. 202,009, 8–17–65, Cl. D81—20.
Schofield, Everett L., G. E. Hatcher, and C. H. Hicks, to Sam Mulkey Co. Portable space heater. 202,010, 8–17–65, Cl. D81—20.
Schreckengost, Viktor, to The Murray Ohio Mfg. Co. Bicycle accessory tank. 202,018, 8–17–65, Cl. D90—8.
Scovill Mfg. Co.: *See*—
Chapman, Dave, and Le Sueur. 201,983.
Seman, Colman J.: *See*—
Seman, David C., C. J., F. P., and J. G. 201,956.
Seman, David C., C. J., F. P., and J. G. 201,957.
Seman, David C., C. J., F. P., and J. G. Door and panel combination for a prefabricated house. 201,956, 8–17–65, Cl. D13—1.
Seman, David C., C. J., F. P., and J. G. Window and panel combination for a prefabricated house. 201,957, 8–17–65, Cl. D13—1.
Seman, Fredrick P.: *See*—
Seman, David C., C. J., F. P., and J. G. 201,956.
Seman, David C., C. J., F. P., and J. G. 201,957.
Seman, John G.: *See*—
Seman, David C., C. J., F. P., and J. G. 201,956.
Seman, David C., C. J., F. P., and J. G. 201,957.
Sheldon, E. H., & Co.: *See*—
Carlson, Arthur W. 201,964.
Sklera, Richard J., to Karma Corp. Drink dispenser or the like. 201,948, 8–17–65, Cl. D2—3.
Slipian, Gladys R. Bar of soap. 202,006, 8–17–65, Cl. D73—1.
Solomon, Nathan L. Hair clip. 202,016, 8–17–65, Cl. D86—10.
Steinbeck, Frank W., to Wm. Teacher & Sons Ltd. Ash tray. 202,014, 8–17–65, Cl. D85—2.
Sunbeam Corp.: *See*—
Peterson, Jerold R. 202,000.
Sutherland, James R., to Viking Corp. Ledger plate. 201,979, 8–17–65, Cl. D40—1.
Sutherland, James R., to Viking Corp. Mower guard. 201,981, 8–17–65, Cl. D40—1.
Taylor Instrument Companies: *See*—
Aldridge, Clarence F., and Federico. 201,990.
Taylor, Kenneth D., to Industrial Plastics Co. Carrying case for tennis equipment or the like. 202,017, 8–17–65, Cl. D87—5.
Teacher, Wm., & Sons Ltd.: *See*—
Steinbeck, Frank W. 202,014.
Toffolon, Siro R., to The International Silver Co. Fork or similar article of flatwear. 201,995, 8–17–65, Cl. D54—12.
Viking Corp.: *See*—
Sutherland, James R. 201,979.
Sutherland, James R. 201,981.
Webster, Desmond E. C. Lockset handle. 201,987, 8–17–65, Cl. D50—3.
Weiss, Hugh R., to The Pantasote Co. Produce tray. 202,001, 8–17–65, Cl. D58—13.
Welsh Mfg. Co.: *See*—
Andrews, John R., III. 201,950.
White, S. S., Dental Mfg. Co., The: *See*—
Gardella, John M. 201,968.
Wince, Vearl S., to Holophane Co., Inc. Refractor for lighting fixtures and the like. 201,986, 8–17–65, Cl. D48—16.
Wood, John, Co.: *See*—
McRae, Duncan. 201,989.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 17TH DAY OF AUGUST, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Huber, John H., and Schumacher. 3,201,743.
APF Inc.: *See*—
Munn, Ben. 3,200,526.
Ackley, Charles E., to R. W. Hartnett Co. Capsule sealing method and apparatus. 3,200,556, 8–17–65, Cl. 53—38.
Adam, Frits G., to International Standard Electric Corp. Semiconductor diode having multiple regions of different conductivities. 3,201,664, 8–17–65, Cl. 317—234.
Adams, Cecil E., to American Brake Shoe Co. Electrohydraulic flow control apparatus. 3,200,832, 8–17–65, Cl. 137—117.
Adams, Samuel T., and R. P. Kessler; said Kessler and heirs of said S. T. Adams, deceased, assors. to West Virginia Pulp and Paper Co. Bag closer and sealer. 3,200,558, 8–17–65, Cl. 53—76.
Adgate, Theodore M.: *See*—
Maker, James H., and Adgate. 3,201,273.
Aero Metal Products Corp.: *See*—
Dodegge, Carl A. 3,200,493.
Aerojet-General Corp.: *See*—
Climent, Francis J., and Corbin. 3,200,585.
Klager, Karl. 3,201,448.
Afton, Leonard. Multi-purpose, inherently biased, self-inflatable bellows. 3,201,111, 8–17–65, Cl. 267—1.
Agfa Aktiengesellschaft: *See*—
Kiper, Gerd, and Mitsch. 3,200,721.
Ahrens, Erhard, to Electroacustic Gesellschaft mit beschrankter Haftung. Phonograph pickup for grooved records. 3,201,527, 8–17–65, Cl. 179—100.41.
Ainley, Alfred J., J. A. Wright, and E. Heap, to Associated Electrical Industries Ltd., and The General Engineering Co. (Radcliffe) Ltd. Means for controlling the working temperature in machines operating upon plastic materials. 3,200,878, 8–17–65, Cl. 165—64.
Air Heaters, Inc.: *See*—
Muckelrath, Ernest R. 3,201,096.
Air Reduction Co., Inc.: *See*—
Anderson, Nelson E. 3,201,562.
Maghotta, Frank A. 3,201,866.
Aircraft Armaments, Inc.: *See*—
Reiner, Fred, and Linfield. 3,201,754.
Ajinomoto Co., Inc.: *See*—
Tsuchiya, Yoshio, Takenishi, Kato Mori, and Yoshikawa. 3,201,388.
Akro-Mils, Inc.: *See*—
Walter, Ernest W. 3,200,983.
Akustische U. Kino-Gerate Gesellschaft m.b.H.: *See*—
Weingartner, Bernhard. 3,201,516.
Albert, Frank P., and L. W. Bieker, to Union Tank Car Co. Transfer car. 3,201,021, 8–17–65, Cl. 228—49.
Alexander, Laurence E., and S. Wallace, to Leesona Corp. Infrared vapor monitoring system with means to control the infrared emission from the source. 3,201,587, 8–17–65, Cl. 250—43.5.
Alkar Engineering Corp.: *See*—
Rasmussen, Harvey R. and H. J., and Fisher, and Moskal. 3,201,264.
Allegheny Ludlum Steel Corp.: *See*—
Harkins, Thomas R., and Zaremski. 3,201,210.
Renshaw, William G., and Lincoln. 3,201,211.
Zaremski, Donald R. 3,201,212.
Allen, Charles F. H., J. A. Ford, and R. W. Henn, to Eastman Kodak Co. Photographic developers containing calcium precipitation inhibitors. 3,201,246, 8–17–65, Cl. 96—61.
Allen, Edward L., to Ingersoll-Rand Co. Clutch and rotation arresting mechanism. 3,200,922, 8–17–65, Cl. 192—147.
Allen, Richard H., to Well Service Inc. Fracturing of wells. 3,200,882, 8–17–65, Cl. 166—42.
Allied Chemical Corp.: *See*—
Dell, Richard G., and Meinser. 3,201,369.
Eichelberger, William C., and Hartford. 3,201,337.
Allis-Chalmers Mfg. Co.: *See*—
Buhr, August G., Tanke, and Weber. 3,201,005.
Allis, Louis, Co., The: *See*—
Wilkerson, Alan W. 3,201,624.
Allport, Maurice J., to Joseph Lucas (Industries) Ltd. Alternating current generators. 3,201,623, 8–17–65, Cl. 310—75.
Alpha Instrument, Inc.: *See*—
Ferri, Aurelio. 3,201,649.
Alsman, Eugene M.: *See*—
Eastman, Watson S., and Alsman. 3,201,310.
Altorfer, Edward J. Trouser clamp for wire clothes hangers. 3,201,016, 8–17–65, Cl. 223—91.
Aluminium Laboratories Ltd.: *See*—
Lindsay, James G., and Kinsman. 3,201,199.
Ambli, Andrew. Diesel exhaust system. 3,200,765, 8–17–65, Cl. 104—62.
American Agricultural Chemical Co., The: *See*—
Corben, Leo D. 3,201,353.
American Brake Shoe Co.: *See*—
Adams, Cecil E. 3,200,832.
American Cyanamid Co.: *See*—
Arit, Herbert G., Jr., Fitchett, and Markley. 3,201,398.
Dussa, John P., Joseph, and Bernstein. 3,201,425.
Kaiserman, Samuel. 3,201,273.
McCormick, Jerry R. D., and Reichenthal. 3,201,424.
Wilkinson, Raymond G., and Kende. 3,201,462.
American Home Products Corp.: *See*—
Clark, Robert E., Eckhardt, Spence, and Stribley. 3,201,245.
Clark, Robert E., Eckhardt, Hassinen, and Stribley. 3,201,256.
American Machine & Foundry Co.: *See*—
Ernst, John M. 3,201,123.
Hardy, Herbert L., and Mahoney. 3,201,677.
Morris, Jack. 3,201,559.
Richert, Walter J. 3,201,541.
Stewart, Roy B., Jr. 3,201,660.
American Mfg. Co., Inc. The: *See*—
Willis, Grant N. 3,200,675.
American Pipe and Construction Co.: *See*—
Aydelott, Max M. 3,201,150.
American Radiator & Standard Sanitary Corp.: *See*—
Braun, Eugene R. 3,200,594.
American Research and Development Co.: *See*—
Croyle, Eugene I. 3,201,799.
Ametek, Inc.: *See*—
Gruner, Frederick R. 3,200,950.
Krynski, John E. 3,200,951.
Ampex Corp.: *See*—
Trojak, Emil A. 3,201,718.
Amici, Alba M., A. Minghetti, C. Spalla, and A. Tonelo, to Societa Farmaceutici Italia. Process for preparing lysergic acid. 3,201,826, 8–17–65, Cl. 195—81.
Ammerman, John M., to Radio Corp. of America. Mount for deflection yoke and convergence exciter. 3,201,629, 8–17–65, Cl. 313—77.
Amodei, Juan J., to Radio Corp. of America. Storage-diode pulse generator employing tuning transmission line for altering shape of output pulses. 3,201,612, 8–17–65, Cl. 307—88.5.
Amodei, Juan J., to Radio Corp. of America. Electrical circuit. 3,201,613, 8–17–65, Cl. 307—885.
Anaconda Wire and Cable Co.: *See*—
Volk, Victor F. 3,201,061.
Andersen, James H., and M. D. Fuller, to Korry Mfg. Co. Multiunit electric terminal and indicator panel assembly and components. 3,201,786, 8–17–65, Cl. 340—381.
Andersen, Kaj O. Harrow tooth. 3,200,892, 8–17–65, Cl. 172—713.
Anderson, Arvin D., R. L. Foster, and H. G. Russell, to Sinclair Research, Inc. Two stage cracking of residuals. 3,201,341, 8–17–65, Cl. 208—74.
Anderson, C. Gordon: *See*—
Thouvenelle, Beryl E., Stringer, and Anderson. 3,200,977.
Anderson, Kay O.: *See*—
Hodnefield, Olaus T. 3,201,265.
Anderson, Nelson E., deceased (S. B. Anderson, administratrix of said N. E. Anderson), to Air Reduction Co., Inc. Stabilized eddy current seam follower. 3,201,562, 8–17–65, Cl. 219—125.
Anderson, Philip C., to Feed Service Corp. Animal feeding device. 3,200,790, 8–17–65, Cl. 119—51.
Anderson, Robert F. Adjustable brassiere. 3,200,821, 8–17–65, Cl. 128—492.
Anderson, Severa B.: *See*—
Anderson, Nelson E. 3,201,562.
Anderson, William R.: *See*—
Landvoerk, Ole G., and Anderson. 3,200,654.
Anderson, Wilmer C., and S. J. Demby, to General Time Corp. Low power drain pulse formers. 3,201,593, 8–17–65, Cl. 307—88.
Andrews, Thomas D. H.: *See*—
Thoma, Oswald, and Andrews. 3,200,760.
Anfinsen Plastic Molding, Inc.: *See*—
Brocken, Karl. 3,201,011.
Angelini, Sergio, to J. Dolas. Rotary motion transmitting mechanism for internal combustion engines and the like. 3,200,659, 8–17–65, Cl. 74—219.
Ansar, Anders, and E. W. J. Caddy, to The Garrard Engineering & Mfg. Co. Ltd. Record-changing gramophones. 3,201,131, 8–17–65, Cl. 274—10.
Anselm, Courtenay D., to Eastman Kodak Co. Novel process for recovering color-forming coupler from used photographic color developer solutions. 3,201,412, 8–17–65, Cl. 260—310.
Antonides, Harold J., and R. L. Dietchweiler, to Armour Pharmaceutical Co. Algicidal and sanitising compositions. 3,201,311, 8–17–65, Cl. 167—22.
Antonucci, Carmine J., to Potter Instrument Co., Inc. Print hammer modules for high speed printers. 3,200,739, 8–17–65, Cl. 101—93.
Appleton, Doryce: *See*—
Price, Frederick J., Jr. 3,200,909.
Arco Corp.: *See*—
Webb, George. 3,200,744.

Argentieri, Michael A., to International Telephone and Telegraph Corp. Display system. 3,200,498, 8–17–65, Cl. 33—1.

Argue, Donald D.: *See*—
Guenther, Carl, and Argue. 3,201,055.

Arisman, Mervin B.: *See*—
Barden, Wayne A., and Arisman. 3,200,657.

Arit, Herbert G., Jr., G. T. Fitchett, and F. X. Markley, to American Cyanamid Co. Preparation of 7-halo-1,2,3,4-tetrahydro-4-oxo-6-quinazolinesulfonamide. 3,201,398, 8–17–65, Cl. 260—256.5.

Armco Steel Corp.: *See*—
Carpenter, Victor W., Jackson, and Squibb. 3,201,293.

Armour Pharmaceutical Co.: *See*—
Antonides, Harold J., and Dietchweiler. 3,201,311.
Bardos, Thomas J., and Papanastassiou. 3,201,313.
Kaiser, Emil, and Domba. 3,201,422.

Arndt, Donald N., to Walbro Corp. Carburetor fuel system. 3,201,007, 8–17–65, Cl. 261—41.

Aron, Erwin, to Technical Processing, Inc. Rubber compounded with a releasing composition containing a branched chain alcohol and stearic acid. 3,201,361, 8–17–65, Cl. 260—23.7.

Arseneau, Roger E., to International Telephone and Telegraph Corp. Multi-frequency tone signaling system. 3,201,524, 8–17–65, Cl. 179—84.

Asbeck, Heins, to Idealspaten- und Schuafelwalzwerk vorm Eckardt & Co. G.m.b.H. Tractor tread for use on rubber tire vehicles. 3,200,969, 8–17–65, Cl. 152—182.

Ashi Kasei Kogyo Kabushiki Kaisha: *See*—
Tsunoda, Yoshio, Seko, Kato, Misumi, Mitsish, and Toyoda. 3,201,339.

Ashley, Merwin F., to United Shoe Machinery Corp. Container opening devices. 3,200,965, 8–17–65, Cl. 220—64.

Askew, Crawford S. Test probe with grappler. 3,201,746, 8–17–65, Cl. 339—108.

Asselbergs, Edward A. M., to Canadian Patents and Development Ltd. Process for making a cooked dehydrated fish product. 3,201,260, 8–17–65, Cl. 99—209.

Associated Electrical Industries Ltd.: *See*—
Ainley, Alfred J., Wright, and Heap. 3,200,878.

Associated Electrical Industries (Manchester) Ltd.: *See*—
Connett, Jack. 3,201,753.

Associated Spring Corp.: *See*—
Maker, James H., and Adgate. 3,201,273.

Atlas Chemical Industries, Inc.: *See*—
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Atomic Energy of Canada Ltd.: *See*—
Dickinson, John R. 3,201,816.

Aucremanne, Marcel J., and D. D. Woolston, to United States of America, Navy. Device for producing a signal for actuation of acoustic mines. 3,201,707, 8–17–65, Cl. 328—228.

Audivox, Inc.: *See*—
Johanson, Donald L., and Hulse. 3,201,526.

Aulich, Willi, and G. Podlich, to Metallgesellschaft Aktiengesellschaft. Sludge flocculating and filtering apparatus. 3,200,949, 8–17–65, Cl. 210—205.

Auto Union G.m.b.H.: *See*—
Wawrziniok, Erwin. 3,201,206.

Automatic Telephone & Electric Co. Ltd.: *See*—
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Automatic Timing & Controls Inc.: *See*—
Houpt, Grover K. 3,201,616.

Axdahl, Lester G.: *See*—
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Aydelott, Max M., to American Pipe and Construction Co. Joint seal for concrete-lined pipe. 3,201,150, 8–17–65, Cl. 285—55.

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Brown, Michael P., Silver, Dann, and Ayres. 3,201,404.

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Munder, Johannes, Heiss, Fritz, Osswald, and Heck. 3,201,241.
Neugebauer, Wilhelm, Endermann, and Reichel. 3,201,-269.

B&W Inc.: *See*—
Solum, James R., and Hempel. 3,200,884.

Babcock & Wilcox Co., The: *See*—
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Bachman, Kenneth C., O. C. Behymer, H. L. Langdon, J. E. Lawson Jr., R. S. Manne, W. K. Robbins, H. H. Rosser, R. C. Russell, and J. O. Scott, to Esso Research and Engineering Co. Method of making a superior jet fuel. 3,201,-342, 8–17–65, Cl. 208—89.

Bader, William, to Fansteel Metallurgical Corp. Swivel lock toolholder. 3,200,473, 8–17–65, Cl. 29—96.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
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Schmidt-Thomee, Georg, Ellbracht, Kinkel, Trieschmann, Urban, and Zoche. 3,201,380.

Baenziger Robert C., and J. F. Rieger, to Electro-Netic Steel, Inc. Transformer core and lamination therefor. 3,201,731, 8–17–65, Cl. 336—212.

Bailey Meter Co.: *See*—
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Baird, Leslie L., to General Electric Co. Self-aligning disconnect assembly. 3,201,556, 8–17–65, Cl. 200—166.

Baker, Cole H., and F. S. Macklem, to Ovitron Corp. Magnetic trigger circuit. 3,201,599, 8–17–65, Cl. 307—88.5.

Baker, Dwight I.: *See*—
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Baker, Leonard M., and W. L. Carrick, to Union Carbide Corp. Oxidative cleavage of olefinic double bonds. 3,201 476, 8–17–65, Cl. 260—597.

Baker Perkins Inc.: *See*—
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Baker, William A., D. A. Shoemack, and R. H. Richens, to Bristol Aeroplane Plastics Ltd. Apparatus for helical winding of a plurality of threads. 3,201,298, 8–17–65, Cl. 156—431.

Balan, Isadore. Dimmer for electric lights. 3,201,597, 8–17–65, Cl. 307—88.5.

Balazer, Richard J., to Baker Perkins Inc. Mixer construction. 3,200,880, 8–17–65, Cl. 165—88.

Balding, George H., to United States of America, Navy. Symbol generator circuit for aircraft. 3,201,748, 8–17–65, Cl. 340—27.

Baldini, Enrico, to Magrini Societa per Azioni. Arc-extinguishing grid structure for liquid-type interrupter. 3,201,-552, 8–17–65, Cl. 200—150.

Baldwin-Lima-Hamilton Corp.: *See*—
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Ballam, Joseph and E.-L. Chu, to United States of America, Atomic Energy Commission. Magnetic momentum analyzing slit with current conducting strips secured to the magnetic poles. 3,201,555, 8–17–65, Cl. 250—41.9.

Ballauer, Alb C., to R. J. Enstrom Corp. Helicopter rotor system having elastomeric bearings. 3,200,887, 8–17–65, Cl. 170—160.25.

Ballentine, Earle W. Triboelectric generator for ionizing air. 3,201 620, 8–17–65, Cl. 310—7.

Ballou, Donald K., and J. C. Hendelman, to United Aircraft Corp. Continuous oxide plugging indicator. 3,200,637, 8–17–65, Cl. 73—61.

Bancroft, Joseph, & Sons Co.: *See*—
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Banse, George, to National Mfg. Co. Display devices. 3,200,-960, 8–17–65, Cl. 211—59.

Banti, Giuseppe, to Compagnie de Saint-Gobain. Apparatus for surfacing glass. 3,200,541. 8–17–65, Cl. 51—112.

Barber, Ralph F., to Miller Wrapping & Sealing Machine Co. Stacker. 3,201,116, 8–17–65, Cl. 271—79.

Barber-Greene Co.: *See*—
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Bardos, Thomas J., and Z. B. Papanastassiou, to Armour Pharmaceutical Co. Inhibition of cellular reproduction. 3,201,313, 8–17–65, Cl. 167—78.

Barr, Edward J., to McCulloch Corp. Charge forming device. 3,201,096, 8–17–65, Cl. 261—41.

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Bartlett, Roscoe G., Jr. Oxygen supply system. 3,200,816, 8–17–65, Cl. 128—142.

Barton, Norman P., to National Research Development Corp. Camera rangefinders. 3,200,727, 8–17–65 Cl. 95—44.

Barton, Raymond W., T. A. Benjamin, and J. T. Herron, to Mead Johnson & Co. Nursing apparatus. 3,200,860, 8–17–65, Cl. 141—330.

Barton, Richard R. to Miles Laboratories Inc. Process for the recovery of collagenase. 3,201,325, 8–17–65, Cl. 195—66.

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Baskett, Theodore N. Mounting apparatus for traveling, structural-surface-processing appliances. 3,200,656, 8–17–65, Cl. 74—95.

Bass, Patrick, to R & R Research Ltd. Subscriber's prepayment mechanism for use in subscription entertainment systems. 3,200,924. 8–17–65, Cl. 194—1.

Basseches, Mark T. Loud-speaker. 3,200,901, 8–17–65, Cl. 181—32.

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Batosti, Mario, and A. Belloni, to Edison, Valved bag. 3 201 029, 8–17–65, Cl. 229—62.5.

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Beard, John N., Jr.: *See*—
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Beck, Clyde S. Fluid control device. 3,200,846, 8–17–65, Cl. 137—625.48.

Beck Henry C. to Sun Oil Co. Fermentation apparatus and process. 3,201,327, 8–17–65 Cl. 195—109.

Becker, Floyd K., to Bell Telephone Laboratories, Inc. Wave sampling apparatus employing common potential switch. 3,201,703, 8–17–65, Cl. 328—150.

Becker, John E., to Eclipse Consultants Ltd. Torque controls for fluid couplings. 3,200,595, 8–17–65, Cl. 60—54.

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Bedolt, William C., Jr., to Jefferson Chemical Co. Propylene oxide adducts of 1-(2[bis(hydroxypropyl)amino]ethyl)-4-(2-hydroxypropyl)-piperazine. 3,201,400, 8–17–65, Cl. 260—268.

Beesley, Stanley, and D. A. Sharman, to British Celanese Ltd. Manufacture of peracetic acid. 3,201,460, 8–17–65, Cl. 260—502.

Behrends, F. Louis: *See*—
Wilson, William B. 3,200,630.

Behrends, Jurgen, and O. Schweitzer, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Process for the production of copolyoxymethylenes with the aid of catalytic fillers. 3,201,371, 8–17–65, Cl. 260—67.

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Bell & Howell Corp.: *See*—
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Bell & Howell Co.: *See*—
Graves, Howard K. 3,200,899.
Mayer, Peter J., Jr., and Mueller. 3,201,798.
Michaels, Bruno. 3,201,796.

Bell, Robert E., F. C. Carroll, and W. H. Gallo, to Toledo Scale Corp. Indicator. 3,200,896, 8–17–65, Cl. 177—37.

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Boyd, Gary D. 3,201,709.
Caporaso, Anthony J., Kolb, and Laudise. 3,201,209.
De Monte, Robert W. 3,201,719.
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Gannett, Danforth K. 3,201,517.
Giger, Adolf J. 3,201,716.
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Bendix Corp., The: *See*—
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Curran, Peter F., and Medlinski. 3,201,675.
Hager, Robert R. 3,201,176.
Horner, Richard F., and Cunningham. 3,200,987.
Kasten, Walter. 3,200,948.
Mileti, Joseph A. 3,200,755.
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Stanton, George E. 3,201,174.

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Benning, Calvin J., R. S. Gregorian, and F. X. Werber, to W. R. Grace & Co. Process for forming cross-linked polyethylene film. 3,201,503, 8–17–65, Cl. 264—95.

Beresnak, John, to International Telephone and Telegraph Corp. Electronic switching matrix. 3,201,520, 8–17–65, Cl. 179—18.

Bergen, Edward C., to Wellmade Metal Products Co. Adjustable roof safe and cap assembly. 3,200,735, 8–17–65, Cl. 98—46.

Berghgracht, Marius. Machine for flat-sealing an end of a heat-sealable lining of a box of parallelepipedic shape. 3,200,563, 8–17–65, Cl. 53—373.

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Bernhardt, Frederick A. Salt spreader. 3,201,006, 8–17–65, Cl. 222—330.

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Bernstein, Robert, and A. F. Hulverson, to Fruehauf Corp. Tandem axle wheel suspension including axle lift. 3,201,-141. 8–17–65, Cl. 280—104.5.

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Berry, Walter V. Oxygen lance for subsurface use. 3,201,-104. 8–17–65, Cl. 266—34.

Beryllium Corp., The: *See*—
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Dobson, Richard N., and Bexon. 3,200,771.

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Bicek, Edward J., to Universal Oil Products Co. Desiccant manufacture and the use of such desiccants in the conversion of hydrocarbons. 3,201,343, 8–17–65, Cl. 208—95.

Biddle, James G., Co.: *See*—
Salle, Charles J. 3,201,686.

Bieker, Lawrence W.: *See*—
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Bielawski, Mitchell S., and J. M. Mavity, to Universal Oil Products Co. Alkylation of alkylatable organic compounds. 3,201,486, 8–17–65, Cl. 260—671.

Bieri, Leonard: *See*—
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Bildsoe, Jorgen S.: *See*—
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Billsoly, Julius P.: *See*—
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Billeter, Henry R., and J. R. Swarts, to Sloan Valve Co. Adjustable plumbing fittings. 3,201,155, 8–17–65, Cl. 285—350.

Billi, Walter, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Furnace apparatus for producing acetylene from methane. 3,201,204, 8–17–65, Cl. 23—277.

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Bills, William D., to E. I. du Pont de Nemours and Co. Addition of magnesium silicate to a polyester in the manufacture of oriented film. 3,201,506, 8–17–65, Cl. 264—210.

Bird, Gordon S., Jr., to Sanbern Mortgage and Finance Co. Heat exchanger. 3,200,601, 8–17–65, Cl. 62—3.

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Buescher, Lorens F., and L. M. 3,201,073.

Black, Sivalls & Bryson, Inc.: *See*—
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Blackwood, William R., to Consolidated Cigar Corp. Article feeding apparatus. 3,200,930, 8–17–65, Cl. 198—24.

Blanchet, Lucien. Mixed type terminal supports, and corresponding terminal bars. 3,201,747, 8–17–65, Cl. 339—198.

Blanchi, Serge, and R. Lacour. Electromagnetic device with potted coil. 3,201,729, 8–17–65, Cl. 336—83.

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Blashfield, William H., to North Electric Co. P.B.X. trunk circuit for restrictor. 3,201,523, 8–17–65, Cl. 179—27.

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Bleiweiss, Arthur F., G. Colombo, and J. B. Dickson, to Signal-Stat Corp. Compensated thermomotive flasher. 3,201,547, 8–17–65, Cl. 200—122.

Blievernicht, Harlan H., to Carrier Corp. Gas burners. 3,200 871, 8–17–65, Cl. 158—7.

Bliss, Charles O. Chair construction. 3,201,172, 8–17–65, Cl. 297—445.

Bloch, Herman S.: *See*—
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Blue, Robert D., and R. J. Moolenaar, to The Dow Chemical Co. Cesium production. 3,201,229, 8–17–65, Cl. 75—66.

Bluhm, Arley C. and E. F. Dispensing reel. 3,201,060, 8–17–65, Cl. 242—110.3.

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Bluhm, Arley C. and E. F. 3,201,060.

Blyth, John W., C. A. Godcharles, J. H. Jacobson, and W. J. Rozmus, to Hamilton Research Associates, Inc. Mechanical teaching machine. 3,200,513, 8–17–65, Cl. 35—9.

Bobst, J., and Son S.A.: *See*—
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Bochumer Verein fur Gusstahlfabrikation ag.: *See*—
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Bodanszky, Miklos, and J. T. Sheehan, to Olin Mathieson Chemical Corp. Diesters of dihydroxy-dithiohexandeiamide. 3,201,457, 8–17–65, Cl. 260—477.

Bohler, Gebr., & Co. Aktiengesellschaft: *See*—
Thier, Hermann W. R. 3,201,232.

Bohler, Hans, F. Kehrer, and P. Maderni, to Sandoz Ltd. Monocyclic carboxylic aromatic amine. 3,201,402, 8–17–65, Cl. 260—279.

Bolton, John W., & Sons, Inc.: *See*—
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Bongenaar, Willem, A. J. W. M. van Oberbeek, and T. J. Tulp, to North American Philips Co., Inc. Circuit for linearly changing the magnetization of a core. 3,201,594, 8–17–65, Cl. 307—88.

Booth, Eugene T., to United States of America, Atomic Energy Commission. Method and apparatus for radioactive gas analysis using neutrons of two energy levels. 3,201,-586, 8–17–65, Cl. 250—43.5.

Borden Co., The: *See*—
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Border, Elmer D., and R. A. Pfenning, to Strass Industries, Inc. Crystal selector mechanism for an oscillator network. 3,201,714, 8–17–65, Cl. 331—161.

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Fuhrman, Richard E. 3,201,676.
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Bornstein, Joseph. Process for preparing a biochemically active polypeptide from sheep pituitary growth hormone. 3,201,352, 8–17–65, Cl. 260—112.

Boser, Ronald J., and E. L. Weschler. Binder folder attachment for sewing machines. 3,200,779, 8–17–65, Cl. 112—152.

Boswell, George A., Jr., and R. M. Scribner, to E. I. du Pont de Nemours and Co. 3-keto-Δ^4-6-cyanoamino steroids. 3,201,426, 8–17–65, Cl. 260—397.2.

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Bouvert-Martin, Jean-Baptiste, to Societe Generale "Isothermos" Societe Anonyme. Brake adjuster for railway vehicles. 3,200,912, 8–17–65, Cl. 188—196.

Bowers, Albert, to Syntex Corp. 6a,9a,11β-trichloro and 6a-fluoro-9a,11β-dichloro pregnenes. 3,201,391, 8–17–65, Cl. 260—239.55.

Bowers, Albert, and O. Halpern, to Syntex Corp. 6-keto-3-desoxy-$\Delta^{1,3,5(10)}$-estratrienes and processes for their preparation. 3,201,428, 8–17–65, Cl. 260—397.

Bowers, Roy C., to Borg-Warner Corp. Solenoid clutch control having an S-shaped support member. 3,201,662, 8–17–65, Cl. 317—191.

Bowman, Urban, to Carrier Corp. Air conditioning units. 3,201,043, 8–17–65, Cl. 236—1.

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Boyd, Gary D., to Bell Telephone Laboratories, Inc. Tunable optical resonator for harmonic generation and parametric amplification. 3,201,709, 8–17–65, Cl. 330—4.5.

Boydan, Robert E. Multi-channel sound recording and reproducing device. 3,201,525, 8–17–65, Cl. 179—100.2.

Brackett, George E., to Basic Products Corp. Runway lighting devices. 3,201,577, 8–17–65, Cl. 240—1.2.

Bradbury, Wilburn F.: *See*—
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Bradford, Dean C., and L. J. Krzych, to International Telephone and Telegraph Corp. Slow wave filter helix structure. 3,201,720, 8–17–65, Cl. 333—31.

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Bradsell, Robert H.: *See*—
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Bradt, Albert J., J. T. Curry, and R. A. Estock, to Martin-Marietta Corp. Electronic modules. 3,201,655, 8–17–65, Cl. 317—101.

Brady, Joseph L., and R. A. Brudi, to Clark Equipment Co. Crate and carton handling attachment for industrial trucks. 3,200,978, 8–17–65, Cl. 214—651.

Brady, Joseph R., and R. G. Cunningham, to Eastman Kodak Co. Electrostatic charging apparatus. 3,201,668, 8–17–65, Cl. 317—262.

Brady, Kenneth J., and N. Townsend; said Townsend assor. to said Brady. Sequential switch for an automatic vending machine or the like. 3,201,534, 8–17–65, Cl. 200—33.

Bragg, Kenneth R., to Parker-Hannifin Corp. Tube coupling. 3,201,149, 8–17–65, Cl. 285—39.

Brainard, Benson C. Spray container shield enclosure. 3,200,817, 8–17–65, Cl. 128—173.

Brannock, Kent C., to Eastman Kodak Company. Alkyl esters of alicyclic diene compounds having 7 to 18 ring carbon atoms and having a pyrrolidino radical, a piperidino radical, a morpholino radical or the radical of hexamethyleneimine attached to the alicyclic ring. 3,201,397, 8–17–65, Cl. 260—247.2.

Brashear, Edwin G. Foundation underreamer. 3,200,894, 8–17–65, Cl. 175—286.

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Breece, Lee K., Jr., to Resiflex Laboratory. Pediatric urine collection means. 3,200,415, 8–17–65, Cl. 4—110.

Breece, Maurice E., to Sperry Rand Corp. Coaxial to waveguide mode-converting duplexer employing nonreciprocal phase shifting means. 3,201,715, 8–17–65, Cl. 333—1.1.

Brennan, Ward T.: *See*—
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Breslin, Mary A.: *See*—
Schmitt, William F., Breslin, and Moore. 3,201,761.

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Bright, Robert G., to Bright Mfg. Co. Ltd. Sealing strips, beadings or mouldings. 3,200,448, 8–17–65, Cl. 20—69.

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Brillaud, Andre R.: *See*—
Douros, John D., Jr., Brillaud, and Elts. 3,201,323.

Briscoe, George H., to Lacy-Hulbert and Co. Ltd. Vane-type rotary air pumps. 3,201,033, 8–17–65, Cl. 230—152.

Bristol Aeroplane Plastics Ltd.: *See*—
Baker, William A., Shoemack, and Richens. 3,201,298.

Bristol-Banyu Research Institute, Ltd.: *See*—
Kawaguchi, Hiroshi, Okanishi, and Miyaki. 3,201,386.

British Celanese Ltd.: *See*—
Beesley, Stanley, and Sharman. 3,201,460.

British Filters Ltd.: *See*—
Worth, Thomas C., and Hobson. 3,200,955.

British Internal Combustion Engine Research Institute, Ltd., The: *See*—
Mansfield, Wilfred P. 3,200,798.

British Nylon Spinners Ltd.: *See*—
Iwnicki, Kurt, and Miller. 3,200,467.

British & Overseas Minerals Ltd.: *See*—
Carpenter, George. 3,201,099.

British Petroleum Co. Ltd., The: *See*—
Lacey, Richard N., Yeo, and Mowll. 3,201,490.

Brittain, Francis H., to Hazeltine Research, Inc. Loudspeaker. 3,200,900, 8–17–65, Cl. 181—32.

Brixey, William H. Telemetering system for use with telegraph tranamission. 3,201,755, 8–17–65, Cl. 340—151.

Brocken, Karl, to Anfinsen Plastic Molding, Inc. Pouring spout and cover therefor. 3,201,011, 8–17–65, Cl. 222—478.

Brody, Herbert M., to General Electric Co. Refrigeration system including charge checking means. 3,200,605, 8–17–65, Cl. 62—129.

Brokop, Alfred, to Container Corp. of America. Collapsible service tray. 3,201,024, 8–17–65, Cl. 229—30.

Brooks, Forrest E., and C. C. Iden, to Radio Corp. of America. High voltage transformer and rectifier tube with direct connection therebetween. 3,201,730, 8–17–65, Cl. 336—107.

Broughton, Donald B., to Universal Oil Products Co. Refining hydrocarbon lubricating oils. 3,201,344, 8–17–65, Cl. 208—143.

Broughton, Donald B.: *See*—
Stine, Laurence O., and Broughton. 3,201,491.

Brous, Jack C., to Phillips Petroleum Co. Liquid level control apparatus. 3,200,644, 8–17–65, Cl. 73—306.

Brown, Culver S., Jr. Laminated ski with a honeycomb core. 3,201,138, 8–17–65, Cl. 280—11.18.

Brown, D. S., Co., The: *See*—
Brown, Delmont D. 3,200,482.

Brown, Dale G.: *See*—
Steinhauer, Alfred F., and Brown. 3,201,461.

Brown, Delmont D., to The D. S. Brown Co. Tool for inserting elastomer highway joint seals and the like. 3,200,482, 8–17–65, Cl. 29—235.

Brown, George J., and H. H. Barrett, to Bourns, Inc. Electrical pressure transducer. 3,201,735, 8–17–65, Cl. 338—6.

Brown, Michael P., and H. B. Silver, to United States Borax & Chemical Corp. Cyclic aminoborane compounds. 3,201,465, 8–17–65, Cl. 260—551.

Brown, Michael P., H. B. Silver, A. E. Dann, and B. J. Ayres, to United States Borax and Chemical Corp. Boron compounds. 3,201,464, 8–17–65, Cl. 260—551.

Brown, Norman F., to Otis Engineering Corp. Check valve for use in a tubular flow conductor. 3,200,887, 8–17–65, Cl. 137—496.

Brown, Roy L., to Westinghouse Electric Corp. Magnetic core structures. 3,201,733, 8–17–65, Cl. 336—217.

Brown, Warren G., to International Telephone and Telegraph Corp. Pulse code modulation coder. 3,201,777, 8–17–65, Cl. 340—345.

Brucken, Byron L., to General Motors Corp. Dry cleaning apparatus. 3,200,622, 8–17–65, Cl. 68—18.

Brudi, Ronald A.: *See*—
Brady, Joseph L. and Brudi. 3 200 978.

Brunson, Marion O., and W. D. McGillen, to Eastman Kodak Co. Compositions of polyethylene and ethylene/ethacrylate copolymers for improved heat sealability. 3,201,498, 8–17–65, Cl. 260—897.

Brush, Edward E.: *See*—
Levinson, Benjamin L., and Brush. 3 200,994.

Bryan James C., and R. D. Hurt, to E. I. du Pont de Nemours and Co. Apparatus for producing composite textile filaments from a plurality of synthetic polymers. 3,200,440, 8–17–65, Cl. 18—8.

Buchanan, James L., and W. B. Zelina, to General Electric Co. Solid-state controlled rectifier voltage regulating system. 3 201 679, 8–17–65, Cl. 322—25.

Bucks, Karl E., and J. H. Calviou to The Plessey Co. Ltd. Cooling systems. 3,200,881, 8–17–65, Cl. 165—104.

Bucourt, Robert, to Roussel-UCLAF. Heparin derivatives and methods for preparing same. 3,201,312, 8–17–65. Cl. 167—74.

Budd Travis G., J. L. Turak, D. D. Johannesen, and R. E. McCandlish, to The Bendix Corp. Fluid motor, backing plate connection. 3,200,908, 8–17–65, Cl. 188—78.

Buell Halsey W.: *See*—
O'Neil, Joseph R., Jr. Kirsch, and Buell. 3,200,543.

Buescher, Lawrence M.: *See*—
Buescher, Lorenz F. and L. M. 3,201,073.

Buescher Lorenz F. and L. M., to Bish Creative Display, Inc. Support bracket. 3,201,073, 8–17–65 Cl. 248—121.

Buhr, August G., W. H. Tanke, and K. R. Weber, to Allis-Chalmers Mfg. Co. Fertilizer distributor. 3,201,005, 8–17–65. Cl. 222—272.

Bunge, Lothar P. Folding trailer. 3,200,546, 8–17–65, Cl. 52—66.

Bunker Hill Co., The: *See*—
Caldwell, John W. 3,201,739.

Bunn B. H., Co: *See*—
Bunn, Benjamin H. 3,200,738.

Bunn, Benjamin H., to B. H. Bunn Co. Method of tying bundles while said bundles are in motion. 3,200,738, 8–17–65, Cl. 100—3.

Burdick and Jackson Laboratories, Inc.: *See*—
Jackson, William G. 3,201,615.

Burgin, Kermit H., 80% to Frederick B. Cline. Water pump. 3,200,754, 8–17–65, Cl. 103—88.

Burke, Frederick A.: *See*—
Kolster, Harvey L., Burke, and Long. 3,200,961.

Burke, John C.: *See*—
Considine, William J., Bernstein, and Burke. 3,201,454.

Burndy Corp.: *See*—
Williams, Nathanile C. 3,201,745.

Burns, Lester W., and G. K. Raider, to The Pyle-National Co. Combination acoustic ceiling panel and air diffuser. 3,200,734, 8–17–65, Cl. 98—40.

Burns, Thagrus A., and W. H. Phend. Feeding device. 3,200,929, 8–17–65, Cl. 197—130.

Burroughs Corp.: *See*—
Lee, Edwin 8. 3,201,605.
Mollinga, Thomas. 3,201,611.

Burrows, Lale L., to United States of America, Army. Insulating device. 3,200 750, 8–17–65, Cl. 102—92.5.

Burstein, Elias, to International Telephone and Telegraph Corp. Continuous operation two level D.-C. pumped maser amplifier with semiconductor interface. 3,201,708, 8–17–65 Cl. 330—4.

Buske, Alfred, to Karl Schmidt, G.m.b.H. Shaft and sliding bearing assembly. 3,201,183, 8–17–65, Cl. 308—78.

Butler, John M., L. A. Miller, and G. L. Wesp, to Monsanto Co. Reaction products of acetylenic diesters and polyols. 3,201,370 8–17–65, Cl. 260—47.

Buttke, Richard A., to Globe-Union Inc. Apparatus for casting a post strap and welding same to the plates of a battery stack. 3,200,450, 8–17–65, Cl. 22—58.

Byam, Erwin B., and A. K. Undraitis, to Textron Inc. Single-die double-stroke tubular headers. 3,200,423, 8–17–65, Cl. 10—12.5.

Byrne, Joseph E., and W. F. Luck, to Varian Associates. Rotary exhaust apparatus. 3,201,188, 8–17–65, Cl. 316—30.

C. D. Patents Ltd.: *See*—
Davidson, William, Steer, and Perrin. 3,201,045.

CTS Corp.: *See*—
Barden, Wayne A., and Ariaman. 3,200,657.

Caddy, Edward W. J.: *See*—
Ansar, Anders, and Caddy. 3,201,131.

Cadorette George, to Draper Corp. Thread parting and clamping mechanism. 3,200,851, 8–17–65, Cl. 139—263.

Cadwell, Gilbert C.: *See*—
Emerson, Herff U., and Cadwell. 3,200,478.

Calabrese, Daniel M., and M. J. Pusculle, to Westinghouse Electric Corp. Differential bias auxiliary commutating field. 3,201 626, 8–17–65, Cl. 310—186.

Caldwell, John W., to The Bunker Hill Co. Brush assembly for rotatable shaft. 3,201,739, 8–17–65, Cl. 339—5.

Calhoun, Howard J., to Westinghouse Electric Corp. Distance relaying assembly. 3,201,651, 8–17–65, Cl. 317—36.

Callender Edwin M., to General Electric Co. Electrical explosion forming. 3,200,628, 8–17–65, Cl. 72—56.

Calow, Th., & Co.: *See*—
Lindemann, Hans. 3,200,678.

Calviou, John H.: *See*—
Bucks, Karl E., and Calviou. 3 200,881.

Camera Corporation of America: *See*—
Linder, George J., Jr. 3,200,725.

Canadian Patents and Development Ltd.: *See*—
Asselbergs, Edward A. M. 3,201,260.

Canfor, Kenneth R., to Dominion Foundries and Steel, Ltd. Method of coiling tensioned strip material about a core portion of cemented strip wraps. 3,201,297, 8–17–65, Cl. 156—184.

Capewell Mfg. Co., The: *See*—
Craven, Wilbur J., and Dewey. 3,200,463.

Canoraso, Anthony J., E. D. Kolb, and R. A. Laudise, to Bell Telephone Laboratories, Inc. Hydrothermal growth of zinc oxide crystals. 3,201,209, 8–17–65, Cl. 23—301.

Carabet, George F.: *See*—
Voegeli, Donald H., and Carabet. 3,200,432.

Carborundum Co., The: *See*—
O'Neil, Joseph R., Jr., Kirsch, and Buell. 3,200 543.

Carey, Richard T., and R. M. Blanken, to The Borden Co. Process for preparing dried eggs. 3,201,261, 8–17–65, Cl. 99—210.

Carlson, Drexel T.: *See*—
Zebrath Ralph S., Lewis, and Carlson. 3,200,562.

Carmichael, Duncan G., to Eastman Kodak Co. Dyed cellulose ester textile materials resistant to chlorine fading. 3,201,190, 8–17–65, Cl. 8—61.

Carnation Co.: *See*—
Ciraolo, Samuel. 3,200,974.

Carolina Knitting Machine Corp.: *See*—
Haddad, Salomao J. 3,200,617.

Carpenter, George to British & Overseas Minerals Ltd. Methods of expanding perlite and like materials. 3,201,099. 8–17–65. Cl. 263—21.

Carpenter, Robert E., to The Glidden Co., Pemco Division. Inorganic coloring materials. 3,201,270, 8–17–65, Cl. 106—302.

Carpenter, Victor W., J. M. Jackson, and R. W. Squibb, to Armco Steel Corp. Coated silicon iron sheet stock. 3,201,293, 8–17–65, Cl. 148—31.55.

Carrick, Wayne L.: *See*—
Baker, Leonard M., and Carrick. 3,201,476.

Carrier Corp.: *See*—
Blievernicht, Harlan H. 3,200,871.
Bowman, Urban. 3,201,043.
Greeley, Edward M., and Stemerson. 3,200,604.
Stevens, Norman J. 3,201,504.
Wake, James F., and Vervaet. 3,200,603.

Carroll, Frederick C.: *See*—
Bell, Robert E., Carroll, and Gallo. 3,200,896.

Carter, Arlen F., to United States of America. National Aeronautics and Space Administration. Method and apparatus for producing a plasma. 3,201,635, 8–17–65, Cl. 313—156.

Casse, Marcel. Method and machine for producing a web of textile fibres held together by a binder. 3,201,499, 8–17–65, Cl. 264—121.

Castle, Alfred B. Latches. 3,201,161, 8–17–65, Cl. 292—173.

Catino, Sigmund C., and A. F. Strobel, to General Aniline & Film Corp. Method of preparing 4-nitrostilbenes. 3,201,-431, 8–17–65, Cl. 260—645.

Catlin, Robert T., to Remington Arms Co., Inc. Anchoring device. 3,200,692, 8–17–65, Cl. 85—68.

Cavallini, Guido, and E. Massarani, to Francesco Vismara S.p.A. Bisglyoxalyldiphenyl derivatives. 3,201,475, 8–17–65, Cl. 260—592.

Centre National de la Recherche Scientifique Ministere de l'Education Nationale: *See*—
Magat, Michel, Chapiro, and Danon. 3,201,336.

Cerveny, William J., to Standard Oil Co. High pressure contacting apparatus. 3,201,203, 8–17–65, Cl. 23—259.

Cerwonka, Edward, to General Aniline & Film Corp. Photographic polymeric images and process for producing same. 3 201,237, 8–17–65, Cl. 96—35.

Chafetz, Harry, to Texaco Inc. Method of producing a tertiary monohydric alcohol. 3,201,478, 8–17–65, Cl. 260—618.

Chaggaris, Elias G., to General Precision Inc. Bearing race counter rotation apparatus for gyros. 3,200,652, 8–17–65, Cl. 74—5.

Chambers, Willie B. Variable diameter pulley. 3,200,661, 8–17–65, Cl. 74—230.17.

Chandler, Richard F.: *See*—
Taylor, Ellis R., Chandler, and Rhein. 3,200,814.

Chantiles, Fred J., and C. W. Reiber; said Reiber assor. to said Chantiles. Control means for vehicle heating system. 3,200,732. 8–17–65 Cl. 98—2.

Chapiro, Adolphe: *See*—
Magat, Michel, Chapiro, and Danon. 3,201,336.

Chapline, Julea S.: *See*—
Welsh, Herbert F. 3,201,041.

Charlesworth, Robert K., S. A. Murdock, and K. G. Shaw, to The Dow Chemical Co. Recovering polymer from dilute polymer solutions. 3,201,365, 8–17–65, Cl. 260—34.2.

Charrington & Co. Ltd.: *See*—
Williams, Rees P. 3,201,328.

Chase, Harley F. Refuse container and transporting vehicle. 3,200,975, 8–17–65, Cl. 214—317.

Chatleff Controls, Inc.: *See*—
Shurtleff, Louis C. 3,201,148.

Chemetron Corp.: *See*—
Russell, Edward L., and Hanover. 3,201,455.

Chemical Construction Corp.: *See*—
Negra, John S., and Bernas. 3,201,215.

Chemicals Processing Corp.: *See*—
Heins, Sidney M., and Strauss. 3,201,208.

Chernlavskyj, Jaroslav, B. Michaels, A. E. Nupnau, and J. E. Nasiatka, to Bell & Howell Corp. Self-threading motion picture projector. 3,201,020, 8–17–65, Cl. 226—91.

Cherubim, Justin, to Industrial Tectonics, Inc. Hydrostatic bearing. 3,201,181, 8–17–65, Cl. 308—9.

Chessick, John J., and J. B. Christian, to United States of America, Air Force. Ion-incorporation of polar solids as lubrication stabilizer. 3,201,347, 8–17–65, Cl. 252—25.

Chevallier, Michel, and G. Cottres, to La Telemecanique Electrique. Electrical control circuits for sequential energization and deenergization of programmed apparatus. 3,201,601, 8–17–65, Cl. 307—88.5.

Chilvers, Ernest E., to Rolls-Royce Ltd. Mounting of gas turbine engines. 3,201,070, 8–17–65, Cl. 244—54.

Choate, Paul V., to Norris Thermador Corp. Rocket launchers. 3,200,708, 8–17–65, Cl. 89—1.7.

Chow, Weichien: *See*—
Fisher, William H., and Chow. 3,201,536.

Christakis, George J. Aspirating syringes. 3,200,813, 8–17–65, Cl. 128—2.

Christensen, Harold C. Device for supporting a pistol on a belt. 3,200,528, 8–17–65, Cl. 42—94.

Christian, John B.: *See*—
Chessick, John J., and Christian. 3,201,347.

Chu, En-Lung: *See*—
Ballam, Joseph, and Chu. 3,201,585.

Chung, David H., and P. M. Marino, to International Business Machines Corp. Feedback conditioned coincident pulse responsive bistable circuits. 3,201,608, 8–17–65, Cl. 307—88.5.

Ciba Corp.: *See*—
Huebner, Charles F. 3,201,470.
Wettstein, Albert, Vischer, and Urech. 3,201,395.

Ciments du Nord: *See*—
Dussossoy, Pierre. 3,201 100.

Ciraolo, Samuel, to Carnation Co. Double bin dumping machine. 3,200,974. 8–17–65, Cl. 214—314.

Clapp, Daniel E., to King-Seeley Thermos Co. Oven heating system. 3,201,565, 8–17–65, Cl. 219—413.

Clark Equipment Co.: *See*—
Brady, Joseph L., and Brudi. 3,200,978.
Dobbertien, Francis M. 3,200,898.

Clark, George L., and J. P. Smith, to Thompson Ramo Wooldridge Inc. Image converter camera. 3,201,654, 8–17–65, Cl. 317—100.

Clark, Hubert M., and G. H. Drutchas, to Thompson Ramo Wooldridge Inc. Stack-up slipper pump with integral flow control valve. 3,200,752, 8–17–65, Cl. 103—42.

Clark, James M.: *See*—
Weber, Karl H., Ryan, and Clark. 3,200,475.

Clark, Robert E., E. R. Eckhardt, J. B. Hassinen, and R. C. Stribley, to American Home Products Corp. Method of preparing liquid infant formula. 3,201,256, 8–17–65, Cl. 99—63.

Clark, Robert E., E. R. Eckhardt, E. R. Spence, and R. C. Stribley, to American Home Products Corp. Method of preparing liquid infant formula. 3,201,245, 8–17–65, Cl. 99—57.

Clark, Thomas C., to M. A. Quon. Hinged snap-lock container. 3,200,527, 8–17–65, Cl. 40—152.

Clark, Walter F.: *See*—
Miller, Dale W., and Clark. 3,201,068.

Clarke, Maymond W., and D. Kenningham, to North American Philips Co., Inc. Exclusive-OR circuit utilising constant current to the emitters of multiple transistors. 3,201,609, 8–17–65. Cl. 307—88.5.

Clary Corp.: *See*—
Koutnik, Rodrick J. 3,201,661.

Cleaver, John C., to Cleaver-Brooks Co. Multi-cell heating unit. 3,200,793, 8–17–65, Cl. 122—240.

Cleaver-Brooks Co.: *See*—
Cleaver, John C. 3,200,793.

Clement, Clyde H., ¼ each to Milton L. Morrison, Kenneth Morrison, Lawrence D. Nelson, and Harold C. Conard. Display apparatus. 3,200,522, 8–17–65, Cl. 40—77.

Cleveland Crane & Engineering Co., The: *See*—
Gorjane, Henry A. 3,200,766.

Cleveland Metal Abrasive Co.: *See*—
Stewart, Orald L. 3,201,289.

Cleveland Pneumatic Industries Inc.: *See*—
Weiland, Stanley A. 3,200,581.

Clevite Corp.: *See*—
Dahlberg, Reinhard. 3,200,468.
Gerlach, Albrecht. 3,201,608.

Climent, Francis J., and E. M. Corbin, to Aerojet-General Corp. High temperature gas nozzle for rocket motor. 3,200,585, 8–17–65, Cl. 60—35.6.

Cline, Frederick B.: *See*—
Burgin, Kermit H. 3,200,764.

Clymer, Gerald K., to Philco Corp. Method of forming ohmic bonds to a germanium-coated silicon body with eutectic alloy forming materials. 3,200,490, 8–17–65, Cl. 29—473.1.

Coats, John N. Swivel pipe joint. 3,201,152, 8–17–65, Cl. 285—231.

Coats, John N. Pipe coupling having clamping force adjusting means. 3,201,156, 8–17–65, Cl. 285—365.

Coda, Severina, V. A. Colo, A. Glaesser, and C. Pasini, to Societa Farmaceutici Italy. (2-N-alkyl'-N-alkyl''aminoethyl) guanidine. 3,201,459, 8–17–65, Cl. 260—501.

Colo, Vittorio A.: *See*—
Coda, Severina, Colo, Glaesser, and Pasini. 3,201,459.

Coloccia, Philip T. Spool type hair winding mandrel with telescoping cover clamp. 3,200,824, 8–17–65, Cl. 132—40.

Colombo, George: *See*—
Bleiweiss, Arthur F., Colombo, and Dickson. 3,201,547.

Commissariat a l'Energie Atomique: *See*—
Deleuze, Edouard. 3,201,076.

Commonwealth Scientific and Industrial Research Organisation: *See*—
Morgan, William V. 3,200,445.

Compagnie Electro-Mecanique: *See*—
Jardin, Jacques A. 3,200,952.

Compagnie Francaise Thomson-Houston: *See*—
Grosbois, Marcel, and Billon. 3,201,717.

Compco Corp.: *See*—
Zagel, Samuel J. 3,200,528.

Concut, Inc.: *See*—
Hatcher, Cecil W. 3,201,173.

Conn, C. G., Ltd.: *See*—
Krauss, Serge L. 3,200,899.

Connett, Jack, to Associated Electrical Industries (Manchester) Ltd. Selection of peripheral equipment in computer system. 3,201,753, 8–17–65, Cl. 340—147.

Conrad, Harold C.: *See*—
Clement, Clyde H. 3,200,522.

Conron, Gregory F., to United Aircraft Corp. Mark selection circuit. 3,201,569, 8–17–65. Cl. 235—61.7.

Considine, William J., J. Bernstein, and J. C. Burke, to Olin Mathieson Chemical Corp. Lower alkyl N-(2-(lower alkyl) cyclopropylmethyl) carbamates. 3,201,454, 8–17–65, Cl. 260—468.

Consolidated Cigar Corp.: *See*—
Blackwood, William R. 3,200,930.

Consolidation Coal Co.: *See*—
Poundstone, William N. 3,200,989.

Consolidated Kinetics Corp.: *See*—
Sweeney, Patrick M., and Eberhart. 3,201,109.

Container Corp. of America: *See*—
Brokop, Alfred. 3,201,024.
LaGrutta, Pascal A. 3,200,986.
Wolowicz, Richard S., and Warner. 3,201,025.

Contraves AG: *See*—
Hertwig, Helmut. 3,201,768.

Control Data Corp.: *See*—
Rabinow, Jacob. 3,201,751.
Rabinow, Jacob. 3,201,752.

Converters, Inc.: *See*—
Welch, Archibald H. 3,200,719.

Cook, Maurice D., and P. T. Troell, to Harbison-Walker Refractories Co. Method of in situ fabrication of a monolith refractory lining. 3,201,501, 8–17–65, Cl. 264—30.

Cook, William H., to Union Carbide Corp. 1-[bis(2-hydroxypropyl)amino]-2-butanol. 3,201,473, 8–17–65, Cl. 260—584.

Coover, Harry W., Jr., and F. B. Joyner, to Eastman Kodak Co. Three-component metal hydride-transition metal halide catalyst and olefin polymerization process therewith. 3,201,379, 8–17–65, Cl. 260—93.7.

Corben, Leo D., to The American Agricultural Chemical Co. Micro-inclusions and method of making same. 3,201,353, 8–17–65, Cl. 252—316.

Corbin, Edwin M.: *See*—
Climent, Francis J., and Corbin. 3,200,585.

Corhart Refractories Co., Inc.: *See*—
Slaughter, John I. 3,201,267.

Cormier, Louis A. Bottle cap. 3,200,982, 8–17–65, Cl. 215—46.

Corning Fibre Box: *See*—
Travis, Jack R., and Tremaine. 3,201,026.

Corning Glass Works: *See*—
Johnson, Robert M., and Manley. 3,200,471.
MacDowell, John F. 3,201,266.
Werner, Albert J. 3,201,010.

Coryell, George M., and H. H. Fogler, to Eastman Kodak Co. Dimensionally stable gelatin-containing film product. 3,201,250, 8–17–65, Cl. 96—87.

Cosby, Baden L., to Sperry Rand Corp. Transistor switching circuit with means to neutralise minority carrier storage. 3,201,600, 8–17–65, Cl. 307—88.5.

Costello, Robert C., to Simmons Co. Torsional edge spring for mattresses and the like. 3,200,417, 8–17–65, Cl. 5—260.

Cots, James D. Bean separator. 3,200,945, 8–17–65, Cl. 209—78.

Cottrez, Gerard: *See*—
Chevalier, Michel, and Cottrez. 3,201,601.

Council for Scientific and Industrial Research: *See*—
Firth, Donald, and Hancock. 3,200,761.

Courtway, Richard J. Orchard cultivator. 3,200,890, 8–17–65, Cl. 172—111.

Cousins, Sydne. Separable fastener. 3,200,464, 8–17–65, Cl. 24—230.

Couvinoise, S.A. la: *See*—
Hancart, Aime. 3,200,810.

Cox, Eugene F.: *See*—
Hostettler, Fritz, and Cox. 3,201,358.

Crago, Kenneth N. Electrical tool. 3,200,674, 8–17–65, Cl. 81—3.

Cramer, Engelbert, to Junkers & Co. G.m.b.H. Attachment for gas-burning apparatus. 3,200,875, 8–17–65, Cl. 158—123.

Crane Co.: *See*—
Trefil, James, and DeCraene. 3,200 836.

Craven, Wilbur J., and D. N. Dewey, to The Capewell Mfg. Co. Quick-release connector. 3,200,463, 8–17–65, Cl. 24—230.

Creed & Co. Ltd.: *See*—
Mason, Frederick P., Stevens, and Smith. 3,201,512.
Moore, Frank A. 3,200 928.

Creswick, Norman S., to Thomas J. Lipton, Inc. Beverage dispenser. 3,200,997, 8–17–65, Cl. 222—145.

Cripe, Alan R., to Reynolds Metals Co. Cargo supporting structures for bulk containers, trailers and the like. 3,200,549. 8–17–65, Cl. 32—376.

Cripe, Maxwell L., to The Bendix Corp. Vacuum suspended booster brake mechanism. 3,201,177, 8–17–65, Cl. 303—6.

Croyle, Eugene I., to American Research and Development Co. Dispenser mechanism for molding apparatus. 3,201,799, 8–17–65, Cl. 18—30.

Crucible Steel Co. of America: *See*—
Flowers, Ab. 3,201,287.

Cubert, Jack S., and F. J. Weintraub, to Sperry Rand Corp. Logic circuit. 3,201,614, 8–17–65, Cl. 307—88.5.

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Dalton, Thomas B., to Westran Corp. Landing gear structure for semi-trailers and the like. 3,201,087, 8–17–65, Cl. 254—86.

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Dangauthier, Marcel, to Societe d'Etudes et d'Applications Industrielles Commerciales et Immobilieres Inter-Technique. Automobile vehicle suspension. 3,201,142, 8–17–65, Cl. 280—106.5.

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Dansiger, Harry, and K. Haeseler, to Farbenfabriken Bayer Aktiengesellschaft. Process for the continuous production of tri- and poly-basic alcohols. 3,201,480, 8–17–65, Cl. 260—635.

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Davidson, William, L. A. Steer, and A. Perrin, to C.D. Patents Ltd. Combined space heating and domestic hot water heating system. 3,201,045, 8–17–65, Cl. 237—8.

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Davis, Robert E. Piston ring groove cleaner. 3,200,429, 8–17–65, Cl. 15—104.01.

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Dluhosch, Kurt, and G. Otterbach, to Fichtel & Sachs A.G. Automatic fuel control system for an internal combustion engine. 3,200,802, 8–17–65, Cl. 123—97.

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English, Howard D., ½ to F. A. Ramia. Electric connector. 3 201,742, 8-17-65, Cl. 339—58.

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Eriksson, Allan H., to Husqvarna Vapenfabriks Aktiebolag. Zig-zag sewing machine. 3,200,780, 8-17-65, Cl. 112—158.

Ernest, Dale S., to Kelsey-Hayes Co. Nozzle adjusting mechanism. 3 200,586, 8-17-65, Cl. 60—35.5.

Ernst, Alfredo. Hardness measuring apparatus operated by a single compressive motion. 3,200,640, 8-17-65, Cl. 73—81.

Ernst, John M., to American Machine & Foundry Co. Pin and ball handling mechanism for bowling pin spotting machines. 3,201,123, 8-17-65, Cl. 273—43.

Erwien, Herbert, and W. Kaiser to Dierks & Sohne. Mixer. 3,201,095, 8-17-65, Cl. 259—106.

Esquire, Inc.: *See*—
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Moorhead, John P. 3,200,773.
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Curtis, Francis. 3,200,559.
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Faber, Jan W. H., to Eastman Kodak Co. Light-sensitive polycyclopentadiene and polycyclohexadiene compositions and printout elements prepared therewith. 3,201,240, 8-17-65 Cl. 96—48.

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Fahrenbach, Wolfgang B., and F. E. Helmick; said Fahrenbach assor. to said Helmick. Carton forming machine. 3,200,716, 8-17-65, Cl. 93—37.

Fairest, Derek H., to Morgan Fairest Ltd. Labelling machines. 3,201,299, 8-17-65, Cl. 156—485.

Fairest, Morgan, Ltd.: *See*—
Fairest, Derek H. 3,201,299.

Fang, Fabian T., and I. S. Fiarman, to Rohm & Haas Co. Vinylation reactions and mercuric salt catron exchange catalysts therefor. 3,201,357, 8-17-65, Cl. 260—2.2.

Fanning, William J., to Western Electric Co., Inc. Winding apparatus. 3,201,056, 8-17-65, Cl. 242—56.1.

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Farison, Robert E., to W. R. Grace & Co. Chemical dissolving and dispensing means. 3,200,835, 8-17-65, Cl. 137—268.

Farnsworth, Philo T., to International Telephone and Telegraph Corp. Electron gun in the form of a multipactor. 3,201,640, 8-17-65, Cl. 315—12.

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Feeney, Jack T., H. F. Thiele, Jr., and E. G. Koriath, to Graphic Saw, Inc. Sawing machine. 3,200,688, 8-17-65, Cl. 83—383.

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Feldmann, Klaus, A. Rumberg, H. Klee, H. Floor, and A. Schummer, to Knapsack-Griesheim Aktiengesellschaft. Process for crushing and cooling calcium carbide blocks. 3,201,052, 8-17-65, Cl. 241—23.

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Feldpausch, Hugo, to Feldpausch & Co. Screw driving machines. 3,200,863, 8-17-65, Cl. 144—32.

Fellner, Juan A. Thermostatic valve. 3,201,044, 8-17-65, Cl. 236—33.

Felten & Guilleaume Carlswerk Aktiengesellschaft: *See*—
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Fennel, Otto, Sohne K.G.: *See*—
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Fenner, Robert M., and D. E. Hamilton. Portable supporting structure for gymnastic equipment. 3,201,119, 8-17-65, Cl. 272—62.

Ferenc, Max. Cooking utensil. 3,200,737, 8-17-65, Cl. 99—355.

Ferguson, Hugo S., to Duffers Associates, Inc. Circuit for measuring RMS valve of pulses using an integrating circuit with predetermined time constant. 3,201,688, 8-17-65, Cl. 324—108.

Ferguson, Randon O., to The Johnson Rubber Co. Insulated rail joint construction. 3,201,046, 8-17-65, Cl. 238—152.

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Hanson, Leroy C. 3,201,567.

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Fichtel & Sachs A.G.: *See*—
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Fine, Arnold M., to Sperry Rand Corp. Moving target indicator for a stacked-beam coherent radar. 3,201,789, 8-17-65, Cl. 343—7.7.

Finestone, Arnold B., and J. S. Pavlin, to Foster Grant Co., Inc. Use of acyl peroxides as catalysts in the preparation of acrylonitrile-styrene-alpha-methylstyrene terpolymers. 3 201,375, 8-17-65, Cl. 260—80.5.

Firewel Co., Inc., The: *See*—
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Firth, Donald, and R. H. Y. Hancock, to Council for Scientific and Industrial Research. Hydraulic positive displacement rotary machines. 3,200,761, 8-17-65, Cl. 103—162.

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Fish, Donald H., to Engelhard Industries, Inc. Immersion thermocouple. 3,201,277, 8-17-65, Cl. 136—4.

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Fisher, Ralph, L. R. Vertnik, K. E. McCaleb, and N. M. Le Bard, to General Mills, Inc. Tetralkyl dimeric fat amines. 3,201,471, 8-17-65, Cl. 260—583.

Fisher, William H., and W. Chow, to Sparton Corp. Turn signal apparatus with automatic premature prevention cancelling means. 3,201,536, 8-17-65, Cl. 200—61.34.

Fitchett, Gilmer T.: *See*—
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Flowers, Ab, to Crucible Steel Co. of America. Heat treating method. 3,201,287, 8-17-65, Cl. 148—11.5.

Fluke, Jefferson M., ½ to A. L. Hilscher. Method and means to produce folders with eyelets and tangs. 3,200,487, 8-17-65, Cl. 29—430.

Flumerfelt, Gene C., to Mine safety Appliances Co. Apparatus for detecting water vapor in gas. 3,200,636, 8-17-65, Cl. 73—29.

Fogg, Joseph E.: *See*—
Brigman, Richard P., and Fogg. 3,200,573.

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Fonken, Gunther S., to The Upjohn Co. 11α-ring-substituted-11α-hydroxypregnane-3,20-diones and process for the production thereof. 3,201,390, 8–17–65, Cl. 260—239.5.

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Ford, John A.: *See*—
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Brigman, Richard P., and Fogg. 3,200,573.

Forrest Industries, Inc.: *See*—
Frashour, Ronald G., and Pfeiffer. 3,200,553.

Forshee, Sheila. Method and means for trapping and reclaiming porcelain-frit. 3,201,272, 8–17–65, Cl. 117—102.

Fortescue, Peter, and C. L. Rickard, to General Dynamics Corp. Gas cooled nuclear reactor with improved fuel element arrangement. 3,201,320, 8–17–65, Cl. 176—59.

Fortescue, Peter, and C. L. Rickard, to General Dynamics Corp. Nuclear reactor. 3,201,321, 8–17–65, Cl. 176—59.

Fossler, Martin E., and W. C. Leingang, Jr., to Wolf Bros., Inc. Container. 3,201,028, 8–17–65, Cl. 229—54.

Foster Grant Co., Inc.: *See*—
Finestone, Arnold B., and Pavlin. 3,201,375.

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Fountain, Eugene B., to Shell Oil Co. Catalyst recovery using sludge extraction. 3,201,495, 8–17–65, Cl. 260—683.74.

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Fox, Joseph M., 3rd, and J. C. Yarze, to Pullman Inc. Production of domestic heating gas. 3,201,214, 8–17–65, Cl. 48—214.

France, L. D.: *See*—
Pattillo, Sidney M., and France. 3,200,570.

France, L. D., & Co., Inc.: *See*—
Pattillo, Sidney M., and France. 3,200,570.

Francesco Vismara S.p.A.: *See*—
Cavallini, Guido, and Massarani. 3,201,475.

Francis Associates: *See*—
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Francis, Samuel A., to Francis Associates. Fluid read-out device. 3,200,525, 8–17–65, Cl. 40—130.

Franke, Ray F.: *See*—
Stamm, Joseph A., Rumsey, and Franke. 3,200,724.

Frashour, Ronald G., and R. J. Pfeiffer, to Forrest Industries, Inc. Composition board flooring strip. 3,200,553, 8–17–65, Cl. 52—595.

Frasier, John E., and N. L. Murphy, to Frasier-Simplex, Inc. Glass melting furnace. 3,201,219, 8–17–65, Cl. 65—347.

Frasier-Simplex, Inc.: *See*—
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Fredenburg, Robert H., to Pittsburgh Plate Glass Co. Stabilization of methyl chloroform. 3,201,482, 8–17–65, Cl. 260—652.5.

Fredrickson, Einar H., to I-T-E Circuit Breaker Co. Rotary type control switch. 3,201,533, 8–17–65, Cl. 200—16.

Freedman, Arthur J., to Standard Oil Co. Reaction products of imidazolines and alkylene iminodiacetic acids. 3,201,411, 8–17–65, Cl. 260—309.6.

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Fremery, Maximilian I., and E. K. Fields, to Standard Oil Co. Halogenated derivatives of dialkyl cyclododecandienephosphonates. 3,201,436, 8–17–65, Cl. 260—461.

French State represented by the Minister of Armed Forces, Powder Deartment and Institut National de la Recherche Agronomique: *See*—
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Frith, Hagin, & Sons: *See*—
Frith, Hagin F., Jr. 3,200,619.

Fritz, Gerhard: *See*—
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Froelich, Ronald W., to Thompson Ramo Wooldridge, Inc. Horizon detection and scanning system. 3,201,591, 8–17–65, Cl. 250—83.3.

Frohbieter, Edwin H., to Whirlpool Corp. Automatic ice cube maker. 3,200,612, 8–17–65, Cl. 62—345.

Froome, Keith D., and R. H. Bradsell, to National Research Development Corp. Measurement of distance by means of modulated polarised light. 3,200,698, 8–17–65, Cl. 88—1.

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Fuchsman, Charles H., to Ferro Corp. Polyolefins stabilized with an (alkylphenol) monosulphide and a nickel alkoxide. 3,201,368, 8–17–65, Cl. 260—45.75.

Fueslein, John R., R. R. Rader, and E. C. Roper, to Mueller Brass Co. Pressure seal plug. 3,200,984, 8–17–65, Cl. 220—24.5.

Fuhrman, Richard E., to Borg-Warner Corp. Refrigerating compressor. 3,201,076, 8–17–65, Cl. 318—558.

Fujimoto, Yasuo, and M. Naruse, to Kyowa Hakko Kogyo Co., Ltd. Method for preparing ribonucleoside-5'-phosphates or their salts from ribonucleosides. 3,201,389, 8–17–65, Cl. 260—211.5.

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Fuller, Perry J. Apparatus for cleaning applicators. 3,200,428, 8–17–65, Cl. 15—21.

Fuller-Myers: *See*—
Myers, Elman B. 3,201,670.

Fusesi, Stephen, and J. V. Karabinos, to Olin Mathieson Chemical Corp. Oxyalkylation of ethylidene glycerol and compositions produced thereby. 3,201,420, 8–17–65, Cl. 260—340.7.

Gaddini, Norman E. Fruit orienting jet unit. 3,200,968, 8–17–65, Cl. 214—1.

Galat, Alexander. Compounds useful in the prevention of dental caries. 3,201,407, 8–17–65, Cl. 260—297.5.

Galbiers, Jerome J., D. H. Ellerbrock, and J. D. Beckley, to R. C. Can Co. Frosen liquid food package and method of making the same. 3,201,259, 8–17–65, Cl. 99—192.

Galbraith, Donald D. Power barrow. 3,200,973, 8–17–65, Cl. 214—140.

Gale, Alfred J., and J. C. Nygard, to High Voltage Engineering Corp. Short focus lens at focal point of long focus lens. 3,201,631, 8–17–65, Cl. 313—84.

Galimberti, Paolo, V. Gerosa, M. M. Melandri, and M. J. H. Kramer, to Societa Italiana Prodotti Sherling. Pharmacologically active derivatives of N-methylisonipecotic acid. 3,201,405, 8–17–65, Cl. 260—294.

Gallagher, Bernard J., to Nuclear Products Co. Safety relief valve. 3,200,839, 8–17–65, Cl. 137—516.29.

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Gangwisch, William J. Multicompartment dispensing package. 3,200,995, 8–17–65, Cl. 222—94.

Gannett, Danforth K., to Bell Telephone Laboratories, Inc. Privacy communication system. 3,201,517, 8–17–65, Cl. 179—1.5.

Garapolo, Orlando, to Wilson & Co., Inc. Bacon slicing machine. 3,200,865, 8–17–65, Cl. 146—95.

Garman, Robert C. Axle puller. 3,200,484, 8–17–65, Cl. 29—263.

Garrard Engineering & Mfg. Co. Ltd., The: *See*—
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Gaylord, William M., Jr., and J. F. Knott, III, to Union Carbide Corp. Apparatus for diluting acids and alkalies. 3,201,205, 8–17–65, Cl. 23—283.

Geier, Ulf, to Schloemann Aktiengesellschaft. Rolling mills, with cooling means, for the treatment of pulverulent and granular materials, particularly metals. 3,200,441, 8–17–65, Cl. 18—9.

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Spivack, John D. 3,201,472.

Geigy, J. R., A.-G.: *See*—
Daglish, Anthony F., Vonderwahl, and Tillotson. 3,201,315.

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General Aniline & Film Corp.: *See*—
Catino, Sigmund C., and Strobel. 3,201,481.
Cerwonka, Edward. 3,201,237.
Mautner, Henry R. 3,201,189.
Mueller, Fritz W. H., and Roth. 3,201,255.
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Brody, Herbert M. 3,200,605.
Buchanan, James L., and Zelina. 3,201,679.
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Guenther, Carl, and Argue. 3,201,055.
Hall, Robert N. 3,201,666.
Harrington, Dean B. 3,201,627.
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Heumann Frederick K. 3,201,227.
Hutt, Philip. 3,201,564.
Ladusaw, William T. 3,201,772.
Levins, Dave B. 3,200,645.
Mansfield, Walter C., Jr. 3,201,646.
Mitoff, Stephen P. 3,201,738.
Peters, Philip H., and Wilbur. 3,201,712.
Scott, Ernest R. 3,201,553.
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Woodward, Stewart A. 3,201,531.
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General Engineering Co (Radcliffe) Ltd., The: *See*—
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General Mills, Inc.: *See*—
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General Motors Corp.: *See*—
Brucken, Byron L. 3,200,622.
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Hill, Vernon L., and Stapleton. 3,201,286.
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Jackson, George W. 3,200,844.
Komarmy, Julius M. 3,200,953.
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Sobey, Albert J., and Hawkins. 3,200,583.
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Ring, Thomas F., Robinson, and Keane. 3,200,577.
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Gerlach, Albrecht, to Clevite Corp. Switching circuits. 3,201,603, 8–17–65, Cl. 307—88.5.

Gerosa, Vittorina: *See*—
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Gibbons, Chester S. Hydraulic weighing scale. 3,200,897. 8–17–65, Cl. 177—126.

Gibbs, John R., to General Motors Corp. Multiple fluid spray gun with remotely operable selective valve control. 3,201,048, 8–17–65, Cl. 239—422.

Giddings & Lewis Machine Tool Co.: *See*—
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Lehmkuhl, Robert A. 3,200,492.

Gier, Thurman E., to E. I. du Pont Nemours and Co. Fibrous sodium metal silicates. 3,201,196, 8–17–65, Cl. 23—110.

Giger, Adolf J., to Bell Telephone Laboratories, Inc. Plural channel switching system with impedance of on gate and off gates forming a bandpass filter. 3,201,716, 8–17–65, Cl. 333—3.

Gilbert, Herbert A. Smokeless non-tobacco cigarette. 3,200,819, 8–17–65, Cl. 128—206.

Gilchrist, James G., Jr.: *See*—
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Gile, Herman S., to United States of America, Atomic Energy Commission. Separation and recovery of uranium from uranium-aluminum alloys. 3,201,191, 8–17–65, Cl. 23—14.5.

Gillespie, Merle H., Jr. Precast shell coping and method of construction for swimming pools. 3,200,548, 8–17–65, Cl. 52—300.

Gillman, Harold K., to Unexcelled Chemical Corp. Apparatus for stacking and weighing sliced food products. 3,200,864, 8–17–65, Cl. 146—94.

Gillmore, Jack F., and W. E. Elder, to Parker-Hannifin Corp. High pressure valve assembly. 3,200,847, 8–17–65, Cl. 137—625.65.

Giordano, Ames F., to International Telephone and Telegraph Corp. Stereoscopic projection apparatus. 3,200,702, 8–17–65, Cl. 88—24.

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Gladrow, Elroy M.: *See*—
Klimberlin, Charles N., Jr., and Gladrow. 3,201,355.

Glaesser, Alfredo: *See*—
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Glass, Marvin I., Neumann, Meyer, and Jernstrom. 3,200,537.
McFarland, Norman T., and Meyer. 3,201,129.

Glass, Marvin I., A. E. Neumann, B. C. Meyer, and H. E. Jernstrom, to Marvin Glass & Associates. Toy walking dog. 3,200 537, 8–17–65, Cl. 46—118.

Glass, Marvin I., and B. C. Meyer, to Marvin Glass & Associates. Electrically powered and sounding toy bird. 3,200,538, 8–17–65, Cl. 46—232.

Glassco, Donald E. G., and J. M. Bratton, to Purex Corp., Ltd. Reinforced fibreboard box construction. 3,201,022, 8–17–65, Cl. 229—15.

Gleason, Charles H., and G. R. Feaster, to Westinghouse Electric Corp. Nuclear thermionic converter. 3,201,619, 8–17–65, Cl. 310—4.

Glickman, Leonard. Apparatus for utilizing and dispensing air conditioner condensate. 3,200,608, 8–17–65, Cl. 62—279.

Globe-Union Inc.: *See*—
Buttke, Richard A. 3,200,450.
Williamsen, Everette J. 3,200,452.

Godcharles, Charles A.: *See*—
Blyth, John W., Godcharles, Jacobson, and Rosmus. 3,200,513.

Goddard, Denis A., and L. Truza, to Dominion Engineering Works Ltd. Adjustable drainage foil for paper machine. 3,201,308, 8–17–65, Cl. 162—352.

Goggi, Charles P., to Goggi Corp. Floating towing device. 3,201,118, 8–17–65, Cl. 272—32.

Goggi Corp.: *See*—
Goggi, Charles P. 3,201,118.

Goldberg, Martin J.: *See*—
Emmerich, Claude L., and Goldberg. 3,201,779.

Goldstein, Arnold. Folding barbecue construction. 3,200,806, 8–17–65, Cl. 126—25.

Gomarasca, Piero, and P. Blasina, to Laboratorio Farmaceutico Lofarma. Chlorine derivatives of cyclopentanophenanthrene and processes for their preparation. 3,201,427, 8–17–65, Cl. 260—397.4.

Goodfriend, David J., to Prosthetics Research Inc. Method of reproducing dental relationships on an articulator. 3,200,497, 8–17–65, Cl. 32—32.

Goodman, Jack J., and H. Stillman, to Prestige Products, Inc. Pole structure. 3,200,554, 8–17–65, Cl. 52—727.

Goodman Mfg. Co.: *See*—
Stinson, Mary L. 3,200,938.

Gordon, Joseph A.: *See*—
Wood, Fred A., and Gordon. 3,200,534.

Gorehan, Peter E., to Moore Business Forms, Inc. Aperture sensing mechanisms. 3,201,019, 8–17–65, Cl. 226—9.

Gorjanc, Henry A., to The Cleveland Crane & Engineering Co. Carrier systems. 3,200,766, 8–17–65, Cl. 104—88.

Gotaverken, Aktiebolaget: *See*—
Isakseon, Erik H. 3,200,785.

Goubau, Georg J. E., to Beam Guidance, Inc. Iris type beam wave guide. 3,200,697, 8–17–65, Cl. 88—1.

Gould-National Batteries, Inc.: *See*—
Ellis, Grenville B. 3,201,284.

Gowan, Willard E., Sr., to St. Louis Shipbuilding-Federal Barge, Inc. Cargo barge cover. 3,200,764, 8–17–65, Cl. 114—201.

Grabiel, John L., to General Motors Corp. Diaphragm fuel pump with vent. 3,200,758, 8–17–65, Cl. 103—150.

Grabovac, Bosko, to Torque Controls, Inc. Torque measuring device. 3,200,632, 8–17–65, Cl. 73—1.

Grace, W. R. & Co.: *See*—
Benning, Calvin J., Gregorian, and Werber. 3,201,503.
Parlson, Robert E. 3,200,835.
Salutsky, Murrell L. 3,201,194.

Graebner, John C.: *See*—
Pasquier, Claude J., and Graebner. 3,201,700.

Gramenzi, Frank V. Hinge mechanism for flask for use in metal molding. 3,200,454, 8–17–65, Cl. 22—107.

Grandjean, Rene, to North American Philips Co. Inc. Lamp bolder assembly. 3,201,078, 8–17–65, Cl. 246—361.

Grange, Raymond A., to United States Steel Corp. Method of treating steel to produce a fine-grained condition. 3,201,288, 8–17–65, Cl. 148—12.4.

Grant, Charles J., to The Borden Co. Cutter. 3,200,494, 8–17–65, Cl. 31—26.

Graphic Saw, Inc.: *See*—
Feeney, Jack T., Thiele, and Koriath. 3,200,686.

Graves, Howard K., to Bell & Howell Co. Camera zoom objective and zoom viewfinder with flexible cable coupling. 3,200,699, 8–17–65, Cl. 88—1.5.

Grebe, John J., and J. F. Miller, to The Dow Chemical Co. Method for production of metal fabrications. 3,201,228, 8–17–65, Cl. 75—65.

Greco, Carl C., to Stauffer Chemical Co. Heterocyclic organotin compounds. 3,201,408, 8–17–65, Cl. 260—299.

Greecen Ltd.: *See*—
Welland, John E. T. 3,201,037.

Greek, Eldon V. Bathroom fixture. 3,200,544, 8–17–65, Cl. 52—27.

Greeley, Edward M., and B. N. Stenerson, to Carrier Corp. Corrosion inhibition. 3,200,604, 8–17–65, Cl. 62—85.

Green, Joseph, M. M. Fein, and M. Israel, to Thiokol Chemical Corp. Reaction product of a rubber and a poly nitrile decaborane. 3,201,377, 8–17–65, Cl. 260—85.3.

Green, Milton, to Polaroid Corp. Hydroquinone diacetamide azo compounds. 3,201,384, 8–17–65, Cl. 260—160.

Greene, Janice L.: *See*—
Idol, James D., Jr., and Greene. 3,201,451.

Gregorian, Razmic S.: *See*—
Benning, Calvin J., Gregorian, and Werber. 3,201,503.

Grewe, Theodor, T. von Hauteville, R. Huss, K. Jekellus, W. Kaiser, K. Waldau, and H. Wollmann, to International Standard Electric Corp. Method of suppressing noise, compressing bandwidth, and evaluating radar-picture signals or similar periodic trains of impulses. 3,201,767, 8–17–65, Cl. 343—6.

Grimth, George L., and T. P. Dowling, to Trojan Powder Co. Waterproof package for explosives. 3,200,743, 8–17–65, Cl. 102—24.

Grim, Howard G., to Midvale-Heppenstall Co. and Heppenstall Co. Method of making cleaner alloy steels or the like. 3,201,224, 8–17–65, Cl. 75—13.

Grindheim, Earl A.: *See*—
Werner, Frank D., Grindheim, and Sadler. 3,201,575.

Griswold, Charles J., Jr., to General Motors Corp. Closure latch. 3,201,164, 8–17–65, Cl. 292—280.

Grosbois, Marcel, and G. Billon, to Compagnie Francaise Thomson-Houston. Junction between circular wave-guide and two rectangular wave-guides of different polarizations. 3,201,717, 8–17–65, Cl. 333—9.

Grotheer, Norman C.: *See*—
Ligon, Elmer R., Johnson, and Grotheer. 3,201,094.

Grundig, Heins G., to International Standard Electric Corp. Rotary switch with interchangeable contact structure for shorting and non-shorting positions. 3,201,532, 8–17–65, Cl. 200—11.

Gruner, Frederick R., to Ametek, Inc. Laundry machines. 3,200,950, 8–17–65, Cl. 210—364.

Gruner, Karel: *See*—
Cubra, Bohuslav, and Gruner. 3,201,223.

Gryk, Leon: *See*—
Peres, Guillermo, and Gryk. 3,201,570.

Gryk, Leon, to Royal McBee Corp. Record reading apparatus. 3,201,571, 8–17–65, Cl. 235—61.11.

Gryk, Leon, to Royal McBee Corp. Code to code converters. 3,201,780, 8–17–65, Cl. 340—347.

Gryzskiewicz-Trochimowski, Oleg: *See*—
Morel, Georges, Menoret, Levy, and Gryzskiewicz-Trochimowski. 3,201,410.

Gudernatsch, Hugo: *See*—
Sennewald, Kurt, Vogt, and Gudernatsch. 3,201,419.

Guenther, Carl, and D. D. Argul, to General Electric Co. Filament winding apparatus. 3,201,055, 8–17–65, Cl. 242—25.

Gulf Oil Corp.: *See*—
Dubrovin, Kenneth P. 3,201,466.

Gulf Research & Development Co.: *See*—
Hamilton, Harry A., Henke, and Stauffer. 3,201,345.

Gunther, Helmut: *See*—
Vierama, Taco J., and Gunther. 3,200,713.

Gurnha, Alvin L., to Bayshore Industries, Inc. Stick horse. 3,201,117, 8–17–65, Cl. 272—1.

Gustafsson, Stig, to Svenska Flaktfabriken, Aktiebolaget. Electrostatic precipitators. 3,200,565, 8–17–65, Cl. 55—112.

Gustafsson, Stig, and S. Maartmann, to Svenska Flaktfabriken, Aktiebolaget. Emission electrode for electrostatic precipitators. 3,200,566, 8–17–65, Cl. 55—152.

Gutehoffnungshutte Sterkrade Aktiengesellschaft: *See*—
Scherff, Helmut. 3,201,106.

Gutknecht, Edward L. Sine gage. 3,200,503, 8–17–65, Cl. 33—174.

Gutmann, Fredrick T.: *See*—
Pasquier, Claude J., and Gutmann. 3,201,793.

Guyot, Paul, and L. F. A. Dieleman, to North American Philips, Inc. Method of manufacturing grids for use in electronic discharge valves. 3,200,854, 8–17–65, Cl. 140—71.5.

HRB-Singer, Inc.: *See*—
Diamant, Henri B. 3,201,544.

Haas dit Rolle, Pierre R. Safety process and apparatus for railway services. 3,201,583, 8–17–65, Cl. 246—30.

Hackethal-Draht- und Kabel-Werke AG: *See*—
Lehnert, Gunther. 3,201,563.

Hackethal Draht- und Kabel-Werke Aktiengesellschaft: *See*—
Martin, Helmut, and Mohring. 3,201,723.

Hackney, Stanley, and R. P. Williams, to United Kingdom Atomic Energy Authority. Nuclear reactor with pressuriser. 3,201,319, 8–17–65, Cl. 176—52.

Haddad, Salomao J., to Carolina Knitting Machine Corp. Circular knitting machine. 3,200,617, 8–17–65, Cl. 66—50.

Haessler, Karl: *See*—
Dansiger, Harry, and Haeseler. 3,201,480.

Hafner, Theodore. Suspension system for surface wave transmission line. 3,201,724, 8–17–65, Cl. 333—95.

Hagemeyer, Hugh J., Jr., and R. L. Etter, Jr., to Eastman Kodak Co. Emulsifiable polyethylene waxes and process of preparation. 3,201,381, 8–17–65, Cl. 260—94.9.

Hager, Robert R., to The Bendix Corp. Brake balancing device for hydraulic brake system. 3,201,176, 8–17–65, Cl. 303—6.

Hahn, Paul R. T.: *See*—
Heiss, Raymond H., Sr., and Hahn. 3,201,187.

Hailey, Hilda E.: *See*—
Hailey, Howard T. and H. E. 3,201,023.

Hailey, Howard T. and H. E. Cartons. 3,201,023, 8–17–65, Cl. 229—28.

Halacsy, Andrew A., to Federal Pacific Electric Co. Transformer core and winding. 3,201,734, 8–17–65, Cl. 336—221.

Halbach, Ralph H., and B. W. Tleimat, to Dorr-Oliver Inc. Three-product nozzle-type centrifuge. 3,201,036, 8–17–65, Cl. 233—14.

Halip, Nickolas J. Composite composition bowling pin. 3,201,124, 8–17–65, Cl. 273—62.

Hall, C. M., Lamp Co.: *See*—
Hirsch, Harry D. 3,201,581.

Hall, Mitchell A. Coin slide construction. 3,200,926, 8–17–65, Cl. 194—92.

Hall, Robert N., to General Electric Co. Non-rectifying contacts to silicon carbide. 3,201,666, 8–17–65, Cl. 317—237.

Halldemaskiner, AB: *See*—
Durling, Bengt. 3,200,866.

Haller, John. Molding apparatus. 3,200,442, 8–17–65, Cl. 18—16.5.

Hallmark Cards, Inc.: *See*—
Kolster, Harvey L., Burke, and Long. 3,200,961.

Halpern, Otto: *See*—
Bowers, Albert, and Halpern. 3,201,428.

Hamilton, Donald E.: *See*—
Penner, Robert M., and Hamilton. 3,201,119.

Hamilton, Harry A., A. M. Henke, and H. C. Stauffer, to Gulf Research & Development Co. Process for preparing jet fuels. 3,201,345, 8–17–65, Cl. 208—255.

Hamilton Research Associates, Inc.: *See*—
Blyth, John W., Godcharles, Jacobson, and Rosmus. 3,200,513.

Hammick, Frederick C., to MacLane Mfg. Co. Ltd. Internal combustion engine. 3,200,799, 8–17–65, Cl. 123—53.

Hammond, Robert J., to V-M Corp. Drive yoke for phonograph pickups. 3,201,132, 8–17–65, Cl. 274—37.

Hamon, Ray C., to Union Carbide Corp. Egg albumin compositions. 3,201,257, 8–17–65, Cl. 99—113.

Hanano, Jitsuo. Electric circuit for dimming vehicle lights. 3,201,643, 8–17–65, Cl. 315—83.

Hancart, Aimé, to La Couvinoise, S.A. Hot air generator. 3,200,810, 8–17–65, Cl. 126—110.

Hancock, Roger H. Y.: *See*—
Firth, Donald, and Hancock. 3,200,761.

Handmann, Richard W., to Radio Corp. of America. Apparatus for producing electronic tube stems. 3,201,216, 8–17–65, Cl. 65—138.

Hanley, Harvey H., and A. E. Hanson, Jr. Double vortex combustion chamber apparatus. 3,200,870, 8–17–65, Cl. 158—4.

Hanover, Kenneth A.: *See*—
Russell, Edward L., and Hanover. 3,201,455.

Hansen, Elmer K. Positive parking brake. 3,200,907, 8–17–65, Cl. 188—69.

Hansen, Robert E.: *See*—
Kurtzwell, Terrence J., Kronenberg, and Hansen. 3,201,278.

Hanson, Archibald E., Jr.: *See*—
Hanley, Harvey H., and Hanson. 3,200,870.

Hanson, Frederick R., and W. D. Maxon, to The Upjohn Co. Process for the microbiological oxygenation of progesterone. 3,201,324, 8–17–65, Cl. 195—51.

Hanson, Leroy C., to Ferro Corp. Heating unit. 3,201,567, 8–17–65, Cl. 219—450.

Hanulec, Joseph D., and C. E. Schwab, to Haseltine Research Inc. Integrator for periodically recurring signals. 3,201,702, 8–17–65, Cl. 328—127.

Hanulec, Joseph D., and C. E. Schwab, to Haseltine Research, Inc. Integrator for periodically recurring signals. 3,201,706, 8–17–65, Cl. 328—165.

Haracs, Edward F. Rotary brush roll. 3,200,430, 8–17–65, Cl. 15—183.

Harbison-Walker Refractories Co.: *See*—
Cook, Maurice D., and Troell. 3,201,501.

Harding, Sune, to Wicanders Korkfabriker, Aktiebolaget. 3,200,981, 8–17–65, Cl. 215—41.

Hardy, Herbert L., and W. J. Mahoney, to American Machine & Foundry Co. Temperature compensated voltage converter. 3,201,677, 8–17–65, Cl. 321—16.

Harkins, Thomas R., and D. R. Zaremski, to Allegheny Ludlum Steel Corp. Trim member assembly. 3,201,210, 8–17–65, Cl. 29—183.5.

Harper, Henry J. Press brake die alignment indicator device. 3,200,508, 8–17–65, Cl. 33—185.

Harper, Robert J., to Northwestern Refining Co. Illuminated building and sign. 3,201,579, 8–17–65, Cl. 240—2.

Harpster, Norman R., to Universal-Cyclops Steel Corp. Stainless steels. 3,201,231, 8–17–65, Cl. 75—126.

Harrington, Dean B., to General Electric Co. Polyphase generators. 3,201,627, 8–17–65, Cl. 310—198.

Harris, Earl L. Tire repair fixture. 3,201,084, 8–17–65, Cl. 254—50.4.

Harris, Herbert H., A. L. Galloway, L. E. Limpel, and P. H. Schmidt, to Diamond Alkali Co. Herbicidal composition and method. 3,201,220, 8–17–65, 8–17–65, Cl. 71—2.6.

Harris, Joseph P. Data registering device. 3,201,038, 8–17–65, Cl. 235—50.

Harris, Milton M.: *See*—
Libby, Milton E. 3,201,145.

Harris, Raymond C.: *See*—
Straley, James M., and Harris. 3,201,383.

Harrison, George C., and L. G. Axdahl, to Minnesota Mining and Mfg. Co. Vitrified clap pipe joint of cast in place polyurethane. 3,201,136, 8–17–65, Cl. 277—198.

Harrison, Homer S., to Mechanical Handling Systems, Inc. Conveyor system with accumulating trolley units. 3,200,768, 8–17–65, Cl. 104—172.

Hart, John F., Jr. Tent with ventilating means. 3,200,731, 8–17–65, Cl. 98—1.

Hart Mfg. (Canada) Ltd.: *See*—
Richardson, Douglas W. 3,201,546.

Harter, Isaac, Jr., and W. G. Wilson, to The Babcock & Wilcox Co. Continuous casting method and apparatus. 3,200,456, 8–17–65, Cl. 22—200.1.

Hartford, Winslow H.: *See*—
Elchelberger, William C., and Hartford. 3,201,337.

Hartman, George F. Swivels. 3,200,459, 8–17–65, Cl. 24—73.

Hartnett, R. W., Co.: *See*—
Ackley, Charles E. 3,200,556.

Hartzler, Harris D., to E. I. du Pont de Nemours and Co. 2-chloro-3 4,4-tricyano - 1 - perhaloalkylthio-1-aza-1,3-butadienes and their preparation. 3,201,449, 8–17–65, Cl. 260—465.

Harwood Engineering Co.: *See*—
Maglott, George F. 3,201,031.

Hasek, Robert H., and E. U. Elam, to Eastman Kodak Co. Process of manufacturing dialkyl ketenes. 3,201,474, 8–17–65, Cl. 260—585.5.

Haskin, Simon. Jet-propelled aircraft engine mounting. 3,201,069, 8–17–65, Cl. 244—54.

Hassinen, John B.: *See*—
Clark, Robert E., Eckhardt, Hassinen, and Stribley. 3,201,256.

Hatch Edmond K., to The Osborn Mfg. Co. Contour squeeze molding machine. 3,200 449, 8–17–65, Cl. 22—20.

Hatcher, Cecil W., to Conant, Inc. Bumn cutter with means for reducing effect of bumps. 3,201,173, 8–17–65, 299—39.

Haunl-Werke Körber & Co. KG.: *See*—
Liedtke, Kurt. 3,200 555.
Wochnowski, Waldemar. 3,200,947.

Hawkins, Cyril M.: *See*—
Sobey Albert J., and Hawkins. 3,200,583.

Hawkins, John, and B. L. Rowe, to John Lysaght (Australia) Ltd. Method of decarburising electrical steel by using an oxide film. 3 201,294. 8–17–65, Cl. 148—113.

Hawkins, John W., to Power Jets (Research & Development) Ltd. Safety devices. 3 200,616, 8–17–65, Cl. 64—28.

Hayatian, Allan A., to Westrac Co. Bearing seal structure. 3 201.134, 8–17–65, Cl. 277—92.

Hayatian, Allan A., to Westrac Co. Bearing seal structure. 3,201,135, 8–17–65, Cl. 277—92.

Hayes Spray Gun Co.: *See*—
Hayes, Stanley A. 3,201,049.

Hayes, Stanley A., to Hayes Spray Gun Co. Proportioning eductor. 3,201,049, 8–17–65, Cl. 239—433.

Haynes, John A., to Jet Research Center, Inc. Method and apparatus for tapping furnaces. 3,201,225, 8–17–65, Cl. 75—28.

Hazeltine Research, Inc.: *See*—
Brittain, Francis H. 3,200,900.
Hanulec, Joseph D., and Schwab. 3,201,702.
Hanulec, Joseph D., and Schwab. 3,201,705.

Heap, Ellis: *See*—
Ainley, Alfred J., Wright, and Heap. 3,200,878.

Heathington, Lawrence. Cutting tool. 3,200,862, 8–17–65, Cl. 144—27.

Heck, Hans E.: *See*—
Munder, Johannes, Heiss, Fritz, Osswald, and Heck. 3,201,241.

Hedges, Ralph G. Protractor guide for bending pipes. 3,200,505, 8–17–65, Cl. 33—180.

Heidelberger, Charles, to United States of America, Health, Education and Welfare. 5-trifluoromethyluracil, derivatives thereof, and processes for preparing the same. 3,201,387, 8–17–65, Cl. 260—211.5.

Heier, James T. Lithographic exposure apparatus and method. 3,200,730, 8–17–65, Cl. 95—73.

Heilbrunn, Alfred, to Topps Chewing Gum, Inc. Device to cut edges of sheets and remove scrap. 3,200,685, 8–17–65, Cl. 83—98.

Heimann, Fred G., to Fruehauf Corp. Retractable meat hook. 3,201,077, 8–17–65, Cl. 248—340.

Heino, Walden L., to E. I. du Pont de Nemours and Co. Adhesives comprising epoxy-hydroxy polyether resin and epoxy-containing copolymer. 3,201,497, 8–17–65, Cl. 260—837.

Heins, Sidney M., and B. Strauss, to Chemicals Products Corp. Method of producing anhydrous inorganic compounds. 3,201,208, 8–17–65, Cl. 23—300.

Heiss, Hans: *See*—
Munder, Johannes, Heiss, Fritz, Osswald, and Heck. 3,201,241.

Helmick, Fred E.: *See*—
Fabrenbach, Wolfgang B., and Helmick. 3,200,718.

Hemmeter, George T., and W. L. Madsen. Hanger for use with a hinge. 3,200,435, 8–17–65, Cl. 16—187.

Hempel, William C.: *See*—
Solum, James R., and Hempel. 3,200,884.

Hemwall, John B., to The Dow Chemical Co. Stabilization of clay soils and aggregates with lead salts of phosphoric and sulfuric acids. 3,201,268, 8–17–65, Cl. 106—68.

Hendelman, Jesse C.: *See*—
Ballou, Donald K., and Hendelman. 3,200,637.

Hendricks, John E., and D. M. Piatt, to Industrial Electronics Engineers, Inc. Display apparatus. 3,201,784, 8–17–65, Cl. 340—378.

Hendrickson, Howard J. Safety tail light. 3,200,524, 8–17–65, Cl. 40—129.

Hendry, David C., to Stewarts and Lloyds Ltd. Overhead gantry crane truck. 3,200,770, 8–17–65, Cl. 105—163.

Henke, Alfred M.: *See*—
Hamilton, Harry A., Henke, and Stauffer. 3,201,345.

Henn, Richard W.: *See*—
Allen, Charles F. H., Ford, and Henn. 3,201,246.

Hennessy, Jack P., Sales Co., Inc., The: *See*—
Thompson, Richard R. 3,200,481.

Henrard, Armand I. G., G. Shulman, and E. O. Klots, to Pfister Chemical Works, Inc. Phthalocyanine dyes. 3,201,413, 8–17–65, Cl. 260—314.5.

Hensler, Paul, H. Tomala, and K. Ruoff, to Dr. Ing. h.c. F. Porche Firma, K.G. Internal combustion engine. 3,200,804, 8–17–65, Cl. 123—195.

Heppenstall Co.: *See*—
Grim, Howard G. 3,201,224.

Hercules Powder Co.: *See*—
Spurlin, Harold M. 3,201,363.

Hermanns, Wilhelm. Storage receptacle for pulverized material. 3,201,000, 8–17–65, Cl. 222—193.

Herr, Robert, O. Ortlinghaus, J. Lemp, and A. Ortlinghaus, to Ortlinghaus, Gebr. Air cooled compact clutch and brake. 3,200,917, 8–17–65, Cl. 192—18.

Herrick, Carlyle S., to General Electric Co. Method and apparatus for meniscus coating. 3,201,275, 8–17–65, Cl. 117—213.

Herrick, Elbert C., W. J. Stout, and S. G. Belak, to Sun Oil Co. Process for preparing wax extended polyurethane foam. 3,201,359, 8–17–65, Cl. 260—2.5.

Herron, Joe T.: *See*—
Barton, Raymond W., Benjamin, and Herron. 3,200,860.

Hertwig Helmut, to Contraves AG. Apparatus for finding the relation between a missile trajectory and a target. 3,201,788, 8–17–65, Cl. 343—7.8.

Hession, John W., Jr., ⅓ to G. D. Besler and ⅓ to M. A. Hession. Apparatus for creating aerosol dispersions. 3,200,535, 8–17–65, Cl. 43—129.

Hession, Mark A.: *See*—
Hession, John W., Jr. 3,200,585.

Heuer, Charles A., to Olin Mathieson Chemical Corp. Heat exchanger. 3 200 480, 8–17–65, Cl. 29—157.3.

Heumann, Frederick K., to General Electric Co. Method of preparing readily decomposable materials. 3,201,227, 8–17–65, Cl. 75—65.

Hewett, John B., and E. A. Windham. Air conditioning systems. 3,200 606, 8–17–65, Cl. 62—176.

Hewlett-Packard Co.: *See*—
Holland, Edward R. 3,201,781.

Heyer, Don. Article feeding apparatus. 3,200,941, 8–17–65, Cl. 198—220.

Higgins, Bernard A., to Mining Engineering Co. Ltd. Belt conveyors. 3,200,940, 8–17–65, Cl. 198—192.

High Voltage Engineering Corp.: *See*—
Gale, Alfred J., and Nygard. 3,201,631.

Highsmith, William D.: *See*—
Swartz, Richard L., and Highsmith. 3,201,114.

Hill, Alfred, to The Glacier Metal Co. Ltd. Thrust bearings. 3,201,184, 8–17–65, Cl. 308—160.

Hill, Boyd N., to Esso Research and Engineering Co. Isomerization process. 3,201,496, 8–17–65, Cl. 260—683.75.

Hill, Dorothy G. Hair set protector. 3,200,827, 8–17–65, Cl. 132—49.

Hill, James S., to Engelhard Industries, Inc. Method of making metal bodies incorporated with non-metallic refractory material and product thereof. 3,201,236, 8–17–65, Cl. 75—206.

Hill, Vernon L., and T. F. Stapleton, to General Motors Corp. Boronizing bath and method. 3,201,285, 8–17–65, Cl. 148—6.11.

Hill, Vernon L., and T. F. Stapleton, to General Motors Corp. Method of boronizing. 3,201,286, 8–17–65, Cl. 148—6.11.

Hillyer, John C.: *See*—
Wilson, Joseph F., Hillyer, and Vives. 3,201,354.

Hilscher, Aubrey L.: *See*—
Fluke, Jefferson M. 3,200,487.

Himmel, Leon, to International Telephone and Telegraph Corp. Identification system. 3,201,757, 8–17–65, Cl. 340—171.

Hine, Louis P., Jr., to The C. A. Olsen Mfg. Co. Vertical draft relief. 3,200,811, 8–17–65, Cl. 126—116.

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Hollmann, Hans E., to Dresser Industries, Inc. Servo type integrator with means for minimizing the effects of friction. 3,201,669, 8–17–65, Cl. 318—30.

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Horwitz, Jeff, to Jeffco Games, Inc. Solitaire gin rummy game. 3,201,122, 8–17–65, Cl. 273—1.

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Jackson, George W., to General Motors Corp. Valve for vehicle suspension system. 3,200,843, 8–17–65, Cl. 137—614.19.

Jackson, George W., to General Motors Corp. Snap action valving mechanism. 3,200,844, 8–17–65, Cl. 137—625.2.

Jackson, Harold E., and D. R. Dean, to Tecalemit (Engineering) Ltd. Atomising liquid fuel burner. 3,200,872, 8–17–65 Cl. 158—76.

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James, Owen W., and E. P. Waters, to Bethlehem Steel Corp. Obtaining improved surface finishes on double reduced material. 3 200,629, 8–17–65, Cl. 72—201.

Janes, Charles F., to United States of America, Navy. Electro-magnetic actuator. 3,200,668, 8–17–65, Cl. 74—640.

Jardin, Jacques A., to Compagnie Electro-Mecanique. Coiled filter having uniform surface porosity. 3,200,952, 8–17–65, Cl. 210—457.

Jarnot, Frank L. Door closing preventer. 3,200,434. 8–17–65, Cl. 16—86.

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Johanson, Donald L., and C. V. Hulse, to Audivox, Inc. Multi-directional hearing aid. 3,201,528, 8–17–65, Cl. 179—107.

Johansson, Kurt E. A. Method for joining reinforcing rods and tool for carrying out the method. 3,200,488, 8–17–65, Cl. 29—453.

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Johnson, Floyd O., to Varian Associates. Coupling means. 3,201,725, 8–17–65, Cl. 333—98.

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Johnson, Luther R., deceased; B. K. Johnson, executrix. Method of making horseshoe with rubber-cushioned sole. 3,200,885, 8–17–65, Cl. 168—12.

Johnson, Maurice W., to North American Philips Co., Inc. Voltage stabilization using a plurality of transistors and a Zener diode. 3,201,682, 8–17–65, Cl. 323—22.

Johnson, Robert B., to Standard Coated Products Inc. Corner molding. 3,200,547, 8–17–65, Cl. 52—288.

Johnson, Robert M., and J. C. Manley, to Corning Glass Works. Apparatus for manufacturing electrical components. 3,200,471, 8–17–65, Cl. 29—33.

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Jones, Hugh R. Replaceable cartridge acoustical muffler. 3,200,902, 8–17–65, Cl. 181—61.

Jones, Lawrence G. F., to Sperry Rand Corp. Information storage device. 3,201,769, 8–17–65, Cl. 340—174.1.

Jones, Milton E. Elbow adapter for electrical conduit wire puller. 3,201,090, 8–17–65, Cl. 254—134.3.

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Justi, Eduard, K.-H. Friese, and A. Winsel, to Varta Accumulatoren-Fabrik Aktiengesellschaft, and Siemens-Schuckert-Werke Aktiengesellschaft. Catalyst electrode. 3,201,282. 8–17–65, Cl. 136—86.

Kahn, Leonard R. Phase-neutralized limiter, and transmitter neutralization therewith. 3,201,694, 8–17–65, Cl. 325—137.

Kaiser, Emil, and E. Domba, to Armour Pharmaceutical Co. Benzofurans and process for preparing. 3,201,422, 8–17–65, Cl. 260—346.2.

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Kelly, Robert P., W. E. Leek, J. S. Martin, C. H. Morse, C. B. Workman, and J. A. Roberts, to Remington Arms Co., Ltd. Gas operating mechanism for autoloading firearm. 3,200,740 8–17–65. Cl. 89—191.

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Ketterer, Charles C., to E. I. du Pont de Nemours and Co. Polymerisation process using a reaction vessel coated with oxidized aluminum. 3,201,378, 8–17–65, Cl. 260—85.5.

Keyes, Henry I., and M. J. Rogers, to Diamond Crystal Salt Co. Salt slurry unloading system. 3,201,175, 8–17–65, Cl. 302—14.

Kilduff, Timothy J., and A. A. Benderly, to United States of America, Army. Method of making a waveguide window. 3,201,296 8–17–65 Cl. 156—106.

Kimberlin, Charles N., Jr., and E. M. Gladrow, to Esso Research and Engineering Co. Reactivation of noble metal catalysts with anhydrous gaseous halogens. 3,201,355. 8–17–65. Cl. 252—411.

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King, Ivan C. Jaw crusher faceplate. 3,201,054, 8–17–65, Cl. 241—291.

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Kingston, James E. Gunsight. 3,200,499, 8–17–65, Cl. 33—51.

Kinkel, Klaus: *See*—
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Kinsman William P. C.: *See*—
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Kiper, Gerd, and G. Mitsch, to Agfa Aktiengesellschaft. Shutter and flash controlling apparatus for cameras. 3,200,721, 8–17–65, Cl. 95—11.5.

Kirchhübel, Kurt: *See*—
Cöppers, Curt, and Kirchhübel. 3,201,795.

Kirkpatrick, Willard H., V. L. Seale, and H. C. Noe, Jr., to Nalco Chemical Co. Salts of partial amides of alkylene-polyamines with polyethylene glycol chloride. 3,201,430, 8–17–65, Cl. 260—404.5.

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Klamp, Paul, and J. S. Bildsoe, to Mechanical Handling Systems, Inc. Signal setting mechanism for conveyor truck. 3,200,767, 8–17–65, Cl. 104—88.

Klasens, Hendrik A.: *See*—
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Klatte, Henry B., and J. V. Oliveau, to Universal Oil Products Co. High speed magnetic electric switch. 3,201,537, 8–17–65, Cl. 200—61.41.

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Kleinschmidt, Edward E., and W. F. Bradbury, to SCM Corp. Miniature bulletin printer. 3,201,514, 8–17–65, Cl. 178—33.

Klots, Edward O.: *See*—
Henrard, Armand I. G., Shulman, and Klots. 3,201,413.

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Petersen, James M., Reed, and Kluge. 3,201,439.
Reed, David D., Petersen, and Kluge. 3,201,440.
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Petersen, James M., Reed, and Kluge. 3,201,439.
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Knapsack-Griesheim Aktiengesellschaft: *See*—
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Scangewald, Kurt, Vogt, and Gudernatsch. 3,201,419.

Knick, Ulrich. Measurement amplifier for small direct voltages. 3,201,689, 8–17–65, Cl. 324—120.

Knotowicz, Aloysius E., to The Patent Button Co. Indicating device. 3,201,795, 8–17–65, Cl. 340—676.

Knott, Joseph F., III: *See*—
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Knox, William J., Jr., and R. E. Sticker, to Eastman Kodak Co. Gelatin compositions containing salts of half esters of sulfo-succinic acid as coating aids therefor. 3,201,252, 8–17–65, Cl. 96—94.

Koeman, Meindert: *See*—
Schalkwijk, Jan, and Koeman. 3,201,518.

Kohls, James P.: *See*—
Schenk, Adelbert J., Kohls, and Brennan. 3,200,933.

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Caporaso, Anthony J., Kolb, and Laudise. 3,201,209.

Kollonitsch, Janos, to Merck & Co., Inc. Hydroboration using borane-aluminum alcoholates. 3,201,477, 8–17–65, Cl. 260—606.5.

Kolster, Harvey L., F. A. Burke, and D. A. Long, to Hallmark Cards, Inc. Merchandise display rack. 3,200,961, 8–17–65, Cl. 211—148.

Komarmy, Julius M., to General Motors Corp. Filter cartridge with pleated element. 3,200,953, 8–17–65, Cl. 210—457.

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Kopel, Harold, to Esquire, Inc. Instructional device. 3,200,514, 8–17–65, Cl. 35—9.

Koppel, Ernst R., to General Precision, Inc. Premixed gas infrared burner. 3,200,874, 8–17–65, Cl. 158—114.

Koppens, Leonardus P. Apparatus for obtaining an apportioned amount of liquid mixture. 3,200,990, 8–17–65, Cl. 222—2.

Koppers Co., Inc.: *See*—
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Koriath, Edwin G.: *See*—
Feeney, Jack T., Thiele, and Koriath. 3,200,688.

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Laskey, Walter P., Bibb, and Sherman. 3,200,681.

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Koutnik, Rodrick J., to Clary Corp. Rotary solenoid having a rectangular stator member. 3,201,661, 8–17–65, Cl. 317—189.

Kovach, Stephen M., to Sinclair Research, Inc. Process for preparing polyalkylated benzenes from alkyl ketones. 3,201,485, 8–17–65, Cl. 260—668.

Kovach, Stephen M., and G. O. Michaels, to Sinclair Research, Inc. Aromatic alkylation with a silica-alumina-chromia catalyst. 3,201,487, 8–17–65, Cl. 260—671.

Koyder, Walter J., and R. W. Phillips, to Talon, Inc. Weft detector device. 3,200,853, 8–17–65, Cl. 139—370.

Koyder, Walter J., to Talon, Inc. Take-up mechanism for a loom. 3,200,852, 8–17–65, Cl. 139—304.

Kraft, Edmond W.: *See*—
Donko, Harold A., and Kraft. 3,200,646.

Kraic, Otto, and V. Stoupa, to Ustav pro vyzkum motorovych vozidel Praha. Rotary piston internal combustion engine. 3,200,796, 8–17–65, Cl. 123—16.

Kralowetz, Bruno. Profile milling cutter for circular milling. 3,200,474, 8–17–65, Cl. 29—105.

Kramer, Helmut, to Pintsch Bamag Aktiengesellschaft. Apparatus for supporting and movably guiding oxygen lances for rotating barrel converters in production of steel. 3,201,107, 8–17–65, Cl. 266—36.

Kramer, Helmut, to Pintsch Bamag Aktiengesellschaft. Steel converter with loose supporting ring. 3,201,106, 8–17–65, Cl. 266—36.

Kramer, Martin J. H.: *See*—
Galimberti, Paolo, Gerosa, Melandri, and Kramer. 3,201,405.

Krapcho, John, to Olin Mathieson Chemical Corp. Aminoalkoxy and aminoalkylthioanilide compounds. 3,201,401, 8–17–65, Cl. 260—268.

Krauss, Serge L., to C. G. Conn, Ltd. Electronic dynamic sound level indicator. 3,200,899, 8–17–65, Cl. 181—.5.

Krepak, John C. Wave damper device. 3,200,598, 8–17–65, Cl. 61—5.

Kress, Herbert, J. P. Bilisoly, and J. N. Beard, Jr., to Esso Research and Engineering Co. Molecular sieve catalyst activation process. 3,201,356, 8–17–65, Cl. 252—455.

Kritzer, Richard W., Jr., to Peerless of America,. Inc. Apparatus for effecting reverse bends in dual heat exchange tubing. 3,200,631, 8–17–65, Cl. 72—306.

Kromer, John H., to Koppers Co., Inc. Coke handling apparatus. 3,200,970, 8–17–65, Cl. 214—17.

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Kurtzweil, Terrence J., Kronenberg, and Hansen. 3,201,278.

Kruell, Andreas. Venetian blind. 3,200,876, 8–17–65, Cl. 160—173.

Krusic, Zelko J., to Westinghouse Electric Corp. Electric control device. 3,201,545, 8–17–65, Cl. 200—106.

Krynski, John E., to Ametek, Inc. Filter. 3,200,951, 8–17–65, Cl. 210—404.

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Bradford, Dean C., and Krzych. 3,201,720.

Kudritski, Hans: *See*—
Mach, Horst, and Kudritski. 3,201,062.

Kuether, Frederick W., to Honeywell Inc. Measuring apparatus. 3,200,647, 8–17–65, Cl. 73—359.

Kuether, Frederick W., to Honeywell, Inc. Integrated neutron flux indicator. 3,201,589, 8–17–65, Cl. 250—83.1.

Kuhle, Engelbert: *See*—
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Kung, Walter, to Maschinenfabrik Ruti AG. Bobbin battery for looms. 3,200,850, 8–17–65, Cl. 139—245.

Kurtzweil, Terrence J., M. L. Kronenberg, and R. E. Hansen, to Union Carbide Corp. Hermetically sealed fused-electrolyte cell. 3,201,278, 8–17–65, Cl. 136—4.

Kury, Josef, to J. Bobst and Son S.A. Delivery mechanisms ensuring the transfer of punched sheets from a press to a waste ejecting device. 3,201,115, 8–17–65, Cl. 271—51.

Kuze, Yoshikazu. Hydrostatic transmission. 3,200,593, 8–17–65, Cl. 60—53.

Kvingedal, Odd: *See*—
Meisingset, Kaare R., Mo, and Kvingedal. 32,01,515.

Kyowa Hakko Kogyo Co., Ltd.: *See*—
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Laboratorio Farmaceutico Lofarma: *See*—
Gomarasca, Piero, and Biasina. 3,201,427.

Lacan, Guy H., and A. G. Faffart, to La Telemecanique Electrique. Electric contact device having means for limiting contact pressure. 3,201,555, 8–17–65, Cl. 200—166.

Lacey, Richard N., A. A. Yeo, and R. T. L. Mowll, to The British Petroleum Co. Ltd. Separation of mixtures. 3,201,490, 8–17–65, Cl. 260—676.

Lacour, Roger: *See*—
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Lacy-Hulbert and Co. Ltd.: *See*—
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Ladusaw, William T., to General Electric Co. Filter obstruction signal arrangement for air conditioning apparatus. 3,201,772, 8–17–65, Cl. 340—239.

Lafay, Georges, to Societe des Forges et Ateliers du Creusot. Tipping mechanism for a steelworks converter. 3,201,106, 8–17–65, Cl. 266—36.

Lagerson, Kenneth F.: *See*—
Palkowski, Henry W., and Lagerson. 3,200,628.

Lagesse, Joseph H. A. S., to Tape Engineering Ltd. Device for folding the ends of cylindrical wrapping. 3,200,564, 8–17–65, Cl. 53—380.

LaGrutta, Pascal A., Container Corp. of America. Removable plug closure with pull loop. 3,200,986, 8–17–65, Cl. 220—60.

Laing, Nikolaus, to Laing Vortex, Inc. Heat exchange apparatus and air conditioner units incorporating such apparatus. 3,200,609, 8–17–65, Cl. 62—280.

Laing Vortex, Inc.: *See*—
Laing, Nikolaus. 3,200,609.

Lam, John S.: *See*—
Moyer, Donald W., and Lam. 3,200,830.

Lampe, Albert C.: *See*—
Van Wilgen, Jacob. Nijmeyer, and Lampe. 3,201,681.

Land, Edwin H., to Polaroid Corp. Method of treating photographic sheet with a liquid. 3,200,726, 8–17–65, Cl. 95—13.

Landau, Ralph, to Mid-Century Corp. Process for oxidising alkyl benzenes to phthalic anhydride. 3,201,423, 8–17–65, Cl. 260—346.4.

Landsverk Electrometer Co.: *See*—
Landsverk, Ole G., and Anderson. 3,200,654.

Landsverk, Ole G., and W. R. Anderson, to Landsverk Electrometer Co. Hermetic seal construction. 3,200,654, 8–17–65, Cl. 74—18.2.

Lang, Eduard, W. Faulian, and E. Zwickart, to Otto Fennel, Söhne K.G. Theodolite with coded indications. 3,200,696, 8–17–65, Cl. 33—1.

Lang, Robert J.: *See*—
Young, John C. O., Lang, and Wilson. 3,200,873.

Langdon, Harry L.: *See*—
Bachman, Kenneth C., Behymer, Langdon, Lawson, Manne, Robbins, Rosser, Russell, and Scott. 3,201,342.

Lanigan, James P., E. F. Wallace, J. I. Kotter, and H. L. Salaun, Jr., to United States of America, Agriculture. Reversible double-drive clutch. 3,200,919, 8–17–65, Cl. 192—48.

Larkin, Robert B., to Mills Products, Inc. Oven door window unit. 3,200,812, 8–17–65, Cl. 126—200.

La Rock, Harold E., Sr. Liquid mixing apparatus. 3,200,736, 8–17–65, Cl. 99—275.

Larson, George W., to Eastman Kodak Co. Method of inhibiting discoloration of color photographic layers containing dye images and resulting photographic products. 3,201,243, 8–17–65, Cl. 96—56.

Larson, George W., to Eastman Kodak Co. Method of inhibiting discoloration of color photographic layers containing dye images and resulting photographic products. 3,201,244, 8–17–65, Cl. 96—56.

Laschenski, Joseph E., to Philco Corp. Tuning apparatus. 3,201,726, 8–17–65, Cl. 334—29.

Laskey, Walter P., M. Bibb, and R. M. Sherman, to The Kor-It Co., Inc. Lathe for forming a virtually cylindric surface on an article. 3,200,681, 8–17–65, Cl. 82—12.

Lassman, Benjamin, to Benjamin Lassman & Son. Solids press molding apparatus. 3,200,465, 8–17–65, Cl. 25—27.

Lassman, Benjamin, & Son: *See*—
Lassman, Benjamin. 3,200,465.

Laughter Corp.: *See*—
Barr, Ellis V. 3,200,426.

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Lavallee, Joseph A., to Lavallee & Ide, Inc. Device for grinding compound-convex surfaces. 3,200,540, 8–17–65, Cl. 51—73.

La Venture, Robert H. Tow-bar. 3,200,972, 8–17–65, Cl. 214—86.

Law, Harold B., to Radio Corp. of America. Spherical grids and methods of making same. 3,200,469, 8–17–65, Cl. 29—25.18.

Lawson, John E., Jr.: *See*—
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Leavell, Charles. Vibration elimination. 3,200,893, 8–17–65, Cl. 173—135.

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Fisher, Ralph, Vertnik, McCaleb, and Le Bard. 3,201,471.

Lebens, Wilhelm. Innerspring mattress with plastic foam cover. 3,200,418, 8–17–65, Cl. 5—351.

Le Bleu, Ronald E.: *See*—
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Le Brusque, Rene, to H. Ernault Batignolles, S.A. Device for controlling the motions of the template holder of a copying lathe. 3,200,682, 8–17–65, Cl. 82—14.

Lee, Edwin S., III, to Burroughs Corp. Magnetic core flux counter. 3,201,605, 8–17–65, Cl. 307—88.5.

Lee, Walter, J. S. Hoover, and C. S. Marschalko, to Farrington Electronics Inc. Document feed apparatus. 3,201,113, 8–17–65, Cl. 271—5.

Leebrick, John R., to M.T. Chemicals Inc. Tin derivatives of sulfo-salicylic acids. 3,201,432, 8–17–65, Cl. 260—429.7.

Leeds and Northrup Co.: *See*—
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Leek, Wayne E.: *See*—
Kelly, Robert P., Leek, Martin, Morse, Workman, and Roberts. 3,200,710.

Leesona Corp.: *See*—
Alexander, Laurence R., and Wallace. 3,201,587.

Lehde, Henry C., and J. J. Dickerman. Potato harvester. 3,200,888, 8–17–65, Cl. 171—14.

Lehmer, Wilhelm A. Rein, and J. Weishaupt, to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft. Packing units for heat exchangers operating at extremely low temperatures. 3,200,877, 8–17–65, Cl. 165—4.

Lehmkuhl, Robert A., to Giddings & Lewis Machine Tool Co. Multiple use machine with tool changer. 3,200,492, 8–17–65, Cl. 29—568.

Lehnert, Gunther, to Hackethal-Draht- und Kabel-Werke AG. Welding electrode. 3,201,563, 8–17–65, Cl. 219—145.

Leingang, William C., Jr.: *See*—
Fossler, Martin E., and Leingang. 3,201,028.

Lenders, Wilhelmus L. L., to North American Philips Co., Inc. Component inserting machine. 3,200,481, 8–17–65, Cl. 29—203.

Lentz, Erwin C., to Walker Mfg. Co. Muffler. 3,201,207, 8–17–65, Cl. 23—288.

Leonard, Henri, to Micro-Mega. Two-speed articulated anchoring joint for dental drill. 3,200,663, 8–17–65, Cl. 74—353.

Leonard, James H., to I-T-E Circuit Breaker Co. Single turn trip coil having novel core and armature configurations. 3,201,539, 8–17–65, Cl. 200—87.

Leonard, James H., to I-T-E Circuit Breaker Co. Overload sensing device employing independently operated thermal and magnetic trip means. 3,201,543, 8–17–65, Cl. 200—88.

Leonard, James H., to I-T-E Circuit Breaker Co. Circuit breaker with vent opening. 3,201,550, 8–17–65, Cl. 200—144.

Leonard, Robert F., to Litho Chemical & Supply Co., Inc. Surface treated lithographic plates and production thereof. 3,201,247, 8–17–65, Cl. 96—75.

Le Sage, Clarence V., to Berry California Corp. Pneumatic fastener driving machine. 3,200,716, 8–17–65, Cl. 91—461.

Levi, Roberto, to North American Philips Co., Inc. Thermionic dispenser cathode. 3,201,639, 8–17–65, Cl. 313—346.

Levin, Herbert L., to International Telephone and Telegraph Corp. Caged electron gun. 3,201,838, 8–17–65, Cl. 313—256.

Levins, Dave B., to General Electric Co. Electric position sensor. 3,200,643, 8–17–65, Cl. 73—313.

Levinson, Benjamin L., and E. E. Brush, ½ to E. Levinson and ½ to said Brush. Positive-pressure controlled-atmosphere liquid dispenser. 3,200,994, 8–17–65, Cl. 222—82.

Levinson, Evelyn: *See*—
Levinson, Benjamin L., and Brush. 3,200,994.

Levy, Robert: *See*—
Morel, Georges, Menoret, Levy, and Grymkiewicz-Trochimowski. 3,201,410.

Levy, Sidney E., and B. C. Sharp, to Ling-Temco-Vought, Inc. Modular component assembly of microphones. 3,201,530, 8–17–65, Cl. 179—146.

Lewin, Gunnar E. W. Locking device for doors, shutters and the like. 3,201,160, 8–17–65, Cl. 292—71.

Lewis, Richard L.: *See*—
Zebarth, Ralph S., Lewis, and Carlson. 3,200,562.

Ley, John E., to Schaffner Mfg. Co., Inc. Buffing bar and method of making such bar. 3,200,542, 8–17–65, Cl. 51—262.

Libaw, William H., I. A. Sonderby, and J. Jenkins, Jr., to The Magnavox Co. Transducing system. 3,201,763, 8–17–65, Cl. 340—178.

Libby, Milton E., to M. M. Harris. Molded plastic loose leaf binders. 3,201,145, 8–17–65, Cl. 281—29.

Liberty Mfg. Co. of Texas: *See*—
Meripol, Robert B. 3,201,158.

Lieb, Albert, to International Standard Electric Corp. Electroluminescent capacitor. 3,201,633, 8–17–65, Cl. 313—108.

Liedtke, Kurt, to Hauni-Werke Korber & Co. KG. Method and apparatus for wrapping cigarette packs and the like. 3,200,555, 8–17–65, Cl. 53—33.

Ligon, Elmer R., W. J. Johnson, and N. C. Grotheer, to W. S. Dickey Clay Mfg. Co. Blender. 3,201,094, 8–17–65, Cl. 259—5.

Limpel, Lawrence E.: *See*—
Harris, Herbert H., Galloway, Limpel, and Schuldt. 3,201,220.

Lincoln, Rush A.: *See*—
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Lindemann, Hans, to Calow, Th., & Co. Method and apparatus for scalping rod-shaped materials. 3,200,678, 8–17–65, Cl. 82—1.

Linder, George J., Jr., to Camera Corp. of America. Magazine for a camera. 3,200,725, 8–17–65, Cl. 95—13.

Lindsay, James G., and W. P. C. Kinsman, to Aluminium Laboratories Ltd. Method of producing low soda content alumina. 3,201,199, 8–17–65, Cl. 23—143.

Lindsey, Joe P., to Phillips Petroleum Co. Peak signal circuit with particular filter means. 3,201,704, 8–17–65, Cl. 328—150.

Linfield, Wayne S.: *See*—
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Ling-Temco-Vought, Inc.: *See*—
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White, Wyman. 3,200,701.

Lipp, Victor K. Fluid pressure control system. 3,201,180, 8–17–65, Cl. 303—84.

Lippincott, Holland S., to Philco Corp. Pump mechanism. 3,200,763, 8–17–65, Cl. 103—231.5.

Lipton, Thomas J., Inc.: *See*—
Creswick, Norman S. 3,200,997.

Liquid Package Equipment Corp.: *See*—
Williams, Earl J. 3,201,002.

Litho Chemical & Supply Co., Inc.: *See*—
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Livingstone, Jay G. Perforate plastic fitment with bottom which is at least partly flat in pressure contact with flat portion of top of container. 3,201,014, 8–17–65, Cl. 223—545.

Locke, Norbert. Bicycle exerciser accessory. 3,201,121, 8–17–65, Cl. 272—73.

Long, Douglas A.: *See*—
Kolster, Harvey L., Burke, and Long. 3,200,961.

Long, Marshall, to International Lift Slab Corp. System for elevating building components. 3,201,088, 8–17–65, Cl. 254—69.

Longini, Richard L., to Westinghouse Electric Corp. Sequential trip semiconductor device. 3,201,596, 8–17–65, Cl. 307—88.5.

Long-Lok Corp.: *See*—
Willmon, L. D. 3,200,422.

Lord, John G., to Shoup Voting Machine Co. Rotary cam controlled voting machine. 3,201,089, 8–17–65, Cl. 235—50.

Losak, Albert A. Vestibule. 3,200,546, 8–17–65, Cl. 52—94.

Louis, John R., to Bailey Meter Co. Pulsating D.-C. bias circuit for transistorised servo amplifier. 3,201,672, 8–17–65, Cl. 316—207.

Lowe, James H. Thermal switch utilising a housing with an opening in which a thermal element supports a spring by a contact means. 3,201,549, 8–17–65, Cl. 200—140.

Lowenthal, Hans, to Colibri Lighters Ltd. Gas burning cigarette lighters. 3,200,620, 8–17–65, Cl. 67—7.1.

Lucas, Joseph, (Industries) Ltd.: *See*—
Allport, Maurice J. 3,201,636.

Luck, William F.: *See*—
Byrne, Joseph E., and Luck. 3,201,188.

Lundin, Robert S., to General Time Corp. No-back mechanism for small synchronous motors. 3,200,915, 8–17–65, Cl. 192—4.

Lusebrink, Elmer H., to E. I. du Pont de Nemours and Co. Temperature controlled device. 3,201,568, 8–17–65, Cl. 219—10.61.

Luteran, Frank K.: *See*—
Pasquier, Claude J., and Luteran. 3,201,687.
Lyon, John K., and G. Potapenko. Dispensing valve having cup-like deformable sealing element. 3,201,081, 8–17–65, Cl. 251—172.
Lyon, Zeno G.: *See*—
Sichak, William, and Lyon. 3,201,692.
Lyon, Zeno G., to International Telephone and Telegraph Corp. Repeater terminal. 3,201,691, 8–17–65, Cl. 325—11.
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Lysak, John, to Radio Corp. of America. Tubular glass sealing apparatus. 3,201,217, 8–17–65, Cl. 65—270.
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Sorenson, Glenn P., and McKee. 3,200,747.
M. T. Chemicals Inc.: *See*—
Loebrick, John E. 3,201,432.
Maag Gear Wheel & Machine Co. Ltd.: *See*—
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Maartmann, Sten: *See*—
Gustafsson, Stig, and Maartmann. 3,200,566.
Macatician, John, to Thiokol Chemical Corp. Gyroscopic control system. 3,200,748, 8–17–65, Cl. 102—50.
MacDowell, John F., to Corning Glass Works. Glass ceramic bodies and method of making them. 3,201,266, 8–17–65, Cl. 106—39.
Mach, Horst, and H. Kudritzki, to International Standard Electric Corp. Carrier storage arrangement in a pneumatic tube system. 3,201,062, 8–17–65, Cl. 243—1.
Mackay, Johnstone S.: *See*—
Manes, Milton, and Mackay. 3,201,433.
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Baker, Cole H., and Macklem. 3,201,599.
Macklis, Howard: *See*—
Di Stefano, Dominic, Macklis, and Boretz. 3,200,753.
Mackor, Eduard L.: *See*—
Oelderik, Jan M., Mackor, Platteeuw, and Van der Wiel. 3,201,494.
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Hammick, Frederick C. 3,200,799.
MacNab, Adrian J., and R. S. Treseder, to Shell Oil Co. Corrosion protection. 3,201,335, 8–17–65, Cl. 204—147.
Madden, Homer W. Container palletising and depalletising machine. 3,200,969, 8–17–65, Cl. 214—8.5.
Maddox, James E., and A. T. Fassero, to Clement O. Dennis. Tire loader. 3,200,443, 8–17–65, Cl. 16—18.
Maderni, Piero: *See*—
Bohler, Hans, Kehrer, and Maderni. 3,201,402.
Madsen, William L.: *See*—
Hemmeter, George T., and Madsen. 3,200,435.
Maerov, Sidney, and E. B. McCord, to E. I. du Pont de Nemours and Co. Bulky continuous filament yarn of distinct plies having different shrinkage characteristics. 3,200,576, 8–17–65, Cl. 57—140.
Magat, Michel, A. Chapiro, and J. S. Danon, to Centre National de la Recherche Scientifique Ministere de l'Education Nationale. Graft polymerization utilising ionising radiation. 3,201,336, 8–17–65, Cl. 204—154.
Magee, James H., to Leeds and Northrup Co. Visual indicator for bistate units. 3,201,773, 8–17–65, Cl. 340—248.
Maglott, George F., to Harwood Engineering Co. Differential pressure control for pipeless pumping. 3,201,031, 8–17–65, Cl. 230—53.
Magnaflux Corp.: *See*—
Peterson, Jack A., and Deibel. 3,200,966.
Magnavox Co., The: *See*—
Libaw, William H., Sonderby, and Jenkins, Jr. 3,201,763.
Magnotta, Frank A., to Air Reduction Co., Inc. Stabilization of poly(vinyl isopropyl ethers) with a benzotriazole and a phenol. 3,201,366, 8–17–65, Cl. 260—45.8.
Magri, Joseph L., and H. N. Shohet, to United States of America, Navy. Droop compensated fuel control system. 3,200,886, 8–17–65, Cl. 170—135.74.
Magrini Societa per Asioni: *See*—
Baldini, Enrico. 3,201,552.
Mahar, Russell B., to Union Carbide Corp. Liquefied gas cylinder. 3,200,998, 8–17–65, Cl. 222—184.
Mahoney, William J.: *See*—
Hardy, Herbert L., and Mahoney. 3,201,677.
Maitra, Karuna K., to Radio Corp. of America. Redundant logic networks. 3,201,701, 8–17–65, Cl. 328—94.
Maker, James H., and T. M. Adgate, to Associated Spring Corp. Mechanical plating method. 3,201,273, 8–17–65, Cl. 117—106.
Maley, Wayne A., to United States Steel Corp. Fence wire tensioning apparatus. 3,201,065, 8–17–65, Cl. 254—64.
Mala, Huso, H. Holtschmidt, E. Kuhle, and O. Bayer, to Farbenfabriken Bayer Aktiengesellschaft. Mono and poly-(O,O-dialkyl phosphato) and (O,O-dialkyl phosphonato) azomethine esters. 3,201,443, 8–17–65, Cl. 260—461.
Mamon, Michel, to International Telephone and Telegraph Corp. Overload protection in transistorized power regulating circuits. 3,201,606, 8–17–65, Cl. 307—88.5.
Manes, Milton, and J. S. Mackay, to United States Steel Corp. Preparation of aromatic isocyanates from cyanic acid vapors. 3,201,433, 8–17–65, Cl. 260—453.
Manger, Charles W., and B. H. Perkins, to E. I. du Pont de Nemours and Co. Process of salt milling a mill powder. 3,201,061, 8–17–65, Cl. 241—22.
Manley, John C.: *See*—
Johnson, Robert M., and Manley. 3,200,471.
Manne, Richard S.: *See*—
Bachman, Kenneth C., Behymer, Langdon, Lawson, Manne, Robbins, Rosser, Russell, and Scott. 3,201,342.
Manning, David T., and H. A. Stansbury, Jr., to Union Carbide Corp. Nitrosochloride and chloro oxime derivatives of polyunsaturated organic compounds. 3,201,453, 8–17–65, Cl. 260—468.
Mansfield, Walter C., Jr., to General Electric Co. Ballast apparatus utilizing temperature responsive fuse. 3,201,646, 8–17–65, Cl. 315—239.
Mansfield, Wilfred P., to The British Internal Combustion Engine Research Institute Ltd. Internal combustion engines and pistons therefor. 3,200,798, 8–17–65, Cl. 123—78.
Marangoni, Luigi, and A. Nenz, to Edison. Preparation of a-isonitrosoketones by nitrosation of ketones. 3,201,468, 8–17–65, Cl. 260—566.
Marconi Co. Ltd., The: *See*—
Eastwood, Eric. 3,201,790.
Marcus, William, to Merrymaid Plastics Corp. Pot strainer. 3,200,954, 8–17–65, Cl. 210—470.
Margulies, Lazar, to Mount Sinai Hospital Research, Foundation, Inc. Coil spring intra-uterine contraceptive device and method of using. 3,200,815, 8–17–65, Cl. 128—130.
Marlag, Robert J., to Toledo Scale Corp. Electronic counting apparatus with feedback circuits to prevent miscounting. 3,201,699, 8–17–65, Cl. 328—46.
Marino, Philip M.: *See*—
Chung, David H., and Marino. 3,201,606.
Marino, Thomas. Manhole steps. 3,200,903, 8–17–65, Cl. 182—92.
Mark, Herman F., to The Western Petrochemical Corp. Textile finishes. 3,201,362, 8–17–65, Cl. 260—28.5.
Marker, Hannes, to Dr. h.c. Georg von Opel. Safety front jaw for ski bindings or fastenings. 3,201,140, 8–17–65, Cl. 280—11.35.
Markley, Francis X.: *See*—
Arit, Herbert G., Jr., Fitchett, and Markley. 3,201,398.
Marquardt, Günter: *See*—
Wenzel, Ehrhard, and Marquardt. 3,200,855.
Marron, John W. Bulldozer attachment. 3,200,891, 8–17–65, Cl. 172—197.
Marschalko, Cornell S.: *See*—
Lee, Walter, Hoover, and Marschalko. 3,201,113.
Martin, Helmut, and G. Mohring, to Hackethal Draht-und Kabel-Werke Aktiengesellschaft. Corrugated waveguides. 3,201,723, 8–17–65, Cl. 333—95.
Martin, James S.: *See*—
Kelly, Robert P., Leek, Martin, Morse, Workman, and Roberts. 3,200,710.
Martin, Paul E., and L. Pernack. Stackable, universal industrial bin. 3,201,035, 8–17–65, Cl. 232—1.
Martin-Marietta Corp.: *See*—
Bradt, Albert J., Curry, and Estock. 3,201,655.
di Stefano, Dominic, Macklis, and Boretz. 3,200,753.
Dunn, John P. 3,201,065.
Hunter, Jack A. 3,200,510.
Jenkins, Carlton H. 3,200,712.
Mueller, John J., and Seetoo. 3,201,235.
Zotos, George A. 3,200,613.
Marzocchi, Lorenzo. Fastening device. 3,200,458, 8–17–65, Cl. 24—71.
Maschinenfabrik Augsburg-Nurnberg A.G.: *See*—
Meurer, Siegfried. 3,200,795.
Maschinenfabrik Ruti AG: *See*—
Kung, Walter. 3,200,850.
Mason, Frederick P., G. J. L. Stevens, and F. G. Smith, to Creed & Co. Ltd. Facsimile system having provision for high speed skipping of blank areas. 3,201,512, 8–17–65, Cl. 178—6.
Mason, Jerry M., and J. R. Hogan, to General Motors Corp. AM-FM all transistor radio receiver. 3,201,695, 8–17–65, Cl. 325—315.
Mastella, Louis, to Wm. Wrigley, Jr. Co. Wrapped package. 3,201,258 8–17–65, Cl. 99—180.
Math, Friedrich C. Jet reaction motor. 3,200,588, 8–17–65, Cl. 60—39.35.
Mathison, Victor G., to Bourns, Inc. Gear-adjusted variable resistor. 3,201,737, 8–17–65, Cl. 338—174.
Matsukata, Kosuke. Record changer diameter adapter. 3,201,133, 8–17–65, Cl. 274—42.
Matsushita Electric Industrial Co., Ltd.: *See*—
Wada, Sadaharu. 3,201,674.
Matsushita Electric Works, Ltd.: *See*—
Okubo, Masashi. 3,201,178.
Mattil, Karl F.: *See*—
Merker, Dwight R., and Mattil. 3,201,431.
Mauric, Gerhard, to Electronic Specialty Co. Stop for linear actuators. 3,200,664, 8–17–65, Cl. 74—424.8.
Mautner, Henry R., to General Aniline & Film Corp. Process for dyeing polypropylene fibers with acid dyestuffs in the presence of a water soluble thiocyanate. 3,201,189, 8–17–65, Cl. 8—55.
Mavity, Julian M.: *See*—
Bielawski, Mitchell S., and Mavity. 3,201,486.
Maxon, William D.: *See*—
Hanson, Frederick R., and Maxon. 3,201,324.
Maxwell, Stewart A., to Fisher & Ludlow Ltd. Hot beverage dispensing machines. 3,200,992, 8–17–65, Cl. 222—52.
May, Charles B., and R. D. Jeffery, to United States of America, Navy. Transmission line adapter for connecting coaxial and strip transmission lines at right angles. 3,201,722, 8–17–65, Cl. 333—84.
May, Russell D., to Black, Sivalls & Bryson, Inc. System for the sonic treatment of emulsions and for resolving the same into their constituent parts. 3,200,567, 8–17–65, Cl. 55—175.
Mayer, Arthur A., and T. D. Robb, to Bell Telephone Laboratories Inc. Telephone system permanent signal trunk. 3,201,521, 8–17–65, Cl. 179—27.
Mayer, Peter J., Jr., and A. C. Mueller, to Bell & Howell Co. Loop former in short gate camera. 3,201,796, 8–17–65, Cl. 352—159.

Mayo, Robert F., M. A. Wallio, and W. L. Wells, to United States of America, National Aeronautics and Space Administration. Electric-arc heater. 3,201,560, 8–17–65, Cl. 219—121.
Maytag Co., The: *See*—
Smith, Thomas R. 3,200,511.
Masarakis, Arthur G., to United States Steel Corp. Rigging for tilting ladles. 3,200,453, 8–17–65, Cl. 22—62.
McCaleb, Kirtland E.: *See*—
Fisher, Ralph, Vertnik, McCaleb, and Le Bard. 3,201,471.
McCall, Ernest B., and T. J. Rawlings, to Monsanto Chemicals Ltd. Dibensothiophene and dibensofuran derivatives. 3,201,418, 8–17–65, Cl. 260—239.3.
McCall, Harold M.: *See*—
Phares, Lindsey J., McCall, Snow, and Spannhake. 3,200,599.
McClellan, Herbert L., and R. E. Wisebaker, to The National Machinery Co. Method and apparatus for forming hollow rivets. 3,200,424, 8–17–65, Cl. 10—12.5.
McColl, William, to Diamond Power Specialty Corp. Valve heating means. 3,200,833, 8–17–65, Cl. 137—154.
McConeghy, Charles J. Dummy shotgun shell blank. 3,200,746, 8–17–65, Cl. 102—39.
McCord, Eugene B.: *See*—
Maerov, Sidney, and McCord. 3,200,576.
McCormick, Jerry B. D., and J. Reichenthal, to American Cyanamid Co. Derivatives of 1,3,11,12-tetrahydroxynaphthacene and 1,3,6,11-tetrahydroxynaphthacene-5,12-quinone. 3,201,424, 8–17–65, Cl. 260—351.
McCoy, Bernard J., to Tamar Electronics Industries Inc. Torque test device. 3,200,633, 8–17–65, Cl. 73—9.
McCulloch Corp.: *See*—
Barr, Edward J. 3,201,096.
Millar, Gordon H. 3,200,580.
Sheaffer, Benjamin L. 3,200,838.
McDaniel, Clyde L., to United States of America, Commerce. Apparatus for determining melting points. 3,200,635, 8–17–65, Cl. 73—17.
McFarland, Norman T., and B. C. Meyer, to Marvin Glass & Associates. Game board with apertured path and movable goal member. 3,201,129, 8–17–65, Cl. 273—134.
McGavern, Sanford A., Jr., to Schwitzer Corp. Method of fabricating vibration damper. 3,200,485, 8–17–65, Cl. 29—421.
McGillen, William D.: *See*—
Brunson, Marion O., and McGillen. 3,201,498.
McHugh, Kenneth L., and J. O. Smith, to Monsanto Research Corp. Lubricants containing a Schiff base. 3,201,350, 8–17–65, Cl. 252—51.5.
McIlvin, Donald B., to United Shoe Machinery Corp. Injection sole molding machines. 3,200,438, 8–17–65, Cl. 18—4.
McIntire, Owen F. Incinerator. 3,200,777, 8–17–65, Cl. 110—18.
McKee, Richard G.: *See*—
Sorenson, Glenn P., and McKee. 3,200,747.
McKusick, Blaine C., and S. Trofimenko, to E. I. du Pont de Nemours and Co. Hexacyanoethane and its preparation. 3,201,452, 8–17–65, Cl. 260—465.8.
McMurray, Arthur W., to Borland Industrial Corp. Fastener tape. 3,200,462, 8–17–65, Cl. 24—205.16.
McNamara, Allen G., to National Research Council. Shielded reed switch. 3,201,540, 8–17–65, Cl. 200—87.
McNeil, Dalph C. Flash separator. 3,200,568, 8–17–65, Cl. 55—191.
McWhirter, James H., to Westinghouse Electric Corp. Evaporative cooled inductive apparatus having cast solid insulation with cooling ducts formed therein. 3,201,728, 8–17–65, Cl. 336—60.
Meacham, James F., to I-T-E Circuit Breaker Co. Panelboard for bolted and plug-in circuit breaker. 3,201,657, 8–17–65, Cl. 317—119.
Mead Johnson & Co.: *See*—
Barton, Raymond W., Benjamin, and Herron. 3,200,860.
Meadowcroft, George R., to FMC Corp. Apparatus for trimming trees. 3,200,674, 8–17–65, Cl. 56—235.
Mechanical Handling Systems, Inc.: *See*—
Harrison, Homer S. 3,200,768.
Klamp, Paul, and Bildsoe. 3,200,767.
Medlinski, William W.: *See*—
Curran, Peter F., and Medlinski. 3,201,675.
Meinser, Richard A.: *See*—
Dell, Richard G., and Meinser. 3,201,369.
Meisinger, Erwin E., and H. S. Bloch, to Universal Oil Products Co. Isomerization of olefinic compounds. 3,201,493, 8–17–65, Cl. 260—683.2.
Meisingset, Kaare R., I Mo, and O. Kvingedal, to International Standard Electric Corp. Method for synchronising cryptographic teleprinter equipment. 3,201,515, 8–17–65, Cl. 178—53.
Melxell, Oliver S., to International Telephone and Telegraph Corp. Electrical bridge networks and circuits including said networks. 3,201,678, 8–17–65, Cl. 321—69.
Melandri, Max M.: *See*—
Galimberti, Paolo, Gerosa, Melandri, and Kramer. 3,201,405.
Menegoni, Primo. Puller with adjustable puller arms provided with different size claws and a centrally located threaded means to engage the work. 3,200,483, 8–17–65, Cl. 29—259.
Menoret, Yves: *See*—
Morel, Georges, Menoret, Levy, and Gryzskiewicz-Trochimowski. 3,201,410.
Merchlewitz, Anthony W.: *See*—
Porter, Alvin J., and Merchlewitz. 3,201,018.
Mercier, Carl R., to Moloney Electric Co. Air-magnetic type circuit interrupter having planar blowout coils and primary conductor mounted puffer means. 3,201,551, 8–17–65, Cl. 200—147.
Merck & Co., Inc.: *See*—
Humphreys, Thomas W., and Hinkley. 3,201,268.
Humphreys, Thomas W., Wagner, and Hinkley. 3,201,269.
Kollonitsch, Janos. 3,201,477.
Shen, Tsung-Ying. 3,201,414.
Merck, E., Aktiengesellschaft: *See*—
Jayme, Georg, and Bauer. 3,201,852.
Meripol, Robert B., to Liberty Mfg. Co. of Texas. Sucker rod coupling. 3,201,158, 8–17–65, Cl. 287—117.
Merker, Dwight R., and K. F. Mattil, to Swift & Co. Selective hydrogenation of malvalic and sterculic acids in cottonseed oil. 3,201,431, 8–17–65, Cl. 260—409.
Merrymaid Plastics Corp.: *See*—
Marcus, William. 3,200,954.
Mertler, Charles S., to Stevens Mfg. Co., Inc. Thermostat and tip-over switch. 3,201,548, 8–17–65, Cl. 200—138.
Mers, Gerhard, to International Standard Electric Corp. Magnetic core matrix storage systems. 3,201,768, 8–17–65, Cl. 340—174.
Mers, Max, to Borg-Warner Corp. Chain saw chain. 3,200,861, 8–17–65, Cl. 143—135.
Metallgesellschaft Aktiengesellschaft: *See*—
Aulich, Willi, and Podlich. 3,200,949.
Stieler, Jörg, and Münch. 3,201,102.
Metz, Ramey B., and S. M. Kerber, to Tamar Electronics Industries, Inc. Motion control system. 3,200,932, 8–17–65, Cl. 198—37.
Metzler, Charles L.: *See*—
Wark, John D., and Metzler. 3,201,003.
Meurer, Siegfried, to Maschinenfabrik Augsburg-Nurnberg A.G. Method and apparatus for forming combustion gas mixtures for rotary piston engines. 3,200,795, 8–17–65, Cl. 123—8.
Meyer, Burton C.: *See*—
Glass, Marvin I., Neumann, Meyer, and Jernstrom. 3,200,537.
Glass Marvin I., and Meyer. 3,200,538.
McFarland, Norman T., and Meyer. 3,201,129.
Meyer, Edgar D. Pipe smoker's kit. 3,200,822, 8–17–65, Cl. 131—243.
Meyer, Gerhard: *See*—
Siggel, Erhard, Meyer, and Rosener. 3,201,192.
Meyer, Hans. Comparator. 3,200,502, 8–17–65, Cl. 33—172.
Meyer, John F., and E. J. Zalewski, to Schenectady Varnish Co., Inc. Insulated conductor having undercoat of isocyanurate modified polyester and overcoat of polyethylene terephthalate. 3,201,276, 8–17–65, Cl. 117—218.
Meyer, Lester W. A., to Eastman Kodak Co. Process for molding rod-like cigarette filter tip of cellulose ester flake. 3,201,505, 8–17–65, Cl. 264—109.
Meyer, Ronald E., to Remwood Chemical Co. Conductivity probe. 3,201,685, 8–17–65, Cl. 324—30.
Meyerhoefer, Carl E., to Equitable Paper Bag Co., Inc. Double gusset bag. 3,201,027, 8–17–65, Cl. 229—53.
Meyerhoff, Leonard, to Eastern Research Group. Ducted fan aircraft. 3,201,067, 8–17–65, Cl. 244—23.
Michaels Bruno, to Bell & Howell Co. Automatic film threading device. 3,201 796, 8–17–65, Cl. 352—30.
Michaels, Bruno: *See*—
Chermiavskyj, Jaroslav, Michaels, Nupnau, and Nasiatka. 3,201,020.
Michaels, Glenn O.: *See*—
Kovach, Stephen M., and Michaels. 3,201,467.
Michigan-Dynamics, Inc.: *See*—
Darnell, Rex C. 3,200,787.
Micro-Mega: *See*—
Leonard, Henri. 3,200,663.
Mid-Century Corp.: *See*—
Landau, Ralph. 3,201,423.
Midvale-Heppenstall Co.: *See*—
Grim, Howard G. 3,201,224.
Miehle-Goss-Dexter, Inc.: *See*—
Weinberg, Earl H., and Spaulding. 3,200,741.
Miles Laboratories, Inc.: *See*—
Barton, Richard R. 3,201,325.
Mileti, Joseph A., to The Bendix Corp. Pump. 3,200,755, 8–17–65, Cl. 103—113.
Millar, Gordon H., to McCulloch Corp. Bearing lubrication system. 3,200,580, 8–17–65, Cl. 60—13.
Miller, Dale W., and W. F. Clark, to General Motors Corp. Plural propeller pitch change control system. 3,201,068, 8–17–65, Cl. 244—17.23.
Miller, David B.: *See*—
Iwnicki, Kurt, and Miller. 3,200,467.
Miller, James C., to Radio Corporation of America. Memory systems using tunnel diodes. 3,201,595, 8–17–65, Cl. 307—88.5.
Miller, John F.: *See*—
Grebe, John J., and Miller. 3,201,228.
Miller, Jorge, to Procesos Industriales Ltd. Apparatus for making steel. 3,201,105, 8–17–65, Cl. 266—34.
Miller, Lee A.: *See*—
Butler, John M., Miller, and Weep. 3,201,370.
Miller, Matthew N., to Jay P. Freer. Fastener device. 3,200,461, 8–17–65, Cl. 24—201.
Miller, Richard M.: *See*—
Smith, James E., Sweeny, and Miller. 3,201,625.
Miller, Robert H.: *See*—
Wilson, William B. 3,200,630.
Miller, Robert K., to Western Electric Co., Inc. Article assembly apparatus. 3,200,957, 8–17–65, Cl. 140—93.
Miller, Roscoe E. Antifoam barium sulfate suspensions. 3,201,317, 8–17–65, Cl. 167—95.
Miller Wrapping & Sealing Machine Co.: *See*—
Barber, Ralph F. 3,201,116.
Milligan, James W., to Duncan Electric Co., Inc. Magnetizing method. 3,201,663, 8–17–65, Cl. 317—201.

Mills, Lindley B. Beverage dispenser. 3,200,991, 8-17-65, Cl. 222—52.

Mills Products, Inc.: *See*—
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Milner, Consuelo S., to United States of America, Navy. Thermally stabilized crystal units. 3,201,621, 8-17-65, Cl. 310—8.9.

Miltschitzky, Gustav, and W. Schindelin, to Wacker-Chemie G.m.b.H. Process for producing welding powders. 3,201,292, 8-17-65, Cl. 148—26.

Mine Safety Appliances Co.: *See*—
Flumerfelt, Gene C. 3,200,636.

Minghetti, Anacleto: *See*—
Amici, Alba M., Minghetti, Spalla, and Tonolo. 3,201,326.

Mining Engineering Co. Ltd.: *See*—
Higgins, Bernard A. 3,200,940.

Minnesota Mining and Mfg. Co.: *See*—
Harrison, George C., and Ardahl. 3,201,136.
Johnson, Wayne R., and Vice. 3,201,770.

Miranda, William. Slip pipe wrench with locking ring. 3,200,877, 8-17-65, Cl. 81—160.

Misumi, Teryuk: *See*—
Tsunoda, Yoshio, Seko, Kato, Misumi, Mituisi, and Toyoda. 3,201,339.

Mitchell, Joseph R., and M. E. Potter, to United States Steel Corp. Austenitic stainless steel. 3,201,230, 8-17-65, Cl. 75—124.

Mitchell, William H., to Thiokol Chemical Corp. Shear slide cushion. 3,200,584, 8-17-65, Cl. 60—35.6.

Mitoff, Stephen P., to General Electric Co. Electrical heating element and insulation therefor. 3,201,738, 8-17-65, Cl. 338—238.

Mitsch, Georg: *See*—
Kiper, Gerd, and Mitsch. 3,200,721.

Mituisi, Masasi: *See*—
Tsunoda, Yoshio, Seko, Kato, Misumi, Mituisi, and Toyoda. 3,201,339.

Miyaki, Takeo: *See*—
Kawaguchi, Hiroshi, Okanishi, and Miyaki. 3,201,386.

Mo, Ivar: *See*—
Meisingset, Kaare R., Mo and Kvingedal. 3,201,515.

Moffett, Robert B., to The Upjohn Co. Pyridylcoumarins. 3,201,406, 8-17-65, Cl. 260—295.

Möhring, Günter: *See*—
Martin, Helmut, and Möhring. 3,201,723.

Molded Container Corp.: *See*—
Eastman, Watson S., and Aisman. 3,201,310.

Mollings, Thomas, to Burroughs Corp. Staircase-waveform generator employing two controllable ramp signal generators combined at the output. 3,201,611, 8-17-65, Cl. 307—88.5.

Moloney Electric Co.: *See*—
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Moncure, Jewett P. Apparatus for the removal of crab carapaces. 3,200,436, 8-17-65, Cl. 17—2.

Monito, Gregory A.: *See*—
Narbut, Paul, Monito, and Voytik. 3,201,727.

Monoosmock Enterprises, Inc.: *See*—
Wagaman, Robert. 3,201,015.

Monsanto Chemicals Ltd.: *See*—
McCall, Ernest B., and Rawlings. 3,201,418.

Monsanto Co.: *See*—
Butler, John M., Miller, and Wesp. 3,201,370.
Fields, Joseph E., and Johnson. 3,201,351.
Salyer, Ival O. 3,201,384.
Urry, Wilbert H. 3,201,456.

Monsanto Research Corp.: *See*—
McHugh, Kenneth L., and Smith. 3,201,350.

Montana, Alfred L., to United States of America, Army. Firing mechanism with integral safety. 3,200,709, 8-17-65, Cl. 89—142.

Montecatini Societa Generale per l'Industria Mineraria e Chimica: *See*—
Billi, Walter. 3,201,204.
Peri, Cesare A. 3,201,442.

Montone, Liber J.: *See*—
Embree, Milton L., and Montone. 3,201,690.

Moody, Eugene P. Pipe holder. 3,201,018, 8-17-65, Cl. 224—26.

Moolenaar, Robert J.: *See*—
Blue, Robert D., and Moolenaar. 3,201,229.

Moore Business Forms, Inc.: *See*—
Goreham, Peter E. 3,201,019.

Moore, Frank A., to Creed & Co. Ltd. Projecting teleprinter with platen movable into and out of projection field. 3,200,928, 8-17-65, Cl. 197—55.

Moore, Lee C., Corp.: *See*—
Woolslayer, Homer J., and Jenkins. 3,201,091.

Moore, Mary L.: *See*—
Schmitt, William F., Breslin, and Moore. 3,201,761.

Moore, Robert F. Flashlight. 3,201,580, 8-17-65, Cl. 240—10.6.

Moorhead, John P., to Evans Products Co. Freight loading apparatus. 3,200,772, 8-17-65, Cl. 105—369.

Moorhead, John P., to Evans Products Co. Bulkhead hold down. 3,200,773, 8-17-65, Cl. 105—376.

Moravets, Clifford. Jumping board. 3,201,120, 8-17-65, Cl. 272—65.

Morel, Georges, Y. Menoret, R. Levy, and O. Gryszkiewicz-Trochimowski, to French State represented by the Minister of Armed Forces, Powder Department and Institut National de la Recherche Agronomique. Certain 3-aryl-2,4-oxasolidine dione compounds. 3,201,410, 8-17-65, Cl. 260—307.

Morena, Carmen G. Dispensing package with sliding trap chamber. 3,201,008, 8-17-65, Cl. 222—361.

Moretti, William G., Jr.: *See*—
Neuendorf, Charles A., and Moretti. 3,200,642.

Morgan, William V., to Commonwealth Scientific and Industrial Research Organization. Apparatus for the removal of burrs and other foreign matter from fibres. 3,200,445, 8-17-65, Cl. 19—84.

Mori, Hisao: *See*—
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Morin, Lawrence. Automobile swerve alarm system. 3,201,754, 8-17-65, Cl. 340—52.

Morrill, Vaughan, Jr. Pipette. 3,200,650, 8-17-65, Cl. 73—425.6.

Morris, Jack, to American Machine & Foundry Co. Apparatus and method for forming helically welded tubing. 3,201,559, 8-17-65, Cl. 219—62.

Morrison, James L. D., and M. D. Estowski; said Eestowski assor. to V-M Corp. Record changer. 3,201,130, 8-17-65, Cl. 274—10.

Morrison, Kenneth: *See*—
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Morrison, Milton L.: *See*—
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Morrison, Willard L., to The Union Stock Yard and Transit Co. of Chicago. Nuclear reactor fuel element nitrogen fixation. 3,201,322, 8-17-65, Cl. 176—66.

Morrissey, William E. Fishing tackle box. 3,201,017, 8-17-65, Cl. 224—26.

Morrow, Robert S., and G. H. Thomas, to International Research and Development Corp. Continuous vibration monitor device. 3,201,776, 8-17-65, Cl. 340—261.

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Margulies, Lasar. 3,200,815.

Mouron, Bertrand D.: *See*—
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Mower, William W., and D. I. Baker, to North American Aviation, Inc. Two stage baffled injector. 3,200,589, 8-17-65, Cl. 60—39.46.

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Moyer, Donald W., and J. S. Lam, to International Harvester Co. Flow divider valve. 3,200,830, 8-17-65, Cl. 137—101.

Muckelrath, Ernest R., to Air Heaters, Inc. Portable heater. 3,201,098, 8-17-65, Cl. 263—19.

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Mayer, Peter J., Jr., and Mueller. 3,201,798.

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Mueller, John J., and W. Seetoo, to Martin-Marietta Corp. Hot press fabrication of thermoelectric elements. 3,201,235, 8-17-65, Cl. 75—201.

Muffenger, Keith E., to Servo Corp. of America. Hot box detector. 3,201,584, 8-17-65, Cl. 246—169.

Muller, Johann, to H. and F. W. Deckel. Machine tool. 3,200,470, 8-17-65, Cl. 29—26.

Muller, Karl, to Voigtlander A.G. Triplet lens objective. 3,200,704, 8-17-65, Cl. 88—57.

Muller, Karl, and F. Ueberhagen, to Voigtlander A.G. Four-lens objective with anastigmatic image formation. 3,200,703, 8-17-65, Cl. 88—57.

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Munn, Ben, to APF Inc. Picture frame construction. 3,200,526 8-17-65, Cl. 40—152.

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Myers, William R., and R. L. Pruett, to Union Carbide Corp. Reactions of conjugated dienes. 3,201,484, 8-17-65, Cl. 260—666.

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Nelson, Averd G., to Preway Inc. Frame corner fastener assembly. 3,200,913, 8-17-65, Cl. 189—36.

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Netteland, Loyal G., to The Firewel Co., Inc. Controller for pressure suits. 3,200,829, 8-17-65, Cl. 137—81.

Neuendorf, Charles A., and W. G. Moretti, Jr. Maximum performance take-off director. 3,200,642, 8-17-65, Cl. 73—178.

Neufeld, Leonard C., to The Delman Co. Control device for Windshield clearing system. 3,200,667, 8-17-65, Cl. 74—479.

Neugebauer, Wilhelm, F. Endermann, and M. K. Reichel, to Asoplate Corp. Etchable reproduction coatings on metal supports. 3,201,239, 8-17-65, Cl. 96—86.

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Nicholls, Harvey. Earth moving apparatus having means for regulating discharge from earth carrying bowl. 3,200,520, 8-17-65, Cl. 37—129.

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Kirkpatrick, Willard H., Seale, and Noe. 3,201,430.

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Noonan, Walter K., and J. Presni. Automobile luggage carrier and table. 3,201,186, 8-17-65, Cl. 312—241.

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Norris, Paul E., to Procter & Gamble Co. Trifluorostannite salts of amines in oral compositions for caries prophylaxis. 3,201,316, 8-17-65, Cl. 167—93.

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Clarke, Raymond W., and Kenningham. 3,201,609.
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Dros, Albert A. 3,200,582.
Dros, Albert A. 3,200,602.
Grandjean, Rene. 3,201,078.
Guyot, Paul, and Dieleman. 3,200,854.
Johnson, Maurice W. 3,201,682.
Joormann, Hendrik J. M., Diemer, Klasens, and Westerveld. 3,201,622.
Leaders, Wilhelmus L. L. 3,200,481.
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Schmitz, Matthens J. 3,201,519.
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Norton, Henry, H. V., L. B., and D. 3,200,686.

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Norton, Henry, H. V., L. B., and D. 3,200,686.

Norton, Leslie B.: *See*—
Norton, Henry, H. V., L. B., and D. 3,200,686.

Norton, Lynn W.: *See*—
Norton, William H. 3,201,568.

Norton Tool Co. Ltd.: *See*—
Norton, Henry, H. V., L. B., and D. 3,200,686.

Norton, William H., deceased, by L. W. Norton, administratrix, to Thermel Inc. Heating unit with embedded tubular element. 3,201,568, 8-17-65, Cl. 219—538.

Norwalt, Robert H., to Radio Corp. of America. Multivibrator employing voltage controlled variable capacitance element in a coupling network. 3,201,602, 8-17-65, Cl. 307—88.5.

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Nupnau, Arthur E.: *See*—
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Cüppers, Curt, and Kirchhubel. 3,201,795.

O'Donnell, James D. Illuminated copy holder. 3,201,578, 8-17-65, Cl. 240—2.

Oelderik, Jan M., E. L. Mackor, J. C. Platteeuw, and A. van der Wiel, to Shell Oil Co. Hexafluoroantimonic acid-catalysed hydrocarbon conversions. 3,201,494, 8-17-65, Cl. 260—683.47.

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Fuseni, Stephen, and Karabinos. 3,201,420.
Heuer, Charles A. 3,200,480.
Krapcho, John. 3,201,401.
Ryker, Don W. 3,201,500.
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Olsen, C. A., Mfg. Co., The: *See*—
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Olsen, Willy, and B. B. Ellis, to Westinghouse Electric Corp. Wound magnetic core having turns which are given a predetermined set in radius before winding. 3,201,732, 8-17-65, Cl. 336—218.

Olson, Raymond G., and H. W. Ronfeldt, to Power Control Products, Inc. Cylinder and piston arrangement. 3,200,596, 8-17-65, Cl. 60—54.5.

O'Meara, Thomas R., to Hughes Aircraft Co. Wide band amplifier. 3,201,710, 8-17-65, Cl. 330—54.

O'Neil, Joseph R., Jr., A. J. Kirsch, and H. W. Buell, to The Carborundum Co. Abrasive wheel and method of making the same. 3,200,543, 8-17-65, Cl. 51—337.

Operhall, Theodore, C. Yaker, and D. B. Rapoport, to Howe Sound Co. Method of shell mold casting. 3,200,465, 8-17-65, Cl. 22—200.

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Ortlinghaus, Otto: *See*—
Herr, Robert, O. and A. Ortlinghause, and Lemp. 3,200,-017.

Osborn Mfg. Co., The: *See*—
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Osborn, Stephen W., and A. J. Yu, to Thiokol Chemical Corp. Curable copolymers containing carboxyl and organometallic carboxylate and process for their preparation. 3,201,376, 8–17–65, Cl. 260—82.1.

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Munder, Johannes, Heiss, Frits, Osswald, and Heck. 3,201,241.

Ostgaard, John T., to Royal Industries, Inc. Emergency device for pneumatically operated brakes. 3,201,179, 8–17–65, Cl. 303—71.

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Otterbach, Gerd: *See*—
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Ottestad, Jack B., to U.S. Industries, Inc. Piston assemblies. 3,200,716, 8–17–65, Cl. 91—392.

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Ovitron Corp.: *See*—
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Trethewey, William C. 3,200,971.

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Ozenberger, Milton E., to Bell Telephone Laboratories Inc. Common control switching system for radio circuits. 3,201,-522, 8–17–65, Cl. 179—27.

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Pacoroni, Valentine W., and A. E. Smith, to Westinghouse Electric Corp. Connector including a rectifier for voltage reduction. 3,201,617, 8–17–65, Cl. 307—146.

Pagel, Armin B. Wrenches. 3,200,676, 8–17–65, Cl. 81—64.

Palkowski, Henry W., and K. F. Lagerson. Swaging tool for forming joints. 3,200,628, 8–17–65, Cl. 72—62.

Palmer, Winslow, to Sperry Rand Corp. Timing signal synchronizing system. 3,201,792, 8–17–65, Cl. 343—103.

Palovik, Joseph J. Pitching disc optionally capable of sticking or sliding. 3,201,128, 8–17–65, Cl. 273—106.

Palus, Joseph P. Easily assembling and disassembling boat. 3,200,420, 8–17–65, Cl. 9—2.

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Parker, Carlyle V., to United States of America, Navy. Light controlled electronic matrix switch. 3,201,764, 8–17–65, Cl. 340—173.

Parker, Donald O., to Fleetwood Furniture Co. Electronic teaching device. 3,200,516, 8–17–65, Cl. 35—35.

Parker, John H., to National Brass Co. Packaged door assembly. 3,200,447, 8–17–65, Cl. 20—11.

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Gillmore, Jack F., and Elder. 3,200,847.
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Parker Tobacco Co.: *See*—
Parker, Samuel A., Jr. 3,200,859.

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Calabrese, Daniel M., and Pasculle. 3,201,626.

Pasini, Claudio: *See*—
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Pasquier, Claude J., and J. C. Graebner, to International Telephone and Telegraph Corp. Phase shifting system. 3,201,-700, 8–17–65, Cl. 328—55.

Pasquier, Claude J., and F. T. Gutmann, to International Telephone and Telegraph Corp. Coordinate conversion device. 3,201,793, 8–17–65, Cl. 343—112.

Pasquier, Claude J., and F. K. Luteran, to International Telephone and Telegraph Corp. Digital delay system utilising variable decade scalers and ambiguity eliminating circuitry. 3,201,687, 8–17–65, Cl. 324—68.

Patch, Edward, to Evans Products Co. Multiple-position door. 3,200,733, 8–17–65, Cl. 98—9.

Patent Button Co., The: *See*—
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Pattillo, Sidney M., and L. D. France, to L. D. France & Co., Inc. Moisture control unit. 3,200,570, 8–17–65, Cl. 55—227.

Paulson, Harold B. Perforator attachments for offset printing machines. 3,200,667, 8–17–65, Cl. 83—346.

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Payn, Marshall D., and H. I. Toews. Stick feeder. 3,200,934, 8–17–65, Cl. 198—32.

Paynor, Melvin, to Fulford Mfg. Co. Turn lock assembly. 3,201,162, 8–17–65, Cl. 292—202.

Pearl, Judea, to Radio Corp. of America. Apparatus, without moving parts, for moving a storage area along a storage medium. 3,201,765, 8–17–65, Cl. 340—173.1.

Pedersen, Robert D., to Teale & Co. Voltage proximity detector. 3,201,775, 8–17–65, Cl. 340—258.

Peerless of America, Inc.: *See*—
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Pemco Division, Glidden Co., The: *See*—
Carpenter, Robert E. 3,201,270.

Pennington, William. Exhaust purifying arrangement. 3,201,338, 8–17–65, Cl. 204—193.

Peras, Lucien, to Regie Nationale des Usines Renault. Rotary engines. 3,200,794, 8–17–65, Cl. 123—8.

Peres, Guillermo, and L. Gryk, to Royal McBee Corp. Record sensing and feeding apparatus. 3,201,570, 8–17–65, Cl. 235—61.11.

Perl, Cesare A., to Montecatini Societa Generale per l'Industria Minerari e Chimica. Process for preparing the N-monomethyl-amide of O,O-dimethyldithiophosphorylacetic acid. 3,201,442, 8–17–65, Cl. 260—461.

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Peters, Philip H., and D. A. Wilbur, to General Electric Co. Tunable magnetron apparatus. 3,201,712, 8–17–65, Cl. 331—90.

Peters, Raymond S., to Peters Metal Fabricating Co. Knockdown shelving unit. 3,200,775, 8–17–65, Cl. 108—108.

Peters, Theodore F., to General Motors Corp. Latch actuating means. 3,200,623, 8–17–65, Cl. 70—279.

Petersen, Erich: *See*—
Schrodt, Rudolf, and Petersen. 3,200,866.

Petersen, James M.: *See*—
Reed, David D., Petersen, and Kluge. 3,201,440.

Petersen, James M., H. D. Kluge, deceased (H. E. Kluge, administratrix), and D. D. Reed, to Texaco Inc. Mono-(and bis-) hydrocarbonthiophosphonoxyhydroxyalkyl hydrocarbylamines. 3,201,441, 8–17–65, Cl. 260—461.

Petersen, James M., D. D. Reed, and H. D. Kluge, deceased; H. E. Kluge, administratrix, to Texaco Inc. Dialkyl hydrocarbonthiophosphonoxyalkoxyhydroxyhexahydrophthalates and process for making same. 3,201,439, 8–17–65, Cl. 260—461.

Peterson, Edwin F. Method of making a sand retaining blow tube. 3,200,479, 8–17–65, Cl. 260—635.

Peterson, Herbert T., to Weyerhaeuser Co. Sewer sampling system. 3,200,649, 8–17–65, Cl. 73—422.

Peterson, Jack A., and J. L. Delbel, to Magnaflux Corp. Rapid transverse unloading mechanism. 3,200,966, 8–17–65, Cl. 214—1.

Petitto, John J., Sr. Device activated by hip movement of a user. 3,200,536, 8–17–65, Cl. 46—51.

Pfeifer, Alfred, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Tool for fine cutting. 3,200,673, 8–17–65, Cl. 77—58.

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Frashour, Ronald G., and Pfeiffer. 3,200,553.

Pfenning, Robert A.: *See*—
Border, Elmer D., and Pfenning. 3,201,714.

Pfister Chemical Works, Inc.: *See*—
Henrard, Armand I. G., Shulman, and Klotz. 3,201,413.

Phares, Lindsey J., H. M. McCall, R. K. Snow, and E. W. Spannhake, to Raymond International Inc. Method for forming piles in situ. 3,200,599, 8–17–65, Cl. 61—53.64.

Phend, William H.: *See*—
Burns, Thagrus A., and Phend. 3,200,929.

Philco Corp.: *See*—
Clymer, Gerald K. 3,200,490.
Laschenski, Joseph E. 3,201,726.
Lippincott, Holland S. 3,200,763.
Snyder, John W. 3,201,637.
Wagner, Richard C. 3,200,942.

Phillips, Jack E., to Phillips Petroleum Co. Alkylation process control method. 3,200,883, 8–17–65, Cl. 260—683.4.

Phillips Petroleum Co.: *See*—
Brous, Jack C. 3,200,644.
Lindsey, Joe P. 3,201,704.
Phillips, Jack E. 3,200,883.
Piety, Raymond C. 3,201,706.
Sherk, Fred T. 3,201,492.
Sherk, Fred T. and Dixon. 3,201,488.
Wilson, Joseph F., Hillyer, and Vives. 3,201,354.

Phillips, Richard W.: *See*—
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Piatt, David M.: *See*—
Hendricks, John E., and Piatt. 3,201,784.

Picatti, Joe E. Collapsible bag type applicator. 3,200,996, 8–17–65, Cl. 222—107.

Pickles, Joseph, to Ferro Mfg. Corp. Door lock. 3,201,163, 8–17–65, Cl. 292—216.

Pieper, Heins: *See*—
Spolders, Rudolf, Breuing, and Pieper. 3,201,226.

Pierce, George W., G. F. Nadeau, and C. B. Thompson, to Eastman Kodak Co. Composite film element and composition therefor including anti-halation material. 3,201,249, 8–17–65, Cl. 96—84.

Piety, Raymond G., to Phillips Petroleum Co. Tuning system. 3,201,706, 8–17–65, Cl. 328—167.

Pike, John E., to The Upjohn Co. Pregnane-17α-01-16α-acetaldehyde 16β,17-cyclic enol ethers and process for the production thereof. 3,201,392, 8–17–65, Cl. 260—239.55.

Pike, John E., to The Upjohn Co. 3-keto-5'6'-dihydro androstane-[17,16α-c]-pyrans and compounds produced therefrom. 3,201,393, 8–17–65, Cl. 260—239.55.

Pike, John E., to The Upjohn Co. Lactol derivatives of 16-(2-oxo ethyl)-17-hydroxy pregnane steroids. 3,201,394, 8–17–65, Cl. 260—239.55.

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Pintsch Bamag Aktiengesellschaft: *See*—
Kramer, Helmut. 3,201,107.
Kramer, Helmut. 3,201,106.

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Fredenburg, Robert H. 3,201,482.

Platteeuw, Joost C.: *See*—
Oelderik, Jan M., Mackor, Platteeuw, and Van der Wiel. 3,201,494.

Plessey Co. Ltd., The: *See*—
Bucks, Karl E., and Calviou. 3,200,881.

Plonski, Edward S. Powdered coffee dispenser. 3,201,004, 8–17–65, Cl. 222—228.

Pluckebaum, Paul. Method of erecting concrete structures. 3,201,502, 8–17–65, Cl. 264—34.

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Aulich, Willi, and Podlich. 3,200,949.

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Green, Milton. 3,201,284.
Jarrett, Arthur D. 3,201,385.
Land, Edwin H. 3,200,726.
Topas, Jeremy M. 3,200,723.

Pollack, Sid. Container. 3,201,030, 8–17–65, Cl. 229—65.

Pommer, Horst: *See*—
Scheuerer, Guenter, Pommer, Stummeyer, and Fischer. 3,201,458.

Porath, Gordon H. Precision quill-type machine tool spindle. 3,200,671, 8–17–65, Cl. 77—5.

Porsche, Dr. Ing. h.c.F., K.G., Firma: *See*—
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Porter, Alvin J., and A. W. Merchlewitz, to Product Design & Engineering, Inc. Dispensing and closure cap for containers. 3,201,013, 8–17–65, Cl. 222—525.

Porter, Kenneth W., Jr., and D. L. Pringle, to Motorola, Inc. Digital communication system. 3,201,778, 8–17–65, Cl. 340—347.

Porterfield, Ernest C. Drum type meter. 3,200,643, 8–17–65, Cl. 73—200.

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Potter Mary E.: *See*—
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Pouliart, Willy H. P., and G. Van Mechelen, to International Standard Electric Corp. Electrical sorting system. 3,201,-758, 8–17–65, Cl. 340—172.5.

Poulton Mary K.: *See*—
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Poulton, Wilson W., Jr., to I-T-E Circuit Breaker Co. Circuit breaker handle assembly with improved force transfer characteristics. 3,201,557, 8–17–65, Cl. 200—172.

Poulton, Wilson W., Jr., deceased (by M. K. Poulton, executrix), and A. Strobel, to I-T-E Circuit Breaker Co. Armature adjusting structure. 3,201,659, 8–17–65, Cl. 317—176.

Poundstone, William N., to Consolidation Coal Co. Belt conveyor. 3,200,939, 8–17–65, Cl. 198—192.

Power Control Products, Inc.: *See*—
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Power Jets (Research & Development) Ltd.: *See*—
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Powers Regulator Co., The: *See*—
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Powers, Joseph B. Latching cap. 3,200,979, 8–17–65, Cl. 215—9.

Premi, John: *See*—
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Pressman, Abraham I., to Radio Corporation of America. Memory. 3,201,598, 8–17–65, Cl. 307—88.5.

Prestige Products, Inc.: *See*—
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Price Frederick J., Jr., to D. Appleton. Liquid food dispensing device. 3,200,999, 8–17–65, Cl. 222—185.

Price, Michael S. T., to United Kingdom Atomic Energy Authority. Process of forming a carbon article from furfural alcohol and carbon particles. 3,201,330, 8–17–65, Cl. 202—26.

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Porter, Kenneth W., Jr., and Pringle. 3,201,778.

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Procter & Gamble Co.: *See*—
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Product Design & Engineering, Inc.: *See*—
Porter, Alvin J., and Merchlewitz. 3,201,013.

Produits Semi Conducteurs Les: *See*—
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Proops, William R., and G. W. Fowler, to Union Carbide Corp. Curable mixtures comprising epoxide compositions and divalent tin salts. 3,201,360, 8–17–65, Cl. 260—18.

Prosthetics Research Inc.: *See*—
Goodfriend, David J. 3,200,497.

Prouix, John J. Fireman's helmet. 3,201,771, 8–17–65, Cl. 340—227.

Pruett, Roy L.: *See*—
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Pullman Inc.: *See*—
Fox, Joseph M., III, and Yarsa. 3,201,214.
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Purex Corp., Ltd.: *See*—
Glasseo, Donald E. G., and Bratton. 3,201,022.

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Pye Ltd.: *See*—
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Quanstrom, Richard L., to Sinclair Research, Inc. Emulsifiable oil composition. 3,201,349, 8–17–65, Cl. 252—33.4.

Quick, Riley E., to Roller Derby Skate Corp. Accessory for roller skates. 3,201,137, 8–17–65, Cl. 280—11.2.

Quon, Mingwah A.: *See*—
Clark, Thomas C. 3,200,527.

R & R Research Ltd.: *See*—
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R C. Can Co.: *See*—
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Rabinow, Jacob, to Control Data Corp. Reading machine with mark separation. 3,201,752, 8–17–65, Cl. 340—146.3.

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Amodei, Juan J. 3,201,613.
Batsle, William K. 3,201,509.
Brooks, Forrest E., and Iden. 3,201,730.
Handmann, Richard W. 3,201,316.
Law, Harold B. 3,200,469.
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Miller, James C. 3,201,696.
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Pearl, Judea. 3,201,765.
Pressman, Abraham I. 3,201,596.
Skorup, Gordon E. 3,201,652.
Stark, John, Jr. 3,201,642.
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Ramia, Frederick A.: *See*—
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Ramsden, R., & Son Ltd.: *See*—
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Randall, Ralph S. Machine for vacuum sealing bags. 3,200,-560, 8–17–65, Cl. 53—86.

Range, Alan L., to Automatic Telephone & Electric Co. Ltd. Signalling systems for the control of street traffic. 3,201,-740, 8–17–65, Cl. 340—41.

Rapata, George M., to Illinois Tool Works, Inc. Plastic fastener. 3,200,604, 8–17–65, Cl. 85—62.

Rapata, George M., to Illinois Tool Works, Inc. Container package. 3,200,944, 8–17–65, Cl. 206—65.

Rapoport, Daniel B.: *See*—
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Rasmussen, Harvey R. and H. J., G. W. Fisher, and L. G. Moskal, to Alkar Engineering Corp. Smokehouse method. 3,201,264, 8–17–65, Cl. 99—229.

Rasmussen, Ralph J., to Formsprag Co. Ready break loose anti-feedback device. 3,200,916, 8–17–65, Cl. 192—8.

Rasmussen, Richard E., to R. E. and D. R. Rasmussen. French heel structure. 3,200,518, 8–17–65, Cl. 36—34.

Ratliff, George D., Jr. Variable displacement motors and speed controls therefor. 3,200,756, 8–17–65, Cl. 103—120. 120.

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Ray, William A., to International Telephone and Telegraph Corp. Polarised solenoid actuating system. 3,200,561, 8–17–65, Cl. 60—52.

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Phares, Lindsey J., McCall, Snow, and Spannhake. 3,200,599.

Raynor, Russell C., and C. H. Scott, to Dorr-Oliver Inc. Continuously operating sedimentation tanks. 3,200,956, 8–17–65, Cl. 210—531.

Read, William B., to Owens-Illinois Glass Co. Scoring device. 3,200,684, 8–17–65, Cl. 83—12.

Reed, David D.: *See*—
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Reed, David D., to Texaco Inc. Method of producing a monoester of a hydrocarbyl thiophosphonic acid and a polyalkylene glycol. 3,201,438, 8–17–65, Cl. 260—461.

Reed, David D., J. M. Petersen, and H. D. Kluge (deceased), by H. E. Kluge, administratrix, to Texaco Inc. Halogalkyldihydroxyoxahexyl hydrocarbonthiophosphonates. 3,201-,440, 8–17–65, Cl. 260—461.

Reed, David D.: *See*—
Petersen, James M., Reed, and Kluge. 3,201,439.

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Reiber, Clair W.: *See*—
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Reich, Hans, to Dr. Ing. Porsche, h.c.F., K.G., Firma. Synchronisation arrangement for change-speed transmissions. 3,200,920, 8–17–65, Cl. 192—68.

Reichel, Maximilian K.: *See*—
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Reimers Getriebe K.G.: *See*—
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Rein, Albert: *See*—
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Reiner, Fred, and W. S. Linfield, to Aircraft Armaments, Inc. Remote control and indication system. 3,201,754, 8–17–65, Cl. 340—147.

Reinert, Owen E., and R. T. Daly, Jr., to Sperry Rand Corp. Control system for transferring a load from one power source to a second power source. 3,201,592, 8–17–65, Cl. 307—64.

Reiss, Raymond H., Sr., and P. R. T. Hahn, to Ronthor Reiss Corp. Drawer back bearing. 3,201,187, 8–17–65, Cl. 312—346.

Reiss, Ronthor Corp.: *See*—
Reiss, Raymond H. Sr., and Hahn. 3,201,187.

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Kelly, Robert P., Leek, Martin, Morse, Workman, and Roberts. 3,200,710.

Remwood Chemical Co.: *See*—
Meyer, Ronald E. 3,201,685.

Renshaw, William G., and R. A. Lincoln, to Allegheny Ludlum Steel Corp. Stainless steel trim member. 3,201,211, 8–17–65, Cl. 29—183.5.

Resiflex Laboratory: *See*—
Breece, Lee K., Jr. 3,200,415.

Re-Trac-To, Inc.: *See*—
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Reynolds, Delbert D., and R. M. Stewart, to Eastman Kodak Co. Photographic silver halide emulsions sensitized with 1,1-dimethylhydrasinium salts. 3,201,254, 8–17–65, Cl. 96—107.

Reynolds, Delbert D.: *See*—
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Reynolds Metals Co.: *See*—
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Reynolds, Willard S., to Telectron Co., Division of Elliott & Evans, Inc. Control relay circuit. 3,201,658, 8–17–65, Cl. 317—151.

Rhein, Leroy W.: *See*—
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Richardson, Douglas W., to Hart Mfg. (Canada) Ltd. Power controlling device for electrical heating elements. 3,201,-546, 8–17–65, Cl. 200—113.

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Rieber, John G., to United States of America, Navy. Electronic switching circuit. 3,201,607, 8–17–65, Cl. 307—88.5.

Riebert, Walter J., to American Machine and Foundry Co. Pivotal bearing arrangement for electromagnetic operator. 3,201,541, 8–17–65, Cl. 200—87.

Rickard, Corwin L.: *See*—
Fortescue, Peter, and Rickard. 3,201,320.
Fortescue, Peter, and Rickard. 3,201,321.

Rickards, Michael A., to Weber Aircraft Corp. Dynamic test facility. 3,200,634, 8–17–65, Cl. 73—12.

Riddell, Maynard H.: *See*—
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Ringold, Howard J.: *See*—
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Rivard, Alfred L. Jointer-knife setting tool. 3,200,507, 8–17–65, Cl. 33—185.

Robb, Theodore D.: *See*—
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Robbins, William K.: *See*—
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Roberts, John A.: *See*—
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Roberts, Victor I., and M. H. Riddell, to The Borden Co. Pulverulent materials dispenser. 3,201,001, 8–17–65, Cl. 222—194.

Robinson, Ralph C.: *See*—
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Rockoff, Joseph, D. L. Waugh, and W. E. Huber, to Dayco Corp. An endless raw edge V-belt. 3,200,662, 8–17–65, Cl. 74—233.

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Rogg, Otto, to C. Hurth. Work holding, clamping and centering devices for machine tools. 3,200,711, 8–17–65, Cl. 90—1.

Rohm & Haas Co.: *See*—
Fang, Fabian T., and Fiarman. 3,201,357.
Hurwitz, Marvin J., and Beavers. 3,201,479.

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Emerson, Herff C., and Cadwell. 3,200,478.

Roland, Homer F., to United States of America, Air Force. Near miss distance scoring system using doppler effect. 3,201,791, 8–17–65, Cl. 343—12.

Roller Derby Skate Corp.: *See*—
Quick, Riley R. 3,201,137.

Rolls-Royce Ltd.: *See*—
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Ronfeldt, Howard W.: *See*—
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Root, John J., to The Electric Storage Battery Co. Batteries. 3,201,279, 8–17–65, Cl. 136—6.

Root, Vlotti E. Traffic control hive base. 3,200,419, 8–17–65, Cl. 6—4.

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Roper, Geo. D., Corp.: *See*—
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Rosberger, Paul S. Keyboard. 3,200,689, 8–17–65, Cl. 84—423.

Rose, Emilie O. Collapsible easel and support therefor. 3,201,060, 8–17–65, Cl. 248—460.

Rosemount Engineering Co.: *See*—
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Rosen, Raphael, to United States of America, Atomic Energy Commission. Corrosion resistant sealing structure. 3,201,-082, 8–17–65, Cl. 251—366.

Rosener, Wolfgang: *See*—
Siggel, Erhard, Meyer, and Rosener. 3,201,192.

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Ross, Erno H., and E. J. Baxa, to Hughes Aircraft Co. Regulated transistor power supply with automatic shutoff. 3,201,680, 8–17–65, Cl. 323—9.

Rosser, Henry H.: *See*—
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Roth, Alexander. Stereoscopic cinema system. 3,201,797, 8–17–65, Cl. 352—86.

Roth, Curt B.: *See*—
Mueller, Fritz W. H., and Roth. 3,201,255.

Roth, Donald L., to Honeywell Inc. Fuel demand meter with power failure indicating device. 3,201,573, 8–17–65, Cl. 235—151.

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Royal Industries, Inc.: *See*—
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Royal McBee Corp.: *See*—
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Gryk, Leon. 3,201,760.
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Von Kummer, Ferdinand G. 3,201,782.

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Rubens, George J. Adhesively attached resilient safety device for electrical connectors. 3,201,740, 8–17–65, Cl. 339—40.

Ruby, William R., to General Aniline & Film Corp. Preparation of N,N'-dicyclohexyl carbodiimide. 3,201,463, 8–17–65, Cl. 260—651.

Rudisch, Walter E., to The Bendix Corp. Couple. 3,200,658, 8–17–65, Cl. 74—125.5.

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Rumelin, Gottfried, to Teves Alfred Maschinen- und Armaturen-fabrik KG. Hydraulic cylinder assembly for disc brakes. 3,200,911, 8–17–65, Cl. 188—196.

Rumpel. Harvey H., to Barber-Greene Co. Concave adjustment for crushers. 3,201,053, 8–17–65, Cl. 241—286.

Rumsey, Carl E.: *See*—
Stamm, Joseph A., Rumsey, and Franke. 3,200,724.

Ruoff, James S.: *See*—
Nadeau, Gale F., Ruoff, and Thompson. 3,201,251.

Ruoff, Karl: *See*—
Hensler, Paul. Tomala, and Ruoff. 3,200,804.

Ruschig, Heinrich, K. Schmitt, L. Ther, and G. Vogel, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. 1-phenyl-2-loweralkyl and phenyl-loweralkyl-4-tertiary amino-3 5 - dioxo - 1,2,4 - triazolidines. 3,201,404, 8–17–65, Cl. 260—294.

Russell, Edward L. and K. A. Hanover, to Chemetron Corp. Resolution of DL-menthyl hydrogen phthalate with 1-(α-naphthyl)-ethylamine. 3,201,455, 8–17–65, Cl. 260—475.

Russell, Howard G.: *See*—
Anderson, Arvin D., Foster, and Russell. 3,201,841.

Russell, Richard C.: *See*—
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Ryan, Danahey, to E. I. du Pont de Nemours and Co. Web unwind apparatus. 3,201,057, 8–17–65, Cl. 242—58.1.

Ryan, Fay T.: *See*—
Weber, Karl H., Ryan, and Clark. 3,200,475.

Ryan, William P., to Royal McBee Corp. Positioning mechanism. 3,200,927. 8–17–65, Cl. 197—16.

Ryffel, Hans, to Dr. G. Datwyler. Fluid-flow device, particularly rotary compressor and the like and slider construction. 3 201.034. 8–17–65, Cl. 230—153.

Ryker, Don W., to Olin Mathieson Chemical Corp. Propellant powder making process. 3,201,500, 8–17–65, Cl. 264—3.

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Kleinschmidt, Edward E., and Bradbury. 3,201,514.

SKF Kugellagerfabriken Gesellschaft mit beschrankter Haftung: *See*—
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Sabol, Victor F., and G. Sivly, to Westinghouse Electric Corp. Conducting structure and electric switch. 3,201,535, 8–17–65, Cl. 200—48.

Sadler, Byron L.: *See*—
Werner, Frank D., Grindheim, and Sadler. 3,201,575.

Safford, Earl: *See*—
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Saile, Charles J., to James G. Biddle Co. Corona test set calibrator having a mercury wetted relay switch for providing a square wave calibration signal. 3,201,686, 8–17–65, Cl. 324—54.

Saint-Gobain, Compagnie de: *See*—
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St. Louis Shipbuilding-Federal Barge, Inc.: *See*—
Gowan, Willard E., Sr. 3,200,784.

St. Regis Paper Co.: *See*—
Steck, Clyde O. 3,200,552.

Sakowski, Walter J., to Olin Mathieson Chemical Corp. Brine preparation. 3,201,335, 8–17–65, Cl. 204—99.

Salutsky, Murrell L., to W. R. Grace & Co. Process for preparation of copper ammonium phosphate. 3,201,194, 8–17–65, Cl. 23—105.

Salyer, Ival O., to Monsanto Co. Polypropylene plasticised with mineral oil. 3,201,364, 8–17–65, Cl. 260—33.6.

Sanbern Mortgage and Finance Co.: *See*—
Bird, Gordon S., Jr. 3,200,601.

Sandos Ltd.: *See*—
Bohler, Hans, Kehrer, and Maderni. 3,201,402.

Santomieri, Louis S. Bullet swaging attachment for reloading press. 3,200,695, 8–17–65, Cl. 86—1.

Sasanko, Alvin M., to Swedish Crucible Steel Co. Apparatus for rendering polystyrene sheet material flexible. 3,200,-437, 8–17–65, Cl. 18—1.

Saunders, John P., H. K. Dick, and A. L. Tardiff, to Sylvania Electric Products Inc. Filament transfer apparatus. 3,200,965, 8–17–65, Cl. 214—1.

Saunders, Robert C., Jr. Fluid injector. 3,200,764, 8–17–65, Cl. 103—264.

Sawa, Yoshiro, N. Tsuzi, and H. Tada, to Shionogi & Co., Ltd. 3-alkoxy-substituted-N lower alkanoyl morphinans. 3,201,-403, 8–17–65, Cl. 260—285.

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Schalkwijk, Jan, and M. Koeman, to North American Philips Co. Inc. Party line. 3,201,518, 8–17–65, Cl. 179—17.

Schaller, Frank H., and D. W. Hubbard, to Sperry Rand Corp. High speed printer with ribbon-shift assembly for permitting printing in different ink. 3,200,740, 8–17–65, Cl. 101—96.

Schaus, Robert B., to North American Aviation, Inc. Slurry flowmeter. 3,201,083, 8–17–65, Cl. 253—148.

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Schenk, Adelbert J., J. P. Kohls, and W. T. Brennan, to Jervis B. Webb Co. Dispatching control system for conveyors. 3,200,933, 8–17–65, Cl. 198—38.

Scherbner, Paul J., and R. E. Saxtan, to The Beryllium Corp. Alloy and method of producing the same. 3,201,234, 8–17–65, Cl. 75—153.

Scherff, Helmut, to Gutehoffnungshutte Sterkrade Aktiengesellschaft. Blowing tube apparatus and method for operating it. 3,201,103, 8–17–65, Cl. 266—34.

Scheuerer, Guenter, H. Pommer, H. Stummeyer, and A. Fischer, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Herbicidal esters of α,α-dichlorobutyric acid. 3,201,458, 8–17–65, Cl. 260—487.

Schiebeler, Werner, to International Standard Electric Corp. Rotor controlled step motor. 3,201,671, 8–17–65, Cl. 318—138.

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Schloemann Aktiengesellschaft: *See*—
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Wehmeyer, Werner. 3,200,625.

Schmidt, Albert, to F. Frutiger. Dispersion-type blasting explosives. 3,201,291, 8–17–65, Cl. 149—22.

Schmidt Ernst O. Hardness tester. 3,200,639, 8–17–65, Cl. 73—79.

Schmidt, Karl, G.m.b.H.: *See*—
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Schmidt, Walter L., to Waverly Associates, Inc. Vacuum-venturi process of rapidly digesting pulp. 3,201,303, 8–17–65, Cl. 162—55.

Schmidt-Thomee, Georg, H. Eilbracht, K. Kinkel, H. G. Trieschmann, F. Urban, and G. Zoche, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Process for the production of polyethylene. 3,201,380, 8–17–65, Cl. 260—94.9.

Schmitt, Karl: *See*—
Ruschig, Heinrich, Schmitt, Ther, and Vogel. 3,201,404.

Schmitt, William F., M. A. Breslin, and M. L. Moore, to Sperry Rand Corp. Indirect addressing system. 3,201,-761, 8–17–65, Cl. 340—172.5.

Schmits, Mattheus J., to North American Philips Co., Inc. Automatic telephone exchanges having a subscriber's memory. 3,201,519, 8–17–65, Cl. 179—18.

Schrader, Gerhard, to Farbenfabriken Bayer Aktiengesellschaft. O-alkyl-O-cycloalkyl thiophosphoric acid S-phenyl-esters. 3,201,444, 8–17–65, Cl. 260—461.

Schreiner, Louis W., to Warwick Electronics Inc. Direct current coupled contrast control. 3,201,513, 8–17–65, Cl. 178—7.5.

Schreyer, Edward P. Thermostatically controlled electrically heated cooking utensil. 3,201,588, 8–17–65, Cl. 219—441.

Schrimpf, Henry W., to Honeywell Inc. Information handling apparatus. 3,201,760, 8–17–65, Cl. 340—172.5.

Schrimpf, Henry W., to Honeywell Inc. Electrical data processing apparatus. 3,201,762, 8–17–65, Cl. 340—172.5.

Schrodt, Rudolf, and E. Petersen, to Reimers Getriebe K.G. Control mechanism for a driving unit consisting of a driving engine and an infinitely variable gear. 3,200,666, 8–17–65, Cl. 74—472.

Schuldt, Paul H.: *See*—
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Schultz, Robert T. Short protector circuit. 3,201,650, 8–17–65, Cl. 317—23.

Schulz, Arthur C., to Hooker Chemical Corp. Process for the production of trimethyl phosphite. 3,201,436, 8–17–65, Cl. 260—461.

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Hjermstad, Hans U., and Schumacher. 3,201,683.

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Schummer, Anton: *See*—
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Hanulec, Joseph D., and Schwab. 3,201,705.

Schwan, Judith A., and J. E. Dunn, to Eastman Kodak Co. Accelerators for reversal color development. 3,201,242, 8–17–65, Cl. 96—55.

Schwanendugel, Paul J., to Westinghouse Electric Corp. Timing static device. 3,201,604, 8–17–65, Cl. 307—88.5.

Schweitzer, Otto: *See*—
Behrends, Jurgen, and Schweitzer. 3,201,371.

Schwenk, William E., to International Paper Co. Method and apparatus for sealing milk containers and the like. 3,200,567, 8–17–65, Cl. 53—39.

Schwerdofer, Hans J., to Fichtel & Sachs A.G. Multiple speed hub with internal speed changing mechanism. 3,200,669, 8–17–65, Cl. 74—760.

Schwitzer Corp.: *See*—
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Scott, Clifford O. Safety door for vehicles. 3,201,169, 8–17–65, Cl. 296—44.

Scott, Ernest R., to General Electric Co. Appliance switch and conductor assembly. 3,201,553, 8–17–65, Cl. 200—157.

Scott, Howard W., and W. H. Houston, to Verilux Inc. Fluorescent lighting fixture. 3,201,576, 8–17–65, Cl. 240—1.1.

Scott, James O.: *See*—
Bachman, Kenneth C., Behymer, Langdon, Lawson, Manne, Robbins, Rosser, Russell, and Scott. 3,201,-342.

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Boswell, George A., Jr., and Scribner. 3,201,426.

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Searcy, Ronald L., and L. M. Bergquist, to Hyland Laboratories. Diagnostic procedure. 3,201,202, 8–17–65, Cl. 23—230.

Sebastian, Ray. Shaping device for artificial eyelashes. 3,200,823, 8–17–65, Cl. 132—31.

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Seetoo, Winston: *See*—
Mueller, John J., and Seetoo. 3,201,235.

Seko, Maomi: *See*—
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Sharman, Donald A.: *See*—
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Sharp, Bernard C.: *See*—
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Sharp, Douglas M., to International Telephone and Telegraph Corp. Radio receivers. 3,201,696, 8–17–65, Cl. 325—423.

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MacNab, Adrian J., and Treseder. 3,201,335.
Oelderik, Jan M., Mackor, Platteeuw, and van der Wiel. 3,201,494.

Shen, Tsung-Ying, to Merck & Co., Inc. New 1-heteroacyl-3-indolyl aliphatic acids. 3,201,414, 8–17–65, Cl. 260—319.

Sherk, Fred T., to Phillips Petroleum Co. Separation of hydrocarbons possessing volatility differences. 3,201,492, 8–17–65, Cl. 260—681.5.

Sherk, Fred T., and R. E. Dixon, to Phillips Petroleum Co. Process and apparatus for non-catalytic reaction. 3,201,-488, 8–17–65, Cl. 260—672.

Sherman, Roger M.: *See*—
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Shobet, Herbert N.: *See*—
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Shonts, Loran A., Jr., E. B. Offutt, and C. W. Hunter, to The Vendo Co. Automatic rental or purchase money collection apparatus for vending machines. 3,200,923, 8–17–65, Cl. 194—1.

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Showalter, William E., to Union Oil Co. of California. Preparation of hydrogen clays. 3,201,197, 8–17–65, Cl. 23—112.

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Shultz, Paul L., to R. J. Enstrom Corp. Helicopter tail rotor structure and method of construction. 3,200,477, 8–17–65, Cl. 29—156.8.

Shurtleff, Louis C., to Chatleff Controls, Inc. Coupling means for connecting conduits. 3,201,148, 8–17–65, Cl. 285—3.

Sichak, William, and Z. G. Lyon, to International Telephone and Telegraph Corp. Single sideband communication system. 3,201,692, 8–17–65, Cl. 325—17.

Sidelman, Abraham. Bristle brush hair curler. 3,200,825, 8–17–65, Cl. 132—41.

Siegel, Al L. Two-way hospital light. 3,201,582, 8–17–65, Cl. 240—73.

Siegel, Martin, and S. Zelnick, to Weldotron Corp. Apparatus for shrinking wrappers of packages. 3,200,561, 8–17–65, Cl. 53—184.

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Signal-Stat Corp.: *See*—
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Silver, Howard B.: *See*—
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Simmons, Harold C., and L. B. O'Sickey, to Parker-Hannifin Corp. Nozzle. 3,201,050, 8–17–65, Cl. 239—453.

Simmons, Irving F., Jr., and R. G. Pinder, to Eastman Kodak Co. Organic finishing system for application to polyolefins and polyallomers for vacuum metallizing and decorative purposes. 3,201,271, 8–17–65, Cl. 117—47.

Simms, John A., to E. I. du Pont de Nemours and Co. Terpolymers containing at least 65% ethylene. 3,201,374, 8–17–65, Cl. 260—80.5.

Simpson, Frank S., to Illinois Stoker Co. Refuse incinerator. 3,200,776, 8–17–65, Cl. 110—15.

Simpson, Henry A. Device for automatically turning on lights of automotive vehicles. 3,201,644, 8–17–65, Cl. 315—83.

Simpson Pope Ltd.: *See*—
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Sinclair Research, Inc.: *See*—
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Decker, William H. 3,201,340.
Kovach, Stephen M. 3,201,485.
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Quanstrom, Richard L. 3,201,349.

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Sivly, George: *See*—
Sabol, Victor F., and Sivly. 3,201,535.

Skorup, Gordon E., to Radio Corp. of America. Transformer-rectifier combination. 3,201,652, 8–17–65, Cl. 317—99.

Skraban, Casimir J. Anchor winch. 3,201,092, 8–17–65, Cl. 254—187.

Slaughter, John I., to Corhart Refractories Co., Inc. Method of producing fusion cast, basic refractory bodies. 3,201,267, 8–17–65, Cl. 106—59.

Sloan Valve Co.: *See*—
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Smith, Alan G., to The Dow Chemical Co. Mixing apparatus. 3,201,093, 8–17–65, Cl. 259—4.

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Smith, James E., P. J. Sweeny, and R. M. Miller, to Westinghouse Electric Corp. Dynamoelectric machines. 3,201,625, 8–17–65, Cl. 310—154.

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Smith, Keith L., to Union Carbide Corp. Alkylene oxide polymers stabilized with urea compounds. 3,201,367, 8–17–65, Cl. 260—45.9.

Smith, Sidney E., to Dennison Mfg. Co. Metering dispenser. 3,201,009, 8–17–65, Cl. 222—443.

Smith, Thomas R., to The Maytag Co. Drier control. 3,200,511, 8–17–65, Cl. 34—45.

Smyser, James A. Trailer connecting apparatus. 3,201,144, 8–17–65, Cl. 280—477.

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Sobey, Albert J., and C. M. Hawkins, to General Motors Corp. Rocket propulsion apparatus. 3,200,583, 8–17–65, Cl. 60—35.6.

Societa Farmaceutici Italia: *See*—
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Coda, Severina, Colo, Glaesser, and Pasini. 3,201,459.

Societa Italiana Prodotti Shering: *See*—
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Societe d'Etudes et d'Applications Industrielles Commerciales et Immobilieres Inter-Technique: *See*—
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Society Orogil: *See*—
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Solomon, Frank, R. F. Enters, and R. Di Pasquale, to Yardney International Corp. Negative electrode method and machine for making the same. 3,201,281, 8–17–65, Cl. 136—30.

Solomon, Nathan L. Hair curler. 3,200,826, 8–17–65, Cl. 132—41.

Solum, James R., and W. C. Hempel, to B&W Inc. Close tolerance centralizer with interconnecting stop collar. 3,200,884, 8–17–65, Cl. 166—241.

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Sonnabend, Lawrence F., to The Dow Chemical Co. Polyamines from diphenyl ether. 3,201,469, 8–17–65, Cl. 260—570.5.

Sorenson, Glenn P., and R. G. McKee, to MB Associates. Method of duplicating ballistic density. 3,200,747, 8–17–65, Cl. 102—49.

Spalla, Celestino: *See*—
Amici, Alba M., Minghetti, Spalla, and Tonolo. 3,201,326.

Spalten, Robert. Reinforced interchangeable artificial tooth and backing. 3,200,495, 8–17–65, Cl. 32—9.

Spalten, Robert. Interchangeable artificial tooth and backing. 3,200,496, 8–17–65, Cl. 32—9.

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Phares, Lindsey J., McCall, Snow, and Spannhake. 3,200,599.

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Cosby, Baden L. 3,201,600.
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Fine, Arnold M. 3,201,789.
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Palmer, Winslow. 3,201,792.
Reinert, Owen E., and Daly, Jr. 3,201,592.
Schaller, Frank H., and Hubbard. 3,200,740.
Schmitt, William F., Breslin, and Moore. 3,201,761.
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Wing, Willis G. 3,200,653.

Spivack, John D., to Geigy Chemical Corp. Tertiary-aminoalkylated primary amines. 3,201,472, 8–17–65, Cl. 260—583.

Spivack, John D., and M. Dexter. 2-Substituted aminothiazoles. 3,201,409, 8–17–65, Cl. 260—306.8.

Spolders, Rudolf, W. Breuing, and H. Pieper, to Ruhrstahl Huttenwerke, Aktiengesellschaft. Steel purification vacuum method. 3,201,226, 8–17–65, Cl. 75—49.

Spurlin, Harold M., to Hercules Powder Co. Extrusion aids for polyethylene. 3,201,363, 8–17–65, Cl. 260—30.4.

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Stamm, Joseph A., C. E. Rumsey, and R. F. Franke, to International Telephone and Telegraph Corp. Apparatus for accurate formation and presentation of a visual display. 3,200,724, 8–17–65, Cl. 95—12.

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Standard Coated Products Inc.: *See*—
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Fremery, Maximilian I., and Fields. 3,201,436.

Standard Oil Co. (Ohio), The: *See*—
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Idol, James D., Jr., and Greene. 3,201,451.

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Orthuber, Richard K., and Stanley. 3,201,630.

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Hill, Vernon L., and Stapleton. 3,201,286.

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Stark, Marvin K., to General Motors Corp. Pinion torque analyser. 3,200,641, 8–17–65, Cl. 73—138.

Starp, Frans W. R., and H. K. Mutterer, to Alfred Gauthier, G.m.b.H. Photographic intra-lens shutter. 3,200,729, 8–17–65, Cl. 95—53.

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Stearns, Charles E. Tiltable pouring cradle. 3,201,074, 8–17–65, Cl. 248—141.

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Steeg, Katherine. Catamenial pad holding device. 3,200,460, 8–17–65, Cl. 24—81.

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Steffes, Adam P. G. Pump. 6,200,757, 8–17–65, Cl. 103—150.

Steinhauer, Alfred F., and D. G. Brown, to The Dow Chemical Co. Alkylhaloanpthalene sulfonates. 3,201,461, 8–17–65, Cl. 260—505.

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Stephan, Siegfried, to Belder Trust reg. Comminuting and mixing assembly. 6,200,867, 8–17–65, Cl. 146—192.

Stephens, Wayne A. Door template. 6,200,509, 8–17–65, Cl. 33—194.

Sternberg, Samuel. Detachable stirrup for women's slacks and stretch-pants. 3,200,414, 8–17–65, Cl. 2—222.

Stevenhagen, Pieter G., to North American Philips Co., Inc. Memory matrix with insulating frame. 3,201,766, 8–17–65, Cl. 340—174.

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Stewart, Orald L., to Cleveland Metal Abrasive Co. Method of heat treating metal shot. 3,201,289, 8–17–65, Cl. 148—13.

Stewart, Roy B., Jr., to American Machine & Foundry Co. Electromagnetic relay with shading ring. 3,201,660, 8–17–65, Cl. 317—184.

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Sticker, Robert E.: *See*—
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Stine, Laurence O., and D. B. Broughton, to Universal Oil Products Co. Continuous sorption process with emphasis on product purity. 3,201,491, 8–17–65, Cl. 260—676.

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Stone, Harry D., to Summit Products Co. Interlocking masons' guide line holders. 3,200,500, 8–17–65, Cl. 33—85.

Stone, Shannah G.: *See*—
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Straley, James M., and D. J. Wallace, to Eastman Kodak Co. 1-hydroxy-4-N-[p-(2'-pyrrolidonyl-1-)phenyl]-amino anthraquinones. 3,201,415, 8–17–65, Cl. 260—326.5.

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Strayer, Arthur C., deceased (by E. B. Strayer, executrix), to E. B. Strayer. Lock-seal night depository bag. 3,200,868, 8–17–65, Cl. 150—7.

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Strecker, Charles E., deceased (by J. E. Strecker, executrix), to General Electric Co. Dimming circuit and apparatus for gaseous discharge lamps. 3,201,645, 8–17–65, Cl. 315—98.

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Stuebe, Louis M., and J. D. Parker, to Beloit Iron Works. Cylinder mold for paper making machine. 3,201,309, 8–17–65, Cl. 162—357.

Stummeryer, Herbert: *See*—
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Suchowolec, Walter T., to Turner Corp. Sportman's heater assembly. 3,200,809, 8–17–65, Cl. 126—92.

Summerlin, Frederick A. Transmission mechanism. 3,200,590, 8–17–65, Cl. 60—51.

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Sun, Kuan H., to Westinghouse Electric Corp. Discriminating radiation detector for determining a given radiation in the presence of other radiations. 3,201,590, 8–17–65, Cl. 250—83.3.

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Surh, Philip C. Dynamic speaker. 3,201,529, 8–17–65, Cl. 179—115.5.

Suter, Erwin. Drafting appliance. 3,200,774, 8–17–65, Cl. 108—7.

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Svenska Flaktfabriken, Aktiebolaget: *See*—
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Gustafsson, Stig, and Maartmann. 3,200,566.

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Swarts, Richard L., and W. D. Highsmith, to Universal Business Machines Inc. Document feeder and control system. 3,201,114, 8–17–65, Cl. 271—11.

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Sweeney, Patrick M., and L. L. Eberhart, to Consolidated Kinetics Corp. Apparatus for isolating vibrations. 3,201,109, 8–17–65, Cl. 267—1.

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Swesy, Montgomery C., and R. L. Doyle, to Western Progress, Inc. Signalling device. 3,200,786, 8–17–65, Cl. 116—63.

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Swift, David J., to Simpson Pope Ltd. Gas stove. 6,200,808, 8–17–65, Cl. 126—37.

Swift, Harvey C., to Kelsey-Hayes Co. Automatic brake adjusting mechanism. 3,200,909, 8–17–65, Cl. 188—79.5.

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Bowers, Albert, and Halpern. 3,201,436.
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Taccone, Russell W., to Taccone Corp. Cushioning device. 3,201,110, 8–17–65, Cl. 267—1.

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Takagi, Ichiso. Heat exchanger tubes. 3,200,848, 8–17–65, Cl. 138—38.

Takagi, Keitaro, to Ishikawajima-Harima Jukogyo Kabushiki Kaisha. Foldable hydrofoil. 3,200,781, 8–17–65, Cl. 114—66.5.

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Technicon Instruments Corp.: *See*—
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Telectron Co., Division of Elliott & Evans, Inc.: *See*—
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Petersen, James M., Reed, and Kluge. 3,201,439.
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Reed, David D., Petersen, and Kluge. 3,201,440.

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Thiele, Henry F., Jr.: *See*—
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Thier, Hermann W. R. to Bohler, Gebr., & Co. Aktiengesellschaft. Use of steel involving prolonged stressing at elevated temperatures. 3,201,282, 8-17-65, Cl. 75—126.

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Mitchell, William H. 3,200,584.
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Thirion, Rene A. L., to D.B.A., Societe Anonyme. Fluid pressure servomotors. 3,200,579, 8-17-65, Cl. 60—10.5.

Thoma, Oswald H., to Unipat A.G. Axial piston pumps or motors. 3,200,762, 8-17-65, Cl. 103—162.

Thoma, Oswald, and T. D. H. Andrews, to Dowty Hydraulic Units Ltd., and Unipat A.G. Hydraulic apparatus. 3,200,760, 8-17-65, Cl. 103—162.

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Thorne, Robert L., to International Telephone and Telegraph Corp. Stroboscopic display with sample-and-hold circuit. 3,201,641, 8-17-65, Cl. 315—22.

Thouvenelle, Beryl B., W. H. Stringer, and C. G. Anderson. Loading and unloading device for securing truck trailers upon carrying vehicles. 3,200,977, 8-17-65, Cl. 214—515.

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Tollmith, Henry, to The Dow Chemical Co. N-(diethoxyphosphinothioyl) - 2,2,2 - trichloroacetamide. 3,201,446, 8-17-65, Cl. 260—461.

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Topol, George J., to Bowser, Inc. Photoelectric comparison apparatus for indicating the amount of contamination in liquids. 3,200,700, 8-17-65, Cl. 88—14.

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Tranbeau, Sherman T. Rotary feeder mechanism. 3,201,007, 8-17-65, Cl. 222—345.

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Tredl, James, and E. P. De Crasne, to Crane Co. Multi-lock lever and coupling. 3,200,836, 8-17-65, Cl. 137—385.

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Tringali, Dominick, to General Time Corp. Snap action incremental actuator. 3,200,655, 8-17-65, Cl. 74—64.

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Tsunoda, Yoshio, M. Seko, M. Kato, T. Misumi, M. Mituishi, and Y. Toyoda, to Ashi Kasei Kogyo Kabushiki Kaisha. Electrodialyser. 3,201,339, 8-17-65, Cl. 204—301.

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Urry, Wilbert H., to Monsanto Co. Unsaturated ether esters and process for their production. 3,201,456, 8-17-65, Cl. 260—476.

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Van Dijk, Christiaan P., and W. G. Hudson, to Pullman, Inc. Process for treating the effluent gas obtained by the oxidation of a hydrogen halide gas. 3,201,201, 8-17-65, Cl. 23—219.

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Van Steenburgh, Leon R., Jr. Apparatus for making ice members. 3,200,611, 8-17-65, Cl. 62—296.

Van Wilgen, Jacob, J. Nijmeyer, and A. C. Lampe, to North American Philips Co., Inc. Supply circuit and abrupt current and voltage limiting means therefor. 3,201,661, 8-17-65, Cl. 323—20.

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Vermes, Laszlo G., Moment comparator. 3,200,968, 8-17-65, Cl. 212—39.

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Vice, Charles L.: *See*—
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Vickers, Stanley E., to Imperial Mfg. Co. Hydraulic tapper unit with means to permit yielding of the feed nut. 3,200,425, 8-17-65, Cl. 10—136.

Viersma, Taco J., and H. Gunther, to North American Philips Co., Inc. Hydraulic servo-mechanism. 3,200,713, 8-17-65, Cl. 91—49.

Virtue, Eugene P., M. D. Jennings, and W. C. Swanson, to International Harvester Co. Force booster. 3,200,714, 8-17-65, Cl. 91—378.

Vischer, Ernst: *See*—
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Vitt, George N. Aerodynamic shotgun slug. 3,200,751, 8-17-65, Cl. 102—92.5.

Vives, Van C.: *See*—
Wilson, Joseph F., Hillyer, and Vives. 3,201,854.

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Voegeli, Donald H., and G. F. Carabet, to The Hoover Co. Suction cleaner. 3,200,432, 8-17-65, Cl. 15—328.

Voelcker, Rudolph W., to Western Electric Co., Inc. Coaxial line to strip line connector. 3,201,721, 8-17-65, Cl. 333—33.

Voelker, Henry J., and H. J. Ornott. Traffic safety device. 3,200,705, 8-17-65, Cl. 88—78.

Voet, Andries, J. Iannicelli, and A. C. Teter, to J. M. Huber Corp. Modified carbon black production. 3,201,200, 8-17-65, Cl. 23—209.4.

Vogel, Gerhard: *See*—
Ruschig, Heinrich, Schmitt, Ther, and Vogel. 3,201,404.

Vogt, Wilhelm: *See*—
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Von Hanteville, Tankred: *See*—
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Von Kummer, Ferdinand G., to Royal McBee Corp. Code to code converters. 3,201,752, 8-17-65, Cl. 340—347.

Von Opel, Dr. h.c. Georg: *See*—
Marker, Hannes. 3,201,140.

Voorhies, Carl. Automatic handling of magnetic parts. 3,200,921, 8-17-65, Cl. 198—35.

Voytik, Paul: *See*—
Narbutt, Paul, Monito, and Voytik. 3,201,727.

Vroom, Clifford G., to Eastman Kodak Co. Lamp socket for photoflash unit. 3,201,741, 8-17-65, Cl. 339—45.

Wacker-Chemie G.m.b.H.: *See*—
Miltschitzky, Gustav, and Schindelin. 3,201,392.

Wada, Sadaharu, to Matsushita Electric Industrial Co., Ltd. Eddy current brake to control motor speed. 3,201,674, 8-17-65, Cl. 318—302.

Wagaman, Robert, to Monocosmock Enterprises, Inc. Supplemental container for a bottle. 3,201,015, 8-17-65, Cl. 222—570.

Waggaman, William H. Method and apparatus for comparing smoking properties of various cigarettes. 3,200,648, 8-17-65, Cl. 73—343.

Wagner, Joseph R.: *See*—
Humphreys, Thomas W., Wagner, and Hinkley. 3,201,-262.

Wagner, Kuno, to Farbenfabriken Bayer Aktiengesellschaft. Biuret polyisocyanate based polyurethanes. 3,201,372, 8-17-65, Cl. 260—77.5.

Wagner, Richard C., to Phileo Corp. Article packaging. 3,200,942, 8-17-65, Cl. 206—45.31.

Wagstaff, James B., to United States Steel Corp. Method of regulating the discharge of molten metal from ladles. 3,200,457, 8-17-65, Cl. 22—209.

Wake, James F., and J. Verveet, to Carrier Corp. Lubricant control means for refrigeration apparatus. 3,200,603, 8-17-65, Cl. 62—84.

Walbro Corp.: *See*—
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Waldan, Karl: *See*—
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Walden, Samuel L., and A. B. Thomas. Power boat attachment. 3,200,782, 8-17-65, Cl. 114—66.5.

Waldherr, Rudolf, and L. Weiland, to Hugo Stinnes Personlich Gesellschaft mit beschrankter Haftung. Winding roll or mandrel. 3,201,058, 8-17-65, Cl. 242—72.1.

Walker, David E., and R. A. Noland, to United States of America, Atomic Energy Commission. Cladding process. 3,200,491, 8-17-65, Cl. 29—474.4.

Walker Mfg. Co.: *See*—
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Wallace, David J.: *See*—
Straley, James M., and Wallace. 3,201,415.

Wallace, Eugene F.: *See*—
Lanigan, James P., Wallace, Kotter, and Salaun. 3,200,-919.

Wallace, Stanley: *See*—
Alexander, Laurence E., and Wallace. 3,201,587.

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Walter, Ernest W., to Akro-Mils, Inc. Plastic drawer construction. 3,200,983, 8-17-65, Cl. 220—22.

Walton, Sylvan B. Live fishbait holder. 3,200,532, 8-17-65, Cl. 43—44.6.

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Wark, John D., and C. L. Metsler. Dispensing container. 3,201,008, 8-17-65, Cl. 222—206.

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Warrick, Arthur M. Invalid bed. 3,200,416, 8-17-65, Cl. 5—62.

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Waugh, Dale L.: *See*—
Rockoff, Joseph, Waugh, and Huber. 3,200,662.

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Wayman, James B. Stropper. 3,200,670, 8-17-65, Cl. 76—99.2.

Webb, George, to Arco Corp. Parachute. 3,200,744, 8-17-65, Cl. 102—96.4.

Webb, Jervis B., Co.: *See*—
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Weber Aircraft Corp.: *See*—
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Weber, Karl H., F. T. Ryan, and J. M. Clark, to Eltra Corp. Method of making a two-piece frame for dynamo-electric machines. 3,200,475, 8-17-65, Cl. 29—155.53.

Weber, Kenneth R.: *See*—
Buhr, August G., Tanke, and Weber. 3,201,005.

Webster, David E. Sheet forming method and apparatus. 3,201,305, 8-17-65, Cl. 162—203.

Webster, Owen W., to E. I. du Pont de Nemours and Co. Onium tetracyanoethylenides. 3,201,399, 8-17-65, Cl. 260—266.

Weeks, James L. Climbing stirrups. 3,200,904, 8-17-65, Cl. 182—134.

Wehmeyer, Werner, to Schloemann Aktiengesellschaft. Cooling and thermal insulation of the tools of extrusion presses. 3,200,625, 8-17-65, Cl. 72—42.

Weidel, Joachim, and W. Bauer, to International Standard Electric Corp. Electron tube for indicating symbols, letters, numerals, and the like. 3,201,634, 8-17-65, Cl. 313—109.5.

Weidknecht, Charles J., to United Aircraft Corp. High frequency power circuit. 3,201,711, 8-17-65, Cl. 330—56.

Weil, Edward D., to Hooker Chemical Corp. Novel sulfones from benzhaleobicyclo(2.2.1) heptadienes. 3,201,417, 8-17-65, Cl. 260—327.

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Weinberg, Earl H., and R. E. Spaulding, said Weinberg, assor., to Miehle-Goss-Dexter, Inc. Drive means for an intermittently operating member. 3,200,741, 8-17-65, Cl. 101—221.

Weingarten, Abraham. Motor vehicle sun visor with adjustable wings. 3,201,170, 8-17-65, Cl. 296—97.

Weingartner, Bernhard, to Akustische U. Kino-Gerate Gesellschaft m.b.H. Capsule-enclosed electro-acoustic transducer and transistor amplifier. 3,201,516, 8-17-65, Cl. 179—1.

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Cubert, Jack S., and Weintraub. 3,201,614.

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Weissman, Harold M., to General Motors Corp. Thrust bearing. 3,201,182, 8-17-65, Cl. 308—10.

Welch, Archibald H., to Converters, Inc. Envelope attaching machine. 3,200,719, 8-17-65, Cl. 93—61.

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Well Service Inc.: *See*—
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Welland, John E. T., to Greecen Ltd. Taximeters. 3,201,037, 8-17-65, Cl. 235—30.

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Wells, Martin. Gears. 3,200,665, 8-17-65, Cl. 74—446.

Wells, William L.: *See*—
Mayo, Robert F., Wallio, and Wells. 3,201,560.

Welsh, Herbert F., deceased; J. S. Chapline, executrix, to Sperry Rand Corp. Fluid shift register. 3,201,041, 8-17-65, Cl. 235—201.

Wennerberg, Frits J., to Separator Aktiebolaget. Plate heat exchanger. 3,201,322, 8-17-65, Cl. 202—172.

Wensel, Ehrhard, and G. Marquardt, to Telefunken Patentverwertungs G.m.b.H. Method of making tension grid. 3,200,855, 8-17-65, Cl. 140—71.5.

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Werner, Albert J., to Corning Glass Works. Homogeneous batch feeding. 3,201,010, 8-17-65, Cl. 222—464.

Werner, Carl K., to Uddeholms Aktiebolag. Method of forming the upper end of killed steel ingot. 3,201,219, 8-17-65, Cl. 29—187.

Werner, Frank D., E. A. Grindheim, and B. L. Sadler, to Rosemount Engineering Co. Linearising multi-channel digitiser 3 201,575. 8-17-65, Cl. 235—197.

Weschler, Eugene L.: *See*—
Boser, Ronald J., and Weschler. 3,200,779.

Wesp George L.: *See*—
Butler, John M., Miller, and Wesp. 3,201,370.

Wessels, Johannes H., and J. Koorneef, to North American Philips Co., Inc. Automatic adjustment of magnetic head spacing. 3,201,526, 8-17-65, Cl. 179—100.2.

West, William F., to Standard Armament Inc. Bomb arming solenoid 3.200.707, 8-17-65, Cl. 89—1.5.

Western Electric Co., Inc.: *See*—
Embree, Milton L., and Montone. 3,201,690.
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Miller, Robert K. 3,200,857.
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Western Petrochemical Corp., The: *See*—
Mark Herman F. 3,201,362.

Western Progress, Inc.: *See*—
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Westinghouse Electric Corp.: *See*—
Brown, Roy L. 3,201,733.
Calabrese, Daniel M., and Pascuile. 3,201,626.
Calhoun, Howard J. 3,201,651.
Gleason, Charles H., and Feaster. 3,201,619.
Houck, James P. 3,201,656.
Hull, Frederick C. 3,201,233.
Krusic, Zelko J. 3,201,545.
Longini, Richard L. 3,201,596.
McWhirter, James H. 3,201,728.
Narbut, Paul, Monito, and Vovtik. 3,201,727.
Nygren Raymond T. 3,201,684.
Olsen, Willy, and Ellis. 3,200,476.
Olsen, Willy, and Ellis. 3,201,732.
Pacoroni, Valentine W., and Smith 3,201,617.
Sabol, Victor F., and Siviy. 3,201,535.
Schwanenfingel, Paul J. 3,201,604.
Smith, James E., Sweeny, and Miller. 3,201,625.
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Westrac Co.: *See*—
Hayatian, Allan A. 3,201,134.
Hayatian, Allan A. 3,201,135.

Westran Corp.: *See*—
Dalton, Thomas B. 3,201,066.
Dalton, Thomas B. 3,201,067.

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West Virginia Pulp and Paper Co.: *See*—
Adams, Samuel T., and Kessler. 3,200,956.

Wettstein, Albert, E. Vischer, and J. Urech, to Ciba Corp. $\Delta^{1,4}$-3-oxo-18-nor- and -18-oxygenated-androstadienes. 3,201,395, 8-17-65, Cl. 260—239.57.

Weyant, William R., to Radio Corp. of America. High voltage electron discharge tube. 3,201,636, 8-17-65, Cl. 313—240.

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Peterson, Herbert T. 3,200,649.

Wheeler, William R., to Varian Associates. Sorption gas and vapor trap apparatus. 3,200,569, 8-17-65, Cl. 55—208.

Whelchel, Alvin C. Planter. 3,200,778, 8-17-65, Cl. 111—85.

Whirlpool Corp.: *See*—
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Whisenhunt, J. L., to Packard-Bell Electronics Corp. Narrow band transistor radio employing crystal controlled oscillator. 3,201,607, 8-17-65, Cl. 325—451.

Whitbread, Albert H., and R. S. Dolman, to Birmingham Small Arms Co. Ltd. Positioning device for rotary machine tools. 3,200,683, 8-17-65, Cl. 82—28.

White, Wyman, to Ling-Temco-Vought, Inc. Method for optical comparison of skin friction-ridge patterns. 3,200,701, 8-17-65, Cl. 88—14.

Whitehead, Edwin C., to Technicon Instruments Corp. Method and apparatus for determining the concentration by weight of a substance in a fluid stream. 3,200,651, 8-17-65, Cl. 73—434.

Whitfield, Homer G., to Hydromation Engineering Co. Elevator. 3,200,935, 8-17-65, Cl. 198—171.

Whitfield, Kenneth O. Self-lifting flatiron. 3,200,521, 8-17-65, Cl. 38—79.

Whitfield, Kenneth O. Tire inflating device. 3,200,831, 8-17-65, Cl. 137—102.

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Wickard, Harry A., to Re-Trac-To, Inc. Retractable truck body cover with tension control. 3,201,171, 8-17-65, Cl. 296—100.

Wilbur, Donald A.: *See*—
Peters, Philip H., and Wilbur. 3,201,712.

Wilkerson, Alan W., to The Louis Allis Co. Transistorised regulator. 3,201,624, 8-17-65, Cl. 310—95.

Wilkinson, Raymond G., and A. S. Kende, to American Cyanamid Co. 2-carboxymethyl 4-oxo-tetrahydronaphthalenes. 3,201,462, 8-17-65, Cl. 260—520.

Williams, Augustus, 50% to Earl Safford. Vehicle wheel traction means. 3,201,159, 8-17-65, Cl. 291—3.

Williams, Earl J., to Liquid Package Equipment Corp. Liquid measuring and dispensing apparatus. 3,201,002, 8-17-65, Cl. 222—205.

Williams, James R. Aquaplane. 3,200,421, 8-17-65, Cl. 9—310.

Williams, Nathaniel C., to Burndy Corp. Angular contact connector. 3,201,745, 8-17-65, Cl. 339—99.

Williams, Rees P., to R. Ramsden & Son Ltd., and Charrington & Co. Ltd. Continuous fermentation apparatus for beer production. 3,201,328, 8-17-65, Cl. 195—141.

Williams, Robert F., Jr., B. R. Dotson, and R. T. Jones, to Eastman Kodak Co. Heat sealing of polyolefin films. 3,201,302, 8-17-65, Cl. 161—263.

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Williams, Virgil C. Space conditioning apparatus. 3,200,-607, 8-17-65, Cl. 62—274.

Williams, William A., to T. B. Wood's Sons Co. Variable pitch sheaves having a large number of grooves. 3,200,660, 8-17-65, Cl. 74—230.17.

Williamsen, Everett J., to Globe-Union Inc. Device for casting battery grids. 3,200,452, 8-17-65, Cl. 22—79.

Williford, Jacob V., and H. B. Ford, said Ford assor. to said Williford. Induction motor starting circuits. 3,201,673, 8-17-65, Cl. 318—221.

Willis, Grant N., to The American Mfg. Co., Inc. Crimping device for strapping material operating both during instroke and outstroke of the handles. 3,200,675, 8-17-65, Cl. 81—9.1.

Willmon, L. D., to Long-Lok Corp. Method of forming a screw with a slot in the shank. 3,200,422, 8-17-65, Cl. 10—10.

Wilson, Burton D., and T. F. Murray, to Eastman Kodak Co. Photographic emulsions containing delta-polycarbonyl sensitizers. 3,201,253, 8-17-65, Cl. 96—107.

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Wilson, Harold W., to Wilson Laboratories, Inc. Process for making a soil fertilising and soil buffering product. 3,201,-222, 8-17-65, Cl. 71—45.

Wilson, James A.: *See*—
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Wilson, Joseph F., J. C. Hillyer, and V. C. Vives, to Phillips Petroleum Co. Reducing the caking of nitrogen-containing salts. 3,201,354, 8-17-65, Cl. 252—383.

Wilson Laboratories, Inc.: *See*—
Wilson, Harold W. 3,201,222.

Wilson, Warren M. Stop valve and inclined port valve with common operator. 3,200,842, 8-17-65, Cl. 137—614.11.

Wilson, William B., to Robert H. Miller and F. Louis Behrends. Integral heavy duty door knob and method of forming the same. 3,200,630, 8-17-65, Cl. 72—254.

Wilson, William G.: *See*—
Harter, Isaac Jr., and Wilson. 3,200,456.

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Wing, Willis G., to Sperry Rand Corp. Thermal gradient compensating device. 3,200,653, 8-17-65, Cl. 74—5.

Winkel, Otto. Spool for reeling and unreeling strip material. 3,201,060, 8-17-65, Cl. 242—74.1.

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Winter, Duncan K. Ship maneuvering means. 3,200,763, 8-17-65, Cl. 114—163.

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Woerther, Clarence J., and J. G. Gilchrist, Jr., to International Minerals & Chemical Corp. Process for the production of phosphate fertiliser. 3,201,221, 8-17-65, Cl. 71—11.

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Wollmann, Heins: *See*—
Grewe, Theodor, Von Hanteville, Huss, Jekelius, Kaiser, Waldau, and Wollmann. 3,201,787.

Wolowiec, Richard S., and J. A. Warner, to Container Corp. of America. Debowing curved score in carton end wall. 3,201,026, 8-17-65, Cl. 229—34.

Womack, Robert M., to Drilling Jars, Inc. Jar mechanism. 3,200,895, 8-17-65, Cl. 175—299.

Wood, Fred A., and J. A. Gordon. Animal and wild game trap. 3,200,534, 8-17-65, Cl. 43—61.

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Swaney, Earl T., and Woodcock. 3,200,926.

Wood's, T. B., Sons Co.: *See*—
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Woolston, Daniel D.: *See*—
Aucremanne, Marcel J., and Woolston. 3,201,707.

Workman, Clark B.: *See*—
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Worst, Joseph C., to General Electric Co. Dry cleaning machine. 3 200,621, 8-17-65, Cl. 68—12.

Worswick, Alan, to Alan Worswick (Engineering) Ltd. Ingot casting machines. 3,200,451, 8-17-65, Cl. 22—63.

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Worswick, Alan. 3,200,451.

Worth, Thomas C., and A. G. Hobson, to British Filters Ltd. Filtration apparatus for filtering liquids. 3,200,955, 8-17-65. Cl. 210—492.

Wossner, Felix, to Fichtel & Sachs A.G. Hydropneumatic suspension unit. 3,201,112, 8-17-65, Cl. 267—64.

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Wright, John B., to The Upjohn Co. Novel 4,5-polymethylene-(6H)-1,2,5-thiadiazine-1,1-dioxides. 3,201,396, 8-17-65, Cl. 260—243.

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Wyss, Urs, to Maag Gear Wheel & Machine Co. Ltd. Process for automatically controlled carburizing of the surface layer of steel articles. 3,201,290, 8-17-65, Cl. 148—16.5.

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Yano, Hiroshi. Trigger of toy gun. 3,200,805, 8-17-65, Cl. 124—27.

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Fox, Joseph M., and Yarse. 3,201,214.

Yeo, Alan A.: *See*—
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Yetter, Edward W., to E. I. du Pont de Nemours and Co. Control method and apparatus. 3,201,572, 8-17-65, Cl. 235—151.

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Young, John C. O., R. J. Lang, and J. A. Wilson, to Esso Research and Engineering Co. Ultrasonic burner. 3,200,-873, 8-17-65, Cl. 158—77.

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Yu, Arthur J.: *See*—
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Yumoto, Ryoji. Lead-acid storage battery. 3,201,280, 8-17-65, Cl. 136—26.

Zagel, Samuel J., to Compco Corp. Slide sorting device. 3,200,523, 8-17-65, Cl. 40—106.1.

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Zaremski, Donald R., to Allegheny Ludlum Steel Corp. Trim member. 3,201,212, 8-17-65, Cl. 29—183.5.

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Harkins, Thomas R., and Zaremski. 3,201,210.

Zebarth, Ralph S., R. L. Lewis, and D. T. Carlson, to Gordon Johnson Co. Apparatus for article packaging. 3,200,562, 8-17-65, Cl. 53—184.

Zelina, William B.: *See*—
Buchanan, James L., and Zelina. 3,201,679.

Zelnick, Seymour: *See*—
Siegel, Martin, and Zelnick. 3,200,561.

Zendeh, Farhang, to International Standard Electric Corp. Self-correcting coding circuit, and circuit arrangement for decoding binary information. 3,201,783, 8-17-65, Cl. 340—347.

Zepell, Nathan A. Writing instrument. 3,200,792, 8-17-65, Cl. 120—42.03.

Zoche, Guenter: *See*—
Schmidt-Thomee, Georg, Eilbracht, Kinkel, Trieschmann, Urban, and Zoche. 3,201,380.

Zotos, George A., to Martin-Marietta Corp. Cryogenic refrigerating method and apparatus. 3,200,613, 8-17-65, Cl. 62—402.

Zwickert, Erwin: *See*—
Lang, Eduard, Faulian, and Zwickert. 3,200,606.

CLASSIFICATION OF PATENTS

ISSUED AUGUST 17, 1965

NOTE.—First number, class; second number, subclass; third number, patent number

2— 60	3,200,413	29—183.5	3,201,210	53—380	3,200,564	73—329	3,200,647	95— 11.5	3,200,723	112—152	3,200,779
232	3,200,414		3,201,211	55—112	3,200,565	343	3,200,648	12	3,200,724	158	3,200,780
4—110	3,200,415		3,201,212	152	3,200,566	422	3,200,649	13	3,200,725	114— 66.5	3,200,781
5— 62	3,200,416	187	3,201,213	175	3,200,567	425.6	3,200,650		3,200,726		3,200,782
260	3,200,417	203	3,200,481	191	3,200,568	434	3,200,651	44	3,200,727	163	3,200,783
351	3,200,418	235	3,200,482	208	3,200,569	74— 5	3,200,652	53	3,200,728	201	3,200,784
6— 4	3,200,419	259	3,200,483	227	3,200,570		3,200,653	63	3,200,729	203	3,200,785
8— 55	3,201,189	263	3,200,484	367	3,200,571	18.2	3,200,654	73	3,200,730	116— 63	3,200,786
61	3,201,190	421	3,200,485	56— 28	3,200,572	54	3,200,655	96— 35	3,201,237	70	3,200,787
9— 2	3,200,420	422	3,200,486	35	3,200,573	95	3,200,656	36	3,201,238	117— 47	3,201,271
310	3,200,421	430	3,200,487	235	3,200,574	99	3,200,657		3,201,239	102	3,201,272
10— 10	3,200,422	453	3,200,488	328	3,200,575	125.5	3,200,658	48	3,201,240	109	3,201,273
12.5	3,200,423	470.9	3,200,489	57—140	3,200,576	219	3,200,659	49	3,201,241	128.4	3,201,274
	3,200,424	473.1	3,200,490	58— 21.155	3,200,577	230.17	3,200,660	55	3,201,242	213	3,201,275
136	3,200,425	474.4	3,200,491	23	3,200,578		3,200,661	56	3,201,243	218	3,201,276
	3,200,426	568	3,200,492	60— 10.5	3,200,579	233	3,200,662		3,201,244	118— 11	3,200,788
12—128	3,200,427	30— 34.1	3,201,178	13	3,200,580	353	3,200,663	61	3,201,246	119— 25	3,200,789
15— 21	3,200,428	216	3,200,493	24	3,200,581	424.8	3,200,664	75	3,201,247	51	3,200,790
104.01	3,200,429	31— 26	3,200,494		3,200,582	446	3,200,665	76	3,201,248	120— 28	3,200,791
183	3,200,430	32— 9	3,200,495	35.55	3,200,586	472	3,200,666	84	3,201,249	42.03	3,200,792
250.41	3,200,431		3,200,496		3,200,587	479	3,200,667	87	3,201,250	122—240	3,200,798
323	3,200,432	32	3,200,497	35.6	3,200,583	640	3,200,668		3,201,251	123— 8	3,200,794
328	3,200,433	33— 1	3,200,498		3,200,584	750	3,200,669	94	3,201,252		3,200,795
16— 86	3,200,434	51	3,200,499		3,200,585	75— .5	3,201,223	107	3,201,253	16	3,200,796
137	3,200,435	85	3,200,500	39.35	3,200,588	13	3,201,224		3,201,254	41.72	3,200,797
17— 2	3,200,436	143	3,200,501	39.46	3,200,589	28	3,201,225	115	3,201,255	48	3,200,798
18— 1	3,200,437	172	3,200,502	51	3,200,590	49	3,201,226	98— 1	3,200,731	53	3,200,799
4	3,200,438	174	3,200,503	52	3,200,591	65	3,201,227	2	3,200,732	54	3,200,800
	3,200,439	179.5	3,200,504		3,200,592		3,201,228	9	3,200,733	90	3,200,801
8	3,200,440	180	3,200,505	53	3,200,593	66	3,201,229	40	3,200,734	97	3,200,802
9	3,200,441	185	3,200,506	54	3,200,594	124	3,201,230	46	3,200,735	148	3,200,803
16.5	3,200,442		3,200,507		3,200,595	126	3,201,231	99— 57	3,201,245	195	3,200,804
18	3,200,443		3,200,508	54.5	3,200,596		3,201,232	63	3,201,256	124— 27	3,200,805
30	3,200,444	194	3,200,509	54.6	3,200,597	128	3,201,233	113	3,201,257	126— 25	3,200,806
	3,201,799	204	3,200,510	61— 5	3,200,598	153	3,201,234	180	3,201,258	37	3,200,807
19— 84	3,200,445	34— 45	3,200,511	53.64	3,200,599	201	3,201,235	192	3,201,259		3,200,808
267	3,200,446	57	3,200,512	62— 3	3,200,600	206	3,201,236	209	3,201,260	92	3,200,809
20— 11	3,200,447	35— 9	3,200,513		3,200,601	76— 89.2	3,200,670	210	3,201,261	110	3,200,810
69	3,200,448		3,200,514	6	3,200,602	77— 5	3,200,671	222	3,201,262	116	3,200,811
22— 20	3,200,449	20	3,200,515	84	3,200,603	24	3,200,672		3,201,263	200	3,200,812
58	3,200,450	35	3,200,516	85	3,200,604	58	3,200,673	229	3,201,264	271	3,200,820
63	3,200,451		3,200,517	129	3,200,605	81— 3	3,200,674	275	3,200,736	128— 2	3,200,813
79	3,200,452	36— 34	3,200,518	176	3,200,606	9.1	3,200,675	355	3,200,737		3,200,814
82	3,200,453	37— 43	3,200,519	274	3,200,607	64	3,200,676	100— 3	3,200,738	130	3,200,815
107	3,200,454	129	3,200,520	279	3,200,608	160	3,200,677	101— 93	3,200,739	142	3,200,816
200	3,200,455	38— 79	3,200,521	280	3,200,609	82— 1	3,200,678	96	3,200,740	173	3,200,817
200.1	3,200,456	40— 77	3,200,522	298	3,200,610	2.5	3,200,679	221	3,200,741	202	3,200,818
209	3,200,457	106.1	3,200,523		3,200,611		3,200,680	247	3,200,742	208	3,200,819
23— 14.5	3,201,191	129	3,200,524	345	3,200,612	12	3,200,681	102— 24	3,200,743	492	3,200,821
87	3,201,192	130	3,200,525	402	3,200,613	14	3,200,682	35.4	3,200,744	131—243	3,200,822
88	3,201,193	152	3,200,526	63— 14	3,200,614	28	3,200,683	37.8	3,200,745	132— 31	3,200,823
105	3,201,194		3,200,527	64— 17	3,200,615	83— 12	3,200,684	39	3,200,746	40	3,200,824
107	3,201,195	42— 94	3,200,528	28	3,200,616	98	3,200,685	49	3,200,747	41	3,200,825
110	3,201,196	43— 1	3,200,529	65—138	3,201,216	277	3,200,686	50	3,200,748		3,200,826
112	3,201,197	16	3,200,530	270	3,201,217	346	3,200,687	70.2	3,200,749	49	3,200,827
119	3,201,198	41.2	3,200,531	330	3,201,218	383	3,200,688	92.5	3,200,750	133— 4	3,200,828
143	3,201,199	44.6	3,200,532	347	3,201,219	84—423	3,200,689		3,200,751	136— 4	3,201,277
209.4	3,201,200	54.5	3,200,533	66— 50	3,200,617	85— 7	3,200,690	103— 42	3,200,752		3,201,278
219	3,201,201	61	3,200,534	54	3,200,618	47	3,200,691	87	3,200,753	6	3,201,279
230	3,201,202	129	3,200,535	195	3,200,619	68	3,200,692	88	3,200,754	26	3,201,280
259	3,201,203	46— 51	3,200,536	67— 7.1	3,200,620	75	3,200,693	113	3,200,755	30	3,201,281
277	3,201,204	118	3,200,537	68— 12	3,200,621	82	3,200,694	120	3,200,756	86	3,201,282
283	3,201,205	232	3,200,538	18	3,200,622	86— 1	3,200,695	150	3,200,757		3,201,283
288	3,201,206	47— 1	3,200,539	70—279	3,200,623	88— 1	3,200,696		3,200,758	178	3,201,284
	3,201,207	48—214	3,201,214	71— 2.6	3,201,220		3,200,697	153	3,200,759	137— 81	3,200,829
300	3,201,208	215	3,201,215	11	3,201,221		3,200,698	162	3,200,760	101	3,200,830
301	3,201,209	51— 73	3,200,540	45	3,201,222	1.5	3,200,699		3,200,761	102	3,200,831
24— 71	3,200,458	112	3,200,541	72— 19	3,200,624	14	3,200,700		3,200,762	117	3,200,832
73	3,200,459	262	3,200,542	42	3,200,625		3,200,701	231.5	3,200,763	154	3,200,833
81	3,200,460	337	3,200,543	56	3,200,626	24	3,200,702	264	3,200,764	183	3,200,834
201	3,200,461	52— 27	3,200,544	61	3,200,627	57	3,200,703	104— 52	3,200,765	268	3,200,835
205.16	3,200,462	66	3,200,545	62	3,200,628		3,200,704	88	3,200,766	385	3,200,836
230	3,200,463	94	3,200,546	201	3,200,629	78	3,200,705		3,200,767	496	3,200,837
	3,200,464	288	3,200,547	254	3,200,630	89— 1	3,200,706	172	3,200,768	512.15	3,200,838
25— 27	3,200,465	300	3,200,548	306	3,200,631	1.5	3,200,707	105—138	3,200,769	516.29	3,200,839
28— 1	3,200,466	376	3,200,549	73— 1	3,200,632	1.7	3,200,708	163	3,200,770	564.5	3,200,840
72	3,200,467	377	3,200,550	9	3,200,633	142	3,200,709	197	3,200,771	596	3,200,841
29— 25.18	3,200,469	511	3,200,551	12	3,200,634	191	3,200,710	369	3,200,772	614.11	3,200,842
25.3	3,200,468	593	3,200,552	17	3,200,635	90— 1	3,200,711	376	3,200,773	614.19	3,200,843
26	3,200,470	595	3,200,553	29	3,200,636	62	3,200,712	106— 15	3,201,265	625.2	3,200,844
33	3,200,471	727	3,200,554	61	3,200,637	91— 49	3,200,713	39	3,201,266	625.48	3,200,846
38	3,200,472	53— 33	3,200,555	64	3,200,638	378	3,200,714	59	3,201,267	625.6	3,200,845
96	3,200,473	38	3,200,556	79	3,200,639	392	3,200,715	68	3,201,268	625.65	3,200,847
105	3,200,474	39	3,200,557	81	3,200,640	461	3,200,716	280	3,201,269	138— 38	3,200,848
155.53	3,200,475	76	3,200,558	138	3,200,641	92— 94	3,200,717	302	3,201,270	139—245	3,200,849
155.57	3,200,476	78	3,200,559	178	3,200,642	93— 37	3,200,718	108— 7	3,200,774	249	3,200,850
156.8	3,200,477	86	3,200,560	200	3,200,643	61	3,200,719	108	3,200,775	263	3,200,851
157	3,200,478	184	3,200,561	308	3,200,644	95— 10	3,200,720	110— 15	3,200,776	304	3,200,852
	3,200,479		3,200,562	313	3,200,645	11.5	3,200,721	18	3,200,777	370	3,200,853
157.3	3,200,480	373	3,200,563	317	3,200,646		3,200,722	111— 85	3,200,778	140— 71.5	3,200,854

140– 71.5	3,200,855	179–107	3,201,528	209– 78	3,200,945	230–152	3,201,033	260– 28.5	3,201,362	260–551	3,201,463
	3,200,856	115.5	3,201,529	106	3,200,946	153	3,201,034	30.4	3,201,363		3,201,464
93	3,200,857	146	3,201,530	133	3,200,947	232– 1	3,201,035	33.6	3,201,364		3,201,465
141– 38	3,200,858	180– 7	3,200,898	210– 24	3,201,366	233– 14	3,201,036	34.2	3,201,365	557	3,201,466
73	3,200,859	181– .5	3,200,899	184	3,200,948	235– 30	3,201,037	45.75:	3,201,368	563	3,201,467
330	3,200,860	32	3,200,900	205	3,200,949	50	3,201,038		3,201,369	566	3,201,468
143–135	3,200,861		3,200,901	364	3,200,950		3,201,039	45.8	3,201,366	570.5	3,201,469
144– 27	3,200,862	61	3,200,902	404	3,200,951	61.11:	3,201,570	45.9	3,201,367	577	3,201,470
32	3,200,863	182– 92	3,200,903	457	3,200,952		3,201,571	47	3,201,370	583	3,201,471
146– 94	3,200,864	134	3,200,904		3,200,953	61.7	3,201,569	67	3,201,371		3,201,472
95	3,200,865	187– 31	3,200,905	470	3,200,954	132	3,201,040	77.5	3,201,372	584	3,201,473
124	3,200,866	188– 65.1	3,200,906	492	3,200,955	151	3,201,572	79.5	3,201,373	585.5	3,201,474
192	3,200,867	69	3,200,907	531	3,200,956		3,201,573	80.5	3,201,374	592	3,201,475
148– 6.11:	3,201,285	78	3,200,908	211– 1	3,200,957	175	3,201,574		3,201,375	597	3,201,476
	3,201,286	79.5	3,200,909	4	3,200,958	197	3,201,575	82.1	3,201,376	606.5	3,201,477
11.5	3,201,287	85	3,200,910	49	3,200,959	201	3,201,041	85.3	3,201,377	618	3,201,478
12.4	3,201,288	196	3,200,911	59	3,200,960	236– 1	3,201,042	85.5	3,201,378	635	3,201,479
13	3,201,289		3,200,912	148	3,200,961		3,201,043	93.7	3,201,379		3,201,480
16.5	3,201,290	189– 36	3,200,913	177	3,200,962	33	3,201,044	94.9	3,201,380	645	3,201,481
26	3,201,292	192– 3	3,200,914	212– 39	3,200,963	237– 8	3,201,045		3,201,381	652.5	3,201,482
31.55:	3,201,293	4	3,200,915	214– 1	3,200,964	238–152	3,201,046	112	3,201,382	653.9	3,201,483
113	3,201,294	8	3,200,916		3,200,965	239–336	3,201,047	147	3,201,383	666	3,201,484
149– 22	3,201,291	18	3,200,917		3,200,966	422	3,201,048	160	3,201,384	668	3,201,485
150– 7	3,200,868	46	3,200,918		3,200,967	433	3,201,049	210	3,201,385	671	3,201,486
152–162	3,200,869	48	3,200,919		3,200,968	453	3,201,050		3,201,386		3,201,487
156– 62.6	3,201,295	53	3,200,920	8.5	3,200,969	240– 1.1	3,201,576	211.5	3,201,387	672	3,201,488
108	3,201,296	142	3,200,921	17	3,200,970	1.2	3,201,577		3,201,388	674	3,201,489
184	3,201,297	147	3,200,922	18.2	3,200,971	2	3,201,578		3,201,389	676	3,201,490
431	3,201,298	194– 1	3,200,923	86	3,200,972		3,201,579	239.5	3,201,390		3,201,491
485	3,201,299		3,200,924	140	3,200,973	10.6	3,201,580	239.55:	3,201,391	681.5	3,201,492
158– 4	3,200,870	72	3,200,925	314	3,200,974	41.5	3,201,581		3,201,392	683.2	3,201,493
7	3,200,871	92	3,200,926	317	3,200,975	73	3,201,582		3,201,393	683.4	3,200,883
76	3,200,872	195– 1	3,201,323	508	3,200,976	241– 21	3,201,066	239.57:	3,201,394	683.47:	3,201,494
77	3,200,873	51	3,201,324	515	3,200,977	22	3,201,051		3,201,395	683.74:	3,201,495
114	3,200,874	66	3,201,325	651	3,200,978	23	3,201,052	243	3,201,396	683.75:	3,201,496
123	3,200,875	80	Re.25,840	215– 9	3,200,979	286	3,201,053	247.2	3,201,397	837	3,201,497
160–173	3,200,876	81	3,201,326	11	3,200,980	291	3,201,054	256.5	3,201,398	897	3,201,498
161– 62	3,201,300	109	3,201,327	41	3,200,981	242– 25	3,201,055	268	3,201,399	261– 41	3,201,096
112	3,201,301	141	3,201,328	46	3,200,982	56.1	3,201,056		3,201,400		3,201,097
252	3,201,302	197– 16	3,200,927	219– 10.61:	3,201,558	58.1	3,201,057		3,201,401	263– 19	3,201,098
162– 53	3,201,303	55	3,200,928	62	3,201,559	72.1	3,201,058	279	3,201,402	21	3,201,099
168	3,201,304	130	3,200,929	121	3,201,560	74.1	3,201,059	285	3,201,403	33	3,201,100
203	3,201,305	198– 24	3,200,930	125	3,201,561	110.3	3,201,060	294	3,201,404	264– 3	3,201,500
213	3,201,306	35	3,200,931		3,201,562	115	3,201,061		3,201,405	30	3,201,501
246	3,201,307	37	3,200,932	145	3,201,563	243– 1	3,201,062	295	3,201,406	34	3,201,502
352	3,201,308	38	3,200,933	398	3,201,564	19	3,201,063	297.5	3,201,407	95	3,201,503
357	3,201,309	82	3,200,934	413	3,201,565	35	3,201,064	299	3,201,408	104	3,201,504
375	3,201,310	171	3,200,935	441	3,201,566	244– 1	3,201,065	306.8	3,201,409	109	3,201,505
165– 4	3,200,877	178	3,200,936	450	3,201,567	17.23:	3,201,068	307	3,201,410	121	3,201,499
64	3,200,878	179	3,200,937	538	3,201,568	23	3,201,067	309.6	3,201,411	210	3,201,506
73	3,200,879	192	3,200,938	220– 22	3,200,983	54	3,201,069	310	3,201,412	266– 9	3,201,101
88	3,200,880		3,200,939	24.3	3,200,989		3,201,070	314.5	3,201,413	21	3,201,102
104	3,200,881		3,200,940	24.5	3,200,984	56	3,201,071	319	3,201,414	34	3,201,103
166– 42	3,200,882	220	3,200,941	54	3,200,985	246– 30	3,201,583	326.5	3,201,415		3,201,104
241	3,200,884	200– 5	3,201,531	60	3,200,986	169	3,201,584	327	3,201,416		3,201,105
167– 22	3,201,311	11	3,201,532	89	3,200,987	248– 99	3,201,072		3,201,417	36	3,201,106
74	3,201,312	16	3,201,533	97	3,200,988	121	3,201,073	329.3	3,201,418		3,201,107
78	3,201,313	33	3,201,534	222– 2	3,200,990	141	3,201,074	340	3,201,419		3,201,108
85	3,201,314	48	3,201,535	52	3,200,991	147	3,201,075	340.7	3,201,420	267– 1	3,201,109
90	3,201,315	61.34:	3,201,536		3,200,992	151	3,201,076	343.2	3,201,421		3,201,110
93	3,201,316	61.41:	3,201,537	72	3,200,993	340	3,201,077	346.2	3,201,422		3,201,111
95	3,201,317	67	3,201,538	82	3,200,994	361	3,201,078	346.4	3,201,423	64	3,201,112
168– 12	3,200,885	87	3,201,539	94	3,200,995	412	3,201,079	351	3,201,424	271– 5	3,201,113
170–135.74:	3,200,886		3,201,540	107	3,200,996	460	3,201,080	397.1	3,201,425	11	3,201,114
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171– 14	3,200,888		3,201,542	184	3,200,998	43.5	3,201,586	397.4	3,201,427	79	3,201,116
172– 26	3,200,889	88	3,201,543	185	3,200,999		3,201,587		3,201,428	272– 1	3,201,117
111	3,200,890	98	3,201,544	193	3,201,000	49.5	3,201,588	397.47:	3,201,429	32	3,201,118
197	3,200,891	106	3,201,545	194	3,201,001	83.1	3,201,589	404.5	3,201,430	62	3,201,119
713	3,200,892	113	3,201,546	205	3,201,002	83.3	3,201,590	409	3,201,431	65	3,201,120
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	3,201,321		3,201,556	501	3,201,012	316	3,201,353		3,201,441	274– 10	3,201,130
66	3,201,322	172	3,201,557	525	3,201,013	383	3,201,354		3,201,442		3,201,131
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5.4	3,201,510	172	3,201,332	91	3,201,016	254– 50.4	3,201,084		3,201,446		3,201,135
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350	3,201,155		3,201,608	27	3,201,642	32	3,201,682	84	3,201,722		3,201,762
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117	3,201,158		3,201,611	98	3,201,645	324– 30	3,201,685	98	3,201,725	173.1	3,201,765
291– 3	3,201,159		3,201,612	239	3,201,646	54	3,201,686	334– 29	3,201,726	174	3,201,766
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202	3,201,162	116	3,201,615		3,201,648	120	3,201,689	83	3,201,729	174.1	3,201,769
216	3,201,163	141	3,201,616	18	3,201,649	158	3,201,690	107	3,201,730		3,201,770
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294– 89	3,201,166	10	3,201,182	99	3,201,652	119	3,201,693	217	3,201,733	248	3,201,773
118	3,201,167	78	3,201,183		3,201,653	137	3,201,694	221	3,201,734	258	3,201,774
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299– 39	3,201,173	8.9	3,201,621	176	3,201,659	55	3,201,700	40	3,201,740		3,201,780
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303– 6	3,201,176	95	3,201,624	191	3,201,662	150	3,201,703	92	3,201,743		3,201,783
	3,201,177	154	3,201,625	201	3,201,663		3,201,704	97	3,201,744	378	3,201,784
71	3,201,179	186	3,201,626	234	3,201,664	165	3,201,705	99	3,201,745		3,201,785
84	3,201,180	198	3,201,627	235	3,201,665	167	3,201,706	108	3,201,746	381	3,201,786
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	3,201,596	84	3,201,631	125	3,201,670	56	3,201,711	146.3	3,201,751	12	3,201,791
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	3,201,599		3,201,633	221	3,201,673	161	3,201,714		3,201,754	346– 31	3,201,794
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	3,201,602	240	3,201,636	558	3,201,676	3	3,201,716	171	3,201,757	86	3,201,797
	3,201,603	256	3,201,637	321– 16	3,201,677	9	3,201,717	172.5	3,201,758	159	3,201,798
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DESIGN PATENTS

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

August 17, 1965 Volume 817 Number 3

TRADEMARKS

NOTICES

International Convention for the Protection of Industrial Property

Adherence of Uganda to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence of the Government of Uganda to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect June 14, 1965.

EDWARD J. BRENNER,
July 20, 1965. *Commissioner of Patents.*

International Convention for the Protection of Industrial Property

Adherence of Kenya to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland, of the adherence of the Republic of Kenya to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect June 14, 1965.

EDWARD J. BRENNER,
July 20, 1965. *Commissioner of Patents.*

CONDITION OF TRADEMARK APPLICATIONS AS OF JUNE 30, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] ---------- 16,698
Date of oldest new application ---------- Jan. 2, 1965
Date of oldest amended application ---------- Jan. 4, 1965

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	1-2-65	1-4-65
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-4-65	1-4-65
Renewals (All Classes)	6-8-65	6-28-65
Sec. 12 (c) Publications (All Classes)	6-16-65	----------

Applications filed during the month of June 1965—2,486

Registrations Issued ---------- 366—No. 794,243 to No. 794,608
Renewals Issued ---------- 70

For the quarter—April 1, 1965 through June 30, 1965

Applications filed ---------- 7296
Registrations issued ---------- 4338
Renewals issued ---------- 840
Cancellations under Section 8 ---------- 1267

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Erratum

The following was inadvertently omitted from the OFFICIAL GAZETTE of Aug. 3, 1965, and is reproduced herewith.

Trademark Registrations—New Certificates

New certificates issued under Sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registration

423,481. THERMONIC. Cl. 21. Induction Heating Corporation. 9–3–46. New Cert. Sec. 7(c) to The Taylor-Winfield Corporation, Warren, Ohio.

442,125. RESPONSE. Cl. 6. Charles A. Rolley, doing business as Rolley Perfumes. 3–1–49. New Cert. Sec. 7(c) to Colgate-Palmolive Company, New York, N.Y.

655,862. SLUSHEZE. Cl. 39. U.S. Plastisol, Inc. 12–17–57. New Cert. Sec. 7(c) to The Servus Rubber Company, Rock Island, Ill.

699,983. THE CRICKETS. Cl. 107. The Crickets, 6–21–60. New Cert. Sec. 7(c) to Jerry Allison, Clovis, N. Mex.

749,440. COLONY. Cl. 38. The Paramount Line, Inc. 5–14–63. New Cert. Sec. 7(c) to Belmont Greeting Card Company, Inc., Bronx, N.Y., and Greeting Cards Incorporated of New Jersey, Newark, N.J.

749,441. CC AND DESIGN. Cl. 38. The Paramount Line, Inc. 5–14–63. New Cert. Sec. 7(c) to Belmont Greeting Card Company, Inc., Bronx, N.Y., and Greeting Cards Incorporated of New Jersey, Newark, N.J.

788,133. MATCH-IT. Cl. 25. Wilbur W. Randall. 4–13–65. New Cert. Sec. 7(c) to Match-It, Inc., Hartford, Conn.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 129,909. Bell Aerospace Corporation, Wheatfield, N.Y. Filed Oct. 16, 1961.



The drawing is lined for red, but color is not claimed as a feature of the mark.

Class 19—Vehicles

For Aircraft and Missile Components—Namely, Ground Effect Machines.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Rocket Engines and Components Thereof.

First use on or about Sept. 1, 1960.

SN 200,010. Marson Fastener Corporation, Revere, Mass. Filed Aug. 17, 1964.

RIVET-ALL

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Rivets.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Riveting Equipment—Namely, Riveting Guns.

First use Mar. 17, 1964.

SN 212,474. Metalphoto Corporation, Cleveland, Ohio. Filed Feb. 23, 1965.

METALPHOTO

Owner of Reg. No. 696,040.

Class 6—Chemicals and Chemical Compositions

For Chemicals for Processing Photosensitive Metal Plates.

Class 26—Measuring and Scientific Appliances

For Photosensitive Metal Plates.

First use Feb. 16, 1954.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 2—Receptacles

SN 204,707. Plast-O-Pak Corporation, Leominster, Mass. Filed Oct. 23, 1964.

PROFITRAY

For Trays.

First use Apr. 21, 1964.

SN 204,953. Batesville Casket Company, Batesville, Ind. Filed Oct. 28, 1964.

MONOGARD

For Burial Caskets.

First use Sept. 25, 1964.

SN 204,961. Indian Head Mills, Inc., New York, N.Y. Filed Oct. 28, 1964.

REDI-STRING

For Dispenser for Twine.

First use July 13, 1964.

SN 205,614. Rondo of America, Incorporated, Hamden, Conn. Filed Nov. 5, 1964.

RONDOLATION

Owner of Reg. No. 561,488.

For Cardboard and Paperboard Partitioned Liners for Boxes and in Strip Form for Packaging Ampules, Tubes, and Other Products.

First use April 1949.

SN 206,551. Cutisin, Výroba Umělých Střev, Národní Podnik, Hlavatcova-Hradcovr, Czechoslovakia. Filed Nov. 17, 1964.



Owner of Czechoslovakian Reg. No. 156,751, dated Feb. 28, 1964; and U.S. Reg. No. 666,264.
For Artificial Casings Particularly for Sausage Meat, Chopped Meat and Other Food Products, for Drugs, and for Medical and Cosmetic Preparations.

SN 206,845. Texas Tennessee Industries, Inc., Houston, Tex. Filed Nov. 17, 1964.



For Insulated Water Cans and Picnic Chests.
First use in or before May 1963.

SN 206,754. Owens-Illinois Glass Company, Toledo, Ohio. Filed Nov. 23, 1964.

BOATOTE

For Plastic Bags.
First use Sept. 16, 1964.

SN 206,904. Bes Pak & Company, Inc., Montgomery, Ala. Filed Nov. 24, 1964.



Owner of Reg. No. 604,675.
For Freezer Bags and Plastic Containers for Refrigerator Storage.
First use Mar. 1, 1962.

SN 207,015. Crown Zellerbach Corporation, San Francisco, Calif. Filed Nov. 27, 1964.

CROWN POLY

Owner of Reg. Nos. 639,170 and 693,528.
For Plastic Shipping Sacks.
First use May 19, 1964.

SN 207,201. International Paper Company, New York, N.Y. Filed Dec. 2, 1964.

CLASSIC

For Paper Bags.
First use Nov. 4, 1964.

SN 207,220. Numis Products, Inc., West Covina, Calif. Filed Dec. 2, 1964.



For Coin Tubes.
First use Oct. 8, 1964.

SN 207,367. Crown Zellerbach Corporation, San Francisco, Calif. Filed Dec. 3, 1964.

WEB SEAL

For Fibreboard Cartons.
First use Jan. 6, 1964.

SN 208,007. Vaughan's Seed Company, Downers Grove, Ill. Filed Dec. 11, 1964.

FORM-A-CUBE

For Pots, Planters, and Containers for Growing, Shipping, and Selling Plants.
First use on or about Oct. 1, 1964.

SN 208,008. Vaughan's Seed Company, Downers Grove, Ill. Filed Dec. 11, 1964.

THE "3-FOR"

For Pots, Planters, and Containers for Growing, Shipping, and Selling Plants.
First use on or about Oct. 1, 1964.

SN 208,009. Vaughan's Seed Company, Downers Grove, Ill. Filed Dec. 11, 1964.

V.I.P.

For Pots, Planters, and Containers for Growing, Shipping, and Selling Plants.
First use on or about Oct. 1, 1964.

SN 208,112. Republic Packaging Corporation, Chicago, Ill. Filed Dec. 14, 1964.

TOTAL-PAK

For Custom Designed Packaging Made of Various Materials for the Shipment and Storage of Manufactured Articles.
First use Sept. 15, 1961.

SN 208,246. General Foods Corporation, White Plains, N.Y. Filed Dec. 16, 1964.

QUICK-STRIP

For Vacuum Cans.
First use Dec. 3, 1963.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 187,863. Edward H. Goddard, d.b.a. Antelope Camping Equipment Manufacturing Company, Monte Vista, Calif. Filed Mar. 3, 1964.



No claim of exclusive right is made to "Camping Equipment" for the goods recited.
For Back Pack Camping Equipment, Such as Knapsacks, Pack Frames, and Pack Frame Bags.
First use May 1, 1962.

Class 4 — Abrasives and Polishing Materials

SN 205,665. Consolidated Foods, Inc., Nashua, N.H. Filed Nov. 6, 1964.

ELEGANT

For Metal Sponges Adapted for Cleaning, Scouring, Polishing, and Similar Abrading Usages.
First use June 1954.

SN 206,163. Afta Solvents Corporation, Glen Cove, N.Y. Filed Dec. 15, 1964.

FURNITURE FRIEND

The word "Furniture" is hereby disclaimed apart from the mark as shown.
For Furniture Polish.
First use Oct. 29, 1964.

Class 5 — Adhesives

SN 196,582. Air Reduction Company, Incorporated, New York, N.Y. Filed June 29, 1964.

MERIT-PAD

Owner of Reg. No. 409,771.
For Liquid Padding Compound for Binding Books, Pads, and Tablets.
First use in or about February 1943.

SN 206,544. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Nov. 19, 1964.

HOOKER

Owner of Reg. Nos. 522,606, 555,557, and others.
For Cement Bonding Materials, Adhesives for Securing Roofing, and Resin-Based Adhesives for Industrial Use.
First use at least as early as December 1956.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 199,522. Aerojet-General Corporation, Elmonte, Calif. Filed Aug. 10, 1964.

STARMAT

For Structural Armor Material Used To Defeat Small Arms Fire, Projectiles, and Fragmentation-Type Missiles, Said Armor Plate Being a Heterogeneous Composite With a Reinforced Plastic Outer Surface.
First use Mar. 25, 1964.

Class 12 — Construction Materials

SN 195,133. New Castle Products, Inc., New Castle, Ind. Filed June 8, 1964.

AUDIO-WALL

For Foldable Doors and Partitions, and Parts Therefor.
First use May 26, 1964.

SN 195,424. Mesker Brothers Iron Company, Hazelwood, Mo. Filed June 11, 1964.

MESKER

For Construction and Building Members Comprising Metal and Non-Metal Doors, Windows, Wall Panels and Frame Members and Parts Therefor, and for Metal Channels and Other Extruded Parts.
First use prior to Jan. 1, 1880.

SN 205,544. Simpson Timber Company, Seattle, Wash. Filed Nov. 4, 1964.

GREENBRIAR

For Decorative Ceiling Tile.
First use Oct. 20, 1964.

SN 206,377. Redland Pipes Limited, Reigate, Surrey, England. Filed Nov. 17, 1964.

DECKON

Owner of British Reg. No. 750,615, dated Feb. 8, 1956.
For Building Materials—Namely, Concrete and Earthenware (Ceramic or Clay) Pipes, and Concrete Fittings Associated With the Use of These in All Forms of Engineering Relative to Sewers, Surface Water and Pressure Applications.

SN 206,429. Down Spout-O-Matic Company, Villa Park, Ill. Filed Nov. 18, 1964.

DRAIN-O-MATIC

For Automatically Uncoiling and Recoiling Vinyl Plastic Extensions for Drain Spouts.
First use Feb. 12, 1964.

SN 206,992. Advanced Equipment Corporation, Anaheim, Calif. Filed Nov. 27, 1964.

SPACEMATIC

For Interior Building Walls, Ceilings, and Partitions, Doors, Windows, and Related Types of Building Supplies, and Equipment Sold Together With the Building Supplies, Including Door Handles, Window Hardware, Ceiling Mounting Brackets, and the Like.
First use Nov. 9, 1964.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 180,420. Marken Plastic Corporation, Los Angeles, Calif. Filed Nov. 4, 1963.

MARTEX

For Plastic Conduit and Pipe and Couplings Therefor.
First use Apr. 16, 1963.

SN 198,125. Coordinated Sales, Inc., Chicago, Ill. Filed May 11, 1964.

GOLDEN DOLPHIN

For Toilet Seats.
First use Aug. 24, 1962.

SN 197,676. Continental Industries, Inc., Tulsa, Okla. Filed July 13, 1964.

CONTINENTAL

For Hardware and Plumbing Supplies for Use With Small Diameter Pipe, Including Punching T's, Tube Couplings, Saddles, Saddle T's, Molds, Welding Metals, Repair Clamps, and Tools.
First use June 16, 1961.

SN 201,989. Harvey Aluminum (Incorporated), Torrance, Calif. Filed Sept. 15, 1964.

ASTROLUX

For Faucets, Mixing Valves for Bathroom Showers, Shower Heads, and Tub Fillers.
First use at least as early as July 30, 1964.

SN 210,120. Grove Valve and Regulator Company, Oakland, Calif. Filed Jan. 18, 1965.

GROVEX

Owner of Reg. No. 635,407.
For Parts for Valves and Fluid Regulators—Namely, Resilient Plastic or Rubber Seal Rings, Diaphragms, Tubular Valve Members, Seals, Safety Blowout Plugs, and the Like for Use in Valves and Fluid Regulators.
First use on or before July 20, 1962.

SN 211,872. Coats & Clark Inc., New York, N.Y. Filed Feb. 12, 1965.

DUAL-WING

For Separable Slide Fasteners Known as Zippers.
First use on or about Feb. 3, 1965.

SN 211,921. Pogo Trimmer Company, Dallas, Tex. Filed Feb. 12, 1965.

HOSE-KADDY

For Hangers for Storing Garden Hose.
First use Feb. 4, 1965.

SN 212,054. Rockford Screw Products Co., Rockford, Ill. Filed Feb. 15, 1965.

ROCKALLOY

For Threaded Fasteners.
First use June 3, 1964.

SN 212,401. Fostoria Corporation, Warrington, Pa. Filed Feb. 19, 1965.

CHEMVALVE

For Fluid Control Valves.
First use Jan. 5, 1965.

SN 213,191. Ajax Hardware Corporation, City of Industry, Calif. Filed Mar. 8, 1965.

QUEEN ANNE COLLECTION

For Cabinet and Drawer Knobs and Pulls and Hinges.
First use Jan. 19, 1965.

Class 14—Metals and Metal Castings and Forgings

SN 204,115. Norsk Hydro-Elektrisk Kvaelstofaktieselskab, Oslo, Norway. Filed Sept. 16, 1964.



Owner of U.S. Reg. Nos. 516,063 and 523,090.
For Light Metals—Namely, Magnesium and Aluminium and Alloys Thereof, Further Castings and Forgings.
First use July 18, 1923; in commerce in the first part of 1924.

SN 207,444. Stone Manganese Marine Limited, London, England. Filed Dec. 3, 1964.

SONOSTON

Owner of British Reg. No. 847,896, dated Apr. 17, 1963.
For Unworked, Partly Wrought, Fully Wrought, and Machined Castings of Metal Alloys Containing Manganese and Copper.

Class 15—Oils and Greases

SN 195,029. Wagner Electric Corporation, St. Louis, Mo. Filed June 5, 1964.

WAGNER

Owner of Reg. Nos. 536,118, 728,198, and others.
For Oils and Greases—Namely, Brake Lubricant.
First use May 1, 1963.

SN 200,939. Kameyama Rosoku Kabushiki Kaisha, Kameyama, Mie, Japan. Filed Aug. 31, 1964.

NEWACE

Owner of Japanese Reg. No. 609,730, dated Apr. 22, 1963.
For Candles and Candlesticks.

SN 202,714. Southwest Grease & Oil Co., Inc., Wichita, Kans. Filed Sept. 25, 1964.

SURE-LIFE

For Drill Collar Compounds.
First use Aug. 29, 1964.

SN 204,584. Nationwide Industries, Inc., Philadelphia, Pa. Filed Oct. 22, 1964.

NU-SEAL

For Power Steering System Sealer.
First use July 29, 1964.

Class 16—Protective and Decorative Coatings

SN 197,862. American Hardware Supply Co., East Butler, Pa. Filed June 25, 1964.

HERITAGE RUST-D-STROY

For Protective Enamel Coatings for Interior and Exterior Metal and Wood Surfaces.
First use Oct. 31, 1961.

Class 17—Tobacco Products

SN 211,536. Iwan Ries & Co., Chicago, Ill. Filed Feb. 8, 1965.

Ko-Ko Mixture

The word "Mixture" is disclaimed apart from the mark as shown.
For Smoking Tobacco.
First use about February 1920.

SN 211,537. Iwan Ries & Co., Chicago, Ill. Filed Feb. 8, 1965.

AFFINITY MIXTURE

The word "Mixture" is disclaimed apart from the mark as shown.
For Smoking Tobacco.
First use 1922.

SN 212,417. La Primadora Cigar Corporation, New York, N.Y. Filed Feb. 19, 1965.

DIPLOMAT

Owner of Reg. No. 769,829.
For Cigars.
First use Nov. 9, 1962.

Class 19—Vehicles

SN 210,298. Globe Rubber Products Corp., Philadelphia, Pa. Filed Jan. 21, 1965.

MARK XX

For Rubber Auto Carpet.
First use Nov. 21, 1963.

SN 210,463. Otto-Items, Inc., St. Louis, Mo. Filed Jan. 22, 1965.

TRU-TORQUE

For Hydraulic Brake Parts, and Repair Kits for Hydraulic Brakes Containing Pistons, Sealing Cups, Expanders, and Springs.
First use Mar. 15, 1948.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 174,376. Hycon Mfg. Company, Monrovia, Calif. Filed Aug. 5, 1963.

hycon

Owner of Reg. Nos. 603,805, 781,334, and 781,335.
For Electrical Television Cameras, Electrical and Electronic Components and Accessories Therefor.
First use Dec. 13, 1961.

SN 174,377. Hycon Mfg. Company, Monrovia, Calif. Filed Aug. 5, 1963.

HYCON

Owner of Reg. Nos. 603,805, 781,334, and 781,335.
For Electrical Television Cameras.
First use May 15, 1949.

SN 185,349. Anaconda Wire and Cable Company, New York, N.Y. Filed Jan. 27, 1964.

CS-1200

For Electrical Coil Components.
First use Oct. 1, 1963.

SN 206,992. Advanced Equipment Corporation, Anaheim, Calif. Filed Nov. 27, 1964.

SPACEMATIC

For Interior Building Walls, Ceilings, and Partitions, Doors, Windows, and Related Types of Building Supplies, and Equipment Sold Together With the Building Supplies, Including Door Handles, Window Hardware, Ceiling Mounting Brackets, and the Like.
First use Nov. 9, 1964.

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SN 180,420. Marken Plastic Corporation, Los Angeles, Calif. Filed Nov. 4, 1963.

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SN 193,125. Coordinated Sales, Inc., Chicago, Ill. Filed May 11, 1964.

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First use Aug. 24, 1962.

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CONTINENTAL

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First use June 16, 1961.

SN 201,969. Harvey Aluminum (Incorporated), Torrance, Calif. Filed Sept. 15, 1964.

ASTROLUX

For Faucets, Mixing Valves for Bathroom Showers, Shower Heads, and Tub Fillers.
First use at least as early as July 30, 1964.

SN 210,120. Grove Valve and Regulator Company, Oakland, Calif. Filed Jan. 16, 1965.

GROVEX

Owner of Reg. No. 635,407.
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WAGNER

Owner of Reg. Nos. 536,118, 728,198, and others.
For Oils and Greases—Namely, Brake Lubricant.
First use May 1, 1963.

SN 200,939. Kameyama Rosoku Kabushiki Kaisha, Kameyama, Mie, Japan. Filed Aug. 31, 1964.

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Owner of Japanese Reg. No. 609,730, dated Apr. 22, 1963.
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SN 202,714. Southwest Grease & Oil Co., Inc., Wichita, Kans. Filed Sept. 25, 1964.

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First use Nov. 9, 1962.

Class 19—Vehicles

SN 210,298. Globe Rubber Products Corp., Philadelphia, Pa. Filed Jan. 21, 1965.

MARK XX

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First use Nov. 21, 1963.

SN 210,463. Otto-Items, Inc., St. Louis, Mo. Filed Jan. 22, 1965.

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For Hydraulic Brake Parts, and Repair Kits for Hydraulic Brakes Containing Pistons, Sealing Cups, Expanders, and Springs.
First use Mar. 15, 1948.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 174,376. Hycon Mfg. Company, Monrovia, Calif. Filed Aug. 5, 1963.

hycon

Owner of Reg. Nos. 603,805, 781,334, and 781,335.
For Electrical Television Cameras, Electrical and Electronic Components and Accessories Therefor.
First use Dec. 13, 1961.

SN 174,377. Hycon Mfg. Company, Monrovia, Calif. Filed Aug. 5, 1963.

HYCON

Owner of Reg. Nos. 603,805, 781,334, and 781,335.
For Electrical Television Cameras.
First use May 15, 1949.

SN 185,349. Anaconda Wire and Cable Company, New York, N.Y. Filed Jan. 27, 1964.

CS-1200

For Electrical Coil Components.
First use Oct. 1, 1963.

SN 186,664. The Pure Oil Company, Palatine, Ill. Filed Feb. 12, 1964.

MECHANOFLUID

For Liquid or Semi-Liquid Composition Exhibiting Change in Electrical Properties Such as Conductivity and Resistance in Response to Shear.
First use on or about Feb. 3, 1964.

SN 188,614. Takuto Denki Kabushiki Kaisha, Setagaya-ku, Tokyo-to, Japan. Filed Mar. 16, 1964.

TAKT

Priority claimed under Sec. 44(d) on Japanese application filed Nov. 9, 1963; Reg. No. 672,100, dated Apr. 3, 1965.
For Electronic Communication Apparatus and Instruments—Namely, Transistor Phonograph and Radio-Phonograph; and Phonograph-Radio Combinations.

SN 200,287. Sargent & Greenleaf Inc., Rochester, N.Y. Filed Aug. 20, 1964.

LOUD-MOUTH

For Battery Operated, Noise Producing Exit Alarm.
First use Aug. 11, 1964.

SN 202,653. Admiral Controls, Inc., Los Angeles, Calif. Filed Sept. 25, 1964.



The drawing is lined for the colors red and green, but no claim is made to such colors.
For Electronic Hardware—Namely, Terminal Lugs, Stand-Offs, Bushings, Inserts, and Handles.
First use May 1, 1963.

SN 205,995. Biviator S.A., Geneva, Switzerland. Filed Nov. 12, 1964.

BIVIA

Priority claimed under Sec. 44(d) on Swiss Reg. No. 204,034, dated May 22, 1964.
For Electric Micromotor.

SN 206,454. The Five Star Company, Plantsville, Conn. Filed Dec. 18, 1964.



For Relays, Coils, and Solenoids.
First use Feb. 12, 1947.

SN 208,456. The Gems Company, Inc., Farmington, Conn. Filed Dec. 18, 1964.

LOAD-PAK

For Electrical Switches.
First use October 1964.

SN 208,630. Schaub Engineering Company, Downers Grove, Ill. Filed Dec. 21, 1964.

SHADOW-BOX

For Electrical Control Panels.
First use Apr. 26, 1962.

SN 208,632. Signal Oil and Gas Company, Los Angeles, Calif. Filed Dec. 21, 1964.

FORTUNE

For Batteries.
First use Jan. 31, 1962.

SN 209,809. Slater Electric Inc., Glen Cove, N.Y. Filed Jan. 12, 1965.

MEDALIST

For Switches, Receptacles, Combination Switches and Receptacles, Pilot Lights, Combination Switches and Pilot Lights, Wall Plates, and Weatherproof Outlet Box Covers.
First use July 27, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 172,745. Huber Corporation, Marion, Ohio, by change of name from Huber-Warco Company, Marion, Ohio. Filed July 10, 1963.



Owner of Reg. No. 633,137.
For Construction Equipment—Namely, Road-Building and Maintenance Machinery, Earth-Moving Machinery, and Parts and Accessories Therefor.
First use Feb. 23, 1963.

SN 176,813. The Leico Machinery Corporation of North America, Los Angeles, Calif. Filed Sept. 12, 1963.

LEICO

For Metal Spinning and Forming Machines and Tools.
First use July 1953.

SN 191,367. Houdaille Industries, Inc., Buffalo, N.Y. Filed Apr. 17, 1964.

BN

For Hole Punching Units for Use in Punching Presses.
First use Nov. 1, 1959.

SN 191,465. Wilkinson Sword Limited, London, England. Filed Apr. 17, 1964.

MASTERCUT

For Scissors.
First use Dec. 28, 1963; in commerce Dec. 28, 1963.

SN 199,637. Star Diamond Industries, Inc., Wilmington, Calif. Filed Aug. 10, 1964.

STAR-M

For Diamond Blades.
First use Jan. 8, 1964.

SN 202,077. The Garcia Corporation, Teaneck, N.J. Filed Sept. 17, 1964.

MITCHELL

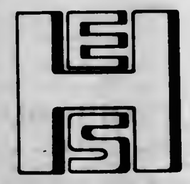
Owner of Reg. Nos. 629,464, 562,465, and 568,133.
For Tools and Hardware—Namely, Pliers and Wrenches.
First use at least as early as March 1958.

SN 202,793. Hammond Machinery Builders, Inc., Kalamazoo, Mich. Filed Sept. 28, 1964.

AUTO SHOT

Applicant disclaims the word "Shot" apart from the mark as shown.
For Machines for Sandblasting or Peening Using Beads.
First use July 14, 1964.

SN 205,464. Societe H. Ernault-Somua, Paris, France. Filed Nov. 3, 1964.



Owner of French Reg. No. 513,562, dated May 24, 1963 (Paris); Natl. Inst. No. 205,945.
For Machine Tools—Namely, Lathes and Milling Machines, Accessories for Such Machine Tools, and Their Components.

SN 206,657. A. O. Smith Harvestore Products, Inc., Arlington Heights, Ill. Filed Nov. 20, 1964.

TWIN-POWR

For Sweep Arm Auger Unloaders and Parts Therefor.
First use July 30, 1964.

SN 207,746. Sundstrand Corporation, Rockford, Ill. Filed Dec. 8, 1964.



The mark consists of a fanciful design of the letter "S" within a circle. Owner of Reg. Nos. 637,112 and 700,478.
For Hydraulic Transmissions and Injection Pumps.
First use August 1960.

SN 206,964. Frank O. Johnson, Casper, Wyo. Filed Dec. 16, 1964.

PREFORM

For Lapidary Vise.
First use Jan. 9, 1964.

SN 208,755. Maromatic Company, Inc., Burlingame, Calif. Filed Dec. 28, 1964.



For Automated Production Machines and Control Systems for Manufacturing Tumbler Locks.
First use Apr. 5, 1964.

SN 209,749. Zippo Manufacturing Company, Bradford, Pa. Filed Jan. 11, 1965.

ZIPPO

Owner of Reg. Nos. 317,219 and 710,591.
For Pocket Knives.
First use Sept. 24, 1964.

SN 209,776. Electro Engineering Products Co., Inc., Chicago, Ill. Filed Jan. 12, 1965.



For Portable Electrically Powered Saws and Drills.
First use on or about Aug. 12, 1958.

SN 210,386. Vaco Products Company, Chicago, Ill. Filed Jan. 21, 1965.

VACO GUILD/MARK

Owner of Reg. Nos. 426,477, 746,735, and others.
For Hand Tools—Namely, Screw Drivers and Nut Drivers.
First use Dec. 15, 1964; 1937 as to the mark "Vaco."

SN 211,017. Bass Brothers Enterprises, Inc., Fort Worth, Tex. Filed Feb. 1, 1965.

SWACONE

Owner of Reg. No. 629,471.
For Centrifugal Separators.
First use Oct. 12, 1964.

SN 211,906. Martin Engineering Company, Neponset, Ill. Filed Feb. 12, 1965.

VIBROLLER

For Vibration Inducers, and Vibration Accessories and Equipment.
First use on or about Jan. 2, 1964.

SN 212,168. Towle Manufacturing Company, Newburyport, Mass. Filed Feb. 16, 1965.

GLIMMER

For Stainless Steel Flatware.
First use Sept. 19, 1964.

SN 212,591. S. E. Rykoff & Co., Los Angeles, Calif. Filed Feb. 23, 1965.

SERCO ROSE

The exclusive use of the word "Rose" is disclaimed apart from the mark as shown. Owner of Reg. No. 770,093.
For Stainless Steel Flatware.
First use Dec. 14, 1964.

SN 212,649. Clinton Engines Corporation, Maquoketa, Iowa. Filed Feb. 24, 1965.



For Chain Saws.
First use Jan. 11, 1965.

SN 212,656. Crompton & Knowles Corporation, Worcester, Mass. Filed Feb. 24, 1965.

LIQUIFILM

For Packaging Machines.
First use May 18, 1962.

SN 213,043. Puget Sound Fabricators, Inc., Seattle, Wash. Filed Mar. 1, 1965.

TIMBER-TOTER

For Gantry Cranes.
First use Sept. 21, 1964.

SN 213,060. G. H. Stenner & Co., Inc., Jacksonville, Fla. Filed Mar. 1, 1965.

STENNER

For Pumps, Chemical Metering Feeders and Agitators.
First use Jan. 20, 1960.

SN 213,226. Eli Lilly and Company, Indianapolis, Ind. Filed Mar. 3, 1965.

GREENFIELD

Owner of Reg. Nos. 722,467, 755,307, and 776,433.
For Hand Tools for Lawn and Horticultural Applications—Namely, Lawn Spreaders and Plant Chemical Sprayers.
First use Jan. 19, 1965.

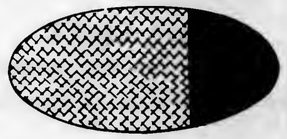
SN 213,227. Liquid Package Equipment Corporation, Woodstock, Ill. Filed Mar. 3, 1965.

SEAL.O.MATIC

For Machines for Filling and Sealing Milk Cartons.
First use prior to April 1957.

Class 26—Measuring and Scientific Appliances

SN 138,518. Metal Bellows Corporation, Wellesley, Mass. Filed Feb. 23, 1962.



The trademark is hatched to indicate the color orange.
For Metal Bellows, e.g., as Used in Pressure Responsive Devices and Flexible Shaft Couplings.
First use Dec. 18, 1960.

SN 158,439. Warren E. Gilson, M.D., d.b.a. Gilson Medical Electronics, Middleton, Wis. Filed Dec. 4, 1962.

ELECTROPHORATOR

For High Voltage Apparatus for the Separation and Isolation of Amino Acids, Peptides, Proteins, Nucleotides, Nucleosides, Purines, Pyrimidines, Phosphoric Acid Esters, Fatty Acids, Sugar Complexes, Steroid Derivatives, Dinitrophenol Amino Acids, and Inorganic Ions and Other Substances by Means of Electrophoresis.
First use June 14, 1957.

SN 179,661. Howe Richardson Scale Company, Clifton, N.J. Filed Oct. 23, 1963.

MICRO-WEIGH

For Weighing Apparatus.
First use Sept. 27, 1963.

SN 181,631. General Dynamics Corporation, Rochester, N.Y. Filed Nov. 21, 1963.

BETTER-BAUD

For Communications Equipment for the Transmission or Reception of Coded Signals Representing Data.
First use at least as early as Aug. 17, 1963.

SN 185,779. International Telephone and Telegraph Corporation, New York, N.Y., assignee of ITT Cannon Electric Inc., Los Angeles, Calif. Filed Jan. 31, 1964.

CANNON

Owner of Reg. Nos. 418,856, 623,956, and others.
For Force Measuring Devices.
First use July 6, 1960.

SN 186,164. Federal Products Corporation, Providence, R.I. Filed Feb. 6, 1964.

electro-check

For Electronic Precision Gaging Equipment.
First use Jan. 10, 1964.

SN 186,261. Microdyne, Inc., Wheeling, Ill. Filed Feb. 7, 1964.

DIGIMATION

For Analog and Digital Computer Systems and Control Systems.
First use Sept. 27, 1963.

SN 194,974. Electronic Development Company, Minneapolis, Minn. Filed June 5, 1964.

AUROMETER

For Devices for Measuring Hearing Loss.
First use Jan. 22, 1964.

SN 197,739. Robert A. Mitchell, d.b.a. Cadence Instruments Company, Philadelphia, Pa. Filed July 13, 1964.

AUTOPACER

For Instruments for Indicating Conformity of Average Speed of a Vehicle With a Predetermined Speed.
First use May 22, 1964.

SN 197,740. Robert A. Mitchell, d.b.a. Cadence Instruments Company, Philadelphia, Pa. Filed July 13, 1964.

CADENCE

For Instruments for Indicating Conformity of Average Speed of a Vehicle With a Predetermined Speed.
First use May 22, 1964.

SN 198,151. Flex Electric Products, Inc., Long Island City, N.Y. Filed July 20, 1964.

DIAL-A-BOUNCE

For Photo Light Bars.
First use May 7, 1964.

SN 198,519. Alco Automotive Products Co., Chicago, Ill. Filed July 27, 1964.

BLOODHOUND

For Universal Joint Testers.
First use Mar. 17, 1964.

SN 198,750. Leeds and Northrup Company, Philadelphia, Pa. Filed July 29, 1964.

CLEERTREND

For Printing Unit for Multipoint Recorders for Recording the Magnitudes of Physical Quantities That May Be Represented by Varying Electrical Signals.
First use March 1964.

SN 199,587. Colab Laboratories, Inc., Chicago Heights, Ill. Filed Aug. 10, 1964.

CELLUPHOR

For Cellulose Acetate Strips To Be Used in Electrophoresis Apparatus.
First use July 16, 1964.

SN 200,481. Precision Scientific Company, Chicago, Ill. Filed Aug. 24, 1964.

POWER JACK

For Supports Used for Temporary Support of Flasks and Similar Equipment in a Scientific Laboratory.
First use January 1964.

SN 200,706. Digital Equipment Corporation, Maynard, Mass. Filed Aug. 27, 1964.

FLIP CHIP

For Digital Circuit Modules.
First use Aug. 24, 1964.

SN 200,795. Textron Inc., Rochester, N.Y. Filed Aug. 27, 1964.

SHURON
CONTINENTAL

For Spectacle Frames and Parts Thereof, Cases for Holding Spectacles, Ophthalmic Lenses and Lens Blanks, Calipers, Gauges and Measuring Rules, Lens Markers, Machines for Adjusting and Testing Lenses and Lens Mountings for Spectacles, Ophthalmic Processing Machinery, Apparatus, and Tools, Including Machines for Manufacturing, Finishing, Adjusting, and Testing Lenses and Lens Mountings, Lens Grinding, Surfacing, Polishing, and Edging Machines, and Lens Blocking Apparatus, and Lense Abrasive and Polishing Materials.
First use Mar. 16, 1963, on spectacle frames.

SN 208,702. Technicon Instruments Corporation, Chauncey, N.Y. Filed Oct. 9, 1964.

AUTOPHORESIS

For Electrophoresis Apparatus.
First use Aug. 26, 1963.

SN 204,494. Nottaris & Wagner, Oberburg-Burgdorf, Switzerland. Filed Oct. 21, 1964.

PAWO

Owner of Swiss Reg. No. 153,271, dated Oct. 16, 1954.
For Process Cameras, Vertical Process Cameras, Vertical Process Enlargers, Vertical Color Separation Enlargers, Vertical Photographer Enlargers, Special Enlargers for Process Photography, Tank Developing Equipment, Automatic Developing Machines, Electronic Exposure Control Devices for Process Cameras, for Enlargers, for Contact Printing Cabinets, Contact Printing Frames, Grey Contact Screens, Different Reproduction Equipment—Namely, Film Punches, Register Lays, Register Pegs, and Reproduction Films.
First use Oct. 16, 1958; in commerce Apr. 15, 1957.

SN 204,506. Roy L. Miller, d.b.a. Miller's Photographic Enterprises, Chicago, Ill. Filed Oct. 22, 1964.

HURRICANE

For Photographic Apparatus—Namely, Photographic Film Washers and Cleaners.
First use Oct. 15, 1962.

SN 205,264. Electrophysics Corporation, Costa Mesa, Calif. Filed Nov. 2, 1964.

SEA-TEMP

Thermistor Controlled Electrical Measuring Instruments for Remote Indication of Temperature.
First use June 28, 1963.

SN 205,786. Electro-Nite, Inc., Philadelphia, Pa. Filed Nov. 9, 1964.

Check/mate

For Instrument for Checking Operation of the Thermocouples.
First use Oct. 28, 1964.

SN 206,835. Durant Manufacturing Company, Milwaukee, Wis. Filed Nov. 24, 1964.

UNISYSTEM

For Sequential Counting Controls With Visual and Electrical Readouts.
First use Nov. 10, 1964.

SN 207,668. George A. Stoops, d.b.a. Matronic Instrument Company, New Castle, Del. Filed Dec. 7, 1964.

ATTACH-A-PREP

For Accessory for Gas Chromatographs Used To Conduct Preparative Chromatography.
First use Oct. 15, 1964.

SN 208,266. Technical Operations, Incorporated, Burlington, Mass. Filed Dec. 16, 1964.

tech/ops

Owner of Reg. Nos. 677,802 and 717,536.
For Optical Benches, Accessories for Optical Benches—Namely, Optical Bench Carriers, Post Holders, Mounting Plates, Positioning Clamps, Lens Holders, Camera Backs, Mirrors, Transfer Bars, Rotation Mounts, Bellows, Lamp Houses and Arc Lamps; Two-Dimensional Recording Microdensitometers and Stepping Attachments, Recording Media and Parts and Accessories—Namely, Automatic Programmers, Specimen Table Drives, Recording Table Attachments, Recording Pen Assemblies, Pen Holders and Actuators, Pulse Counters, Vignetting Controls, Optical Wedges and Aperture Adjusters for the Same.
First use on or about Jan. 31, 1964, on recording microdensitometers.

SN 209,461. Henry C. Siska, d.b.a. Siska Products, Oak Harbor, Ohio. Filed Jan. 6, 1965.

TRIM-ETER

For Sailboat Speedometers.
First use 1946.

SN 209,577. Bausch & Lomb Incorporated, Rochester, N.Y. Filed Jan. 8, 1965.

ORTHOLITE

Owner of Reg. No. 881,727.
For Plastic Ophthalmic Lenses.
First use Aug. 21, 1964.

SN 210,586. Paris Eyewear, Inc., New York, N.Y. Filed Jan. 25, 1965.

Sunfire Fashions

The word "Fashions" is disclaimed apart from the mark as shown.
For Sunglasses.
First use Dec. 14, 1964.

SN 210,918. Adage, Inc., Cambridge, Mass. Filed Jan. 29, 1965.

AMBILOG

For Electronic Computing Equipment.
First use Sept. 21, 1964.

SN 211,516. Esterline Angus Instrument Company, Inc., Indianapolis, Ind. Filed Feb. 8, 1965.

AZAS

For Chart Recording Instruments Having Adjustable Zero and Adjustable Span Features.
First use May 29, 1964.

SN 211,529. International Telephone and Telegraph Corporation, New York, N.Y. Filed Feb. 8, 1965.

SYSTEM SYZER

For Slide Rules.
First use Jan. 11, 1965.

SN 211,576. Rehrig Controls Co., South El Monte, Calif. Filed Feb. 8, 1965.

COLORCOUPLE

For Thermocouples.
First use Nov. 6, 1964.

SN 211,640. Fisher Scientific Company, Pittsburgh, Pa. Filed Feb. 9, 1965.

WOBBULATOR

For Magnetic Stirrer.
First use July 22, 1964.

SN 212,193. Copymation, Inc., Elk Grove Village, Ill. Filed Feb. 17, 1965.

COPY-CHROME

For Photosensitive Paper for Use in Reproduction Machines.
First use Jan. 22, 1965.

SN 212,261. Textron Inc., Rochester, N.Y. Filed Feb. 17, 1965.

TWINSIGHT

For Ophthalmic Lenses.
First use Mar. 1, 1918.

SN 212,788. Liberty Optical Manufacturing Co., Inc., Newark, N.J. Filed Feb. 25, 1965.

Owner of Reg. No. 733,080.
For Spectacle Frames and Temples.
First use Feb. 10, 1965.

SN 212,988. Eastman Kodak Company, Rochester, N.Y. Filed Mar. 1, 1965.

4-X

Owner of Reg. Nos. 222,144, 609,563, and 765,871.
For Sensitised Photographic Film.
First use Oct. 13, 1964.

SN 213,036. National Research Corporation, Newton Highlands, Mass. Filed Mar. 1, 1965.

NRC

Owner of Reg. Nos. 647,460 and 621,267.
For Mass Spectrometer Leak Detectors.
First use Jan. 29, 1965.

SN 213,064. Union Carbide Corporation, New York, N.Y. Filed Mar. 1, 1965.

UNION CARBIDE

Owner of Reg. Nos. 681,820 and 723,842.
For Cryosorption Pumps.
First use on or about Jan. 28, 1965.

SN 213,219. Industrial Instruments, Inc., Cedar Grove, N.J. Filed Mar. 3, 1965.

SOLU CHEK

Owner of Reg. Nos. 614,812 and 727,002.
For Electrical Conductivity Meters.
First use 1944.

Class 27 — Horological Instruments

SN 213,400. Bulova Watch Company, Inc., Flushing, N.Y. Filed Mar. 5, 1965.

Applicant makes no claim to a picture or an accurate representation of a tuning fork, per se, as a trademark. Owner of Reg. No. 760,669.
For Watches and Clocks.
First use Jan. 8, 1965.

SN 213,421. Distinguished Gift Manufacturers, Inc., Waterloo, Iowa. Filed Mar. 5, 1965.

Distinguished Gift

The word "Gift" is disclaimed apart from the mark. Owner of Reg. Nos. 684,064, 751,728, and others.
For Clocks.
First use June 1, 1964.

Class 28 — Jewelry and Precious-Metal Ware

SN 216,082. K.S.K. Jewelry Co., Inc., New York, N.Y. Filed Apr. 8, 1965.

FINGER FASHION

For Precious Metal Jewelry—Namely, Finger Rings.
First use Aug. 17, 1964.

Class 29 — Brooms, Brushes, and Dusters

SN 215,880. Milco Plastics Corp., Brooklyn, N.Y. Filed Apr. 6, 1965.



The drawing is lined for orange.
For Brooms.
First use Dec. 1, 1964.

Class 30 — Crockery, Earthenware, and Porcelain

SN 205,604. Onondaga Pottery Company, Syracuse, N.Y. Filed Nov. 5, 1964.

SYRALITE

For Dinnerware and Tableware Made of China.
First use Sept. 18, 1964.

Class 31 — Filters and Refrigerators

SN 208,447. The Cornelius Company, Anoka, Minn. Filed Dec. 16, 1964.

DAIRY-BANK

For Refrigerators.
First use Oct. 5, 1964.

Class 32 — Furniture and Upholstery

SN 212,664. Flexsteel Industries, Incorporated, Dubuque, Iowa. Filed Feb. 24, 1965.

ZEE-FLEX

For Upholstered Davenports, Upholstered Lounge Chairs, Upholstered Occasional Chairs, and Upholstered Sofa Beds.
First use June 20, 1944.

SN 212,776. Hemenway Furniture Company, Inc., Shreveport, La. Filed Feb. 26, 1965.

HEMLACO

For Commercial Kitchen Equipment—Namely, Serving Counters, Stands, Tables, Racks, and Bins.
First use Sept. 21, 1964.

Class 33 — Glassware

SN 202,896. Anchor Hocking Glass Corporation, Lancaster, Ohio. Filed Sept. 29, 1964.

ANCHORCOTE

For Glass Jars and Bottles.
First use on or about Aug. 19, 1964.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 208,655. Air Reduction Company, Incorporated, New York, N.Y. Filed Dec. 18, 1964.

QUEENBEE MULTIPAK

For Electric Welding Apparatus.
First use on or about Aug. 18, 1964.

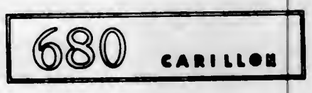
SN 208,802. Arcos Corporation, Philadelphia, Pa. Filed Dec. 24, 1964.

ARCSTRIP

For Welding Electrodes.
First use June 29, 1964.

Class 36 — Musical Instruments and Supplies

SN 185,091. I. T. Verdin Company, Cincinnati, Ohio. Filed Jan. 21, 1964.



Applicant disclaims the exclusive use of the word "Carillon" apart from the mark as shown.
For Magnetic Tape Play Back Machines and Parts Therefor.
First use February 1963.

SN 208,747. Don Costa Productions, New York, N.Y. Filed Oct. 12, 1964.



For Phonograph Records.
First use Nov. 22, 1963.

SN 204,476. Paul E. Johnson, d.b.a. Stark Record Co., Mount Airy, N.C. Filed Oct. 21, 1964.

STARK

For Phonograph Records.
First use Mar. 25, 1962.

SN 206,177. Puchito Record Mfg. Co., Inc., Hialeah, Fla. Filed Nov. 18, 1964.



For Phonograph Records.
First use December 1960.

SN 207,968. Mercury Record Productions, Inc., Chicago, Ill. Filed Dec. 11, 1964.

BLUE ROCK

For Phonograph Records.
First use Nov. 25, 1964.

SN 209,057. BSR Limited, Old Hill, Stafford, England. Filed Dec. 30, 1964.

BSR

Owner of British Reg. No. 841,047, dated Oct. 30, 1962.
For Record Players and Record Changers, and Tape Decks Being Parts of Tape Recorders, All for Use in Sound Recording and Sound Reproducing.

SN 209,109. Prestige Records, Inc., Bergenfield, N.J. Filed Dec. 30, 1964.



For Phonograph Records.
First use June 1, 1964; Feb. 1, 1950, as to "Prestige."

Class 37 — Paper and Stationery

SN 203,264. The Eagle-Picher Company, d.b.a. Fabricon Products, Cincinnati, Ohio. Filed Oct. 5, 1964.

FABCOAT

For Paper Base Coated Wrapping Sheets.
First use Aug. 10, 1964.

SN 203,932. Business Envelope Manufacturers, Inc., Pearl River, N.Y. Filed Oct. 14, 1964.



The mark consists of the words "Pearl River" and the letters "BE" in novel form and design. The words "Pearl River" are disclaimed apart from the mark as shown. Owner of Reg. No. 750,888.
For Envelopes, Paper Envelopes, Letterheads, and Business Forms.
First use Oct. 5, 1964.

SN 206,063. National Business Systems Association, Inc., Chicago, Ill. Filed Nov. 12, 1964. COLLECTIVE MARK.



For Partially Printed Business and Accounting Forms.
First use on or about July 10, 1964.

Class 39 — Clothing

SN 142,693. Cooper's, Incorporated, Kenosha, Wis. Filed Apr. 20, 1962.



The drawing is lined for red. The trademark consists of a red line extending across the upper part of the toe portion of the hose. The representation of the stocking is disclaimed apart from the mark.
For Socks for Men and/or Boys.
First use Nov. 25, 1961.

SN 169,191. Wide Awake Shirt Co., Inc., Reading, Pa. Filed May 17, 1963.

SquireCasuals

Applicant disclaims the descriptive word "Casuals" separate and apart from the mark as shown.
For Casual Shirts.
First use on or about Apr. 19, 1962.

SN 179,191. Bullock's, Inc., Los Angeles, Calif. Filed Oct. 17, 1963.

PETITE BOUTIQUE

For Infants' Wear—Namely, Bootees, Dresses, Sweaters, Bonnets, Sacques, Shawls, Diaper Sets, Christening Sets, Rompers, Bibs, Kimonos; Girls' Dresses, Coats, Sweaters, Jumpers, Robes, Lingerie; and Boys' Suits, Coats, Sweaters, Coveralls, Shirts, Robes, and Underwear.
First use Nov. 1, 1958.

SN 179,679. Wonderknit Corporation, New York, N.Y. Filed Oct. 23, 1963.

BREEZY-KNIT

For Shirts and Sweaters of Knitted Material for Men and Boys.
First use Sept. 3, 1963.

SN 184,838. Rockford Textile Mills, Inc., McMinnville, Tenn. Filed Jan. 17, 1964.

CUFFIES

For Sneaker Socks.
First use Nov. 4, 1963.

SN 184,994. United States Safety Service Co., Kansas City, Mo. Filed Jan. 20, 1964.

CAP-A-TACH

For Safety Hard Hats and Helmets Containing a Device or Attachment Which Secures Ear Muffs Thereto.
First use Dec. 30, 1963.

SN 185,589. United States Rubber Company, New York, N.Y. Filed Jan. 28, 1964.

SAFE T

For Shoes and Over-The-Shoe Footwear.
First use Mar. 8, 1963.

SN 188,195. Puritan Fashions Corporation, New York, N.Y., assignee of Big Yank Corporation, New York, N.Y. Filed Mar. 9, 1964.

GLOCESTER CLOTH

The word "Cloth" is disclaimed apart from the mark as a whole.
For Cloth Fabric Made Up Into Finished Apparel—Namely, Work Pants, Work Shirts, Hats, Coats, and Jackets.
First use Jan. 21, 1964.

SN 190,080. Spotlight, Inc., Columbus, Ohio. Filed Mar. 31, 1964.

Spotlight

For Women's and Misses' Dance Costumes.
First use Mar. 1, 1958.

SN 195,978. The H. A. Seinsheimer Company, Cincinnati, Ohio. Filed June 18, 1964.

FIRST HONORS

For Fabric Made Up Into Finished Apparel—Namely, Men's Outer Clothing.
First use Mar. 1, 1964.

SN 196,386. Sigmar Ouroumoff, nee Huguette Bereau, Paris, France. Filed June 24, 1964.

SIGLINE

Owner of French Reg. No. 502,776, dated Feb. 22, 1962 (Seine); Natl. Inst. No. 179,967.
For Outer Garments—Namely, Dresses, Coats, Tailor-Made Dresses, Skirts, Sailor Suits, Two-Piece Suits and Pants; Underwear; and Under Clothing—Namely, Girdles and Corsets.

SN 196,964. Independent Grocers' Alliance Distributing Co., Chicago, Ill. Filed July 2, 1964.

SHIRLEY GAY

The name "Shirley Gay" is fictitious.
For Hosiery, Lingerie, and Brassieres.
First use in or about February 1958.

SN 203,042. Vereinigte Trikotfabriken Vollmoeller A.G., Stuttgart-Vaihingen, Germany. Filed Sept. 30, 1964.

LANOVA

For Knitted Outerwear—Namely, Dresses and Ladies' Suits; and Underwear Made of Woven Fabric or of Tricot or Other Knit Fabric.
First use Mar. 16, 1911; in commerce Nov. 12, 1963.

SN 203,275. Farah Manufacturing Company, Inc., El Paso, Tex. Filed Oct. 5, 1964.

FaraPress

For Men's and Boys' Slacks and Fabrics Sold Exclusively in the Form of Such Garments.
First use Sept. 17, 1964.

SN 203,602. Nasharr Freres, Chicago, Ill. Filed Oct. 8, 1964.

THE MAGIC HANKY

The word "Hanky" is disclaimed apart from the mark as shown.
For Handkerchief and Baby Bonnet Sold as One Item.
First use Jan. 10, 1960.

SN 207,364. Ann Campion, Inc., New York, N.Y. Filed Dec. 3, 1964.

ANN CAMPION

For Romper Suits, Swim Suits, Terry Dry-Off Suits, Foul Weather Jump Suits, Sailing Gear, Hooded Jackets, Foul Weather Jackets, Pullovers, Blouses, Pants, Bloomers, Shorts, Patio Skirts, Watch Caps, T-Dresses, Pinafores, Dresses, and Formal Apparel for Women.
First use December 1963.

SN 207,502. Lesavoy Mills, Inc., Allentown, Pa. Filed Dec. 4, 1964.

DEL-TOGS

For Men's and Boys' Shirts.
First use Oct. 2, 1964.

SN 207,675. Topco Associates, Inc., Skokie, Ill. Filed Dec. 7, 1964.

KIDDY-KIN

For Infants' Wear—Namely, Baby Bibs and Waterproof Baby Pants.
First use Nov. 9, 1964.

SN 207,933. Aimcee Wholesale Corporation, New York, N.Y. Filed Dec. 11, 1964.

SUPER STRIDE

The word "Stride" is disclaimed apart from the mark as shown. Owner of Reg. No. 429,101.
For Men's Shoes Made Wholly or in Part of Leather.
First use Dec. 28, 1945.

SN 208,488. William F. Niemi Co., d.b.a. Eddie Bauer, Seattle, Wash. Filed Dec. 18, 1964.

KARA KORAM

For Down-Insulated Clothing—Namely, Coats, Jackets, Vests, Parkas, Trousers, Under-Vests, Under-Drawers, for Men, Women, and Children; and Sleeping Robes.
First use July 1963.

SN 209,722. Petite Miss Co., New York, N.Y. Filed Jan. 11, 1965.

La Flaque De Paris

The French words "La Flaque de Paris" mean "the puddle of Paris," when translated into English. The wording "de Paris" is disclaimed apart from the mark as shown.
For Ladies' and Misses' Coats.
First use Dec. 18, 1964.

SN 210,540. Davidson-Bigelow, Incorporated, New York, N.Y. Filed Jan. 25, 1965.

TOEKINS

For Slipper Socks.
First use Jan. 5, 1965.

SN 210,688. Manchester Hosiery Mills, Manchester, N.H. Filed Jan. 26, 1965.

Karen Dale

The name "Karen Dale" is that of an individual whose consent is of record.
For Women's and Girls' Hosiery.
First use Nov. 19, 1964.

SN 211,496. Belknap-Sulloway Mills Corporation, Lanconia, N.H. Filed Feb. 8, 1965.

Size-minder

For Socks.
First use Oct. 28, 1964.

SN 212,007. Harry Irwin, Inc., New York, N.Y. Filed Feb. 15, 1965.

HOB NOB

For Manufacture and Sale of Men's Topcoats, Overcoats, and Sport Jackets.
First use Dec. 20, 1960.

SN 214,512. Cheselle, Inc., New York, N.Y. Filed Mar. 19, 1965.

JUMP-INS

For Ladies' and Children's Robes and Dresses.
First use Dec. 15, 1964.

SN 214,609. Cannon Shoe Company, Baltimore, Md. Filed Mar. 22, 1965.

Orbano

For Men's Shoes.
First use Mar. 2, 1965.

SN 214,686. Dolly Textiles, Inc., Hereford, Tex. Filed Mar. 22, 1965.

Dolly Miss

For Girls' Dresses.
First use Jan. 4, 1965.

Class 44 — Dental, Medical, and Surgical Appliances

SN 198,563. Kerr Manufacturing Company, Detroit, Mich. Filed July 27, 1964.

DEELASTIC

For Hydro-Colloid Impression Material for Dental Inlays, Bridges, and Dentures.
First use prior to 1962.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

794,243. SURE-LIVE. Elsa M. McIntyre, d.b.a. Sure-Live Mealworm Co. SN 188,984. Pub. 6–1–65. Filed 1–8–64.

794,244. CYREZ. American Cyanamid Company. SN 198,997. Pub. 6–1–65. Filed 8–3–64.

794,245. PAN-X AND DESIGN. Francis H. Besdek, d.b.a. Boulder Spring Farm. SN 199,444. Pub. 6–1–65. Filed 8–7–64.

794,246. ABSAFIL. Fiberfil, Inc. SN 201,407. Pub. 6–1–65. Filed 9–8–64.

794,247. HITCO-C AND DESIGN. Hitco, by change of name from H. I. Thompson Fiber Glass Company. SN 201,488. Pub. 6–1–65. Filed 9–8–64.

794,248. FIESTA. Eagle Ottawa Leather Company. SN 201,929. Pub. 6–1–65. Filed 9–15–64.

794,249. UCAR. Union Carbide Corporation. SN 203,357. Pub. 6–1–65. Filed 10–5–64.

794,250. HERCOPRIME. Hercules Powder Company. SN 204,258. Pub. 6–1–65. Filed 10–19–64.

794,251. DESMOPAN. Farbenfabriken Bayer Aktiengesellschaft. SN 204,561. Pub. 6–1–65. Filed 10–22–64.

794,252. ETHOGLAS. Fiberfil, Inc. SN 204,562. Pub. 6–1–65. Filed 10–22–64.

794,253. UNION CARBIDE AND DESIGN. Union Carbide Corporation. SN 205,208. Pub. 6–1–65. Filed 10–30–64.

794,254. PAREZ. American Cyanamid Company. SN 205,228. Pub. 6–1–65. Filed 11–2–64.

794,255. IMSIL. Illinois Minerals Company. SN 205,589. Pub. 6–1–65. Filed 11–5–64.

794,256. "MAY WE HELP YOU?" AND DESIGN. Lakeview Hamster Colony. SN 205,702. Pub. 6–1–65. Filed 11–6–64.

794,257. ISOMIN. Skånska Ättikfabriken Aktiebolag. SN 205,731. Pub. 6–1–65. Filed 11–6–64.

794,258. COMPTRUSION. Eastman Kodak Company. SN 206,527. Pub. 6–1–65. Filed 11–19–64.

794,259. AIRBREEZ. Crown Rubber Company. SN 206,701. Pub. 6–1–65. Filed 11–23–64.

794,260. ALIFIN. Shell Oil Company. SN 206,767. Pub. 6–1–65. Filed 11–23–64.

794,261. ALKOR AND DESIGN. Alkor-Werk Karl Lissmann. SN 207,547. Pub. 6–1–65. Filed 12–7–64.

794,262. GRIFFITH YW HYBRIDS AND DESIGN. W. R. Griffith, d.b.a. Griffith Seed Company. SN 207,592. Pub. 6–1–65. Filed 12–7–64.

794,263. ING-RICH AND DESIGN. Ingram-Richardson, Inc. SN 207,605. Pub. 6–1–65. Filed 12–7–64.

794,264. BAYGAL. Farbenfabriken Bayer Aktiengesellschaft. SN 208,059. Pub. 6–1–65. Filed 12–14–64.

794,265. RALLY. Rally Farms. SN 208,060. Pub. 6–1–65. Filed 12–14–64.

794,266. PAPERBESTOS. Johns-Manville Corporation. SN 208,197. Pub. 6–1–65. Filed 12–15–64.

794,267. ACME GOLD LINE AND DESIGN. Acme Markets, Inc. SN 210,718. Pub. 6–1–65. Filed 1–27–65.

Class 2 — Receptacles

794,268. U PAC KIT. Herrin Transfer & Warehouse Co., Inc. SN 189,471. Pub. 6–1–65. Filed 3–24–64.

794,269. TOWER-TEAR. Tower Packaging Company. SN 201,157. Pub. 6–1–65. Filed 9–2–64.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

794,270. BERKEDGE. Berkeley Bags, Inc. SN 204,751. Pub. 6–1–65. Filed 10–26–64.

794,271. DORAL. Doral Handbags, Inc. SN 205,046. Pub. 6–1–65. Filed 10–29–64.

Class 4 — Abrasives and Polishing Materials

794,272. CELLOTHANE. The Cello Chemical Company. SN 182,313. Pub. 6–1–65. Filed 12–4–63.

Class 5 — Adhesives

794,273. STANMELT. Standard Chemical Products, Inc. SN 196,072. Pub. 6–1–65. Filed 6–19–64.

Class 6 — Chemicals and Chemical Compositions

794,274. E AND HEXAGONAL DESIGN. Eaton Chemical Corporation. SN 140,546. Pub. 6–1–65. Filed 3–23–62.

794,275. C-LINE AND DESIGN. Calumet & Hecla, Inc. SN 140,633. Pub. 6–1–65. Filed 3–26–62.

794,276. ANCHOR DESIGN WITH HEXAGONAL BORDER. Steuber Company, Incorporated, by change of name from C. P. Steuber & Company, Inc. SN 168,885. Pub. 6–1–65. Filed 4–8–63.

794,277. NURSERY FRESH. Avon Products, Inc. SN 170,976. Pub. 6–1–65. Filed 6–14–63.

794,278. KLUBER AND DESIGN. August Kluber Company. CONSOLIDATED CERTIFICATE. SN 188,415, pub. 5–25–65, filed 3–11–64, Cl. 6; SN 188,413, pub. 5–25–65, filed 3–11–64, Cl. 23.

794,279. FAMILY TREE. Clifford E. Schiffer, d.b.a. Calusa Associates. MULTIPLE CLASS (Classes 6 and 52). SN 198,085. Pub. 6–1–65. Filed 7–17–64.

794,280. MOLLIT. Farbenfabriken Bayer Aktiengesellschaft. SN 200,635. Pub. 6–1–65. Filed 8–26–64.

794,281. CHECK IN CIRCLE (DESIGN). Ferro Corporation. SN 200,837. Pub. 6–1–65. Filed 8–28–64.

794,282. ALACSOFT. Alcolac Chemical Corporation. SN 200,888. Pub. 6–1–65. Filed 8–31–64.

794,283. NU-TOX. Geigy Chemical Corporation. SN 202,471. Pub. 6–1–65. Filed 9–28–64.

794,284. TEXACO T AND DESIGN. Texaco Inc. SN 203,442. Pub. 6–1–65. Filed 10–6–64.

794,285. CRYSTOL. Drew Chemical Corporation. SN 204,642. Pub. 6–1–65. Filed 10–23–64.

794,286. QO POLYMEG. The Quaker Oats Company. SN 204,710. Pub. 6–1–65. Filed 10–23–64.

794,287. AMIGASE. Baxter Laboratories, Inc. SN 204,749. Pub. 6–1–65. Filed 10–26–64.

794,288. KAISER. Kaiser Aluminum & Chemical Corporation. SN 204,796. Pub. 6–1–65. Filed 10–26–64.

794,289. BRITESIL. Amerace Corporation. SN 204,945. Pub. 6–1–65. Filed 10–28–64.

794,290. BRITESORB. Amerace Corporation. SN 204,946. Pub. 6–1–65. Filed 10–26–64.

794,291. SHELLSOLVE. Shell Oil Company. SN 205,107. Pub. 6–1–65. Filed 10–29–64.

794,292. AIR DROP AND DESIGN. Moser Paper Company. SN 205,319. Pub. 6–1–65. Filed 11–3–64.

794,293. JARBEL. Geigy Chemical Corporation. SN 205,590. Pub. 6–1–65. Filed 11–6–64.

Class 7—Cordage

794,294. DU PONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 205,171. Pub. 6–1–65. Filed 10–30–64.

794,295. TYBEX. E. I. du Pont de Nemours and Company. SN 205,172. Pub. 6–1–65. Filed 10–30–64.

Class 10—Fertilizers

794,296. C-LINE AND DESIGN. Calumet & Hecla, Inc. SN 140,634. Pub. 6–1–65. Filed 8–26–62.

794,297. DIALOAM. The Eagle-Picher Company. SN 206,244. Pub. 6–1–65. Filed 11–16–64.

Class 11—Inks and Inking Materials

794,298. FANCIFUL S (DESIGN). W. A. Sheaffer Pen Company. MULTIPLE CLASS (Classes 11 and 37). SN 201,623. Pub. 6–1–65. Filed 9–10–64.

794,299. SHEAFFER. W. A. Sheaffer Pen Company. MULTIPLE CLASS (Classes 11 and 37). SN 201,624. Pub. 6–1–65. Filed 9–10–64.

Class 12—Construction Materials

794,300. D. Dundee Cement Company. SN 101,761. Pub. 2–21–61. Filed 8–1–60.

794,301. O'LITE AND DESIGN. The O'Malley Lumber Company. SN 180,460. Pub. 6–1–65. Filed 11–4–66.

794,302. ALKCONDITIONED. Alkco Manufacturing Company. SN 184,416. Pub. 6–1–65. Filed 1–13–64.

794,306. CELTHANE. Dacar Chemical Products Company. SN 187,653. Pub. 6–1–65. Filed 2–28–64.

794,304. FINECRAFT AND DESIGN. J. E. Chilton Millwork & Lumber Co., Inc. SN 188,721. Pub. 6–1–65. Filed 3–16–64.

794,305. TROWLEZE. Kaiser Aluminum & Chemical Corporation. SN 189,309. Pub. 6–1–65. Filed 3–23–64.

794,306. BASALOX. Basic Incorporated. SN 191,487. Pub. 6–1–65. Filed 4–20–64.

794,307. REVERE DRYSEAL COPPER FLASHING AND DESIGN. Revere Copper and Brass Incorporated. SN 192,325. Pub. 6–1–65. Filed 4–29–64.

794,308. URE-AL. Ure-Al Corporation. SN 195,985. Pub. 6–1–65. Filed 6–18–64.

794,309. THERMO-CURB. Huron Portland Cement Company. SN 197,838. Pub. 6–1–65. Filed 7–14–64.

794,310. ASBESTOSEAL. The Philip Carey Manufacturing Company. SN 201,050. Pub. 6–1–65. Filed 9–1–64.

794,311. CRETE-SLEEVE. Shamrock-Neatway Products, Inc. SN 201,310. Pub. 6–1–65. Filed 9–4–64.

794,312. AQUA-STEEL. Stern Swimming Pool Corporation. SN 201,482. Pub. 6–1–65. Filed 9–8–64.

794,313. MAMMOTH. International Pipe and Ceramics Corporation. SN 201,844. Pub. 6–1–65. Filed 9–14–64.

794,314. SILVER ARROW. Edward Hines Lumber Co. SN 202,080. Pub. 6–1–65. Filed 9–17–64.

794,315. FIBERLENE. Max Kats Bag Co., Inc. SN 206,042. Pub. 6–1–65. Filed 11–12–64.

794,316. SPINTONE. Johns-Manville Corporation. SN 206,945. Pub. 6–1–65. Filed 11–25–64.

794,317. SIGNATURE INSPECTION DFPA INSPECTOR AND DESIGN. American Plywood Association. SN 207,104. COLLECTIVE MARK. Pub. 6–1–65. Filed 11–30–64.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

794,318. TIMAC. MAC Valves, Inc. SN 164,204. Pub. 8–25–64. Filed 4–5–63.

794,319. LAM LOC. The Lamson & Sessions Co. SN 192,135. Pub. 6–1–65. Filed 4–24–64.

794,320. COLOR CRAFT. Color Craft Corporation. SN 194,956. Pub. 6–1–65. Filed 6–5–64.

794,321. SPACE-SHOTS. Joe Lowe Corporation. SN 199,477. Pub. 6–1–65. Filed 8–7–64.

794,322. NIBCO SCOTT. Nibco, Inc. SN 207,827. Pub. 6–1–65. Filed 12–9–64.

794,323. NIBCO SCOTT AND DESIGN. Nibco, Inc. SN 207,828. Pub. 6–1–65. Filed 12–9–64.

794,324. CERCLO. Flexello Castors & Wheels Limited. SN 207,956. Pub. 6–1–65. Filed 12–11–64.

794,325. UNI-GRIP. Uni-Grip Hanger Company. SN 207,994. Pub. 6–1–65. Filed 12–11–64.

794,326. THUM-TROL. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co. SN 208,069. Pub. 6–1–65. Filed 12–14–64.

794,327. BOYDBOLT. Calfax, Inc. SN 208,235. Pub. 6–1–65. Filed 12–16–64.

Class 14—Metals and Metal Castings and Forgings

794,328. VEROXAL. Vereinigte Aluminium-Werke Aktiengesellschaft. SN 187,977. Pub. 6–1–65. Filed 8–4–64.

794,329. CAMVAC. Cameron Iron Works, Inc. SN 211,500. Pub. 6–1–65. Filed 2–8–65.

Class 15—Oils and Greases

794,330. DI-333 SUPERDIESEL AND DESIGN. Hy-Test 303 Corp. SN 207,040. Pub. 6–1–65. Filed 11–27–64.

794,331. TEXRO. Texaco Inc. SN 210,913. Pub. 6–1–65. Filed 1–28–65.

Class 16—Protective and Decorative Coatings

794,332. SAN-SUI. H. A. Kimura, d.b.a. H. A. Kimura Imports. SN 189,937. Pub. 6–1–65. Filed 5–29–63.

794,333. AGATEEN. Agate Lacquer Manufacturing Co., Inc. SN 198,995. Pub. 6–1–65. Filed 8–3–64.

Class 17—Tobacco Products

794,334. WREN'S RELISH. Freeman & Gossage, Inc. SN 192,705. Pub. 6–1–65. Filed 5–5–64.

Class 18—Medicines and Pharmaceutical Preparations

794,335. SOLU-BARB. Fellows Medical Mfg. Co. Inc. SN 168,180. Pub. 6–1–65. Filed 5–6–63.

794,336. ALBERS MEDICATED PIG-GLO. Carnation Company. SN 170,888. Pub. 6–1–65. Filed 6–13–63.

794,337. CAPSULE (DESIGN). Parke, Davis & Company. SN 178,217. Pub. 6–1–65. Filed 10–2–63.

794,338. RADJOSAN. Amol-Werk Vollrath Wasmuth, KG. SN 188,405. Pub. 6–1–65. Filed 3–11–64.

794,339. SERPENT (DESIGN). Conal Pharmaceuticals, Inc. SN 200,163. Pub. 6–1–65. Filed 8–19–64.

794,340. PRONEPHRINE AND DESIGN. Professional Pharmacal Co., Inc. SN 202,545. Pub. 6–1–65. Filed 9–28–64.

794,341. FORMULA C-PE. The Emenel Company. SN 203,586. Pub. 6–1–65. Filed 10–6–64.

794,342. HOLY COW. Interstate Industries, Inc., d.b.a. Interstate Chemical Company. SN 203,969. Pub. 6–1–65. Filed 10–14–64.

794,343. PHARMA-PLUS. Warren-Teed Pharmaceuticals Inc. SN 203,994. Pub. 6–1–65. Filed 10–14–64.

794,344. FORMULA PLUS. Milan Distributing Corporation. SN 204,691. Pub. 6–1–65. Filed 10–23–64.

794,345. GENULACTA. Stein, Hall & Co., Inc. MULTIPLE CLASS (Classes 18 and 46.) SN 205,645. Pub. 6–1–65. Filed 11–6–64.

794,346. HEMO-DEX. Whitmoyer Laboratories, Inc. SN 205,896. Pub. 6–1–65. Filed 11–9–64.

794,347. NORATONE. Park and Tilford, d.b.a. Norex Laboratories. SN 206,174. Pub. 6–1–65. Filed 11–13–64.

794,348. BIOTONIN. Colgate-Palmolive Company. SN 206,349. Pub. 6–1–65. Filed 11–17–64.

794,349. SHURJETS. The Shurjets Co. Inc. SN 206,478. Pub. 6–1–65. Filed 11–18–64.

794,350. SASTID. Stiefel Laboratories, Inc. SN 206,480. Pub. 6–1–65. Filed 11–18–64.

794,351. THIBENZOLE "200." Merck & Co., Inc. SN 206,636. Pub. 6–1–65. Filed 11–20–64.

794,352. LIQUIFILM. Allergan Pharmaceuticals. SN 206,674. Pub. 6–1–65. Filed 11–23–64.

794,353. VERISEAL. Ciba Corporation. SN 206,700. Pub. 6–1–65. Filed 11–23–64.

794,354. INDOCIN COMPOUND. Merck & Co., Inc. SN 208,097. Pub. 6–1–65. Filed 12–14–64.

794,355. SUPER ABSORPTION. Frank A. Viscio, d.b.a. Anthony Products Company. SN 209,209. Pub. 6–1–65. Filed 12–31–64.

794,356. DIPE KIN. American Home Products Corporation. SN 209,650. Pub. 6–1–65. Filed 1–11–65.

794,357. MEDILETS. Schering Corporation. SN 209,804. Pub. 6–1–65. Filed 1–12–65.

794,358. BEDFORD. Barth Vitamin Corporation. SN 209,832. Pub. 6–1–65. Filed 1–13–65.

794,359. TONI. The Gillette Company, d.b.a. The Toni Company. SN 209,924. Pub. 6–1–65. Filed 1–14–65.

794,360. DECADERM-F. Merck & Co., Inc. SN 209,939. Pub. 6–1–65. Filed 1–14–65.

794,361. GENTOCIN. Schering Corporation. SN 209,954. Pub. 6–1–65. Filed 1–14–65.

794,362. STRESS-TRATE. Moorman Manufacturing Company of California, Inc. SN 210,060. Pub. 6–1–65. Filed 1–15–65.

794,363. BETATONIL. Ciba Limited. SN 210,091. Pub. 6–1–65. Filed 1–18–65.

794,364. MAGNA-TERRAMYCIN. Chas. Pfizer & Co., Inc. SN 210,152. Pub. 6–1–65. Filed 1–18–65.

794,365. DYSORB. American Home Products Corporation. SN 210,246. Pub. 6–1–65. Filed 1–21–65.

794,366. HYZYD. Dumas-Wilson & Co. SN 210,265. Pub. 6–1–65. Filed 1–21–65.

794,367. TOPSYM. Syntex Laboratories, Inc. SN 210,486. Pub. 6–1–65. Filed 1–22–65.

794,368. PAMINE PB. The Upjohn Company. SN 210,494. Pub. 6–1–65. Filed 1–22–65.

794,369. MULTI-PRIME. Veterinary Supply Depot Incorporated. SN 210,495. Pub. 6–1–65. Filed 1–22–65.

794,370. ABIADIN. Boehringer Ingelheim G.m.b.H. SN 210,536. Pub. 6–1–65. Filed 1–26–65.

794,371. FENOVALPIN. Endo Laboratories Inc. SN 210,661. Pub. 6–1–65. Filed 1–26–65.

794,372. CUMADINE. Endo Laboratories Inc. SN 210,666. Pub. 6–1–65. Filed 1–26–65.

794,373. CONTAC. Menley & James Laboratories, Ltd. SN 211,084. Pub. 6–1–65. Filed 2–1–65.

Class 19—Vehicles

794,374. 403. Societe Anonyme des Automobiles Peugeot. SN 128,110. Pub. 8–20–63. Filed 9–18–61.

794,375. GF AND DESIGN. Georg Fritzmeier, Kommanditgesellschaft. SN 194,765. Pub. 11–12–63. Filed 3–12–63.

794,376. FUL-VUE. Patrick E. Lilly, d.b.a. Ful-Vue Auto Clothes Rod Manufacturing Company. SN 200,105. Pub. 6–1–65. Filed 8–18–64.

794,377. THE BEST IN SIGHT AND DESIGN. Re-Trac Manufacturing Corporation. SN 203,203. Pub. 6–1–65. Filed 10–2–64.

794,378. OMEGA. Ken Kay, d.b.a. Ken Kay Distributing Company. SN 205,432. Pub. 6–1–65. Filed 11–6–64.

Class 20—Linoleum and Oiled Cloth

794,379. PUEBLO. Congoleum-Nairn Inc. SN 207,112. Pub. 6–1–65. Filed 11–30–64.

794,380. CABANA. Congoleum-Nairn Inc. SN 207,115. Pub. 6–1–65. Filed 11–30–64.

Class 21—Electrical Apparatus, Machines, and Supplies

794,381. ODEX. Odex Engineering Company, assignee of Houston Corporation. SN 169,560. Pub. 6–1–65. Filed 5–23–63.

794,382. PERSONAL-LITE. Tensor Corporation. SN 186,679. Pub. 6–1–65. Filed 3–13–64.

794,383. ACOUSTICA AND DESIGN. Acoustica Associates, Inc. MULTIPLE CLASS (Classes 21, 26, and 31). SN 192,147. Pub. 6–1–65. Filed 4–28–64.

794,384. DIRECTOR-LITE. Bright Star Industries, Inc. SN 192,869. Pub. 6–1–65. Filed 5–7–64.

794,385. MICROVISION. The Bendix Corporation. SN 195,587. Pub. 6–1–65. Filed 6–15–64.

794,386. SPECIAL T. Specialty Distributing Co., Inc. MULTIPLE CLASS (Classes 21 and 36). SN 196,913. Pub. 6–1–65. Filed 7–1–64.

794,387. CCA AND DESIGN. Consumers Cooperative Association. SN 199,455. Pub. 6–1–65. Filed 8–7–64.

794,388. SAAB AND DESIGN. Svenska Aeroplan Aktiebolaget. MULTIPLE CLASS (Classes 21 and 26). SN 201,466. Pub. 6–1–65. Filed 9–8–64.

794,389. SUPER/REG AND DESIGN. Trio Laboratories, Inc. SN 202,844. Pub. 6–1–65. Filed 9–24–64.

Class 22 — Games, Toys, and Sporting Goods

794,390. MONARCH AND CROWN DESIGN. Brunswick Corporation, by change of name and assignment from MacGregor Sport Products Inc. SN 110,866. Pub. 6–1–65. Filed 12–27–60.

794,391. NATURAL AND DESIGN. Gus G. Bosnos, d.b.a. Natural Manufacturing. SN 135,754. Pub. 6–1–65. Filed 1–15–62.

794,392. GROTESQUE HUMAN (DESIGN). Beulah Harris Stolpen, d.b.a. The Rolling Reader Co. SN 182,970. Pub. 6–1–65. Filed 12–13–63.

794,393. RIP FLAG. Mason City Tent & Awning Co. SN 184,639. Pub. 6–1–65. Filed 1–15–64.

794,394. RU. La Mecanique Halieutique. SN 189,326. Pub. 6–1–65. Filed 3–23–64.

794,395. HANKY PANKY. Thomas P. Meenan. SN 189,339. Pub. 6–1–65. Filed 3–23–64.

794,396. FLIP·N·FILL. Doughboy Industries, Inc. SN 189,861. Pub. 6–1–65. Filed 3–30–64.

794,397. ZUBIE. Felipe M. Zubiate, d.b.a. F. M. Zubiate & Co. SN 201,906. Pub. 6–1–65. Filed 9–14–64.

794,398. HORCO-TEX. Tyer Rubber Corporation, assignee of Hodgman Rubber Company. MULTIPLE CLASS (Classes 22 and 32). SN 202,268. Pub. 6–1–65. Filed 9–21–64.

794,399. DURA-SLATE. C. G. Wood Company. SN 204,864. Pub. 6–1–65. Filed 10–26–64.

794,400. WALTER HAGEN. Wilson Sporting Goods Co. SN 204,989. Pub. 6–1–65. Filed 10–27–64.

794,401. IA. Indian Archery Corporation. SN 205,061. Pub. 6–1–65. Filed 10–29–64.

794,402. RED RIVER. De Luxe Reading Corporation. SN 205,257. Pub. 6–1–65. Filed 11–2–64.

794,403. BACKYARD PATROL. Hassenfeld Bros., Inc. SN 205,288. Pub. 6–1–65. Filed 11–2–64.

794,404. WOLVERINE. Wolverine Shoe and Tanning Corporation. SN 205,643. Pub. 6–1–65. Filed 11–5–64.

794,405. TEARIE DEARIE. Ideal Toy Corporation. SN 205,691. Pub. 6–1–65. Filed 11–6–64.

794,406. FACULTY CARDS. The Allen Company, Inc. SN 205,910. Pub. 6–1–65. Filed 11–10–64.

794,407. AWFUL-AWFULS. Venus Pen & Pencil Corporation. SN 206,389. Pub. 6–1–65. Filed 11–17–64.

794,408. PETALS. Uneeda Doll Co., Inc. SN 206,669. Pub. 6–1–65. Filed 11–20–64.

794,409. WONDER CUE. Columbia Products Company. SN 206,827. Pub. 6–1–65. Filed 11–24–64.

794,410. PFLUEGER SILVERFLITE. Pflueger Corporation. SN 206,961. Pub. 6–1–65. Filed 11–25–64.

794,411. VAN DAM AND DESIGN. The Van Dam Rubber Co., Inc. SN 206,983. Pub. 6–1–65. Filed 11–25–64.

794,412. CHAMPION AND DESIGN. Champion Exercises, Inc. SN 207,008. Pub. 6–1–65. Filed 11–27–64.

794,413. FANCY FRILLS. De Luxe Reading Corporation. SN 207,028. Pub. 6–1–65. Filed 11–27–64.

794,414. WINTER ANGEL. De Luxe Reading Corporation. SN 207,024. Pub. 6–1–65. Filed 11–27–64.

794,415. SWEET DREAMS. De Luxe Reading Corporation. SN 207,025. Pub. 6–1–65. Filed 11–27–64.

794,416. JOHNNY EAGLE. De Luxe Reading Corporation. SN 207,179. Pub. 6–1–65. Filed 11–27–64.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

794,278. CONSOLIDATED CERTIFICATE. See Class 6.

794,417. OIL IR. Ingersoll-Rand Company. SN 176,529. Pub. 6–1–65. Filed 9–9–63.

794,418. ROTA-CYL. Graham Engineering Company, Inc. SN 177,033. Pub. 6–1–65. Filed 9–16–63.

794,419. MAN SHAVING (DESIGN). Imperial Knife Associated Companies, Inc. SN 192,040. Pub. 6–1–65. Filed 4–27–64.

794,420. BALLERINA. Rain Jet Corp. SN 199,104. Pub. 6–1–65. Filed 8–3–64.

794,421. BURSTING STARS. Rain Jet Corp. SN 199,105. Pub. 6–1–65. Filed 8–3–64.

794,422. VESUVIUS. Rain Jet Corp. SN 199,108. Pub. 6–1–65. Filed 8–3–64.

794,423. 3F IN A CIRCLE (DESIGN). Paul Forkardt Kommanditgesellschaft. SN 201,299. Pub. 6–1–65. Filed 9–4–64.

794,424. LITTLE GIANT LG AND DESIGN. Chicago Pneumatic Tool Company. SN 207,787. Pub. 6–1–65. Filed 12–9–64.

794,425. LITTLE GIANT. Chicago Pneumatic Tool Company. SN 207,788. Pub. 6–1–65. Filed 12–9–64.

794,426. POOL-SWEEP. Howard M. Arneson, d.b.a. Arneson Products. SN 207,857. Pub. 6–1–65. Filed 12–10–64.

794,427. CAMAC. Carl Buck & Associates. SN 208,666. Pub. 6–1–65. Filed 12–22–64.

794,428. CELERTA. Anker-Phoenix Nähmaschinen A.G. SN 210,251. Pub. 6–1–65. Filed 1–21–65.

794,429. SCOTCHGARD. Minnesota Mining and Manufacturing Company. SN 210,330. Pub. 6–1–65. Filed 1–21–65.

Class 24 — Laundry Appliances and Machines

794,430. NATIONAL N AND DESIGN. Matsushita Electric Industrial Co., Ltd. SN 186,669. Pub. 4–20–65. Filed 12–18–63.

794,431. ACME GOLD LINE AND DESIGN. Acme Markets, Inc. SN 210,719. Pub. 6–1–65. Filed 1–27–65.

Class 26 — Measuring and Scientific Appliances

794,383. (See Class 21 for this trademark.)

794,388. (See Class 21 for this trademark.)

794,432. QUALICON. Nuclear-Chicago Corporation. SN 134,751. Pub. 2–26–63. Filed 12–27–61.

794,433. POLYMIL. Societe Industrielle de Lunetterie S.I.L., assignee of La Lunette de Paris, Inc. SN 157,227. Pub. 9–15–64. Filed 11–14–62.

794,434. BENRUS. Benrus Watch Company, Inc. SN 200,900. Pub. 6–1–65. Filed 8–31–64.

794,435. MINI-SINE. Kingmann-White, Inc. SN 204,681. Pub. 6–1–65. Filed 10–23–64.

794,436. JET-TRON. Automation Devices, Inc. SN 206,684. Pub. 6–1–65. Filed 11–23–64.

794,437. FEED-O-METER. Technical Industries, Inc. SN 206,898. Pub. 6–1–65. Filed 11–24–64.

Class 27 — Horological Instruments

794,438. MIDGE. Mattel, Inc. SN 210,144. Pub. 6–1–65. Filed 1–18–65.

Class 28 — Jewelry and Precious-Metal Ware

794,439. CITADEL. Allied Stores Corporation. SN 207,357. Pub. 6–1–65. Filed 12–3–64.

794,440. BIB. Bibelot Creations, Inc. SN 211,697. Pub. 6–1–65. Filed 2–10–65.

794,441. FINGER MATE. Tube Benders, Inc. SN 212,169. Pub. 6–1–65. Filed 2–16–65.

Class 29 — Brooms, Brushes, and Dusters

794,442. GROOMAGIC. Magiklip Corporation. SN 177,802. Pub. 6–1–65. Filed 9–26–63.

Class 31 — Filters and Refrigerators

794,383. (See Class 21 for this trademark.)

794,443. ICE-MASTER. Morris & Associates, Inc. SN 205,191. Pub. 6–1–65. Filed 10–30–64.

Class 32 — Furniture and Upholstery

794,398. (See Class 22 for this trademark.)

794,444. FINECRAFT AND DESIGN. J. E. Chilton Millwork & Lumber Co., Inc. SN 188,722. Pub. 6–1–65. Filed 3–16–64.

794,445. MAURICE VILLENCY. Maurice Villency, Inc. MULTIPLE CLASS (Classes 32 and 42). SN 186,935. Pub. 6–1–65. Filed 3–17–64.

794,446. GLENSTONE. Custom Marble Company. SN 204,968. Pub. 6–1–65. Filed 10–28–64.

794,447. READI-VIEW. Young Radiator Company. SN 212,087. Pub. 6–1–65. Filed 2–15–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

794,448. CITATION STEAM CLEANER AND DESIGN. Citation Manufacturing Company, Inc. SN 143,720. Pub. 6–1–65. Filed 5–3–62.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

794,449. VAKUUM VULK AND DESIGN. Wilhelm Schelkmann, d.b.a. Reifen Schelkmann. SN 189,948. Pub. 6–1–65. Filed 3–30–64.

794,450. K BLOCK AND DESIGN. H. Krasne Mfg. Co. SN 194,496. Pub. 6–1–65. Filed 5–28–64.

Class 36 — Musical Instruments and Supplies

794,386. (See Class 21 for this trademark.)

Class 37 — Paper and Stationery

794,298. (See Class 11 for this trademark.)

794,299. (See Class 11 for this trademark.)

794,451. MORGAN SPACE-SAVER AND DESIGN. Morgan Paper Company, Inc. SN 170,940. Pub. 6–1–65. Filed 6–13–63.

794,452. HONEY DO REMINDER. Carl K. McDaniel. SN 188,024. Pub. 6–1–65. Filed 3–5–64.

794,453. SMART SHOPPER. Westab Inc. SN 189,127. Pub. 6–1–65. Filed 3–19–64.

794,454. GLO-RITE. Milton Bradley Company. SN 192,552. Pub. 6–1–65. Filed 5–4–64.

794,455. SURE-STAY. Precision Papers, Inc. SN 199,220. Pub. 6–1–65. Filed 8–4–64.

794,456. WINROTO SUPER. International Paper Company. SN 199,567. Pub. 6–1–65. Filed 8–10–64.

794,457. POLLY STAR AND DESIGN. St. Regis Paper Company. SN 200,117. Pub. 6–1–65. Filed 8–18–64.

794,458. TI OFFSET. International Paper Company. SN 200,354. Pub. 6–1–65. Filed 8–21–64.

794,459. VISI-FOLDER. Acme Visible Records, Inc. SN 201,503. Pub. 6–1–65. Filed 9–9–64.

794,460. CHRO-MATIC. Graphic Covers, Inc. SN 202,926. Pub. 6–1–65. Filed 9–29–64.

794,461. GRATISCRIPT. Barnes-Hind Ophthalmic Products. SN 203,728. Pub. 6–1–65. Filed 10–12–64.

794,462. NEATAPE. Neatape Corporation. SN 203,798. Pub. 6–1–65. Filed 10–12–64.

Class 38 — Prints and Publications

794,463. PASSPORT TO SELECTIVE DINING. Maxine Maddox, d.b.a. Dining in Waikiki. SN 162,270. Pub. 4–28–64. Filed 2–7–63.

794,464. FARBENPASS PASSEPORT DE COULEURS PASSAPORTO DEI COLORI COLOR PASS. Color Activ S.A. SN 163,228. Pub. 6–1–65. Filed 2–1–65.

794,465. RAT FINK. Kanrom, Inc. SN 181,648. Pub. 6–1–65. Filed 11–21–63.

794,466. THE PLAYERS SHOWCASE. Publishers' Development Corporation. SN 199,494. Pub. 6–1–65. Filed 8–7–64.

794,467. HOOKER NEWS. Hooker Chemical Corporation. SN 202,082. Pub. 6–1–65. Filed 9–17–64.

794,468. THE SOYBEAN DIGEST. American Soybean Association. SN 202,406. Pub. 6–1–65. Filed 9–23–64.

794,469. SMI WORLD AND DESIGN. Success Motivation Institute, Inc. SN 203,126. Pub. 6–1–65. Filed 10–1–64.

794,470. DISC AND DESIGN. Record Club of America, Inc. SN 203,610. Pub. 6–1–65. Filed 10–8–64.

794,471. AUTOMATIC MERCHANT'S MARKETPLACE. Inside Vending, Inc. SN 203,765. Pub. 6–1–65. Filed 10–12–64.

794,472. A SPOTLIGHT WONDER BOOK. Wonder Books, Inc. SN 205,025. Pub. 6–1–65. Filed 10–28–64.

794,473. WESTMINSTER GALLERIES. Sunshine Art Studios, Inc. SN 205,469. Pub. 6–1–65. Filed 11–3–64.

794,474. TAPE PARADE. Trade Service Publications, Inc. SN 205,741. Pub. 6–1–65. Filed 11–6–64.

794,475. FEDERAL TIMES. Army Times Publishing Company. SN 206,596. Pub. 6–1–65. Filed 11–20–64.

794,476. WINDOW CAL. Chicago Decal Company. SN 206,606. Pub. 6–1–65. Filed 11–20–64.

794,477. SERVICE STATION MANAGEMENT. Hunter Publishing Company. SN 206,851. Pub. 6–1–65. Filed 11–24–64.

794,478. TEEN-VILLE. Celebrity Publications, Ltd. SN 207,475. Pub. 6–1–65. Filed 12–4–64.

794,479. DARE. Cashin Publishing Company. SN 213,761. Pub. 6–1–65. Filed 3–10–65.

Class 39 — Clothing

794,480. FANTASTIC AND DESIGN. Stone Manufacturing Company. SN 186,974. Pub. 6–1–65. Filed 2–18–64.

794,461. ZODYS AND DESIGN. Hartfield Stores, Incorporated. SN 187,196. Pub. 6-1-65. Filed 2-21-64.

794,462. CASEY JR. Blue Bell, Inc. SN 189,258. Pub. 6-1-65. Filed 3-23-64.

794,483. CASEY JONES GIRL. Blue Bell, Inc. SN 189,259. Pub. 6-1-65. Filed 3-23-64.

794,484. CASEY'S WIFE. Blue Bell, Inc. SN 189,260. Pub. 6-1-65. Filed 3-23-64.

794,485. SON OF CASEY. Blue Bell, Inc. SN 189,261. Pub. 6-1-65. Filed 3-23-64.

794,486. MISS CASEY JONES. Blue Bell, Inc. SN 189,262. Pub. 6-1-65. Filed 3-23-64.

794,487. MISS CASEY. Blue Bell, Inc. SN 189,263. Pub. 6-1-65. Filed 3-23-64.

794,488. CASEY'S KIDS. Blue Bell, Inc. SN 189,264. Pub. 6-1-65. Filed 3-23-64.

794,489. LITTLE CASEY JONES. Blue Bell, Inc. SN 189,265. Pub. 6-1-65. Filed 3-23-64.

794,490. LITTLE CASEY. Blue Bell, Inc. SN 189,266. Pub. 6-1-65. Filed 3-23-64.

794,491. TUFFPRENE. Sawyer-Tower Products, Inc. SN 192,949. Pub. 6-1-65. Filed 5-7-64.

794,492. ACME GOLD LINE AND DESIGN. Acme Markets, Inc. SN 210,721. Pub. 6-1-65. Filed 1-27-65.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

794,445. (See Class 32 for this trademark.)

794,493. SCULPTURA. Westwood Textile Manufacturing, Inc. SN 189,282. Pub. 6-1-65. Filed 3-20-64.

794,494. RED CARPET AND DESIGN. A. Snider Original, Inc. SN 201,055. Pub. 6-1-65. Filed 9-1-64.

794,495. CHARM HOUSE. Arkwright Merchandising Corporation. SN 208,520. Pub. 6-1-65. Filed 12-21-64.

794,496. LUCERN. Dan River Mills, Incorporated. SN 208,552. Pub. 6-1-65. Filed 12-21-64.

794,497. LISTRAKHAN. Lister & Company Limited. SN 208,595. Pub. 6-1-65. Filed 12-21-64.

794,498. ACME GOLD LINE AND DESIGN. Acme Markets, Inc. SN 210,722. Pub. 6-1-65. Filed 1-27-65.

Class 43 — Thread and Yarn

794,499. TRU-FIT. Coats & Clark Inc. SN 188,960. Pub. 6-1-65. Filed 3-18-64.

Class 44 — Dental, Medical, and Surgical Appliances

794,500. CUSTOM-CARE. Simmons Company. SN 207,840. Pub. 6-1-65. Filed 12-9-64.

794,501. SIM-CARE. Simmons Company. SN 207,841. Pub. 6-1-65. Filed 12-9-64.

Class 45 — Soft Drinks and Carbonated Waters

794,502. CAL-O-ETT. L. F. Beverage Corporation. SN 185,106. Pub. 6-1-65. Filed 1-22-64.

794,503. CARLENE. John Groves, d.b.a. John Groves Company. SN 203,005. Pub. 6-1-65. Filed 9-30-64.

Class 46 — Foods and Ingredients of Foods

794,645. (See Class 18 for this trademark.)

794,504. VICKIE BELL'S. Queen Bee Food Products, Inc. SN 161,094. Pub. 6-1-65. Filed 1-21-63.

794,505. OATIES. Chesapeake Feed Company. SN 161,770. Pub. 6-1-65. Filed 1-31-63.

794,506. 2-K. I. Tom Kats, d.b.a. 2-K Restaurant. SN 164,263. Pub. 9-22-64. Filed 3-8-63.

794,507. C-LINE AND DESIGN. Calumet & Hecla, Inc. SN 168,152. Pub. 6-1-65. Filed 5-6-63.

794,508. CURE 81. Geo. A. Hormel & Company. SN 173,358. Pub. 6-1-65. Filed 7-19-63.

794,509. GOLDEN NUGGET. Hygrade Food Products Corporation. SN 173,915. Pub. 6-1-65. Filed 7-29-63.

794,510. DINE WITH THE FINEST. General Grocer Company. SN 176,516. Pub. 6-1-65. Filed 9-9-63.

794,511. ROYAL KNIGHT AND DESIGN. General Candy Company, d.b.a. Royal Knight Candies. SN 180,393. Pub. 6-1-65. Filed 11-4-63.

794,512. EL RANCHO. E. J. Brach & Sons. SN 181,851. Pub. 5-18-65. Filed 11-26-63.

794,513. JUBILEE. Swift & Company. SN 182,515. Pub. 12-22-64. Filed 12-6-63.

794,514. STRIP CHEEZERS. Pet Milk Company. SN 183,786. Pub. 6-1-65. Filed 12-30-63.

794,515. BEST OUT WEST. Sheridan Flouring Mills, Inc. SN 184,183. Pub. 6-1-65. Filed 1-7-64.

794,516. LEVAPAN. Companía Nacional de Levaduras, Levapan Ltda. SN 189,148. Pub. 6-1-65. Filed 3-20-64.

794,517. SOVEREIGN. The Sovereign Confectionery Company Limited. SN 198,779. Pub. 6-1-65. Filed 7-29-64.

794,518. SPIKES. Bayou Candy Co., Inc. SN 199,257. Pub. 6-1-65. Filed 8-5-64.

794,519. GRASSHOPPER. Bayou Candy Co., Inc. SN 199,957. Pub. 6-1-65. Filed 8-17-64.

794,520. FIRECRAKER. Bayou Candy Co., Inc. SN 199,956. Pub. 6-1-65. Filed 8-17-64.

794,521. BLACK LADLE. Bowlby Candy Co., Inc. SN 201,808. Pub. 6-1-65. Filed 9-14-64.

794,522. HIE AND DESIGN. Ray B. Leach, d.b.a. Hie Food Products. SN 202,375. Pub. 6-1-65. Filed 9-22-64.

794,523. HI-GAIN. The Wander Company. SN 203,859. Pub. 6-1-65. Filed 10-5-64.

794,524. LADY ANNE. Anne Rosen, d.b.a. Lady Anne Preserving Co. SN 203,430. Pub. 6-1-65. Filed 10-6-64.

794,525. LITTLE ROASTIES. Mayflower Enterprises, Inc. SN 204,389. Pub. 6-1-65. Filed 10-20-64.

794,526. LITTLE SALTIES. Mayflower Enterprises, Inc. SN 204,390. Pub. 6-1-65. Filed 10-20-64.

794,527. SOUTHERN STAR. Wilbur-Ellis Company. SN 204,863. Pub. 6-1-65. Filed 10-26-64.

794,528. OODLE. Quaker City Chocolate & Confectionery Co., Inc. SN 205,000. Pub. 6-1-65. Filed 10-28-64.

794,529. MAGIC SWIRL. General Mills, Inc. SN 205,282. Pub. 6-1-65. Filed 11-2-64.

794,530. CHAMP. National Tea Co. SN 205,481. Pub. 6-1-65. Filed 11-3-64.

794,531. RAZZEROO. Topps Chewing Gum, Incorporated. SN 205,549. Pub. 6-1-65. Filed 11-4-64.

794,532. ANGEL FOOD AND DESIGN. Robert Alameda, d.b.a. Robert Alameda Company, and Robert Alameda Co. SN 205,649. Pub. 6-1-65. Filed 11-6-64.

794,533. HI-LIGHT. Abbott Laboratories. SN 206,116. Pub. 6-1-65. Filed 11-13-64.

794,534. TOOT-TOOT. Hallam & Son, Incorporated. SN 206,539. Pub. 6-1-65. Filed 11-19-64.

794,535. BRASS BAND AND DESIGN. Rarity Packing Co., Inc. SN 210,475. Pub. 6-1-65. Filed 1-22-65.

794,536. TENNESSEE BELLE. Block Brothers, Incorporated. SN 210,525. Pub. 6-1-65. Filed 1-25-65.

794,537. IM-PROVE. East India Spice Co., Ltd. SN 210,543. Pub. 6-1-65. Filed 1-26-65.

794,538. AERO. Rowntree and Company Limited. SN 211,198. Pub. 6-1-65. Filed 2-3-65.

794,539. SNACK-WICH. The Borden Company. SN 211,247. Pub. 6-1-65. Filed 2-3-65.

794,540. FLEXI-PACK. Campbell Soup Company. SN 211,416. Pub. 6-1-65. Filed 2-5-65.

794,541. HARVO. Harvo Limited. SN 211,464. Pub. 6-1-65. Filed 2-5-65.

794,542. IM-PAK. Richview, Inc. SN 211,467. Pub. 6-1-65. Filed 2-5-65.

794,543. HORSE KWIK. Cargill, Incorporated. SN 211,503. Pub. 6-1-65. Filed 2-8-65.

794,544. TRADERS. Traders, Inc. SN 211,684. Pub. 6-1-65. Filed 2-9-65.

794,545. CHED-R-LAC. National Dairy Products Corporation. SN 211,882. Pub. 6-1-65. Filed 2-11-65.

Class 47 — Wines

794,546. CU VALLÉE & CIE. Cucamonga Vineyard Company, d.b.a. Cucamonga Vineyard Co. SN 167,227. Pub. 6-1-65. Filed 4-22-63.

794,547. CORDON DE BOURGOGNE. Julius Wile Sons & Co., Inc. SN 202,600. Pub. 6-1-65. Filed 9-24-64.

Class 48 — Malt Beverages and Liquors

794,548. FALCON BEER AND DESIGN. N.V. Phoenix Brouwerij, d.b.a. Castle Brewery, Klaver Brouwerij, Mill Brewery, Klaver Holland Beer Brewery, and Falcon Brewery. SN 167,489. Pub. 6-1-65. Filed 4-24-63.

794,549. AMOPEX. Mayer-Bass, Inc. SN 208,674. Pub. 6-1-65. Filed 10-9-64.

Class 49 — Distilled Alcoholic Liquors

794,550. BOURBON SUPREME. The American Distilling Company. SN 49,731. Pub. 6-1-65. Filed 4-16-58.

794,551. VAN DER MINT. The Huntington Creek Corporation, d.b.a. Leroux & Company. SN 184,724. Pub. 6-1-65. Filed 1-16-64.

794,552. SETTER. Majestic Distilling Company, Inc. SN 204,483. Pub. 6-1-65. Filed 10-21-64.

Class 50 — Merchandise Not Otherwise Classified

794,553. POLYTINT. Polychrome Corporation. SN 161,405. Pub. 6-1-65. Filed 11-18-63.

794,554. HYDROGLASSED. Silverlith Corporation. SN 187,894. Pub. 6-1-65. Filed 3-3-64.

794,555. VAL-U-FLOWERS. Star Ribbons, Inc., d.b.a. Star Sales of Dallas. SN 200,964. Pub. 6-1-65. Filed 8-31-64.

794,556. DRIB LETS AND DESIGN. James L. Callan, d.b.a. The Callan Company. SN 202,411. Pub. 6-1-65. Filed 9-22-64.

794,557. WISE GUY. Topps Chewing Gum, Incorporated. SN 204,313. Pub. 6-1-65. Filed 10-19-64.

794,558. M AND DESIGN. Marlboro Molding Company. SN 204,388. Pub. 6-1-65. Filed 10-20-64.

794,559. PET-TECTOR. Luther E. Freeman, d.b.a. Ten-Ten Co. SN 205,273. Pub. 6-1-65. Filed 11-3-64.

794,560. TROPAQUARIUM. Merton & Hall, Inc. SN 206,565. Pub. 6-1-65. Filed 11-19-64.

794,561. SAMCO. Samuel Mallinger Company. SN 211,080. Pub. 6-1-65. Filed 2-1-65.

794,562. SHORE-MATE. Zak Machine Company. SN 211,405. Pub. 6-1-65. Filed 2-4-65.

794,563. HELPFUL DON. Donald L. Williams. SN 211,485. Pub. 6-1-65. Filed 2-5-65.

Class 51 — Cosmetics and Toilet Preparations

794,564. POLOFF. Heluan G.m.b.H. SN 127,599. Pub. 6-1-65. Filed 9-11-61.

794,565. CHEVULU. C. B. Head, d.b.a. Char-Ne & Company. SN 165,182. Pub. 6-1-65. Filed 3-21-63.

794,566. HEAT & TREAT. Clairol Incorporated. SN 174,748. Pub. 6-1-65. Filed 8-9-63.

794,567. EYE TRACTIVE AND DESIGN. Speert, Incorporated. SN 182,221. Pub. 6-1-65. Filed 12-2-63.

794,568. V.I. PINK. Lehn & Fink Products Corporation. SN 184,632. Pub. 6-1-65. Filed 1-15-64.

794,569. V.I. PEACH. Lehn & Fink Products Corporation. SN 184,635. Pub. 6-1-65. Filed 1-15-64.

794,570. BRUSH 'N BLUSH. Hazel Bishop Inc. SN 200,544. Pub. 6-1-65. Filed 8-25-64.

794,571. SLY BROWS. Lehn & Fink Products Corporation, d.b.a. Tussy Cosmetics. SN 202,092. Pub. 6-1-65. Filed 9-17-64.

794,572. RADIANT. Hudson National, Inc., by change of name from Hudson Vitamin Products, Inc. SN 202,982. Pub. 6-1-65. Filed 9-29-64.

794,573. MAURI MONTAY. Mauri Montay, Inc. SN 203,111. Pub. 6-1-65. Filed 10-1-64.

794,574. FOUR A'S (DESIGN). Avon Products, Inc. SN 203,372. Pub. 6-1-65. Filed 10-6-64.

794,575. SKINEX. Marcel R. Pitet, d.b.a. Pitet Products. SN 203,426. Pub. 6-1-65. Filed 10-6-64.

794,576. WIG-LIFE. Vapon, Inc. SN 203,447. Pub. 6-1-65. Filed 10-6-64.

794,577. DERMA-SATIN. Nutritional Science Corporation. SN 204,397. Pub. 6-1-65. Filed 10-20-64.

794,578. LIQUID LIFT. Chas. Pfizer & Co., Inc. SN 204,822. Pub. 6-1-65. Filed 10-26-64.

794,579. VITA DEW. Chas. Pfizer & Co., Inc. SN 204,829. Pub. 6-1-65. Filed 10-26-64.

794,580. VITA-TINT. Chas. Pfizer & Co., Inc. SN 204,830. Pub. 6-1-65. Filed 10-26-64.

794,581. YACHT SET. Adele Simpson, Inc. SN 204,846. Pub. 6-1-65. Filed 10-26-64.

794,582. ONE SHOT. Beecham Products Inc. SN 204,679. Pub. 6-1-65. Filed 10-27-64.

Class 52 — Detergents and Soaps

794,279. (See Class 6 for this trademark.)

794,583. NU SPARKLE. Coastal Chemical Company, Inc. SN 167,118. Pub. 6-1-65. Filed 4-19-63.

794,584. GREEN STUF. Thomas R. McClintic, d.b.a. McClintic Products. SN 188,776. Pub. 6-1-65. Filed 3-16-64.

794,585. DYNALITE. Diamond Alkali Company. SN 208,653. Pub. 6-1-65. Filed 10-9-64.

794,586. ROYAL GUARD. Cussons (International) Limited. SN 204,367. Pub. 6-1-65. Filed 10-20-64.

794,587. IRISH SPRING. Colgate-Palmolive Company. SN 204,767. Pub. 6-1-65. Filed 10-20-64.

794,588. MAC'S AND DESIGN. Mac's Super Gloss Co., Inc. SN 204,802. Pub. 6–1–65. Filed 10–26–64.

794,589. LOFT. Sanford Chemical Co., Inc. SN 205,008. Pub. 6–1–65. Filed 10–28–64.

794,590. STEAM-MOR. A & J Chemical Corp. SN 207,544. Pub. 6–1–65. Filed 12–4–64.

794,591. U.S. BORAX. United States Borax & Chemical Corporation. SN 212,611. Pub. 6–1–65. Filed 2–23–65.

Service Mark

Class 100 — Miscellaneous

794,592. HAPPY HUMPTY. Happy Humpty Restaurants, Inc. SN 187,416. Pub. 6–1–65. Filed 2–25–64.

794,593. RENT-A-SOFT. Ralph Walsh, d.b.a. Arlington Soft Water Company. SN 190,040. Pub. 6–1–65. Filed 8–31–64.

794,594. STEEL-TAINER. International Sea Van, Inc. SN 199,161. Pub. 6–1–65. Filed 8–3–64.

794,595. COACHMAN (DESIGN). J. J. Newberry Co. SN 201,541. Pub. 6–1–65. Filed 9–9–64.

794,596. POST HOUSE AND DESIGN. Post Houses, Inc. SN 205,339. Pub. 6–1–65. Filed 11–2–64.

Class 102 — Insurance and Financial

794,597. AMERICAN FOUNDATION ETC. AND DESIGN. American Foundation Life Insurance Company. SN 198,118. Pub. 6–1–65. Filed 7–20–64.

794,598. "WISHING WON'T DO IT . . . SAVING WILL." The Western Saving Fund Society of Philadelphia. SN 203,044. Pub. 6–1–65. Filed 9–30–64.

Class 103 — Construction and Repair

794,599. TD. The Displayers, Inc. SN 187,568. Pub. 6–1–65. Filed 2–27–64.

Collective Membership Mark

Class 200

794,600. CLUB INTERNATIONALE AND DESIGN. Club Internationale. SN 206,493. Pub. 6–1–65. Filed 11–17–64.

794,601. REGISTERED BUILDER ETC. AND DESIGN. National Association of Home Builders of the United States. SN 206,566. Pub. 6–1–65. Filed 11–19–64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 11 — Inks and Inking Materials

794,602. Aetna Products Company Incorporated, Hicksville, N.Y. SN 156,709. Filed P.R. 11–6–62; Am. S.R. 3–3–65.

TYPE-N-CORRECT

For Typewriter Ribbons.
First use Aug. 15, 1962.

Class 12 — Construction Materials

794,603. Brunswick Corporation, Chicago, Ill. SN 181,315. Filed P.R. 11–18–63; Am. S.R. 6–17–65.

ICE-WHITE

For Reinforced Fiberglas Interliner Panels.
First use Feb. 20, 1963.

794,604. Otho W. Smith, Bedford, Ind. SN 201,479. Filed P.R. 9–3–64; Am. S.R. 5–24–65.

THINSTONE

For Stone Facing for Buildings.
First use about 1961.

Class 39 — Clothing

794,605. Wembley, Inc., New Orleans, La. SN 190,843. Filed P.R. 4–10–64; Am. S.R. 6–17–65.

CROCKETT

For Men's Neckwear.
First use July 1, 1963.

794,606. Chicopee Mills, Inc., New York, N.Y. SN 205,158. Filed P.R. 10–30–64; Am. S.R. 6–17–65.

CUSHIONIZED

For Baby Pants.
First use at least as early as May 5, 1964.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

794,607. Habib S. Marcus, d.b.a. Marcus Bros., Brooklyn, N.Y. SN 175,594. Filed P.R. 8–22–63; Am. S.R. 4–23–65.



Baby Broadcloth



For Sheets and Pillow Cases.
First use 1949.

Class 44 — Dental, Medical, and Surgical Appliances

794,608. Ignatius Paul Sottek, d.b.a. Bite-Rite Company, Toledo, Ohio. SN 206,262. Filed P.R. 11–16–64; Am. S.R. 5–14–65.

BITE-RITE

For Plastic Material for Relining Dentures.
First use October 1963.

TRADEMARK REGISTRATIONS RENEWED

44,366. OLD FORESTER. Cl. 49. 7–4–05.
44,394. STARK-STAR. Cl. 1. 7–4–05.
44,440. CHAMPION. Cl. 1. 7–4–05.
44,441. GOLD. Cl. 1. 7–4–05.
44,586. INGERSOLL. Cl. 27. 7–11–05.
45,325. LAMBSDOWN UNDERWEAR. Cl. 39. 8–15–05.
45,336. CERENA. Cl. 46. 8–15–05.
45,340. DESIGN OF TWO CONCENTRIC CIRCLES. Cl. 46. 8–15–05.
46,652. VELLASTIC UTICA. Cl. 39. 9–26–05.
47,203. PERFECT. Cl. 46. 10–31–05.
47,204. CERESOTA. Cl. 46. 10–31–05.
47,217. WHITE CHAMPION. Cl. 46. 10–31–05.
47,588. CHAS. H. FLETCHER. Cl. 18. 11–14–05.
47,813. MURINE. Cl. 6. 11–21–05.
199,397. USG. Cl. 21. 6–9–25.
199,428. F.H. AND DESIGN. Cl. 27. 6–9–25.
199,442. FRENCH MAID. Cl. 46. 6–9–25.
199,443. MOUNTAIN MAID. Cl. 46. 6–9–25.
199,723. VELIPCO. Cl. 37. 6–16–25.
199,962. FEATHER WEIGHT AND DESIGN. Cl. 12. 6–23–25.
199,964. KELLOGG'S ALL BRAN. Cl. 46. 6–23–25.
200,247. ROUND TABLE. Cl. 46. 6–30–25.
200,271. KING ARTHUR. Cl. 46. 6–30–25.
200,272. KNIGHT ON HORSEBACK (DESIGN). Cl. 46. 6–30–25.
200,392. KNIGHTS GROUPED AROUND A TABLE (DESIGN). Cl. 46. 6–30–25.
200,644. SPUR. Cl. 39. 7–7–25.
200,646. AVOLYN. Cl. 39. 7–7–25.
200,647. ARCHER. Cl. 39. 7–7–25.
200,649. LIBERTY. Cl. 39. 7–7–25.
200,650. GREYLOCK. Cl. 39. 7–7–25.
200,651. ART. Cl. 39. 7–7–25.
200,722. WHIP. Cl. 39. 7–7–25.
200,723. TUXARA. Cl. 39. 7–7–25.
200,891. EVERSPRING. Cl. 44. 7–14–25.
201,026. PAR. Cl. 39. 7–14–25.
201,097. PELL. Cl. 39. 7–21–25.
201,103. DRAKE. Cl. 39. 7–21–25.
201,523. KING COLE AND DESIGN. Cl. 46. 7–28–25.
201,694. CADILLAC. Cl. 19. 8–4–25.
201,708. DESIGN OF CROWN AND SHIELD. Cl. 19. 8–4–25.
202,103. JACK O' LANTERN. Cl. 46. 8–18–25.
203,885. DICTAPHONE. Cl. 36. 9–29–25.
205,169. LADY LOVE AND DESIGN. Cl. 39. 11–3–25.
206,479. GALVIKLING. Cl. 16. 12–1–25.
206,480. MAGIC. Cl. 16. 12–1–25.
206,481. KING. Cl. 16. 12–1–25.
206,665. GOLDEN. Cl. 18. 12–8–25.
413,175. OMECO. Cl. 2. 4–10–45.
413,244. ROYAL OAK. Cl. 51. 4–17–45.
414,201. HEMISFERIO AND DESIGN. Cl. 15. 5–29–45.
414,602. SILVER LORD. Cl. 8. 6–19–45.
414,676. "SCRIBBLES" AND DESIGN. Cl. 38. 6–19–45.
414,931. ELBAHSAW. Cl. 39. 7–3–45.
415,132. TRAFFIC ACE. Cl. 22. 7–10–45.
415,322. GUDE'S PEP-TO MANGAN. Cl. 18. 8–7–45.
415,493. ORITE. Cl. 50. 8–7–45.
415,671. SYLVANIA. Cl. 6. 8–14–45.
416,250. DUSORB. Cl. 6. 9–4–45.
416,298. HALLMARK. Cl. 33. 9–4–45.
416,530. SERENITY. Cl. 28. 9–18–45.
417,120. "WEATHERIZED" WEATHER-BIRD SHOES AND DESIGN. Cl. 39. 10–16–45.
417,164. LEVELON. Cl. 6. 10–16–45.
417,362. SENTINEL. Cl. 37. 10–23–45.
417,447. NOJAX. Cl. 2. 10–30–45.
417,449. SOUR PUSS AND DESIGN. Cl. 45. 10–30–45.
417,512. TETRA PHOSPHO-GLUCO SATE. Cl. 6. 10–30–45.
417,564. BUYERS GUIDE. Cl. 46. 10–30–45.
417,805. NUNN-BUSH ANKLE FASHIONED. Cl. 39. 11–13–45.
417,985. SECURIT. Cl. 33. 11–27–45.
418,200. BOUQUET DE FAUNES. Cl. 51. 12–11–45.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued June 30, 1959

680,957. FARBMET. Cl. 1.
680,961. LIFETWIST. Cl. 1.
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681,295. CARNELIAN. Cl. 51.

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168,867. WASHINGTON DEE-CEE AND DESIGN. Cl. 39. 5–22–23. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 4 and 17, in the heading, signature and in the statement, column 1, lines 1 and 2, "Manufacturing Co." should be deleted and *Mfg. Co.* should be inserted.

174,211. UNCLE FULLER. Cl. 39. 10–9–23. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 4 and 17, in the heading, signature and in the statement, column 1, lines 1 and 2, "Manufacturing Co." should be deleted and *Mfg. Co.* should be inserted.

219,329. BIG. 8. Cl. 39. 10–19–26. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, "Manufacturing Co." should be deleted and *Mfg. Co.* should be inserted.

268,748. BIG FITER AND DESIGN. Cl. 39. 8–18–30. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, "Manufacturing Co." should be deleted and *Mfg. Co.* should be inserted.

271,900. TAXI-KLOTH. Cl. 39. 6–17–30. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, "Manufacturing Company" should be deleted and *Mfg. Co.* should be inserted.

271,901. TAXI-KLOTH. Cl. 42. 6–17–30. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, "Manufacturing Company" should be deleted and *Mfg. Co.* should be inserted.

354,435. NAUGAHYDE. Cl. 50. 2–15–38. United States Rubber Products, Inc. United States Rubber Company, New York, N.Y. Amended: In the statement, column 1, line 9 through column 2, line 1, the description of goods is deleted and *A fabric base coated with a decorative wear layer of plastic producing artificial leather* is inserted.

364,888. MATCH-ME. Cl. 39. 2–14–39. Washington Mfg. Co., Nashvilel, Tenn. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, "Manufacturing Co." should be deleted and *Mfg. Co.* should be inserted.

420,866. OLD TRUSTY. Cl. 39. 5–7–46. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1, "Manufacturing Company" should be deleted and *Mfg. Co.* should be inserted.

430,488. HUDSON. Cl. 28. 6–10–47. H. D. Hudson Manufacturing Company, Chicago, Ill. Corrected: In the statement, column 1, line 9, "Trombone" should be deleted.

442,607. BIG FRIEND. Cl. 39. 5–3–49. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 3 and 16, in the heading, signature and in the statement, column 1, line 1, "Manufacturing Company" should be deleted and *Mfg. Co.* should be inserted.

504,054. OLD KENTUCKY. Cl. 39. 11–23–48. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 4, 5 and 16, in the heading, signature and in the statement, column 1, lines 1 and 22, "Manufacturing Company" should be deleted and *Mfg. Co.* should be inserted.

512,146. DEER CREEK. Cl. 39. 7–12–49. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 4, 5 and 16, in the heading, signature and in the statement, column 1, line 1, "Manufacturing Company" should be deleted and *Mfg. Co.* should be inserted.

513,561. BAREKAT. Cl. 39. 8–16–49. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 4, 5 and 16, in the heading, signature and in the statement, column 1, line 1, "Manufacturing Company" should be deleted and *Mfg. Co.* should be inserted.

530,071. DYNAMATIC. Cls. 21 and 23. 9–5–50. Dynamatic Corporation. Eaton Manufacturing Company, Cleveland, Ohio. Amended to appear:

DYNAMATIC

543,440. KAPTAIN KID. Cl. 39. 6–5–51. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 4, 5 and 15, in the heading, signature and in the statement, column 1, line 1, "Manufacturing Company" should be deleted and *Mfg. Co.* should be inserted.

553,536. HAPPY JILL. Cl. 39. 1–15–52. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 4 and 15, in the heading, signature and in the statement, column 1, line 1, "Company" should be deleted and *Co.* should be inserted.

555,419. GUYMONT. Cl. 39. 2–26–52. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 4, 5 and 16, in the heading, signature and in the statement, column 1, lines 1, "Manufacturing Company" should be deleted and *Mfg. Co.* should be inserted.

587,677. PROLON. Cl. 2. 3–30–54. The Lambert Company. Pro-Phy-Lac-Tic Brush Company, Northampton, Mass. Corrected: In the statement, column 1, line 8, "hollow" should be deleted.

587,706. FLORENCE. Cl. 2. 3–30–54. The Lambert Company. Pro-Phy-Lac-Tic Brush Company, Northampton, Mass. Corrected: In the statement, column 1, line 8, "hollow" should be deleted.

590,648. HUMDINGER AND DESIGN. Cl. 39. 6–6–54. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 4, 5 and 16, in the statement, column 1, line 1, "Manufacturing Co., Incorporated" should be deleted and *Mfg Co.* should be inserted.

599,701. MAMMOTH CAVE. Cl. 39. 12–21–54. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 4, 5 and 16 and in the statement, column 1, line 1, "Manufacturing Co., Incorporated" should be deleted and *Mfg. Co.* should be inserted.

602,747. WASHINGTON DEE CEE. Cl. 39. 8–1–55. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 4, 5 and 16, in the statement, column 1, line 1, "Manufacturing Company, Incorporated" should be deleted and *Mfg. Co.* should be inserted.

617,456. THE WRIGHT LINE. Cl. 32. 12–13–55. The Wright Line, Inc., by change of name from Wright and Company, Incorporated, Barry Wright Corporation, Watertown, Mass. Amended to appear:

Wright LINE

623,782. CADENCE. Cl. 2. 3–27–56. Pro-Phy-Lac-Tic Brush Company, Northampton, Mass. Corrected: In the statement, column 2, line 1, "hollow" should be deleted.

624,272. GULF AND DESIGN. Cl. 6. 4–3–56. Gulf Oil Corporation, Pittsburgh, Pa. Amended: In the statement, column 2, after line 3, *Owner of Reg. No. 621,650 and others.* is inserted, and the drawing is amended to appear:

Gulf

628,317. WALK-RIGHT. Cl. 39. 6–5–56. Washington Mfg. Co., Nashville, Tenn. Corrected: In the certificate, lines 4, 5 and 16 and in the statement, column 1, line 1, "Manufacturing Co., Incorporated" should be deleted and *Mfg. Co.* should be inserted.

632,656. HUDSON. Cl. 28. 8–14–56. H. D. Hudson Manufacturing Company, Chicago, Ill. Corrected: In the statement, column 1, line 5, "trombone" should be deleted.

636,065. DESIGN OF CAMEO MEDALLION. Cl. 52. 10–16–56. Cameo Corporation. B. T. Babbitt, Inc., Albany, N.Y. Amended to appear:



689,480. SPASAVER. Cl. 28. 12–8–59. The Sherman-Klove Company. Symington Wayne Corporation, Salisbury, Md. Corrected: In the statement, column 1, line 1, "Illinois" should be deleted and *Delaware* should be inserted.

712,182. LORI-LYNN. Cl. 39. 3–7–61. Washington Mfg. Co. doing business as Washington Mfg. Company, Old Kentucky Mfg. Company, Gold Star Company and Lori-Lynn Company, Nashville, Tenn. Corrected: In the statement, column 1, line 1, "Manufacturing Company, Inc." should be deleted and *Mfg. Co.* should be inserted.

717,692. FARM-IN-THE DELL. Cl. 2. 7–4–61. Pro-Phy-Lac-Tic Brush Company, Florence, Mass. Corrected: In the statement, column 2, line 1, "hollow" should be deleted.

717,698. PROLONWARE. Cl. 2. 7–4–61. Pro-Phy-Lac-Tic Brush Company, Florence, Mass. Corrected: In the statement, column 2, line 1, "hollow" should be deleted.

717,694. SAN MARINO. Cl. 2. 7–4–61. Pro-Phy-Lac-Tic Brush Company, Florence, Mass. Corrected: In the statement, column 2, line 1, "hollow" should be deleted.

718,052. WISHING TREE. Cl. 2. 7–11–61. Pro-Phy-Lac-Tic Brush Company, Florence, Mass. Corrected: In the statement, column 2, line 1, "hollow" should be deleted.

718,053. LEONORA. Cl. 2. 7–11–61. Pro-Phy-Lac-Tic Brush Company, Florence, Mass. Corrected: In the statement, column 2, line 1, "hollow" should be deleted.

720,387. AMBERLEY. Cl. 39. 8–22–61. Washington Mfg. Co., Nashville, Tenn. In the statement, column 1, line 1, "Manufacturing Company, Incorporated" should be deleted and *Mfg.* should be inserted.

723,905. RUTH KAY. Cl. 39. 11–14–61. Washington Mfg. Co., doing business as Ruth Kay Company and Old Kentucky Mfg. Company, Nashville, Tenn. Corrected: In the statement, column 1, line 1, "Manufacturing Company, Inc." should be deleted and *Mfg. Co.* should be inserted.

723,906. EVA LAURA. Cl. 39. 11–14–61. Washington Mfg. Co., doing business as Gold Star Company, Guymont Company, Allwear Company, and Eva Laura Company, Nashville, Tenn. Corrected: In the statement, column 1, line 1, "Manufacturing Company, Inc." should be deleted and *Mfg. Co.* should be inserted.

730,130. BRODNAX. Cl. 39. 4–17–62. Washington Mfg. Co., doing business as Washington Mfg. Company, Old Kentucky Mfg. Company, Gold Star Company, Lori-Lynn Company and The Brodnax Company, Nashville, Tenn. Corrected: In the statement, column 1, line 1, "Manufacturing Company, Inc." should be deleted and *Mfg. Co.* should be inserted.

732,506. BEAU BRUMMEL AND DESIGN. Cl. 39. 6–5–62. Washington Mfg. Co., assignee of The Rauh Company, Nashville, Tenn. Corrected: In the statement, column 1, line 1, "Manufacturing Co." should be deleted and *Mfg. Co.* should be inserted.

736,101. KENWICK. Cl. 39. 8–14–62. Washington Mfg. Co., Nashville, Tenn. Corrected: In the statement, column 1, line 1, "Manufacturing Company, Inc." should be deleted and *Mfg. Co.* should be inserted.

739,769. AMBERLEY. Cl. 39. 10–23–62. Washington Mfg. Co., Nashville, Tenn. Corrected: In the statement, column 1, line 1, "Manufacturing Company, Inc." should be deleted and *Mfg. Co.* should be inserted.

740,960. BEAU BRUMMEL. Cl. 39. 11–20–62. Washington Mfg. Co., Nashville, Tenn. Corrected: In the statement, column 1, line 1, "Manufacturing Company, Inc." should be deleted and *Mfg. Co.* should be inserted.

742,698. HEAVY DUTY. Cl. 39. 12–25–62. Washington Mfg. Co., Nashville, Tenn. Corrected: In the statement, column 1, line 1, "Manufacturing Co." should be deleted and *Mfg. Co.* should be inserted.

759,726. GOLD STAR. Cl. 39. 11–5–63. Washington Mfg. Co., Nashville, Tenn. Corrected: In the statement, column 1, line 1, "Manufacturing Company, Inc." should be deleted and *Mfg. Co.* should be inserted.

762,488. INSTANT BREAKFAST. Cl. 46. 12–31–63. La Lanne Incorporated, Hollywood, Calif. Corrected: In the statement, column 2, lines 1 and 2, "prepared breakfast cereal" should be deleted and *food powder for preparation of beverages* should be inserted.

777,822. ASCO. Cl. 23. 9–22–64. Asco Sintering Corporation, Los Angeles, Calif. Amended: In the statement, column 2, line 1, "and filters" is deleted.

790,820. PLAS-DE-JOUR. Cl. 50. 6–8–65. Louis A. Labe, doing business as Labe Enterprises, Denver, Colo. Corrected: In the statement, column 2, line 3, "1864" should be deleted and *1964* should be inserted.

791,266. DETONEX. Cl. 9. 6–22–65. Societe Suisse des Explosifs, Valais, Switzerland. Corrected: In the statement, column 1, line 1, "de" should be deleted and *des* should be inserted.

791,362. NACAR. Cl. 27. 6–22–65. Fabrique de Montres Zila S.A. (Uhrenfabrik Zila AG.) (Zila Watch Co. Ltd.), Bern, Switzerland. Corrected: In the statement, column 1, line 1, "Montries" should be deleted and *Montres* should be inserted.

INDEX OF REGISTRANTS

ISSUED AUGUST 17, 1965

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Abbott Laboratories, North Chicago, Ill. 794,533, pub. 6–1–65. Cl. 46.
Acme Markets, Inc., Philadelphia, Pa. 794,267, pub. 6–1–65. Cl. 1.
Acme Markets, Inc., Philadelphia, Pa. 794,431, pub. 6–1–65. Cl. 24.
Acme Markets, Inc., Philadelphia, Pa. 794,492, pub. 6–1–65. Cl. 39.
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Barth Vitamin Corp., Valley Stream, N.Y. 794,358, pub. 6–1–65. Cl. 18.
Basic, Inc., Cleveland, Ohio. 794,306, pub. 6–1–65. Cl. 12.
Battle Creek Box Co., Battle Creek, Mich. 681,170, canc. Cl. 37.
Baxter Laboratories, Inc., Morton Grove, Ill. 794,287, pub. 6–1–65. Cl. 6.
Bayou Candy Co., Inc., New Orleans, La. 794,518–20, pub. 6–1–65. Cl. 46.
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Carey, Philip, Mfg. Co., The, Cincinnati, Ohio. 794,310, pub. 6–1–65. Cl. 12.
Cargill, Inc., Minneapolis, Minn. 794,543, pub. 6–1–65. Cl. 46.
Carnation Co., Los Angeles, Calif. 794,336, pub. 6–1–65. Cl. 18.
Cashin Publishing Co., Cleveland, Ohio. 794,479, pub. 6–1–65. Cl. 38.
Castle Brewery Klaver Brouwerif, Mill Brewer, Klaver Holland Beer Brewery and Falcon Brewery : *See*—
N.V. Phoenic Bronwerij.
Celanese Corp. of America, New York, N.Y. 680,961, canc. Cl. 1.
Celebrity Publications, Ltd., New York, N.Y. 794,478, pub. 6–1–65. Cl. 38.
Cello Chemical Co., The, Baltimore, Md. 794,272, pub. 6–1–65. Cl. 4.
Centaur Co., The, to Sterling Drug, Inc., New York, N.Y. 47,588, ren. 8–17–65. Cl. 18.

Champion Exercisers, Inc., Paramount, Calif. 794,412, pub. 6–1–65. Cl. 22.
Chesapeake Feed Co., Beltsville, Md. 794,505, pub. 6–1–65. Cl. 46.
Chicago Decal Co., Chicago, Ill. 794,476, pub. 6–1–65. Cl. 38.
Chicago Pneumatic Tool Co., New York, N.Y. 794,424–5, pub. 6–1–65. Cl. 28.
Chicago White Lead & Oil Co., The, to Hooker Glass & Paint Mfg. Co., Chicago, Ill. 206,479–81, ren. 8–17–65. Cl. 16.
Chicopee Mills, Inc., New York, N.Y. 794,606. Cl. 39.
Chilton, J. E., Millwork & Lumber Co., Inc., Nashville, Tenn. 794,304, pub. 6–1–65. Cl. 12.
Chilton, J. E., Millwork & Lumber Co., Inc., Nashville, Tenn. 794,444, pub. 6–1–65. Cl. 32.
Ciba Corp., New York, N.Y. 794,358, pub. 6–1–65. Cl. 18.
Ciba Ltd., Basle, Switzerland. 794,363, pub. 6–1–65. Cl. 18.
Citation Mfg. Co., Inc., Siloam Springs, Ark. 794,448, pub. 6–1–65. Cl. 24.
Cities Service Oil Co., New York, N.Y. 681,086, canc. Cl. 21.
Clairol, Inc., New York, N.Y. 794,566, pub. 6–1–65. Cl. 51.
Clinton Watch Co., Chicago, Ill. 681,143, canc. Cl. 27.
Club Internationale, Washington, D.C. 794,600, pub. 6–1–65. Cl. 200.
Cluett, Peabody & Co., Inc., New York, N.Y. 200,644, ren. 8–17–65. Cl. 39.
Cluett, Peabody & Co., Inc., New York, N.Y. 200,646–7, ren. 8–17–65. Cl. 39.
Cluett, Peabody & Co., Inc., New York, N.Y. 200,649–51, ren. 8–17–65. Cl. 39.
Cluett, Peabody & Co., Inc., New York, N.Y. 200,722–3, ren. 8–17–65. Cl. 39.
Cluett, Peabody & Co., Inc., New York, N.Y. 201,026, ren. 8–17–65. Cl. 39.
Cluett, Peabody & Co., Inc., New York, N.Y. 201,097, ren. 8–17–65. Cl. 39.
Cluett, Peabody & Co., Inc., New York, N.Y. 201,103, ren. 8–17–65. Cl. 39.
Coastal Chemical Co., Inc., Savannah, Ga. 794,583, pub. 6–1–65. Cl. 52.
Coats & Clark, Inc., New York, N.Y. 794,499, pub. 6–1–65. Cl. 43.
Colgate-Palmolive Co., New York, N.Y. 794,348, pub. 6–1–65. Cl. 18.
Colgate-Palmolive Co., New York, N.Y. 794,587, pub. 6–1–65. Cl. 52.
Color Activ S.A., Zurich, Switzerland. 794,464, pub. 6–1–65. Cl. 38.
Color Craft Corp., Indianapolis, Ind. 794,320, pub. 6–1–65. Cl. 13.
Columbia Broadcasting System, Inc., Danvers, Mass. 681,165, canc. Cl. 36.
Columbia Products Co., Columbia, S.C. 794,409, pub. 6–1–65. Cl. 22.
Compania Nacional de Levaduras, Levapan Ltda., Bogota, Colombia. 794,516, pub. 6–1–65. Cl. 46.
Conal Pharmaceuticals, Inc., Chicago, Ill. 694,339, pub. 6–1–65. Cl. 18.
Congoleum-Nairn, Inc., Kearney, N.J. 794,379–80, pub. 6–1–65. Cl. 20.
Consumers Cooperative Association, Kansas City, Mo. 794,387, pub. 6–1–65. Cl. 21.
Contax Corp., Dallas, Tex. 681,265, canc. Cl. 101.
Continental Advertising & Marketing Agencies, Inc., New York, N.Y. 681,266, canc. Cl. 101.
Copolymer Rubber & Chemical Corp., Baton Rouge, La. 680,957, canc. Cl. 1.
Crown Rubber Co., Fremont, Ohio. 794,259, pub. 6–1–65. Cl. 1.
Cucamonga Vineyard Co., d.b.a. Cucamonga Vineyard Co., Cucamonga, Calif. 794,546, pub. 6–1–65. Cl. 47.
Cudahy Bros. Co., to Patrick Cudahy, Inc., Cudahy, Wis. 47,217, ren. 8–17–65. Cl. 46.
Cudahy, Patrick, Inc.: *See*—
Cudahy Bros. Co.
Cussons (International) Ltd., Kersal, Manchester, England. 794,586, pub. 6–1–65. Cl. 52.
Custom Marble Co., Morganton, N.C. 794,446, pub. 6–1–65. Cl. 32.
Dan River Mills, Inc., Danville, Va. 794,496, pub. 6–1–65. Cl. 42.
Davidson Mfg. Corp., Chicago, Ill., to Fairchild Camera and Instrument Corp., Syosset, N.Y. 415,493, ren. 8–17–65. Cl. 50.
Decar Chemical Products Co., Pittsburgh, Pa. 794,303, pub. 6–1–65. Cl. 12.
Dell Products Corp., Hillside, N.J. 417,449, ren. 8–17–65. Cl. 45.
De Luxe Reading Corp., Elizabeth, N.J. 794,402, pub. 6–1–65. Cl. 22.
De Luxe Reading Corp., Elizabeth, N.J. 794,413–16, pub. 6–1–65. Cl. 22.
De Witt, E. C., & Co., Inc., Chicago, Ill. 206,665, ren. 8–17–65. Cl. 18.
Diamond Alkali Co., Cleveland, Ohio. 794,585, pub. 6–1–65. Cl. 52.
Diamond Power Specialty Corp., Lancaster, Ohio. 681,099, canc. Cl. 23.
Dictaphone Corp., Bridgeport, Conn. 203,885, ren. 8–17–65. Cl. 36.
Displayers, Inc., The, New York, N.Y. 794,599, pub. 6–1–65. Cl. 103.
Doniger, David D., & Co., Inc., to McGregor-Doniger, Inc., New York, N.Y. 414,931, ren. 8–17–65. Cl. 39.
Doral Handbags, Inc., New York, N.Y. 794,271, pub. 6–1–65. Cl. 3.
Doughboy Industries, Inc., New Richmond, Wis. 794,396, pub. 6–1–65. Cl. 22.
Dowst Mfg. Co., from Richard Benit Studio, Inc., Chicago, Ill. 681,240, canc. Cl. 50.
Draper Canning Co., The: *See*—
Draper, H. C.
Draper, H. C., d.b.a. Draper Canning Co., to The Draper Canning Co., Milton, Del. 201,523, ren. 8–17–65. Cl. 46.
Drew Chemical Corp., New York, N.Y. 794,285, pub. 6–1–65. Cl. 6.
Dumas-Wilson & Co., St. Louis, Mo. 794,366, pub. 6–1–65. Cl. 18.
Dundee Cement Co., Dundee, Mich. 794,300, pub. 2–21–65. Cl. 12.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 794,294–5, pub. 6–1–65. Cl. 7.
Dynamatic Corp. Eaton Mfg. Co., Cleveland, Ohio. 530,071. Am. 7(d). (Multiple Class (Classes 21 and 23).
Eagle Ottawa Leather Co., Grand Haven, Mich. 794,248, pub. 6–1–65. Cl. 1.
Eagle-Picher Co., The, Cincinnati, Ohio. 794,297, pub. 6–1–65. Cl. 10.
East India Spice Co., Ltd., Mount Vernon, N.Y. 794,537, pub. 6–1–65. Cl. 46.
Eastman Kodak Co., Rochester, N.Y. 794,258, pub. 6–1–65. Cl. 1.
Eaton Chemical Corp., Detroit, Mich. 794,274, pub. 6–1–65. Cl. 6.
Elk Enterprises, Inc., Baltimore, Md. 681,138, canc. Cl. 26.
Emenel Co., The, Loma Linda, Calif. 794,341, pub. 6–1–65. Cl. 18.
Empire Memorials, Inc., Melrose, Minn. 681,238, canc. Cl. 50.
Endo Laboratories, Inc., Garden City, N.Y. 794,371–2, pub. 6–1–65. Cl. 18.
Engelhard Industries, Inc.: *See*—
Baker & Co., Inc.
Etka Chemical Co., Inc., Troy, N.Y. 681,256, canc. Cl. 52.
FMC Corp.: *See*—
Sylvania Industrial Corp.
Fairchild Camera and Instrument Corp.: *See*—
Davidson Mfg. Corp.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 794,251, pub. 6–1–65. Cl. 1.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 794,264, pub. 6–1–65. Cl. 1.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 794,280, pub. 6–1–65. Cl. 6.
Feature Items Co., Minneapolis, Minn. 681,042, canc. Cl. 18.
Federated Suisse Des Associations De Fabricants D'Horlogerie, Binenne, Switzerland. 199,423, ren. 8–17–65. Cl. 27.
Fellows Medical Mfg. Co., Inc., Detroit, Mich. 794,335, pub. 6–1–65. Cl. 18.
Ferro Corp., Cleveland, Ohio. 794,281, pub. 6–1–65. Cl. 6.
Fiberfil, Inc., Evansville, Ind. 794,246, pub. 6–1–65. Cl. 1.
Fiberfil, Inc., Evansville, Ind. 794,252, pub. 6–1–65. Cl. 1.
Fleer, Frank H., Corp., Philadelphia, Pa. 681,217–8, canc. Cl. 46.
Flexello Castors & Wheels Ltd., Slough, England. 794,324, pub. 6–1–65. Cl. 13.
Florsheim Farms: *See*—
Florsheim, Peter.
Florsheim, Peter, d.b.a. Florsheim Farms, San Jose, Calif. 681,232, canc. Cl. 46.
Fluff 'N Puff Pillow Service of America, Inc., Minneapolis, Minn. 681,263, canc. Cl. 100.
Forkardt, Paul, Kommanditgesellschaft, Dusseldorf, Germany. 794,423, pub. 6–1–65. Cl. 23.
Form Moulding, Inc., Metchen, N.J. 680,963, canc. Cl. 2.
Franco-American Hygienic Co., Kansas City, Mo. 416,250, ren. 8–17–65. Cl. 6.
Freeman & Gossage, Inc., San Francisco, Calif. 794,334, pub. 6–1–65. Cl. 17.
Freeman, Luther E., d.b.a. Ten-Ten Co., San Diego, Calif. 794,559, pub. 6–1–65. Cl. 50.
Fritzmeier, Georg, Kommanditgesellschaft, Munich, Germany. 794,375, pub. 11–12–63. Cl. 19.
Ful-Vue Auto Clothes Rod Mfg. Co.: *See*—
Lilly, Patrick E.
Gardner Mfg. Co., Horicon, Wis. 681,284, canc. Cl. 23.
Gaylor Products Co., Van Nuys, Calif. 681,083, canc. Cl. 21.
Geigy Chemical Corp., Ardsley, N.Y. 681,049, canc. Cl. 18.
Geigy Chemical Corp., Ardsley, N.Y. 794,283, pub. 6–1–65. Cl. 6.
Geigy Chemical Corp., Ardsley, N.Y. 794,293, pub. 6–1–65. Cl. 6.
General Candy Co., d.b.a. Royal Knight Candies, St. Louis, Mo. 794,511, pub. 6–1–65. Cl. 46.
General Grocer Co., Brentwood, Mo. 794,510, pub. 6–1–65. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 794,529, pub. 6–1–65. Cl. 46.
General Motors Corp., Detroit, Mich. 201,694, ren. 8–17–65. Cl. 19.
General Motors Corp., Detroit, Mich. 201,708, ren. 8–17–65. Cl. 19.
Genesco, Inc.: *See*—
Utica Knitting Co.
Gerber & Co., Inc., to Gerber Cheese Co., Inc., New York, N.Y. 199,442–3, ren. 8–17–65. Cl. 46.
Gerber Cheese Co., Inc.: *See*—
Gerber & Co., Inc.
Gibson Laboratories, Fort Worth, Tex. 681,044, canc. Cl. 18.
Gillette Co., The, d.b.a. The Toni Co., Boston, Mass. 794,359, pub. 6–1–65. Cl. 18.
Gilmour Mfg. Co.: *See*—
Gilmour, Robert A.
Gilmour, Robert A., d.b.a. Gilmour Mfg. Co., Somerset, Pa. 794,326, pub. 6–1–65. Cl. 18.

Graham Engineering Co., Inc., Palo Alto, Calif. 794,418, pub. 6–1–65. Cl. 23.
Graphic Covers, Inc., Indianapolis, Ind. 794,460, pub. 6–1–65. Cl. 37.
Grimth Seed Co.: *See*—
Grimth, W. R.
Grimth, W. R., d.b.a. Grimth Seed Co., Bloomington, Ill. 794,262, pub. 6–1–65. Cl. 1.
Groves, John, Co.: *See*—
Groves, John.
Groves, John, d.b.a. John Groves Co., Braddock, Pa. 794,503, pub. 6–1–65. Cl. 45.
Guerlain, Inc.: *See*—
Guerlain Perfumery Corp., The.
Guerlain Perfumery Corp., The, Wilmington, Del., and New York, N.Y., to Guerlain, Inc., New York, N.Y. 418,200, ren. 8–17–65. Cl. 51.
Gulf Oil Corp., Pittsburgh, Pa. 624,272. Am. 7(d). Cl. 6.
Haering, D. W., & Co., Inc., San Antonio, Tex. 417,512, ren. 8–17–65. Cl. 6.
Hall Brothers, Inc., to Hallmark Cards, Inc., Kansas City, Mo. 416,676, ren. 8–17–65. Cl. 38.
Hallam & Son., Inc., Springfield, Mo. 794,584, pub. 6–1–65. Cl. 46.
Hallmark Cards, Inc.: *See*—
Hall Brother, Inc.
Happy Humpty Restaurants, Inc., Ft. Wayne, Ind. 794,592, pub. 6–1–65. Cl. 100.
Hartfield Stores, Inc., Los Angeles, Calif. 794,481, pub. 6–1–65. Cl. 39.
Hartmann Luggage Co., Racine, Wis. 680,970, canc. Cl. 3.
Harvo Ltd., Birmingham, Warwick, England. 794,541, pub. 6–1–65. Cl. 46.
Hassenfeld Bros., Inc., Pawtucket, R.I. 794,408, pub. 6–1–65. Cl. 22.
Head, C. B., d.b.a. Char-Ne & Co., Ceres, Calif. 794,565, pub. 6–1–65. Cl. 51.
Hemisphere Trading Co., Inc., New Orleans, La. 414,201, ren. 8–17–65. Cl. 15.
Hercules Powder Co., Wilmington, Del. 794,250, pub. 6–1–65. Cl. 1.
Hermos Corp., The, Boston, Mass. 680,998, canc. Cl. 6.
Herrin Transfer & Warehouse Co., Inc., Shreveport, La. 794,268, pub. 6–1–65. Cl. 2.
Heyden Newport Chemical Corp., New York, N.Y. 680,978, canc. Cl. 6.
Hie Food Products: *See*—
Leach, Ray B.
High Fidelity Recordings, Inc., Hollywood, Calif. 681,164, canc. Cl. 36.
Hines, Edward, Lumber Co., Chicago, Ill. 794,314, pub. 6–1–65. Cl. 12.
Hitco, from H. I. Thompson Fiber Glass Co., Gardena, Calif. 794,247, pub. 6–1–65. Cl. 1.
Hodgman Rubber Co.: *See*—
Tyer Rubber Corp.
Hooker Chemical Corp., Niagara Falls, N.Y. 794,467, pub. 6–1–65. Cl. 38.
Hooker Glass & Paint Mfg. Co.: *See*—
Chicago White Lead & Oil Co., The.
Hormel, Geo. A., & Co., Austin, Minn. 794,508, pub. 6–1–65. Cl. 46.
Houston Corp.: *See*—
Odex Engineering Co.
Hudson, H. D., Mfg. Co., Chicago, Ill. 430,438, cor. Cl. 23.
Hudson, H. D., Mfg. Co., Chicago, Ill. 632,656, cor. Cl. 23.
Hudson National, Inc., from Hudson Vitamin Products, Inc., New York, N.Y. 794,572, pub. 6–1–65. Cl. 51.
Hudson Vitamin Products, Inc.: *See*—
Hudson National, Inc.
Huluan G.m.b.H., Zug, Switzerland. 794,564, pub. 6–1–65. Cl. 51.
Hunter Publishing Co., Chicago, Ill. 794,477, pub. 6–1–65. Cl. 38.
Huntington Creek Corp., The, d.b.a. Leroux & Co., Ruffsdale, Pa. 794,551, pub. 6–1–65. Cl. 49.
Huron Portland Cement Co., Detroit, Mich. 794,309, pub. 6–1–65. Cl. 12.
Hygrade Food Products Corp., Detroit, Mich. 794,509, pub. 6–1–65. Cl. 46.
Hy-Test 303 Corp., Rutherford, N.J. 794,330, pub. 6–1–65. Cl. 15.
Ideal Toy Corp., Hollis, N.Y. 794,405, pub. 6–1–65. Cl. 22.
Illinois Minerals Co., Cairo, Ill. 794,255, pub. 6–1–65. Cl. 1.
Imperial Knife Associated Companies, Inc., Providence, R.I. 794,419, pub. 6–1–65. Cl. 23.
Indian Archery Corp., Evansville, Ind. 794,401, pub. 6–1–65. Cl. 22.
Ingersoll-Rand Co., New York, N.Y. 794,417, pub. 6–1–65. Cl. 23.
Ingersoll, Robt. H., & Bro., New York, N.Y., to The United States Time Corp., Middlebury, Conn. 44,586, ren. 8–17–65. Cl. 27.
Ingram-Richardson, Inc., Frankfort, Ind. 794,263, pub. 6–1–65. Cl. 1.
Inside Vending, Inc., Chicago, Ill. 794,471, pub. 6–1–65. Cl. 38.
International Foodcraft Corp., Brooklyn, N.Y. 681,228, canc. Cl. 46.
International Nickel Co., Inc., The, New York, N.Y. 681,028, canc. Cl. 14.
International Paper Co., New York, N.Y. 199,723, ren. 8–17–65. Cl. 37.
International Paper Co., New York, N.Y. 794,456, pub. 6–1–65. Cl. 37.
International Paper Co., New York, N.Y. 794,458, pub. 6–1–65. Cl. 37.
International Pipe and Ceramics Corp., Los Angeles, Calif. 794,313, pub. 6–1–65. Cl. 12.
International Sea Van, Inc., Evansville, Ind. 794,594, pub. 6–1–65. Cl. 100.
International Shoe Co., St. Louis, Mo. 417,120, ren. 8–17–65. Cl. 39.
International Silver Co., The: *See*—
International Silver Co.
International Silver Co., to The International Silver Co., Meriden, Conn. 416,530, ren. 8–17–65. Cl. 28.
Interstate Chemical Co.: *See*—
Interstate Industries, Inc.
Interstate Industries, Inc., d.b.a. Interstate Chemical Co., Kansas City, Mo. 794,342, pub. 6–1–65. Cl. 18.
Jablons, Jordan, d.b.a. Jianni-Craft, New York, N.Y. 680,998, canc. Cl. 7.
Jans Mfg., New York, N.Y. 681,144, canc. Cl. 28.
Johns-Manville Corp., New York, N.Y. 794,266, pub. 6–1–65. Cl. 1.
Johns-Manville Corp., New York, N.Y. 794,316, pub. 6–1–65. Cl. 12.
Julee Comforter Mfg. Corp., Holyoke, Mass. 681,094, canc. Cl. 22.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 794,288, pub. 6–1–65. Cl. 6.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 794,305, pub. 6–1–65. Cl. 12.
Kanrom, Inc., New York, N.Y. 794,465, pub. 6–1–65. Cl. 38.
Katz, I. Tom, d.b.a. 2–K Restaurant, Houston, Tex. 794,506, pub. 9–22–64. Cl. 46.
Katz, Max, Bag Co., Inc., Indianapolis, Ind. 794,315, pub. 6–1–65. Cl. 12.
Kay, Ken, Distributing Co.: *See*—
Kay, Ken.
Kay, Ken, d.b.a. Ken Kay Distributing Co., North Hollywood, Calif. 794,376, pub. 6–1–65. Cl. 19.
Keasbey & Mattison Co., Ambler, to Nicolet Industries, Inc., Norristown, Pa. 199,962, ren. 8–17–65. Cl. 12.
Kellogg Co., Battle Creek, Mich. 199,964, ren. 8–17–65. Cl. 46.
Kimura, H. A., d.b.a. H. A. Kimura Imports, San Francisco, Calif. 794,332, pub. 6–1–65. Cl. 16.
Kimura, H. A., Imports: *See*—
Kimura, H. A.
Kingmann-White, Inc., Placentia, Calif. 794,435, pub. 6–1–65. Cl. 2.
Kluber, August, Co., Schriesheim, Germany. 794,278, pub. 5–25–65. (Consolidated certificate, Classes 6 and 23.)
Kohnstamm, H., & Co., Inc., New York, N.Y. 417,164, ren. 8–17–65. Cl. 6.
Koller Agency, The: *See*—
Koller, George A.
Koller, George A., d.b.a. The Koller Agency, Teaneck, N.J. 681,269, canc. Cl. 102.
Krasne, H., Mfg. Co., Los Angeles, Calif. 794,450, pub. 6–1–65. Cl. 55.
L.F. Beverage Corp., Glen Cove, N.Y. 794,502, pub. 6–1–65. Cl. 45.
Lady Anne Preserving Co.: *See*—
Rosen, Anne.
Lady Fair Corp., to Martha Maid Mfg. Co., Chicago, Ill. 205,169, ren. 8–17–65. Cl. 39.
Lakeview Hamster Colony, Newfield, N.J. 694,256, pub. 6–1–65. Cl. 1.
La Lanne, Inc., Hollywood, Calif. 762,488, cor. Cl. 46.
Lambert Co., Pro-Phy-Lac-Tic Brush Co., The, Northampton, Mass. 587,677, cor. Cl. 2.
Lambert Co., Pro-Phy-Lac-Tic Brush Co., The, Northampton, Mass. 587,706, cor. Cl. 2.
La Mecanique Hallieutique, Grisolles Tarn-et Garonne, France. 794,394, pub. 6–1–65. Cl. 22.
Lamson & Sessions Co., The, Cleveland, Ohio. 794,319, pub. 6–1–65. Cl. 13.
Lane Ltd.: *See*—
Lane Tobacco, Ltd.
Lane Tobacco, Ltd., to Lane Ltd., New York, N.Y. 414,602, ren. 8–17–65. Cl. 8.
Lasting, Hyman B., Portmouth, Va. 681,245, canc. Cl. 50.
Latham Process Corp., New York, N.Y. 681,267, canc. Cl. 101.
Leach, Ray B., d.b.a. Hie Food Products, Omaha, Nebr. 794,522, pub. 6–1–65. Cl. 46.
Lehn & Fink Products Corp., Bloomfield, N.J. 794,568–9, pub. 6–1–65. Cl. 51.
Lehn & Fink Products Corp., d.b.a. Tussy Cosmetics, Bloomfield, N.J. 794,571, pub. 6–1–65. Cl. 51.
Leroux & Co.: *See*—
Huntington Creek Corp., The.
Lightfoot Schultz Co., New York, N.Y., and Hoboken, N.J., to Philip Morris, Inc., New York, N.Y. 413,244, ren. 8–17–65. Cl. 51.
Lilly, Patrick E., d.b.a. Ful-Vue Auto Clothes Rod Mfg. Co., Athens, Ga. 794,376, pub. 6–1–65. Cl. 19.
Lister & Co., Ltd., Bradford, England. 794,497, pub. 6–1–65. Cl. 42.
Lowe, Joe, Corp., Englewood, N.J. 794,321, pub. 6–1–65. Cl. 18.
Lurgi Gesellschaft fur Warmetechnik m.b.H., Frankfurt am Main, Germany. 681,117, canc. Cl. 23.
Lytle Engineering & Mfg. Co., Chicago, Ill. 681,260, canc. Cl. 100.
MAC Valves, Inc., Oak Park, Mich. 794,318, pub. 8–25–64. Cl. 13.
Mack & Co., Inc., Rahway, N.J. 794,351, pub. 6–1–65. Cl. 18.
Maddox, Maxine, d.b.a. Dining In Waikiki, Honolulu, Hawaii. 794,463, pub. 4–28–64. Cl. 38.
Magiklip Corp., New York, N.Y. 794,442, pub. 6–1–65. Cl. 29.

Mahoney, Frank D., d.b.a. Oil Marketing Equipment Co., San Francisco, Calif., to Oil Marketing Equipment Co., Inc., Redwood City, Calif. 413,175, ren. 8–17–65. Cl. 2.
Majestic Distilling Co., Inc., Lansdowne, Md. 794,552, pub. 6–1–65. Cl. 49.
Marcus Bros: *See*—
Marcus, Habib S.
Marcus, Habib S., d.b.a. Marcus Bros., Brooklyn, N.Y. 794,607. Cl. 42.
Marlboro Molding Co., Marlboro, N.J. 794,558, pub. 6–1–65. Cl. 50.
Martha Maid Mfg. Co.: *See*—
Lady Fair Corp.
Mason City Tent & Awning Co., Mason City, Iowa. 794,393, pub. 6–1–65. Cl. 22.
Matsushita Electric Industrial Co., Ltd., Kitakawachi-Gun, Osaka, Japan. 794,430, pub. 4–20–65. Cl. 24.
Mattel, Inc., Hawthorne, Calif. 794,438, pub. 6–1–65. Cl. 27.
Mauri Montay, Inc., Pittsburgh, Pa. 794,573, pub. 6–1–65. Cl. 51.
Mac's Super Gloss Co., Inc., Los Angeles, Calif. 794,588, pub. 6–1–65. Cl. 52.
Mayer-Bass, Inc., Hackensack, N.J. 794,549, pub. 6–1–65. Cl. 48.
Mayflower Enterprises, Inc., Elizabethtown, Pa. 794,525–6, pub. 6–1–65. Cl. 46.
McClintic, Thomas R., d.b.a. McClintic Products, Syracuse, Ind. 794,584, pub. 6–1–65. Cl. 52.
McDaniel, Carl K., Springfield, Mo. 794,452, pub. 6–1–65. Cl. 37.
McGregor-Doniger, Inc.: *See*—
Doniger, David D., & Co., Inc.
MacGregor Sport Products, Inc.: *See*—
Brunswick Corp.
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Menley & James Laboratories, Ltd., Philadelphia, Pa. 794,373, pub. 6–1–65. Cl. 18.
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Morris & Associates, Inc., Raleigh, N.C. 794,443, pub. 6–1–65. Cl. 31.
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Morton & Hall, Inc., Venice, Fla. 794,560, pub. 6–1–65. Cl. 50.
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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
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PATENTS

NOTICES

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[89th Congress, H.R. 4185]

July 24, 1965

AN ACT

79 Stat. 259.

To fix the fees payable to the Patent Office, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the items numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10, respectively, in subsection (a) of section 41, title 35, United States Code, are amended to read as follows:

Patent fees.
66 Stat. 796.

"1. On filing each application for an original patent, except in design cases, $65; in addition, on filing or on presentation at any other time, $10 for each claim in independent form which is in excess of one, and $2 for each claim (whether independent or dependent) which is in excess of ten. Errors in payment of the additional fees may be rectified in accordance with regulations of the Commissioner.

"2. For issuing each original or reissue patent, except in design cases, $100; in addition, $10 for each page (or portion thereof) of specification as printed, and $2 for each sheet of drawing.

"3. In design cases:

"a. On filing each design application, $20.

"b. On issuing each design patent: For three years and six months, $10; for seven years, $20; and for fourteen years, $30.

"4. On filing each application for the reissue of a patent, $65; in addition, on filing or on presentation at any other time, $10 for each claim in independent form which is in excess of the number of independent claims of the original patent, and $2 for each claim (whether independent or dependent) which is in excess of ten and also in excess of the number of claims of the original patent. Errors in payment of the additional fees may be rectified in accordance with regulations of the Commissioner.

"5. On filing each disclaimer, $15.

"6. On appeal for the first time from the examiner to the Board of Appeals, $50; in addition, on filing a brief in support of the appeal, $50.

"7. On filing each petition for the revival of an abandoned application for a patent or for the delayed payment of the fee for issuing each patent, $15.

"8. For certificate under section 255 or under section 256 of this title, $15.

"9. As available and if in print: For uncertified printed copies of specifications and drawings of patents (except design patents), 50 cents per copy: for design patents, 20 cents per copy: the Commissioner may establish a charge not to exceed $1 per copy for patents in excess of twenty-five pages of drawings and specifications and for plant patents printed in color; special rates for libraries specified in section 13 of this title, $50 for patents issued in one year. The Commissioner may, without charge, provide applicants with copies of specifications and drawings of patents when referred to in a notice under section 132.

New Applications Received June 1965

Patents	8657
Designs	456
Plant Patents	7
Reissues	28
Total	9148

Issue—August 24, 1965

Patents	1203	No. 3,201,800 to No.	3,203,002, incl.
Designs	76	No. 202,021 to No.	202,096, incl.
Plant Patents	1	No. 2,548	
Reissues	2	No. 25,842 to No.	25,843, incl.
Total	1282		

"10. For recording every assignment, agreement, or other paper relating to the property in a patent or application, $20; where the document relates to more than one patent or application, $3 for each additional item."

SEC. 2. Section 41 of title 35, United States Code, is further amended by adding the following subsection:

"(e) The fees prescribed by or under this section shall apply to any other Government department or agency, or officer thereof, except that the Commissioner may waive the payment of any fee for services or materials in cases of occasional or incidental requests by a Government department or agency, or officer thereof." 79 Stat. 260.

SEC. 3. Section 31 of the Act approved July 5, 1946 (ch. 540, 60 Stat. 427; U.S.C., title 15, sec. 1113), as amended, is amended to read as follows:

"(a) The following fees shall be paid to the Patent Office under this Act:

"1. On filing each original application for registration of a mark in each class, $35.

"2. On filing each application for renewal in each class, $25; and on filing each application for renewal in each class after expiration of the registration, an additional fee of $5.

"3. On filing an affidavit under section 8(a) or section 8(b) for each class, $10. 15 USC 1058.

"4. On filing each petition for the revival of an abandoned application, $15.

"5. On filing opposition or application for cancellation for each class, $25.

"6. On appeal from the examiner in charge of the registration of marks to the Trademark Trial and Appeal Board for each class, $25.

"7. For issuance of a new certificate of registration following change of ownership of a mark or correction of a registrant's mistake, $15.

"8. For certificate of correction of registrant's mistake or amendment after registration, $15.

"9. For certifying in any case, $1.

"10. For filing each disclaimer after registration, $15.

"11. For printed copy of registered mark, 20 cents.

"12. For recording every assignment, agreement, or other paper relating to the property in a registration or application, $20; where the document relates to more than one application or registration, $3 for each additional item.

"13. On filing notice of claim of benefits of this Act for a mark to be published under section 12(c) hereof, $10. 15 USC 1062.

"(b) The Commissioner may establish charges for copies of records, publications, or services furnished by the Patent Office, not specified above.

"(c) The Commissioner may refund any sum paid by mistake or in excess."

SEC. 4. Section 151 of title 35, United States Code, is amended to read as follows: 66 Stat. 803.

"§ 151. *Issue of patent*

"If it appears that applicant is entitled to a patent under the law, a written notice of allowance of the application shall be given or mailed to the applicant. The notice shall specify a sum, constituting the issue fee or a portion thereof, which shall be paid within three months thereafter.

"Upon payment of this sum the patent shall issue, but if payment is not timely made, the application shall be regarded as abandoned.

"Any remaining balance of the issue fee shall be paid within three months from the sending of a notice thereof and, if not paid, the patent shall lapse at the termination of this three-month period. In calculating the amount of a remaining balance, charges for a page or less may be disregarded.

"If any payment required by this section is not timely made, but is submitted with the fee for delayed payment within three months after the due date and sufficient cause is shown for the late payment, it may be accepted by the Commissioner as though no abandonment or lapse had ever occurred." 79 Stat. 261.

SEC. 5. Section 154 of title 35, United States Code, is amended by inserting the words "subject to the payment of issue fees as provided for in this title," after the words "seventeen years,". 66 Stat. 804.

SEC. 6. The analysis of chapter 14 of title 35, United States Code, immediately preceding section 151, is amended in the first item thereof by striking out the words "Time of issue of patent" and inserting in lieu thereof "Issue of patent".

SEC. 7. (a) This Act shall take effect three months after its enactment. Effective date.

(b) Items 1, 3, and 4 of section 41(a) of title 35, United States Code, as amended by section 1 of this Act, do not apply in further proceedings in applications filed prior to the effective date of this Act.

(c) Item 2 of section 41(a), as amended by section 1 of this Act, and section 4 of this Act do not apply in cases in which the notice of allowance of the application was sent, or in which a patent issued, prior to the effective date; and, in such cases, the fee due is the fee specified in this title prior to the effective date of this Act.

(d) Item 3 of section 31 of the Trademark Act, as amended by section 3 of this Act, applies only in the case of registrations issued and registrations published under the provisions of section 12(c) of the Trademark Act on or after the effective date of this Act. 60 Stat. 462. 15 USC 1062. Repeal. 66 Stat. 811.

SEC. 8. Section 266 of title 35, United States Code, is repealed.

The chapter analysis of chapter 27 of title 35, United States Code, is amended by striking out the following item:

"266. Issue of patents without fees to Government employees."

SEC. 9. Section 112 of title 35, United States Code, is amended by adding to the second paragraph thereof the following sentence: "A claim may be written in independent or dependent form, and if in dependent form, it shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim."

SEC. 10. Section 282 of title 35, United States Code, is amended by deletion of the first paragraph thereof and substituting therefor the following paragraph: Patents, validity.

"A patent shall be presumed valid. Each claim of a patent (whether in independent or dependent form) shall be presumed valid independently of the validity of other claims; dependent claims shall be presumed valid even though dependent upon an invalid claim. The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting it."

Approved July 24, 1965.

LEGISLATIVE HISTORY:
HOUSE REPORT No. 113 (Comm. on the Judiciary).
SENATE REPORT No. 301 (Comm. on the Judiciary).
CONGRESSIONAL RECORD, Vol. 111 (1965):
Mar. 17: Considered and passed House.
June 15: Considered and passed Senate, amended.
July 12: House concurred in Senate amendments.

Board of Appeals Decisions Rendered in the Month of July 1965

Examiner affirmed	242
Examiner affirmed in part	55
Examiner reversed	97
Total	394

Disclaimers

2,838,492.—*Raymond L. Pederson* and *Milton E. Herr*, Kalamazoo, *John C. Babcock*, Portage Township, Kalamazoo County, and *J Allan Campbell* and *John A. Hogg*, Kalamazoo, Mich. 6-FLUORO STEROIDS. Patent dated June 10, 1958. Disclaimer filed May 20, 1965, by the inventors; the assignee, *The Upjohn Company*, assenting.

Hereby enter this disclaimer to claims 2, 3, 4, 5, 6, and 7 of said patent.

2,838,496.—*John C. Babcock*, Portage Township, Kalamazoo County, and *J Allan Campbell* and *John A. Hogg*, Kalamazoo Township, Kalamazoo County, Mich. 6-FLUORO STEROIDS AND PROCESS FOR PREPARING SAME. Patent dated June 10, 1958. Disclaimer filed May 20, 1965, by the inventors; the assignee, *The Upjohn Company*, assenting.

Hereby enter this disclaimer to claims 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16 of said patent.

2,838,500.—*J Allan Campbell*, Kalamazoo Township, Kalamazoo County, *Raymond L. Pederson*, Kalamazoo, *John C. Babcock*, Portage Township, Kalamazoo County, and *John A. Hogg*, Kalamazoo Township, Kalamazoo County, Mich. 6-FLUORO STEROIDS. Patent dated June 10, 1958. Disclaimer filed May 20, 1965, by the inventors; the assignee, *The Upjohn Company*, assenting.

Hereby enter this disclaimer to claims 20, 22, 23, 26, and 27 of said patent.

2,838,528.—*J Allan Campbell*, Kalamazoo Township, Kalamazoo County, *John C. Babcock*, Portage Township, Kalamazoo County, and *John A. Hogg*, Kalamazoo Township, Kalamazoo County, Mich. 6-FLUORO STEROIDS AND PROCESS. Patent dated June 10, 1958. Disclaimer filed May 20, 1965, by the inventors; the assignee, *The Upjohn Company*, assenting.

Hereby enter this disclaimer to claims 14 and 15 of said patent.

2,953,458.—*Arjen Sjollema*, Leeuwarden, Netherlands. PROCESS FOR MODIFYING POWDERED MILK PRODUCTS. Patent dated Sept. 20, 1960. Disclaimer filed July 9, 1965, by the assignee, *Cooperatieve Vereniging tot Bereiding van Melkproducten, trading under the style Cooperatieve Condensfabriek "Friesland."*

Hereby enters this disclaimer to claim 3 of said patent.

Extension of Trial of "Special" Examining Procedure for Certain "New" Applications

The program announced in 812 O.G. 953 under the title "Trial of 'Special' Examining Procedure for Certain 'New' Applications" will continue until further notice.

The restriction in the announcement which requires that an application be "awaiting action for more than six months," in order to qualify for "Special" status under the program, is hereby waived. Requests for "Special" status will be entertained any time after an application has been assigned a serial number and filing date.

The provision in the announcement which limits to 100 the number of applications that may be processed under the program by each Examining Group is lifted. Until further notice there will be no ceiling.

This notice becomes effective immediately.

EDWARD J. BRENNER,
Commissioner.

July 26, 1965.

Appeal Briefs

It appears that many appeal briefs are being filed which omit reference to the drawing in describing the appellant's invention. As a reminder that the Board of Appeals is aided in its consideration if such a reference appears, attention is directed to the following language in the first sentence of Rule 192(a):

". . . including a concise explanation of the invention which should refer to the drawing by reference characters . . ."

EDWIN L. REYNOLDS,
First Assistant Commissioner.

Aug. 3, 1965.

International Convention for the Protection of Industrial Property

Adherence of Uganda to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence of the Government of Uganda to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect June 14, 1965.

EDWARD J. BRENNER,
July 20, 1965. *Commissioner of Patents.*

International Convention for the Protection of Industrial Property

Adherence of Kenya to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland, of the adherence of the Republic of Kenya to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect June 14, 1965.

EDWARD J. BRENNER,
July 20, 1965. *Commissioner of Patents.*

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF JULY 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action: New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	3- 8-65
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	12- 7-62	9-22-65
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager. Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	6-20-60
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	10- 1-62	5-26-59
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Manager. Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	1- 6-60
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager. Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures	7-20-62	3-23-60
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager. Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	8-10-59
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager. Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12-18-62	7-24-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10-12-62	11-22-60
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	1- 3-62	7-14-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager. Communications; Multiplexing Techniques; Facsimile and Related Art.	10-23-62	2-20-60
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager. Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	10-30-58
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager. Semi-Conducter and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 2-62	2- 2-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager. Optics; Radiant Energy; Measuring.	9-24-62	7- 9-59
ELEMENTS, GROUP 270—E. J. SAX, Manager. Conductors; Switches; Miscellaneous.	1-25-63	2-20-61

Total number of pending applications (excluding Designs)	197,122
Total number of Design applications pending	5,148
Total number of applications awaiting action (excluding Designs)	147,473
Total number of Design applications awaiting action	1,827
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	March 3, 1958

EXPIRATION OF PATENTS.

The patents within the range of numbers indicated below expire during August 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents ..... Numbers 3,446,165 to 3,448,505, inclusive
Plant Patents ..... Number 805

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6-26-62	11-14-61
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	10-26-62	10-14-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	3- 5-63	11- 2-59
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	5- 3-61
FLUID HANDLING, GROUP 360—E. PAUL, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	2- 4-63	12-13-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Manager Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	5-20-63	7-20-60
HEAT GENERATION, TRANSFER AND UTILIZATION, GROUP 380—P. L. PATRICK, Manager Furnaces, Liquid Heaters and Vaporisers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation; Refrigeration; Drying; Ventilation; and Illumination.	4- 8-63	8-26-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	4- 5-63	8-26-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 5-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-28-63	1-10-61
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-21-63	9-21-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	6- 6-63	9-12-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager Printing; Typewriters; Stationery; Material Treatment.	7-20-62	12-31-58
DESIGNS, GROUP 490—J. A. MANIAN, Manager Industrial Arts; Household, Personal and Fine Arts.	9- 2-64	6-26-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE ALEXANDER M. WRIGHT

No. 7218. Decided April 15, 1965

[52 CCPA —; 343 F.2d 761; 145 USPQ 182]

1. APPLICATION—DISCLOSURE—SUFFICIENCY OF DISCLOSURE—APPLICANT NEED NOT EXPRESSLY EXCLUDE UNINTENDED PRIOR ART FEATURES.

"We believe * * * that appellant's specification as filed discloses that fuel flow to the engine is automatically regulated *solely* by unmodified, compressor discharge absolute pressure. Whereas the Board fails to find any statement that it is so regulated and that other parameters, such as fuel pressure, do not modify it, we fail to find that such other parameters are at all intended to be included. To assume that parameters, other than compressor discharge absolute pressure, *may* control the fuel flow in appellant's invention, is to indulge in unwarranted speculation. Appellant's drawings do not show them, the specification does not describe them or even suggest that they are present, and we are not willing to conclude that they are. To do so would be asking future applicants to expressly negate all features which, although perhaps common in the art, are not intended to be part of the disclosure. Considering the over-all operation of the invention, as *originally* disclosed in the specification and drawings, we agree with appellant that the regulation of fuel flow *solely* by unmodified, compressor discharge pressure was inherently disclosed therein."

2. SAME—SAME—AMENDMENT TO THE SPECIFICATION.

"We feel that the amendments to the specification merely render explicit what had been implicitly disclosed originally, and, while new *language* has certainly been added, we are not prone to view all new 'language' ipso facto as 'new matter.'"

3. PATENTABILITY—COMBINING REFERENCES—OBVIOUSNESS.

"While appellant is correct in contending that incorporating the Davies *device* into the Chandler *device* would not provide every feature of the claimed device, we believe this contention fails to meet the issue before us. The Patent Office position is that the claimed invention would be obvious to one of ordinary skill in the art with the Chandler and Davies patents before him. Hence, we are concerned with what these patents *disclose*, more particularly what they suggest, without regard to what the respective patentees consider to be their inventions. The issue is not whether appellant's apparatus has been 'fully met' but rather whether the claimed apparatus has been clearly suggested. We believe it has * * *."

4. SAME—OBVIOUSNESS—OMISSION OF ELEMENT AND ITS FUNCTION—35 U.S.C. 103.

"* * * we believe the word 'solely' does not so limit claim 15 as to render it patentable. The afterburner fuel control of Chandler is governed by two parameters, pressure differential across the compressor and tail pipe temperature. We agree with the Solicitor that 'the elimination of the temperature parameter for the afterburner fuel control of *Chandler* * * * together with its tailpipe safeguarding function, would be an obvious expedient,' but we hasten to add that this finding is based upon a *determination of obviousness under section 103* and not upon a mechanical rule, which the Solicitor would have us extract from *In re Karlson*, 50 CCPA 908, 311 F.2d 581, 136 USPQ 184, about the omission of an element and its function from a known combination being obvious if the remaining elements perform the same function as before. Language to this effect in *Karlson* was never intended to short-circuit the clear wording of 35 U.S.C. 103."

5. SAME—COMBINATION—OBVIOUSNESS.

"Patentability depends on the obviousness of the overall *combinations*, not of the individual *elements of* that combination for *they* are not being claimed."

6. SAME—PARTICULAR SUBJECT MATTER—"AFTERBURNER FUEL REGULATOR RESPONSIVE TO COMPRESSOR DISCHARGE ABSOLUTE PRESSURE."

The action of the Board of Appeals in refusing certain claims in an application entitled "Afterburner Fuel Regulator Responsive to Compressor Discharge Absolute Pressure," for inadequate disclosure is reversed, and its action in refusing certain claims as unpatentable over the prior art is affirmed.

APPEAL from the Patent Office. Serial No. 688,459.

MODIFIED.

A. M. Prentiss for appellant.

Clarence W. Moore (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals, adhered to on reconsideration, affirming the rejection of claims 15 through 28 of application Serial No. 688,459, filed October 7, 1957, for "Afterburner Fuel Regulator Responsive to Compressor Discharge Absolute Pressure." No claims are allowed.

The Invention

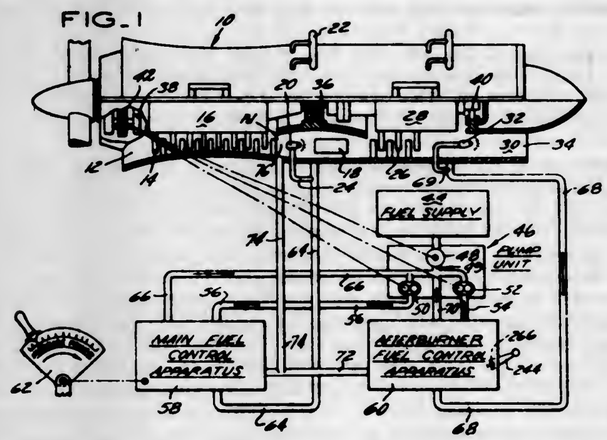
The invention relates to fuel control apparatus for aircraft turbojet engines having an "afterburner" combustion chamber, supplemental to and on the discharge side of, a "main" combustion chamber for reheating exhaust gases and thereby increasing the jet reaction thrust of the engine when maximum power output is desired, such as on take-off. As explained in the specification——

Engines of this type usually comprise, as principal elements, an air inlet, an air compressor, one or more main combustion chambers having a series of burner nozzles through which the main fuel supply is fed, a gas turbine, a supplementary combustion chamber also having a series of burner nozzles through which the supplementary fuel supply is fed, and a tail pipe for discharging the combustion gases to the atmosphere in the form of a jet. Associated with the engine are a main fuel supply system, including a fuel pump and control apparatus, for delivering fuel to the main combustion chambers, and a supplementary fuel supply system, including a fuel pump and control apparatus, for delivering fuel to the afterburners in the afterburner combustion chamber. This invention is particularly concerned with the afterburner fuel control apparatus which controls the afterburner fuel flow as a preselected function of the compressor discharge absolute pressure.

The specification goes on to say the "invention consists in the *combination and arrangement of elements* hereinafter described and illustrated * * *." [Emphasis ours.]

Appellant's FIGURE 1, reproduced below since one of the two issues presented by the appeal has a direct bearing thereon, diagrammatically shows a turbojet aircraft engine with its associated main fuel supply and afterburner fuel supply system, including appellant's "control" apparatus, and the principal connections therebetween.

FIG. 1



The main elements are: a supporting casing 10, an air inlet 12, a multistage air compressor 14 having a rotor shaft 16, one of a number of main combustion chambers 18, one of a corresponding number of main fuel burner nozzles 20, connected to a generally circular fuel manifold 22 by means of a conduit 24, a multistage turbine 26 having a rotor shaft 28 connected to compressor rotor shaft 16; an afterburner combustion chamber 30, one of a plurality of afterburner fuel nozzles 32, a tail pipe 34 for discharging combustion exhaust; a center bearing 36 and end bearings 38 and 40 supported by casing 10, and a gear train 42 connected to shaft 16 for operating the fuel pumps and other accessories at a speed proportional to the engine speed.

The fuel supply system includes a supply tank 44 connected to a fuel pump unit 46 comprising a centrifugal pump 48, connected by a conduit 49 in series with a pair of parallel, positive displacement pumps 50 and 52, which supply fuel through conduits 56 and 54, respectively, to a main fuel control apparatus 58 and an afterburner fuel control apparatus 60. All three pumps 48, 50, and 52 are connected to gear train 42 as shown by the broken lines, whereby they are driven at a speed proportional to engine speed. Fuel, controlled by a pilot's manual control 62, is supplied by main fuel control 58 through conduits 64 and 24 to nozzles 20 in the main combustion chamber 18 for the operation of turbine 26; and fuel not required by the turbine is returned from main fuel control 58, through a conduit 66, to conduit 49 on the inlet side of pump 50.

Similarly, fuel at a regulated rate is supplied by the afterburner fuel control 60, through conduits 68 and 69, to afterburner nozzles 32; and fuel not required for afterburning is returned from afterburner fuel control 60, through a conduit 70, to conduit 49 on the inlet side of pump 52.

Appellant's brief says:

As shown in FIG. 1 of the drawings * * * applicant's invention, broadly comprehended, comprises an afterburner fuel control apparatus 60, for regulating the fuel flow to afterburners 32 in afterburner combustion chamber 30, *which is used in operative association with a main fuel control apparatus 58* for regulating the fuel flow to main burner nozzles 20 in main combustion chamber 18. [Emphasis ours.]

One of the basic requirements for fuel control apparatus for turbojet engines is that the total fuel flow to the engine should always bear a preselected, definite, scheduled ratio to the weight [mass?] air flow through the engine, under all operating conditions; and since the total fuel flow to the engine consists of the fuel flow to the main burners 20, and the fuel flow to the afterburners 32, the regulating of the main fuel flow by main control apparatus 58 must be fully coordinated with the regulation of the afterburner fuel flow by afterburner control apparatus 60. This coordination of fuel flows is obtained by the * * * arrangement of elements * * * shown in FIG. 1 * * *.

* * * * * * *

Since one of the cardinal features of applicant's invention is regulation of the fuel flow to the main combustion chamber and the afterburner, in accordance with the rate of mass air flow through the engine, and since compressor discharge absolute pressure is a measure of said air flow, it is essential that said pressure be the sole control parameter that automatically regulates said fuel flow, because any modification of said pressure would cause said fuel flow to be not in accordance with said air flow. Since applicant's invention is particularly concerned with apparatus for regulating the fuel flow to the afterburner, the main fuel control apparatus is involved only to the extent that it cooperates in association with the afterburner control apparatus (as shown in FIG. 1), the details of construction of the main control apparatus form no part of applicant's invention, beyond the arrangement whereby (as shown in FIG. 1), it *automatically regulates the fuel flow to the main combustion chamber*, in accordance with same control parameter as the afterburner fuel control (i.e. compressor discharge absolute pressure). Accordingly, the details of construction of the main fuel control apparatus will not be further described herein since they may be any combination and arrangement of elements that operate to regulate the fuel flow to the main combustion chamber in accordance with the compressor discharge absolute pressure, as for the example of a combination and arrangement of pertinent elements similar to those of the afterburner fuel control apparatus, as hereinafter described, and illustrated in the drawings * * *.

The afterburner fuel control apparatus 60, the drawing of which is full of complex detail and not reproduced here since it is believed unnecessary for an understanding of the issues, comprises three principal parts: (1) a fuel by-pass valve which maintains a constant metering head across a variable-area, contoured, fuel metering valve; (2) the metering valve itself, together with its positioning mechanism for varying the flow area through the valve as a preselected function of the compressor discharge absolute pressure; and (3) a shut-off valve actuated by a solenoid and by a manual transfer valve, which cuts off all fuel flow to the afterburners when they are not in use.

More specifically, the afterburner fuel flows from the pump 52 to the metering valve, which is positioned as a function of the compressor discharge by means of a "nutcracker amplifier" arrangement. Any change in discharge pressure from the compressor is transmitted to a chamber in a bellows, which is opposed by a second evacuated chamber in the bellows, thereby causing movement of the bellows partition separating the two chambers. The signal thus created is transmitted to the "nutcracker amplifier," an arrangement of two parallel tracks or links," one fixed and the other rotatable over a fulcrum in accordance with (*a*) tension on an adjustable spring connected to one end of the track and (*b*) movement of a rod connecting the other end of the track with the bellows. The amplifier actuates a rod, which moves a servo valve, which, in turn, controls the flow of fluid to one or the other side of a piston attached to the metering valve by means of a shaft. Movement of the piston thereby positions the metering valve, and the direction of movement of the piston is determined by the direction of movement of the servo valve. The direction of movement of the servo valve depends on whether an *increase* or a *decrease* in compressor discharge pressure has occurred. The amplifier also responds to a feedback signal from the metering valve, thereby establishing an equilibrium in the system after each change in compressor discharge pressure.

A pressure drop regulating valve maintains the pressure drop across the metering valve constant by bypassing a certain amount of fuel around the pump 52 via conduit 70. The pressure downstream of the metering valve is sensed and the regulating valve then operates to apply the necessary correction, i.e. bypass, to establish a constant pressure differential across the metering valve. A detailed description of the structure of the pressure drop regulating valve, as well as the shut-off valve mechanism, will not be set forth.

One point of novelty in the invention is alleged to reside in the metering valve being contoured "so as to give the same difference in the rate of fuel flow for the same difference in compressor discharge absolute pressure (P_d), throughout the operating range of the engine * * *." A further point of novelty is described in the specification as follows:

One of the principal novel features of my improved afterburner fuel control is the *much higher sensitivity* in the response of the metering valve positioning means to changes in compressor discharge absolute pressure, at low values than at high values of said pressure * * *. *This sensitivity performance is one of the striking features* of the type of nutcracker amplifier shown in FIGURE 2; the advantage being approximately equal percentage sensitivity over the operating range of the fuel control. [Emphasis ours.]

The Claims

Base claim 15, upon which the remaining claims on appeal depend, reads:

15. For use with an aircraft turbojet engine having an air compressor, a main combustion chamber, a gas turbine, an afterburner combustion chamber for reheating the exhaust gases from said turbine, a fuel pump for supplying fuel to said main and afterburner chambers, and a main fuel control for automatically regulating the supply of fuel to said main combustion chamber soley in accordance with the unmodified absolute discharge pressure of said compressor; an afterburner fuel control apparatus for controlling the total flow of fuel from said pump to said afterburner chamber solely in accordance with said pressure, comprising a fuel flow metering valve, first means, actuated by said pressure, for varying the flow area through said valve solely in accordance with varying values of said pressure throughout the operating range of said apparatus; and second means for maintaining a constant metering head across said valve, throughout the operating range of said appartus.

Claim 16 in part recites "wherein said second means includes a by-pass valve for returning fuel not passing through said metering valve to the inlet side of said pump * * *," and certain functional features of said bypass valve.

Claim 17 identifies "a movable element" as part of said "first means," e.g., the bellows partition, and also includes a "third means, actuated by said element, for varying the position of said [metering] valve * * *."

Claim 18 is dependent on claim 17 and further qualifies the "third means" by reciting means for making the ratio of incremental change in the flow area of the metering valve to the original value of the flow area a constant for a given increment of change in the position of the valve, throughout the range of movement of the valve.

Claim 19 is dependent on claim 18 and recites the contoured metering valve producing a flow which is a straight-line function of the compressor discharge pressure.

Claim 20 is dependent on claim 17 and recites a "fourth means" within the third means "for amplifying the ratio between the movement of said element and the resulting movement of said valve."

Claim 21 is dependent on claim 20 and further qualifies the fourth means to include "means for restoring the equilibrium of the system * * * after any movement of said valve by said element."

Claims 22–24 are all dependent on claim 19 and add limitations relating to various manual adjustments, termed in the specification "factory adjustments" and a "Field Slope Adjustment." These adjustments do not change during flight, but do affect the overall performance of the aircraft while in flight.

Claims 25–28 have been rejected solely on the ground they include matter for which there is allegedly no basis in the original disclosure. At one time these claims were deemed allowable, but the allowance was withdrawn by reason of an amendment to base claim 15.

The New Matter Rejection

During prosecution, in an effort to overcome a rejection on prior art, appellant amended claim 15 to include the terms "solely" and "unmodified" (first occurrences only) in describing the manner of fuel control for the main combustion chamber. The Examiner raised the objection of lack of antecedent basis in the original disclosure, and an issue arose which the Board discussed as follows:

> The essential issue with respect to the rejection of the claims as based on an inadequate disclosure, and the rejection of the claims on the prior art relates to the nature of the control parameter. It is strongly urged by appellant that the limitations relating to the feature that the fuel controls are automatically regulated "solely in accordance with the unmodified absolute discharge pressure of said compressor" represent the exact nature of appellant's control parameter that determines the basic philosophy and fundamental mode of operation of his invention.
>
> We agree with the Examiner that the original specification and drawings do not show any details of the main fuel control whereby only unmodified absolute discharge pressure regulates the main fuel supply. While the original disclosure did state that the fuel is regulated in accordance with the rate of mass air flow through the engine as measured by the compressor discharge absolute pressure, we find no statement that it is soley so regulated and that other parameters, such as fuel pressure do not modify it. The Examiner has called attention to the patent to Lee, which shows that additional control parameters may be used in a fuel control.
>
> * * * * * * *
>
> While the prior art does not show the main fuel control automatically regulated solely in accordance with the unmodified absolute discharge pressure, we do not give this limitation any patentable weight since the limitations of "solely" and "unmodified" are not supported in the original disclosure. There being no basis in the original disclosure for the limitations which are now urged to be critical, we do not consider such limitations as being of patentable significance in the claims of this application.

We believe the Examiner and Board have misconstrued at least two portions of the original disclosure.

First, FIG. 1 shows the discharge pressure of compressor 14 to be transmitted unmodified from chamber 76 through conduits 74 and 72 to both the main fuel control 58 and the afterburner fuel control 60. No alterations to this pressure are shown. The drawing communicates

as clearly as possible the idea of transmitting *unmodified* compressor discharge pressure to the respective fuel control apparatuses. The figure clearly shows that the only control entity, other than discharge pressure, is a manual control 62, which is applied to the main fuel control apparatus 58, but this feature has nothing to do with appellant's invention. Of course, the aircraft is subject to various pilot *controls*, including fuel control, at times such as on take-off and landing, but appellant's invention is concerned with *regulating* the fuel as a function of mass air flow through the compressor during flight. As the mass air flow changes, for example by a change in altitude or for any other reason, the rate of fuel flow to the main burner and to the afterburner is adjusted accordingly. Furthermore, this "regulating" is shown to be *automatic* since it occurs without the aid of external manual influences.

Second, we believe the Board erred in misconstruing the following passage from the specification, which all agree constituted a portion of the *original* disclosure:

> Both the main and afterburner fuel controls are connected by conduits 72 and 74 with the compressor discharge chamber 76, whereby *the fuel supplied by both controls is regulated in accordance with the rate of mass air flow through the engine, as measured by the compressor discharge absolute pressure* (P_4) *in chamber 76.* [Emphasis ours.]

We understand this statement to say that the fuel flow to the engine from both control apparatuses 58 and 60 is automatically regulated (as distinguished from the manual control 62) by the *same* control parameter and that this parameter is compressor discharge absolute pressure. Since the compressor discharge pressure is transmitted *unmodified* from chamber 76 to *both* control apparatuses 60 and 58, it follows that fuel flow *to the engine* from both apparatuses is automatically regulated by unmodified, compressor discharge absolute pressure.

[1] We believe further that appellant's specification as filed discloses that fuel flow to the engine is automatically regulated *solely* by unmodified, compressor discharge absolute pressure. Whereas the Board fails to find any statement that it is so regulated and that other parameters, such as fuel pressure, do not modify it, we fail to find that such other parameters are at all intended to be included. To assume that parameters, other than compressor discharge absolute pressure, *may* control the fuel flow in appellant's invention, is to indulge in unwarranted speculation. Appellant's drawings do not show them, the specification does not describe them or even suggest that they are present, and we are not willing to conclude that they are. To do so would be asking future applicants to expressly negate all features which, although perhaps common in the art, are not intended to be part of the disclosure. Considering the over-all operation of the invention, as *originally* disclosed in the specification and drawings, we agree with appellant that the regulation of fuel flow *solely* by unmodified, compressor discharge pressure was inherently disclosed therein.

In summary, finding no basis in the original specification or drawings to indicate that appellant intended either fuel control apparatus to be *regulated*, as opposed to being controlled which is what manual device 62 does, in any way other than *automatically* and by any parameter other than *unmodified* compressor discharge absolute pressure, we hold that these concepts were inherently disclosed in the

application as filed and the rejection of claims 15–28 on grounds of inadequate disclosure is reversed.

An ancillary matter is the question of the propriety of the Examiner's and Board's refusal [1] to enter appellant's proposed amendment of December 16, 1960. The full text of the change sought to be effected by this amendment does not appear in the printed record, and some confusion exists as to the relationship of this amendment to an amendment filed by appellant on October 3, 1960. The October 3 amendment also contained additions to the specification, some or all of which are printed in the record as part of the specification and which the Solicitor's brief, in a footnote, refers to as "prejudicial to the Commissioner's new matter position * * *." Under the circumstances, we are unable to rule specifically on entry of the December 16, 1960 amendment per se. However, we have studied the four passages, indicated in the Solicitor's brief as having been stipulated as not part of the original specification, but which nevertheless appear in the record, and conclude that these passages do *not* add "new matter" to the specification. We reach this conclusion primarily for the reasons above indicated in regard to the amendment of base claim 15 to recite the terms "solely" and "unmodified." [2] We feel that the amendments to the specification merely render explicit what had been implicitly disclosed originally, and, while new *language* has certainly been added, we are not prone to view all new "language" ipso facto as "new matter."

The Art Rejection

Claims 15–24 were rejected as unpatentable over various combinations of the following prior art:

Hooker, 2,555,445, June 5, 1951.
Mock, 2,581,275, January 1, 1952.
Lee II, 2,675,674, April 20, 1954.
Chandler et al., 2,700,275, January 25, 1955.
Davies et al., 2,742,755, April 24, 1956.
Watson et al., 2,764,868, October 2, 1956.
Thorpe et al., 2,841,957, July 8, 1958.
Porter, 2,909,896, October 27, 1959.

The principal rejection is that of base claim 15 "as being unpatentable over Chandler in view of Davies."

Chandler shows a turbojet engine arrangement generally similar to that in appellant's FIG. 1. The respective fuel flows to the engine from the main fuel control and from the afterburner fuel control are *regulated* in accordance with the pressure *rise* across the air compressor. In the afterburner fuel control, the fuel flow to the engine is regulated by a valve which functions in accordance with changes in this pressure rise. The pressure differential across the valve itself is maintained constant by means of another valve whose operation is subject to this pressure differential and a constant rate spring.

Davies is directed to a fuel system for pilot burners in gas-turbine engine reheat equipment and shows controlling the total fuel flow to an afterburner in response to compressor discharge pressure which, in

[1] The Examiner's refusal led to the filing of a petition to the Commissioner, which was denied. Ultimately a second petition to the Commissioner was filed, in response to which the matter was said to be fully covered by section 608.04(c) of the Manual of Patent Examining Procedure, which says, in effect, that where the alleged new matter is "introduced into" or "affects" the claims, thus necessitating their rejection, the question becomes an appealable one, and should not be considered on petition even though that new matter has been introduced into the specification.

turn, is shown to be a *function* of the mass air flow through the engine. Appellant agrees with this analysis of Davies but contends, inter alia, that Davies does not thereby show total fuel flow to his afterburner *in accordance with* compressor discharge pressure, presumably meaning "solely" in accordance with this pressure.

In regard to the art rejection, the Board said:

> The rejection of the claims as being unpatentable over the prior art is based essentially on the combination of the Chandler et al. and Davies et al. patents. The principal distinction over the Chandler et al. patent resides in the fact that in Chandler et al. the main fuel and afterburner fuel controls are automatically actuated in response to the difference between the pressure discharge and inlet pressures, whereas in the instant application appellant uses the parameter of absolute compressor discharge pressure to control fuel flow. The Examiner held that the distinction between these two control parameters was not patentable especially in view of Davies et al. Davies et al. show the expedient of controlling afterburner fuel flow by absolute compressor discharge pressure.
>
> We agree with the Examiner that it would not be patentable to utilize absolute compressor discharge pressure as suggested by Davies et al. in lieu of the pressure rise control signal in Chandler et al.

In response, appellant argues in his main brief that the substitution of absolute compressor discharge pressure, *as employed by Davies*, for the pressure rise across the compressor as employed by Chandler to automatically regulate the fuel flow to the afterburner would not result in a fuel control apparatus meeting the terms of the claims. We note that all the comparisons there made, showing novelty of the present invention, are made between the claims on appeal and *Davies*. Appellant also argues that one of the cardinal features of his invention is a "marked *simplification* of afterburner fuel controls, in comparison with most of the prior art" by eliminating *fuel pressure* as a parameter for regulating fuel flow to an afterburner, as employed by Davies for example. It is not until we approach the end of the brief that we find any attempt to establish patentability over Chandler, the primary reference. Appellant there says:

> (5) The first substantial step in simplifying afterburner controls was achieved by the Chandler patent of record, which eliminated *fuel pressure* as a parameter for regulating afterburner fuel flow, by using a combination of *air* pressures (i.e. the pressure *rise* across the compressor), to regulate afterburner fuel flow.
>
> The second substantial step in simplifying afterburner fuel controls was achieved by applicant's invention, which *eliminated compressor inlet air pressure* as a *factor* in the *parameter* for afterburner fuel regulating, thus leaving only *one* air pressure line from the compressor to the regulator.
>
> (6) The Chandler patent of record, is assigned to the same assignee as the application involved in the appeal at bar, and applicant was familiar with the operation and advantage achieved by the Chandler fuel control. The objective of *further simplifying* Chandler's control was clearly not to be found in turning back to prior art devices, such as Davies, which used *fuel pressure*, as well as compressor pressure, as parameters to regulate afterburner fuel flow, since such prior art controls were obviously far more complicated than Chandler's control.

First, it is of no moment that the Chandler patent has been assigned to the assignee of the subject application or that appellant was actually familiar with the operation and advantage achieved by the Chandler fuel control. Second, we do not understand appellant's contention that simplification of Chandler's control could not be found in turning "back" to devices such as Davies for the Davies patent was applied for in 1950, nearly two years after Chandler filed, and issued approximately 15 months after the Chandler patent issued. In any case, both patents are prior art and must be considered together. To be

sure, Davies' device may be more complicated than Chandler's in certain respects, but we believe appellant has overlooked other disclosures in Davies which, in our opinion, *suggest* the claimed invention.

Appellant says, in effect, that following the "first substantial step" in simplifying fuel controls taken by Chandler, that of eliminating fuel pressure as a parameter, the next substantial step was the present invention which, stripped to its fundamentals, is apparatus using absolute discharge pressure as a sole parameter in regulating fuel flow, and that this latter step was unobvious.

We cannot agree with the contention that appellant's invention was unobvious. Davies says:

> It is known that when a sonic velocity occurs in the turbine nozzles of a gas-turbine engine, *the mass flow of air which passes through the engine is proportional to the absolute delivery pressure of the compressor of the engine* if the turbine inlet temperature is constant * * *. [Emphasis ours.]

Davies goes on to say:

> Since in preferred arrangements according to the invention, the fuel delivery to the pilot burner is proportional to the absolute delivery pressure of the compressor, it is also proportional to the mass flow of air flowing through the engine * * *.

[3] While appellant is correct in contending that incorporating the Davies *device* into the Chandler *device* would not provide every feature of the claimed device, we believe this contention fails to meet the issue before us. The Patent Office position is that the claimed invention would be obvious to one of ordinary skill in the art with the Chandler and Davies patents before him. Hence, we are concerned with what these patents *disclose*, more particularly what they suggest, without regard to what the respective patentees consider to be their inventions. The issue is not whether appellant's apparatus has been "fully met" but rather whether the claimed apparatus has been clearly suggested. We believe it has, since the quoted passages from Davies tell one of ordinary skill in the art that compressor discharge pressure can be used to regulate automatically fuel flow in accordance with mass air flow through the engine.

[4] Finally, we believe the word "solely" does not so limit claim 15 as to render it patentable. The afterburner fuel control of Chandler is governed by two parameters, pressure differential across the compressor and tail pipe temperature. We agree with the Solicitor that "the elimination of the temperature parameter for the afterburner fuel control of *Chandler* * * * together with its tailpipe safeguarding function, would be an obvious expedient," but we hasten to add that this finding is based upon a *determination of obviousness under section 103* and not upon a mechanical rule, which the Solicitor would have us extract from *In re Karlson*, 50 CCPA 908, 311 F. 2d 581, 136 USPQ 184, about the omission of an element and its function from a known combination being obvious if the remaining elements perform the same function as before. Language to this effect in *Karlson* was never intended to short-circuit the clear wording of 35 U.S.C. 103. The same reasoning applies to the word "solely" in describing the regulating of fuel flow to the main combustion chamber.

Claims 16 and 17 were rejected "for substantially the same reasons as claim 15 * * * in view of Thorpe who teaches using a by-pass valve * * *," the specific features of this valve being set forth and allegedly teaching appellant's modifications of the apparatus defined by claim 15. Claims 18, 19, and 24 were rejected for substantially the same reason as claim 17 "in view of Mock"; claims 20 and 21 were rejected for substantially the same reasons as claim 17 "in view of Watson"; and claims 22 and 23 were rejected for substantially the same reasons as claim 19 "in view of Hooker." The Lee patent was used to provide a more detailed analysis of a main fuel control apparatus, Chandler's main fuel control having been indicated as corresponding to that of Lee's. The Porter reference appears to have been dropped after the final rejection. Each additional reference was used to provide either a teaching or suggestion of the particular modification of the base claim, or to show that such modification constitutes "merely a matter of design choice."

The Examiner's answer says:

> Applicant relies on the patentability of the base claim 15 to determine the patentability of claims 16–24 over the art as applied. Throughout the prosecution of the case applicant has followed this same approach and this is taken by the Examiner to be an acquiescence to the propriety of the application of these additional references as used against claims 16–24. Accordingly, no additional comment is directed by the Examiner as concerns the art rejection of claims 16–24.

While we note that appellant strongly disagrees with the Examiner that he has at any time, up to and including the present appeal, *acquiesced* in the propriety of treating all of claims 15–24 together as regards their patentability over the art, we also note that appellant has failed to come forth with an affirmative argument as to why any or all of claims 16–24 are patentable, independently of the patentability of claim 15. Some effort along these lines is demonstrated in appellant's brief before the Board, but these arguments for the most part boil down to a reliance on the patentability of base claim 15.

We certainly agree with appellant, however, that claims 16–24 do not *claim the additional feature*, but instead define *combinations*, the combinations being made up of the apparatus set forth in the base claim *and* the additional feature. [5] Patentability depends on the obviousness of the overall *combinations*, not of the individual *elements of* that combination for *they* are not being claimed. We do not agree with appellant, however, that these features are sufficient to render the otherwise *un*patentable combination defined by claim 15 patentable.

Appellant, at oral argument, relied heavily on our decision in *In re Flint*, 51 CCPA 1230, 330 F. 2d 363, 141 USPQ 299, and suggests that we examine the present appeal in light of our decision and rationale there. In *Flint* the invention related to a releasable hold open device for doors which the Examiner and Board found to be "functionally equivalent" to the prior art device. The appellant therein contended that such a finding, even if correct, did not necessarily render the claimed device unpatentable since the *statutory* test is the obviousness, under 35 U.S.C. 103, of the novel subject matter and not whether the invention is "functionally equivalent" to the art device. We agreed with that contention, saying:

> Assuming, arguendo, that the pin ejection system of appellant and the releasable spring arm taught by Pollack are "functionally equivalent," it does not follow that the former would be "obvious" to one of ordinary skill in view of the latter. On the contrary, we see no suggestion in Pollack's leaf spring arm and stud construction to employ a spring-loaded pin *directly in the pivot socket* even though the Solicitor characterizes such construction as "a slightly different disposition of the pin member" which results in a combination which is "merely the obvious equivalent of that of Pollack." We therefore do not find obviousness.

In *Flint* we also said, citing *In re Scott*, 51 CCPA 747, 323 F. 2d 1016, 139 USPQ 297, that "Expedients which are functionally equivalent

to each other are not necessarily obvious *in view of* one another." On the other hand they *might* be, and, of course, where "functional equivalence" is not found, they may or may not be obvious. The test of obviousness, therefore, is to be applied to each set of facts as it arises. Under the facts of *this* case, we hold that claims 15–24 define subject matter which *is* obvious within the meaning of section 103.

[6] The rejection of claims 15–28 on the ground of inadequate disclosure is reversed and the rejection of claims 15–24 as unpatentable over the art is affirmed.

MODIFIED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,330,370, D. J. Miller, APPARATUS AND METHOD FOR MANUFACTURE OF RUBBER TUBING, filed Dec. 9, 1960, D.C., N.D. Ohio (Cleveland), Doc. 36558, *B. F. Goodrich Co. v. Rubber Latex Products, Inc. et al.* Stipulation and order holding claims 4, 10, 16, 17, and 18 of Patent No. 2,330,370 infringed if said claims are valid; all other claims dismissed without prejudice Apr. 6, 1965.

2,441,960, P. Eisler, MANUFACTURE OF ELECTRIC CIRCUIT COMPONENTS; **2,567,565** (Re. 24,165), same; **2,706,-697(a)**, same, filed Jan. 25, 1963, D.C., E.D. Pa. (Philadelphia), Doc. 32720, *Technograph Printed Circuits, Ltd. et al. v. American Bosch Arma Corp.* Consent order of dismissal (notice Apr. 5, 1965).

2,475,510, T. O. Mehan, TOTAL TAKING CONTROLS; **2,635,812**, same, TRANSFER MECHANISM FOR CALCULATING MACHINES; **2,665,079**, E. M. Lippert, RIBBON FEEDING MECHANISM, filed Apr. 6, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c532, *Victor Comptometer Corporation v. Sears, Roebuck & Co.*

2,512,568, W. H. St. Thomas, COMBINATION BILLFOLD, PURSE AND POCKET CASE, filed Feb. 24, 1964, D.C.N.J. (Newark), Doc. 158–64, *St. Thomas, Inc. v. Holiday Billfolds Corporation.* Consent judgment for injunction Apr. 1, 1965. Same, filed Aug. 5, 1964, D.C.N.J. (Newark), Doc. 720–64, *St. Thomas, Inc. v. Simon E. Knee.* Decree as above.

2,537,586, V. D. Lilienstern, DOLL HEAD WITH HAIR, filed Apr. 30, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–456, *American Character, Inc. v. Goldberger Doll Mfg. Co., Inc.*

2,541,835, E. Saarinen, SHAPED CHAIR, filed Apr. 5, 1965, D.C., S.D.N.Y., Doc. 65/1011, *Knoll Associates, Inc. v. J.G. Furniture Co., Inc.*

2,543,143, C. H. Wells et al., TRUCK PARTITION, filed Apr. 15, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c592, *Evans Products Company v. Unarco Industries, Inc.*

2,547,648, A. V. Loughren, AUTOMATIC CONTRAST CONTROL SYSTEM FOR TELEVISION APPARATUS, filed Nov. 20, 1959, D.C., N.D. Ill. (Chicago), Doc. 59c1847, *Haseltine Research, Inc. v. Zenith Radio Corporation.* Final judgment in favor of defendant; claims 1, 2 and 4 of Patent No. 2,547,648 held invalid; complaint dismissed; plaintiff enjoined Apr. 5, 1965. Same, filed Mar. 12, 1962, D.C., N.D. Ill. (Chicago), Doc. 62c601, *Trav-Ler Radio Corporation v. Haseltine Research, Inc.* By agreement, case dismissed with prejudice Apr. 14, 1965.

2,567,565. (See 2,441,960.)

2,596,313, R. K. Wagoner, DOUGH SHAPING MACHINE, filed Apr. 22, 1965, D.C., S.D. Ind. (Evansville), Doc. 65–C–32, *Sophia V. Wagoner v. Stickelberg & Sons, Inc.*

2,600,564, H. Millard, SNAP ACTION DEVICE; **2,613,308**, S. G. Ransome, SWITCH ACTUATOR; **2,627,754**, H. Millard, OVERCENTER SNAP DEVICE; **2,814,703**, W. A. Martin, SEALED SWITCH; **2,814,704**, E. A. Bald, same, filed Apr. 14, 1964, D.C., S.D.N.Y., Doc. 64/1168, *Masson Electronics Corp. v. Minneapolis-Honeywell Regulator Co.* Stipulation and order dismissing complaint and counterclaim Apr. 20, 1965.

2,607,840, J. R. Hollins, EMERGENCY STOP FLASHER SIGNAL SYSTEM; **2,652,553**, same, DIRECTIONAL SIGNAL SYSTEM, filed Apr. 2, 1965, D.C., S.D.N.Y., Doc. 65/987, *Lehigh Valley Industries, Inc. et al. v. Bobro Products, Inc.*

2,612,368. (See 2,600,564.)

2,613,108, G. F. Kraus, FLUID DISPENSERS; **2,680,296**, Edelstein and Glickstein, VALVE ACTUATING ASSEMBLY FOR AEROSOL CONTAINERS, filed Apr. 27, 1965, D.C., W.D. Tex. (San Antonio), Doc. 3536, *Syncro-Mist Controls, Inc. et al. v. Hunter Products Corp.*

2,624,102, H. Fleisher, AUTOMATIC SHARPENER FOR STRAIGHT KNIFE CLOTH CUTTING MACHINES, filed July 13, 1961, D.C., S.D.N.Y., Doc. 61/2468, *Beaver Cloth Cutting Machines, Inc. v. H. Maimin Co., Inc.* Patent held valid and infringed; defendant enjoined June 10, 1964. Appealed, C.C.A., 2nd Cir., Doc. 276. Judgment of District Court reversed and complaint dismissed Mar. 31, 1965.

2,627,754. (See 2,600,564.)

2,632,921, W. H. Kreidl, METHOD OF IMPROVING THE BONDING PROPERTIES OF POLYETHYLENE PLASTICS; **2,648,097**, M. F. Kritchever, METHOD OF SECURING DECORATIVE MATTER TO A SURFACE OF A POLYETHYLENE BODY; **3,015,189**, G. W. Traver, METHOD OF CONDITIONING POLYETHYLENE SURFACES FOR THE ADHESION OF MATERIALS COATED THEREON AND RESULTING PRODUCT, filed Apr. 27, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c651, *E. I. du Pont de Nemours and Company v. Union Carbide Corporation.*

2,635,812. (See 2,475,510.)

2,648,097. (See 2,632,921.)

2,652,553. (See 2,607,840.)

2,657,633, J. G. Baker et al., PUMP CONSTRUCTION, filed Apr. 8, 1965, D.C., W.D. Wis. (Madison), Doc. C–65–60, *Baker Manufacturing Company v. Duplex Manufacturing Company.*

2,665,079. (See 2,475,510.)

2,672,614, Zimmerman and Greenlee, BIB, filed Apr. 21, 1965, D.C., S.D. W. Va. (Charleston), Doc. 3240, *Delbert L. Greenlee v. Greenlee Plastic Products, Inc.*

2,685,536, Starkey and Ransburg, METHOD FOR ELECTROSTATICALLY COATING ARTICLES; **2,794,417**, Starkey (deceased) and Ransburg, same; **2,893,893**, W. W. Crouse, METHOD AND APPARATUS FOR ELECTROSTATIC COATING; **2,893,894**, E. M. Ransburg, same; **Re. 24,662**, C. C. Simmons, ELECTROSTATIC METHOD AND APPARATUS FOR SPRAY COATING OF ARTICLES, filed Apr. 23, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c641, *Ransburg Electro-Coating Corp. v. Clifford Spiller et al.*

2,686,761, Claypool and Best, PRODUCTION SAFETY JOINT, filed May 10, 1957, D.C., S.D. Tex. (Houston), Doc. 10,885, *Robbins M. Claypool et al. v. Brown Oil Tools, Inc.* Final judgment; complaint dismissed with prejudice Apr. 21, 1965.

2,705,966, C. C. Wetzel, VEGETABLE CUTTING DEVICES, filed Apr. 27, 1965, D.C., N. Dak. (Fargo), Doc. 4135, *Clifford C. Wetzel v. Tri-Steel Manufacturing Company et al.*

2,706,697(a). (See 2,441,960.)

2,706,697(b); **Re. 24,165**, P. Eisler, MANUFACTURE OF ELECTRIC CIRCUIT COMPONENTS, filed Jan. 4, 1965, D.C., E.D. Pa. (Philadelphia), Doc. 32593, *Technograph Printed Circuits, Ltd. et al. v. The Budd Company.* Consent order of dismissal (notice Apr. 5, 1965). Same, filed Dec. 30, 1961, D.C., W.D. Va. (Lynchburg), Doc. 542, *Technograph Printed Circuits, Ltd. et al. v. General Electric Company.* Order of dismissal June 21, 1965.

2,753,694, Trow and Nelson, ICE DISINTEGRATING AND CHIP DELIVERING SPIRAL ICE CHIP PRODUCING MACHINE, filed Aug. 21, 1961, D.C., N.D. Ill. (Chicago), Doc. 61c1394, *King-Seeley Thermos Co. v. Frees-King Corporation.* Judgment for plaintiff; injunction to be issued Mar. 26, 1965.

2,771,824, Patch and Grundy, COMPOSITE FLOOR AND DECK COVERING CONSTRUCTION, filed Apr. 30, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–668–FW, *Crossfield Products Corporation v. Skelton Magnesite Company.*

2,784,763, C. Shorts, METHOD AND APPARATUS FOR MAKING FIBER-REINFORCED SHEET MATERIAL, filed Nov. 4, 1959, D.C., N.D. Calif. (San Francisco), Doc. 38645, *Filon Plastics Corporation v. H. Koch & Sons.* Judgment for defendant Apr. 29, 1965.

2,794,417. (See 2,685,536.)

2,798,500, W. Dietze, HAIR NET DEVICE, filed Jan. 6, 1964, D.C., S.D.N.Y., Doc. 64/37, *Solida Textil- und Netzwaren-Manufaktur Ruthard Dietze K.G. v. Thomas Holmes Mfg. Co.* Stipulation and order of dismissal Apr. 26, 1965.

2,814,703. (See 2,600,564.)

2,814,704. (See 2,600,564.)

2,843,860, V. A. Chernivsky, BABY SUPPORT, filed Apr. 14, 1959, D.C., N.D. Ill. (Chicago), Doc. 59c591, *Welsh Co. v. Victor A. Chernivsky et al., doing business as Comfy Babe Company.* Patent held valid and not infringed by plaintiff Aug. 5, 1963. Judgment, pursuant to mandate, setting aside judgment of Aug. 5, 1963, patent held to be infringed by plaintiff Welsh Co.; injunction issued against plaintiff; plaintiff's complaint dismissed Apr. 29, 1965.

2,893,893. (See 2,685,536.)

2,893,894. (See 2,685,536.)

2,900,206. (See 2,613,108.)

2,913,189. (See 2,632,921.)

2,927,342, Kemp and Lane, COAL TAR EMULSIONS CONTAINING SYNTHETIC RESIN AND FILLER, filed May 10, 1965, D.C., N.D. Ohio (Cleveland), Doc. C65–262, *Koppers Company, Inc. v. Maintenance, Inc. et al.*

2,932,266, J. W. Lynch, MULTIPLE PURPOSE PLOW, filed May 7, 1965, D.C., N.D. Tex. (Lubbock), Doc. 5–224, *Randolph Manufacturing Company v. E & J Crustbuster Company.*

3,056,378, M. B. Simmonds, FLUID MOTOR, filed May 3, 1965, D.C., W.D. Pa. (Pittsburgh), Doc. 65–455, *E. H. Roplogle et al. v. Mine Safety Appliances Company.*

3,064,872, B. A. Skirow, CUP CONTAINER, filed Sept. 20, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1690, *Skirow Brothers v. Roberts Colonial Houses, Inc.* Judgment holding claims 6 and 7 of Patent No. 3,064,872 invalid; complaint dismissed; counterclaim sustained as to the invalidity and non-infringement of claims 6 and 7 of said patent May 7, 1965.

3,106,606, D. E. Foley, INFORMATION DISPLAY MEANS, filed Oct. 8, 1963, D.C., S.D.N.Y., Doc. 63/2929, *William F. Hogan et ano. v. Ultronic Systems Corp. et ano.* Stipulation and order dismissing actions and counterclaims May 10, 1965.

3,109,537, D. C. Larking, REFUSE CONTAINER FOR MOTOR VEHICLE BODY, filed May 10, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c729, *Daniel C. Larkin et al. v. General Wholesale Auto Supply Co.* Same, filed June 10, 1965, D.C., E.D. Mich. (Detroit), Doc. 26982, *Sterling Products Co., Inc. v. Crest Mfg. Co. et al.*

3,115,662, M. Sanoff, AIR CONDITIONER COVER, filed May 3, 1965, D.C., E.D. Mich. (Brooklyn), Doc. 65C–465, *Melvin Sanoff v. Welbilt Corporation.*

3,155,106, A. M. Baron, DISHWASHER DRAIN AIRGAP, filed May 6, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–684–DW, *U.S. Brass Corp. v. American Metal Products Corp.*

3,160,200, E. Southe, DEVICE TO PRODUCE STEAM FOR MOBILE AND STATIONARY TOYS, filed May 3, 1965, D.C., S.D.N.Y., Doc. 65/1338, *E. Southe v. Renwal Products, Inc. et al.*

3,175,288, Garwick and Clark, TRAY PACK PROCESSING CUTTER, filed May 4, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c696, *Kuts-Kwik, Inc. v. Ray E. Clark.*

Re. 24,165. (See 2,706,697(b).)

Re. 24,662. (See 2,685,536.)

REISSUES

AUGUST 24, 1965

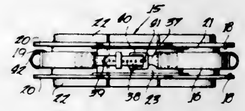
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,842
POWER PLIERS
Peter J. Keane, Orangeburg, S.C., Floyd E. Burnell, Whitesboro, N.Y., and Griffith Jones, Jr., Orangeburg, S.C., assignors to Kelsey-Hayes Company, Detroit, Mich., a corporation of Delaware
Original No. 2,990,613, dated July 4, 1961, Ser. No. 74,999, Dec. 9, 1960. Application for reissue May 19, 1964, Ser. No. 380,971
5 Claims. (Cl. 30—180)



8. Fluid actuated power pliers comprising a housing having a work piston chamber, a pair of levers partially disposed in said work piston chamber, said levers being crossed and pivotally interconnected intermediate their opposite ends, one lever being rigidly affixed to said housing, the other lever being movable and including cam follower means, each of said levers having jaw means at one end thereof, said other lever being swingable about said pivotal interconnection to move said jaw means between a relatively widely spaced position to a relatively closely spaced position, said cam follower means being adjacent the wall of said chamber in said widely spaced position and adjacent said fixed lever in said closely spaced position, a work piston reciprocally disposed in said work piston chamber, said work piston including cam track means, said cam track means being positioned to engage between said cam follower means and the wall of said chamber and to coact with said cam follower means to cause rotative movement of said other lever by said reciprocal movement, fluid actuated means to cause reciprocal movement of said cam track means in one direction and means to selectively cause reciprocal movement of said cam track means in the other direction.

25,843
TEACHING AID FOR TUMBLING
George P. Nissen, Cedar Rapids, Iowa, and Richard V. Harris, Napa, Calif., assignor to Nissen Corporation, Cedar Rapids, Iowa
Original No. 3,085,357, dated Apr. 16, 1963, Ser. No. 131,903, Aug. 16, 1961. Application for reissue Aug. 9, 1963, Ser. No. 301,219
9 Claims. (Cl. 272—60)



13. Acrobatic apparatus having, in combination, an inner annular belt adapted to fit around the waist of an acrobat, an outer annular interrupted belt encircling the inner belt in concentric relation therewith and having releasably connected end portions, and radially overlapping and axially facing surfaces on said belts permitting turning of the outer belt with respect to the inner belt while retaining the belts in their concentric relation, the length of each of said belts being adjustable in increments and the increments of adjustment of the outer belt corresponding with those of the inner belt so that the desired concentric relation of the belts is retained with different lengths of adjustment of the inner belt.

PLANT PATENTS

GRANTED AUGUST 24, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,548
ALMOND TREE
Frederic W. Anderson, Merced, Calif., assignor to Arthur Bright, Le Grand, Calif.
Filed Apr. 20, 1964, Ser. No. 361,318
1 Claim. (Cl. Plt.—30)

A new and distinct variety of almond tree, substantially as illustrated and described, characterized—in comparison to the Mission—by a blooming period about one week later; and by the regular and very productive bearing of later-in-harvest nuts which are longer, thinner, and with less doubles.

PATENTS

GRANTED AUGUST 24, 1965

GENERAL AND MECHANICAL

3,201,800
SYMMETRICAL GARMENTS
Warren P. McHugh, Bergenfield, N.J. (101 Wilson Ave., Rumford, R.I.)
Filed June 5, 1963, Ser. No. 285,787
2 Claims. (Cl. 2—83)



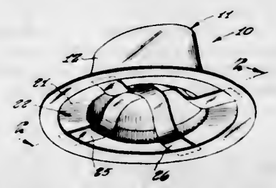
1. In a bifurcated garment of the character described, a pair of duplicate units adapted, when assembled, to provide a body-forming portion and a pair of legs extending downwardly from said body-forming portion, each unit having an upper section constituting one half of said body-forming portion above the crotch of the garment and a lower section constituting a leg-forming portion, said upper section of each unit having substantially parallel longitudinally extending side edges continuing downwardly into downwardly and outwardly extending edges which respectively meet at the crotch of the garment with inwardly and downwardly extending edges at opposite sides of a unit to provide a fullness of material in the lower and upper regions respectively of said upper and lower sections when said units are stitched together, each lower section extending downwardly from the crotch a sufficient distance to cover the leg and foot of an intended wearer, each lower section having downwardly tapering edges extending downwardly from said inwardly and downwardly extending edges of the unit, said inwardly and downwardly extending edges and said tapering edges of each unit stitched together downwardly from the crotch a sufficient distance to form a covering for a leg of a wearer and to leave two tongues of sufficient length beyond the lower end of the stitching for extending to over the toes of a wearer, an elongated, generally ovate piece having one end attached to one of said tongues of one of said units and its other end attached to the other of said tongues of said one of said units by seams along the margin of said ovate piece and thus providing separate pockets adapted alternately to receive either the left foot or the right foot of a wearer depending upon the fore and aft orientation of the garment on a wearer, a second elongated, generally ovate piece having one end attached to one of said tongues of the second of said units and its other end attached to the other tongue of said second unit by seams along the margin of said second ovate piece and thus providing separate pockets adapted alternately to receive either the right foot or the left foot of a wearer depending upon the fore and aft orientation of the garment on a wearer, the upper sections of said duplicate units being joined together along the side edges of the respective upper sections to complete the circumference of the body-portion of the garment.

3,201,801
REVERSIBLE COAT
John Atrasian, 120 S. Hibiscus Drive, Miami Beach, Fla.
Filed Apr. 2, 1963, Ser. No. 270,007
10 Claims. (Cl. 2—93)



1. A reversible coat comprising an inner garment and an outer garment each including front and rear body panels having the edges thereof joined together along side seams, the edge of one of the front and rear body panels which are joined to form each of the side seams having an extending portion integral therewith with the free edges of the extending portions being interconnected thereby enabling relative movement between the inner and outer garments for eliminating drooping or sagging and providing that the inner and outer garments may hang freely.

3,201,802
HAT PROTECTOR
Robert D. Smith, 2742 E. Tremont Ave., Bronx 61, N.Y.
Filed Oct. 14, 1963, Ser. No. 315,890
3 Claims. (Cl. 2—187)



1. In a rain protection hat, the combination of an upwardly extending crown having a lower peripheral edge, an outwardly extending circumferential brim adjacent said peripheral edge, a flange on the underside of said brim, the outer edge of said flange being affixed to the outer edge of said brim, said flange having an inner edge defining a central opening, a peripheral pocket formed between said brim and said flange, and a pair of cross straps having opposite ends extending radially outwardly beyond the said lower peripheral edge of said crown and being affixed to the upper side of said flange, said cross straps extending from within said peripheral pocket across said central opening and being of sufficient length to extend upwardly adjacent to the underside of said crown.

3,201,803
REVERSIBLE HEAD SCARF
Lillian L. Gettinger, 2509 Shelley Dale Drive, Baltimore, Md.
Filed Jan. 8, 1965, Ser. No. 424,386
2 Claims. (Cl. 2—207)

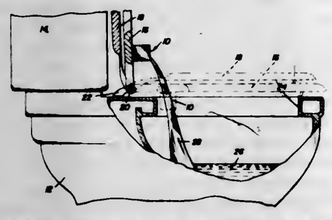
1. A reversible head scarf which can be worn in one position to provide an attractive coiffure covering having a decorative appearance and which can be worn in a reversed position to provide a protective covering to protect a coiffure from rain, snow and sleet, said head scarf com-

prising a flexible mesh crown portion having a substantially linear first edge thereon which serves to define the neck encircling rear edge of the head scarf, said crown portion having a second edge thereon formed by a pair of rearwardly extending and gradually converging arcuate edge portions which extend from opposite ends of said first edge and meet at a central apex, said central apex being located along the medial axis of said crown portion which extends perpendicularly rearward from the center of said first edge, said second edge serving to define the forward edge of said head scarf, a moisture impervious flexible plastic film panel having front and back edges congruent with central portions of said first and second edges, said panel having opposite side edges interconnecting its front and back edges and extending perpendicularly to said first edge, said panel being superimposed



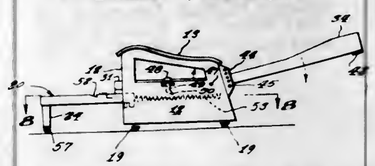
centrally upon said crown portion and adhered thereto by stitching extending along said side edges and said back edge, said panel front edge and said second edge being stitched together and shirred into a pair of pleats disposed on opposite sides of said medial axis, said crown portion ends projecting beyond said panel side edges serving as tie members which can be joined beneath a wearer's chin to maintain the head scarf in coiffure covering relationship, said head scarf being capable of being worn with said panel disposed inwardly and in contact with the wearer's coiffure whereby said mesh crown portion provides an attractive and decorative coiffure covering, said head scarf also being capable of being worn with said panel disposed outwardly to provide a moisture impervious barrier which protects the wearer's coiffure from deleterious effects of rain, snow and sleet.

3,201,804
AUTOMATIC RETAINING AND WRINGING ATTACHMENT FOR TOILETS
Aaron Masters, 164 Smith St., Perth Amboy, N.J.
Filed July 23, 1963, Ser. No. 296,997
15 Claims. (Cl. 4—1)



1. A diaper retaining and wringing attachment for toilet bowls comprising a support structure, means mounting said support structure upon a toilet bowl and upon the toilet bowl seat with a gripping means carried by said support structure for gripping a diaper and retaining it in a toilet bowl, said support structure having a pressure surface, a pressure member movably mounted on said support structure in opposed relation to said pressure surface and cooperating therewith for squeezing and wringing a diaper passing therebetween, said pressure surface being in fixed relation to said pressure member, gripping means carried by said support structure and including a pair of cooperating gripping fingers disposed between and urged into closed position by said pressure surface and pressure member.

3,201,805
COMBINED SEAT, HASSOCK AND CONVERTIBLE BED
Robert D. Smith, 2742 E. Tremont Ave., Bronx 61, N.Y.
Filed Oct. 8, 1963, Ser. No. 314,671
1 Claim. (Cl. 5—18)



In an item of furniture the combination of a main body member forming a seat element, a hassock slidably receivable within said main body member, and a cushion and back rest unit having a pivotable back rest for selective adjustment between a relatively vertical position and a horizontal position to form a bed, said main body comprising a pair of spaced apart end walls, an upper and a lower panel between said end walls and rigidly affixed thereto, a space between said panels, a runner between said panels affixed to the inner side of each of said end walls, said hassock comprising a cushioned panel having a pair of legs at its front edge, the rear edge of said cushioned panel being supported upon said runners, said hassock being slidable forwardly outward from said main body, said cushion and back rest unit comprising a pair of cushioned panels connected pivotally together by a hinge mounted on said panels forming said cushion and back rest unit, a first cross rod, a plurality of spaced apart openings in each of said end walls to selectively receive said first cross rod for supporting the rear side of said back rest, a second cross rod, an opening in each of said end walls to receive said second cross rod, said second rod selectively retaining said cushion and back rest unit by bearing against the upper side of said hinge, said back rest unit having a head rest portion at the end opposite the end adjacent said hinge, a pair of adaptors on the rear side of said head rest portion, a pair of detachable legs attachable to said adaptors to form said bed, a pair of compression coil springs supported within said main body end walls normally urging said hassock forwardly, a pull button upon each end wall, and a pull rod under each pull button connected to a pawl receivable within a notch at each end of said hassock, said pawl in engaged position with said notch retaining said coil spring in compressed position.

3,201,806
HOSPITAL BED
Clyde B. Hutt, 601 E. 22nd, Vancouver, Wash.
Filed Nov. 18, 1963, Ser. No. 324,456
1 Claim. (Cl. 5—62)

An adjustable hospital bed assembly consisting of a bedstead having head and foot board portions rigidly connected by a pair of side rails, a cross bar extending centrally across said bedstead and having its ends secured to said side rails respectively, a pair of identical upwardly-extending support members secured on the ends of said cross bar respectively, a main cross shaft mounted in said support members, a rectangular mattress-supporting main frame, a pair of identical side plates centrally secured on the sides of said main frame respectively and extending downwardly therefrom, said cross shaft extending centrally through said side plates and providing a central pivotal support for said main frame spaced above said

side rails, a transversely extending rock shaft mounted on said side rails, lever means and arm linkage operatively connecting said rock shaft with said main frame and controlling the tilting of said main frame on said cross shaft, an adjusting rod connected with said lever means and rock shaft, a hand crank and screw threaded means operating said adjusting rod, a hinged head section panel and a hinged leg section panel on said main frame, each of said side plates of said main frame having a pair of downwardly-extending end portions, a pair of cross shafts mounted in the downwardly-extending end



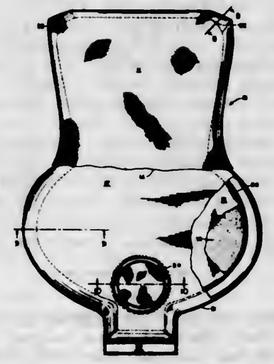
portions of said side plates respectively, arm linkage connecting said latter mentioned cross shafts with said head section panel and said leg section panel respectively, a pair of reversely positioned hydraulic cylinder assemblies each having its cylinder pivotally mounted on one of said latter mentioned cross shafts and its piston connected with said arm linkage on the other of said latter mentioned cross shafts, whereby said head section panel and said leg section panel may be adjusted independently of the tilting of said main frame on said first mentioned cross shaft.

3,201,807
SKI STABILIZER
Gerald R. Weaver, Tulare, Calif., assignor of forty-nine percent to Harold W. Jarvis, Tulare, Calif.
Filed Apr. 8, 1963, Ser. No. 271,216
2 Claims. (Cl. 9—310)



1. A stabilizer for a water ski having a predetermined forward path of travel and being adapted to be tipped from horizontal to oppositely transversely inclined positions to steer the ski comprising an elongated mounting plate of substantially rigid sheet material having a plurality of openings therethrough, fastener means extended through said openings mounting said plate beneath the ski, and a pair of elongated fins of substantially rigid sheet material disposed beneath the ski and arranged in substantially inverted V-shaped formation having an apex rigidly mounted on said mounting plate, each of said fins having opposite reaction surfaces, bottom marginal edges arcuately forwardly converging toward said plate and toward each other, and rearward marginal edges right angularly related to the plate, said fins being disposed in individual planes aligned with said path of travel of the ski in rigid predetermined obtuse angular relation to the ski to provide a dual keeling effect to minimize drifting of the ski from a straight path of travel when in transversely horizontal position and to insure that at least one reaction surface of the fins is immediately in effective position beneath the ski when the ski is in such transversely inclined positions, said fins having a plurality of apertures therethrough to permit water to flow through the fins during said tipping of the ski to minimize air pockets between the fins and between the fins and the ski.

3,201,808
BUOYANT UNDERGARMENT
Muriel Henry Glass, New York, N.Y., assignor to Marinaway Enterprise A.G., Zug, Switzerland, a corporation of Switzerland
Filed Mar. 11, 1963, Ser. No. 264,290
8 Claims. (Cl. 9—334)



1. A buoyant undergarment for wear by a human comprising:

(a) a single buoyant contoured pad section having a relatively small thickness relative to its breadth and length constructed generally to conform to the front contours of a human body and including a chest portion, a waist portion, and an abdomen portion, said buoyant pad having outer layers of cloth joined at their perimeter, intermediate water impervious plastic layers also joined at their perimeter with tap portions thereof extending and joined to spaced portions of the outer cloth layers, inner hermetically sealed plastic layers forming a container within said intermediate layers, and a layer of flat open-celled material within said container, and

(b) a rear garment section attached to said pad section which includes crotch attaching means extending from said abdomen portion for positioning between the legs of the human, and waist attaching means extending from said waist portion and attached to said crotch attaching means for positioning about the waist of the human, whereby said rear garment section anchors said buoyant section to the front contour of the body of the human to prevent shifting thereof.

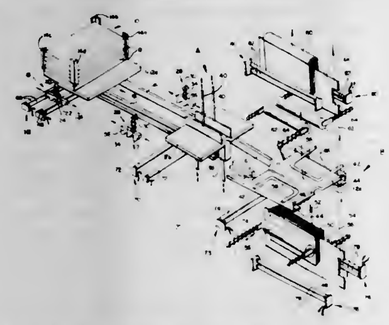
3,201,809
FORMATION OF ELEMENTS HAVING THREADS WITH RECESSED SIDES
Robert Neuschotz, 1162 Angelo Drive, Beverly Hills, Calif.
Filed Aug. 10, 1962, Ser. No. 216,080
4 Claims. (Cl. 10—10)



1. The method of forming a threaded element comprising starting with an elongated piece of stock having a predetermined non-circular external cross section throughout an extended length thereof, said cross section being such that the non-circular stock presents a series of

circularly successive sides extending along the length of the stock and forming radially outwardly projecting peaks at the junctures of said sides also extending along the length of the stock, forming external threads on said non-circular stock with the threads being truncated progressively by said sides so that said sides form outer surfaces on the threads which, as a particular thread extends circularly from one peak to the next, first decrease in radius to a predetermined recessed portion and then increase in radius toward the next peak, individual ones of said recessed portions of said outer surfaces being recessed radially inwardly beyond a plane which is drawn to just touch the two adjacent peaks, holding said stock, after forming said external threads, by gripping the stock at essentially the radially innermost portions of certain of said recessed portions but not at said peaks, internally threading said stock while thus held, and at some time during said method cutting off successive portions of said non-circular stock to form a series of threaded elements from successive portions thereof.

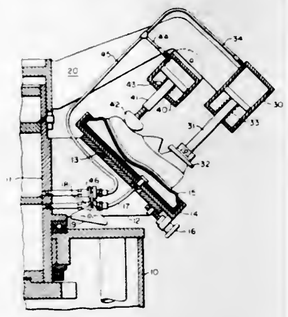
3,201,810
HEATING MEANS FOR CASING-IN MACHINE
James H. Thorp, Hartford, Conn., assignor to The Smyth Manufacturing Company, Bloomfield, Conn., a corporation of Connecticut
Filed Oct. 4, 1962, Ser. No. 228,498
10 Claims. (Cl. 11—3)



1. In a book casing-in machine, the combination of means providing a station for successively assembling book components comprising fillers and cases, means for successively transporting fillers along a first predetermined path to said assembly station, means for successively transporting cases along a second predetermined path to said assembly station, means adjacent at least one of said first and second paths for applying adhesive to at least one component of each book prior to assembly, and means adjacent at least one of said first and second paths for heating substantially one entire surface of at least one component of each book prior to assembly whereby to expedite set up of said adhesive.

3,201,811
SOLE PRESS
Harold E. Marasco, Beverly, Mass., assignor to Marasco Shoe Machinery Corporation, Lynn, Mass., a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,389
1 Claim. (Cl. 12—33)

A sole press comprising a pad box and pad for supporting a sole in outwardly and downwardly inclined position, an overhead arm carrying two separate fluid pressure cylinders located respectively opposite to the toe and heel ends of the pad box with cooperating toe and heel posts movable therein at substantially right angles to the pad box, means mounting said toe and heel posts in said cylinders so that the stroke of said toe post is shorter than the stroke of said heel post, fluid pressure connections to the pad box for inflating and elevating the pad and fluid pressure connections to each of the said cylinders for moving both posts independently and simultaneously toward the pad until engaged with an interposed shoe, and means for



independently retracting the toe and heel posts from the pad to positions of maximum clearance upon release of fluid pressure in their associated cylinders, whereby said heel post moves a greater distance than said toe post to provide immediate and ample clearance between said toe and heel posts and the shoe.

3,201,812
LEATHER CONDITIONING
Hubert O. Chaplin, Leicester, England, assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
No Drawing. Filed July 25, 1963, Ser. No. 297,691
Claims priority, application Great Britain, July 27, 1962, 28,854/62
7 Claims. (Cl. 12—146)

1. The method of conditioning leather comprising subjecting a leather article to a conditioning medium, applying a susbtantially continuous coating to one side surface of the leather article, and heating the coated side while maintaining an opposite side surface at a temperature lower than the heated side.

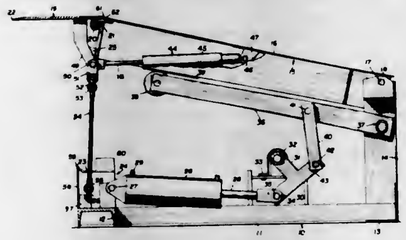
ERRATUM

For Class 14—71 see:
Patent No. 3,203,002

3,201,813
HYDRAULICALLY ACTUATED DOCK BOARD WITH HINGED LIP
Robert L. Le Clear, Albion, Mich., assignor to T & S Equipment Co., Albion, Mich., a corporation of Michigan
Filed Feb. 8, 1963, Ser. No. 257,124
2 Claims. (Cl. 14—71)

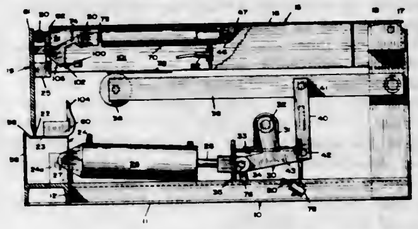
1. A hydraulically actuated dock board comprising:
a frame means adapted to be disposed with a recess in a loading platform;
a ramp having a lower surface and a substantially flat upper surface;
pivotal attachment means securing one end of said ramp to said frame means while leaving the opposite ramp end free from such securing;
a ramp elevating means including an elongated bar disposed in substantially parallel juxtaposition beneath said ramp;

said elongated bar having one end pivotally attached to said frame means and an opposite end pivotally mounting a roller;
said roller abutting against said ramp lower surface;
hydraulic cylinder and piston means disposed within said frame means beneath said ramp;
said hydraulic cylinder and piston means having a first end pivotally attached to said frame means and a second end through which a rod from said piston projects;
mechanical linkage means pivotally attached to said piston rod and to said elongated bar between its ends;
said mechanical linkage means including a rocker arm and a link, said rocker arm being centrally pivoted to said frame means with one end thereof pivotally attached to said piston rod and with the other thereof pivotally attached to the lower end of said link, said link extending upward and having its upper end pivotally attached to said elongated bar;
said mechanical linkage means being operative, when said piston rod is extended, to raise said elongated rod and hence to raise said ramp and being operative. when said piston rod is retracted, to lower said elongated rod and hence to lower said ramp;
a lip pivotally mounted adjacent said ramp free end and normally hanging perpendicularly downward from said ramp under the influence of gravity;



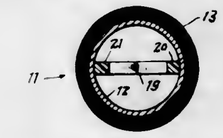
said lip having a lower surface and a substantially flat upper surface;
an actuating arm projecting from said lip lower surface;
dashpot means interconnected between said lip and said ramp to control the speed of relative movement therebetween;
said dashpot means including a fluid pressure device having a fixed end pivotally attached to said ramp lower surface and an extensible end pivotally connected to said lip actuating arm;
a flexible member of preselected length;
said flexible member having one end pivotally attached to said frame means and having an opposite end pivotally attached to said pivotal connection between said dashpot extensible end and said lip actuating arm;
said hydraulic cylinder and piston means being selectively actuatable to eleveate said ramp whereby, when said ramp elevates beyond the length of said flexible member, said lip will be pivoted upward until its upper surface is substantially coplanar with said ramp upper surface;
said hydraulic cylinder and piston means being selectively deactuatable to lower said ramp whereby, when said ramp lowers far enough to provide slack in said flexible member, said lip will move slowly in a downward direction under the influence of gravity, with the speed of said downward movement being limited by said dashpot means.

3,201,814
HYDRAULICALLY ACTUATED DOCK BOARD WITH HINGED LIP
Robert L. Le Clear, Albion, Mich., assignor to T & S Equipment Co., Albion, Mich., a corporation of Michigan
Filed Aug. 5, 1963, Ser. No. 299,829
9 Claims. (Cl. 14—71)



1. In a hydraulically operated dock board including a frame means, a ramp having one end pivotally attached to said frame means, a lip pivotally attached to the other end of said ramp, and mechanical linkage means disposed beneath said ramp and being operative to raise and lower said ramp, the improvement comprising:
a first cylinder and piston means mounted on said frame means and coupled to said mechanical linkage means for operation thereof;
a second cylinder and piston means mounted on the underside of said ramp and coupled to said lip for raising and lowering thereof;
a supply means adapted to supply a source of actuating fluid to said first and second cylinder and piston means;
a switch means controlling said supply means for selective operation thereof to thus selectively supply actuating fluid to said first and second cylinder and piston means;
control valve means for directing delivery of said actuating fluid to a selected cylinder and piston means; and
operating means responsive to said mechanical linkage means for selectively actuating said control valve means and thus determining to which cylinder and piston means said actuating fluid will be delivered;
said switch means being actuatable to operate said supply means and thus supply actuating fluid from said source to said control valve means, which, when engaged by said operating means causes said ramp and said lip to raise;
said switch means also being deactuatable to terminate operation of said supply means and to interrupt the supply of actuating fluid from said source to said control valve means, which, when disengaged by said operating means, causes said ramp and said lip to lower.

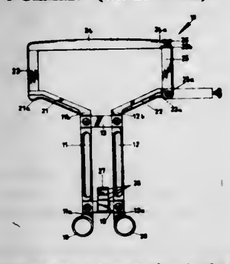
3,201,815
LINT REMOVER
Harold E. Selby, 619 68th St., Brookyln 20, N.Y.
Filed Oct. 28, 1964, Ser. No. 407,126
2 Claims. (Cl. 15—104)



1. A lint remover comprising a roll of adhesive coated lint removing material carried on a tubular core with the adhesive facing outwardly and means for rotatably

mounting said roll, said means comprising an elongated handle including laterally opposed portions resiliently movable toward each other and a pair of laterally spaced arm portions extending longitudinally respectively from one end of each of said opposed handle portions, said arm portions being laterally and outwardly offset relative to the longitudinal axis of said handle, each arm portion including an outwardly extending shoulder portion at the outer end and an outwardly extending shoulder portion adjacent the inner end thereof, said arm portions being resiliently displaceable toward each other to admit said arm portions longitudinally within the bore of said tubular core and the spacing between the inner and outer shoulder portions on said arm portions being sufficient to receive the opposite ends of said tubular core therebetween when said arm portions are resiliently displaced outwardly to their normal position, the inner and outer shoulder portions respectively engaging opposite end portions of said tubular core.

3,201,816
STORM WINDOW WASHING DEVICE
Peter C. Bryce, 575 Lees Lane, Oakville, Ontario, Canada
Filed Nov. 21, 1963, Ser. No. 325,234
4 Claims. (Cl. 15—220)



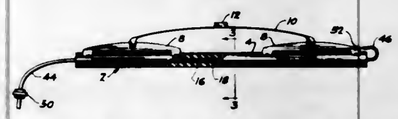
1. A storm window washing device including a support framework, a yoke cooperable with said framework; a resilient, deformable member compressible between said yoke and said framework; cleaning means supported by said deformable member; unidirectionally bendable flexible handle means having rigidity in compression and tension attached to said yoke, said deformable member including a resilient tubular member and a sleeve support member; said sleeve support member comprising two substantially identical rods each having inturned ends; coil springs interconnecting said ends in pairs to hold said rods in substantially parallel spaced apart relationship; said tubular member within said support framework to be compressible between said framework and said yoke.

3,201,817
ERASER
Raymond D. Atchley, Los Angeles, Calif., assignor to Techform Laboratories, Inc., Venice, Calif., a corporation of California
Filed July 25, 1963, Ser. No. 297,614
4 Claims. (Cl. 15—231)



1. An eraser structure which comprises a case having a pair of opposite walls and a bottom portion, a cover closing said case, a partition traversing the interior of said case and connected at opposite ends to said walls and connected along its lower edge to said bottom portion, said partition with said cover on said case forming a pair of separate compartments in said case, a first fixed cylindrical plug mounted on one of said walls in one of said compartments, a first retractable spindle mounted coaxially of said first plug on the second wall of said case in said one compartment, a second fixed cylindrical plug mounted on said one wall in the other compartment, a second retractable spindle mounted coaxially of said second plug on the said second wall, frictional engaging means on the periphery of said second spindle, a knob mounted on the outer end of said second spindle exteriorly of said case for manually driving said second spindle, means for limiting axial displacement of said second spindle, a pad mounted on the exterior surface of the bottom of said case, and means forming a pair of slots in the enclosed case adjacent opposite edges of the bottom portion of said case, said case being in the form of a frame, wherein said opposite walls are end walls, the sides of said frame being open, said cover having a top and depending side portions, the opposite ends of said cover overlying the top and side edges of said end walls, the side portions of said cover substantially closing said open sides of said frame, means adjacent said edges of said end walls to maintain said cover in fixed closed position on said end walls, the lower edges of said side portions of said cover being disposed parallel to and spaced a short distance from the adjacent side edges of said bottom portion of said frame, said spaces between said side edges of said bottom portion and said lower edges of said cover forming said pair of slots.

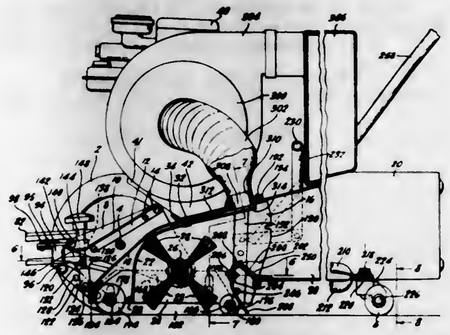
3,201,818
WINDSHIELD WIPER AND METHOD OF PRODUCING THE SAME
Roy E. Linker, Nursery Road, P.O. Box 124, West Trenton, N.J.
Filed May 12, 1964, Ser. No. 366,697
6 Claims. (Cl. 15—250.06)



1. The method of producing a windshield wiper blade which comprises the steps of extruding a flexible plastic material onto and about a flexible insulated heating element formed of a resistance alloy, thereafter severing the resulting strip into lengths exceeding the length of a windshield wiper blade to be produced, removing the plastic material from the insulated heating element at the opposite ends of the severed lengths of the strip thus produced to provide insulated electrical leads, and stripping the insulation from a portion of the leads thus provided for connecting the wire to a source of electrical current.

3. A flexible windshield wiper blade adapted for use in wiping a curved windshield comprising a strip of flexible plastic material having a heating element embedded in the plastic material and intimately and permanently bonded to the plastic material, said strip being of uniform cross section throughout the length thereof and having opposite edges with means extending longitudinally of the strip adjacent one of said edges for mounting the blade in a holder, the opposite edge of the strip being tapered for flexible wiping engagement with a windshield, the heating element having a width greater than its thickness and being arranged in the strip with its width at right angles to a plane including said edges of the strip and serving to render the wiper blade flexible in said plane to conform to the curvature of a windshield while opposing transverse bending of the windshield wiper blade, the ends of said heating element projecting beyond the ends of the blade for connection to a source of electrical current.

3,201,819
SWEEPER
Barton M. Wilgus, West Milton, Ohio, assignor to Lambert, Inc., Dayton, Ohio, a corporation of Ohio
Filed Nov. 17, 1961, Ser. No. 153,009
20 Claims. (Cl. 15—349)



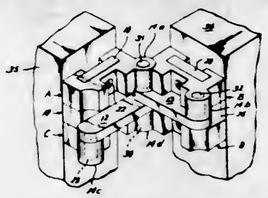
20. A sweeper comprising, in combination, a housing adapted to be moved across the surface to be cleaned, means for supporting the housing for such movement, a debris receptacle into which debris is discharged during operation of the sweeper, said housing having an open lower end and a discharge opening communicating with the debris receptacle, a rotating brush in said housing engaging the surface to be cleaned, a dust seal for preventing discharge of dust into the atmosphere during operation of the sweeper, said seal including a supplemental frame movably supported on the main housing and freely movable during operation of the sweeper, said frame including a substantially horizontal shaft extending across said sweeper adjacent the front side of the open lower end of said housing, and a plurality of independently mounted sealing members in side by side sealing relationship with each other, said members being rotatably mounted on said supporting shaft and fitting loosely enough thereon to be freely movable vertically when passing over particles of debris.

3,201,820
BOX HINGE
Raymond Desrosiers, Taunton, Mass., assignor to Advance Mfg. Co. Inc., Pawtucket, R.I., a corporation of Rhode Island
Filed July 16, 1963, Ser. No. 295,361
3 Claims. (Cl. 16—159)



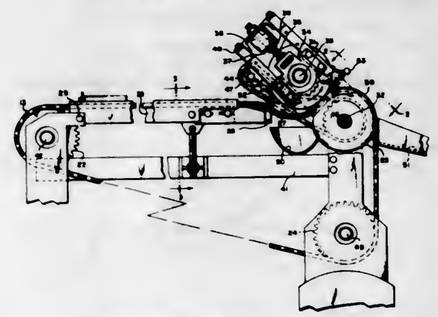
1. A hinge construction for a paperboard box having a bottom and cover with rear walls in edge to edge position, comprising a pair of elongated rectangular plates hingedly connected along adjacent edges, there being a rectangular slot adjacent the central portion of each plate, a double C-shaped spring having its free ends bent at right angles and extending through said slots, and a plurality of spaced triangular tangs extending integrally at right angles to the surface of said plates whereby the tangs can be driven through the rear walls of the bottom and cover of the box and said tangs can be bent over to lock said plates to said box, said spring being hooked into said slots whereby said spring will remain in place regardless of the angular position of said plates, said hinge connection being laterally offset from the plane of said plates by means which permit adjacent edges of the plates to be biased into abutting engagement with each other by the double C-shaped spring to retain the plates in a desired angular relationship to facilitate securing of the hinge to the box and space the said edges from each other when the hinge is secured to the box.

3,201,821
HINGE
Niles L. Ruckstuhl, 3928 W. Alabama, Houston, Tex.
Filed Apr. 1, 1963, Ser. No. 269,556
6 Claims. (Cl. 16—163)



6. A hinge comprising, two adjacent link members; four identically shaped support members arranged in two pairs with the support members of each pair lying in the same plane; a spacer member located between each pair of support members to space the support members apart sufficiently to allow both link members to be positioned therebetween in parallel, superimposed, relationship when the two pairs of support members are moved into facing engagement; means pivotally connecting each link member with one of the support members in each pair, with the link members each having one end pivoting around the same axis as one end of the other link member at all times.

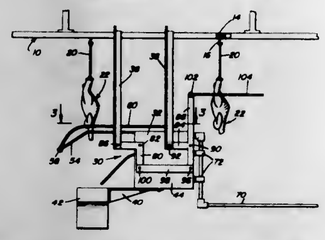
3,201,822
REMOVAL OF MEAT FROM SEPARATED SECTIONS OF THE LEGS OF KING CRAB
Ernest W. Glidden, Seattle, and Lloyd C. Frederickson, Bellingham, Wash., assignors to Wakefield Seafoods, Inc., Seattle, Wash., a corporation of Washington
Filed Oct. 1, 1963, Ser. No. 313,011
16 Claims. (Cl. 17—2)



1. A machine for extracting meat from a king crab leg which has been severed from the body of the crab, comprising: a pair of complementing live pressure rollers so located and driven in counter directions of rotation as to produce an infeed throat leading to a nip, and an endless driven conveyor providing hammocks spaced apart at

intervals of the length of the conveyor to serve as work-supporting flights, the conveyor being trained so that a run thereof travels a prescribed path having no more than a moderate slope and at the tail end of which the hammocks pass between the rollers entering at the nip of the latter, the hammocks in their travel along said path locating the upper surface thereof approximately parallel with the path, the hammocks being adapted to sustain the crab legs thereon with the large ends facing to the rear and being flexible with said upper surface providing frictional resistance to relative motion of said sustained legs in a direction endwise to their length as the legs travel with the conveyor.

3,201,823
AUTOMATIC NECK SKIN CLIPPER
Louie B. Mathews, 10 2nd Ave., Pritchard, Ala.
Filed Aug. 20, 1963, Ser. No. 303,334
13 Claims. (Cl. 17—11)



1. In a poultry dressing conveyor assembly of the overhead type and which includes a conveyor support frame together with a conveying means by which beheaded poultry are carried in a row along a fixed path of travel and in inverted position with their severed necks dependingly attached by an uncut strip of neck skin; a support body, a neck skin severing means mounted on said body, mounting means connected to said conveyor support frame and suspendingly supporting said support body therebeneath, adjusting means operatively connected to and interposed between said conveyor support frame and said body and operable to adjustably move said body toward and from said conveyor assembly, guide means on said support body positioned for engagement with the necks of poultry carried by said conveyor assembly and confining said necks to said fixed path of travel, said mounting and adjusting means positioning said severing means to intersect said fixed path of travel and sever said poultry necks.

3,201,824
HOLDER FOR BIRDS
Anna Konopa, Rte. 1, West Springfield, Pa.
Filed Dec. 13, 1963, Ser. No. 330,292
5 Claims. (Cl. 17—11)



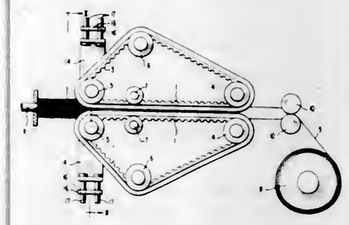
1. In combination, a device for holding the wings and drumstick of a bird in position comprising

a relatively flexible elongated member having means at the ends thereof adapted to be attached to the wings of a bird,

a U-shaped relatively rigid resilient member,

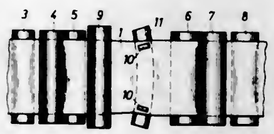
said U-shaped member having legs and an intermediate part and having means at the intermediate part thereof for attaching it to the rear end of said bird, and means on the ends of said legs of said U-shaped members to receive an intermediate part of said flexible member and to receive the ends of the drumsticks of said bird whereby said wings and drumsticks are held in position.

3,201,825
METHOD OF SHIRRING SAUSAGE CASINGS
Ernst Riegler, Niederwalluf, Rheingau, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany
Filed Jan. 24, 1962, Ser. No. 168,556
Claims priority, application Germany, Jan. 26, 1961, K 42,739
2 Claims. (Cl. 17—45)



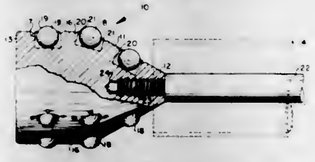
1. A process for shirring a sausage casing which comprises passing the casing through an elongated zone and reciprocating the casing at the discharge end of the zone in a direction normal to the direction of travel in the zone, whereby the casing is shirred.

3,201,826
APPARATUS FOR STRETCHING STRIPS OF PLASTIC MATERIAL
Gernot Brückner, Laufener Strasse 12, Tittmoning, Upper Bavaria, Germany
Filed Dec. 3, 1962, Ser. No. 241,779
Claims priority, application Germany, Dec. 7, 1961, B 65,082
6 Claims. (Cl. 18—1)



1. An apparatus for stretching plastic sheet material in the longitudinal direction comprising two stretching rolls parallel to and spaced from each other, the second roll being driven at a higher speed than the first roll so as to exert a longitudinal traction upon the sheet material running over said stretching rolls, means for heating said sheet material between said stretching rolls, a rotatable support, and at least one pair of pressure rolls between said stretching rolls and following said heating means for pressing the marginal parts of said sheet material against said rotatable support, said pressure rolls being inclined relative to each other so that their axes intersect at a certain distance from a straight line connecting the centers of rotation of said pressure rolls in the direction of movement of said sheet material.

3,201,827
TUBE-STRETCHING MANDREL
Maurice V. Reynolds and Rosario J. Perrone, Marion, Ind., assignors, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Apr. 8, 1963, Ser. No. 271,414
2 Claims. (Cl. 18—1)



1. A mandrel for radially stretching sections of tubing comprising:

(A) a solid tapered block having a conical surface of revolution,

(B) a plurality of ball-receiving bores

(a) projecting into said block,

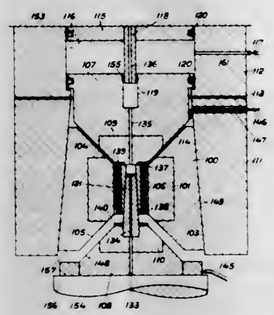
(b) said bores being substantially uniformly distributed over substantially the entire surface of said block,

(C) a like plurality of balls each rotatably inserted in one of said bores and projecting out of said block,

(D) means partially obstructing said bores thereby retaining said balls, and

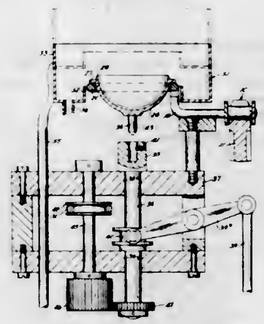
(E) pulling means fastened to said mandrel and extending coaxially therefrom whereby said mandrel can be pulled into said tubing.

3,201,828
HIGH PRESSURE APPARATUS
Per Ake Fryklund, Robertsfors, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Dec. 18, 1962, Ser. No. 245,477
Claims priority, application Sweden, Dec. 27, 1961, 12,962/61, 12,963/61
12 Claims. (Cl. 18—16.5)



1. High pressure apparatus comprising an outer pressure absorbing means, a pressure chamber including means forming two end surfaces and means forming side surfaces and having an axis running through the end surfaces, the means forming said side surfaces of the pressure chamber comprising a plurality of blocks arranged around the pressure chamber and having side surfaces facing each other, there being gaps between said side surfaces of the blocks, said blocks being movable in the axial direction in said outer pressure absorbing means, said blocks and said outer pressure absorbing means having cooperating means to produce movement of the blocks towards the interior of the pressure chamber in response to axial movement of the blocks in one direction for compressing a material arranged in the pressure chamber, said means forming end surfaces of the pressure chamber being pressure-resisting means sealed to the blocks and both mounted for axial movement in the same direction with respect to the outer pressure absorbing means to follow the axial movement of the blocks.

3,201,829
METHOD OF AND APPARATUS FOR MAKING HOLLOW ARTICLES
Alvon R. Cox, Ashland, Ohio, and Albert E. Hosler, deceased, late of Ashland, Ohio, by Eva Hosler, executrix, Ashland, Ohio, assignors to The Faultless Rubber Company, Ashland, Ohio
Original application June 17, 1960, Ser. No. 37,007, now Patent No. 3,165,565, dated Jan. 12, 1965. Divided and this application Apr. 1, 1964, Ser. No. 356,675
4 Claims. (Cl. 18—26)



1. In apparatus for making hollow articles from a liquid plastisol of thermosetting material, the combination comprising a pair of mating semi-spherical mold members having cavities combinable to define a hollow article and meeting lands at the margins of the cavities, means to convey the separated open mold members step by step past a plurality of stations, means at one station for filling at least one mold member to its brim with the plastisol, means for heating the mold members to the gelling temperature of the material, means at another station for spinning the mold member about an axis perpendicular to the brim of the cavity after some plastisol has gelled and deposited on the mold cavity surface to remove undeposited plastisol from the mold member, and a member at said another station and movable relative to said mold member to encompass the mold member at its lands to receive liquid plastisol as thrown out from the mold member when spun.

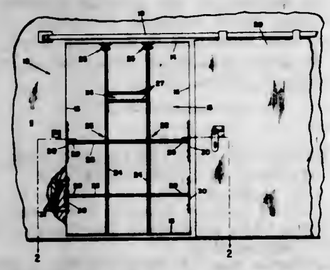
3,201,830
BULK GRAIN DOOR SUPPORT FRAME
Willis Pembrook Senter, Moscow, Idaho, and Robert O. Engard, 618 W. 14th, Spokane, Wash.
Filed Apr. 15, 1963, Ser. No. 273,157
3 Claims. (Cl. 20—27)

1. An improved bulk grain hauling car having a side wall with a door opening therein, comprising:

a support frame having a pair of spaced vertical bars and plural vertically spaced horizontal bars interconnected to form a grill-work of a size and shape to fit entirely within said opening;

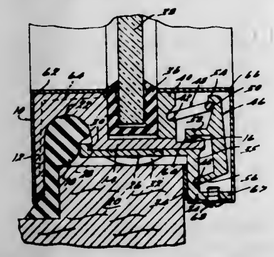
means releasably securing the ends of said horizontal bars against movement outwardly of said car;

means supporting said grill-work for inward tilting movements from a vertical plane substantially coincident to said opening to a horizontal plane sub-



stantially coincident to the top of said opening; and a grain door removably fixed within the car across said door opening and supported by said frame against outward pressures.

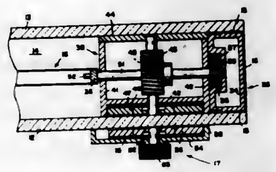
3,201,831
WINDOW GLAZING CONSTRUCTION
Roger G. Cudini, Birmingham, Mich., assignor to Moynahan Bronze Company, Detroit, Mich., a corporation of Michigan
Filed Mar. 13, 1961, Ser. No. 95,063
8 Claims. (Cl. 20—56.4)



1. A window glazing construction comprising an outer frame portion, an inner frame portion adapted to engage said outer frame portion, said inner and outer frame portions including means for engaging a wall section, seal means on said outer frame portion adapted to be compressed between said outer frame portion and the wall section for weather-proofing the peripheral portion of a window opening in the wall section, outer cushion means engageable with said outer frame portion for sealing the outer peripheral portion of a window pane, inner cushion means for sealingly engaging the inner peripheral portion of a window pane, a loading strip engageable with said inner cushion means, separate lug means adapted to engage said inner and outer frame portions, and means including spring means adapted to engage said loading strip and said lug means to resiliently urge said loading strip and said outer frame portion toward each other for supporting a window pane therebetween.

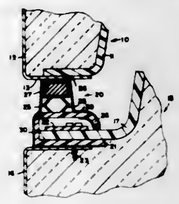
3,201,832
HERMETICALLY SEALED WINDOW AND BLIND UNIT
Victor A. Herdis, Riverton, N.J., and Joseph M. Bond, Jenkintown, Pa., assignors to Polarpane Corporation, Pennsauken, N.J., a corporation of New Jersey
Filed Mar. 4, 1963, Ser. No. 262,619
3 Claims. (Cl. 20—56.5)

1. A combined window and blind unit comprising a divider frame having top and bottom frame members joined together by spaced-apart side members, an inside and outside glass pane mounted on the frame and defining a space therebetween, sealing means around said unit which hermetically seals it, a series of slats positioned in said space, a gear mounted on one end of each slat, a rack positioned in said unit so as to have teeth in mesh with teeth of the slat gears, interior operating means positioned in said space and operatively connected to said rack for moving said rack to cause rotation of said slat



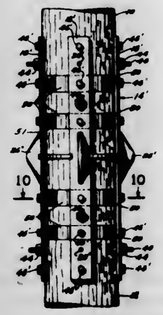
gears and slats, said interior operating means including an interior rotatable magnet mounted in said space, and exterior operating means mounted outside said space for operating said interior operating means, said exterior operating means including an exterior rotatable magnet mounted outside said space and magnetically connected to the interior magnet and adapted to drive said interior magnet and operating means.

3,201,833
SEALING ARRANGEMENT
James G. Bryson and Raymond J. Creech, Tyler, Tex., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Aug. 22, 1963, Ser. No. 303,812
6 Claims. (Cl. 20—69)



1. A gasket for an enclosure member having a removable access cover member comprising:
- a first edge portion adapted to be secured to one of said members;
- a second edge portion adapted to make sealing engagement with the other of said members, extensible means between said first and second edge portions;
- magnetic means associated with said gasket for retaining said second edge portion in sealing engagement with said other member;
- restraining means adapted to limit extension of said extensible means, to thereby facilitate opening of said access cover by providing a location for relief of pressure difference which may exist across said access cover and for promotion of a peeling separation between said magnetic means and said other of said members, said restraining means being disposed along an exterior surface of said gasket and comprising a relatively inelastic, flexible, narrow tape extending at least partially across said gasket between said first edge portion and said second edge portion of said gasket, said tape having a relatively small width with respect to the length of said gasket.

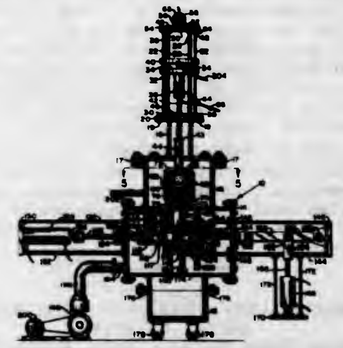
3,201,834
TIMBER PILE CONNECTOR
Jack R. Baittinger, Scotch Plains, N.J., assignor of one-half to John J. Dougherty, Cedar Grove, N.J.
Filed Sept. 18, 1961, Ser. No. 138,655
1 Claim. (Cl. 20—92)



A pile comprising a lower wooden pile section, an upper wooden pile section superimposed on the lower pile section, said pile sections having spaced annular grooves therealong, a connector fitting interposed between and joining said pile sections, said connector fitting including a circular plate between the abutting ends of the pile sections, said plate having pairs of diametrically opposed notches in its periphery, side bars spaced around the plate, said side bars engaged in the notches and extending above and below the plate, said side bars having a series of spaced holes therealong, said pile sections having a series of spaced openings through said axial centers thereof, from side to side, in one direction and another series of spaced openings through the axial centers thereof from side to side in a direction at right angles to the direction of said first series of openings, bolts passing through the aligned holes and openings and protruding beyond the side bars, nuts on the ends of the bolts and connecting opposed side bars, elongated lugs on the side bars extending beyond both sides of the plate, and knife edges on the inner surfaces of said side bars at the ends thereof, a series of arcuate shaped members carried at spaced intervals along the side bars and seated in the grooves in the pile sections, curved knife edge flanges on the top edges of the inner surfaces of the arcuate-shaped member and penetrating the pile, said knife edge flanges conforming to the curvature of the arcuate-shaped members and means extending through the side bars and the arcuate shaped members to prevent relative movement between the side bars and the arcuate shaped members.

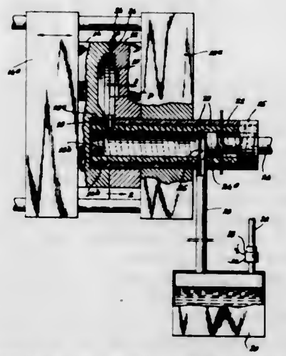
3,201,835
CASTING REFRACTORY METALS
Donald E. Cooper, Las Vegas, Nev., and Schuyler A. Herres, Murray Hill, N.J., assignors to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 267,071
8 Claims. (Cl. 22—68)

1. In apparatus for die casting a refractory metal including a gas tight shell, a pair of separable die blocks inside said shell recessed to form a casting cavity therein and means for melting a body of molten metal in a tiltable crucible in said shell the improvements which comprise;
- (a) a horizontal feed tube inside said shell communicating with the casting cavity in said die blocks, said feed tube having a graphite liner,
- (b) means for transferring molten metal from said tiltable crucible into said feed tube through the top thereof, and,



- (c) a plunger inside said feed tube closely fitting the liner therein and actuated by means external of said shell to force molten refractory metal from said feed tube into the casting cavity in said die blocks.

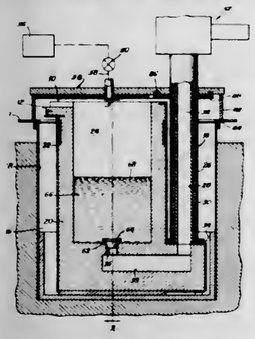
3,201,836
METHOD OF, AND APPARATUS FOR, DIE CASTING METALS
Gustav Nyselius, Stamford, Conn., assignor to Mount Vernon Die Casting Corporation, Stamford, Conn.
Filed Sept. 21, 1964, Ser. No. 398,126
2 Claims. (Cl. 22—68)



1. Apparatus for die casting metal which comprises: a stationary die plate and a movable die plate which when their relatively inner faces are closed together define a die cavity, the stationary die plate having an opening extending transversely through it directly below the die cavity, and the movable die plate having a recess in its relatively inner face extending in continuation of the opening in the stationary die plate, a sleeve fixedly disposed in the opening in the stationary die plate and having a closed forward end portion projecting beyond the relatively inner face of the stationary die plate and adapted to move into the said recess in the corresponding inner face of the movable die plate when the die plates are closed together, a short-length nipple affixed to and projecting radially from said forward end portion of said sleeve to the die cavity and communicating directly between the sleeve and the die cavity, the axis of the nipple being aligned with the line of parting between the die plates and the inner faces of said die plates being complementally recessed to provide a full tubular seat for said

nipple, means extending the full length of said sleeve for maintaining the sleeve and nipple at a temperature above the melting point of the casting material, a reservoir for metal casting material disposed below said sleeve, and means for intermittently raising a charge of casting material from the reservoir to the die cavity including a conduit communicating between the reservoir and the rearward end portion of the sleeve and a charging piston reciprocable within the sleeve to force a charge of casting material from the sleeve through said nipple to fill the cavity, the conduit communicating to the sleeve at a point along the length thereof which is so located that when the plunger is at the rear end of its stroke the conduit connection to the reservoir is uncovered, thus allowing molten metal in the heated nipple and sleeve to return to the reservoir by gravity after each reciprocation of the plunger.

3,201,837
METHOD AND APPARATUS FOR CASTING METAL ARTICLES
Edmund Quincy Sylvester, Shaker Heights, Ohio (% Griffin Wheel Co., 445 N. Sacramento Blvd., Chicago 12, Ill.)
Filed Apr. 6, 1962, Ser. No. 185,652
14 Claims. (Cl. 22—69)



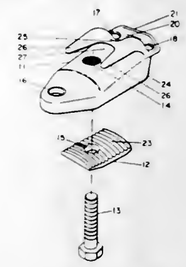
2. A method of producing flow of molten metal from a ladle chamber having a bottom pouring opening with a refractory stopper member therein and communicating with an upwardly directed pouring conduit, comprising the steps of creating a superatmospheric pressure within said pouring conduit sufficient to dislodge said stopper, relieving said superatmospheric pressure, and applying superatmospheric pressure to the ladle chamber and continuing such application to such an extent as to raise the level of the molten metal in the pouring tube above that in the ladle chamber.

3,201,838
ROPE COUPLING
John S. Brown, Framingham, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 18, 1964, Ser. No. 353,005
8 Claims. (Cl. 24—125)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A connecting device for releasably and adjustably joining the free end of a first cable to a second cable at a point between the ends thereof where the longitudinal axis of said first cable is generally perpendicular to the longitudinal axis of said second cable comprising:

(a) a body member having front and rear faces, said body member being provided with an opening therethrough extending from the front face thereof to the rear face thereof and having a bifurcated hook portion extending outwardly and downwardly from the front face thereof for engaging said second cable, and

(b) clamping means movable with respect to the rear face of said body member for clamping said first cable to said body member, said clamping means including a portion extending through said opening in said body member and between the arms of said bifurcated hook portions thereof to restrict disengagement of said second cable from said hook portion.

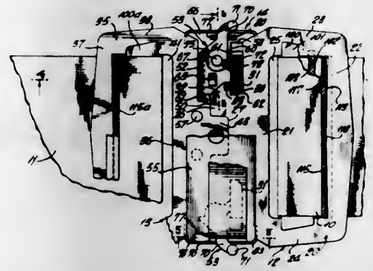


3,201,839
ZIPPER OPERATOR
Donald A. Reifsteck, Richard L. Reifsteck, and Donald E. Reifsteck, all of P.O. Box 71, Hanover, Ill.
Filed June 27, 1963, Ser. No. 292,199
1 Claim. (Cl. 24—205.15)



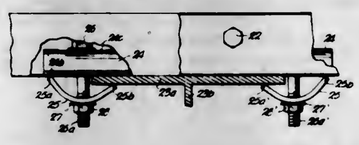
A zipper operator for a woman's dress having at the back a zipper extending generally from the waist to the back of the neck of the wearer, said operator comprising: a flattened semi-flexible self-supporting elongated member having a lower end portion and an upper end portion, the lower end portion being adapted to be inserted between the waist portion of the dress and the body of the user, the elongated member being of such length that when the lower portion is disposed between the waist portion of the dress and the waist of the user that the upper portion of the elongated member is adjacent the neck of the user, a flexible hook carrying element having a zipper tab engaging hook at the lower end thereof, the upper end of said flexible hook carrying element being secured to the upper end portion of the elongated member, the hook and flexible element being of such a relative length to the flattened elongated member that the hook is disposed over the lower end portion of the elongated member, and a finger receiving aperture in the upper end portion between the upper end of the flexible hook carrying element and the upper end of the elongated member, the parts being so arranged and constructed that the elongated member may be grasped when the lower portion is disposed between the waist of the dress and the waist of the user by the user reaching back over her shoulder with either hand and engaging the aperture with a finger whereby the zipper tab may be pulled up.

3,201,840
SAFETY BELT DEVICES
George H. Jantzen, New York, N.Y., assignor to M. Steinthal & Co., Inc., New York, N.Y., a corporation of New York
Filed May 20, 1963, Ser. No. 282,537
6 Claims. (Cl. 24—230)



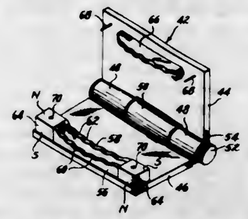
1. A safety belt buckle comprising a pair of separable buckle parts, one of said buckle parts comprising a pair of catch teeth separated by an intervening recess, each of said teeth having a catch recess on its outer side, the other buckle part comprising a pair of latch bolts slidable into and out of said catch recesses respectively when said buckle parts are together, said catch teeth being urged angularly edgewise towards each other by the bending action of the latch bolts thereon when in locking position in said catch recesses upon the pulling of said buckle parts away from each other in directions along the length of the buckle, spring means urging said latch bolts into said recesses respectively when said buckle parts are together and a support tooth having a shape to fit said intervening recess snugly to mesh with said catch teeth and to support said teeth against said bending action when said buckle parts are locked together and when said catch teeth are subjected to stresses resulting from separating pull on said buckle parts, whereby said catch teeth are subjected mainly to shear stresses during such pull, said catch teeth and said support teeth being in relative position to intermesh upon movement of said buckle parts relatively towards each other, and hand-controllable means for moving said latch bolts out of said catch recesses against the action of said spring means to permit said buckle parts to be separated.

3,201,841
SIGNBOARD ENGAGING MEANS
Richard L. Carleton, Raytown, Mo., assignor to Butler Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed May 13, 1963, Ser. No. 279,772
6 Claims. (Cl. 24—243)



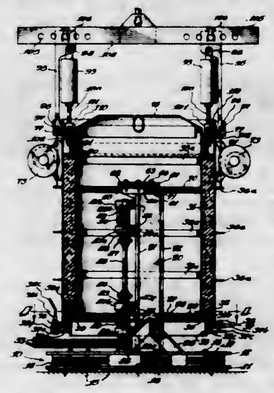
1. An engaging assembly comprising a first member arcuate in cross section along one dimension thereof, a second member arcuate in cross section along one dimension thereof, each member of such length along its said dimension as to span the width of the other member, said members comprising each a flat, substantially rectangular piece also rectangular in transverse and longitudinal section, said piece formed into arcuate section along one dimension thereof whereby to provide engaging edges thereon and means removably coupling the members together whereby they engage one another and an object therebetween in an orientation thereof at right angles to one another along said dimensions.

3,201,842
MAGNETIC FASTENER
Charles S. Armistead, Box 724, Morgantown, W. Va.
Filed Feb. 14, 1963, Ser. No. 258,481
13 Claims. (Cl. 24—248)



6. A fastener for holding flexible sheet material, comprising: a pair of plates hinged together along one edge thereof, said plates being arranged for movement between a confronting position and a position wherein one of said plates is disposed at an angle to the other; a pair of spaced, parallel bars secured to the confronting face of one of said plates and projecting normally therefrom, the other plate having magnetic means associated therewith; a wedge bar secured to the confronting face of the other plate and projecting normally therefrom, said wedge bar being arranged to enter the space between said spaced bars when said plates are in confronting position and to cooperate therewith to grip flexible sheet material therebetween; and a magnet secured to said one confronting face adjacent each end of said parallel bars for attracting said magnetic means to hold said plates in said confronting position.

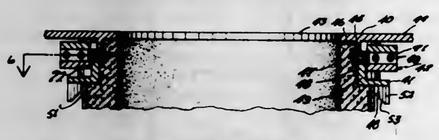
3,201,843
CONCRETE PIPE MOLDING MACHINE
Paul L. Osweiler, Dayton, Ohio, assignor to Price Brothers Company, Dayton, Ohio, a corporation of Michigan
Filed Aug. 13, 1963, Ser. No. 301,848
7 Claims. (Cl. 25—30)



6. In a machine for molding concrete pipe, the combination of a supporting base, a steel column rigidly supported on said base and extending vertically in the normal operating position of the machine, lower inner cylinder support means secured to said column extending laterally therefrom and terminating in an annular support area, said support means including two concentric cooperating portions having opposed tapered surfaces, one such portion

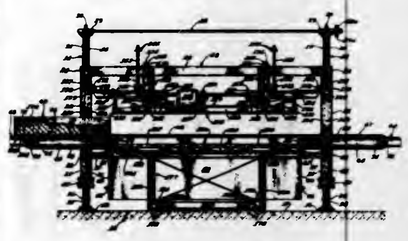
carrying the annular support area, the other portion being within the one portion and being rigidly secured to said column, the tapered surfaces permitting the one portion to be moved upwardly only with respect to the other portion, a steel inner molding cylinder having its bottom edge on said annular support area with said inner molding cylinder extending vertically and disposed about said column, upper inner cylinder support means for rigidly securing said column to the inside of the inner molding cylinder, said upper cylinder end support means including two concentric cooperating portions having opposed tapered surfaces similar to the tapered portions of the lower cylinder support means, a bottom pallet ring removably supported on said annular support area and providing an annular outer cylinder support area concentric with said inner cylinder, a steel outer molding cylinder having its bottom edge supported on said last named area, said two cylinders being concentric, manually controlled means for locking said outer cylinder and bottom pallet ring to be movable upwardly together, and means for exerting force on top of the concrete mix in the space between molding cylinders, said force exerting means including a plurality of air cylinders, each air cylinder including a member relatively movable thereto in response to air pressure, each cylinder having a tension member having one end connected to the top part of said outer molding cylinder and having the other end connected to a relatively stationary part of the air cylinder, means for applying the relatively movable part of said cylinder to exert force on the mix near the top of the region between the molding cylinders, and means for removably supporting the top end of each tension member, said tension members and cylinders being adjustable as units for use with different cylinder diameters, said inner cylinder being free of the force exerting means whereby the inner cylinder always remains in the same position for each pipe making operation and is readily changed when the concrete pipe diameter is to be changed by elevating the inner cylinder.

3,201,844
PIPE HEADER FOR FORMING GASKET GROOVES IN CONCRETE PIPE TONGUES
George Poitras, 1010 Elizabeth Road, St. Boniface 6, Manitoba, Canada
Filed Oct. 7, 1963, Ser. No. 314,356
Claims priority, application Great Britain, Oct. 16, 1962, 39,069/62
7 Claims. (Cl. 25—39)



1. In a groove forming apparatus for concrete pipe tongues, the combination of a base ring and a top ring adapted to encircle a pipe tongue, a left-hand pair and a right-hand pair of posts connecting said base ring and said top ring together in spaced relation whereby to provide an annular space between said rings, a sectional groove forming component disposed between said rings and comprising a left-hand pair and a right-hand pair of quadrants radially projectable and retractable through said annular space between the rings, a left hand-pair and a right-hand pair of control arms rigidly connected to the respective quadrants in the respective pairs and pivotally mounted on the respective posts in the respective pairs, means movably connecting together adjacent ends of the quadrants in each pair, and fluid operated means reacting between the left-hand and right-hand pairs of quadrants for projecting and retracting the same through said annular space.

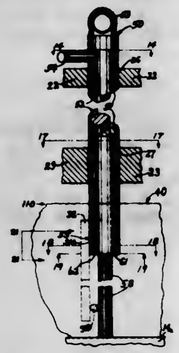
3,201,845
CONCRETE SLAB MAKING MACHINE
Cole Y. Strong, Denver, Colo., assignor to Consolidated Industries, Inc., Denver, Colo., a corporation of Colorado
Filed Dec. 24, 1962, Ser. No. 246,728
3 Claims. (Cl. 25—41)



1. A concrete slab making machine comprising in combination:
(a) a main support fixed to a floor surface,
(b) a frame vertically movable on said main support relative to said floor surface,
(c) releasable locking means on said frame for locking said frame against vertical movement on said main support,
(d) a pallet cart supported on said floor surface,
(e) a pallet carried on said cart,
(f) a mold box fixed on said frame adapted to receive said pallet,
(g) deck plates fixed on said frame and located at opposite ends of said mold box,
(h) a feed drawer supported on said deck plates and said mold box adapted to move back and forth across the top of said mold box from deck plate to deck plate,
(i) power means on said frame for actuating said feed drawer in said back and forth movements,
(j) a pressure plate mounted for vertical relative movement on said frame into and out of said mold box,
(k) power means interconnected between said frame and said pressure plate adapted to relatively vertically reciprocate said pressure plate and said frame,
(l) stop means on said pressure plate adapted to engage said frame to limit upward relative travel of said frame relative to said pressure plate,
(m) means actuated by restraining the downward movement of said pressure plate to release said locking means to cause upward movement of said frame relative to said pressure plate.

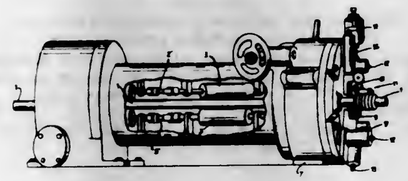
3,201,846
APPARATUS FOR SUPPORTING A REINFORCING MESH IN A MOLD
Wilbur A. Schaich, Maumee, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed May 31, 1961, Ser. No. 113,942
1 Claim. (Cl. 25—118)

A device for providing vertical support for a reinforcing mesh disposed within a mold and designed for extraction when the molded material has set sufficiently to support said mesh, comprising: a core and a collar which telescope together and cooperatively define a lower cylindrical portion and a surmounted upper cylindrical portion, both portions being concentric to a common longitudinal axis, said upper portion having a larger diameter than said lower portion, said upper portion having a transverse notch designed to receive and support a horizontal portion of said mesh, said transverse notch being spaced from said axis a distance at least equal to the radius of said lower portion; said core including said lower cylindrical portion, that portion of said upper portion directly underlying said notch and another portion of said upper cylindrical portion, said another portion extending the length of said upper cylindrical portion; said collar including at least that portion of said upper



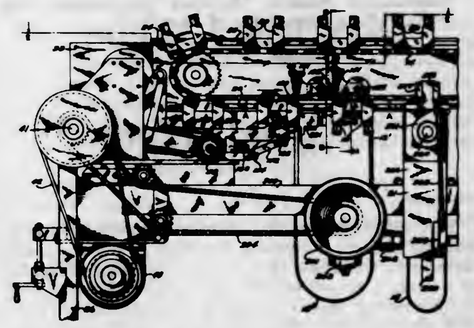
cylindrical portion which lies below the plane of said notch but does not directly underlie said notch, whereby on removal of said collar from the molded material the core may be rotated from underlying engagement with said mesh into a portion of the void left by said collar to permit withdrawal of said core.

3,201,847
DEVICE FOR HELICAL EDGEWISE WINDING OF A STRIP ONTO A ROTATING TUBE
Gustav Rasmussen, Stader Strasse 244-256, Hamburg-Harburg, Germany
Filed July 5, 1961, Ser. No. 131,454
Claims priority, application Germany, July 5, 1960, R 28,265
2 Claims. (Cl. 29—33)



1. Apparatus for helically winding a strip upon a tube comprising, in combination, a frame, a tool carrier head fixed on said frame having a longitudinal axis and a central opening defined therein through which said axis extends, drive means adapted to simultaneously rotate and axially translate a tube through said tool carrier head opening concentric to said longitudinal axis, said tool carrier being in fixed relationship to said drive means, at least one strip-guiding roller rotatably mounted upon said tool carrier head in the region of winding the strip upon the tube, annular strip guide means defined in the periphery of said roller, a tube-engaging surface defined on said roller for frictional engagement with the tube, said annular strip guide means being shaped to wholly enclose in cross section said strip to said tube-engaging surface for guiding said strip and keeping it in contacting engagement on said tube so that the formation of creases is substantially eliminated, first means mounting said roller upon said head for movement in a direction parallel to said longitudinal axis, second means mounting said roller upon said head for movement in a direction radially with respect to said longitudinal axis, and third means mounting said roller upon said head for pivoted movement about an axis substantially perpendicularly disposed to said longitudinal axis and the axis of rotation of said roller.

3,201,848
APPARATUS FOR PRODUCTION OF ELECTRICAL CONDUCTORS
Karl H. Andren, West Allis, Wis., assignor to Artos Engineering Company, Milwaukee, Wis., a corporation of Wisconsin
Original application Apr. 26, 1962, Ser. No. 190,402. Divided and this application Sept. 4, 1963, Ser. No. 306,499
12 Claims. (Cl. 29—33)



1. Apparatus for producing electrical conductor components comprising, a supply source for a continuous strand of insulated wire stock, a conveyor movable along a given path and provided with a plurality of wire carrier clamps spaced in single file along the path, a work station laterally of said conveyor on one side of said path, means for withdrawing wire from said supply source and for feeding the same to one of said carrier clamps for gripping thereby, means for severing the gripped portion of the wire into a predetermined length, and means for feeding the severed end of the wire length to an adjacent carrier clamp for gripping thereby with the gripped ends of the severed wire length juxtapositioned and protruding from said clamps in a common direction, whereby said wire length is advanced by said conveyor to said work station with both ends of said wire length in position to be worked upon from a common side of said conveyor and its path of movement.

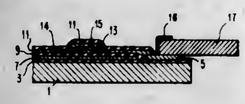
3,201,849
METHOD OF WINDING HELICES
Robert G. Voss, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 3, 1959, Ser. No. 850,731
6 Claims. (Cl. 29—155.5)



1. A process for winding a wire helix comprising the steps of spraying a mandrel upon which the helix is to be wound with a colloidal suspension of graphite in water, letting the coating thus sprayed harden, winding the helix under tension on said mandrel whereby the turns of the helix become imbedded in said coating to a depth of approximately half the thickness of said coating, placing preglazed support rods in contact with the helix thus wound the glaze material on said support rods having

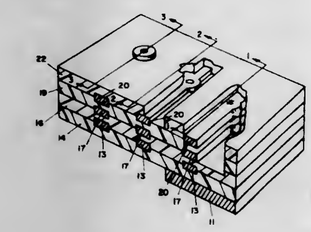
a melting point such that it becomes tacky at the temperature at which the graphite coating burns off, and introducing the mandrel, the helix and the support rods thus assembled into a furnace having an atmosphere of wet forming gas and heating the assembly until the coating on said mandrel substantially completely burns off and the glazing material on the support rods adheres to the helix, cooling the assembly, and withdrawing the mandrel from the helix.

3,201,850
METHOD FOR EFFECTING SUPERCONDUCTIVE CONNECTIONS
George J. Kahan, Port Washington, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 31, 1962, Ser. No. 170,003
12 Claims. (Cl. 29—155.5)



1. A method for forming electrical connections between metallic surfaces comprising the steps of subjecting said surfaces to the action of a solution consisting essentially of a resin, a diluent and an acid reactive with any oxide coating formed thereon to expose clean metallic surfaces, said clean metallic surfaces capable of forming conductive metallic bonds when contacted so as to define an electrical connection, and contacting said exposed metallic surfaces to establish an electrical connection therebetween, said resin hardening upon evaporation of the unreacted acid to form a binder to maintain said metallic surfaces in contact.

3,201,851
METHOD OF MAKING INTERCONNECTING MULTILAYER CIRCUITS
Thomas H. Stearns, Wilton, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Oct. 5, 1960, Ser. No. 60,650
5 Claims. (Cl. 29—155.5)



1. The method of making a plurality of circuits interconnected at a plurality of discrete points, said method comprising the steps of placing on a base plate a first layer of thermoplastic material having a copper foil bonded thereto, etching an insulating path around a desired circuit configuration to provide an insulated space between the desired circuit configuration and the remaining copper foil, forming dimpled portions in said circuit configuration at said discrete points, and laminating succeeding layers of thermoplastic material and copper foil thereon, etching the foil and forming dimpled portions in a similar manner, simultaneously applying heat and a cutting force through said aligned dimpled portions to provide a hole therethrough and to melt out thermoplastic material in the immediate vicinity of the hole to expose for a connection these dimpled portions having holes therethrough, electroconductively sensitizing the walls of said hole and exposed dimpled conductive portions and thereafter electroplating said wall and conductive portions with a conductive material to provide a mechanical and electrical interconnection between said circuits at said discrete points.

3,201,852
METHOD OF SOLDERING
William A. Yonkers, Mountain Lakes, N.J., assignor to Radio Frequency Laboratories, Inc., Boonton, N.J., a corporation of New Jersey
Filed Sept. 5, 1961, Ser. No. 136,020
4 Claims. (Cl. 29—155.5)



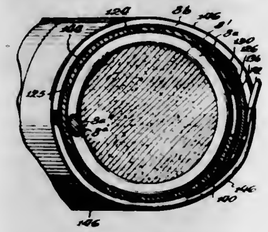
1. A method of soldering together two wires having pre-tinned ends which method comprises inserting the pre-tinned end of each wire into a bushing made of non-conductive resilient material capable of withstanding normal soldering temperatures and which holds said wires in electrical contact with one another, and quickly applying sufficient heat without harmful excess to the protruding portion of one of the wires to form a soldered joint.

3,201,853
METHOD OF MAKING AN ELECTRICAL ALUMINUM-COPPER CONNECTION
Elbert S. Howarth and Robert A. Ramser, New Kensington, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 24,801, Apr. 26, 1960. This application Sept. 24, 1963, Ser. No. 312,251
2 Claims. (Cl. 29—155.55)



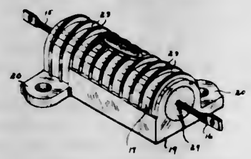
2. In a method of making an electrical connection between an aluminum bus bar and a copper anode bar of an electrolytic reduction cell, arranging a copper contact member and an aluminum backing member in end-to-end abutting relation, said aluminum backing member being more ductile than said copper contact member, forming a flash welded joint between the abutting ends of said members, said joint having a brittle phase at the flash weld interface, and applying sufficient pressure to the resultant composite in a direction substantially normal to the flash weld interface to thin out said brittle phase and effect substantial lateral expansion of the said members in directions parallel to the weld interface with upsetting of said aluminum member over said copper member to produce at least partial peripheral encasement of said copper member by said upset aluminum member, and welding said backing member to said bus bar.

3,201,854
METHOD OF MAKING A SHIELDED TRANSFORMER
Jay A. Cox, Rolling Hills Estates, Calif., assignor to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey
Original application Jan. 3, 1961, Ser. No. 80,467, now Patent No. 3,149,296, dated Sept. 15, 1964. Divided and this application Sept. 7, 1962, Ser. No. 221,965
1 Claim. (Cl. 29—155.57)



In a process of making a transformer comprising a core of magnetic material with superimposed input and output windings wound on the core, the steps comprising: winding insulated wire around the core to form one of said windings, applying masking tape longitudinally on the core and over said winding, spraying the entire wound core with a conductive material which covers the latter winding and said masking tape, removing said masking tape to leave an insulating gap extending around the core perimeter, which gap prevents the formation of a short circuit loop by the coating of conductive material, applying over the insulating gap a strip of insulating material wider than said insulating gap so that the longitudinal margins thereof extend beyond the margins of the gap on the outside of the coating, applying a strip of conductive material over the strip of insulating material which strip is narrower than the strip of insulating material so that the margins thereof terminate within the margins of the strip of insulating material to provide an electrical shield over said gap, and electrically connecting the strip of conductive material with only one of the longitudinal marginal portions of said coating bordering said insulating gap to prevent the formation of a short circuit loop by placing a circumferentially extending bare ended insulated conductor on only one of the contiguous portions of said strip of conductive material and said coating and soldering the bare end of said conductor to said contiguous portions, and winding insulated wire around the outside of said coated winding on the core to form the other winding of the transformer leaving said insulated conductor projecting from the transformer.

3,201,855
ELECTRICAL RESISTOR AND METHOD OF MAKING SAME
Bernard F. Hay, Columbus, Nebr., assignor to Dale Electronics, Incorporated, Columbus, Nebr.
Filed Feb. 21, 1961, Ser. No. 90,794
1 Claim. (Cl. 29—155.63)



The method of producing an electrical resistor comprised of a housing having opposite vertical ends and an elongated horizontal bore extending therethrough from one end to the other, and a resistor element imbedded within a mass of hard insulative material within said bore, wherein said resistor element has an elongated body with axially-positioned leads extending from opposite ends thereof, and said elongated body is shorter than said bore except for said axial leads which have lengths extending beyond the lengths of said housing, said elongated body having a proportionately smaller cross-sectional area than said bore, comprising,

placing said resistor element in the bore of said housing whereby a space is created entirely around the elongated body of said resistor element,

passing the ends of said leads through separate closure means having opposite vertical bearing surfaces so that said resistor element is supported only by said leads,

placing said closure means in engagement with said housing and imposing diametrically opposite forces on said closure means so that the vertical bearing surfaces of said closure means are in tight, binding, abutting and sealing contact only with the vertical ends of said housing whereby said housing is tightly gripped and held against longitudinal displacement by said closure means,

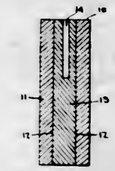
providing an access opening into said bore,

introducing a single hardenable insulative fluid from the high pressure system of an injection molding machine through said access opening to fill the space in said bore around the entire outer surface of said elongated body of said resistor element,

allowing said hardenable insulative fluid to harden to permanently imbed said resistor element in said bore of said housing,

and removing said closure means from engagement with said housing and from supporting engagement with the leads of said resistor element.

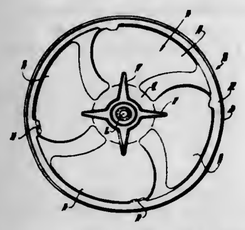
3,201,856
PROCESS OF PRODUCING HOLES WITH REDUCED OPENINGS
Barclay Keegan, Glasgow, and Roderick C. MacKenzie, East Kilbride, Scotland, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 17, 1962, Ser. No. 188,197
Claims priority, application Great Britain, Apr. 20, 1961, 14,323/61
7 Claims. (Cl. 29—156.8)



1. A process for producing a worked metallic object having at least one passage of controlled non-uniformity of cross-sectional area which comprises providing a metallic mass having at least one hole of substantially uniform cross section therein, at least partly filling said hole with a filler body extending throughout the length of said hole and having reduced resistance to deformation over only a portion of the length thereof, to provide at least one predetermined zone of enhanced flowability and at least one predetermined zone of flowability less than the flowability of the zone of enhanced flowability, working the metallic mass together with said filler body under substantially uniform deformation forces to induce flow of said metallic mass and said filler body and thereafter re-

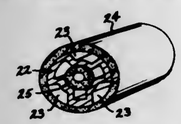
moving said filler body from the thus-worked metallic mass to open the thus-produced passage of controlled non-uniform cross-sectional area.

3,201,857
METHOD OF MAKING FAN WITH SLINGER RING
Stephen W. Klenoski, Torrington, Conn., assignor to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut
Filed Mar. 21, 1963, Ser. No. 267,057
7 Claims. (Cl. 29—156.8)



1. A method for making a fan and attached slinger ring comprising the steps of providing a single sheet metal blank, cutting and forming a central portion of said blank to provide a fan having a central hub section and a plurality of integral circumaxially spaced generally radial fan blades which are arranged at similar pitch angles and which have notches in their outer edge portions which notches are arranged in an annular series approximately in a common radial plane, cutting and forming a generally annular portion of said blank around said central portion to provide a slinger ring having a body and a plurality of integral circumaxially spaced generally radial tabs which are formed of remaining parts of the blank disposed between the openings left by the fan blades and which project inwardly beyond the outer edges of said openings so as to have an inner edge diameter smaller than the peripheral diameter of the fan blades, providing inwardly open notches in said tabs and flexing the fan blades to reduce their said peripheral diameter whereby to interengage said blade and tab notches and thereby connect said slinger ring to and around said blades.

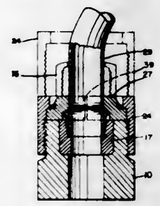
3,201,858
METHOD OF MAKING A COMPOSITE POROUS METAL STRUCTURE
Emery I. Valyi, Riverdale, N.Y., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed June 14, 1962, Ser. No. 202,612
15 Claims. (Cl. 29—157.3)



1. A method of making a sheet-like porous metal structure comprising embossing a sheet metal member of tubular cross-section to form groove-like indentations therein protruding out of one face of said member radially extending toward the interior of said member, providing a sheet-like porous metal body, superimposing said body on the opposite face of said member, and metallurgically bonding said body to the unembossed portions of said member whereby said indentations form channels for flow of fluid therethrough.

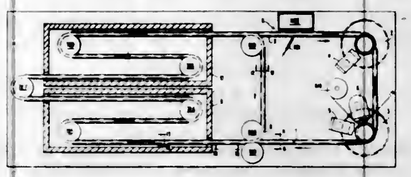
7. A method of making a sheet-like porous metal structure comprising embossing a sheet metal member to form groove-like indentations therein protruding out of one face of said member, filling said indentations with an evanescent material, providing a layer of metallic particles on the face of said structure opposite said one face, metallurgically bonding by sintering said particles to each other and to the unembossed portions of said opposite face and eliminating said material.

3,201,859
FERRULE PRESETTING TOOL
John H. Stanley, Euclid, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 6, 1960, Ser. No. 27,422
15 Claims. (Cl. 29—282)



1. A tool for attaching a ferrule to a tube comprising a body having a recess, an annular die within said recess, said die having an opening for receiving the tube to which the ferrule is to be attached, said opening including a tapered flare mouth facing outwardly of said recess, a nut threadedly attached to said body, a multiple segment split die within said nut and having a bore for receiving said tube, said split die having a shoulder facing said annular die and against which said ferrule is adapted to abut, said split die being movable by said nut toward said annular die as said nut is threaded onto said body for moving said ferrule against said flare mouth whereby said flare mouth will contract said ferrule upon said tube.

3,201,860
METHODS AND APPARATUS FOR HANDLING, TRANSPORTING AND ASSEMBLING MULTI-COMPONENT ARTICLES
Charles Horberg, Jr., Northbrook, Ill., assignor to Paramount Textile Machinery Company, Chicago, Ill.
Filed June 22, 1964, Ser. No. 376,815
19 Claims. (Cl. 29—431)



1. An apparatus for transporting multi-component articles, said apparatus comprising:
link chain means;
at least some of the links of said link chain means each including an article receiving cavity which has at least one open end;
slide means mounted in at least some of said cavities;
means for reciprocating said slide means axially of said cavities to displace articles therefrom; and
registration means contained within at least some of said cavities and adapted to define positions of selected alignment for at least some of the components of said articles.

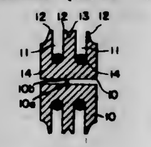
12. A method for transporting multi-component articles, said method comprising:
disposing a plurality of relative movable article components within article receiving cavities of link chain means in mutually telescoped relation;
registering at least some of the telescoped components of said articles within said cavities while said link chain means is in motion;
contracting one of said components about another component within a link chain means cavity while said link chain means is in motion; and
thereafter displacing said articles out of said cavities.

3,201,861
METHOD OF MAKING A DOUBLE-WALLED TUBE
Howard A. Fromson, Weston, Conn., and William B. Ryan, Pelham, N.Y., assignors, by mesne assignments, to Howard A. Fromson, Easton, Conn.
Filed Mar. 31, 1960, Ser. No. 19,041
1 Claim. (Cl. 29—455)



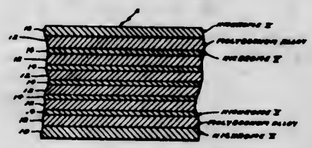
A method of producing a double-walled tube having an inner tubular component and an outer tubular component, which comprises forming a tubular member in the collapsed form of a ribbon bent into S-shaped cross-section to bring its sides closer together without forming folds in face to face contact, the thickness of the face wall sections of said tubular member being approximately equal to the desired thickness of the inner tubular component of the tube to be produced, while the thickness of the side wall sections of said tubular member is greater than the desired thickness of the inner tubular component of the tube to be produced, said ribbon being faced with layers of insulating material, inserting said ribbon into the outer tubular component, and inflating said ribbon to form the inner tubular component, said ribbon being so dimensioned that when fully inflated, its outer periphery will be separated from the inner periphery of the outer tubular component by an annular space with said layers contained in said space, and the side sections of said ribbon will form fins radiating outwardly from said inner tubular component towards said outer tubular component and will be closely adjacent to the inner periphery of said outer tubular component.

3,201,862
PROCESS FOR MAKING STEEL-REINFORCED ALUMINUM MEMBERS
Kazuo Gotoh, 10-Ro-3, Nishikata-machi, Bunkyo-ku, Tokyo, Japan
Filed Dec. 26, 1961, Ser. No. 161,908
Claims priority, application Japan, Dec. 28, 1960, 35/5,097
15 Claims. (Cl. 29—470.1)



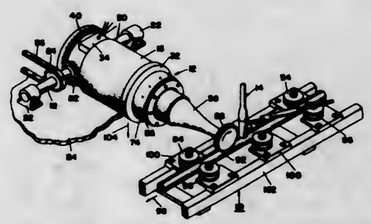
1. A process of making a reinforced aluminum member which comprises:
(a) forming a member of aluminum base material with a groove elongated in a predetermined direction;
(b) placing a steel wire member in said groove;
(c) applying pressure to a portion of said aluminum base material adjacent said groove in such a manner as to force said material portion into said groove and about said wire member, whereby said material is bonded to said wire member and
(d) stretching the member of aluminum base material in said predetermined direction while bonded to said wire member, whereby said wire member is stretched.

3,201,863
METHOD OF MAKING MOLYBDENUM AND HIGH TEMPERATURE OXIDATION RESISTANT ALLOY LAMINATED COMPOSITE MATERIAL
Edwin D. Sayre, Richland, Wash., assignor to the United States of America as represented by the Secretary of the Air Force
Original application Mar. 17, 1960, Ser. No. 15,773, now Patent No. 3,116,981, dated Jan. 7, 1964. Divided and this application Jan. 8, 1963, Ser. No. 294,782
4 Claims. (Cl. 29—472.3)



1. A method of making a composite metal body suitable for making gas turbine wheel buckets and the like and characterized by high hot strength and resistance to oxidation at high temperatures comprising the steps of interleaving thin sheets of molybdenum with thin sheets of a nickel chromium alloy, the molybdenum sheets having a thickness at least twice the thickness of the nickel chromium alloy sheets, the stack of interleaved sheets beginning and ending with a nickel chromium sheet, heating the stack of interleaved sheets to a temperature of the order of 2200° F. in a reducing atmosphere, and while so heated applying sufficient pressure normal to the stacked sheets to reduce the stack thickness by the order of twenty percent of the original thickness whereby the metal sheets will become diffusion welded to form a composite body capable of being employed as forging stock and for hot rolled sheet.

3,201,864
METHOD AND APPARATUS FOR ULTRASONIC WELDING
James Byron Jones and Nicholas Maropis, West Chester, Pa., assignors, by mesne assignments, to Sonobond Corporation, West Chester, Pa., a corporation of Pennsylvania
Filed Nov. 25, 1960, Ser. No. 71,776
20 Claims. (Cl. 29—487)



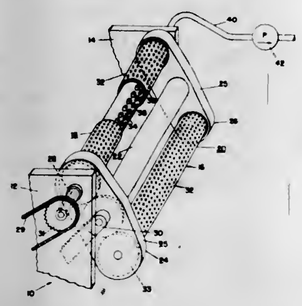
1. A continuous method of fusion welding metal members comprising the steps of forcibly engaging an outer face of one of the metal members adjacent to but spaced from the intended weld zone with an end portion of a

vibrating element with sufficient force to couple vibratory energy into said one member, introducing mechanical vibratory energy into said one member, introducing mechanical vibratory energy having a frequency of about 59–200,000 cycles per second to said one member through said end portion of said vibrating elements while said end portion of said vibrating element engages said one member, providing relative movement in a direction between said one member and said end portion, providing relative movement in the same direction between said one member and a fusion welding apparatus, and fusion welding said metal member with said fusion welding apparatus by providing a melt puddle in said members at a loop region of the conducted vibratory energy in said one member.

6. Apparatus for fusion welding metal members comprising a vibrating element, means mounting said vibrating element for engagement between an end portion thereof and one of the metal members adjacent to but spaced from the intended weld zone with sufficient force to couple vibratory energy into said one member, vibration generating means connected axially to said vibrating element for vibrating said element at a frequency of about 59 to 200,000 cycles per second, and a fusion welding device supported adjacent said metal members and spaced from said vibrating element by a distance corresponding to a whole number multiple of a one-half wavelength of vibratory energy in said one metal member, said fusion welding device providing a melt puddle in said metal members at a loop region of the conducted vibratory energy in said one metal member.

14. The method of welding comprising the steps of heating two adjacent metal edges to a welding temperature while bringing said edges close enough together to permit the two to weld together, and inducing ultrasonic vibrations in at least one of said edges whereby a weld will be formed at the edges without the formation of a substantial bead.

3,201,865
PROCESS FOR POSITIONING AND SPLICING WEBS
James Byron Jones, West Chester, Pa., assignor, by mesne assignments, to Sonobond Corporation, West Chester, Pa., a corporation of Pennsylvania
Original application Mar. 25, 1959, Ser. No. 801,889, now Patent No. 3,132,544, dated May 12, 1964. Divided and this application Mar. 21, 1963, Ser. No. 267,054
15 Claims. (Cl. 29—493)



1. The process for aplicing a discontinuous web which includes the steps of operatively anchoring a first free end of the web around and to an anvil member, rotating said anvil member to tauten the first free end of the web, passing the second free end of the web around the anvil member, and in contact with the first free end of the web, to a second member, operatively anchoring said second free end to said second member, rotating said second member to tauten the second free end of the web, joining together the portions of the ends of the web which are in contact on the anvil member, and releasing the anchored portions of the joined web.

3,201,866
SHAVER HEAD ASSEMBLY WITH ANTI-NOISE MEANS
Arnold J. Parrello, Fairfield, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 8, 1963, Ser. No. 263,760
2 Claims. (Cl. 30—43.92)



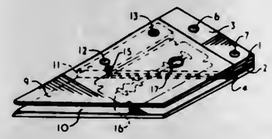
1. A cutter head assembly for an electric shaver, comprising an inner cutter member and an outer cutter member, said outer cutter member having a substantially U-shaped frame portion with cutter teeth formed on the bight of said frame portion and the inner cutter member having a wall thereof formed with cutter teeth, means for biasing the inner cutter member into engagement with the outer cutter member to bring the cutter teeth of each member into contact, means connected to said biasing means for moving said inner cutter member in a reciprocatory path between and parallel to the legs of said U-shaped frame portion whereby sound waves are generated which reverberate within the outer cutter member, and apertures formed in the spaced legs of the U-shaped frame portion to permit escape of sound waves therethrough to thereby reduce undesired noise caused by the movement of the inner cutter member within the said outer cutter, said apertures having centers located at an imaginary point approximately midway of the bight portion and the ends of said legs of said outer cutter frame portion.

3,201,867
HOLDER FOR INJECTOR TYPE RAZOR BLADES TO SCRAPE WITH
Grover Case, 27311 Beech Drive, Euclid 32, Ohio
Filed Dec. 10, 1962, Ser. No. 243,386
3 Claims. (Cl. 30—169)



1. In combination with a narrow substantially rectangular blade having a single cutting edge along one of the longer sides thereof and a pair of aligned slots extending lengthwise thereof, a holder for the blade comprising:
(a) a pair of spaced legs,
(b) spring means connecting adjacent ends of said legs for urging the same apart,
(c) a foot portion at the end of each leg opposite the connected end thereof,
(d) said foot portions arranged in opposed transverse alignment,
(e) each said foot portion having flat upper and lower sides and of a length substantially half the length of the blade and of a width corresponding to the width of the blade less its cutting edge,
(f) said foot portions extending arcuately rearwardly beyond the rear edge of the blade at their juncture with said legs,
(g) a headed pin fixed to each foot portion at corresponding flat sides thereof and normally spaced apart from each other a greater distance than the distance between the outer ends of said slots,
(h) said legs being movable toward one another against the force of the spring means to align the pins with the blade slots,
(i) said pins when so aligned, being insertable in the slots and under the action of the spring force on said legs engaging the outer ends of the slots, whereby to seat and secure the blade flat against the pin carrying side of the foot portions; the relationship of the blade to the foot portions being such that the single cutting edge of the blade projects beyond the forward edge of the foot portions with the rear edge of the blade lying in substantial registry with the rear edge of the foot portions and the arcuate portion of the foot portions extending rearwardly beyond said rear edge of the blade whereby to provide a maximum area of support for the blade.

3,201,868
PAPER CUTTER
Walter T. Solly, 215 Riverdale Ave., Cornwall, Ontario, Canada
Filed July 10, 1963, Ser. No. 294,016
4 Claims. (Cl. 30—289)



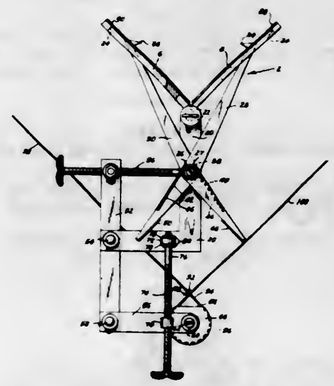
1. A paper cutter comprising a casing having a pair of laterally spaced side members and a separator block secured therebetween along part of one side; a blade holder including a pair of parallel plates, between which a blade may be inserted, removably disposed in said casing between the side members thereof, the plates of said holder being of a combined thickness substantially equal to the thickness of the separator block of said casing and having a width corresponding with the distance from the separator block to the opposite side of the casing, said holder having an elongated bar externally of said plates on each side across one end thereof, said bars being of a length and thickness corresponding substantially with the width and thickness of the spaced side members of said casing and designed to abut and be coextensive with the outer side of said casing at one end thereof; a razor blade positioned between the plates of said holder and projecting in part therebeyond; and a fastening means passing through the casing, holder and blade; the casing side members being longer than said holder and blade and serving to constantly sheath the holder-carried blade mounted therebetween in parallel and spaced relation thereto.

3,201,869
KNIFE WITH DETACHABLE BLADE
Victor Gambino, 16143 Broadway, Cleveland 37, Ohio
Filed Oct. 16, 1963, Ser. No. 316,672
3 Claims. (Cl. 30—342)



1. A knife comprising; a handle having a vertical slot in one end thereof and a passage connected with the slot and extending therefrom longitudinally within the handle; a blade having a shank portion received in said slot; a ferrule removably received in said slot comprising spaced parallel plate portions lying on opposite sides of said shank portion; a yoke member comprising threaded means and a pair of arms on opposite sides of said ferrule; means extending through said arms, plate portions and shank portion for detachably connecting the same to constitute a blade and ferrule assembly; and retaining means in said passage and engaged with said threaded means for maintaining said assembly in a mounted relation on said handle.

3,201,870
BRICKLAYING REFERENCE DEVICE
David C. Barlow, 222 Sedberry St., and Curtis W. Hughes, P.O. Box 3324, both of Fayetteville, N.C.
Filed Apr. 10, 1963, Ser. No. 272,018
6 Claims. (Cl. 33—85)

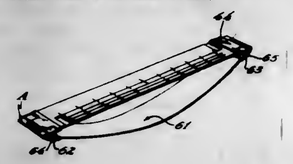


1. A guide device for supporting a flexible guide line in spaced relationship relative to the corner of a structure, comprising: a pair of mounting plates hingedly connected along the confronting vertical edges thereof; a substantially horizontally disposed L-shaped bar having one end thereof connected to said mounting plates at the juncture thereof; means for securing said L-shaped bar in a predetermined relationship relative to said mounting plates; a first bar pivotally connected medially thereof to the other end of said L-shaped bar; a second bar having one end thereof pivotally connected to the end of said first bar positioned most remotely from said mounting plates; a supporting post mounted to the other end of said second bar to extend generally normally therefrom; means interconnecting said first bar and said L-shaped bar for adjusting the lateral position of said supporting post in one general direction; means interconnecting said second bar and said L-shaped bar for adjusting the lateral position of said supporting post in a second general direction; and means for attaching said mounting plates to said structure.

3,201,871
APPARATUS FOR MEASURING THE HYGRO-EXPANSIVITY OF PAPER AND PAPERBOARD
Robert O. Ragan, Oak Park, and Miles A. Snyder, Western Springs, Ill., assignors, by mesne assignments, to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Sept. 25, 1961, Ser. No. 140,471
3 Claims. (Cl. 33—125)

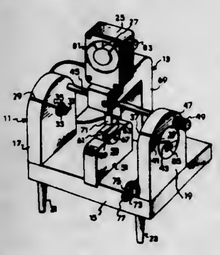
1. An apparatus for measuring the hygroexpansivity of a test strip of material capable of expanding and contracting in length upon variations in moisture therein, the device including:
a flat elongated strip of spring material,

means for securing the ends of said test strip of material to the ends of said spring strip in a manner to bow the spring strip into curved form with the test strip of material stretched between the ends of the spring strip bridging the bow of the spring strip,
an actual scale and a vernier scale,



means for connecting the actual scale in face contact to one end of said test strip of material,
means for connecting the vernier scale to the other end of said test strip of material,
said scales being in predetermined relation, whereby expansion or contraction of said test strip of material will vary the relative positions of said scales.

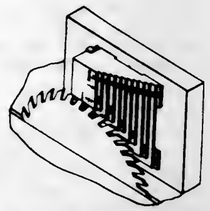
3,201,872
DIAMETER AND ROUNDNESS GAGING INSTRUMENT
Burton L. Pentoni, 3416 River Forest Drive, and Malcolm Paul Hayden, 4015 Wawonaissa Trail, both of Fort Wayne, Ind.
Filed Aug. 3, 1962, Ser. No. 214,740
5 Claims. (Cl. 33—147)



1. An instrument for testing and measuring the roundness of cylindrical material comprising in combination:
(a) a fixture having spaced end members,
(b) each end member provided with a substantially parallel slot,
(c) rotatable means including a slot corresponding with the slot in the end members, said end members adapted to support the rotatable means,
(d) a bearing member disposed on the fixture between the end members,
(e) gaging means carried by the fixture and responsive to the diameter of the cylindrical material along a measuring axis intersecting the bearing member, and
(f) manually actuated adjustment means to rotate the cylindrical material between the gaging means and bearing member.

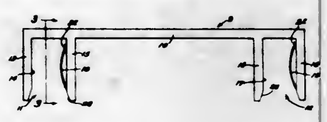
3,201,873
GAGE BLOCK
James C. Bell, 92 High View Drive, and George H. Horstmann, 88 Raven Terrace, both of Stratford, Conn.
Filed May 29, 1963, Ser. No. 284,058
5 Claims. (Cl. 33—168)

2. A gage comprising a relatively small block adapted to fit into the hand and to be conveniently handled and positioned against a cutting tool and work guide, said block having two squared adjoining corner portions characterized by a total of four faces, a first set of two of said faces being normal to each other and common to both of said corner portions, said two faces being also normal respectively to a second or remaining set of two faces and the latter being in parallelism, said block having a stepped gaging face disposed opposite one of said first-mentioned two faces, said gaging face comprising alternate shoulder surfaces and land surfaces disposed normal to each other and respectively parallel to said one face and to said remaining two faces, wherein:
(a) the block has a second stepped gaging face similar to the first-mentioned gaging face and provided with alternate shoulders and lands disposed normal to each other and respectively parallel to the other of said first-mentioned two faces and to said remaining two faces,
(b) lands of the said gaging faces are paired, said paired lands comprising single continuous coplanar surfaces,
(c) one of said second two faces constitutes a portion of the base surface of the block,



(d) the other of said second two faces has substantially a square configuration and a size constituting a small fractional part of the base surface of the block,
(e) said one of the second two faces is of substantially square configuration and constitutes a raised small fractional portion of the said base surface,
(f) the block has additional raised portions of the said base surface,
(g) said raised portions constituting feet on which the block may rest,
(h) the base surface of the block is rectangular,
(i) four raised portions are provided on the base surface of the block, one at each corner thereof,
(j) a sharp tooth is provided on the base surface of the block, disposed at one edge thereof and between a pair of raised portions, said tooth being adapted to mark pieces of lumber when the block is shifted along the same with the pieces guided between the pair of raised portions.

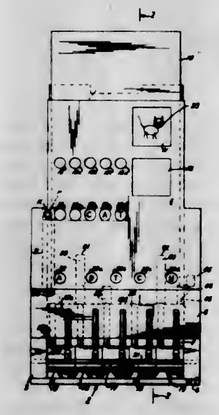
3,201,874
SELF-POSITIONING STUD SPACING GAUGE
Donald F. Christy, 519 Congress St., Ottawa, Ill.
Filed June 22, 1962, Ser. No. 204,509
2 Claims. (Cl. 33—180)



1. In a self-positioning spacing gauge for structural building members the combination of a longitudinally extending bar, a jaw mounted on each end portion of the bar and projecting from a common side thereof, each jaw having a first rigid arm provided with a planar, interior face normal to the center line of the bar and a second rigid arm spaced longitudinally from the first arm and having an interior face confronting the planar face of the

first arm, the second rigid arms being located on corresponding sides of the first rigid arms and the confronting faces on said first and second rigid arms being longitudinally spaced apart a distance greater than the maximum thickness of the structural building members, and a longitudinally expansile spring means mounted on the confronting face of the second arm, said planar faces on the first and second arms being disposed in parallel relationship and spaced apart a predetermined longitudinal distance on the bar.

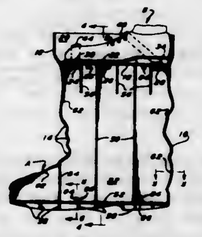
3,201,875
EDUCATIONAL DEVICE
Stanley D. Perteus, Honolulu, and Aaron Leonard Diamond, Kailua, Oahu, Hawaii, assignors to PHD, Incorporated, Honolulu, Hawaii, a corporation of Hawaii
Filed Dec. 28, 1962, Ser. No. 248,108
8 Claims. (Cl. 35—6)



1. A device for assisting a child in learning which comprises a board having a series of apertures arranged in line, a card mounted at the rear of the board for movement relative thereto and having indicia marked thereon, a series of manually actuated keys with each key associated with a particular character of the indicia, selective interlocking means between the card and keys including a member associated with each key and cooperating with a stucture on said card to retain the card in one position and release the card for a predetermined increment of movement when a key is actuated corresponding to the next character of the series to be exposed, and said card presenting a new series of characters in alignment with the series of apertures after each increment of movement.

3,201,876
COMBINED TOY BOOTS AND STILTS
Dubi Leumi, Philadelphia, Pa., assignor to Amsco Industries, Inc., Hatboro, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1964, Ser. No. 411,974
5 Claims. (Cl. 36—7.5)

1. Toy stilts for children comprising a pair of rigid plastic shell members each having an external configuration in the shape of a giant boot with a lower shoe-like portion and an upper cuff portion, each boot shell comprising a pair of integrally molded half shell portions having rabbets at opposed complementary edges thereof, guide pins integrally molded within one of said half shell portions and projecting outwardly therefrom, locator pins integrally molded in one of said shell half portions and outwardly projecting therefrom, sockets integrally molded in the other of said shell half portions for receiving said locator pins, means to cement said half sections together in complementary abutting rabbeted engagement to define a seam with said locator pins cooperatively secured in said sockets and said guide pins



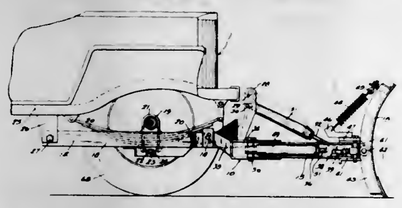
overlying the seam defined by said rabbets, a platform plate medially disposed in each of the cuff portions and supported upon reinforcing ribs integrally molded in each of said half shell portions and dividing said boot into an upper foot receiving compartment and a lower false bottom compartment, and means in said upper compartment for detachably securing a child's foot therein whereby a child wearing said boots will appear taller and enable him to imitate storybook giants.

3,201,877
REPLACEABLE HEELS FOR SHOES
Frank Costa, Vineland, N.J., assignor of thirty-five percent to Alfred W. Fisher, Vineland, N.J., thirty-seven and one-half percent to Paul Phillippi Hufford, Cherry Hill, N.J., five percent to John Mucciarelli, Vineland, N.J., and two and one-half percent to Martin L. Paglinghi, Vineland, N.J.
Filed July 6, 1964, Ser. No. 380,213
4 Claims. (Cl. 36—36)



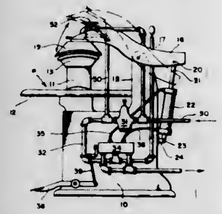
1. A heel construction having a heel base portion with a plate therein and a heel tread portion with a plate therein, one of said plates having a projection extending therefrom and the other having an opening therethrough, said projection extending through said opening in the other plate and engaging the other plate, one of said plates having a transverse ledge extending therefrom and the other of said plates having a ledge receiving opening therethrough, said ledge having a free edge, the other of said plates having a transverse tongue extending therefrom along which said ledge is disposed, said ledge and said tongue having slots therealong and the slot in the ledge having a central access opening from the free edge to the slot, and a locking spring mounted at one end on one of said plates having a leg portion insertable in said access opening and resiliently movable along said slots.

3,201,878
PLOW ATTACHMENT FOR VEHICLES
Anton H. Markwardt, Milwaukee, Wis., assignor to Peerless Gear & Engineering, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed May 10, 1963, Ser. No. 279,484
7 Claims. (Cl. 37—42)



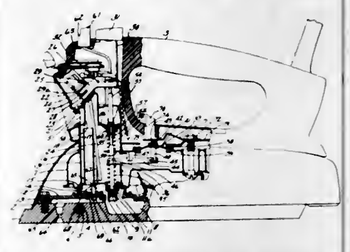
1. A vehicle attachment comprising, a mounting frame fixedly attachable to a vehicle and having a rigid upstanding arm formed integral with the forward end thereof, a carrier frame pivotally attached to the forward end of said mounting frame for swinging movement in a substantially vertical plane, a plow blade pivotally attached at a medial portion thereof to the free end of said carrier frame for swinging movement in a horizontal plane about a vertical pivot, actuating means hingedly connected between said carrier frame and said plow blade for swinging said plow blade about its pivot, and hydraulic actuating means connected between the upstanding arm of said mounting frame and the free end of said carrier frame for swinging said carrier frame about its pivot axis to thereby raise and lower said plow blade, said hydraulic actuating means being connected to said carrier frame by a pin operating within a slot extending longitudinally of said carrier frame, whereby said actuating means may be adjusted from a position wherein the free end of the carrier frame is permitted limited free swinging movement to a position wherein it is placed under constant down pressure.

3,201,879
CLOTHES PRESSES
Edward J. Hoffman, 1611 S. Bronson Ave., Los Angeles, Calif.
Filed Apr. 26, 1963, Ser. No. 275,931
1 Claim. (Cl. 38—40)



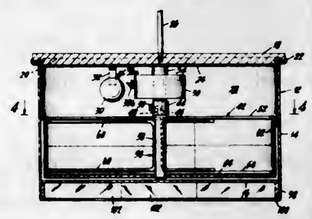
In a press of the character described, having a pressing buck and a pressing head mounted for swinging movement between "open" and "pressing" positions; a double acting power cylinder operatively connected with said pressing head for its actuation between said open and pressing positions, a control valve for selective application of fluid pressure medium to the opposite ends of said power cylinder, a pipe line supplying pressure medium for the press, at a predetermined high pressure, a pressure reducing valve interposed in the said pipe line and connected with said control valve for its application of pressure medium to said control valve at the reduced pressure, a shunt line connected in the medium supply line across said pressure reducing valve and a shut-off valve in said shunt line; said power cylinder control valve having a shiftable valve member that is adjustable to selectively direct the pressure medium supplied thereto at said high pressure or at said reduced pressure to said power cylinder for movement of the pressing head between opening and pressing positions and a manually operable means for control of said shiftable valve member.

3,201,880
AUTOMATIC SPRAY, STEAM, AND DRY IRON
Bryce A. Denton, Ontario, Calif., assignor to General Electric Company, a corporation of New York
Filed Sept. 20, 1962, Ser. No. 224,919
10 Claims. (Cl. 38—77)



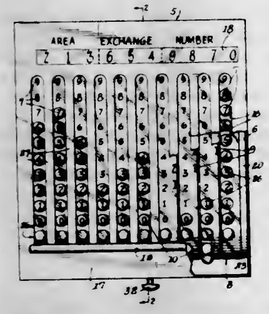
1. In combination, a pressing iron having a sole plate, heating means supported by and in heat conducting relation with reference to said sole plate, means forming a steam generating chamber receiving heat from said heater, delivery means connected to said steam generating chamber and delivering steam to the work, a water tank disposed above said sole plate, water conducting means connected to said water tank and communicating with said steam generating chamber, a water regulating valve disposed in said water conducting means for controlling the flow of water into said steam generating chamber and having a fixed valve member and a movable valve member cooperating therewith, pressure responsive means including a flexible wall forming a part of the wall structure of said tank and subject to the pressure in said steam generating chamber connected to and operating said movable valve member to meter the flow of water into said chamber in accordance with the amount of steam used.

3,201,881
ADVERTISING DEVICES
Edouard Dechar, East Norwich, N.Y., assignor to Dechar Corporation, Brooklyn, N.Y., a corporation of New York
Filed May 6, 1963, Ser. No. 278,111
5 Claims. (Cl. 40—77)



1. An advertising device comprising, an enclosure having a top wall, a side wall and a bottom wall, said side wall being provided with transparent indicia, a movable member positioned within said enclosure and having a side wall positioned adjacent said side wall of said enclosure, said side wall of said member having differently colored parts, light means positioned within said enclosure, means for moving said member so that said differently colored parts are successively moved past said indicia of said side wall of said enclosure for successive color illumination of the latter, a plurality of movable color reflecting members positioned on said bottom wall of said enclosure in covering relation therewith, and movable agitating means positioned for agitating said reflecting members concurrently with the movement of said movable member.

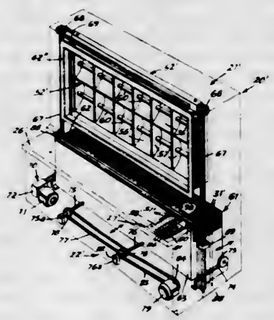
3,201,882
TELEPHONE NUMBER SET-UP DEVICE
Carl C. Alford, 1214 Elm St., and Earl O. Bear, 1215 Linden Ave., both of Glendale, Calif.
Filed Sept. 13, 1963, Ser. No. 308,771
5 Claims. (Cl. 40—96)



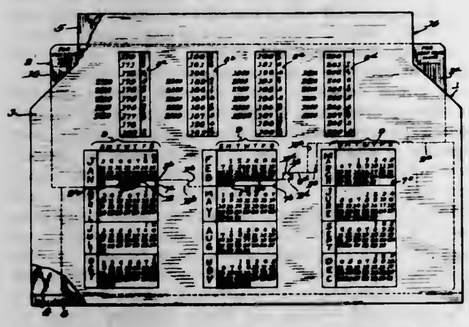
1. A number set-up device comprising:
(a) a housing with a front wall having a plurality of slots in side-by-side arrangement, and a window above and transverse to said slots,
(b) a core within said housing and provided with a front wall adjacent to the inner side of the front wall of the housing and provided with a plurality of rows of numbers exposed through the slots in the housing wall,
(c) a plurality of similar and transparent bands trained around the core in register with the housing slots and the rows of numbers on the core, the latter being visible through said bands,
(d) a row of numbers on each band out of register with the slots of the housing wall,
(e) transparent embossments on said bands extending into the slots to retain the bands in the mentioned register with the numbers on the core, said embossments constituting finger-operable means to move the bands selectively, around the core to bring the numbers on the respective bands into view through the window, according to the degree of movement of the respective bands, and
(f) means to return the bands to their initial position.

3,201,883
X-RAY VIEWER
Steen Leopold Schleisner-Meyer, Mount Wilson, Md. (Rome State School, Box 550, Rome, N.Y.)
Filed Nov. 24, 1961, Ser. No. 154,558
2 Claims. (Cl. 40—106.1)

1. An X-ray film viewer of the character described comprising; a cabinet, a plurality of similar rectangular frames having means by which a plurality of X-ray films are adapted to be removably secured in each of said frames, a window in the upper section of the front wall of said cabinet, a plurality of reflectors mounted in fixed position in the upper section of said cabinet behind said window, a light source mounted in each of said reflectors at the focal point thereof, means by which said light sources are adapted to be selectively energized, a magazine having a bottom wall and a pair of longitudinally spaced vertically disposed parallel end walls between which said frames are slidably mounted in spaced parallel relation for up and down movement, means by which said magazine is mounted in the lower section of said cabinet below said reflectors for back and forth movement therein, said end walls being each provided with a plurality of vertically disposed transversely spaced parallel slots which extend downwardly from the upper ends thereof, each of said frames being provided with a pair of longitudinally aligned pins, which extend outwardly from the ends thereof through said slots whereby said frames are guided in the up and down movement thereof, power means by which said magazine is adapted to be moved to bring a selected frame into and out of position to be moved upwardly from said magazine into viewing position between said window and said reflectors; said power means comprising a pair of spaced parallel horizontally disposed screws which are rotatably mounted in fixed position in said cabinet and operatively connected to said magazine, and a first reversible motor by which said screws are adapted to be rotated in unison; and frame elevating means by which a selected frame is adapted to be raised up from said magazine into viewing position between said window and said reflectors and returned to said magazine, said frame elevating means comprising; a pair of longitudinally spaced vertically disposed parallel screws which are rotatably mounted in fixed position in said cabinet one adjacent each end wall of said magazine, a second reversible motor by which said vertically disposed screws are adapted to be rotated in unison, an internally threaded nut mounted on each of said vertically disposed screws which are raised and lowered by the rotation of said vertically disposed screws, guide means by which said nuts are constrained against rotation on said screws during rotation thereof, a finger carried by each of said nuts in position to engage the said pins carried by a selected frame which has been moved into alignment with said vertically disposed screws and thereby raise said selected frame up from said magazine into viewing position when said vertically disposed screws are rotated in one direction and lower said selected frame back into said magazine when said vertically disposed screws are rotated in the opposite direction, means by which the actuation of said second reversible motor is selectively controlled; a first switching means by which said first reversible motor is energized in accordance with a selected frame to move said magazine forwardly from normal at rest position, a second switching means which is adapted to be actuated by said selected frame to deenergize said first reversible motor when said selected frame has been moved into alignment with said vertically disposed screws, and a third switching means by which said first reversible motor is energized to return said magazine to normal at rest position.



3,201,884
PERPETUAL CALENDAR
John L. Anghey, 134 W. 2nd St., Hobart, Ind.
Filed Nov. 13, 1962, Ser. No. 236,957
9 Claims. (Cl. 40—109)



1. A perpetual calendar comprising a body structure and a slide structure, means on the body structure for supporting said slide structure for relative movement therebetween, said slide structure having indicia thereon representing the days of the months of the year, said body structure being constructed to overlie the slide member and conceal portions of the latter while exposing other portions thereof, with the exposed portions containing date designating indicia for each month of the year, said body structure having indicia thereon cooperating with the indicia on said slide structure to designate the days of the week on which the monthly dates fall, movement of said slide structure relative to the body structure being operative to vary the relationship between the day designations and the date designations whereby the days for each month may be chronologically arranged to start on any selected day of the week, said slide structure being constructed in the form of a plurality of sections including an upper section and a lower section providing interlocking and complementally formed slide sections in the same plane and controlled by the upper section, the upper section containing the date designating indicia for only the months of January and February and with the number of days indicated for February controlled by the relationship between the upper section and the lower section, the dividing line between said upper section and the adjacent lower section being vertical and disposed immediately following the indicia representing the 28th day of February, said sections complementally formed providing a lost-motion connection so that relative movement of such section relative to the adjacent section being operative to expose indicia designating a 29th day of February to provide the lost-motion connection between said sections and simultaneously shift the days of all subsequent months accordingly, and said upper section and said adjacent lower section complementally formed with a plurality of vertical dividing lines so that in one position of said sections to the extreme right openings may be formed corresponding to the exposed indicia for the 29th day of February with one set of complementally formed vertical dividing lines of said sections operatively engaged, and with said sections to the extreme right all of said vertical dividing lines operatively engage with the exception of one set corresponding to the exposed indicia spacing, and said upper and lower sections operative for regular years by moving the upper section to the extreme left, then right to the desired year on said upper section, and operative to said leap years by moving the upper section to the extreme right, then left to the desired leap year on said upper section and identified in a color different from that of the regular years.

3,201,885
KEY IDENTIFIER
Milan Sasich, 3201 S. 53rd St., Milwaukee 19, Wis.
Filed June 24, 1963, Ser. No. 290,884
1 Claim. (Cl. 40—330)



In an identifier for keys having a head; a sheet of flexible material having a fringe along one side and a pair of tabs extending from the opposite side with the tabs being disposed at the ends of the sheet of material, said sheet being rolled upon itself into a roll with said tabs extending from one end of the roll; and a fastener extending through the head of the key and through said tabs for attaching the rolled material to the key and for retaining the material in its rolled condition with said fringed portion extending from said tabs; whereby said fringed material functions to identify the key from other keys in a group.

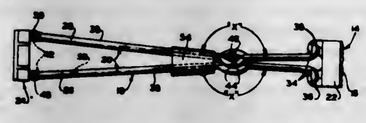
3,201,886
MAGAZINE INTERCEPTOR LATCH
Robert P. Kelly and Wayne E. Look, Ilion, James S. Martin, Mohawk, Charles H. Morse and Richard E. Nightingale, Herkimer, and John A. Roberts, Utica, N.Y., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Dec. 27, 1963, Ser. No. 333,878
8 Claims. (Cl. 42—17)



1. A firearm having a receiver, a barrel extending from said receiver, a magazine tube coextensive with said barrel and communicating with said receiver, a plurality of cartridges reciprocably positioned in said magazine, the invention comprising means for restraining one cartridge from forward inertial displacement during firearm recoil and to prevent more than one cartridge from entering said receiver during one cycle of the firearm, said means comprising a latch member pivotally mounted in said receiver, said latch member being pivotally movable to engage the rear most cartridge in said magazine upon firing of said firearm and to intercept the next cartridge during cycling of said firearm.

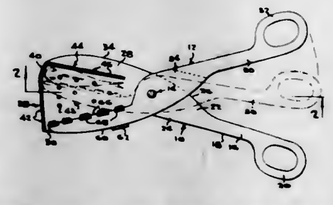
3,201,887
FOLDING STOCK FOR SHOULDER ARMS
Herve L. Sedelow, Springfield, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed July 20, 1964, Ser. No. 384,008
5 Claims. (Cl. 42—72)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A stock for a shoulder arm having a receiver and a barrel, the stock including a forward section for seating the receiver and part of the barrel, and a butt section comprising a pair of frames hingedly mounted on the rear end of said forward section for pivotal displacement between forward folded positions along opposite sides of said forward section and rearward extended positions, a butt plate for joining the rear ends of said frames together when in the extended positions and provide



shoulder support for the shoulder arm, and discontinuity means formed in said frames for strengthening and for pressed engagement to hold said frames against pivotal displacement when joined in the extended positions by said butt plate.

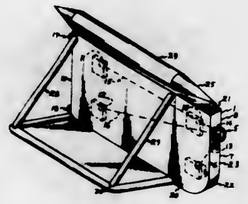
3,201,888
MINNOW TONGS
Clyde T. Barbee, 1602 Random Road, Carrollton, Tex.
Filed June 22, 1962, Ser. No. 204,585
4 Claims. (Cl. 43—4)



1. A minnow tongs comprising a lower lever and an upper lever, said levers being crossed and pivoted together intermediate their ends, said lower lever terminating at its forward end in a first flat plate, an upstanding transverse wall extending across the forward end of said plate, an upstanding longitudinal wall extending on said plate rearwardly from one end of said transverse wall, said upper lever terminating at its forward end in a second flat plate substantially narrower than the first plate of the lower lever, the forward end of the second plate being located close to and longitudinally-spaced from the rearward side of said transverse wall, and an upstanding longitudinal wall extending along the edge of the second plate adjacent to and opposed to the longitudinal wall of the first plate, said first and second plates being arranged to have sliding contact with each other as the levers are closed, the longitudinal wall of the upper level plate being disposed at an upward and laterally-inward angle relative to the second plate for holding a minnow upon the first plate and between the longitudinal walls as the levers are closed, said transverse wall being taller than said longitudinal walls.

3,201,889
SHRIMP NET DOOR
James M. Jackson, Rte. 5, Box 237, Rose Dhu Road, Savannah, Ga.
Filed May 16, 1963, Ser. No. 280,867
9 Claims. (Cl. 43—9)

1. A shrimp net door adapted for trawling at depths greater than 400 feet comprising an upstanding vane, a towing bridle attached to the inner face of the vane, said vane having a lower edge adapted to slide along the sea bottom, and a bottom-engaging stabilizing wing extending outwardly from said lower edge beyond the outer face of the vane a distance equal to at least substantially one half of the height dimension of the vane, said wing being disposed at an angle of between substantially 80



and 85 degrees from the outer face and being adapted to slide along the sea bottom and to prevent tipping over of the vane from the weight of the towing cable.

3,201,890
TROTLINE FISHING REEL
Flavil H. Griggs, Friendship, Tenn.
Filed Dec. 24, 1963, Ser. No. 333,057
8 Claims. (Cl. 43—27.4)

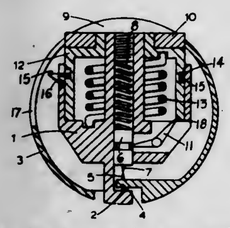


1. A device for use in setting and taking up trotlines comprising a reel having a drum portion upon which a trotline may be wound, a radially extending flange at one end of said drum, a flange at the other end of said drum having a first radially extending portion and a second substantially frustro-conical portion extending outwardly and downwardly from said first portion, and a plurality of pin members mounted on the other surface of said second portion and extending outwardly and upwardly therefrom, whereby fish hooks attached to the ends of leaders depending from a trotline being wound upon said reel may be placed on said pegs for storage, said pins being positioned to permit fish hooks stored thereon to slide therefrom upon unwinding of the trotline.

3,201,891
ANGLING DEVICES
Karl Wilhelm Weiss, Heinrich Mareschner Strasse 32, Vaterstetten, near Munich, Germany
Filed Oct. 28, 1963, Ser. No. 319,454
10 Claims. (Cl. 43—34)

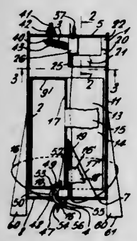
1. An angling device for aquatic animals such as fish, comprising a body member, impelling means in said body member, hook means attached to said impelling means for projection through apertures in said body member, trigger means receptive to contact by the animals for actuating the impelling means and causing the hook means to be impelled outwardly toward the animals, and soluble locking means for immobilizing the trigger means

until the angling device is located in water, said trigger means comprising a shell tiltable relative to the impelling means and the water-soluble locking means is in



the form of a plug located in an opening in the shell to prevent the shell from being tilted while the plug remains undissolved.

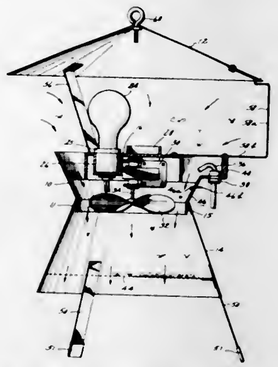
3,201,892
CASTING FLOATS
Francis E. Graham, Coe Hill, Ontario, Canada
Filed May 25, 1964, Ser. No. 369,783
2 Claims. (Cl. 43—43.11)



1. A casting assembly comprising in combination a central buoyant float, a surrounding sinkable housing enclosing said float, said float being free for limited vertical movement within and between the upper and lower ends of said housing, said housing including at its apex, line-braking means, and at its base, at least one water admitting aperture and line-locking means, said float and housing each being provided with a coinciding open-sided slot into which said line may be inserted, said housing also including a lower enclosing plate to which said line locking means is secured, said line locking means including a pivoted latch projecting below said plate, said latch including a catch within said housing, said float having means on its lower end co-operating with said catch for releasing said catch when said float becomes buoyant upon striking water thereby releasing an associated line to the extent it is wound around said housing prior to being locked therein.

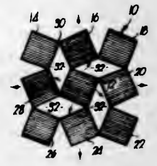
3,201,893
INSECT TRAP
Jorgen Gesmar, Westport, Conn., assignor to General Electric Company, a corporation of New York
Filed Sept. 3, 1963, Ser. No. 306,084
2 Claims. (Cl. 43—139)

1. An insect trap comprising: an open-ended frusto-conical member defining an air passage through its open ends, said member being vertically oriented so that the small end forms the bottom and the larger end forms the top; a component supporting bridge positioned within said member; a plurality of supporting ribs extending between said member and said bridge; an electric lamp mounted in the upper surface of said bridge; an electric motor and fan combination attached to and extending beneath said bridge; a compartment for receiving insect bait formed in the upper surface of said bridge; an insect receptacle having a frusto-conical shape with its smaller end open and its larger end having a surface for permitting air to flow therethrough while preventing insects to flow therethrough, said receptacle being vertically oriented with the smaller end forming the top and the larger end forming the bottom, said receptacle top opening being slightly larger than the bottom of said member so that said member may be received within the top of said receptacle, a plurality of resilient fingers each having its lower end attached to the side wall of said receptacle and extending upwardly toward said member,



each of said fingers having a middle section extending inwardly and each of said fingers being self-biased inwardly; a plurality of apertures formed in said member with each of said apertures being aligned with a respective one of said resilient fingers and each being adapted to receive a middle section of a respective one of said fingers for releasably attaching the receptacle to the member; and a plurality of legs attached to said receptacle, said legs being of a size to be conveniently grasped with one hand so that the receptacle may be separated from said member by grasping one of said legs and manually forcing the receptacle away from the member.

3,201,894
GEOMETRICAL DEVICE HAVING ARTICULATED RELATIVELY MOVABLE SECTIONS
Ronald D. Resch, 1000 E. 24 Highway, Independence, Mo.
Filed June 14, 1963, Ser. No. 287,967
8 Claims. (Cl. 46—1)



1. A geometric device comprising:
a plurality of relatively shiftable, polygonal sections in modular arrangement to define a module and including a central section and a plurality of outer sections, said outer sections being disposed in continuous circumscribing, proximal relationship to the perimeter of said central section, each of said outer sections having side margins thereof positioned in coextensive, substantially abutting relationship with the side margin of an adjacent outer section, a side edge of an outer section adjacent to said central section being disposed in proximal coextensive, substantially abutting disposition with respect to an adjacent side of said central section when the module is in a closed condition;
means pivotally interconnecting each corner of the central section with the proximal corner of the outer section adjacent thereto; and
means pivotally connecting a pair of the other corners of each outer section with the proximal corners of the outer sections adjacent thereto to permit movement of all of the sections when said central section is rotated, a corner of each section being interconnected with but a single corner of another section of the module.

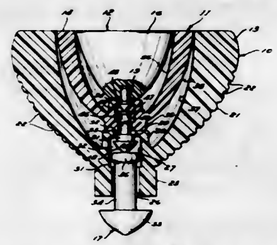
3,201,895
TETHERED AERIAL TOP
Norman J. Stivers, 6545 Wilbur Ave. #27, Reseda, Calif.
Filed Mar. 29, 1962, Ser. No. 183,585
6 Claims. (Cl. 46—61)



1. A manually operable reversing whirling toy comprising:
a rotable body including a pair of laterally-spaced disc-like members;
a center pin axially, laterally and non-rotatably supported therebetween and fabricated of a softer material than said members; and
string means adapted to be attached to said pin whereby said body will unwind said string from said center pin by gravitation and whereby said body will climb on said string by rewinding said string on said center pin through its own rotational momentum,
each of said body members comprising a wall generally calathiform in configuration with an outwardly extending central boss having a bore therethrough and an outwardly facing open annular groove surrounding said boss;
means defining a plurality of circumferentially spaced longitudinal slots extending through each said boss and forming a plurality of relatively flexible, arcuate fingers therebetween;
tubular ferrule means fitting over each said boss for holding said fingers against radial spreading; and
internal ridge means on the interior of each said boss for gripping said central pin in response to fitting of said ferrule means over said bosses.

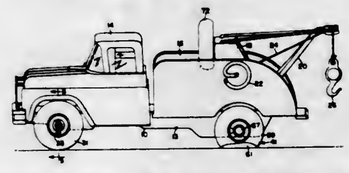
3,201,896
SPINNING TOP
Austin T. Dalhart, 28905 Osborn, Bay Village, Ohio
Filed Jan. 2, 1963, Ser. No. 248,998
4 Claims. (Cl. 46—65)

1. A multiple spinning top comprising inner and outer bodies each symmetrical about an axis and proportioned for nesting of said inner body within said outer body with said axes co-axial, means including a radially deflectable surface on said outer body normally spaced from the axis thereof by a predetermined distance, a spinning point on said inner body having a portion spaced from the axis thereof by a distance greater than said predetermined distance, said portion being positioned below said surface when said bodies are nested locking said bodies in said nested position, a spinning point on said outer body axially movable relative thereto to an inner position when said outer body is supported and spinning thereon, said means maintaining said spinning point on said inner body in alignment with said spinning point on said outer body



while said portion is below said deflectable surface, movement of said spinning point to said inner position pressing said portion past said surface ejecting said inner body from said outer body.

3,201,897
SIMULATED FLAT TIRED VEHICLE
Bernard E. Balthazor, Moline, Ill., assignor to Buddy L Corporation, East Moline, Ill., a corporation of Delaware
Continuation of application Ser. No. 108,387, May 8, 1961. This application Apr. 15, 1963, Ser. No. 274,379
6 Claims. (Cl. 46—202)

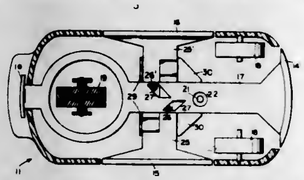


5. A toy in the form of a simulated vehicle having a body, an axle carried by the body and including a terminal end, means cooperative between the body and the axle and preventing rotation of the latter, a plurality of simulated penumatic-tired wheels carrying the body, one of said wheels being mounted on said axle end, releasable securing means removably connected to said axle and for removably retaining said one wheel, a spare simulated pneumatic-tired wheel removably carried by the body and interchangeable with said one wheel, and one of said last-mentioned two wheels being formed to simulate a flat tire having a flat ground-engaging portion, said flat-tired wheel having means for preventing rotation thereof, when installed on said axle with said flat portion lowermost whereby to keep said flat portion lowermost.

3,201,898
REVERSING TOY VEHICLE WITH INDICATING MEANS
Robert G. Lahr, Hartland, Wis. (6600 Capistrano Ave., Canoga Park, Calif.), and Otto L. Kuehn, Hartland, Wis. (The Rucksack, Vail, Colo.)
Filed Jan. 19, 1962, Ser. No. 167,377
2 Claims. (Cl. 46—244)

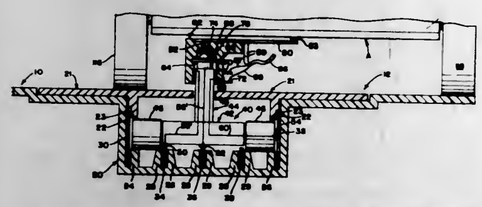
1. In motive powered toy means provided with signaling means the combination of a switching means disposed within said toy means for controlling actuation of signal means, bumper means which is slidably moveable longitudinally with respect to the body of said toy means, for biasing said switching means, wherein said bumper means comprises a portion which is extensible ahead of the body of said toy means and a portion which is extensible behind the body of such toy means, each of said extensible portions being responsive to impact thereon of a suitable

portion of another similar toy means to cause said bumper means to move and actuate said signal means, further characterized by a bumper means extending ahead of the body of said toy means which is firmly affixed with respect to the body of the toy means and which prevents said moveable bumper means from operating and thereby pre-



vents said signal means from operating except when contacted by a suitable portion of another toy means and wherein the rear of said car is provided with an extending portion, fixed in relation to said body, extending from the rear of said body to prevent operation of the rear moveable bumper means by any portion of a similar vehicle except a pre-selected suitable portion.

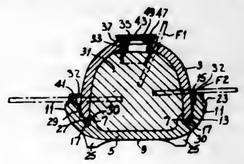
3,201,899
REMOTELY CONTROLLED TOY AND TRACK ARRANGEMENT THEREFOR
George A. Toteff, Birmingham, and Thomas J. Bacsanyi, Livonia, Mich., assignors to AMT Corporation, Troy, Mich., a corporation of Michigan
Filed Mar. 30, 1962, Ser. No. 183,887
1 Claim. (Cl. 46—244)



A remotely controlled toy comprising, a track, a guide groove in said track and extending in a predetermined path, a first and second set of rails extending parallel to said groove, first and second members movable in said groove, contacts on said first member and sliding on said first set of rails, contacts on said second member and sliding on said second set of rails, a self-propelled car connected to each member and receiving control signals from said contacts on said member, and means for independently energizing said separate set of rails.

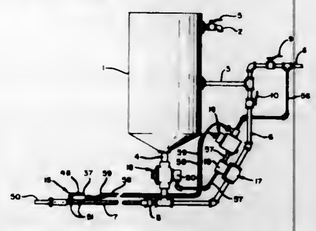
3,201,900
FLORISTS' ACCESSORY
James M. King, Los Angeles, Calif., assignor of forty percent to L. M. Sheridan, five percent to John N. Newland, five percent to P. L. MacDonald, and one and one-fourth percent to James A. Poore, all of Butte, Mont.
Filed Dec. 16, 1963, Ser. No. 330,771
5 Claims. (Cl. 47—41.12)

1. A flower holder comprising an upper member open at its bottom and a lower member open at its top, said members being adhered together to provide a substantially watertight container, the upper member being made of a substantially rigid multicellular closed-cell material having frangible cell walls capable of being pierced by the stems of cut flowers and adapted to support the flowers in a desired arrangement, a filler in the container adapted to hold water for supplying moisture to the stems of flowers pierced through the multicellular material and capable of being penetrated by the stems of flowers pierced through the multicellular material to form a bed for additionally supporting the flowers, the upper edge of said lower member being located above the lower edge of said upper member for additionally supporting the



stems of flowers pierced through said material into said filler and extending in a generally horizontal direction, and said lower member having at least one shoulder extending around it to rigidify the lower member against forces applied to it in a direction generally parallel to said shoulder.

3,201,901
ABRASIVE BLASTING EQUIPMENT
Alfred M. Paull, 97 Marymont Ave., Atherton, Calif.
Filed Sept. 30, 1963, Ser. No. 312,496
8 Claims. (Cl. 51—12)

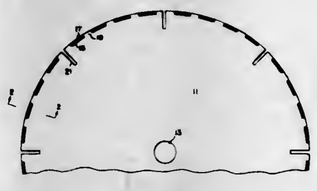


1. Abrasive blasting equipment comprising a tank having an air inlet and a separate abrasive outlet line, a high pressure feed line connected to said air inlet and to said abrasive outlet line, a first valve controlling flow through said high pressure line, fluid pressure operated means for controlling said valve, a manually operable valve controlling fluid flow to said fluid pressure operated means, said manually operable valve having first, second and third ports, said first port being connected to said high pressure line, said second port being connected to said fluid pressure operated means, said third port being connected to atmosphere, port controlling means in said valve, a handle having a direct mechanical engagement with said port-controlling means for moving said port-controlling means to close said third port and interconnect said first and second ports, and said port-controlling means being normally biased to cause said second and third ports to be connected to each other and isolated from said first port.

3,201,902
DIAMOND ABRASIVE SAW BLADE
Donald H. Benson, Spencerport, and Willard R. Pratt, Rochester, N.Y., assignors to Vanguard Abrasive Corporation, Le Roy, N.Y., a corporation of New York
Filed Oct. 29, 1962, Ser. No. 233,580
2 Claims. (Cl. 51—206)

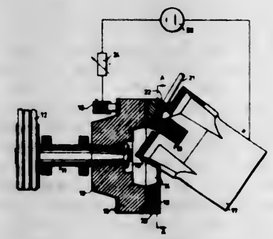
1. A diamond abrasive saw blade comprising a circular sheet steel drive core having a plurality of circumferentially spaced shallow grooves in its periphery, each of said grooves having a circumferential length materially greater than the circumferential distance between adjacent grooves and being open to both sides of the core, and a corresponding plurality of diamond-bearing cutting members each seated in one of said grooves and encapsulated at

both ends and its bottom by the steel drive core and bonded to the steel drive core by a metallic bond at both ends of the groove and along the bottom of the groove in which the cutting member is seated, each of said cutting members being composed of diamond grit dispersed and embedded in a metallic matrix and projecting laterally beyond both of the respective side faces of the sheet steel core and also projecting radially inwardly toward the center of the core beyond the bottom of the groove in which the cutting member is seated, the periph-



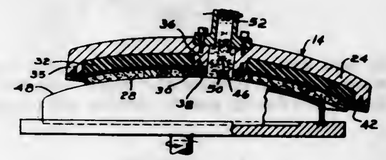
eral edges of steel drive core in the spaces between said grooves being flush with the outer peripheral faces of the cutting members and being free of intentional abrasive ingredients, the circumferential peripheral extent and the abrasive resistance of said diamond-bearing cutting members and the circumferential peripheral extent and the abrasive resistance of said steel core in the spaces between said cutting members being so related to each other that their outer circumferential edges wear down evenly with each other and remain flush with each other during use of the blade in continued cutting.

3,201,903
METHOD FOR SHARPENING ROCK DRILL BITS
Erik Gustav Bengt Lundin, Sandviken, Sweden, assignor to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden
Filed Nov. 4, 1963, Ser. No. 321,159
Claims priority, application Sweden, Nov. 9, 1962, 12,014/62
3 Claims. (Cl. 51—288)



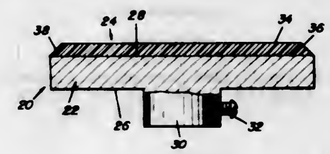
1. Method of grinding a rock drill bit having at least two spaced apart, alined, straight cutting edges, at least a third cutting edge lying in substantially the same plane as said two cutting edges and extending at an angle to the line thereof and having its end which is nearest to the line of said two cutting edges spaced from the adjacent ends thereof, each of said two cutting edges having substantially plane, rearwardly extending surfaces adjacent thereto, which comprises contacting two of said surfaces with a plane annular grinding disc having a central recess with said third cutting edge extending into said recess.

3,201,904
APPARATUS FOR FINISHING GLASS SURFACES
James W. Evans, Corning, and Karl E. Schwarz, Horseheads, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Nov. 9, 1961, Ser. No. 151,736
11 Claims. (Cl. 51—358)



2. In a disc for finishing a convex surface of a glass article, a radially and peripherally flexible concave finishing unit comprising a backing of at least one layer of cloth and at least one layer of rubber-like material, means for rigidly supporting said backing at its central portion and about its periphery, resilient means for cushioning said backing intermediate said central portion and said periphery, glass article finishing elements attached to said backing, and means for flowing an abrasive slurry between said backing and the surface of said article.

3,201,905
LAPPING ARTICLE
John Y. Snyder, New Orleans, La., assignor of five percent to James H. Drury, five percent to Casimir M. Bernard, five percent to Rapier, Barre & Rapier, a firm, one and one-fourth percent to Mrs. L. C. Lohmann, one and one-fourth percent to L. C. Lohmann, and five percent to Jake Polito, all of New Orleans, and ten and one-half percent to Millard P. Snyder, Shreveport, La.
Filed May 2, 1962, Ser. No. 191,834
1 Claim. (Cl. 51—358)

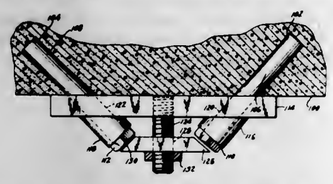


An article for lapping using a fluid or paste abrasive comprising a firm flat back-up member and at least one separate polyethylene facing sheet of uniform thickness fixed directly on said member, said sheet and said member being circular, said sheet upper surface at its outer edge being relieved below the plane of said sheet upper surface.

3,201,906
LOAD SUSPENSION APPARATUS AND RELATED METHODS
Salvatore Vincent Giardina, Brooklyn, N.Y., assignor of one-half to Pasquale Fichera, Brooklyn, N.Y.
Filed Mar. 8, 1962, Ser. No. 178,439
9 Claims. (Cl. 52—39)

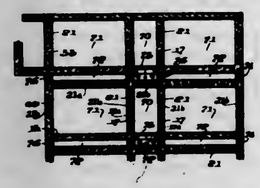
1. For use with an overhead structure provided with two oppositely inclined bores, an anchor hanger comprising a plate provided with oppositely inclined holes concentric with said bores, pins extending through said holes and frictionally engaged in said bores, said pins including

free extremities, a member depending from said plate between said pins, a disc freely displaceable on said mem-



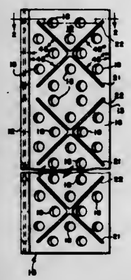
ber and having a periphery for engaging against and between said extremities and means adjustable on said member for forcing said disc against said extremities.

3,201,907
PRECAST SEGMENTAL BUILDING UNITS
Albert Henderson, 4014 5th Ave., Pittsburgh 13, Pa.
Filed Dec. 5, 1956, Ser. No. 626,448
13 Claims. (Cl. 52—73)



1. A building that comprises portable preformed lower segments and preformed upper segments, each lower segment having a floor member integrally formed to spaced vertical wall members, each upper segment having a ceiling member integrally formed to spaced vertical wall members, the vertical wall members in said upper segments being mainly flat on their lower edges and resting on the upper edges of the lower vertical wall members which are mainly flat, thus forming horizontal joints, and means connecting the upper and lower wall members against relative sidewise displacement at said joints.

3,201,908
CORNER SCREED BEAD
Alfred F. Arnold, 1206 Bermuda St., Clearwater, Fla.
Filed Oct. 6, 1961, Ser. No. 143,438
2 Claims. (Cl. 52—255)



1. A corner screed bead for use in forming inside and outside plaster corners, said corner screed bead being formed of resiliently flexible plastic material and comprising:

(a) a solid bead of circular cross section,

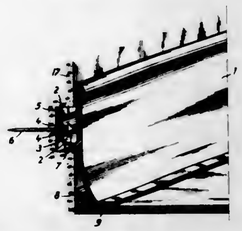
(b) first and second elongated flanges joined by said solid bead and each having a free edge, said flanges extending radially from said solid bead at right angles to one another so that the flanges have inside and outside surfaces,

(c) said flanges having flat web portions and a plurality of spaced ribs projecting above said flat web portions on the inside and outside surfaces of said flanges,

(d) said web portions being of a thickness which is substantially less than the diameter of said solid bead so that said solid bead presents an exposed convex surface thereof between said flanges, said web portions having a plurality of openings therethrough between said ribs,

(e) said ribs being disposed at angles of 45° to said solid bead and to said free edges of said flanges, the apexes of the ribs on the outside surfaces of said flanges lying in planes which are tangent to said solid bead, and the apexes of the ribs on the inside surfaces of said flanges lying in planes which converge at a line lying in said exposed convex surface of said solid bead between said flanges.

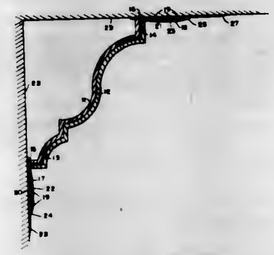
3,201,909
PLASTIC SKIRTING-BOARDS
Heinrich Grün, Lindenstrasse 34, Dusseldorf, Germany
Filed May 31, 1961, Ser. No. 113,884
1 Claim. (Cl. 52—287)



A skirting board of plastic material having longitudinal top and bottom flanges projecting from the same side of said board for bearing against a wall surface and a floor surface, said board further including a pair of integral spaced walls extending longitudinally intermediate said top and bottom flanges and directed generally perpendicularly away from said board in the same direction as said flanges said spaced walls having reversely curved outer ends providing resiliently deformable longitudinal wall portions facing each other and defining a slot for receiving fastening elements having a headed part of a larger size than said slot and for locking behind said headed part, said bottom flange comprising a pair of spaced, flexible arms joined by a bight portion, one of said arms being integrally joined at an edge to a terminal edge of said board, said bight portion being spaced from said board, the other arm having a free terminal edge, said arms being substantially parallel to each other and at an acute angle to the plane of said board, said arms and bight portion forming a pocket for receiving the terminal edge of a strip of covering material whereby the terminal edge of said board is in contact with the strip and urges the strip into pressure engagement with the floor.

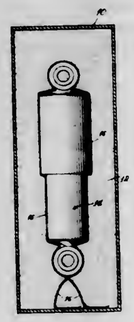
3,201,910
CONSTRUCTION MOLDING
Roland R. Keesee, 275 Plainview Circle, North Little Rock, Ark.
Filed Aug. 14, 1962, Ser. No. 216,879
5 Claims. (Cl. 52—716)

1. An all paper molding consisting essentially of a strip of relatively thick cardboard material having a permanent decorative shape, said strip comprising a front ply and a rear ply glued together, flaps of relatively thin sheets of paper extending along the longitudinal edges of said strip, marginal portions of the flaps being disposed between and



glued to said plies, said front ply being laterally recessed relative to the rear ply along each of its longitudinal edges.

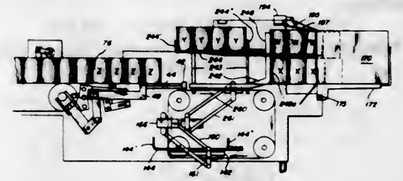
3,201,911
METHOD OF FORMING A PACKAGE HAVING AN ELECTRICAL ZIP TAPE
Paul C. Woodland, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Mar. 13, 1961, Ser. No. 95,135
2 Claims. (Cl. 53—36)



1. A method of packaging an article and removing the article from the package comprising the steps of placing a continuous electric conducting wire around the article, enclosing the article and wire in a foamed thermoplastic material with opposite ends of the wire disposed externally of the package, causing an electric current to flow in the wire whereby it is heated, and manipulating the heated wire to cut the thermoplastic material into parts so that the article may be removed from the package.

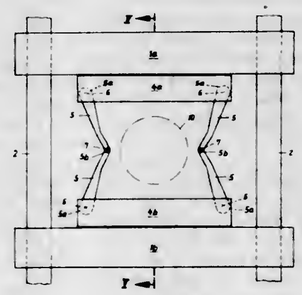
3,201,912
CASE PACKING MACHINE
Mitchell S. Wozniak, Portland, Conn., assignor, by mesne assignments, to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed Aug. 30, 1960, Ser. No. 52,978
20 Claims. (Cl. 53—61)

2. In a case-loading machine, a conveyor supporting articles to be loaded, means to maintain the articles in parallel rows during conveyance, supporting means onto which said articles are moved by said conveyor, means to detect the presence of a full row of articles on said supporting means, means to separate from each row of articles on said supporting means a group to be loaded



into a case, said separating means being activated by said detecting means, loading means including endless conveying means to transport said group into a case-loading position while inserting a preceding group from said position into a case.

3,201,913
APPARATUS FOR FOLDING AND SEALING FILLED PACKAGING HOSE OR THE LIKE
Georg Kopp, also known as Jörg Kopp, Schaffhausen, Switzerland, assignor to Schweizerische Industrie-Gesellschaft, Neuhausen (Rheinfall), Switzerland
Filed Aug. 20, 1962, Ser. No. 218,038
Claims priority, application Switzerland, Aug. 30, 1961, 10,102 /61
7 Claims. (Cl. 53—182)

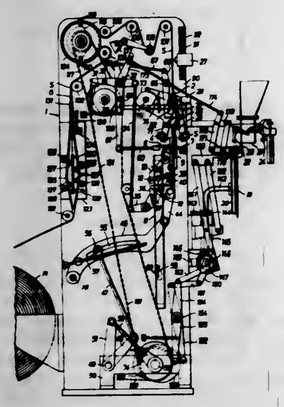


1. Apparatus for folding and closing filled packaging hose formed of heat-sealable material, comprising a pair of oppositely arranged and movable heating jaws adapted to be heated and between which said packaging hose is capable of being located when said heating jaws are spaced from one another, a pair of infolding levers pivotably mounted adjacent to and connected with a respective end in operable relation to each heating jaw, there being a pair of infolding levers on each side of the location of said hose with the respective confronting ends of oppositely arranged infolding levers of each heating jaw being pivotably hinged to one another, in such a manner that said confronting pivotably hinged ends of said infolding levers approach one another upon movement of said heating jaws toward one another in order to infold the side wall of said hose at opposite points and maintain said packaging hose in position while said heating jaws engage and seal said package.

3,201,914
BAG FILLING AND CLOSING MACHINE

Paul Lohse, Stuttgart-Bad Cannstatt, and Manfred Nussbaum, Plochingen, Wurttemberg, Germany, assignors to Fr. Hesser Maschinenfabrik-Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany, a corporation of Germany

Filed May 1, 1962, Ser. No. 191,610
Claims priority, application Germany, May 4, 1961, H 42,499
9 Claims, (Cl. 53—187)



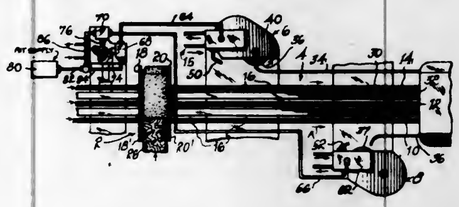
1. In a machine for filling and closing bags, bag-forming apparatus comprising a support, a guide plate on said support, said guide plate having an angled re-entrant portion, a deflector arm pivoted on said support and having an angled portion opposite said re-entrant portion of the guide plate, means for periodically operating said deflector arm thereby to take up bag material into said re-entrant portion, a pair of heat sealing jaws disposed vertically below said guide plate on arms pivoted on said support, means for opening and closing said heat sealing jaws to form a transverse weld seam in the bag material, a cutter device comprising a knife and anvil arranged on said support vertically below said heat sealing jaws, means for periodically operating said cutter device to sever individual bag blanks from the bag material, a nipper device to engage a leading end portion of the bag material, means for reciprocating said nipper device in a vertical path past the cutter device and a transfer mechanism for conveying a severed bag laterally from beneath said cutter device.

3,201,915
CARTON FLAP FOLDING APPARATUS

Valentino Yannaitis, 1102 E. 76th St., Cleveland, Ohio

Filed June 1, 1961, Ser. No. 114,069
23 Claims. (Cl. 53—374)

1. In a packaging apparatus of the type adapted to convey packages having at least one outwardly projecting flap hinged thereon past means for mechanically folding the flap inwardly so that the free end thereof points in at least the general direction of movement of the package being conveyed, the improvement comprising the combination of nozzle means for directing fluid delivered thereto against said flap to push said flap inwardly, supply means for delivering fluid under pressure to said nozzle means, valve means connecting said nozzle means with said supply means, and control means for operating said valve means to pass fluid therethrough from said supply means to said nozzle means as the package approaches

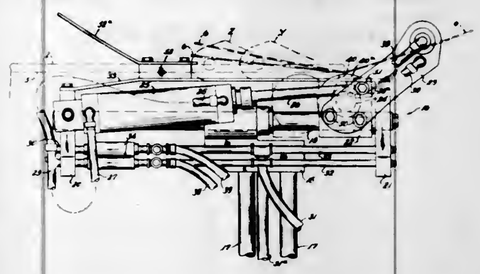


and is at least initially engaged by said means for mechanically folding the flap inwardly.

3,201,916
FLAP OPENER APPARATUS

Robert W. McGill, Akron, Ohio, assignor, by mesne assignments, to Geo. J. Meyer Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin

Filed Oct. 30, 1961, Ser. No. 148,489
11 Claims. (Cl. 53—382)



4. In combination with a case packer or the like that deposits articles into a stationary cardboard case with a leading end flap thereon hingedly connecting to the case and where cases are fed to a filling position through a controlled path with their side flaps open,

a stationary guide means operatively positioned parallel to and adjacent a case having a closed leading end flap,

flap opening means positioned adjacent said guide means and having a portion adapted for horizontal movement to be engageable under a closed end flap, and

means operatively engaging and controlling said flap opening means to insert it under a closed end flap and to move said flap opening means towards the flap hinge and to swing such means through a forward arc to open such closed end flap.

3,201,917
PURIFICATION PROCESS FOR GASEOUS FORMALDEHYDE

Louis L. Wood, Clarksville, Md., assignor to W. R. Grace & Co., a corporation of Connecticut

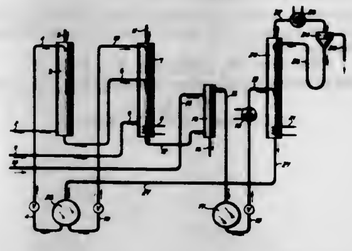
No Drawing. Filed Apr. 5, 1962, Ser. No. 185,208
3 Claims. (Cl. 55—35)

1. A method for removing water from formaldehyde which comprises contacting a water containing substantially gaseous formaldehyde containing less than about 10% water by weight with a substantially anhydrous alkali metal salt of a sulfonated cationic ion exchange resin which is non-reactive towards formaldehyde, and collecting a substantially anhydrous formaldehyde gas produced thereby.

3,201,918
PROCESS FOR SEPARATING ACRYLONITRILE AND AMMONIA FROM GASEOUS MIXTURES

Kurt Sennewald, Wilhelm Vogt, and Joachim Kandler, all of Knapsack, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Aug. 8, 1961, Ser. No. 130,146
Claims priority, application Germany, Aug. 12, 1960, K 41,450
9 Claims. (Cl. 55—38)



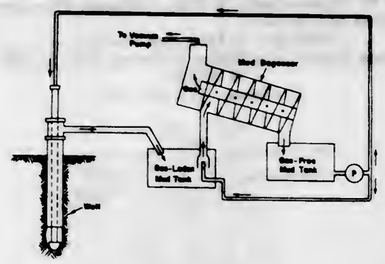
1. A process for separating acrylonitrile and ammonia from gaseous mixtures which comprises conducting a gaseous mixture into a first stage where it is scrubbed countercurrently with a washing liquid thereby obtaining an ammonia containing residual gas and an acrylonitrile and residual ammonia containing washing liquid, withdrawing the ammonia-containing residual gas at the head of said stage, discharging the acrylonitrile and residual ammonia-containing washing liquid at the bottom of said stage, conducting it into a second stage approximately at its center where residual ammonia is desorbed by means of an expelling gas introduced near the bottom of said second stage, removing the desorption gas at the head of the second stage, supplying additional washing liquid at the head of the second stage, withdrawing the total amount of washing liquid containing the acrylonitrile at the bottom of said second stage, introducing said washing liquid containing the acrylonitrile approximately at the center into a third and heated stage, distilling said liquid to separate the acrylonitrile, discharging said acrylonitrile at the head of said third stage, withdrawing the washing liquid from the sump of the third stage, recycling it into the first and second stage at the head thereof, the washing liquid absorbing the acrylonitrile being a member selected from the group consisting of trimethylbenzenes, xylenes, toluene, cumene, p-cymene, diphenyl, tetraline, decaline, α-methylnaphthalenes, α-ethyl-naphthalenes, anisol, diphenyl oxide, and mixtures thereof.

3,201,919
DRILLING MUD DEGASSER

Alfred B. Long, Beaumont, Tex., assignor to Bass Brothers Enterprises, Inc., Fort Worth, Tex., a corporation of Texas

Filed May 23, 1962, Ser. No. 203,675
25 Claims. (Cl. 55—46)

1. The method of degassing well drilling mud which comprises tangentially feeding gas-laden mud at high velocity into a cylindrical chamber substantially laterally to the longitudinal axis thereof, thereby causing said mud to traverse a helical path within said chamber, subjecting the axial region of said chamber to a subatmospheric pressure, withdrawing the gas-free mud from the chamber substantially downstream from the point of entry of the gas-laden mud, separating a portion of such gas-free mud

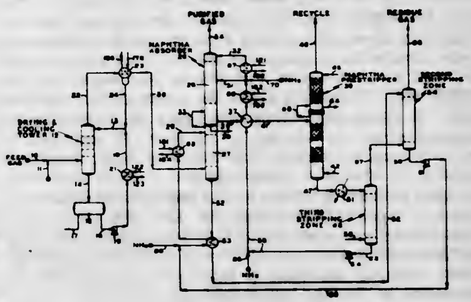


and introducing the same under pressure together with the gas-laden mud flowing into the chamber after said gas-laden mud has been removed from the well.

3,201,920
ACETYLENE PURIFICATION

George Craig Grubb, Eatontown, N.J., and Kennard F. Stephenson, Jr., Croton-on-Hudson, N.Y., assignors to Pullman Incorporated, a corporation of Delaware

Filed Mar. 17, 1961, Ser. No. 96,602
4 Claims. (Cl. 55—48)

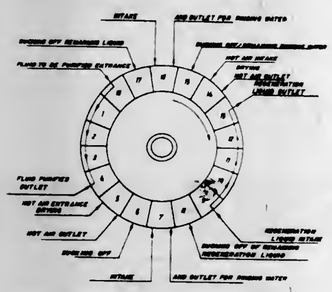


1. In a process for separating C_3 and heavier hydrocarbons including C_6 hydrocarbons from a gas mixture containing the same and acetylene comprising contacting said gas mixture in a first absorption zone with a first heavy naphtha stream under suitable conditions to absorb substantially all of said C_6 hydrocarbons from said gas mixture, contacting the resultant gas mixture from the first absorption zone with a second heavy naphtha stream providing a molar ratio of heavy naphtha to gas between about 8 and about 30 times a great as that provided by said first heavy naphtha stream in said first absorption zone in a second absorption zone maintained under suitable conditions to absorb substantially all of said C_3 hydrocarbons from said resultant gas mixture, contacting bottoms from said first absorption zone with a stripping gas in a first stripping zone under conditions suitable to remove hydrocarbons absorbed in said first absorption zone, contacting bottoms from said second absorption zone with a stripping gas in a second stripping zone under conditions suitable to remove hydrocarbons absorbed in said second absorption zone, and recycling at least a portion of the bottoms from each of said first and second stripping zones, respectively, to said first and second absorption zones, the improvement which comprises passing at least a portion of the overhead fraction from the second stripping zone to the first stripping zone to provide at least a portion of said stripping gas supplied to said first stripping zone.

3,201,921
PROCESS AND APPARATUS FOR TREATMENT OF FLUIDS WITH ADSORPTIVE MATERIALS

Josef Heyes, Duesseldorf-Oberkassel, Germany, assignor to Dr. W. Kampschulte & Cie., Solingen, Germany, a German corporation

Filed Jan. 4, 1960, Ser. No. 296
Claims priority, application Germany, Jan. 5, 1959, H 35,284
17 Claims. (Cl. 55—56)

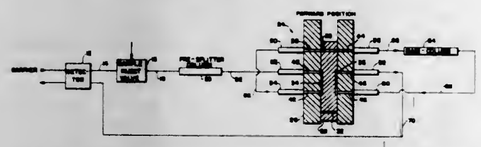


17. Process for the treatment of gases with adsorptive materials capable of retaining substituents present in the gases, which comprises passing such gas through an ordinal series of at least two individual directly flow-connected separate gas enclosing zones including a first and a last zone containing adsorptive material impregnated with a liquid having selective solvent capacity for the substituents to be removed from the gas, to effect contact between said gas and said adsorptive material in said zones and to adsorb said substituents along the extent of said ordinal series of zones, said zones being part of a plurality of separate zones one adjacent to the next and arranged in an endless cycle closeable flow-connected path, thereafter treating the adsorptive material in said series of zones with an agent which is a solvent for the impregnated liquid and which is capable of removing the particular substituents adsorbed on said material in said zones, and recovering the particular substituents from said agent, said series of zones ordinally changing in increments of one zone in succession so that the last of said series of zones is flow-separated from the remaining zones, and the next zone in succession becomes the new first zone of said series whereby different sets of zones in succession are ordinally treated with said gas, thereafter with said agent, and said substituents are subsequently recovered from said agent.

3,201,922
CHROMATOGRAPHIC METHOD

Richard Villalobos, Anaheim, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Feb. 7, 1962, Ser. No. 171,757
1 Claim. (Cl. 55—67)



A method of chromatograph separation and analysis for a number of light and heavy constituents comprising the steps of:

injecting a sample containing light and heavy constitutents in a stream of carrier gas,

passing the stream containing the sample and carrier gas through a pre-splitter chromatographic column and through a value to a main chromatographic column until all the sample has entered the main column,

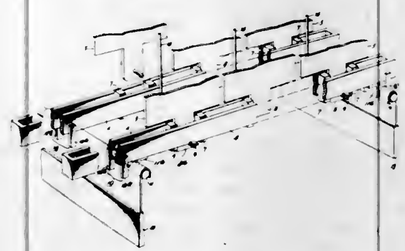
passing the light constituents in the sample and carrier gas from the main column through the valve to a detector,

switching the valve to reverse the flow of carrier gas in the main column while maintaining the flow of carrier gas in the same direction as before in the pre-splitter column and to connect the end of the main column where the sample previously entered directly to the detector.

3,201,923
DEVICE FOR CLEANING THE COLLECTING ELECTRODES IN ELECTROSTATIC PRECIPITATORS

Stig Gustafsson, Jonkoping, and Gösta Mildh, Vattersnas, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Nacka, Sweden

Filed Oct. 20, 1960, Ser. No. 63,874
Claims priority, application Sweden, Jan. 30, 1960, 935/60
2 Claims. (Cl. 55—112)



1. An electrostatic precipitator comprising:

a casing arranged for horizontal gas flow therethrough,

plate-shaped collecting electrodes disposed parallel to the direction of gas flow and arranged in transversely-spaced longitudinal rows which are parallel to the gas flow,

means suspending said collecting electrodes for swinging movement in said casing,

an elongated impact bar underlying each row of electrodes and coextensive therewith,

hammer means within said casing for each impact bar operable upon actuation thereof to engage and displace said bar longitudinally in the direction of gas flow through said precipitator,

abutment means on said impact bar engaging each of said electrodes in the associated row to effect oscillatory movement of said electrodes in the direction of gas flow upon actuation of said hammer means, and including means at each end of each impact bar to suspend said bar from said outermost electrodes,

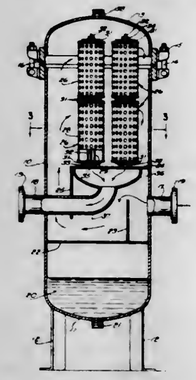
laterally extending rails adjacent the ends of the rows of electrodes, and means at each end of each rail securing said rail to the impact bar adjacent each end to suspend the rail therefrom, said means being the sole support for said rails,

a U-shaped guide bracket mounted on said rail to embrace each impact bar and guide it against lateral movement while permitting free thermal expansion of said collecting electrodes, and baffle plates secured to and depending from said laterally extending rails and operable to prevent any substantial amount of the gas from flowing longitudinally within the space beneath the electrodes.

3,201,924
GAS SEPARATOR/FILTER APPARATUS

Earle H. Fulford, Barrington, R.I., and John E. Searcy, Jr., Tulsa, Okla., assignors to Fram Corporation, Providence, R.I., a corporation of Rhode Island

Filed July 24, 1962, Ser. No. 212,104
2 Claims. (Cl. 55—324)



1. Apparatus adapted to be used with a conduit through which a gas flows under pressure for removal of a liquid contaminant from the gas stream, comprising

an upstanding container with a liquid collecting sump at the bottom thereof,

an inlet pipe for the gas extending through a side wall of the container above said sump,

an outlet pipe for the gas extending through a wall of the container,

an upright baffle in the container near said inlet for directing the entering gas stream upwardly,

deflecting means above said baffle for redirecting the upwardly directed stream first downwardly about the baffle toward said sump and then upwardly again toward the upper portion of the container in a loop to dislodge liquid contaminant droplets downwardly out of the stream and into said sump,

an upright filter cartridge in the upper portion of the container downstream of the baffle and of the deflecting means, said cartridge having liquid repellent porous media adapted to block the remaining liquid contaminant in the stream but pass the gas therethrough and downwardly toward said outlet pipe, and

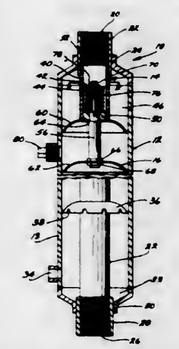
a chamber below said filter cartridge receiving gas passed downwardly and through said media and connected to said outlet pipe.

3,201,925
VARIABLE FLOW SEPARATOR

Joseph J. Shada, Memphis, Tenn., assignor to International Basic Economy Corporation, New York, N.Y., a corporation of New York

Filed Aug. 17, 1961, Ser. No. 132,187
5 Claims. (Cl. 55—391)

1. A separator for removing impurities from a gaseous carrier, comprising: an elongated housing; inlet means in one end of said housing for entrance of an impurity-laden gas; centrifugal flow separator baffles in the central portion of said housing spaced therealong. and forming annular passages therearound for the gases, causing flow around said baffles and adjacent said housing for separating said impurities from said gaseous carrier; outlet means in said housing for the gaseous carrier downstream of said baffles to exit the gaseous carrier; and gas flow regulation means positioned adjacent said inlet means upstream of said baffles; said regulation means comprising a tubular element having an inlet communicating with said inlet means and a reciprocable valve means in said element shiftable toward and away from said inlet in said element; the wall portions of said element including a plurality of outlet ports arranged generally tangentially to said element to cause circular flow



from said inlet means to said separator baffles; said regulation means including biasing means operably engaged with said valve means and biasing it toward said inlet to decrease flow through said ports; and said valve means being responsive to gaseous flow through said inlet to be reciprocally shiftable within said element by the flowing gas against the force of said biasing means to allow flow of varying increasing amounts through said ports.

3,201,926
AIR FILTERING BLANKET FOR AN AIR FILTERING SYSTEM

Frederick G. Harrington, Toronto, Ontario, Canada, assignor to Industrial Air Filters, Limited, a corporation of Ontario

Filed July 12, 1962, Ser. No. 210,877
2 Claims. (Cl. 55—486)

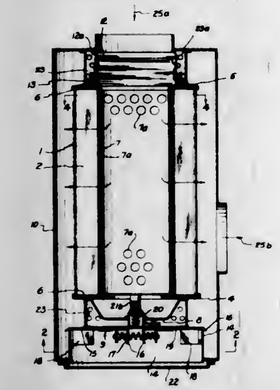


1. In an air filter for an air conditioning system, a substantially non-blocking air filtering fibrous blanket of substantial thickness comprising

(a) an upstream filtering layer of non-tacky fibers having a thickness of about 50% to 25% of the total thickness of the blanket and presenting to the air travelling therethrough non-tacky surfaces whereby large airborne particles are first removed from the said air and separated from the small airborne particles;

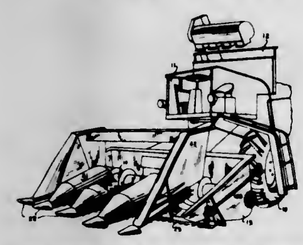
(b) a downstream filtering layer having the fibers thereof impregnated with a non-migratory, water-insoluble polymerized hydrocarbon selected from the group of polymers consisting of polybutene having a molecular weight between 1000 and 2500, said hydrocarbon characterized by permanent tackiness and negligible vapor pressure, whereby substantially all of the remaining airborne particles are removed from the air.

3,201,927
CLOSURE FOR FILTER CONTAINER
Karl-August Wichter, Lubeck, Germany, assignor to Otto Heinrich Drager, Lubeck, Germany
Filed Aug. 16, 1961, Ser. No. 131,762
Claims priority, application Germany, Jan. 11, 1961, D 35,156
1 Claim. (Cl. 55—504)



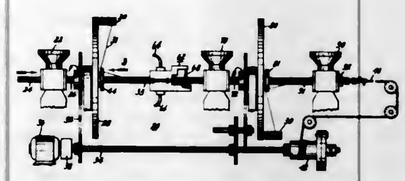
Closure means for an air dust filter comprising a container, a dust filter in said container, thread means for securing one end of said filter in said container, a handle bracket joined to the other end of said filter, spring-actuated tongue fastening means bearing on said handle bracket and removably attached to said container for holding said filter in said container, spring means extending between said fastening means and said filter for applying pressure against said thread means, and guide means for centering said filter in said container.

3,201,928
ROW CROP ATTACHMENT FOR A HARVESTER COMBINE
Helmut Claas, 4 Am Kattenpatt, Harsewinkel, Westphalia, Germany
Filed Sept. 5, 1962, Ser. No. 221,582
3 Claims. (Cl. 56—98)



1. A harvester combine mounted harvesting attachment for row-planted crop, especially Indian corn, comprising, in combination, an elongated cutting mechanism extending transversely to the direction of movement of the combine; a carrier rail mounted on said combine substantially parallel to said cutting mechanism; a plurality of pairs of guide means extending spaced from each other substantially in direction of movement of the combine across the cutting mechanism and arranged to define between each pair of guide means a stalk passage converging in a direction opposite to the advancing direction of the combine, each of said guide means including a lower member, an upper member mounted on said lower member for limited turning movement relative thereto about a substantially vertical axis, an elongated guide frame extending transverse to said axis and fixed to said upper member for limited turning movement therewith, a guide member carried by said frame so that the angular positions of adjacent guide members may be adjusted relative to each other, and means for releasably locking said upper member in an adjusted turned position relative to said lower member; chain type conveying means mounted on each of said guide frame and cooperating with said guide member carried by said frame for conveying the cut crop beyond said cutting mechanism; means for adjustably mounting said lower member on said carrier rail movable in longitudinal direction thereof so as to adapt the positions of said guide members and said conveying means to the row spacing of the crop to be harvested; and drive means associated with said chain type conveying means and including telescoping drive shaft means extending parallel to said carrier rail and a plurality of vertical shafts, one for each guide means, and extending respectively along the respective vertical axis and being operatively connected to said shaft means for rotation therewith.

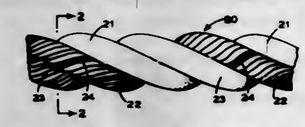
3,201,929
PNEUMATIC CONTAINER AND METHOD AND APPARATUS FOR MAKING SAME
Edward P. Harris, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application June 19, 1957, Ser. No. 666,556, now Patent No. 3,033,557, dated May 8, 1962. Divided and this application Apr. 27, 1960, Ser. No. 25,028
2 Claims. (Cl. 57—15)



1. A positioning comb for aligning and supplying a plurality of moving filaments in parallel relation to a subsequent operation wherein each filament is fed from a source capable of providing an indeterminate length of the filament, the combination comprising; a first comb member including a plurality of equally spaced teeth therealong, the spacing between each tooth being equal to at least twice the diameter of the filament, a second comb member dimensionally similar to the first member and disposed in spaced coaxial relation to the first member and positioned transversely with respect thereto so that the teeth of the first comb member are displaced from the teeth of the second comb member a distance equal to the product of the tangent of the angle to which the filaments are being fed times the distance between the comb members wherein the distance between the comb members is at least four times the diameter of the filament.

3,201,930
ROPE STRAND AND METHOD FOR MAKING SAME
James Stirling, 109—26 209th St., Queens Village 29, Long Island, N.Y.
Filed May 13, 1963, Ser. No. 279,736
18 Claims. (Cl. 57—144)

1. A rope strand comprising a core, said core including a plurality of yarns twisted about a common axis at a predetermined pitch per unit length, a layer of individual yarn elements twisted about said common axis onto and about said core whereby the pitch per said unit length of said layer of yarn is greater than the pitch per unit length of said core measured along said common axis, so that each yarn in said core and the yarns of said core covering layer reach their maximum elongation at the breaking stress to insure each of said yarns being uniformly stressed under a given load.



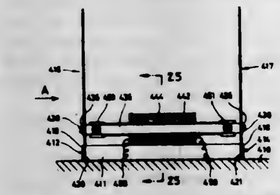
10. A method of making a multiple layer rope strand comprising the steps of drawing a plurality of yarn from a source, twisting said yarns as they are drawn from the source to form the core of said rope strand, forming said twist so as to have a predeterminate pitch per unit length of said core, simultaneously pulling another plurality of yarn having substantially similar elastromeric properties as the yarn forming said core from another source, twisting said second mentioned yarns about said core to form a covering layer therefor as said core is formed, and forming the twist of said covering layer so as to have a pitch per said unit length which is greater than the pitch of said core in one continuing operation so that the respective yarns of said core and covering layer attain substantial equality in length to insure that each of said yarns is uniformly loaded when stressed.

3,201,931
DYED GLASS FIBER YARN
Remus F. Carosella and Roland K. Gagnon, Cumberland, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Mar. 22, 1962, Ser. No. 181,795
4 Claims. (Cl. 57—153)



1. A weavable, heat-settable, dyed glass yarn comprised of substantially continuous filaments individually convoluted into coils, loops and whorls at random intervals and impregnated throughout with a finely divided inorganic pigment, said pigment being entrapped in said coils, loops and whorls of said yarn.

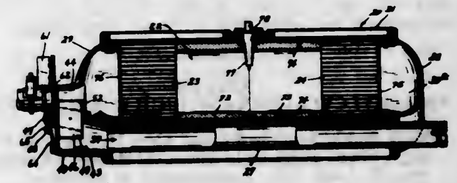
3,201,932
VIBRATORY FREQUENCY STANDARD FOR A TIMEKEEPING DEVICE
Klaus Spering, Pforzheim, and Wilhelm Tiles, Pforzheim-Birkenfeld, Germany, assignors to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed July 10, 1964, Ser. No. 382,440
8 Claims. (Cl. 58—23)



1. A frequency standard for watches having a frame, said standard comprising a mechanical vibrator and a base; the base being mounted on the frame;

said vibrator comprising four thin reeds, each of said reeds being mounted on said base;
the oscillations of the vibrator being compensated so that substantially no vibrations are transmitted to the frame;
said reeds being positioned and arranged into first and second pairs of reeds with each reed of the first pair being coupled to a different reed of the second pair by connection pieces and so that the two sets of coupled reeds simultaneously vibrate in opposite directions, with one reed of each pair vibrating oppositely to the other reed of that pair;
and the vibrator being so constructed so that the centers of gravity of the coupled reeds vibrate along substantially straight lines.

3,201,933
AFTERBURNER SYSTEM
Thomas A. Baden, Minneapolis, Minn., assignor to Donaldson Company, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 29, 1962, Ser. No. 233,736
1 Claim. (Cl. 60—30)

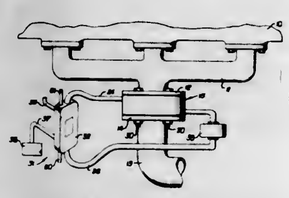


A regenerative afterburner for exhaust gases from an internal combustion engine comprising an elongated housing, a pair of regenerative heat exchangers fixedly mounted in longitudinally spaced relation in the housing, a manifold having an inlet mounted on one end of the housing engaging one of said pair of heat exchangers, a header mounted on the opposite end of the housing engaging the other of said pair of heat exchangers, and a spacer ring of refractory material between and in engagement with said heat exchangers, valve means in the manifold, conduit means connecting the header and manifold, and means for periodically shifting said valve means to alternately connect the inlet of the manifold to one end of the first heat exchanger and connect one end of the conduit means to exhaust and to then connect said one end of the first heat exchanger to exhaust and the conduit to the intake whereby to provide for a straight line flow of gases through the heat exchangers first in one direction and then in the opposite direction.

3,201,934
EXHAUST-LIQUID HEAT EXCHANGER FOR INTERNAL COMBUSTION ENGINES
Harold W. Smith, 2449 Ridgeway Road, San Marino, Calif.
Filed Aug. 6, 1962, Ser. No. 215,804
2 Claims. (Cl. 60—31)

1. In combination, an internal combustion engine exhaust manifold and exhaust line, said line and manifold having spaced apart terminal flanges, a heat exchanger unit in the space between said flanges, said unit comprising inner and outer partitions forming inner and outer passages for flowing hot exhaust and other fluid respectively in heat exchange relation, said inner passage extending endwise openly through said unit and in exhaust passing series relation with the manifold and exhaust line, said unit including heat transfer fins defining

generally endwise extending planes within both passages so as not to restrict the endwise flow of exhaust and said other fluid in said inner and outer passages respectively, said inner passage having an endwise extending axis, the fins in both passages being spaced about said axis and having openings to pass the flow of said other fluid



about said axis and in tortuous relation within the outer passage, the unit having end plates acting with said partitions to enclose said outer passage, said terminal flanges having perforations, connectors received by said perforations to connect said end plates to the flanges, and said outer partition having inlet and outlet ports to circulate said other fluid about the outer passage.

3,201,935
TRIALKYLCYCLOHEXANE HIGH ENERGY FUELS AND PROPULSION PROCESS

John O. Smith, Swampscott, and Alma M. Pomponi, Peabody, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 31, 1962, Ser. No. 213,599
5 Claims. (Cl. 60—35.4)

1. A method of developing thrust in a reaction chamber, said method comprising oxidizing a high energy fuel composition comprising, as an essential ingredient, a trialkylcyclohexane in which each alkyl group contains a different number of carbon atoms and in which each alkyl group may contain from 1 to 6 carbon atoms in said reaction chamber to produce a mass of high temperature gases and exhausting said gases from said reaction chamber so as to develop thrust.

3,201,936
CHARGE FOR SOLID PROPELLENT ROCKET

Robert Victor Bancelin, 45 Rue Prou, Claye-sous-Bois, France

Filed Nov. 17, 1961, Ser. No. 153,086
Claims priority, application France, Nov. 29, 1960, 845,343
7 Claims. (Cl. 60—35.6)

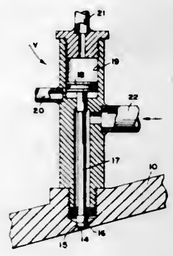


1. In a rocket propulsion unit a noncombustible casing having a longitudinal axis of revolution, a combustible charge contained in said casing and having a coaxial perforation, a noncombustible tube coaxially located in said perforation and having a lateral aperture, and at least a noncombustible wall radially extending to the periphery of said charge and connected to said internal tube along one edge of said lateral aperture.

3,201,937
VARIABLE AREA ORIFICE INJECTOR

Richard Dean McKee, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 27, 1961, Ser. No. 155,217
4 Claims. (Cl. 60—35.54)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A rocket propelled device having a converging-diverging nozzle through which gases exhaust and which is steered by injecting fluid laterally into the exhaust through angular spaced ports around the inner surface of the divergent portion of the nozzle, the improvements, in combination, comprising:

(a) a circular inwardly tapering valve seat disposed within the wall of the nozzle directly adjacent each of said ports,

(b) a valve for each seat having an end conforming to the shape of its seat,

(c) a valve stem affixed to each valve mounted for rectilinear movement,

(d) an actuator affixed to each valve stem for selectively moving a valve independently of the others and to varying positions of opening,

(e) a source of fluid under pressure communicating with each of said ports whereby fluid may be delivered to each valve, and

(f) the proximity of said valve seats to said ports being so near as to produce no substantial pressure drop therebetween, substantially all pressure drop between the source of pressure and the nozzle occurring across each valve, the fluid discharge from a valve flowing directly into the nozzle and substantially no fluid remaining between each valve and its port after it closes on its seat.

3,201,938
RECUPERATIVE ARRANGEMENT FOR GAS TURBINE ENGINES

Louis Isadore Zirin, Marblehead, Mass., assignor to General Electric Company, a corporation of New York

Filed June 27, 1963, Ser. No. 291,150
6 Claims. (Cl. 60—39.51)

1. In a gas turbine powerplant including a fluid compressor having inlet and discharge portions, a combustor having inlet and discharge portions, and a turbine having inlet and discharge portions in axially spaced relation, a discharge opening, and a passageway connecting the discharge portion of the turbine to the discharge opening, a recuperative arrangement comprising:

a first annular header,

first ducting means connected to said first annular header,

a second annular header enveloped by said first annular header in spaced relation thereto,

second ducting means connected to said second annular header,

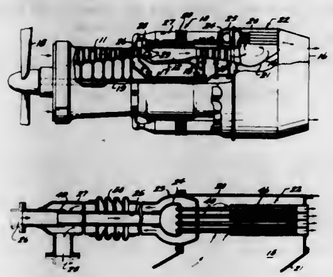
said second ducting means enveloped by and coaxial with said first ducting means,

one of said first and second ducting means connected to the discharge portion of the compressor and the other of said first and second ducting means connected to the inlet portion of the combustor,

and a bank of heat exchange members positioned in the passasgeway between the discharge portion of the turbine and the discharge opening in heat exchange relation with combustion products flowing therethrough,

each of said heat exchange members comprising an elongated closed cylinder slidably supported in the passageway and a coaxial tube slidably supported within said cylinder,

said elongated cylinder intersecting the wall of said first annular header and secured to said first and second annular headers adjacent first ends of said



cylinder and said tube, said elongated cylinder supporting said second annular header within said first annular header,

the first end of said tube intersecting the wall of said second annular header and opening into the interior of said second annular header,

means defining a fluid passageway adjacent the first ends of said cylinder and said tube between the interior of said first annular header and the space between said cylinder and said tube,

means defining a fluid passageway adjacent the second ends of said cylinder and said tube between the interior of said tube and the space between said cylinder and said tube,

whereby fluid supplied to said heat exchange members from the compressor is heated by the combustion products prior to being delivered to the combustor.

3,201,939
HYDRAULIC ACTUATION APPARATUS

Stanley J. Gut, Wayne, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Mar. 19, 1964, Ser. No. 353,174
12 Claims. (Cl. 60—52)

1. A self-contained hydraulic actuator unit comprising a liquid-tight housing enclosing within itself a chamber sealed off from the atmosphere outside the housing and adapted to contain an operative closed loop hydraulic system filled with working fluid at a different pressure than the pressure of the outside atmosphere, the space in said chamber not occupied by components of said system defining a reservoir for working fluid forming a low-pressure portion of the system, which fluid submerges the system components, said hydraulic system also having a high-pressure portion including:

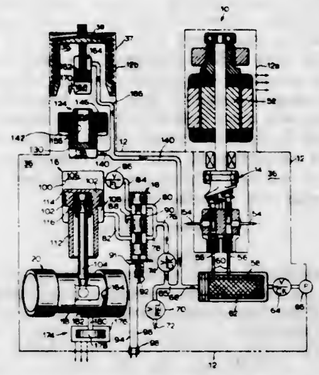
a hydraulic piston and cylinder assembly;

a pump for working fluid having low-pressure inlet passages open to said reservoir;

a multi-way, multi-port valve having low-pressure outlet passages open to said reservoir shiftable between defined positions to interconnect selected ports; and

a high-pressure flow passage means operatively interconnecting said pump, valve, reservoir and hydraulic cylinder so as to cause displacement of said piston in one direction by working fluid with the valve in one of stid defined positions and in the opposite direction with the valve in the other of said defined positions; and in which said piston and cylinder assembly has a

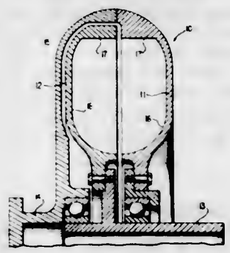
power take-off means, accessible from the exterior of said housing, disposed within said housing and coupled to said piston.



3,201,940
HYDRODYNAMIC COUPLING

Gottfried Hertel, Stuttgart, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertarkheim, Germany

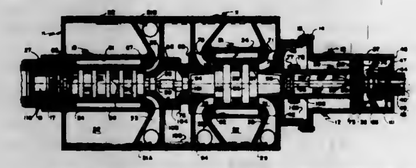
Filed Feb. 6, 1962, Ser. No. 171,484
Claims priority, application Germany, Feb. 11, 1961, D 35,392
3 Claims. (Cl. 60—54)



1. A hydrodynamic coupling, especially for the transmission of torque in motor vehicles, comprising a driving shaft, an impeller member, a turbine member and a driven shaft, a housing part drivably connecting said driving shaft and said impeller member and partially enclosing said turbine member, said turbine member being drivably connected to said driven shaft, means for journalling said housing member and said impeller member on said driven shaft, said impeller member and said turbine member each being provided with inner wall means facing the flow of the liquid of the hydrodynamic coupling and forming a chamber substantially toroidal, the sections of the inner wall means along the outer boundary of the flow circulation of said liquid being of approximately cylindrical configuration to thereby influence the operating characteristics of the coupling, and the approximately cylindrical sections of said inner wall means

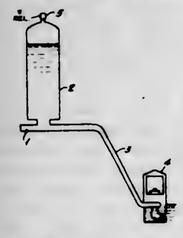
being disposed substantially along the same diameter in said impeller member and said turbine member, said inner wall means of said impeller member and said turbine member comprising outwardly extending arcuate sections joining respective ones of said sections of cylindrical configuration at an angle thereto, said housing part comprising an arcuate portion of substantially the same conformation as said arcuate section of said turbine member, said arcuate portion being parallel to said last-named arcuate section, said inner wall means of said impeller member and said turbine member comprising intermediate sections extending substantially radially of said driven shaft and merging smoothly with said outwardly extending sections, said inner wall means of said impeller member and said turbine member along the inner boundary of the flow of circulation of said liquid comprising arcuate portions of substantially identical curvature merging smoothly with said intermediate sections.

3,201,941
ASSEMBLY OF TURBOMACHINES
James K. La Fleur, Hermosa Beach, Calif., assignor to The La Fleur Corporation, Torrance, Calif., a corporation of California
Filed Apr. 18, 1963, Ser. No. 273,910
14 Claims. (Cl. 60—59)



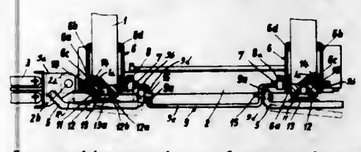
1. A housing, totally contained in said housing a plurality of bladed turbomachines in coaxially aligned and coupled relationship, said housing being divided for assembly and disassembly into parts by division thereof transversely of such axis, adjacent ends of said machines being provided with a space inside of said housing, each of said machines being provided with a blade passage and an inlet and an outlet opening for each of said passages, a system providing for the circulation of a common gas through all of said passages, means supplying and removing heat from said gas so as to cause said machines to operate so that there is a pressure differential between the inlet and the outlet of each passage, and said machines and system being so arranged that adjacent ones of said openings are at substantially the same pressure.

3,201,942
CLOSED SURGE TANK
Hiroji Yamamoto, 88 Isobe-machi, Toyama-shi, Japan
Filed Oct. 6, 1961, Ser. No. 143,492
Claims priority, application Japan, Oct. 20, 1960, 42,805
7 Claims. (Cl. 61—19)



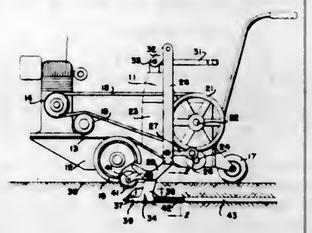
1. A hydraulic surge tank, comprising a chamber communicating with a hydraulic line carrying a fluid under pressure, said line being subject to sudden fluid surges owing to quick increase and decrease of said pressure, a cover for closing said chamber in a fluid-tight manner, said chamber being partly filled with said fluid, and a two-way relief air valve in said cover, said valve being continually open under normal circumstances of use so as to communicate with the space within said chamber and with the atmosphere, and being set to a predetermined pressure lower than that to which said line may be subjected, whereby said surges are effectively dampened by a pneumatic braking effect resulting from a controlled amount of air which passes outward and inward, respectively, through said valve during the use of the surge tank, depending on the direction and amount of said surges.

3,201,943
MINE ROOF SUPPORT
Wilhelm Wilkenloh and Karl Brauer, both of Duisburg-Wanheim, Germany, assignors to Rheinstahl Wanheim G.m.b.H., Duisburg-Wanheim, Germany
Filed Nov. 27, 1961, Ser. No. 155,109
Claims priority, application Germany, Dec. 24, 1960, R 29,348
17 Claims. (Cl. 61—45)



1. In a multi-prop mine roof support, in combination, at least two props each having a lower portion and an upper portion reciprocable relative to said lower portion to support said roof; a ground contacting sole plate for each prop; means for articulately coupling the ground contacting sole plates with the lower portions of the respective props; a ground contacting connecting plate arranged between the lower portions of adjacent props; and coupling means at both ends of said ground contacting connecting plate slidably engaging said lower portions of said adjacent props for sliding movement relative thereto.

3,201,944
PIPE AND CABLE LAYING MACHINE
Peter N. Christensen, 1135 W. Custer Place, Denver, Colo.
Filed July 12, 1962, Ser. No. 209,431
3 Claims. (Cl. 61—72.5)

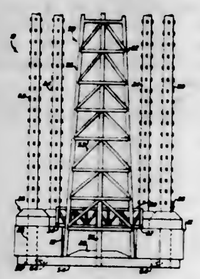


1. A machine for carrying and longitudinally moving an elongated member forwardly beneath a ground surface comprising a support means for traversing the ground surface, oscillatable means extending downwardly from said support means and oscillatable relative to said support means for providing impact forces at a predetermined depth beneath the ground surface and in the direction in which said support means traverses said ground surface, a tunnel forming element elongated in the direction of oscillating movement, power means carried on said support means operatively connected to said downwardly extending means for continuously oscillating said downwardly extending means and thereby providing said impact forces, securing means connecting said downwardly extending means to said tunnel forming element at said predetermined depth beneath the ground surface, and conecting means rearwardly extending from said tunnel forming element for joining the elongated member which is to be buried to said tunnel forming element, said connecting means including a flexible element adapted to absorb the rearword oscillating motion of said tunnel forming element so that intermittent impact forces are delivered periodically to the elongated member via said tunnel forming element in only the direction of the forwardly traversing movement of said support means to incrementally and repeatedly pull and advance the elongated member to be buried along a horizontal path in a trailing relation to said tunnel forming element and at the same depth as said tunnel forming element is moved beneath the ground surface.

ERRATUM

For Class 61—72.6 see:
Patent No. 3,201,948

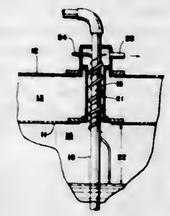
3,201,945
OFFSHORE EQUIPMENT SUPPORTS AND METHOD OF OPERATION
John R. Sutton, P.O. Box 32, Beaumont, Tex.
Filed Apr. 22, 1960, Ser. No. 24,120
7 Claims. (Cl. 61—46.5)



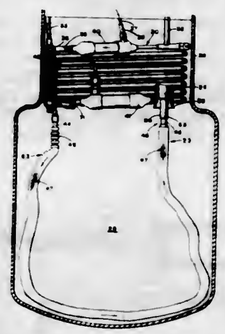
1. A method of erecting a stand in a body of water comprising the steps of supporting said stand on a buoyant barge floating in the body of water, said barge having a plurality of columns movably mounted thereon, and said stand being releasably secured to at least one of said columns, lowering said plurality of columns relative to said barge and thereby lowering said stand until both said columns and said stand contact the floor of the body of water to support said barge, disconnecting from said stand any of said columns releasably connected to said stand while said stand is in contact with the floor of the body of water, and raising all of said columns relative to said barge and out of contact with the floor of the body of water to thereby free said stand of contact with said columns.

3,201,946
CRYOGENIC CONTAINER SUPPORT AND CRYOGENIC CONTAINER SUPPORT AND FLUID CONDUIT STRUCTURE
Richard S. Paulinkonis, Cleveland, Ohio, assignor to Ryan Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 13, 1964, Ser. No. 351,774
4 Claims. (Cl. 62—45)

1. In cryogenic container means having inner and outer container shells with an evacuated space therebetween, and a supporting neck through which conduit means passes from the exterior of the outer shell to the interior of the inner shell, a neck structure comprising an exteriorly ventable neck tube bridging the evacuated space and opening into the top of the container chamber, a dip tube extending through the neck tube and depending downwardly far into the interior of the container chamber, radially intermediate tube means concentrically surrounding the dip tube and extending through the neck tube to define at least one additional fluid-flow cross-section that is radially exterior to the dip tube but is inside the neck tube, said radially intermediate tube means including at least one tube that depends downwardly through the ullage height of said container chamber and then opens into the interior of said container chamber.



3,201,947
CRYOGENIC TRANSPORT TUBE INCORPORATING LIQUEFACTION APPARATUS
Arthur H. Post, Jr., Belmont, and Milton H. Streeter, Sudbury, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Sept. 6, 1963, Ser. No. 307,873
9 Claims. (Cl. 62—55)



1. A cryogenic transport tube adapted to effect a final out-of-contact heat exchange between high-pressure and low-pressure fluids and to expand and liquefy said high-pressure fluid at a point of delivery remote from preceding out-of-contact heat exchangers located within an enclosed vessel, comprising in combination
(a) an enclosed vessel;
(b) out-of-contact heat exchange means located within said enclosed vessel;
(c) a conduit in communication with the high-pressure side of the terminal of said heat exchange means within said vessel and constructed and arranged to be moved up and down within said enclosed vessel;
(d) a first section of tubing comprising an inner high-pressure channel, an annular low-pressure channel

surrounding said high-pressure channel and an evacuated annular channel surrounding said low-pressure channel;

(e) first coupling means joining said conduit to said high-pressure channel of said first section of tubing, and constructed and arranged to provide fluid communication between said annular low-pressure channel of said first section of tubing and the interior of said enclosed vessel and to provide sealing means for one end of said evacuated annular channel;

(f) a second section of tubing comprising a first continuation of said inner high-pressure channel, said annular low-pressure channel and said evacuated channel of said first section of tubing and raidation shielding means around the outer wall defining said low-pressure channel;

(g) second coupling means joining said first and second sections of tubing in fluid-tight relationship;

(h) a third section of tubing comprising a second continuation of said inner high-pressure channel, said annular low-pressure channel and said evacuated channel of said first section of tubing and having an outer protective sheath furnishing an outermost channel for low-pressure cold fluid; said third section having a fluid delivery end suitable for insertion in a storage vessel;

(i) said fluid delivery end comprising

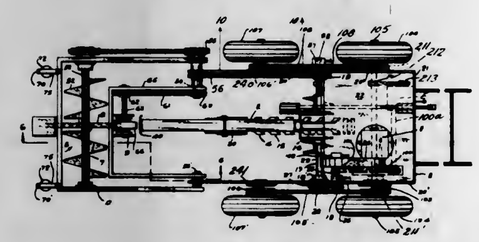
(1) valve means constructed and arranged to expand and at least partially liquefy high-pressure fluid delivered thereto by said high-pressure channel,

(2) passage means constructed and arranged to return cold high-pressure gas through said annular low-pressure channel, and

(3) sealing means terminating said evacuated annular channel; and

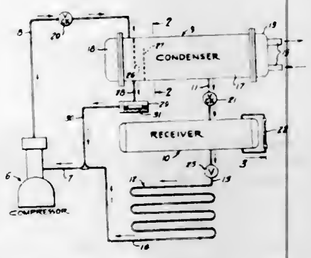
(j) third coupling means joining said second and third sections of tubing in fluid-tight relationship and containing therein means for actuating said valve means located in said delivery end of said third section of tubing.

3,201,948
TRENCHING AND CABLE LAYING MACHINE
Arthur G. Schramm, 215 N. 28th St., Phoenix, Ariz.
Filed May 4, 1961, Ser. No. 107,828
6 Claims. (Cl. 61—72.6)



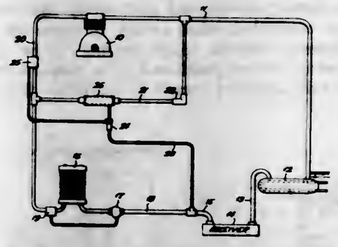
1. A trench and cable laying machine composed of a frame including two parallel laterally positioned and transversely separated upright side plate members, having connecting transverse top and front plates, said frame having front and rear, wheels mounted on transverse shafts on said frame in tandem arrangement on each side thereof, the transverse shaft to which the forward wheels are attached extending through said frame and having means for receiving driving motion; an engine mounted on said frame and attached through clutch means to said wheels; a transverse power-driven shaft journalled at its ends in said frame plate members; an endless chain digger operated by said transverse power-driven shaft, a cable positioning tube pivotally attached to said transverse power-driven shaft at its forward end and adapted to receive a cable to be laid in a trench formed by said digger, said tube extending downwardly and rearwardly from said frame, rollers at the rear of said tube to minimize friction of a cable extending and running through said tube, a curved pliant baffle at the rear of said tube extending upwardly and laterally spanning the transverse width of said digger; having its edges pliantly bearing on the walls of said trench, a vibrating tamper positioned adjacent to and rearwardly of said baffle attached to a U-shaped frame, said U-shaped frame pivotally attached to the rear ends of said frame plate members and supporting said tamper, mechanical means on said U-shaped frame for vibrating said tamper a second U-shaped frame positioned outwardly of said first mentioned U-shaped frame and pivotally attached to said plate members, riding wheels vertically adjustable attached to the rear of said second U-shaped frame to support the weight of the rear of said second U-shaped frame, mechanism for driving said digger from said engine on said frame and mechanism for driving the tandem wheels on each side of said frame; said mechanism operable to drive either of the right or left forward wheels, as desired, and a rotary spiral scraper operating in the rear end of said second U-shaped frame having right and left spiral flights disposed on a transverse shaft in said frame and adapted to move dirt from each side of said ditch centrally and into said ditch.

3,201,949
REFRIGERATING APPARATUS WITH OIL SEPARATOR MEANS
Erich J. Kocher, Milwaukee, Wis., assignor to Vilter Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 22, 1963, Ser. No. 303,802
3 Claims. (Cl. 62—192)



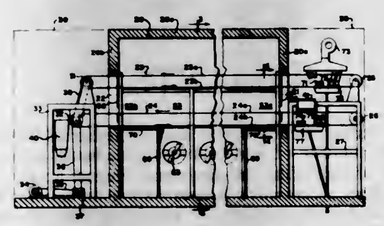
1. In a refrigerating system, a compressor having a low pressure inlet and a high pressure outlet, a condenser having an inlet section communicating with the high pressure outlet of said compressor, said inlet section being segregated from the remainder of the condenser by a baffle extending upwardly from the bottom and transversely across said condenser to form a dam restricting liquid flow, a receiver communicating with said condenser remote from the inlet section thereof downstream of said baffle for receiving condensed refrigerant therefrom, an evaporator communicating at one end with said receiver for receiving condensed refrigerant therefrom, said evaporator having the other end thereof communicating with the low pressure inlet of said compressor via a suction line, and conduit means between the lower portion of the segregated inlet section of said condenser and the suction line between the low pressure inlet of said compressor and said evaporator for returning oil and quantities of refrigerant from said condenser inlet section to said suction line and back to said compressor.

3,201,950
REFRIGERATION APPARATUS INCLUDING LIQUID INJECTION DESUPERHEATER
Raymond M. Shrader, Decatur, Ga., assignor to Larkin Coils, Inc., Atlanta, Ga., a corporation of Georgia
Filed Sept. 26, 1963, Ser. No. 311,743
6 Claims. (Cl. 62—197)



1. In a refrigeration system having automatic capacity control means for varying the capacity thereof including a compressor, condenser, receiver and evaporator having the usual hot gas line from the outlet side of the compressor to the condenser, a suction line from the inlet side of the compressor to the evaporator and a liquid line from the receiver to the evaporator, a hot gas by-pass conduit directly connecting the outlet and inlet sides of said compressor, a liquid by-pass conduit directly connecting said receiver and said gas by-pass conduit, and means for regulating the flow of gaseous refrigerant through said gas by-pass conduit responsive to conditions in the system indicative of the load on the evaporator and pressure in the suction line; the improvement comprising liquid injection means in said gas by-pass conduit at the junction of said liquid by-pass conduit comprising a plurality of concentric tubular members, one of said tubular members having fixed sized orifices in heat exchange relation with the hot gas in said gas by-pass conduit wherein said orifices are so calibrated as to bring the liquid to a boil before said liquid is injected into said gas by-pass conduit whereby the injected liquid absorbs heat from the hot gas to effect complete vaporization of said injected liquid to prevent a slug of liquid from reaching said compressor.

3,201,951
UPDRAFT CONTINUOUS FREEZER
Bert N. Robinson, Seattle, Wash., assignor to W. E. Stone & Co., Inc., Seattle, Wash., a corporation of Washington
Filed Dec. 16, 1963, Ser. No. 330,884
11 Claims. (Cl. 62—272)



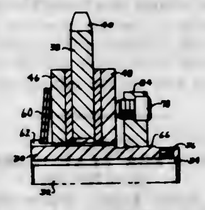
1. In a continuous freezer, an endless perforated belt conveyor having an upper product-carrying course, movable non-refrigerating perforated combination frost collecting and product confining means spaced directly above said upper course, means for enclosing an intermediate part of the length of the space located between said upper course and said combination means to define a freezing zone, and means for passing a gaseous cooling medium upwardly through said freezing zone by passage thereof upwardly through said upper course and combination means.

3,201,952
ORNAMENTAL HAIR CLAMP
Daniel A. Triangolo, Cranston, R.I., assignor to Danal Jewelry Company, Providence, R.I., a corporation of Rhode Island
Filed Aug. 13, 1962, Ser. No. 216,395
6 Claims. (Cl. 63—2)



1. In a hair ornament, a first plate member, a second plate member located in edge-to-edge abutting relation with respect to said first plate member and being normally in substantially the same plane therewith, a coil spring, means connecting said members and said coil spring, said coil spring having its longitudinal axis extending from one plate member to the other in overlying and generally parallel relation when said plate members are in their normal edge-to-edge abutting relation, the adjacent convolutions of said spring being located in mutually abutting relation when said spring is in the normal relaxed position thereof, said plate members being movable relative to each other, the abutting edges defining a pivot axis therefor, said coil spring having means including exposed ones of said convolutions whereby, upon movement of said plate members causing said coil spring to be tensioned, the adjacent convolutions thereof are separated to define spaces into which strands of hair of the wearer are inserted, said spring capturing the strands of hair between the adjacent convolutions when the plate members are released for return to their normal position.

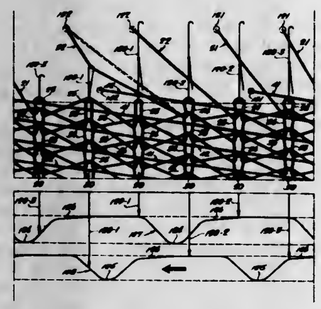
3,201,953
TORQUE LIMITING DEVICE
David Firth, South Bend, Ind., assignor to Dodge Manufacturing Corporation, Mishawaka, Ind., a corporation of Indiana
Filed Oct. 30, 1961, Ser. No. 148,634
5 Claims. (Cl. 64—30)



1. A torque limiting mechanism for use in combination with sprockets, sheaves, pulleys, gears and the like, comprising a cylindrically-shaped hub having a longitudinal bore therethrough and a plurality of longitudinal grooves on the external surface and annular abutment means on the external surface of said hub, a threaded portion on the external surface of said hub spaced from said means, a pair of annular pressure plates with a center opening on said hub disposed between said means and said threaded portion and having friction material on their inner side surfaces and lug means extending into said longitudinal grooves, a disc-shaped drive plate rotatably mounted on said hub between said pressure plates, a ring member threadedly received in predetermined position on said threaded portion and having three threaded holes therethrough with enlarged outer end portions, an annular resilient means interposed between said abutment means

and the adjacent pressure plate, and adjustment screws in the holes of said ring member for engaging the adjacent pressure plate, each of said screws having a head seating against said ring in the outer portion of the respective hole in said ring for determining the torque required to cause relative rotation between said pair of pressure plates and said drive plate.

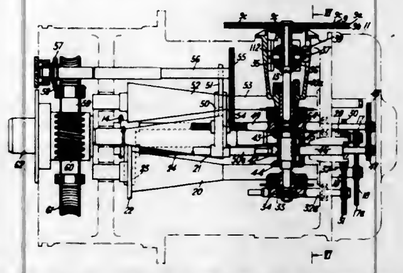
3,201,954
METHOD AND APPARATUS FOR REINFORCING FLEXIBLE HOSE
John Greczin, Philadelphia, Pa., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 19, 1962, Ser. No. 174,288
3 Claims. (Cl. 66—9)



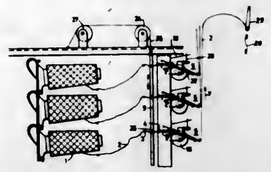
1. The method of knitting a composite fabric composed of two superimposed webs comprising the steps of providing two sets of needles arranged in interdigital relationship in a needle circle with the needles of one set alternating with the needles of the other set, knitting each web of the fabric on one of the sets of needles, feeding yarn to said needles consecutively about the circumference thereof, and drawing-down said needles to form knit loops, one needle of each set being drawn down approximately concurrently with an adjacent needle of the other set, the leading needle with respect to the direction of yarn feed being drawn down slightly in advance of the subsequent needle to thereby position the yarn engaged in the hook of the leading needle below the latch of said subsequent needle so as to be cast off during the formation of a knitted loop by the subsequent needle.

3,201,955
FEED MEANS FOR FLAT WARP KNITTING MACHINES
Allan William Henry Porter, Burton-on-Trent, England, assignor to Hepburn-F.N.F. Limited, Burton-on-Trent, England, a British company
Filed Aug. 16, 1962, Ser. No. 217,444
Claims priority, application Great Britain, Aug. 16, 1961, 29,588/61
5 Claims. (Cl. 66—86)

1. In a flat warp knitting machine of the kind having a warp beam, power means for driving said warp beam, infinitely variable speed gearing operatively interposed between said power means and said warp beam, and a warp let-off mechanism controlling said infinitely variable speed gearing whereby said warp beam is rotated at a speed such that the linear speed of thread leaving the periphery of said warp beam is maintained substantially constant at a desired value; the improved warp let-off mechanism comprises, a rotary sensing device adapted to rotate at a speed corresponding to the linear speed of thread leaving the periphery of said warp beam, a rotary member adapted to be rotated at a constant speed corresponding to the desired linear speed of thread leaving said warp beam, movable actuating means respective to relative rotation between said sensing device and said rotary member, first switch means positioned to be closed upon movement of said actuating means in one direction following relative rotation between said sensing device and said sensing device and said rotary member in one sense and connected, when closed, to cause the ratio of said infinitely variable speed gearing to be increased, second switch means positioned to be closed upon movement of said actuating means in the other direction following relative rotation between said sensing device and said rotary member in the other sense and connected, when closed, to cause the ratio of said infinitely variable speed gearing to be decreased, means for moving said switch means bodily toward and away from said actuating means, and feed back means adapted to transmit back to said switch moving means a movement dependent on the correction to the ratio of said infinitely variable speed gearing whereby a switch means which has been closed as a result of relative rotation between said sensing device and said rotary member is moved away from said actuating means and reopens.

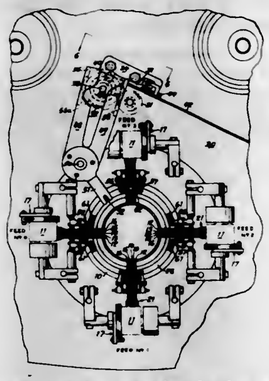


3,201,956
TEXTILE MACHINE
Gunnar Liebrandt, Naila-Froschgrun, Arno Zwingenberger, Marxgrun, near Bad Steben, and Willi Mueller, Naila, Upper Franconia, Germany, assignors to Karl Liebrandt, Naila-Oberklingensporn, Germany
Filed Oct. 20, 1961, Ser. No. 146,582
Claims priority, application Germany, Nov. 4, 1960, L 37,439
2 Claims. (Cl. 66—125)



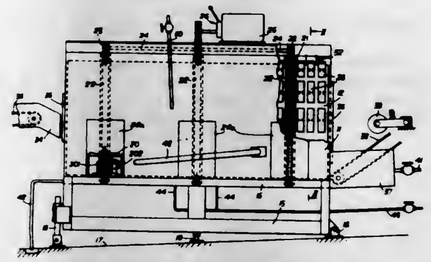
1. A textile machine comprising a number of bobbins, an equal number of sets of knitting elements, an equal number of individual uni-directional thread brakes, the thread from a respective bobbin having an appertaining one of said brakes means for supplying threads drawn off said bobbins through said respective thread brakes to respective sets of said knitting elements, a feeding frame arranged between said bobbins and said brakes, said frame being provided with tensioned wire means, one of said wire means being allotted to each thread for deflection of the thread from the running direction thereof and for storage of thread between said bobbins and said brakes, and means for reciprocating said feeding frame in timed relationship to the operation of the machine.

3,201,957
YARN FINGER OPERATING MEANS
Nathan Levin, 722 Edgewood Ave., Trenton, N.J.
Filed Jan. 19, 1961, Ser. No. 83,828
19 Claims. (Cl. 66—138)



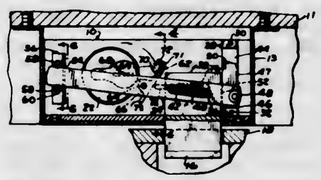
6. A circular knitting machine having a plurality of yarn fingers movable into feeding and into non-feeding positions at each of a plurality of feeds, and means including a single actuating member operatively related to selected fingers at each of said feeds and adapted to be made active and inactive, the said selected fingers being positioned on opposite sides of said plurality of yarn fingers, said member when active being operable to cyclically control the movements of said selected fingers alternately into both of said positions at each of said feeds and when inactive being inoperative to control the movements of said selected fingers whereby the latter are free of the influence of said member and whereby all of said plurality of yarn fingers are movable into both of said positions at each of said feeds.

3,201,958
LAUNDRY WASHING MACHINES
Geoffrey Smith, Woodingdean, Sussex, England, assignor to Polymark (Holding) Limited
Filed Sept. 17, 1962, Ser. No. 223,891
Claims priority, application Great Britain, Sept. 21, 1961, 33,821/61
1 Claim. (Cl. 68—58)



A laundry washing machine comprising a cylindrical outer casing of uniform configuration, a perforated cylindrical inner cage disposed within and co-axially of said casing, both said cage and said casing being inclined to the horizontal, the lengths of said cage and said casing substantially exceeding their respective diameters, means to feed articles to be washed into the upper end of the inner cage, means to remove washed articles from the lower end of the inner cage, means to rotate said inner cage about its longitudinal axis within said outer casing, means to supply washing liquid at the lower end of the outer casing and to extract it from the higher end of said outer casing after traversing the length of said casing, means to provide different operating regimes at different points in the length of said outer casing; and beaters disposed parallel to said longitudinal axis, and extending the whole length of the inner cage to lift the articles simultaneously from the lower zone of the cage along its whole length to a higher position and then to allow them to fall to a lower level position for progression lengthwise of the inner cage by gravity action, each of said beaters comprising a V-shaped perforated portion and an imperforate longitudinally extending web member extending radially inwardly from said inner wall into the apex of said V-shaped portion to divide the space enclosed between said V-shaped portion and said inner wall into two longitudinally extending partial spaces, and partition walls extending radially inwardly from said inner wall into the space enclosed between said V-shaped portion and said inner wall to divide said two partial spaces into a number of compartments said machine furthermore comprising first and second liquid scoops disposed on the outer surface of the inner cage, said first scoops being in communication with the interior of said inner cage, and said second scoops being in communication with said compartments of said beaters, said scoops causing washing liquid to be scooped up during rotation of said inner cage and directed on to articles lifted by said beaters so as to urge said articles away from said beaters and said inner wall and thereby to improve the washing action of the machine, and a series of inwardly directed fin-like baffle members extending circumferentially and radially inwardly from the outer casing towards and nearly into contact with the inner cage between adjacent peripheral rows of said scoops so as to assist in providing separate zones where different operating regimes are maintained and to impede the direct through-flow of washing liquid lengthwise of the machine in the space between said outer casing and said inner cage and to cause said washing liquid to flow in successive paths into and out of the inner cage to maintain an efficient washing action on articles to be treated.

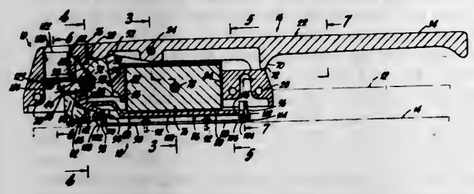
3,201,959
SAFETY LOCK
Boyd Henry Yeager, Byron, Mich., assignor to The Engineered Products Company, Flint, Mich., a corporation of Michigan
Filed Sept. 4, 1962, Ser. No. 221,061
11 Claims. (Cl. 70—134)



11. In combination a key, a key actuated lock, said key being removable from said lock when said key is in a predetermined position with respect to said lock, a lock bolt, lock bolt actuating means for moving said bolt from an unlocked to a locked position in response to rotation of said key in a first direction from said predetermined position to a second position corresponding to said locked position of said bolt, and means operable once a locking operation has been initiated for preventing said lock bolt from being positioned intermediate its locked and unlocked positions when said key is rotated in an opposite direction without having first completed said lock-

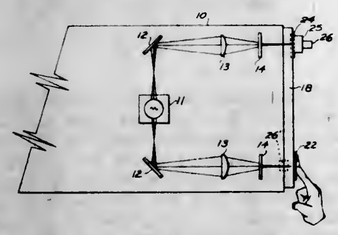
ing opeation, said key being freely rotatable in said opposite direction to said predetermined position after a locking operation has been completed while said lock bolt remains in said locked position.

3,201,960
COMBINATION MAGNETIC AND MECHANICAL LATCH
Irving L. Berkowitz, Oceanside, Long Island, N.Y., assignor to Kason Hardware Corporation, Brooklyn, N.Y., a corporation of New York
Filed Nov. 19, 1963, Ser. No. 324,790
9 Claims. (Cl. 70—150)



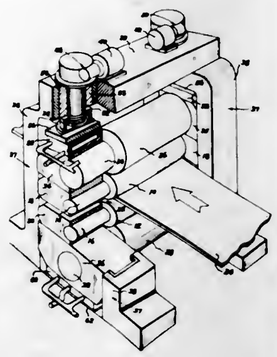
1. A latch comprising, a striker adapted to be attached to a door jamb, support means adapted to be attached to a door, an actuating handle mounted for latching and unlatching movement on said support means, a latch member mounted for latching and unlatching movement on said support means and having a first part in the path of movement of said handle for engagement by the latter to move said latch member from a latched position in which it engages said striker to an unlatched position in which it is released from said striker, and spring means engaging said latch member and biasing the latter toward said latched position, said latch member having another part positioned to press said striker during unlatching movement of said handle to push said support means away from said striker and magnetic means mounted on said support means and positioned to engage said striker in the latched position of said latch, said striker being made of material which is attracted to said magnetic means, and said another part of said latch member being operable to break the magnetic grip between said magnetic means and said striker during initial unlatching movement of said handle.

3,201,961
CONTROL DEVICE
Holland V. Williams, Buffalo, and Daniel T. Hindman, Kenmore, N.Y., assignors to Finger Keys, Inc., Buffalo, N.Y.
Filed Mar. 26, 1962, Ser. No. 182,588
18 Claims. (Cl. 70—277)



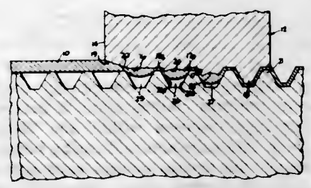
1. A door controlling system comprising, in combination with a door control member, means for operating said control member automatically in response to a preselected fingertip pattern including means for scanning a fingertip and generating a first signal corresponding to the pattern thereof, means for simultaneously scanning a reference finger print and generating a second signal corresponding to the pattern thereof, and means responsive to correspondence of said first and second signals for energizing said operating means only upon substantial identity between said patterns.

3,201,962
ROLLING MILL POSITION CONTROL
Charles F. Hautau, 146 Hilltop Road, Oxford, Ohio
Filed Nov. 13, 1961, Ser. No. 151,924
7 Claims. (Cl. 72—9)



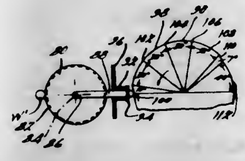
6. In a rolling mill having a stationary frame, and cylindrical rolls disposed with their axes parallel to one another and journaled in bearings which are movable within said frame, a positioning system for controlling the spacing between said rolls, comprising:
expansible material fixed to the bearings of said rolls;
means for measuring a dependent variable associated with the operation of the rolling mill;
and means, under control of the measuring means for maintaining said expansible material at a temperature which is a function of said dependent variable.

3,201,963
APPARATUS FOR ROLLING TUBING INTO A CONVOLUTED CONTOUR
William H. Leinbach, Rte. 3, Hillsdale, Mich.
Original application June 30, 1960, Ser. No. 40,024, now Patent No. 3,149,512, dated Sept. 22, 1964. Divided and this application Feb. 15, 1963, Ser. No. 258,718
9 Claims. (Cl. 72—77)



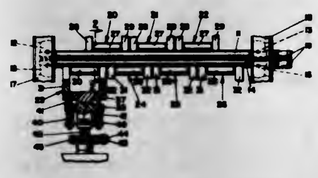
1. A mandrel for supporting tubing for rolling the tubing into a convoluted contour comprising a first convoluted mandrel portion having a pitch diameter equal to the internal pitch diameter of the finished convolutions on the tubing and having a second convoluted portion extending from said first mentioned convoluted portion and having a pitch diameter equal to the external pitch diameter of the finished form and of a larger pitch diameter than the pitch diameter of the first convoluted mandrel portion.

3,201,964
METHOD AND APPARATUS FOR ROLLING THREADS
Fritz Walters, Grosse Pointe Woods, Mich., assignor to Detroit Tap & Tool Company, Warren, Mich., a corporation of Delaware
Filed Jan. 21, 1963, Ser. No. 252,770
6 Claims. (Cl. 72—108)



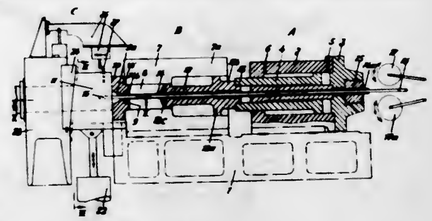
1. A rotary die for pressure forming threads comprising a body having an axis of rotation and a work surface on the periphery thereof, said work surface including an eccentric portion having teeth thereon progressively increasing in diameter, the rate of increase in diameter progressively diminishing whereby the rate of penetration of said teeth on said eccentric portion into the workpiece progressively diminishes so that substantially equal volumes of material are displaced on said workpiece per unit of movement of said teeth on said eccentric portion relative to said workpiece.

3,201,965
STAGGERED SUPPORTING ARRANGEMENT FOR BACKED-UP ROLLER LEVELER
Frederick K. Maust, 85—36 212th St., Queens Village, N.Y.; Hedwig Maust and John Grill, administrators of said Frederick K. Maust, deceased
Original application Oct. 22, 1958, Ser. No. 768,991, now Patent No. 3,078,908, dated Feb. 26, 1963. Divided and this application Dec. 10, 1962, Ser. No. 243,499
5 Claims. (Cl. 72—163)



1. In a roller leveler, two banks of straightening rolls, between which a distorted sheet is to pass, each bank comprising work rolls and supporting sections, an even number of supporting sections located along the longitudinal axis of the work rolls of one bank of straightening rolls, an odd number of supporting sections located along the longitudinal axis of the work rolls of the other bank of straightening rolls, central portions of the last named supporting sections being arranged between the central portions of adjacent pairs of the first supporting sections, end portions of the supporting sections of one bank overlapping end portions of adjacent pairs of supporting sections of the other bank, and means for adjusting each of said supporting means towards or away from its associated work rolls to deflect said work rolls for correcting and leveling the work material.

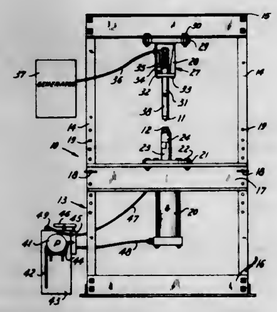
3,201,966
APPARATUS FOR THE EXTRUSION PRESSING OF TUBES, ESPECIALLY STEEL TUBES
Helmut Benteler, Bielefeld, and Wilfried Vogel, Paderborn, Germany, assignors to Benteler-Werke Aktiengesellschaft, Kreis Paderborn, Germany, a firm
Filed May 23, 1962, Ser. No. 197,071
Claims priority, application Germany, May 23, 1961, B 62,596
11 Claims. (Cl. 72—264)



1. In an apparatus for converting axially perforated billets into tubes by extrusion pressing, in combination,
(a) elongated pressure chamber means open at one end and adapted to accommodate an axially perforated billet;
(b) die means having a die opening determining the outer contour and dimensions of a tube to be extruded;
(c) tool ho'der means carrying said die means and being movable between an idle position and an operative position in which it substantially closes said one open end of said pressure chamber means and places said die means in operative position;
(d) ram means in said pressure chamber means and movable therein in longitudinal direction for forcing the material of a billet lodged in said pressure chamber means through said die means when the latter are located by said tool holder means in said operative position;
(e) guide tube means arranged stationarily in said pressure chamber means coaxially with said die opening when said die means are in said operative position, and extending longitudinally through said ram means and through an axially perforated billet when the latter is p aced in said chamber means, said guide tube means having a forward free end spaced axially a predetermined distance from said die means and shaped to form together with the face thereof opposite thereto an admission funnel for the material of said billet to be forced through said die opening; and
(f) mandrel rod means arranged to be freely slidable through said guide tube means and extending through said die opening so as to determine the inside contour and dimension of the tube to be extruded, said mandrel rod means comprising at least two sections introducible at the rear end of said guide tube means during the extrusion operation, and a s'eeve coupling said sections together and having an outer diameter corresponding to the outer diameter of said mandrel rod sections, with an annular groove with sharply defined edges provided in the area of said sleeve

whereby the mandrel rod means are carried along continuously by a tube being extruded and in continuous stationary contact with the inner surface thereof so as to prevent deterioration of said inner surface by contact with atmospheric air during the cooling off period following the passage through the die means and a constriction mark is caused to appear on the extruded tube in the area of said aleeve therein.

3,201,967
METAL FORMING
Lewis Balamuth, Woodside, and Arthur Kuris, Riverdale, N.Y., assignors to Cavitron Ultrasonics Inc., Long Island, N.Y., a corporation of New York
Filed Feb. 23, 1960, Ser. No. 10,280
2 Claims. (Cl. 72—359)

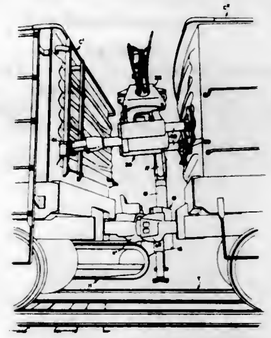


1. Metal forming apparatus comprising two die members movable rectilinearly toward and away from each other and having cooperative metal forming surfaces which, for the most part, are at substantial angles with respect to the direction of the relative movement of the die members, means applying vibrations to at least one of said die members substantially at the center thereof and in directions parallel to the direction in which said die members are movable toward and away from each other, said vibrations being at a frequency in the range between approximately 1 kc./sec. and 100 kc./sec. and an amplitude sufficient to impart peak accelerations of at least 1000 g. to the related die member, and means exerting a static force urging said die members toward each other with an acceleration far less than said peak accelerations so that said static force and the impacts resulting from said vibrations combine to form metal disposed between said surfaces of the die members to the configuration of the latter while said peak accelerations ensure that at least the metal forming surface of said one die member is only in intermittent and relatively movable contact with the metal to very substantially reduce the frictional resistance to forming of the metal.

3,201,968
TRACTOR CARRIED RAILROAD CAR STRAIGHTENER
Russell Stanley Hill, Lafayette, Calif., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,831
7 Claims. (Cl. 72—392)

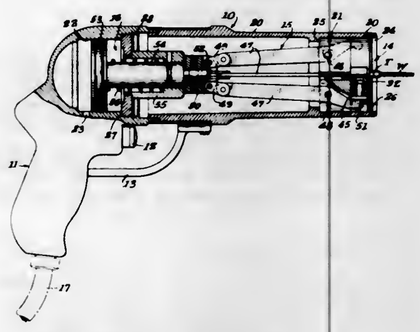
1. The method of straightening a bent or bulged plate at one end of a first railroad car, which comprises the steps of

coupling a second railroad car to said one end of said first railroad car having the bent or bulged end plate, supporting a hydraulic jack having a base and a head horizontally between said cars so that the head bears against said bent or bulged portion of said first car and the base bears against the end of said second car,



and applying fluid pressure to said jack to expand the same and react through said second car and the coupling between said cars to push the bent or bulged end toward normal position.

3,201,969
TERMINAL-CLINCHING TOOL
Roy D. Harrison, Inglewood, and Floyd A. Sharp, Downey, Calif., assignors, by mesne assignments, to Pendleton Tool Industries, Inc., a corporation of Delaware
Filed Jan. 16, 1961, Ser. No. 83,046
8 Claims. (Cl. 72—402)



1. An indenting tool, comprising:

a body,

indenter means removably mounted on said body and having a bore to receive a workpiece to be indented and a guideway extending transversely of and opening at one end to said bore,

an indenting die slidable in said guideway between an extended position wherein one end of said die projects into said bore for indenting a workpiece therein and a retracted position wherein said one end of said die is retracted from said bore,

said die having a transverse thrust face,

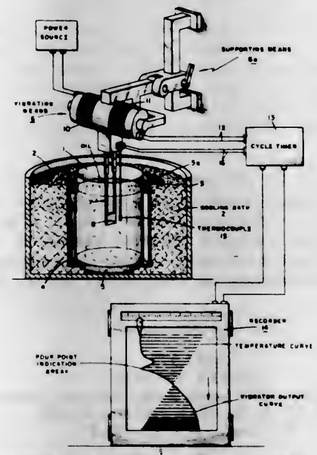
means for moving said die between said positions including a lever pivotally mounted on said body and having one end releasably engaging said thrust face, whereby rocking motion of said lever is effective to move said die between said extended and retracted positions,

power means on said body operatively connected to said lever for rocking the latter,

said indenter means and die being removable as a unit from said body, and

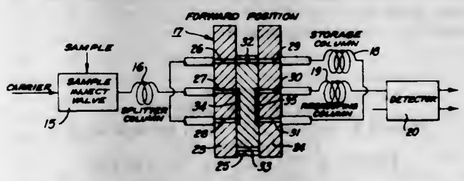
means releasably securing said indenter means to said body.

3,201,970
POUR POINT DETERMINATION
John B. Bensgh and Richard C. Halter, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Dec. 26, 1961, Ser. No. 161,856
7 Claims. (Cl. 73—17)



1. A method of measuring the pour point of oil comprising immersing a vibrating probe into said oil, cooling said oil from a temperature above the pour point of said oil to a temperature below the pour point, and measuring the change of vibrational energy of said vibrating probe with respect to temperature whereby the pour point is determined from a definite break in the vibrational energy cause by a reduction in the damping action of said oil as said oil is cooled.

3,201,971
GAS CHROMATOGRAPH
Richard Villalobos, Santa Ana, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Oct. 8, 1962, Ser. No. 228,930
6 Claims. (Cl. 73—23.1)



1. In a gas chromatograph having sample injection means, detector means and means for directing a stream of carrier gas therethrough, the combination of:

a splitter column;

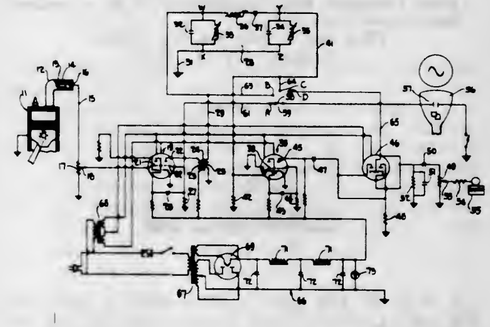
a storage column;

a regrouping column;

gas flow control valve means movable between forward and reverse positions; and

conduit means interconnecting said columns, valve means, sample injection means, and detector means for gas flow from said sample injection means through said splitter column, storage column and regrouping column to said detector means, said valve means being connected through said conduit means to opposite ends of said storage column so that flow through said storage column is in a first direction when said valve means is in said forward position, and so that flow through said storage column is in the reverse direction when said valve means is in said reverse position.

3,201,972
KNOCK DETECTION INSTRUMENT
Warren H. Krause, Cleveland, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 15, 1962, Ser. No. 179,877
1 Claim. (Cl. 73—35)



A detonation indicator for an internal combustion engine having a cylinder, said indicator comprising in combination a piezoelectric pressure sensitive pickup exposed to the pressure within the cylinder of an internal combustion engine, a shunt having a resistance between 5 and 10 megohms connected across the pickup, a detector, a pi-network band pass filter interposed between the shunt and the detector, an amplifier interposed between the shunt and the filter, an amplifier interposed between the detector and the filter, a counter, a resistance-capacity filter having a time constant of the order of 1700 ohm-microfarads between the detector and the counter, the pi-network filter comprising input and output terminals with inductance and capacity elements in parallel across the input terminals and across the output terminals and inductance and capacity in series between input and output terminals, the electrical dimensions of the inductance and capacity elements being chosen to provide a band pass between 6 and 8 kilocycles.

3,201,973
SOLID PROPELLANT BURNING RATE DETECTOR
John E. Fitzgerald and Norman C. Allen, Redlands, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 14, 1962, Ser. No. 244,849
5 Claims. (Cl. 73—35)

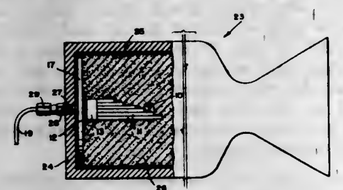
1. A solid propellant burning rate detector comprising in combination:

a rocket motor;

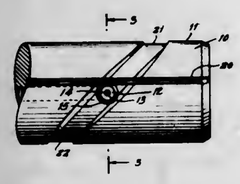
a propellant grain within said motor;

an array of light energy transmitting rods of unequal length linearly aligned within said grain; and

an array of photovoltaic cells arranged opposite the base of each rod and adapted to be connected to a recording means; whereby light energy created during the burning of said grain and transmitted through said rods amplifies the output of the cells creating a pulse signal which is recorded by said means.

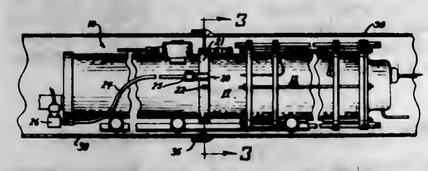


3,201,974
AIR PLUG GAGE CONSTRUCTION
Walter J. Crosbier, Hyde Park, N.Y., assignor to Standard Gage Company, Inc., Poughkeepsie, N.Y., a corporation of New York
Filed Dec. 8, 1960, Ser. No. 74,599
2 Claims. (Cl. 73—37.9)



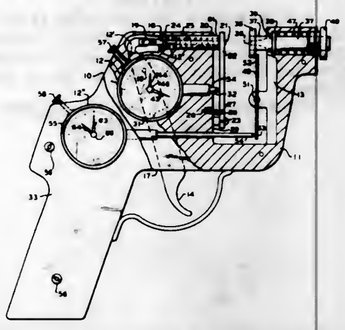
2. In an air plug gage, in combination, a cylindrical plug body, a band of lesser diameter than said body extending completely around said body at an angle of 45° to the plane of a cylindrical diameter of said body, a pair of nozzles in said plug body, said nozzles comprising apertures opening into said band at diametrically opposite points thereof and a circular groove concentric with each aperture, and a pair of longitudinal grooves, each said longitudinal groove communicating with one of said concentric grooves whereby air may escape from said apertures.

3,201,975
METHOD FOR LOCATING PIPE JOINTS
Robert W. Cook, Decatur, Ind., assignor to C. W. Faulkner, Inc., Fort Wayne, Ind.
Filed Apr. 25, 1960, Ser. No. 24,375
3 Claims. (Cl. 73—40.5)



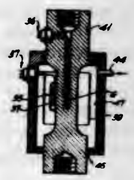
1. The method of locating a joint in an underground pipe which comprises the steps of producing in the atmosphere within said pipe a sound signal by expelling a pressurized fluid onto the inner surface of said pipe, said sound signal being audible at a remote point and directing said pressurized fluid progressively from point to point along the inside of said pipe until a variation occurs in the said sound signal.

3,201,976
METHOD AND APPARATUS FOR DETERMINING THE TENDERNESS OF MEAT
Delbert Starrett, 3600 Price Road, Bartlesville, Okla., and Charles H. Adams, Lincoln, Nebr.
Filed Jan. 31, 1962, Ser. No. 173,319
5 Claims. (Cl. 73—81)
(Filed under Rule 47(a) and 35 U.S.C. 116)



5. A method for determining the tenderness of edible portions of meat of a live animal which comprises applying sufficient pressure across an area of an ear of said live animal to shear the entire thickness of the area of the ear; measuring the pressure required to shear the ear section; and measuring the thickness of the ear section sheared.

3,201,977
STRAIN GAUGE
Ali Umit Kutsay, 3520 Lewis Road, Newtown Square, Pa.
Filed Feb. 20, 1961, Ser. No. 90,550
8 Claims. (Cl. 73—88.5)

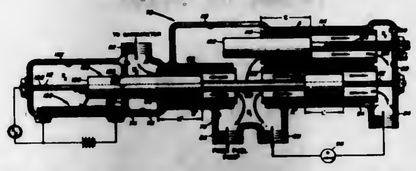


1. In a unitary strain gauge assembly, a load carrying member, an electrical strain gauge element secured to the load carrying member in direct cooperative straining relation therewith, heating means and thermostatic detecting means, said heating means and detecting means being substantially unaffected by load stresses and disposed in intimate thermal relation with said strain gauge element to maintain said strain gauge element and adjacent portions of said load carrying member at a substantially constant temperature.

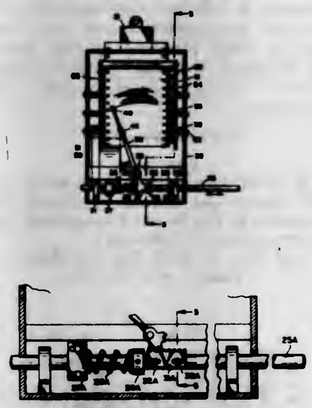
3,201,978
EFFICIENCY METER
Harold S. Morton, 7331 Piney Branch Road, Takoma Park, Md.
Filed Aug. 27, 1962, Ser. No. 219,542
11 Claims. (Cl. 73—114)

5. An efficiency meter apparatus for continuously measuring the operating efficiency of a motor vehicle having a fluid fuel engine, including a housing having an inlet port means therein connected with a source of fluid fuel, and a pair of flow channels in communication at one end thereof with said inlet means, the other end of one of said flow channels being in communication with the fuel inlet of said engine, means connected with said

housing inlet port means and the other end of the other of said flow channels for recirculating fluid fuel through said other flow channel at a rate proportional to the instantaneous speed of said vehicle, fluid pressure responsive means in said housing for comparing and indicating the ratio of said recirculating fluid fuel flow to the fluid fuel flow through said one flow channel, whereby to measure the operating efficiency of said vehicle, and means in said housing for adjusting said meter for use with engines having various ranges of operating efficiency values, said adjusting means including means in said housing defining an adjustable in length flow channel, arranged in parallel with said other flow channel.

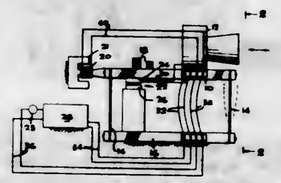


3,201,979
ENGINE ROUGHNESS INDICATOR AND RECORDER
Victor F. Manna, Berkeley Heights, Hsue Chu Tsien, Livingston, and John J. Heigl, Short Hills, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed July 16, 1962, Ser. No. 210,141
1 Claim. (Cl. 73—116)



Apparatus for analyzing the operation of an internal combustion engine of the piston driven crankshaft type wherein said engine is subjected to periodic normal and abnormal vibratory impulses generally about the crankshaft axis and wherein means are provided for mounting said engine to permit limited oscillatory freedom thereof about said axis to reflect said periodic impulses; in combination, sensing means including a spring-loaded plunger having one end thereof in contact with a portion of said engine radially displaced from said axis, means for mounting said sensing means to a relatively fixed structure adjacent to said engine with said plunger positioned generally tangentially with respect to said axis of rotation, the other end of said plunger being connected to a transmitting means comprising a mechanical linkage for amplifying the vibratory movements of said plunger, and means connected to said linkage for recording graphically the frequency and amplitude of said impulses; said transmitting means including a rack on said sensing means, a pinion engaging said rack, an arm secured to and operable by said pinion, a stylus, and a resilient element attached to said arm and carrying said stylus whereby said resilient element continuously urges said stylus at all times into contact with said means for recording graphically the primary vibrational amplitudes and frequencies normally incident to engine operation.

3,201,980
THRUST DYNAMOMETER
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Siegfried Hansen
Filed Feb. 15, 1963, Ser. No. 258,931
3 Claims. (Cl. 73—116)

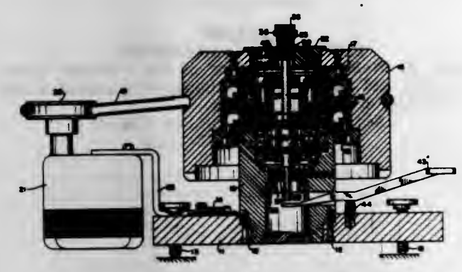


1. A dynamometer for measuring the thrust of an ion propulsion system comprising:
(a) a platform for supporting an ion engine;
(b) means for adjusting the weight of said platform;
(c) a base plate disposed adjacent to said platform in a spaced and parallel relationship with respect thereto;
(d) a plurality of spring members connected between said platform and base plate, said spring members having a spring constant whose magnitude is such that by slight adjustment of the weight of said platform the spring constant can be made to approach zero, whereby, the platform is balanced and a very small thrust force applied thereto by an ion engine mounted thereon will result in deflection thereof with respect to said base plate;
(e) motor means attached to one end of said platform for applying a counterforce thereto which is equal and opposite to the force applied thereto by the ion engine;
(f) servo means for sensing the deflection of said platform means and actuating said motor means, and
(g) means connected to the motor means for indicating the force exerted by said motor means.

3,201,981
BEARING TORQUE TEST INSTRUMENT
Theodore P. Barnard, Keene, N.H., assignor to Miniature Precision Bearings, Inc., Keene, N.H., a corporation of New Hampshire
Original application Feb. 25, 1951, Ser. No. 642,090, now Patent No. 3,027,749, dated Apr. 3, 1962. Divided and this application Mar. 6, 1962, Ser. No. 184,625
7 Claims. (Cl. 73—133)

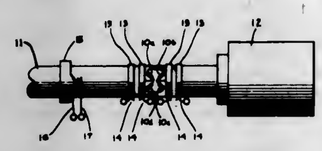
1. A bearing torque test instrument for testing a bearing having inner and outer race members and rolling elements disposed therebetween comprising a housing, a shaft rotatably mounted within said housing and adapted to mate with the inner race member of said test bearing, driving means mounted on said housing and adapted to apply torque to the outer race member of said test bearing, whereby a transmitted torque is applied to the said inner race member and shaft from the said outer race member through the said rolling elements therebetween, an electrical servoloop rotation-restraining system comprising a signal generator and a torque generator each having a rotor and a stator respectively, the said rotors being mounted on said shaft in coaxial symmetry therewith, each of the said stators being mounted on said hous-

ing in operative relationship with the rotor associated therewith, said signal generator being adapted to produce an output signal in proportion to angular displacement of its said rotor, electrical connecting means for applying said output signal from said signal generator to the said torque generator, said torque generator being adapted to



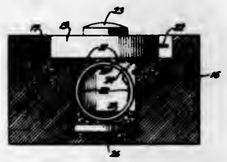
apply a restoring torque to its said rotor in proportion to the said output signal applied thereto to restrain the said shaft at an equilibrium position indicative of the magnitude of said transmitted torque, and means for measuring the said torque generator restoring torque to provide an indication representative of the said transmitted torque.

3,201,982
IN-VEHICLE DYNAMOMETER
Daniel W. Kennedy, 34248 Beachpark Ave., Eastlake, Ohio
Filed May 24, 1962, Ser. No. 197,541
3 Claims. (Cl. 73—136)



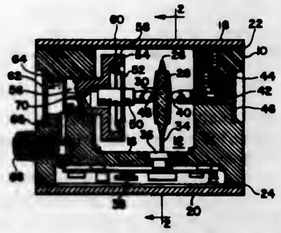
1. A dynamometer, the power of a prime mover to be measured by said dynamometer, said dynamometer comprising in combination, a pair of flexural supports to carry the vertical and horizontal components of the prime mover weight and acceleration and prime mover torque reaction, a pair of serially connected variable impedance elements responsive to variations in mechanical stress mounted on each of said supports and contacting said supports to acquire a variation in stress in proportion to the torque applied by the prime mover whereby the impedances of said elements are also varied, said elements connected to provide an electrical bridge circuit, a switch means driven by the output shaft of said prime mover at a rate proportional to shaft speed, said switch means connected to alternately connect and disconnect a source of constant electrical voltage to two opposite nodes of said bridge circuit, a capacitor, a first diode and a current meter serially connected in the stated order between one of the remaining nodes of said bridge circuit and the other remaining node, said first diode conducting current from said capacitor to said meter, a second diode connected between said other remaining node and the common connection point of said capacitor and said first diode, said second diode conducting current toward said common connection point, the average current through said meter being proportional to the power delivered by said prime mover.

3,201,983
DYNAMICALLY COMPENSATED FORCE MEASURING APPARATUS
Gerald A. Hebert, Chicago, and Robert T. Brumbaugh, Evanston, Ill., assignors, by mesne assignments, to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 5, 1961, Ser. No. 136,096
3 Claims. (Cl. 73—141)



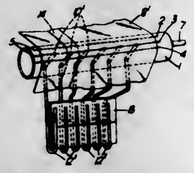
1. In apparatus for measuring a force, a load cell comprising a base, a first deflectable element mounted on said base, said force being applied to a portion of said first deflectable element, said first deflectable element being deflectable proportionally to said force, a first strain gauge secured to said first element and to be variably strained proportionally to the deflection of said first element, a second deflectable element secured to said first deflectable element in substantial alignment with said portion of said first element to which said force is applied, a second strain gauge secured to said second deflectable element and being variably strained proportionally to the deflection thereof, yielding means supporting said second deflectable element in said base whereby said second deflectable element is deflected proportionally to dynamic portions only of said force while said first deflectable element is deflected proportionally to both dynamic and static components of said force, and means to subtract the signal produced by said second strain gauge from the signal produced by said first strain gauge to provide for a determination of the static components only of said force.

3,201,984
ELECTRIC SENSORS AND CIRCUITS
Howard D. Hinnah and Darrell E. Newell, Davenport, Iowa, assignors to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware
Filed Mar. 19, 1962, Ser. No. 180,579
1 Claim. (Cl. 73—141)



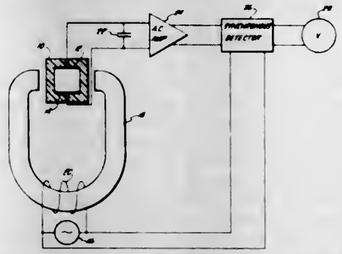
In a force responsive measuring instrument; a crystal controlled electronic oscillator including a piezoelectric crystal having a pair of exciting electrodes comprising thin metallic layers bonded to its opposite active faces, means for applying across said faces a force variable in magnitude from a selected initial force, said means including elements engaging said electrodes in the vicinity of the midpoint of said active faces and having substantially spherical surfaces at their points of engagement with said electrodes; and means for measuring the oscillation frequency of said oscillator in terms of deviation from its oscillation frequency when said crystal is subjected to said initial force.

3,201,985
WEB TENSION MEASURING DEVICES
Kenneth Sydney Williams, Bridgwater, Somerset, England, assignor to British Cellophane Limited, Bridgwater, Somerset, England, a British company
Filed May 24, 1962, Ser. No. 197,426
Claims priority, application Great Britain, June 7, 1961, 20,600/61
4 Claims. (Cl. 73—143)



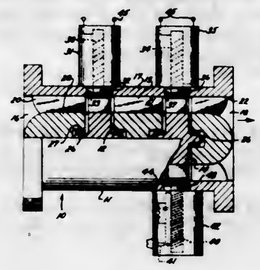
1. An apparatus for measuring the tension in a web which apparatus comprises an arcuate surface around which the web is passed, the arcuate surface having apertures through which a gaseous medium can be supplied under pressure to provide a supporting gaseous cushion between the under surface of the web and the arcuate surface, a supply means for continuously supplying the gaseous medium under pressure to the apertures, the arcuate surface having at least two test-holes spaced apart generally transversely of the web for communicating with the gaseous cushion and a pressure measuring device connected with each test-hole for determining the pressure of the gaseous medium in the gaseous cushion in the vicinity of the test-hole.

3,201,986
MASS FLOWMETER
Charles F. Robinson, Pasadena, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed June 29, 1961, Ser. No. 120,687
5 Claims. (Cl. 73—194)



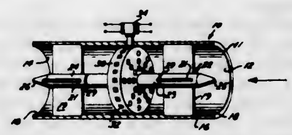
1. Apparatus for detecting the mass flow rate of a medium having a conductivity of less than approximately 10^{-7} mhos per meter comprising: a pipe having a lining of nonconducting material for transporting the medium; first and second parallel plates of conducting material disposed within said pipe parallel to the direction of flow of the medium; a capacitor coupled externally to said pipe across said first and second parallel plates, said capacitor having a capacitance which is substantially greater than the capacitance of said first and second parallel plates; means for generating an alternating magnetic field through said pipe having a component of flux parallel to the opposing surfaces of said first and second parallel plates and perpendicular to the direction of flow of said medium; and phase synchronous voltage detection means coupled across said capacitor and to the means for generating the alternating magnetic field for detecting the voltage induced between said first and second parallel plates due to the flow of said medium through said magnetic field.

3,201,987
MASS FLOW METER
Arthur Charles Ackerman, 6761 Lionel Place, Canoga Park, Calif.
Filed Oct. 1, 1962, Ser. No. 227,442
10 Claims. (Cl. 73—231)



10. A meter for measuring the mass flow rate of a fluid flowing in a conduit comprising:
a first free running turbine rotatably mounted in said conduit;
a second turbine rotatably mounted in said conduit at a location spaced from said first turbine and comprising a plurality of blades each having a portion of magnetic material;
means for coupling a load to said second turbine which is a known function of the rotative speed of said second turbine;
said load comprising a variable reluctance generator located to be responsive to said magnetic blade portions as the blades move past said generator;
means for measuring the speed of each of said turbines; and
means responsive to said measuring means for obtaining the ratio of said speeds from which the mass flow rate of said fluid can be derived.

3,201,988
PERFORATED DISC TYPE TURBINE FLOWMETER
Frederick F. Liu, Northridge, Calif., assignor to Quantum Dynamics, Inc., Tarzana, Calif., a corporation of California
Filed Nov. 2, 1962, Ser. No. 235,982
3 Claims. (Cl. 73—231)

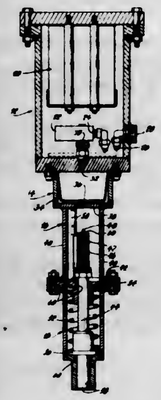


1. A flowmeter comprising:
a fluid conduit;
a measuring rotor in the form of a disc supported within said conduit for rotation about the longitudinal axis of said conduit;
said rotor having an upstream face and a downstream face;
passageway means extending through said rotor and through which fluid flows from said upstream face to said downstream face;
said passageway means being of uniform size along the length thereof and being angularly positioned within said rotor in such a manner that fluid flowing therethrough imparts a rotational torque to said rotor which rotates said rotor at a speed proportional to the rate of fluid flow; and

means for measuring the rotational speed of said rotor to obtain a measure of fluid flow rate through said conduit;

said passageway means comprising a plurality of separate passageways extending through said rotor at different distances from the axis of said rotor; the farther the passageway from said rotor axis, the greater the angle of attack of the passage with the axial direction of fluid flow thereby providing minimum disturbance of the fluid.

3,201,989
DIFFERENTIAL PRESSURE TRANSDUCER
Henry C. Beck, Oakdale, N.Y., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 27, 1962, Ser. No. 213,067
8 Claims. (Cl. 73—300)



3. A depth-measuring device comprising, in combination:

transducer means comprising

a fluidtight gauge chamber formed with an ambient port and a reference port,

a differential pressure gauge having two openings for the application of pressure thereto, the difference of said pressures being measured by said gauge,

a diaphragm chamber affixed to the reference port end of said gauge chamber, said diaphragm chamber being formed with a valve port therein,

and a collapsible fluidtight diaphragm within said diaphragm chamber, said diaphragm being situated between said reference port and said valve port so that the reference port side of the diaphragm chamber is made fluidtight,

one said pressure-gauge opening being exposed to the ambient pressure by being coupled with said ambient port and the other said pressure-gauge opening being exposed to the pressure in said diaphragm chamber by being coupled with said reference port; and

piston means comprising

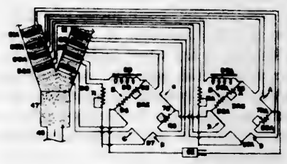
a piston chamber affixed to said diaphragm chamber, one section of said piston chamber being fluidtight and the other section being open to the ambient medium, said other section being located adjacent to said valve port,

a piston rod having a threaded end, said piston rod being located in the open section of the piston chamber,

a valve member having an internally threaded cylindrical body and a valve plug affixed at one end thereof, said body being screwable upon the threaded end of said piston rod, and said plug being shaped to close off said valve port when seated therein by axial movement of said piston rod,

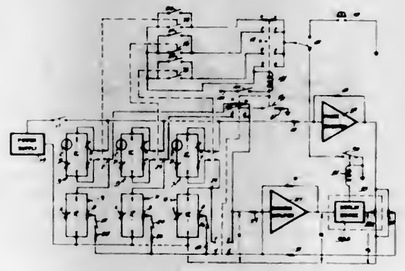
a spring located within the closed section of said piston chamber and acting upon said piston rod to oppose the ambient pressure which forces said piston rod in such a direction as to seat said valve plug in said valve port, thereby establishing a reference pressure within said diaphragm chamber at the pressure at which said seating occurs.

3,201,990
ELECTRIC MEASURING DEVICE FOR MIXED FLUID TEMPERATURE AND VELOCITY
Herman Wald, Astoria, N.Y.
(97—11 Horace Harding Expressway, Queens 68, N.Y.)
Filed June 30, 1960, Ser. No. 40,065
4 Claims. (Cl. 73—342)



4. An electric measuring device for detecting the variation of the exact average temperature of fluid mixtures having two branch conduits for the passage of said fluids with means provided to produce any desired proportion of the volumes of said respective fluid streams flowing therethrough into a mixing chamber having two supply openings leading thereto, comprising in combination, a transformer having a primary coil and two secondary coils, said primary coil being associated with a source of alternating current power, two balanceable component bridge circuits each of which having a pair of input and a pair of output terminals, each of said secondary coils being connected to the input terminals of said respective bridge circuits and direct conductive connection between said output terminals of each component bridge and the output circuit of the succeeding component bridge to form a series of balanceable bridge network, a separate adjustable potentiometer resistor in series with each of the secondary supply circuits each having an adjustable tap connected to one of said input terminals for independently varying the electrical voltage delivered to the arms of each of said bridge circuits controlling the relative effectiveness of the respective bridges in series, a first temperature sensitive resistance element located in each of said branch conduits and connected to one arm of said first and second component bridge circuits and variable in response to variation in temperature of the fluid flowing thereover, a first flow sensitive resistor element located in each of said branch conduits and connected in the opposed arm of said first and second component bridge circuits heated to a predetermined higher temperature than that of fluid being respectively exposed to the motion of fluid in said respective branch conduits and controlled by the rate of cooling proportional to the variation in flow rate, a second temperature responsive resistance element of similar resistance characteristic to that of the first flow sensitive resistor element located in each of said branch conduits and connected to an adjacent arm of said first and second bridge circuits to compensate for the change in fluid temperature from a predetermined standard value for securing a correct response of said first flow sensitive resistor element irrespective of fluid temperature variation, the operation of said first flow sensitive resistor element in said bridges introduce a corrective bias voltage on the resultant unbalanced voltage in strict correspondence with the variation in flow rate of the respective fluid streams to which they are subjected, a separate second flow sensitive resistor element of similar temperature resistance character located in each of said branch conduits to be exposed to said respective flows in motion being responsive to said changes in flow rate and connected in the current supply circuits of said first and second bridge circuit to vary the current flow through said first flow sensitive resistor element to compensate for its non-linear response to change in flow rate or rate of cooling, two potentiometer type variable resistors connected in the adjacent arm of each of said bridge circuits to adjust the initial balance to any predetermined standard condition of temperature and flow rate of both said fluids, one fixed non-responsive resistor element connected in each of the fourth arm of said bridge circuit, the said two condition responsive elements in both said branch conduits controlling the resultant unbalance potential on the output terminals of said series bridge network in accordance with the average temperature of the fluid streams in both said branch conduits, said unbalance potential representing a condition when the average temperature of the fluid mixture departs from a predetermined standard value, and including means for indicating the degree of unbalance produced by the resultant resistance changes of the respective measuring elements in said series bridge network, thereby to obtain an exact measurement of the average temperature of the fluid mixture irrespective of the thoroughness of the mixing of both said fluid streams in said mixing chamber.

3,201,991
PRECISION TEMPERATURE MEASUREMENT AND DISPLAY SYSTEM
Hyman P. Mansberg, Northport, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 21, 1962, Ser. No. 174,924
1 Claim. (Cl. 73—342)



Temperature measuring apparatus comprising:

(a) a source of electrical potential;

(b) a plurality of thermistors positioned at various temperature sensitive locations;

(c) means for linearizing the resistance temperature characteristic of each thermistor;

(d) an impedance connected in series with each thermistor;

(e) means for coupling each of the thermistor impedance series network in parallel across the source of potential;

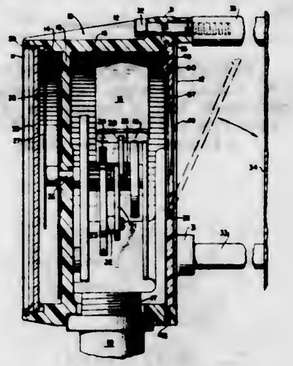
(f) a rationmeter which provides a digital display of the ratio of its input signal to the source of potential when its servo mechanism nulls;

(g) means for unbalancing the ratiometer after each null;

(h) means for successively coupling the potential at the junction of each thermistor with its impedance to the ratiometer;

(i) and means effective after the potential at the junction of each thermistor with its series connected impedance has been successively coupled to the ratiometer for averaging a predetermined weighted value of each said potential and coupling the resulting mean potential to the ratiometer.

3,201,992
GAUGE CASING HAVING PLASTIC HINGED BLOW-OUT
Harry W. Hoff, Jr., Quakertown, Pa., assignor to Amotek, Inc., a corporation of Delaware
Filed Nov. 30, 1961, Ser. No. 155,972
11 Claims. (Cl. 73—416)

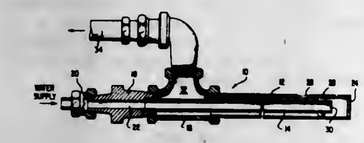


1. In a pressure gage, a hollow casing; gage mechanism within said casing; a front face closing one end of said casing; a cylindrical wall extending from said front face defining an opening in the back end of said casing; an internal peripheral lip and a peripheral groove of greater diameter than said lip on the back end of said cylindrical wall; a plastic back plate closing the back end of said casing, said back plate having a reduced cross section along a line dividing said plate into two segments and forming a hinge joint between said segments; spaced peripheral lips on one segment of said back plate adapted to cooperate with said internal lip; and flange means on said other segment adapted to cooperate with said groove for stationarily fixing said other segment to said casing.

3,201,993
GAS SAMPLING APPARATUS
Oliver C. Moody and Davis L. Carter, Atlanta, Ga., assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed Feb. 4, 1963, Ser. No. 256,028
4 Claims. (Cl. 73—421.5)

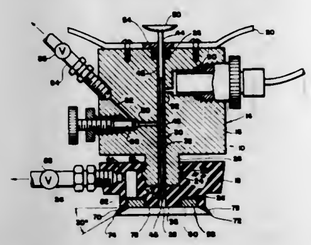
1. A gas sampling tube assembly for withdrawing a sample of flue gas from a furnace stack; said assembly consisting of a first elongate hollow outer tubular member closed at one end and having an opening through its wall at a location spaced from said one end, a second elongate hollow tubular member open at both ends concentrically mounted within said first member to define an annular passage in said first member between the inner side of said first member and the outer side of said second member, one end of said second member being longitudinally located within said first member at a location

between said one end of said first member and said opening, said second member having adjacent said one end thereof a plurality of radially extending protuberances engaging the wall of said first member to support said second member in spaced relation to said first member,



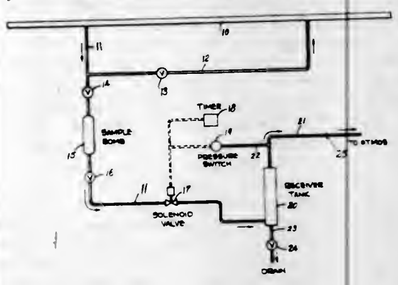
the other end of said second member projecting from the other end of said first member, means for connecting said other end of said second member to a fluid source, an outlet conduit, and means on said other end of said first member for connecting said annular passage to said outlet conduit.

3,201,994
FLUID SAMPLING DEVICE
Clarence W. Adams, Orange, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Feb. 6, 1963, Ser. No. 256,729
2 Claims. (Cl. 73—421.5)



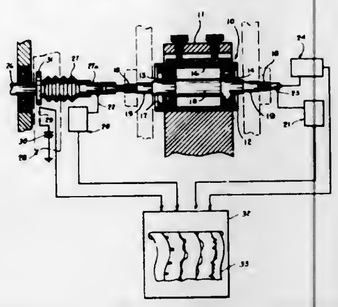
1. In a sampling device for obtaining a substantially uncontaminated sample from a flexible, puncturable container of fluid, the combination of:
a body element and a separable head element frictionally secured to said body element;
said head element having a surface engageable with a wall of the container;
said body element and said head element being provided with a sample chamber having an open side in said surface and closeable by said wall;
evacuable means in said head element for holding said wall against said surface;
means for evacuating said sample chamber and said evacuable means;
a lip formed of resilient material carried by said head element and encircling said surface, said holding means and said open side of said sample chamber;
said resilient lip extending outwardly from the periphery of said surface and at an acute angle with respect to said surface, said lip tapering to a point at its outer periphery and being engageable by said wall of the container to isolate said simple chamber and said holding means from the atmosphere; and
means carried by said housing for puncturing said wall of the container through said open side of said sample chamber to establish communication between the interior of the container and said sample chamber through said wall, whereby to enable a sample of the fluid in the container to flow into said sample chamber.

3,201,995
LIQUID SAMPLING APPARATUS
Ray E. Griffith, Cleveland, and Richard E. Kessler, Rocky River, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Filed May 17, 1962, Ser. No. 195,503
2 Claims. (Cl. 73—422)



1. A liquid sampling apparatus comprising a sample bomb including means for receiving a sample therein, a receiver having input and output ends, conduit means connecting said sample bomb and said receiver input end, valve means associated with said conduit means so as to control liquid flow therein, timer means operatively associated with said valve means whereby said valve means may be automatically opened and closed in accordance with a pre-determined schedule, a slow leaking vent line, open to the atmosphere, connected to the receiver output end, maintaining limited pressure in the receiver, and pressure sensitive switch means connected to said receiver output end and adapted to close said valve means in response to a pressure rise within said receiver.

3,201,996
BEARING TESTING APPARATUS
Everett R. Silvia, Huntington Station, N.Y., assignor to American Bosch Arma Corporation, a corporation of New York
Filed Nov. 29, 1961, Ser. No. 155,654
5 Claims. (Cl. 73—432)



1. In a device of the character described for testing the steadiness of the axis of rotation of a bearing adapted to support a shaft journalled therein,
fixture means for holding said test bearing in fixed position,
means for rotating through a predetermined number of revolutions a shaft journalled in, and extending beyond, said bearing,
pick-off means for producing an output signal indicative of radial displacement of one end of said shaft with respect to said fixture in a direction substantially perpendicular to the axis of said shaft,

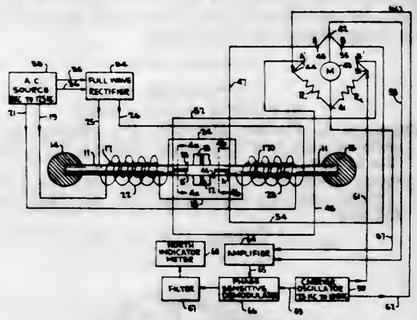
recording means for making a permanent recording of said output signal for all of said revolutions of said shaft, and
means connecting said recording means and said rotating means to relate said output signal to the angular position of said shaft at which said output signal is produced, whereby a comparison of the permanent recordings of the pickoff output for each revolution of the shaft provides an indication of the steadiness of the axis of rotation of said bearing.

3,201,997
APPARATUS FOR BALANCING WHEEL ASSEMBLIES
Lester A. Rosenblum, 56 Freedom Drive, Franklin, N.H.
Filed May 10, 1963, Ser. No. 279,488
11 Claims. (Cl. 73—480)



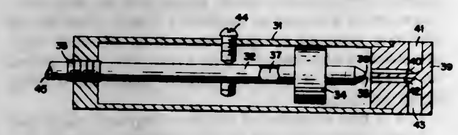
1. A portable device for determining the unbalance of a wheel assembly comprising means comprising an arbor rotatably mounting the wheel assembly, means comprising a pair of uprights for supporting the arbor at opposite sides of the wheel assembly in balance and free from gravity influence whereby the heavy spot of the unbalanced wheel assembly will swing automatically to rest vertically below the arbor, means associated with said uprights for accurately guiding means for marking the heavy spot on the wheel assembly, means for determining the position of the heavy spot relative to the uprights whereby upon said determining the wheel assembly may be swung to bring said heavy spot into registry with said guide means and the operator may utilize said guiding means to mark said heavy spot, a weight gauge fixed on the device, a gauge contactor mountable on the rim of said wheel assembly at the heavy spot and adapted to transmit to said gauge the excess weight of said heavy spot, and means for locating on said wheel assembly a pair of counter balancing spots equidistant from said heavy spot.

3,201,998
SPACE SENSING DEVICE
Leon Horn, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed June 14, 1963, Ser. No. 288,058
14 Claims. (Cl. 73—505)
(Granted under Title 35, U.S. Code (1952), sec. 266)
1. A space sensing device comprising:
(a) a flexible elongated magnetostrictive element,
(b) first and second identical masses of non-magnetic material fixedly attached to the ends of said magnetostrictive element,
(c) a support member,
(d) means for rigidly mounting said magnetostrictive element at a point equidistant from its ends to said support member in a position that permits free angular vibration of said first and second masses about said equidistant point as a center,
(e) means for producing a periodical pulsed magnetic driving signal having a frequency equal to the mechanical resonant frequency of the structure consisting of said first and second masses and said magnetostrictive element, which signal acts on said magnetostrictive element to produce a linear vibration of alternate elongations and relaxations of said magnetostrictive element along its major axis, said means for producing a periodic pulsed magnetic driving signal including:
(1) a first mechanical winding disposed about but not contacting said magnetostrictive element between said first mass and said means for rigidly mounting,
(2) a second electrical winding wound in a direction opposite that of said first electrical winding, said second electrical winding being connected in series with said first electrical winding and disposed about but not contacting said magnetostrictive element between said second mass and said means for rigidly mounting,
(3) a third electrical winding concentric with said first electrical winding but not contacting said magnetostrictive element,



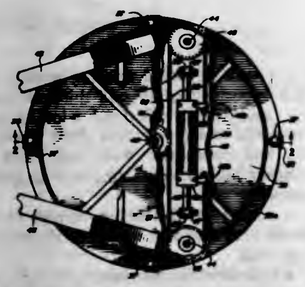
(4) a fourth electrical winding wound in a direction opposite that of said third electrical winding, said fourth electrical winding being connected in series with said third electrical winding and concentric with said third electrical winding but not contacting said magnetostrictive element,
(5) a source of alternating voltage connected in series with said first and second electrical windings, and
(6) a full-wave rectifier having its input connected to said source of alternating voltage and its output connected in series with said third and fourth electrical windings whereby the magnetic flux generated in said first and second windings is reinforced by the magnetic flux generated in said third and fourth windings during one-half the period of the alternating voltage and is cancelled by the magnetic flux generated in said third and fourth windings during the other half of the period,
(f) means for detecting the stresses to which said magnetostrictive element is subjected by the angular vibration of said first and second masses caused by movement of said space sensing device, and
(g) means connected to and responsive to said means for detecting for providing an indication of the movement of said sensing device.

3,201,999
FLUID ACCELEROMETER
Joe L. Byrd, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed June 7, 1963, Ser. No. 286,434
10 Claims. (Cl. 73—515)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A fluid accelerometer comprising a hollow housing having an inlet at one end, a receiver block closing the opposite end of said housing, a plurality of outlet passages formed in said receiver block, a plurality of ports in said receiver block equally arranged about a center line through said block, each of said ports connecting one of said outlet passages to the interior of said housing, a cantilever beam attached to the inlet end of said housing, an inertial nozzle attached to the distal end of said beam, a passage means located in said nozzle for conducting fluid from the inlet to one or more of said ports said beam being adjustably connected to said housing for axial movement toward and away from said receiver block, and adjusting means attached to the housing and contacting the beam for adjusting the beam in a path perpendicular to the longitudinal axis of the beam.

3,202,000
SLEWING MECHANISM
Raymond C. Fischer, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Original application Oct. 2, 1961, Ser. No. 142,151. Divided and this application Dec. 5, 1962, Ser. No. 251,454
3 Claims. (Cl. 74—95)



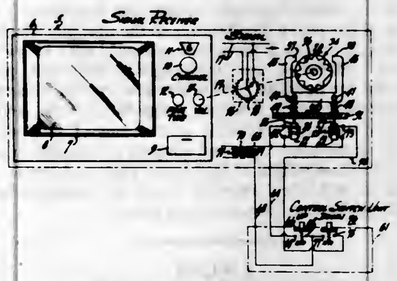
1. A power driven turntable comprising fixed horizontal plate means having vertically extending bearing means centrally thereof, and a plurality of bearing rollers spaced from said bearing means, rotatable horizontal plate means supported by said fixed plate means and said bearing rollers and having an axial shaft extending through said bearing means, a power-receiving pulley having a helical groove thereon mounted on said central shaft, double-acting hydraulic power means including a cylinder and a pair of pistons extending axially therefrom, the end portions of said pistons being secured to said fixed plate means, a pair of cable pulleys mounted on said fixed plate means, and a cable having ends fixed to respective ends of said cylinder extending about said cable pulleys and engaging said power-receiving pulley whereby actuation of said power means causes the cylinder to slide upon the pistons and the cable to drive the power-receiving means thus rotating the rotatable plate means.

3,202,001
LIMIT SWITCH
Alphonse P. Gauvreau, Cleveland, Ohio, assignor to Robert B. Denison, Cleveland, Ohio
Filed Sept. 11, 1961, Ser. No. 137,424
4 Claims. (Cl. 74—97)



1. In a limit switch, an actuator arm pivotally mounted a first axis and having a terminal end and an intermediate portion, a latch member pivotally mounted on a second axis, a torsion spring connecting said terminal end to said latch member, a shoulder on said latch member, a latching dog engageable with said shoulder, and a bumper on said intermediate portion, said bumper engageable with said latching dog to move said dog from engagement with said shoulder, the improvement comprising: said latch member having an opening between said shoulder and said second axis, said actuator arm adjacent a first surface of said member and said torsion spring adjacent an opposite surface of said member, said terminal end extending through said opening to connect with said torsion spring.

3,202,002
ROTARY BI-DIRECTIONAL STEPPER MECHANISM
Edward J. Sperber, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 4, 1963, Ser. No. 255,797
10 Claims. (Cl. 74—157)



1. A bi-directional stepper mechanism for rotating a control shaft comprising:
a ratchet wheel adapted for attachment to said shaft and having two radially toothed sections adapted for driving said shaft in opposite directions,
means providing a driving pawl for each section of said ratchet wheel,
a rocker arm connected with said driving pawls and pivoted for movement on parallel spaced axes from a rest position,
means for moving the rocker arm and pawls on one pivot axis to engage and drive the ratchet wheel in one direction of rotation, and
means for moving the rocker arm and pawls on the other pivot axis to engage and drive the rachet wheel in the other direction of rotation,
thereby to operate said control shaft in steps progressively in either direction.

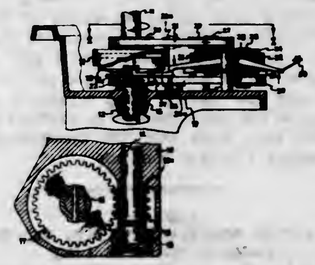
3,202,003
FRICTION DISC DRIVE
Walter K. Heintz, Westfield, N.J., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 4, 1963, Ser. No. 270,672
5 Claims. (Cl. 74—199)



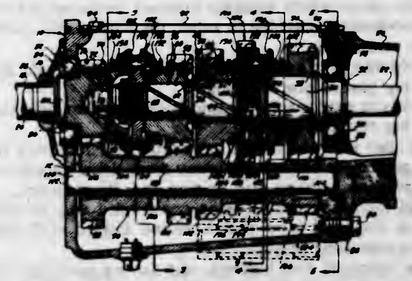
1. In a friction disc drive, a first disc comprising two juxtaposed parts, one periphery of each disc part being disposed in sealing relationship with respect to the corresponding periphery of the other disc part, a deformable sealing ring disposed between said one periphery of each of said first discs, said disc parts and said sealing ring cooperating to define in part a pressure chamber, a set of other discs frictionally contacting said one peripheries of said disc parts, said first disc being rotatably mounted for rotation about a first axis, said other discs being rotatably mounted for rotation about a second axis, and means for introducing fluid under pressure to said pressure chamber, and means for holding the inner peripheries of said driving disc parts axially fast whereby said outer peripheries are adapted to exert an axial clamping force upon introduction of pressure into said pressure chambers.

3,202,004
REVERSE FOR WORM DRIVE, DIRECT DRIVE TILLER
Frank H. Field, Cincinnati, Ohio, assignor, by mesne assignments, to Magna American Corporation, Evendale, Cincinnati, Ohio, a corporation of Ohio
Filed May 19, 1961, Ser. No. 111,323
2 Claims. (Cl. 74—220)

1. In a garden tiller comprising a tine shaft, an engine shaft, a tiller shaft in axial alignment with said engine shaft, and a direct worm gear drive from said tiller shaft to said tine shaft for driving said tine shaft in a forward direction, the improvement which comprises: means to effect a reverse drive of said tine shaft by said engine shaft and by said direct worm gear drive, said means including a first clutch part fixed to said engine shaft; a second clutch part slidable on said tiller shaft into and out of engagement with said first clutch part; a first pulley rotatable with said first clutch part; a second pulley rotatable with said second clutch part; and other means, effective when said second clutch part is out of engagement with said first clutch part, connected between said first and second pulleys, to cause said second clutch part to rotate in a direction opposite from the direction of said first clutch part, said other means comprising a first auxiliary pulley, a second auxiliary pulley, a pair of gears which mesh together, one of said gears being connected to said first auxiliary pulley and the other of said gears being connected to said second auxiliary pulley, first belt means engaging said first pulley and said first auxiliary pulley, second belt means engaging said second pulley and said second auxiliary means, and means for moving said auxiliary pulleys and said gears as a unit to tighten said first and second belt means when said second clutch part is out of engagement with said first clutch part, and for moving said auxiliary pulleys and said gears as a unit to loosen said first and second belt means when said second clutch part is in engagement with said first clutch part.



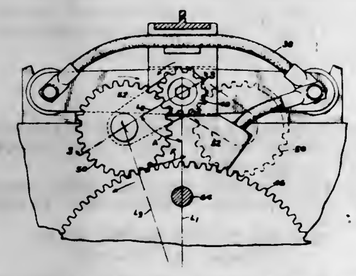
3,202,005
MULTIPLE SPEED RATIO POWER TRANSMISSION MECHANISM WITH FULLY SYNCHRONIZED SPEED RATIO SHIFTS
Peter George Ivanchich, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 22, 1963, Ser. No. 303,788
6 Claims. (Cl. 74—333)



1. In a power transmission mechanism for delivering driving torque from a driving shaft to a power output shaft, a power input gear connected to said driving shaft, a plurality of power output gears rotatably supported on said power output shaft, a cluster gear assembly mounted for rotation about an axis that is parallel to the axis of said power output shaft, said cluster gear assembly including a plurality of gear elements one of which engages said power input gear while each of the others engages a separate one of said power output gears, a first synchronizer clutch means for connecting selectively a first and a second power output gear to said output shaft, a second synchronizer clutch means for connecting selectively another power output gear and said power

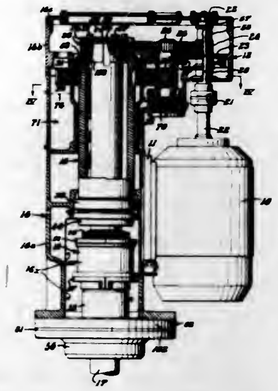
input gear to said power output shaft, a reverse pinion gear assembly comprising a pair of gear elements rotatably supported by rotation about and axis that is spaced from and parallel to the axes of said power output shaft and said cluster gear assembly, a first gear element of said reverse pinion gear assembly being engageable continuously with one gear element of said cluster gear assembly, the gear elements of said reverse pinion gear assembly being connected together for rotation in unison, the connection between said reverse pinion gear elements accommodating axial sliding movement of the second reverse pinion gear element with respect to the first reverse pinion gear element, and a reverse gear connected to said power output shaft, said reverse gear said second reverse pinion gear element being engageable when the latter assumes one axial position to establish a reverse power flow path when said first synchronizer clutch means assumes a neutral condition.

3,202,006
ROTATING MECHANISM FOR PLATING BARREL OR THE LIKE
Wendell G. Lewellen, Jr., Wayne, Mich., assignor to Imperial Industries, Inc., Wayne, Mich., a corporation of Michigan
Filed July 9, 1963, Ser. No. 293,628
14 Claims. (Cl. 74—406)



1. For plating and the like, a rotating barrel assembly having means which rotatably supports the barrel and having mechanism operable to rotate the barrel, said mechanism comprising,
- a driving gear and means operable to rotate said driving gear in one direction,
- a driven gear carried by said barrel and having a driving relation thereto,
- an idler gear and means mounting it for relatively free movement toward and away from drive-transmitting relation between said driving and driven gears,
- said mounting means being constructed and arranged so that said idler gear is biased toward said drive-transmitting relation,
- the interaxial line between said driving gear and idler gear in said drive-transmitting relation being disposed at an angle to the interaxial line between said driving gear and driven gear,
- said angle, measured from the driven gear axis to the driving gear axis and then to said idler gear axis, being opposite in direction to said one direction, so that the force exerted on said idler gear by said driving gear, responsive to inherent resistance to rotation by said barrel and driven gear, tends to supplement said bias,
- the interaxial line between said idler and driven gears being disposed at an angle to that between said driving and driven gears,
- said angles being so related that the radially outward component of force exerted by said driven gear on said idler gear responsive to said resistance is insufficient to overcome the combined effects of said bias and force supplementing said bias,
- whereby said mount and idler gear tend to shift toward said drive-transmitting relation responsive to rotation of said driving gear.

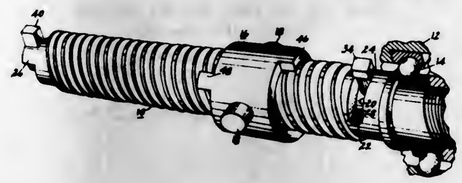
3,202,007
TOP-ENTERING MIXER DRIVE
Andrew Stratienko, Philadelphia, Pa., assignor to King of Prussia Research and Development Corporation, King of Prussia, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1962, Ser. No. 179,957
6 Claims. (Cl. 74—413)



1. A drive for a top-entrance mixer tank having internal pressure, said drive comprising a housing having a vertical portion adapted for mounting on the top of said tank over said top entrance; a hollow cylindrical quill mounted for axial rotation in said housing; drive means for driving said quill rotationally; a cylindrical tubing mounted on the top of said tank surounding said top entrance and extending upwardly in coaxial alignment with said quill for extending the tank pressure to a level above the tank top and within said housing; annular sealing means at the upper end of said tubing for sealing said tank pressure; adaptor coupling means disconnnectably secured to the upper end of said quill and connectable to the upper end of a unitary impeller shaft insertable downwardly through said coaxially aligned quill, tubing and top entrance of said tank, said shaft when fully inserted extending above said quill; and auxiliary lower support means for supporting the inserted shaft when said adaptor coupling means is removed, said sealing means being removable as a unit, when said adaptor coupling means is removed, by moving said sealing means axially upward with respect to said shaft and over the upper end thereof.

3,202,008
SCREW AND NUT ACTUATOR
Howard M. Geyer, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 27, 1963, Ser. No. 283,262
4 Claims. (Cl. 74—424.8)

1. A screw and nut actuator comprising a reversely rotatable hollow screw shaft, a nonrotatable nut threadedly engaging said screw shaft whereby rotation of said screw shaft will effect linear movement of said nut, a torsion bar mounted coaxially of said hollow screw shaft, coacting engageable abutments adjacent each end of said hollow screw shaft and said torsion bar for rotating said torsion bar with said screw shaft in opposite directions, and abutment means on said nut engageable with each of said abutments on said torsion bar adjacent opposite stroke



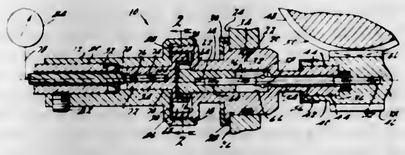
end positions of said nut for restraining rotation of opposite ends of said torsion bar in opposite directions during continued rotation of said screw shaft so as to twist said torsion bar and provide cushioned stops at the stroke end positions of said nut.

3,202,009
ACTUATOR SYSTEM
Howard M. Geyer, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 19, 1963, Ser. No. 288,958
8 Claims. (Cl. 74—424.8)



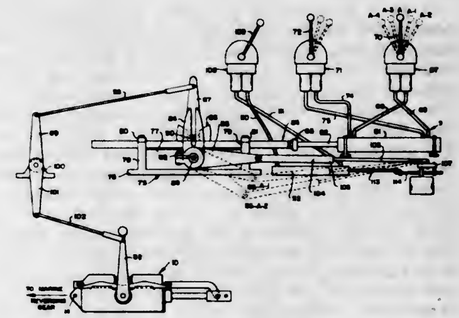
1. A dual actuator system comprising, a pair of rotary motors, a screw and nut actuator comprising a pair of rotatable and axially movable screw shafts of opposite hands and a common nut assembly threadedly engaging said screw shafts, and means coupling each motor to one of said screw shafts whereby simultaneous rotation of said screw shafts in opposite directions will result in conjoint relative axial movement of said screw shafts in opposite directions due to threaded engagement of said screw shafts with said common nut assembly.

3,202,010
SPEEDOMETER-ODOMETER DRIVE ADAPTER
Dugald Cameron, Taylor, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Feb. 26, 1964, Ser. No. 347,562
3 Claims. (Cl. 74—438)



1. A speedometer drive adapter comprising first and second housing sections, a pilot diameter formed on said first housing for reception in a mounting aperture of a cooperating vehicle transmission casing, a bearing surface formed on and near one end of said first housing for journalling a pinion gear adapted to engage an output shaft of said vehicle transmission, a first connecting portion formed at the other end of said first housing, a second connecting portion formed at one end of said second housing, said first and second connecting portions when engaged with each other forming a chamber for the containment therein of an internal gear and a spur gear, a first cylindrical body portion projecting axially from said spur gear, a first cylindrical bearing recess formed in said first housing section for the rotatable reception of said first cylindrical body portion therein, a drive shaft extending through said one end of said first housing section and engaging said spur gear and adapted to engage said pinion gear in order to rotate said spur gear in accordance with the rotation of said pinion gear, a second cylindrical body portion projecting axially from said internal gear, a second cylindrical bearing recess formed in said second housing section for the rotatable reception of said second cylindrical body portion therein, a drive portion formed in said second cylindrical body portion adapted to engage cooperating motion transmitting means for driving an associated speedometer, said first cylindrical bearing recess being parallel with but eccentrically disposed to said second cylindrical bearing recess so as to enable said spur gear to be disposed generally within said internal gear and operatively engage said internal gear generally at one side thereof.

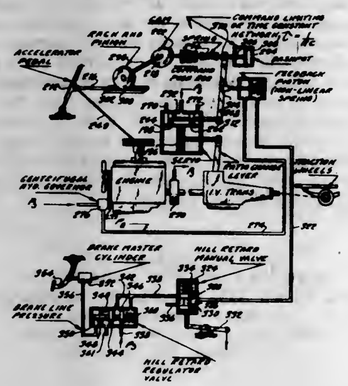
3,202,011
MARINE CONTROL APPARATUS
Jack R. Kobelt, 3236 Dumfries St., Vancouver 12, British Columbia, Canada
Filed May 6, 1963, Ser. No. 278,220
10 Claims. (Cl. 74—472)



1. Control apparatus for a marine installation having a motor, a lever operated marine reversing gear; and a lever operated speed regulating device; in combination with the foregoing,
- (a) a power assist device actuated by a lever, said power assist device operatively connected to the gear,
- (b) a supporting member having a first and second bell crank each with an inner and an outer leg, said bell cranks mounted for independent rotation, means cooperating with one leg of each bell crank whereby both bell cranks are simultaneously rotatable through a limited arc in either direction from a central position, the said means locking one of the legs of the first bell crank at the extremity of an arc aforesaid whilst continuing to rotate the second bell crank through a further arc, the remaining leg of the first bell crank, the motion of which is limited, operatively connected to the power assist lever, the remaining leg of the second bell crank operatively connected to the speed regulating device lever,

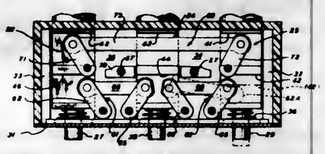
(c) a remote control device having a lever and means operatively connecting the lever thereof to the bell cranks, constructed and arranged so that movement of the said lever effects bell crank rotations as aforesaid.

3,202,012
INFINITELY VARIABLE POWER TRANSMISSION CONTROL SYSTEM
Zbigniew J. Janik, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 10, 1963, Ser. No. 315,266
12 Claims. (Cl. 74—472)



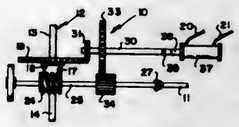
1. In a driveline for a wheeled vehicle, an internal combustion engine having an air-fuel mixture intake manifold and a mixture flow controlling throttle valve, an infinitely variable friction drive comprising first friction elements drivably connected to said engine, second friction elements connected to driven portions of the driveline, third friction elements engageable with both said first and said second friction elements and adapted thereby to establish a frictional driving connection therebetween, fluid pressure operated servo means including a pressure operated piston for varying the position of said third elements relative to said first and second elements thereby providing an infinitely variable speed ratio change, a fluid pressure source, conduit structure interconnecting said source and said servo means, valve means disposed in and partly defining said conduit structure for distributing pressure to spaced portions of said servo means including an adjustable valve element adapted to effect a pressure unbalance across said piston in one direction when it assumes one position and to effect a pressure unbalance across said piston in the opposite direction when it assumes another position, a personally operable accelerator, a calibrated command mechanism interconnecting said throttle valve and said accelerator whereby said engine is adapted to operate with the ratio of transmission efficiency to brake specific fuel consumption at an approximately maximum value for any given engine speed, a motion transmitting connection between said accelerator and said valve element for urging the latter in one direction with a force that is related functionally in magnitude to accelerator movement, an engine driven fluid pressure governor, a fed back mechanism including a pressure sensitive member connected to said valve element, and a fluid connection between said governor and said pressure sensitive member for subjecting the latter to a speed signal that opposes the effect of the command signal imposed by said command mechanism whereby the engine is caused to operate at an approximately constant speed for any given accelerator position.

3,202,013
APPARATUS FOR EXCLUSIVE ACTUATION OF SELECTED ONES OF A PLURALITY OF MECHANISMS
Walter F. Strader, Los Angeles, Calif., assignor to Purolon Corporation, Culver City, Calif., a corporation of California
Filed Apr. 26, 1961, Ser. No. 105,820
4 Claims. (Cl. 74—483)



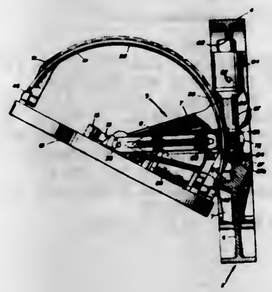
1. In apparatus having a plurality of linearly movable actuating keys arranged in rows within a case, the combination comprising lock shoulder means on each key, an interlock strip adapted at each of its ends to engage a lock shoulder means of an actuating key, a first rotatable arm pivotably attached at one of its ends to one end of the interlock strip and at its other end to a pivot support, and a second rotatable arm pivotably attached at one of its ends to the other end of the interlock strip and at its other end to a pivot support, the spacing between the pivot supports with respect to the spacing of the points of attachment to the interlock strip being so related that the displacement of one end of an interlock strip due to a pressed actuating key in the direction of key movement is greater than is the opposite displacement of the other end of the interlock strip imposed by the arm linkage of the strip.

3,202,014
VEHICLE SPEED CONTROL AND BRAKING APPARATUS
Darwin L. Simpson, 1243 Strathmore Ave., Nanaimo, British Columbia, Canada
Filed Sept. 13, 1961, Ser. No. 137,920
13 Claims. (Cl. 74—664)



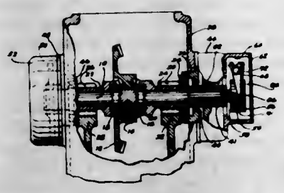
1. Speed control and braking apparatus for a vehicle having driven axle means and a driving shaft, comprising a first driving connection means including a worm wheel on a normally-driven axle means and a worm gear on a driving shaft and meshing with the worm wheel, the pitch of the worm wheel and gear being such that the wheel cannot drive the gear thereby preventing the axle means from driving the driving shaft, said shaft being adapted to be connected to a motor for rotating the axle means, second driving connection means between the shaft and the axle means of the same driving ratio as the first driving connection means, said second driving connection being adapted to permit the shaft to drive the axle means and vice versa, and means for selectively rendering said preventive action of the worm wheel and gear effective and ineffective.

3,202,015
RADAR ANTENNA POSITIONING DEVICE
George E. Mosl, Jr., Silver Spring, and Robert W. Fowler, Takoma Park, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Sept. 10, 1963, Ser. No. 308,044
10 Claims. (Cl. 74—665)



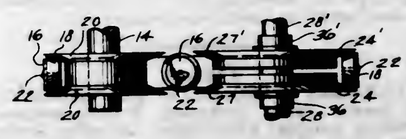
1. An antenna mount, comprising
(A) a movable antenna means,
(B) first arcuate means connected to said antenna means,
(C) second arcuate means connected to said antenna means so as to intersect perpendicularly the plane of said first arcuate means, said first and second arcuate means being movable about mutually perpendicular axes, and
(D) drive means controlled in accordance with the desired positioning of said antenna means and operably connected to move each of said first and second arcuate means about said mutually perpendicular axes so as to position said antenna means as desired.

3,202,016
TRACTOR IMPROVEMENTS
Bruce C. Arnold, Milan, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Apr. 11, 1962, Ser. No. 186,740
6 Claims. (Cl. 74—710.5)



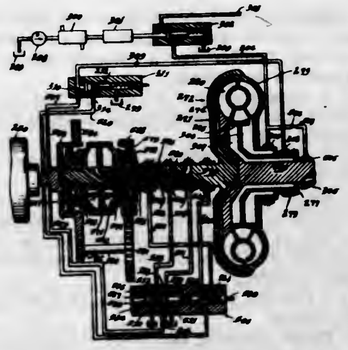
1. In a control for use in a differential gear of the type including a shaft, a ring gear fixed to a mid-portion of the shaft, a differential pinion journaled on said ring gear and a pair of driving sleeves journaled on said shaft, one at each side of said ring gear, and driven from said differential pinion, the combination including a plurality of teeth on one of said sleeves, a toothed clutch element slidably keyed on said shaft beyond the end of the last mentioned sleeve, and shiftable axially of said shaft into interlocking engagement with the teeth on said last mentioned sleeve, for locking up the differential gear, and
means connected with said clutch element for shifting it into and out of engagement with said last mentioned sleeve.

3,202,017
ROLLER BELT AND DIFFERENTIAL PULLEY TRANSMISSION
Russell G. Vance, 144 Tawas Lake Road, East Tawas, Mich.
Filed Aug. 27, 1963, Ser. No. 304,866
6 Claims. (Cl. 74—722)



1. A roller belt and differential pulley transmission in combination comprising, a flanged drive pulley providing a means for frictionally receiving said belt, a drive shaft supporting said drive pulley and providing a means for transferring power from a power source to said drive pulley, a pair of driven pulley halves engaged by said belt and providing a means for converting the rotary motion from a plurality of conical rollers secured to said belt to a differential drivc action imparted to a pair of shafts received by said driven pulley halves, a spacer disposed between said pulley halves providing a means for aligning said shafts of said pulley halves and a pair of bushings providing support means and bearing means for said shafts of said driven pulley halves.

3,202,018
POWER TRANSMISSION
Conrad R. Hilpert, Winnebago, Ill., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed Apr. 16, 1962, Ser. No. 187,741
12 Claims. (Cl. 74—732)



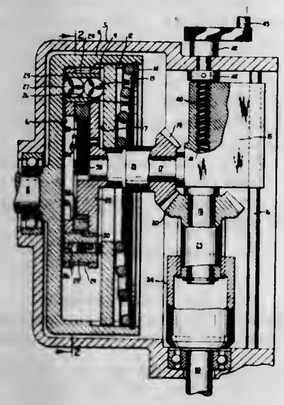
12. A power transmission comprising in series power flow relation, first and second, master clutches of the friction plate type and arranged for selective connection to an electric induction motor and an hydraulic torque converter having a toroidal circuit, each master clutch including a chamber for receiving pressure oil to engage the associated clutch, the first master clutch being directly connected to the motor, a gear train connecting the second master clutch to the motor and arranged to provide for a higher rotative speed of the second clutch when engaged relative to that of the first clutch when engaged, and an hydraulic system including an oil supplying pump, the toroidal circuit, a regulating valve having pressure connections with the first and second clutch chambers and relief outlet connections with the plates of the first and second clutches,

both of said last named connections including a selector valve shiftable between one position determining an engagement of the first clutch, a supply of cooling oil to the plates thereof and release of the second clutch and another position determining an engagement of the second clutch, a supply of cooling oil to the plates thereof and release of the first clutch, and means for infinitely controlling the regulating valve to vary the pressure in the chamber of the clutch being engaged.

3,202,019
VARIABLE SPEED RATIO TRANSMISSION

Per Torsten Fanéa, Jonkoping, Sweden, assignor to Svenska Aeroplan Aktiebolaget, Linkoping, Sweden, a corporation of Sweden

Filed Apr. 2, 1963, Ser. No. 270,510
7 Claims. (Cl. 74—796)



1. Adjustable speed change apparatus providing a continuously variable range of speed ratios between a rotatable driving member and a rotatable driven member, said apparatus comprising:

(A) a plate connected to one of said members to rotate coaxially therewith and having a friction face normal to its axis;

(B) a rotor connected to the other of said members to rotate coaxially therewith;

(C) means mounting said members with their axes parallel to one another and for translatory motion of one of said members transversely to its axis in opposite directions toward and from the axis of the other member;

(D) a plurality of roller carriers, each having an axis of rotation;

(E) means mounting said roller carriers on the rotor

(1) for rotation of each roller carrier about its own axis and relative to the rotor, and

(2) for orbital motion of the roller carriers with the rotor, said roller carriers being disposed with their axes

(a) parallel to that of the rotor,

(b) equidistant from the rotor axis, and

(c) circumferentially spaced from one another;

(F) roller means carried by each of the roller carriers for rotation and orbital motion therewith, said roller means also being rotatable relative to the roller carrier about an axis fixed in the roller carrier and normal to the roller carrier axis;

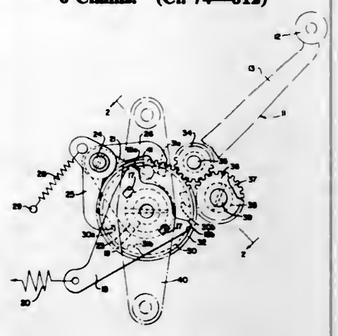
(G) means maintaining said roller means peripherally engaged under bias with the friction face of the plate; and

(H) means for rotating each roller carrier relative to the rotor at an angular velocity which is one-half that of the rotor, and in a direction opposite to the direction of rotation of the rotor, with the roller carriers so oriented that the axes of all of the roller means at all times intersect at a point lying on a plane that is on the axes of the rotor and the plate.

3,202,020
RECIPROCABLE-HANDLE-ACTUATED FULL CYCLE DRIVING MECHANISM

Edward H. Sims, West Ferry, Dundee, Leslie Sneesby, Downfield, Dundee, and William S. Soutar, Dundee, Scotland, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed June 21, 1963, Ser. No. 289,471
Claims priority, application Great Britain, July 17, 1962, 27,356/62
6 Claims. (Cl. 74—812)



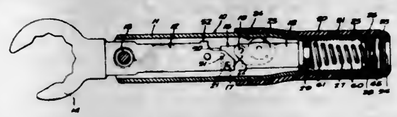
1. A driving mechanism for translating a partial angular rotary movement of a driving member in two directions into a full cycle of movement of a main shaft, comprising a driving device operatively connected to the driving member and having a frame rockably supporting a pair of integral driving pawls; a pair of contra-rotatable discs; mechanism for coupling said pair of discs to the main shaft so as to enable each, when driven, to impart one hundred and eighty degrees of unidirectional rotation thereto; a pair of diametrically opposed notches in each disc; each driving pawl being operably aligned with an associated disc and adapted to engage one of the pair of notches therein during movement of the driving member in a respective one of its two directions of partial rotation; and full surfaces of said discs so arranged with respect to said integral driving pawls as to prevent disengagement of an engaged one of the pawls from its respective notch by cooperation with the disengaged one of the pawls until a complete partial angular movement of the driving member in one of its said two directions has caused the engaged pawl of the interconnected driving device to drive its associated disc through a full movement to present a notch to the disengaged pawl.

3,202,021
TORQUE RELEASE WRENCH

Lawrence H. Livermont, Whittier, Calif., assignor to Reed Roller Bit Company, Houston, Tex., a corporation of Texas

Filed Feb. 23, 1962, Ser. No. 175,041
6 Claims. (Cl. 81—52.4)

1. In a torque release tool of the class described, the combination of: a tubular housing, a torque transmitting arm, pivot means connecting said housing and said arm, a block mounted for axial movement within the housing, a toggle link having a shoulder, pivot means connecting said toggle link to said block and to said arm, said arm having an abutment engaged by said shoulder to limit pivotal movement of the toggle link relative to the arm,



in one direction, and a compression spring within the housing acting to move the block axially and to maintain said shoulder and abutment in contact.

3,202,022
CLAMPING TOOL

Michel Fernand Lothaire, Ave. de la Gare, Kaolac, Senegal

Filed May 12, 1961, Ser. No. 109,751
Claims priority, application France, May 14, 1960, 827,227; Dec. 9, 1960, 846,497
7 Claims. (Cl. 81—357)

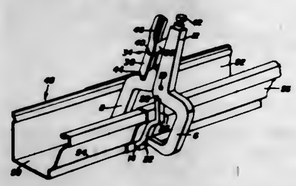


1. A clamping tool comprising a fixed jaw and a movable jaw mounted for sliding movement in relation to said fixed jaw, a main handle integral with said fixed jaw, an intermediate lever, a strap rigid with said main handle, a pin connected to said intermediate lever and disposed perpendicular to the relative movement of the jaws within said strap to pivotally couple said lever to the main handle, a slideway within said movable jaw parallel to the relative movement of the jaws, a catch means guided in said slideway and connected with said intermediate lever to pivotally couple the latter to the movable jaw, a series of teeth mounted on said main handle, a secondary handle, and a toothed sector integral with said secondary handle and pivotally mounted on said intermediate lever and engageable with said series of teeth, said toothed sector being movable by said secondary handle.

3,202,023
GUTTER CLAMP

John T. Parker, P.O. Box 24, Plantersville, Miss.

Filed Apr. 5, 1963, Ser. No. 271,008
5 Claims. (Cl. 81—421)

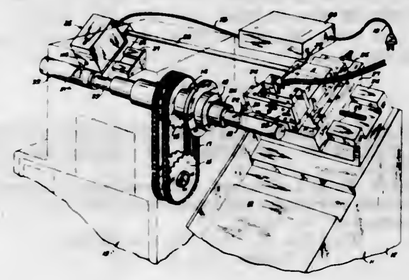


3. A gutter clamp comprising a pair of opposed, generally U-shaped arms opening toward each other and pivotally connected at a first pair of corresponding ends thereof, a pair of opposed, coacting, and complementary elongated jaws removably secured, at corresponding points spaced from the opposite ends thereof to the second pair of corresponding ends of said arms for receiving and clamping a gutter wall therebetween and substantially conforming to the cross-sectional shape thereof, said jaws including one pair of end portions projecting outwardly from said second pair of ends of said arms in one direction and toward said first pair of corresponding ends of said arms and generally along lines extending between the opposite ends of the corresponding U-shaped arms, the other end portions of said jaws projecting outwardly from said second pair of ends of said arms in the opposite direction, means for actuating said arms for opening and closing said jaws, the free terminal end portion of one of the first-mentioned end portions of said jaws and said first end of the corresponding arm including coacting abutment means preventing movement of said free terminal end portion relative to the last-mentioned arm away from the opposing arm.

3,202,024
PATTERN CONTROLLED TOOL

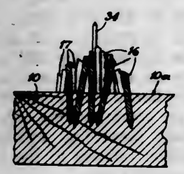
Howard J. Findley, Lyndhurst, Ohio, assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island

Filed Mar. 16, 1961, Ser. No. 96,220
22 Claims. (Cl. 82—14)



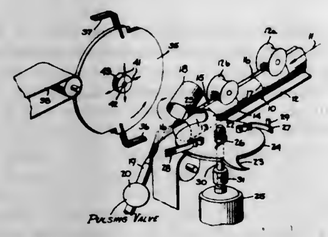
1. In apparatus for removing material from a workpiece at spaced apart locations to produce a desired interrupted configuration thereon; workholder means adapted to hold the workpiece; toolholder means comprising a tool mount and a cutting tool supported thereby and having control movement relative thereto, said tool mount comprising a reaction means and flexible yoke means connected with said reaction means and supporting said tool for said control movement; means actuatable to produce a substantially continuous relative traversing movement between the workpiece and tool for causing the latter to travel over different workpiece portions in succession including said spaced apart locations; pattern means having different pattern portions representative of said desired interrupted configuration; control signal producing pattern-reading means in a co-operative relation to said pattern means and operable to produce control signals; means actuatable to produce a substantially continuous reading relative movement between said reading means and pattern means in synchronism with said relative traversing movement; signal-responsive power output means on said tool mount and effective on said yoke means in response to said signals to engage said tool with and disengage the same from said workpiece by such control movement of the tool toward and away therefrom so that the cutting action of the tool on the workpiece along the path of said traversing movement is an interrupted cutting action with the cutting taking place only at said spaced apart locations; and power medium supply means connected with said power output means.

3,202,025
TOOL FOR PRODUCING FISSURES IN MINERAL FELT
Lorien A. Carlson and John J. Kozacik, Cloquet, Minn., assignors to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 28, 1959, Ser. No. 842,740
4 Claims. (Cl. 83—2)



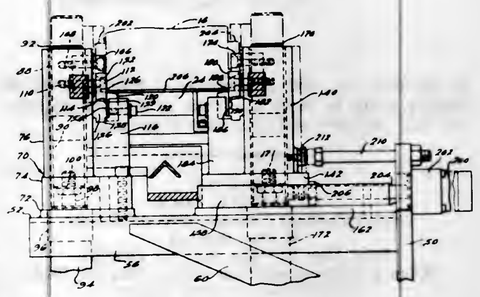
1. A die for forming fissures in mineral felts which die comprises a solid platen base having a planar face to overlie a mineral felt to be fissured, an elongated fissure-forming mass carried by and projecting from said face, said mass being rigid with respect to said base and having a substantially perpendicular peripheral wall of irregular contour extending from said face, said wall and said face forming an angle of at least 90°, the shape of the mass being that of a number of closely packed pins projecting to various extents outwardly from said face.

3,202,026
APPARATUS AND METHODS FOR SEPARATING SUCCESSIVE LENGTHS OF TUBULAR MATERIAL
Walter T. Buhl, Larchmont, N.Y., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 24, 1963, Ser. No. 253,607
7 Claims. (Cl. 83—161)



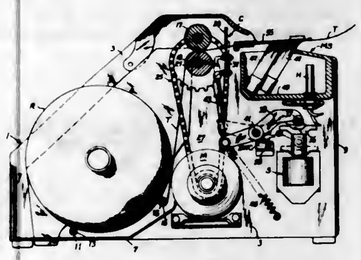
1. Apparatus for separating a succession of tubular members of which each is connected to a succeeding member by a tab-like portion integral therewith, said apparatus comprising in combination: means for conveying the succession of members along a predetermined path; means for deflecting the forward one of said members through an angle of about 90° at least when it arrives at a predetermined location and thus to a position transverse to said path, thereby bending the tab which interconnects same with the succeeding member; movable means for striking such bent tab at the rear thereof and severing same; and means for driving said movable means and conveyor means in such timed relation that the movable means will engage and sever such interconnecting tabs as each member assumes its deflected position, thereby releasing each forward one of said members from those succeeding.

3,202,027
EDGE SHEARING MACHINE WITH MAGNETIC HOLDING MEANS
Frederick P. Sharpe, Dearborn, and George E. Gollwitzer, Belleville, Mich., assignors to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Apr. 30, 1962, Ser. No. 191,217
9 Claims. (Cl. 83—296)



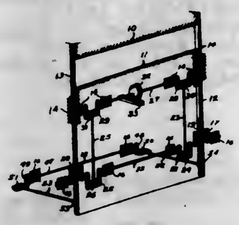
1. Apparatus for shearing a portion of a weld joint on the side surface of an article and comprising: magnetic means for receiving and holding said article, jaw means movable to an open position to permit placement of said article on said magnetic means and a closed position to cause sliding movement of said article relative to said magnetic means to a predetermined position, shearing means operable upon said weld joint in said predetermined position, and said shear means being mounted on said jaw means for movement therewith between said open and said closed positions, said shear means being operable in said closed position to shear said weld joint on said article.

3,202,028
TAPE DISPENSER
Harold H. Rabelow, Marion, and Ross Wood, Aurora, Ill., assignors to Diagraph Bradley Industries, Inc., Herrin, Ill., a corporation of Missouri
Filed Apr. 6, 1960, Ser. No. 20,378
10 Claims. (Cl. 83—241)



1. In tape dispensing apparatus including means for holding a supply of tape, an electric drive means adapted while energized by an electrical source of power to feed tape from said supply, and an electrically actuated cutter adapted when actuated to sever a length of tape from said supply; means for controlling the length of the tape dispensed comprising a first electrical circuit including said drive means and adapted when closed to energize said drive means from said electrical power source, a relay having a coil and a set of relay contacts, a second electrical circuit including said coil and a set of electrical contacts and a source of D.C. power adapted to be energized concurrently with the energization of said first circuit, a third electrical circuit including said relay contacts and said cutter and adapted to be energized upon said relay coil becoming deenergized, and a capacitor shunt-connected across said relay coil whereby upon opening said electrical contacts said drive means and said second electrical circuit are first deenergized and thereafter said cutter is actuated following a delay which is a function of the discharge rate of said capacitor.

3,202,029
CONTROL MECHANISM FOR FLYING SHEARS
Günther Morath, St. Ingbert, Saar, Germany, assignor to Moeller & Neumann G.m.b.H., St. Ingbert, Saar, Germany, a German company
Filed May 22, 1961, Ser. No. 111,689
12 Claims. (Cl. 83—304)



1. A control mechanism for flying shears including a frame mounted for vertical reciprocating movement and for oscillation about a horizontal axis, an upper cutting blade carried by said frame, a lower cutting blade support slidably mounted on said frame for movement toward and away from said upper blade and a lower cutting blade mounted on said support for cooperation with said upper blade to shear a strip of material disposed between said blades, said control mechanism comprising a crankshaft having a first pair of cranks rotatably connected to said frame for reciprocating the same and a second pair of cranks angularly spaced one hundred eighty degrees from said first cranks, a shaft rotatably mounted on said support, a pair of eccentrics on said shaft, connecting rods connecting said eccentrics and said second cranks and means mounted solely on said support to rotate said shaft from one position to a second position angularly spaced one hundred eighty degrees from said first position, whereby with said shaft in said first postion rotation of said crankshaft will move said blades into shearing relationship and upon rotation of said shaft to said second position and rotation of said crankshaft said lower blade will reciprocate in spaced inoperative relationship to said upper blade.

3,202,030
BASSOON
William C. Polkl, 54—20 Kissena Blvd., Flushing, N.Y.
Original application June 13, 1961, Ser. No. 116,801, now Patent No. 3,142,222, dated July 28, 1964. Divided and this application July 15, 1964, Ser. No. 383,560
12 Claims. (Cl. 84—380)

1. In a bassoon, in combination, a bocal; a wing joint; a butt joint; a long joint; and a bell joint, said bocal and said joints being formed with elongated bores and connectable in the above order in such a manner that the bores thereof form a continuous elongated conduit tapering from said bell joint toward said bocal; the bores of said wing joint and of said long joint being approximately parallel, and said wing joint having a flap portion overlapping said long joint, said flap portion being formed



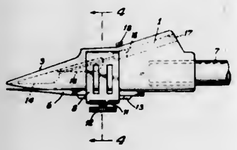
with a plurality of tone holes including a high E hole, an F sharp hole, an F hole, a D hole, and a C hole, said holes being spaced in that order in the direction of elongation of the bore of said wing joint.

3,202,031
BASSOON
William C. Polkl, 54—20 Kissena Blvd., Flushing, N.Y.
Original application June 13, 1961, Ser. No. 116,801, now Patent No. 3,142,222, dated July 28, 1964. Divided and this application July 15, 1964, Ser. No. 383,561
4 Claims. (Cl. 84—380)



1. In a bassoon, in combination, a bocal; a wing joint; a butt joint; a long joint; and a bell joint, said bocal and said joints being formed with elongated bores and connectable in the above order in such a manner that the bores thereof form a continuous elongated conduit tapering from said bell joint toward said bocal, said butt joint having a front side, and back side directed toward the player when the bassoon is held by the latter in the normal playing position, said back side being formed with a plurality of tone holes, key means movably mounted on said butt joint for stopping said tone holes thereof, and guard means on said butt joint and substantially enveloping at least a portion of said key means.

3,202,032
MOUTHPIECE FOR SAXOPHONES AND CLARINETS
Arnfred Rudolf Strathmann, Holtenauer Strasse 346, Kiel-Wik, Germany
Filed Feb. 6, 1964, Ser. No. 343,065
Claims priority, application Germany, Feb. 15, 1963, St 20,294
7 Claims. (Cl. 84—383)



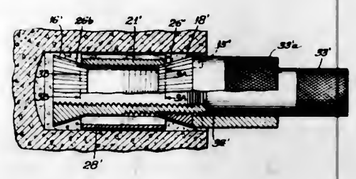
1. A mouthpiece for a saxophone and a clarinet, compising a beak-shaped tubular body having an air channel therethrough and provided with an inclined top wall and a flat bottom wall, a reed detachably attached to said bottom wall, a separate member restricting the cross-sectional area of said air channel in said tubular body and mounted for lengthwise adjustment on the inner face of said inclined top wall, and means accessible from the exterior of said mouthpiece for adjusting said separate member lengthwise along said inclined wall during the playing of the instrument.

3,202,033
SEALING WASHER AND FASTENING DEVICE
Harry C. Weidner, Jr., Shaker Heights, Ohio, assignor to The Atlas Bolt and Screw Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 13, 1962, Ser. No. 216,360
17 Claims. (Cl. 85—1)



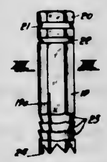
1. A washer for use with a fastening element, comprising a shank having a head at one end, said washer comprising a backing member having one face adapted to bear against said head and having a hole extending therethrough to receive said shank, a rubber-like sealing member secured to the opposite face of said backing member and having a hole extending at least partially therethrough and being generally coaxial with the hole in said backing member for receiving said shank, said sealing member including an annular portion around the hole in said sealing member, the volume of rubber-like sealing material in said annular portion being at least equal to the volume of the hole in said sealing member, the radial distance from the axis of said holes to the outer edge of said annular portion being at least equal to one-half the distance from said axis to the outer edge of said backing member, said annular portion being constructed, proportioned and arranged so that the maximum volume of rubber-like material is provided adjacent to the shank where needed to seal said hole in said backing member and to seal the space between said backing member and receiving member, and so that when said shank is inserted through said holes until said head engages said one face and the shank of said fastening element is inserted into a hole in a fastener receiving member by an axial force with said annular portion sandwiched between said backing member and receiving member, the rubber-like annular portion will be crowded inwardly into sealing engagement with the shank, the hole in the receiving member, and the space between said backing and receiving members, an integral film extending outwardly from said annular portion and covering with said annular portion said full opposite face, said center portion being substantially thicker than said film measured axially from said opposite face, said annular portion and film of said sealing member being integrally formed of the same rubber-like material and being constructed so that tightening said fastener to apply an axial force will cause good sealing by said sealing member but with said film resisting outward spread of said annular portion by the cohesional and frictional engagement force between the same rubber-like material in each so as to resist travel of said sealing member beyond the periphery of said backing member and to provide fluid seal lips by the outer edges of said film and said outwardly spread annular portion sealing the space between said backing and receiving members in said assembled position.

3,202,034
BOLT ANCHORAGE WITH LOOSENING PREVENTING MEANS
John J. Korenchan, Chicago, Ill., assignor to John J. Korenchan, trustee
Filed Jan. 18, 1963, Ser. No. 252,490
4 Claims. (Cl. 85—67)



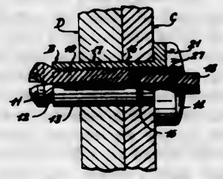
1. An anchorage for bolt means having a thread of one hand, said anchorage being adapted to be wedged in a recess in a solid body, said anchorage comprising an elongated inner metal sleeve having a rear end for disposition deep within said body recess and having a front end to lie nearer the open end of said body recess, said inner sleeve having an externally threaded portion extending rearwardly from the front end of said inner sleeve and having a rear portion shaped so that the outer surface thereof is generally conical with the large end of the cone being nearer the rear end of said inner sleeve, the external thread on said inner sleeve being of a hand opposite to the bolt means thread, said inner sleeve further having an internally threaded portion of the same hand as the bolt means to threadedly receive said bolt means, outer metal sleeve means disposed about the inner sleeve, said outer sleeve means having a rear portion thereof longitudinally slotted and dimensioned, so that said rear portion of said outer sleeve means is normally too small to accommodate the conical end of said inner sleeve but can be forced to do so with the slots permitting lateral expansion of said rear portion of said outer sleeve means, the surface of the cone-shaped portion of the inner sleeve being provided with ratchet teeth whose edges are generally parallel to the sleeve axis, said teeth being oriented in a direction opposite to that of the external thread on the inner sleeve, the opposite surface of said outer sleeve having longitudinally extending irregularities formed thereon, said teeth cooperating with said irregularities to impede relative rotary movement between the two sleeve parts in one direction, said outer sleeve means having a separate front portion thereof as a nut portion internally threaded to cooperate with the external thread of said inner sleeve and having tool receiving slots at one end, said nut portion being forwardly of the laterally expandable portion and when turned in the proper direction with respect to the inner sleeve serving to force the slotted, expandable rear portion of the outer sleeve means rearwardly toward the large end of the cone, the rear portion of said nut being cone-shaped with the small end of said cone being rearwardly of the large end and engaging the inner surface of the outer sleeve, said outer sleeve means having the front portion thereof longitudinally slotted and dimensioned generally similarly to the rear portion of said outer sleeve means so that the forward portion of said outer sleeve means is normally too small to accommodate the large conical end of said forward cone, the inner surface of said outer sleeve which opposes the conical portion of the nut having irregularities thereon similar to those on the rear portion of said outer sleeve, the surface of the conical portion of the nut having ratchet teeth formed thereon, said teeth being substantially identical to the teeth on the rear cone with the teeth on the nut being oriented in the same direction as the external thread on the inner sleeve, said two cones having their small ends facing each other so that upon turning movement of the nut portion in a direction to cause the forward cone to approach the rear cone, any relative movement between the cones and the outer sleeve means permits the ratchet teeth on both cones to slip past the longitudinal irregularities on the slotted portions of the outer sleeve means, reverse relative rotary movement being impeded, whereby said nut is prevented from rotating in the direction in which the bolt is turned, said anchorage being effective in a recess providing substantial clearance about said outer sleeve prior to installation.

3,202,035
SELF-BORING WALL-PLUGS
Claude Rosselet, Founex, near Nyon, Switzerland, assignor to Sarmi S.A., Société d'Applications de Recherches Minières et Industrielles, Leuzerheide (Grisons), Switzerland, a Swiss company
Filed Apr. 16, 1962, Ser. No. 187,905
Claims priority, application Switzerland, Apr. 28, 1961, 5,035/61
1 Claim. (Cl. 85—68)



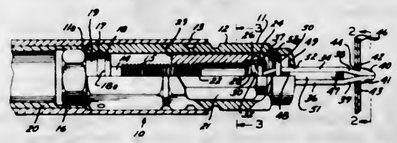
In a self-boring wall-plug which is adapted to be forced and adjustably positioned in a hard and compact material and which comprises a hollow body having a toothed front end portion for boring a hole into said material and a rear end portion constituting a detachable operating head which is shaped to receive a removable interlocking tool means for immobilizing and detaching said operating head from the body of said plug after the same has been set in position, said body and detachable operating head having an outer surface polygonal in cross-section and said front teeth being constituted by two sets of teeth having radially extending apexes cut at an angle of 90° to each other and so positioned that the outer end of the apex of each tooth terminates at a corner of said body.

3,202,036
BLIND FASTENER
John J. Sinko, Lyndhurst, Ohio, assignor to The National Screw & Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed May 9, 1961, Ser. No. 108,899
7 Claims. (Cl. 85—77)



1. As an article of commerce a structural type blind fastener of the bolt or screw type adapted to be driven to a predetermined torque in securing together a plurality of structures having aligned apertures therein forming a passage therethrough accessible from only one side: a first member comprising a cylindrical body having an external thread and a circular head at one end provided with a bearing face inclined outwardly away from said body, a driving connection at the end of said body opposite said head, and a weakened section between said body and said driving connection adapted to break when subjected to a predetermined torque; a second member comprising an internally threaded cylindrical tubular-like body portion having an outside diameter substantially equal to the diameter of said head of said first member threaded onto said cylindrical body of said first member and an integral head at the end of said tubular-like body remote from said head of said first member, said head of said first member being located without the adjacent end of said second member and adapted to be drawn therein to expand said adjacent end of said second member upon relative axial movement between said members incident to setting or driving the fastener; the major portion of said exterior and interior threads of said first and second members interengaging with clearance fit, as defined in Handbook H28 (1957), National Bureau of Standards; a formed annular groove in said tubular-like body portion of said second member produced with said first and second members assembled with one another as aforesaid; and at least one uninterrupted annular portion of limited axial length of said exterior and interior threads of said first and second members formed by the inward deformation of the metal of said tubular-like body portion of said second member by the formation of said groove therein, interengaging with an interference fit, as defined by said handbook, forming a friction-type thread interference lock between said first and second members.

3,202,037
RELEASABLE FASTENER
Lewis C. Finkle, Temple City, and Kenneth V. Stewart, Northridge, Calif., assignors to Wedgelock Corporation of California, North Hollywood, Calif., a corporation of California
Filed June 7, 1963, Ser. No. 286,355
1 Claim. (Cl. 85—81)



A releasable fastener comprising:
a body having a work engaging closed end and an axial opening extending through said closed end;

stud means rotatably mounted in said body for non-axial movement relative to said body, said stud means having a wrench engaging head at one end externally of said body and an external threaded portion at its other end within said body;

means restraining said stud means against longitudinal movement comprising a first annular groove formed on the inner wall of said body portion, a second annular groove formed on said stud means, and a snap ring encompassing said second annular groove and engaging said first annular groove;

chuck means movably mounted by said body for non-rotating axial movement relative to said body, said chuck means having an internal thread engageable by the external thread on said stud means for moving said chuck axially within said body, said internal threads of said chuck means being relieved so that said stud means becomes disengaged from said chuck means at the end of its travel in one direction in said body, the relief on said chuck means comprising a non-threaded internal area at said end of larger diameter than the threads on said stud means, said chuck means and body being adjacent one another and non-circular in cross section to prevent relative rotation therebetween;

a pair of work engaging pins secured to said chuck means for linear movement therewith, said pins extending outwardly of said body through said axial opening thereof and having enlarged outer ends adapted to be extended through aligned holes of a work piece; and

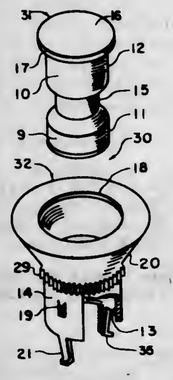
spreader means secured to said body for separating said pins in response to retraction of said pins through said opening of said body, rotation of said stud means retracting said pin means by moving said chuck linearly within said body.

3,202,038

PUSH-TYPE BLIND FASTENER, REMOVABLE, REUSABLE, PROVIDED WITH SELF-LOCKING, SELF-RETAINING, SELF-SECURING MEANS

Henry James Bass, 360 La Perle Place, Costa Mesa, Calif.

Filed Oct. 14, 1963, Ser. No. 316,023
4 Claims. (Cl. 85—83)



1. A reusable self-locking self-retaining self-securing blind fastener adapted for passage into aligned apertures in the front and rear panels of the workpiece which is capable of being installed entirely by hand-pushed operation with both respective opposite ends thereof flush and which is capable of being unfastened by hand-pushed operation comprising, in combination, a sleeve into which is slidably engaged a push bolt with a single annular locking and releasing groove, said sleeve having a countersink head at one end thereof from which extends a cylindrical hollow body portion with a central bore throughout its length, the diameter of said bore in said countersink head being greater than the diameter of said bore in said body portion, directly under said countersink head being provided external self-retaining means capable of being imbedded by hand into said front panel, below said self-retaining means being provided resilient locking and securing tabs slightly bent inwardly towards the axis of said sleeve and extending into said central bore, said tabs being located on said body portion to correspond and cooperate with said groove on said bolt to provide self-locking therein, the end opposite said countersink head having resilient prong means extending inwardly towards the axis of said sleeve and having radially extending projections at the terminal tips thereof, said tips extending radially outwardly no further than the outer surface of said body portion when in the inwardly extending (unfastened) position, said tips extending beyond said outer surface when in the flared radially outwardly (fastened) position, and the distance between said tips to the top surface of said countersink head being equal to the overall length of said bolt, said bolt having an enlarged head at one end thereof of a lesser diameter than said bore in said countersink head but of a greater diameter than said bore in said body portion, said bolt having a cylindrical shank portion extending from said enlarged head of slightly lesser diameter than said bore in said body portion to allow free slideable engagement therein, said bolt shank being provided with said groove at a distance from said enlarged head substantially equal to the distance between the extremities of said tabs and the top surface of said countersink head to receive said tabs for self-locking therein when the top surface of said bolt head is substantially coplanar with the top surface of said countersink head, said groove being adapted upon further insertion by a finger of the hand into said bore in said body portion to release said prong means and unfasten said panels, said fastener being reset for reuse by pushing said bolt into said sleeve in the opposite direction past said prong means allowing said prong means to return to said (unfastened) position, said locking and securing tabs exerting clamping action upon said bolt securing said bolt therein and preventing disengagement thereof.

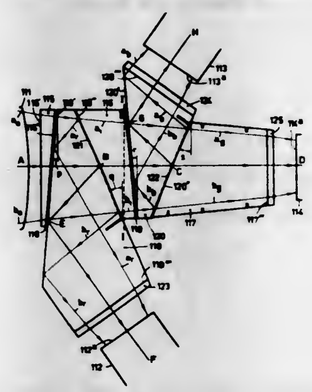
3,202,039

OPTICAL SYSTEM FOR A COLOR TELEVISION CAMERA

Hendrik de Lang and Gijsbertus Bouwhuis, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 27, 1961, Ser. No. 120,039
Claims priority, application Netherlands, Aug. 2, 1960, 254,460
10 Claims. (Cl. 88—1)

1. An optical system for a color television camera having a camera tube for each of a plurality of component colors of an object comprising an objective lens and between the objective lens and each tube a color separating prism system having a non-reflecting optical axis and including a plurality of prisms, said prisms being separated from one another by an air space bounded by surfaces of the prisms which intersect the non-reflecting optical axis and at least one of said prisms being separated from said objective lens by an air space, a dichroic layer adjacent each of said bounding surfaces and intersecting the non-reflecting optical axis, said bounding surfaces and said dichroic layers each forming angles of less than 30° with planes which are at right angles to the non-reflecting optical axis, said prisms being so positioned relative to one another that light reflected by a dichroic mirror is totally reflected by the adjacent bounding surface.

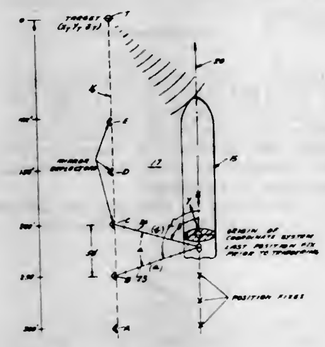


3,202,040

SUBMARINE POSITIONER SYSTEM

Wade Burkhart, New Paltz, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York

Filed Nov. 8, 1961, Ser. No. 150,938
2 Claims. (Cl. 88—1)



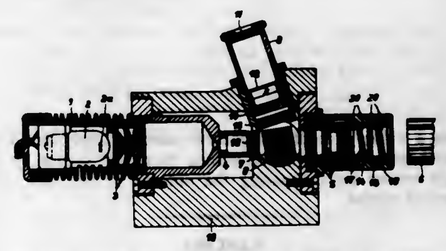
1. A submarine positioning system in relation to a triggered mine target comprising a series of buoys spaced along a predetermined substantially linear path inclusive of the target position, said buoys being planted along equally spaced positions and at a preset height above the target area bottom to constitute a known reference target path inclusive of the mine, a submerged reflector secured to each of said buoys and oriented to reflect incident light beams from a submerged submarine along a course on one side of the target path, said reflectors being identical to one another and being of the retro-reflector type capable of reflecting an incident beam from the submarine directly back thereto over a relatively wide range of angular incidence of the beam on the reflectors, whereby accurate position fixes are provided for the navigating submarine relative to the target mine along a course of known distance from and parallel to the said target path through simultaneous beam sightings on two adjacent reflectors.

3,202,041

OPTICAL DEVICE FOR ORIENTING MONOCRYSTALS ALONG THE AXIS OF THE CRYSTAL

Eugen Bernhardt, Heidenheim (Brenz), Germany, assignor to Carl Zeiss, Oberkochen, Germany

Filed Mar. 16, 1961, Ser. No. 96,258
Claims priority, application Germany, Mar. 17, 1960, Z 7,883
6 Claims. (Cl. 88—14)



1. An optical device comprising an autocollimator for orienting specimens of monocrystals along their crystal axis, comprising an optical system having an optic axis including a source of light, a collimator diaphragm having a relatively restricted small round aperture through which rays of light are directed from said source, a collimator objective spaced from said diaphragm, a division prism between said objective and aperture, an ocular offset from said prism for receiving reflected light images from said prism, and a plane parallel partially transmitting mirror plate which is substantially normally aligned to the optical axis and arranged in front of said collimator objective, said mirror plate reflecting a light image of said aperture to said division prism and then to said ocular in the form of a small dot mark centered in said ocular while another light image of said crystal axis is reflected from said specimen through said mirror plate to said division prism and then to said ocular with the small dot mark light image of said aperture indicating the optical axis of said autocollimator, said division prism being oriented to reflect both of said light images toward said ocular whereby manipulation and orientation of said specimen will cause the reflected image of said crystal axis to be brought into registry and centered with the small centered dot mark image of said aperture.

3,202,042

SYSTEM FOR MEASURING SEPARATELY BACKGROUND AND AVERAGE LINE LUMINANCE OR DENSITY

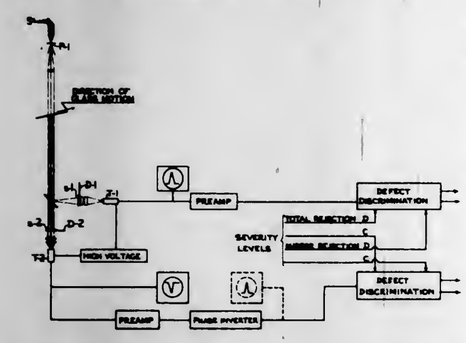
Ballard Jamieson and Robert Kee, Washington, D.C., assignors to the United States of America as represented by the Secretary of Commerce

Filed Aug. 6, 1962, Ser. No. 215,256
9 Claims. (Cl. 88—14)

1. In a system for measuring separately the average line luminance and background luminance of material, both being images of linework or text, means for illuminating said material, means for optically scanning said material, signal generating means responsive to the light output of the scanning means for providing a series of electrical pulses, first means for providing an output hav-

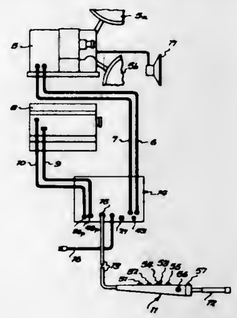
ing a magnitude dependent upon the number of pulses in said series having a value exceeding a first selected level, second means for providing an output having a magnitude dependent upon the number of pulses in said series having a value exceeding a second selected level, said first level being greater in magnitude than said second level, and means for comparing the outputs of said first and second means.

3,202,043
METHOD AND APPARATUS FOR PHOTOELECTRICALLY INSPECTING GLASS
William F. Galey, Saxonburg, Hugh E. Shaw, Jr., New Kensington, and George E. Sleighter, Natrona Heights, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 2, 1964, Ser. No. 405,001
18 Claims. (Cl. 88—14)



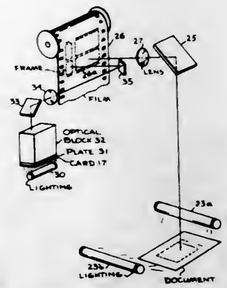
11. Apparatus for detecting the presence of defects in and on the surface of a piece of glass having extensive, sensibly smooth surfaces that are substantially planar in the instant test area, comprising: a source of light of given intensity positioned so as to provide a beam of light intersecting said glass; means, including an objective lens, for presenting images of said defects formed by said beam; means, including a light sensitve element aligned with said beam, responsive to variations in light intensity of said beam which forms said images to provide signals indicative of the presence and location of said defects; and means in the path of light between said source and said light sensitive element to interrupt the major portion of said light beam and permit a small portion only of said light beam, correlated in size with a maximum acceptable defect size so as to indicate by perceptible intensity differences in said increments of light the presence of any larger defect, to impinge upon said light sensitive element.

3,202,044
PICTURE PROJECTING SYSTEM WITH REMOTE PORTABLE CONTROL
Arthur O. Harris, 207 Delaware Ave., Buffalo, N.Y.
Filed Jan. 31, 1962, Ser. No. 170,128
3 Claims. (Cl. 88—24)



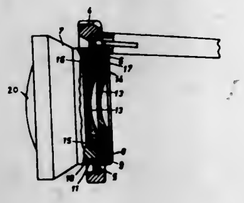
1. A projection system for use with a moving picture projector and a slide projector having mechanism for automatically positioning a slide into operative relation to a light source and a lens, said system including a remote portable controller to be held by a user of the system and including a plurality of switches mounted thereon for controlling the operation of said projectors, a selector switch on said controller movable into two positions, said switch in one position connecting with a circuit leading to said slide projector and in the other position connecting with a circuit including said moving picture projector, a push switch also on said controller and cooperating with said selector switch to actuate either of said circuits with which said selector switch is connected, and electrically actuated mechanisms in fixed relation to said projectors and connected electrically with said switches.

3,202,045
APPARATUS FOR SIMULTANEOUSLY RECORDING SPACED DATA AND CODE ON A SINGLE FRAME OF PHOTOGRAPHIC FILM
William R. Arsenault, Pacific Palisades, John F. Cameron, Rolling Hills, and James S. Thompson, Playa Del Rey, Calif., assignors to FMA, Inc., El Segundo, Calif., a corporation of California
Filed Dec. 10, 1962, Ser. No. 243,509
8 Claims. (Cl. 88—24)



8. In an apparatus for simultaneously recording a document and indexing data relating to said document said indexing data being in the form of round holes punched through a card in accordance with a predetermined code, an optical arrangement for converting the format of holes on said card to a different format, said optical arrangement comprising: a bundle of round optical fibers whose input ends are arranged in the format on the card and whose output ends are arranged in said different format; and a block of optical rods of square cross-section arranged in said different format, said block of optical rods being positioned in face-to-face relationship with the output ends of said bundle of round optical fibers and in registration therewith.

3,202,046
TELESCOPIC SPECTACLES
Wolfgang Roos, Oberkochen, Wurttemberg, Germany, assignor to Carl Zeiss, Wurttemberg, Germany
Filed Apr. 26, 1962, Ser. No. 190,279
Claims priority, application Germany, May 6, 1961, Z 8,725
1 Claim. (Cl. 88—34)



In telescopic spectacles, a spectacle frame having spaced supporting rings connected by a nose bridge, a tubular mount in each of said supporting rings, an objective and an ocular in each of said tubular mounts, said tubular mounts being provided with an internal rearwardly facing annular shoulder, each ocular consisting of two meniscus-shaped individual lenses having their concave faces directed toward the eye, mount rings for each of said meniscus-shaped lenses with the mount rings of the lenses adjacent said objectives seated on said annular shoulder in each of said tubular mounts, the mount ring remote from said objective being engaged with the first named mount ring to support said meniscus-shaped individual lenses in spaced relation, a retaining ring mounted within each of said tubular mounts to lock said lens rings in position and urge the same into engagement with said shoulder, one of said meniscus-shaped individual lenses in each of said oculars producing spherical correction and the other meniscus-shaped lens in each ocular producing cylindrical correction, the ocular lens producing the cylindrical correction being positioned closest to the eye.

3,202,047
INVERTED MICROSCOPE WITH U-SHAPED OPTICAL PATH AND TUBULAR MOUNTS FOR OBJECTIVE AND RELAY LENS SYSTEMS
William F. Lawler, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed June 21, 1961, Ser. No. 118,567
2 Claims. (Cl. 88—39)

1. An inverted microscope having a U-shaped optical path comprising

an elongated housing,

a horizontal stage on which a specimen is held, said stage being operativley carried by said housing adjacent to one end of the upper side thereof,

a microscope objective mounted in vertical alignment with and focused on said specimen,

a generally tubular upright frame member fixed in said housing in optical alignment with and beneath said objective,

means operatively constructed on the top of said frame member for mounting said objective thereon in communication with the interior of the member,

a laterally directed tubular frame part formed on said frame member and opening into the upper hollow part of said frame member,

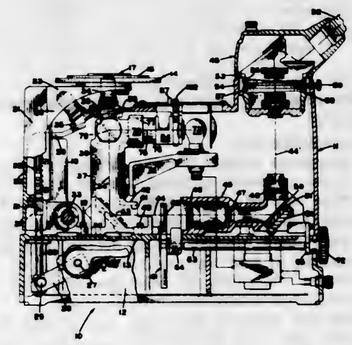
a lamp bracket carried by said frame member and a lamp mounted thereon in alignment with said lateral tubular frame part so that light is directed therethrough,

a beam divider and means for supporting the divider inclinedly at the junction of the axes of the upright frame member and its lateral tubular part in optical alignment with said objective and said lamp so as to illuminate said specimen episcopically,

means forming a side opening in the lower part of said frame member,

a first plane mirror,

means for mounting said mirror in a position substantially 45° to the axis of said objective and in horizontal alignment with said side opening so as to deviate incident image rays along a horizontal portion of optical axis whereon a primary image is formed by the objective,



a unitary relay lens and mirror mount located in a fixed position is said housing on said horizontal portion of axis, said mount consisting of a tubular horizontal part joined at one end to a tubular vertical part,

a second mirror,

a mirror seat formed at the junction of the rorizontal and vertical parts at substantially 45° to said horizontal axis portion whereon the second mirror is fixed so as to deviate said image rays vertically and form the vertical leg of a U-shaped optical system,

a first positive lens and a negative lens mounted in spaced relation thereto in said horizontal part and a second positive lens mounted in said vertical part in optical alignment with the other two lenses and mirror so as to relay said image rearwardly to form a relayed image,

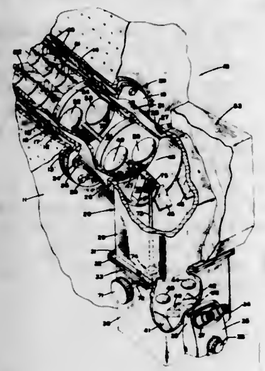
an inclined ocular member for viewing said relayed image, and

rotatable mounting mechanism for said member formed cooperatively on said housing and ocular member for holding the ocular member on the housing, said mechanism including an annular surface whereon the ocular member is supported, said surface being formed horizontally on the upper part of the housing opposite to said stage whereby the ocular is positioned in elevation favorably for convenient viewing of said stage.

3,202,048
OPTICAL INSTRUMENT WITH MICROSCOPE UNIT AND NESTED TUBES FOR VIEWING OBJECTS IN CLOSED CHAMBER

James E. Bellmer, Chili, and David M. Redden, Rochester, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Aug. 25, 1961, Ser. No. 133,970
1 Claim. (Cl. 88—39)



In an optical instrument having an optical system for exterior viewing of objects in a closed chamber, the combination of

a microscope unit,

an elongated upright housing extending along the wall of the chamber, said microscope unit being operatively secured on the lower part thereof so that said wall is interposed between said unit and said objects,

an instrument tube extending horizontally through an opening in said wall, said tube having an open end located exteriorly of said chamber and having a closed end located interiorly thereof,

means for securing the upper end of said housing to said open end of said tube in depending position,

a window formed in the side wall of said tube near said closed end facing said objects to be viewed,

an optical relay system for relaying image forming rays from said objects to the object plane of said microscope unit, said system comprising a plurality of optically aligned lenses which are operatively secured in said tube between said window and microscope unit,

a plurality of optically aligned mirrors forming a penta-mirror which is located in fixed position in the closed end of the tube between said window and said relay system, said penta-mirror deviating the optical axis in a direction longitudinally of said tube,

a second plurality of optically aligned mirrors fixed in said housing between the longitudinal portion of optical axis and said microscope unit for deviating the longitudinal portion of axis downwardly and in optical alignment with said unit,

a mounting sleeve wherein said tube is slidably fitted, said tube being longer than said sleeve at the open end thereof so as to protrude from said sleeve, the inner end of the sleeve being formed to enclose the closed end of said tube,

an outer window formed in this side wall of said sleeve in alignment with the first window,

a horizontal carrier tube secured in the opening in the wall of said chamber, said carrier tube being slidably fitted to receive said sleeve,

means for securing said instrument tube in said sleeve, and

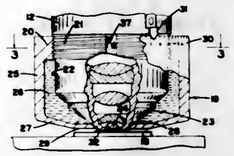
means for demountably securing said sleeve in said carrier tube whereby

said instrument tube and its optical system contained therein together with said sleeve may be mounted and demounted as a completely operative assembly.

3,202,049
LIQUID DISPENSER FOR MICROSCOPE OBJECTIVE

Selah J. Bond, Ontario, N.Y., assignor to Bausch & Lomb Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 29, 1961, Ser. No. 155,713
4 Claims. (Cl. 88—40)



1. The combination in a liquid dispenser which is mounted on an oil immersion type of microscope objective having a side wall and a bottom wall of

a shell surrounding and spaced from said side wall and extending beneath said bottom wall of the objective to form therewith a liquid holding chamber,

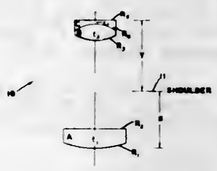
means including an inclined connection constructed jointly on the upper end of the shell and objective side wall for mounting the shell for longitudinal motion on the objective upon rotation of said shell, and

an annular seating surface formed on the lowermost part of said shell around a central discharge orifice in said bottom wall, said seating surface being formed to fit against and cooperate with the bottom wall in one operative position of the shell to form therewith a valve for governing exit of the liquid held in said chamber.

3,202,050
ZOOM TYPE OF EYEPIECE FOR OPTICAL INSTRUMENT

Richard L. Seidenberg, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Dec. 15, 1961, Ser. No. 159,514
1 Claim. (Cl. 88—57)



A zoom type of eyepiece for an optical instrument comprising

a front singlet plano convex lens member designated A and having its plano surface rearmost, and

a rear compound plano convex lens member optically aligned therewith and having a front double convex lens element designated B and a rear plano concave lens element designated C and having its concave surface in contact with the rear surface of element B,

said lens members being spaced apart and being moved at different respective rates to vary the magnification of the image through a zoom range of at least 2.0 as specified in the table herebelow wherein X is the variable distance between a stationary point on the optical axis and the front apex of member A and Y is the variable distance between said point and the rear apex of said lens element C, and F denotes the focal length of said eyepiece at 9× magnification,

MAGNIFICATION	X	Y
9.0	.903 F	−.382 F
10.1	.751 F	−.455 F
11.4	.580 F	−.512 F
12.7	.391 F	−.527 F
14.1	.261 F	−.513 F
15.4	.154 F	−.476 F
16.7	.064 F	−.422 F
18.0	−.0127 F	−.355 F

wherein the minus (−) sign represents motion on one side of said stationary point and the plus (+) sign represents motion on the other side thereof,

the constructional data for said eyepiece being given in the table herebelow, wherein R_1 to R_8 represent the radii of the successive lens surfaces numbering from the front of member A, the minus (−) sign used with the $-R_4$ value meaning that its center of curvature lies on the entrant side of the vertex of that surface, t_1 to t_3 represent the axial thickness of the lens elements, and n_D and ν represent respectively the refractive index and the Abbe number of the successive lens materials,

Lens	Radii	Thicknesses	n_D	ν
A	R_1=.864 F R_2=∞	t_1=.126 F	1.615 to 1.620	35.0 to 38.0
B	R_3=.290 F R_4=−.234 F	t_2=.108 F	1.515 to 1.520	63.0 to 66.0
C	R_5=∞	t_3=.086 F	1.615 to 1.620	35.0 to 38.0

scripts from front to rear, are all between the respective limits specified in the following algebraic inequalities:

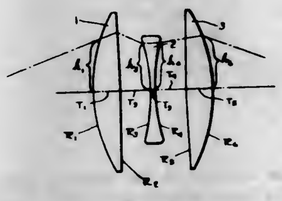
$$1.65<N_1<1.70$$
$$1.68<N_2<1.751$$
$$1.65<N_3<1.70$$
$$+.35F<R_1<+.43F$$
$$-4.0F<R_2<-12.0F$$
$$-.440F<R_3<-.495F$$
$$+.440F<R_4<+.495F$$
$$+4.0F<R_5<+12.0F$$
$$-.35F<R_6<-.43F$$

where F denotes the equivalent focal length of the lens system, positive values of radius denote surfaces that are convex to the front and negative values of radius denote surfaces that are concave to the front, the dispersive indices V_1 and V_3 are each approximately 47.2 and the dispersive index V_2 is approximately 30.9, and wherein the sum of the reduced thicknesses of the three lens elements and of the air spaces therebetween is in the range between .24F and .27F.

3,202,051
SYMMETRICAL THREE ELEMENT LENS SYSTEM

Edwin W. Bechtold, Middle Village, N.Y., assignor to The Edualite Corporation, Westchester County, N.Y., a corporation of New York

Filed Apr. 16, 1964, Ser. No. 363,044
4 Claims. (Cl. 88—57)

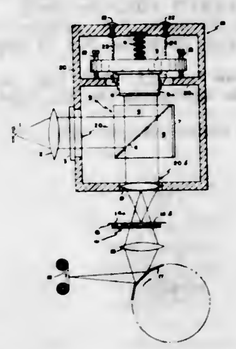


1. A symmetrical, air-spaced three element lens system in which the refractive indices N and the radii of curvature R, each category being numbered by sub-

3,202,052
INTERFEROMETER USED WITH PIEZOELECTRIC CRYSTAL TO FORM LIGHT VALVE

Werner R. Rambauske and Hermann R. Mentwerdt, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

Filed Jan. 12, 1962, Ser. No. 165,969
1 Claim. (Cl. 88—61)
(Granted under Title 35, U.S. Code (1952), sec. 266)



An improved optical valve comprising: in combination,

(a) a high intensity light source;

(b) a receptacle housing having light-entrance and -emergent windows;

(c) an interferometer within said receptacle housing for receiving a coherent beam of light from said source;

(d) a spectral filter between said interferometer and said light source, said filter being positioned adjacent to and exteriorly of said light-entrance window in sealing relation thereto;

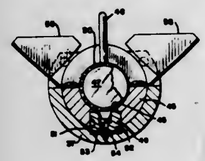
(e) fixed convex collimating lens means between said spectral filter and said light source;

(f) said interferometer including a beam-splitting rectangular solid element having a diagonally cut half-silvered face at a preset fixed distance from the side thereof for initially dividing said beam into two optical paths of equal length when said interferometer is in initial adjustment, said rectangular solid element having a fully silvered face forming a mirror at the end of one of said two optical paths;

(g) a piezoelectric crystal having a mirror formed on one face thereof, at the end of the other of said two optical paths;
(h) means for applying an electrical signal to said crystal;
(i) means for adjustably positioning said piezoelectric crystal and the mirror attached thereto out of said initial adjustment to form light fringes comprising a main support plate within said receptacle housing for mounting said crystal thereto, and a pair of adjustment screws incorporated on said plate, and a spring element in operable engagement with said plate and said receptacle housing for adjustably positioning said support plate relative to said beam-splitting element to an initially fixed position;
(j) second convex lens means positioned within said light-emergent window for focusing the fringes in a predetermined plane exterior to said receptacle housing;
(k) and diaphragm pattern means having light transmitting and light obstructing portions disposed in adjacent, alternate relation to each other, and positioned in said predetermined plane to obstruct transmission of light therethrough of said fringes and subsequently transmit light therethrough in proportion to an outside electrical signal applied to said piezoelectric crystal to effect changes in the optical path length of said interferometer to shift said fringes to other lateral positions relative to said diaphragm pattern.

3,202,053
POLARIZING FILTER HOLDERS FOR INVERTED MICROSCOPES

William F. Lawler, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Original application June 21, 1961, Ser. No. 118,567. Divided and this application Oct. 26, 1964, Ser. No. 406,342
1 Claim. (Cl. 88—65)



A mounting for a polarizing element comprising a polarizer holding cell formed from magnetizable material and having an arcuate peripheral surface, a cell mounting sleeve having a central opening therethrough for the passage of a beam of light, a semi-cylindrical seating surface conforming substantially to said peripheral surface in shape and being formed in said sleeve approximately concentrically with said opening so as to form a socket wherein said cell rests with freedom for relative rotative movement therebetween, a pair of surfaces formed in said sleeve normal to said opening and spaced apart a distance greater than the thickness of said cell and a second pair of longitudinal surfaces formed substantially coplanar with the axis of said sleeve and connecting the opposite ends of the radial surfaces together so as to define a radial open slot in said sleeve overlying said seating surface, a cell handle fixed radially to said cell and projecting through said slot whereby said cell may be rotated on said seating surface, a magnet positioned below the lowest part of said socket and free of said cell, a magnet supporting surface located in spaced relation to the underside of said magnet, a magnet retaining screw abutting against and extending through an opening in said magnet and threaded into the member on which said supporting surface is formed, and an elastic member occupying the space between the bottom of the magnet and its supporting surface, said screw being adjusted to draw the magnet away from the cell and change the effective magnetic retentive force tending to retain the cell in its socket.

3,202,054
RADIATION FILTER WITH PLURAL IRIDIZED METAL OXIDE FILMS

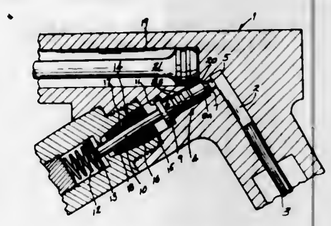
John M. Mochel, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 16, 1959, Ser. No. 846,896
2 Claims. (Cl. 88—106)



1. A radiation filter comprising
a clear glass substrate that is normally transparent to solar radiation, and
a plurality of iridized metal oxide films differing from each other in thickness by an amount not exceeding about 10%,
said plurality of metal oxide films including at least two alternate films, each composed of about equal parts of chromium oxide and an oxide selected from the group consisting of cobalt oxide and nickel oxide, having a reflectance peak of at least 25% located in the near infrared portion of the spectrum, and providing a neutral gray color due to substantially uniform transmission across the visible portion of the spectrum, and
said plurality of metal oxide films further including at least one intermediate film having a lower refractive index than said alternate films and being composed of an oxide selected from the group consisting of amorphous Al_2O_3 and SiO_2.

3,202,055
VALVE SYSTEM FOR COMPRESSION IGNITION DEVICE

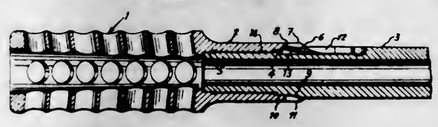
David F. Butler and Glenn R. Dixon, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Nov. 1, 1963, Ser. No. 320,904
5 Claims. (Cl. 89—7)



1. In a device actuated by the adiabatic compression and ignition of a liquid propellant include a combustion chamber, a barrel chamber, a valve chamber communicating said combustion chamber with said barrel chamber, a compression piston slidably mounted in said combustion chamber, a valve seat formed between said valve chamber and said barrel chamber, a valve slidably mounted in said valve chamber, said valve having a conical nose portion normally positioned against said valve seat sealing said barrel chamber from communication with said combustion chamber, spring means normally urging said nose portion of said valve into sealing engagement with said valve seat, a rearwardly extending stem formed integral with said valve, and snubber means mounted in said valve chamber surrounding said stem operative to buffer rearward movement of said valve and to retain said valve in an open position for a predetermined interval of time.

3,202,056
FIRE ARM MUZZLE BRAKE

Kurt Seeberger, Zurich, Switzerland, assignor to Verwaltungsgesellschaft der Werkzeugmaschinenfabrik Oerlikon, Zurich, Switzerland
Filed Mar. 2, 1964, Ser. No. 348,473
Claims priority, application Switzerland, Mar. 4, 1963, 2,778/63
2 Claims. (Cl. 89—14)

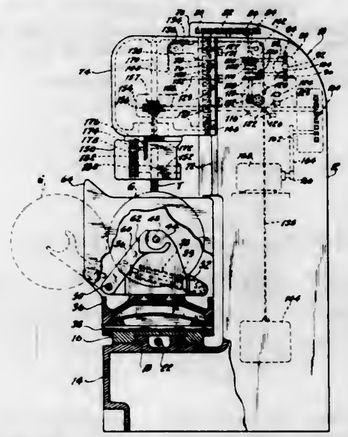


1. A fire arm comprising in combination a barrel having at the front end thereof an exterior thread and an exterior cone shaped portion, the apex of said portion pointing towards the front, a slot in the exterior surface of said barrel extending parallel to the longitudinal axis of said barrel adjacent the front end thereof, a muzzle piece having an interior thread to be screwed on said exterior thread and an interior cone shaped portion complementary to said exterior cone shaped portion, said piece having at its rear end regularly spaced longitudinal slots forming fingers, said interior cone shaped portion being arranged on said fingers, a spring tongue fixed at one end in said slot of said barrel and with its free end designed for engaging in one of said slots, said spring being capable of being disengaged from said slots radially and resiliently by depression of said free end, whereby the expansion of said fingers by said exterior cone shaped portion permits a rotation of said muzzle piece relative to said spring tongue.

3,202,057
GEAR FINISHING MACHINE WITH WORK TRANSFER MECHANISM

Benjamin F. Bregi, Grosse Pointe Shores, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Delaware
Filed Oct. 31, 1960, Ser. No. 66,179
2 Claims. (Cl. 90—1.6)

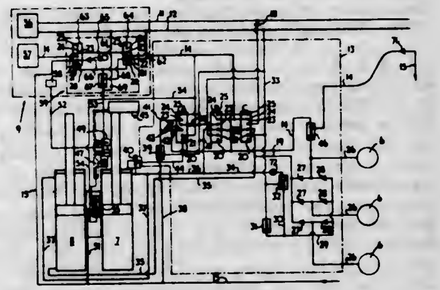
1. A gear finishing machine comprising a frame having a pedestal, horizontal ways on said pedestal, a work slide movable on said ways, a traverse motor in said pedestal, drive means connecting said traverse motor to said work slide, a rocking table on said work slide, rotary work support means on said table, a column at one side of said pedestal, vertical ways on said column, a tool slide movable on said vertical ways, a tool head carried at the underside of said tool slide in position to overlie said table, means providing for adjustment of said tool head relative to said tool slide about a vertical axis, rotary tool support means on said tool head, a drive motor in said column, drive means connecting said motor and tool support means, a tool feed motor in said column, feed screw means interconnecting said tool slide and column for moving said tool slide vertically between a loading position in which a tool carried by said tool support means is located above the position occupied by a work gear on said work support means in clearance therewith, and a working position in which a gear-like tool on said tool support means is in mesh with a work gear on said work support means, and a work gear transfer device mounted on said rocking table for movement therewith comprising a pair of arms having upper and lower ends, means pivoting the lower end of said arms to said table for swinging movement about an axis parallel to the axis



of rotation of said work support means in any position of said table, work support means at the upper ends of said arms, the upper ends of said arms being movable in an arc between a work receiving position spaced laterally from said tool slide to provide for movement of a heavy work gear vertically downward onto the work support means on said arms without interference from said tool slide and tool head and a working position in which a work gear carried thereby is directly beneath the position occupied by a tool on said tool support for engagement by said rotary work support means.

3,202,058
ROOF SUPPORT ASSEMBLY

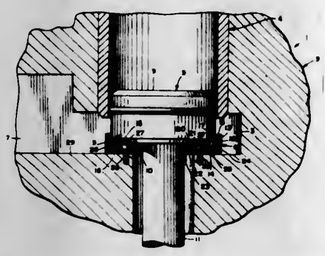
Douglas Herbert Hewlett Bolton, Winchcombe, near Cheltenham, and Michael Charles Potts, Prestbury, Cheltenham, England, assignors to Dowty Mining Equipment Limited, a British company
Continuation of application Ser. No. 302,786, Aug. 19, 1963. This application Nov. 20, 1964, Ser. No. 414,507
Claims priority, application Great Britain, Aug. 20, 1962, 31,932/62
6 Claims. (Cl. 91—189)



1. A roof support assembly including a series of roof supports advanceable in a predetermined sequence, each roof support including signalling means operable to send

a signal to the next roof support in the sequence to initiate the advance of said next roof support, each roof support also including locking means for locking the signalling means in the signalling position in a manner independent of a future loss of the signal, and the assembly also including release means operable to release the locking means of each roof support.

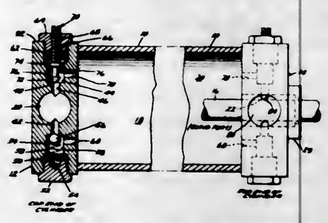
3,202,059
PISTON ASSEMBLY
Jack B. Ottestad, La Grange, and Samuel A. Skeen, Cook County, Ill., assignors to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,428
7 Claims. (Cl. 91—392)



1. In a power unit embodying a supporting member having a pressure chamber therein, means for feeding working fluid under pressure into said chamber, and a cylinder having one end in communication with said chamber,
(a) a piston reciprocable in said cylinder through a predetermined stroke,
(b) said piston having two end faces, and
(c) sealing means mounted on said supporting member for sealing one end face of said piston against fluid pressure in said chamber,
(d) said sealing means comprising
(1) a retainer ring mounted on said supporting member, and
(2) an annular seat held on said supporting member by said retainer ring in position to engage said piston,
(e) said annular seat being transversely movable relative to said retainer ring.

3,202,060
FLUID POWER CYLINDER
Gunnar Grotness, Fort Wayne, Ind., assignor to Pneumatic-Hydraulic Development Co., Inc., Fort Wayne, Ind., a corporation of Indiana
Continuation of application Ser. No. 153,471, Nov. 20, 1961. This application Dec. 30, 1963, Ser. No. 337,699
9 Claims. (Cl. 91—443)

1. A fluid power cylinder comprising a hollow cylinder having opposite ends, a piston reciprocally received by said cylinder, two head blocks mounted on and closing the opposite ends respectively of said cylinder, a piston rod disposed coaxially of said hollow cylinder secured at one end to said piston and reciprocally projecting through one of said head blocks, said head blocks each having two parallel surfaces which are spaced apart in a direction axially of said cylinder thereby providing thickness dimensions for said blocks, said blocks having orthogonally intersecting sides, piston rod-bearing means which includes an axially extending bearing aperture through said one block, said bearing aperture coaxially slidably receiving said piston rod, said bearing aperture extending between the surfaces of said one block and being of uniform diameter throughout the length thereof, the diameter of said aperture being substantially coextensive with the diameter of said rod, each said block having first and second identically shaped bores extending inwardly from two opposite sides respectively, a third bore in each block having inner and outer opposite ends, the outer end of said third bore opening through a third side of the block and the inner end being closed within said block thereby providing a blind port, said blind port at its inner end communicating with the innermost ends of said first and second bores, each said first and second bores being divided into two different diameter lengths with the innermost length being the smaller, each said first and second bores having a valve seat provided at the joinder of the two different diameter lengths, the outermost ends of the larger diameter lengths being threaded, one of said first and second bores receiving a ball valve engageable with the respective valve seat, a closure nut threaded into the outer end of said first bore, a spring interposed between said ball valve and said nut for urging said ball valve into sealing engagement with its valve seat, a retaining nut threaded into the outer end of the other of said first and second bores,

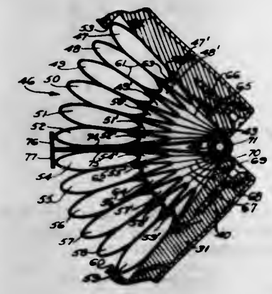


a needle valve threadedly received by an opening in said retaining nut, said needle valve having a valve tip on its inner end which cooperatively engages the respective valve seat, an integral annular collar on said needle valve and movably disposed in the respective larger bore portion, said collar being of a diameter substantially coextensive with that of said larger bore portion, said collar having a diameter larger than the opening in said retaining nut and abuttable with said retaining nut as a stop, a rubber O-ring frictionally fitted onto said needle valve intermediate said collar and said valve tip, said O-ring frictionally engaging said larger bore portion thereby restraining said needle valve against rotation and sealing said larger bore portion, said blind ports extending in a direction normal to the axis of said cylinder, the blind port in said one block extending inwardly toward said bearing aperture but terminating short thereof, and two passages in each head block extending in directions parallel to said cylinder axis, one passage being connected between said first bore and the interior of said cylinder, the other passage being connected between said second bore and the interior of said cylinder, said valve seats of each block being disposed between said blind port and the respective passages.

3,202,061
FLUID ACTUATED DISPLACEMENT AND POSITIONING SYSTEM
Lowell B. Johnston, 39 Bowen St., Providence, R.I.
Filed July 9, 1962, Ser. No. 208,527
7 Claims. (Cl. 92—37)

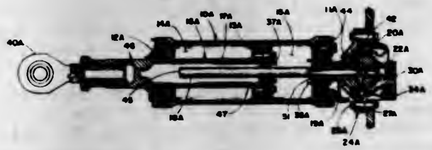
1. A fluid actuated displacement and positioning system comprising
(a) a pair of substantially rigid elongated members in juxtaposition,
(b) guide means to direct relative movement of the members,

(c) a closed chamber comprising a plurality of cells having flexible walls extending between and attached to one of said members, and free of the other member, said flexible wall being so related to said members as to exert a force thereon when said chamber is subjected to fluid pressure, and



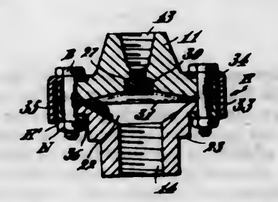
(d) inlet means to introduce a fluid media into said chamber to exert an internal pressure on the wall thereof to move them and the members in their guided path.

3,202,062
ACTUATOR
Robert W. Burden, Dallas, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Original application Apr. 23, 1962, Ser. No. 189,643, now Patent No. 3,182,522, dated Oct. 13, 1964. Divided and this application Aug. 26, 1963, Ser. No. 304,557
6 Claims. (Cl. 92—85)



1. In combination,
a fluid-powered actuator having a cylinder and a piston slidably dividing the cylinder interior into first and second chambers, the piston having an opening therethrough;
a rod mounted on one face of the piston;
a ball rigidly mounted on one end of the cylinder;
a spherical socket receiving the ball and adapted for mounting on a fixed structure;
mutually spaced, first and second ports in the ball;
a rigid tube fixed relative to the ball and having a portion extending axially of the cylinder and sealingly and slidably through the piston opening, the tube having communication with the first port and said tube portion having a free end;
a passage of larger diameter than the tube and extending axially within the rod, which passage receives the tube portion extending through the piston and has an opening connecting the passage with the cylinder first chamber at a location adjacent the piston, the passage having communication with the tube interior;
a passage connected with the second part and extending through the ball, said passage having a wall;
an opening from the last-named passage into the second chamber;
and first and second ports in the socket adapted for connection with respective lines of a fluid powering system and respectively communicating, throughout a range of rotation of the ball in the socket, with the first and second ports of the ball, the ball having a shank by means of which it is rigidly mounted on said one end of the cylinder,
said passage connected with the second port and extending through the ball having extension within and axially of the shank to said opening into the second chamber,
the tube extending through the shank within said passage connected with the second port and having an end rigidly and sealingly mounted within the ball in communication with the first port, said tube having a wall radially spaced inwardly of said passage from said passage wall,
flow through the passage connected with the second port, within the shank, being external of the tube.

3,202,063
GUARD DEVICE FOR PRESSURE-RESPONSIVE INSTRUMENTS
Robert D. Bissell, Orange, and Robert J. Ingham, Fairfield, Conn., assignors, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Aug. 10, 1962, Ser. No. 216,186
17 Claims. (Cl. 92—91)



1. A guard device for use with a fluid pressure-responsive instrument, said guard having a casing comprising coaxial upper and lower rigid members so shaped that when assembled they provide an interior chamber for the reception of a diaphragm unit, the upper member having a socket for the reception of an instrument-supporting part, a diaphragm unit comprising at least one flexible diaphragm and a part having a rigid attaching hub which fits leak-tight within an axial bore in the upper member of the casing, said hub having an axial fluid passage whose upper end communicates with said socket and whose lower end communicates with the space directly above said flexible diaphragm, and means so drawing said upper and lower members of the casing together as to clamp the margin of the flexible diaphragm leak-tight between said members, each of said upper and lower rigid members being devoid of openings for the reception of fastening means to secure the rigid members together and clamp said diaphragm therebetween.

3,202,064
MACHINE FOR APPLYING CORD HANDLES TO PAPER BAGS
Reece W. Kennedy, Covington, Ky., assignor to Duro Paper Bag Manufacturing Company, Ludlow, Ky., a corporation of Kentucky
Filed July 30, 1962, Ser. No. 213,365
7 Claims. (Cl. 93—8)

1. In a machine including means mounting a roll of bag forming paper and means for continuously withdrawing a web of paper from said roll and continuously ad-

vancing it in a path of travel past a plurality of machine stations, the improvement which comprises (a) a first machine station including scoring means positioned to continuously score said advancing web along a line of fold spaced inwardly from a longitudinal edge of said paper web, said scoring means acting to divide said web into a relatively narrow cuff forming part extending lengthwise along a marginal side edge of the web with the remainder of the web defining the body portions of the bags being formed; (b) a second machine station including a roller about which the web travels, a first rotary cutter driven in timed relation to the movement of the web and having a pair of spaced apart blades, said first cutter coacting with said roller to form a continuous series of spaced apart pairs of slits in the cuff part of the web, said pairs of slits each extending inwardly from the free side edge of said cuff part to said line of fold, and a second rotary cutter driven in timed relation to the movement of the web and having a pair of spaced apart blades, said second cutter also coacting with said roller to form a continuous series of additional pairs of slits in the web, said additional pairs of slits lying along said line of fold with an end of each slit



in communication with the innermost end of one of the slits in said first named pairs; (c) a third machine station including means for providing preformed U-shaped cord handles, and means for advancing said preformed handles in timed relation to the movement of said web; and (d) a fourth machine station including means for receiving said advancing cord handles and juxtaposing said handles to said web with said handles projecting outwardly beyond said cuff part and with the opposite legs of each said handle overlying a pair of said first named slits at their points of intersection with said line of fold, and means for securing said handles to said web including means for infolding said cuff part along said line of fold and securing the infolded cuff part to the underlying areas of the remainder of the web, said means for infolding said cuff part along said line of fold, comprising a kicker having fingers arranged to contact and fold upwardly the portions of said cuff lying between the slits in each pair of said first named slits, said kicker also having a trailing edge part positioned to contact and fold upwardly the portions of said cuff part lying immediately to the rear of each of said pairs of slits.

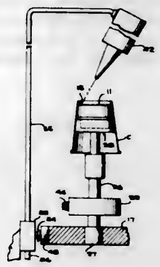
3,202,065

METHOD AND APPARATUS FOR OUTSIDE CAULKING OF BOTTOM OF PAPER CUP

John B. Bolcato, Three Rivers, Mich., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Sept. 13, 1961, Ser. No. 137,782
13 Claims. (Cl. 93—36)

1. A method of forming a paper cup having a completely sealed bottom seam comprising the steps of forming a paper cup having a bottom telescoped within the lower part of the cup body and wherein the bottom has a depending flange disposed between and bonded to a lower portion of the cup body and an inwardly disposed reversely turned lower edge of the cup body, rotating the paper cup about its axis, and depositing caulking compound on the cup bottom at the intersection of the bot-



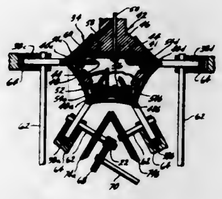
tom flange and the reversely bent cup body lower edge with the centrifugal force of the rotating cup evenly distributing the compound.

3,202,066

APPARATUS AND METHOD FOR FOLDING SYNTHETIC PLASTIC SHEET STOCK

Charles E. Palmer, Somers, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Oct. 11, 1962, Ser. No. 229,937
9 Claims. (Cl. 93—49)



1. In the method of folding plastic sheet stock, the steps comprising providing two spaced pairs of folding members, said members of each pair being of generally circular configuration and having substantially parallel axes of rotation in operative position, one of said members of each pair being a die pad member having a resilient rubber-like material extending about its periphery and the other being a folding blade member having a blade edge extending about its periphery, said resilient rubber-like material of said die pad members having opposing side faces tapering outwardly and oppositely towards their circumferential edges, said blade members having peripheral portions of generally U-shaped cross-section with said blade edges being at the intersection of the circumferential face and the outer side face of said blade members defining said U-shaped cross-section; said blade edges of said pair of blade members extending into said rubber-like material of the cooperating die pad members at said tapering side faces thereof in operative position; rotating said members at substantially equal tangential speeds at their area of engagement with the folding blade and die pad members rotating in opposite directions; and passing a length of synthetic plastic sheet stock between said pairs of members, the blade edges of said rotating folding blade members depressing said stock into said tapering side faces of said resilient rubber-like material of the cooperating rotating die pad members sufficiently to cause said rubber-like material to flow and fold said stock against said outer side face and along said circumferential face of said blade edges, said plastic sheet stock extending relatively tautly between said two pairs of folding members.

3,202,067

FLOORING FOR TAKING-OFF AND LANDING

Louis Michard, Feucherolles, and Hermann Oestrich, Paris, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France

Filed Mar. 24, 1961, Ser. No. 96,151
Claims priority, application France, Mar. 30, 1960, 822,861
4 Claims. (Cl. 94—4)



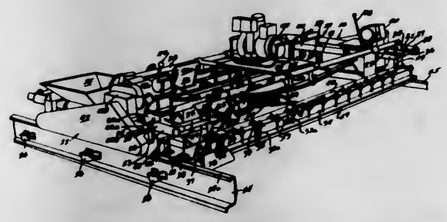
1. A flooring for vertical take-off and landing aircraft of the type having jets directed downwardly and substantially vertically, comprising an assembly of metallic slabs juxtaposed on the ground and assembled to each other by co-operating grooves and tongues with sufficient play around each slab to permit free expansion thereof, said assembly being covered by a single sheet of stainless steel a few tenths of a millimeter thick, said sheet having a length and width which are the same as the length and width of the flooring whereby the whole surface of the assembly of the slabs and the joints between said slabs are covered thereby isolating said slabs and said joints from the blast from said jets, and means extending around the periphery of the assembly and fixed to the ground for clamping the sheet to the assembly.

3,202,068

SLAB FINISHING AND CURB BUILDING MACHINE

Burnham L. Larsen and Bernard J. Larsen, Cedar Falls, Iowa, assignors to Curbmaster of America, Inc., Cedar Falls, Iowa, a corporation of Iowa

Filed Dec. 21, 1962, Ser. No. 246,583
1 Claim. (Cl. 94—46)



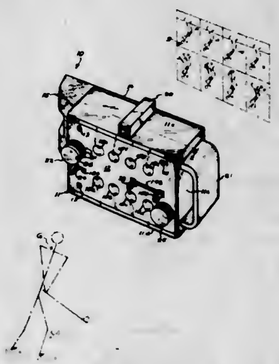
A curb molding and slab finishing machine comprising,
a pair of power units,
wheels on each of said power units for engaging rail providing concrete forms or the like,
an electric motor on each of said power units for driving the wheels thereof,
a pair of transverse tubular support members interconnecting said power units each comprising an elongated inner tube fixedly connected to one of said power units and an elongated outer tube fixedly connected to the other of said power units and receiving in telescopic relation said inner tube whereby the width between said power units can be adjusted,
a platform carried by said power units having an electric generator mounted thereon for driving said motors,
a support member mounted on each of said power units and having a socket formed therein,
a longitudinally extending tubular member received in said socket of each of said support members,
locking means locking said tubular members in their respective sockets,
a screed of fixed length extending transversely between said power units,
a pair of vertically extending telescopically adjustable support means situated at opposite ends of said screed for supporting and for providing vertical adjustment of said screed,
each of said support means comprising,
a vertical tubular sleeve carried by its respective tubular member,
a shaft telescopically received within said sleeve, and
a stop carried on said shaft for limiting the lowermost position of said shaft, and
a pair of guide track means associated, respectively, with each of the power units and extending horizontally and transversely toward the other of said power units,
each of said track means interconnecting a corresponding support means and a longitudinally extending tubular member to slidably support said support means and said screed from said tubular member and to enable said power units to be widened while supporting said fixed-length screed.

3,202,069

SEQUENCE CAMERA

James B. Cummins, Silver Spring, Md., and Theodore R. Kolter, St. Petersburg, Fla.; said Cummins assignor to Photogrammetry, Inc., Rockville, Md., a corporation of Delaware

Filed Nov. 14, 1962, Ser. No. 237,571
8 Claims. (Cl. 95—36)



1. A multiple lens sequence camera comprising:
(a) a plurality of shutter blades independently movable with respect to apertures for making exposures of photographic film,
(b) springs biasing said shutter blades from first positions toward second positions,
(c) a plurality of spaced blocking members each engageable by one of said springs so as to hold said shutters in said first positions,
(d) a release slide reciprocable with respect to said

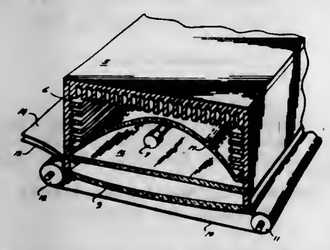
blocking members and comprising a plurality of wedge members spaced apart a distance greater than the spacing of said blocking members,

(e) said wedge members being operative upon movement of said release slide in one direction to sequentially disengage said springs from said blocking members,

(f) drive means for effecting movement of said release slide in said one direction, and

(g) sear means resiliently biased into a position for holding a first one of said springs against disengagement from its respective blocking member by the respective wedge of said release slide, whereby said release slide is prevented from disengaging the others of said springs, said sear means being movable out of said holding position to release said first spring and permit subsequent sequential release of the others of said springs.

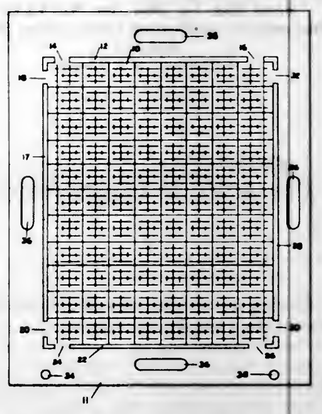
3,202,070
DIAZOTYPE COPYING APPARATUS
James L. Pratt, Jr., Binghamton, and Donald W. Gouldsmith, Vestal, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 15, 1962, Ser. No. 237,963
2 Claims. (Cl. 95—73)



1. In a photocopying apparatus particularly for the exposure of diazotype materials, a housing having top and side walls defining an enclosure of substantially oblong shape and having open ends adapted for the passage of air therethrough, a bottom wall for said housing of transparent material, a dichroic reflector of parabolic shape within said housing, said reflector having an interference filter coating for passing radiations of the infrared range, but reflecting radiations in the ultraviolet range, a tubular mercury arc lamp in the focal point of said reflector, a transparent glass plate between said lamp and said bottom wall, said plate having a coating of dichroic material forming an interference filter having the property of passing radiations in the ultraviolet range, but reflecting radiations in the infrared range, and a plurality of radiation fins on the inner wall of said housing for absorbing said reflected radiations.

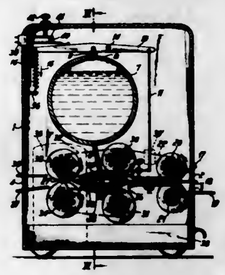
3,202,071
MASK
Chesley F. Carlson, 5225 Minnehaha Blvd., Minneapolis, Minn.
Filed Oct. 25, 1962, Ser. No. 233,040
3 Claims. (Cl. 95—79)

1. A mask for use in stripping and plate making comprising a sheet of plastic material, said sheet consisting of a quickly removable grid portion and a perimeter portion, the said quickly removable grid portion attached to the perimeter portion at predetermined areas only adjacent to the corners with die-cuts extending between the said predetermined attached corner areas, the said perimeter portion having openings therein adjacent to a die-cut line but spaced closer to edge of mask, pressure-sensitive adhesive tape secured to the perimeter and over the said



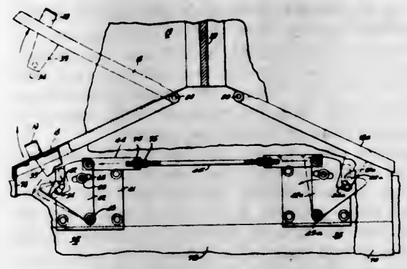
openings for securing the said mask to a printing plate or the like, and said perimeter portion having openings for the reception of nibs for holding in position the said mask on a printing plate, film and the like.

3,202,072
APPARATUS FOR TREATING SHEETS OF FILM BASE
Walter Limberger, Hamburg-Poppenbuttel, Germany, assignor to Lumoprint Zindler KG., Hamburg, Germany
Filed Feb. 14, 1963, Ser. No. 258,428
Claims priority, application Germany, Feb. 17, 1962, L 41,253
11 Claims. (Cl. 95—89)



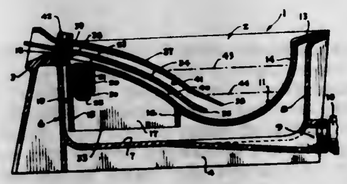
1. An apparatus for the treatment of sheets provided with photographic layers, comprising a housing having an inlet for a sheet to be treated and an outlet for said sheet remote from said inlet, guide means in said housing forming a channel for the passage of said sheet from said inlet to said outlet, said guide means including a hollow body with a perforated surface positioned for contact with the photographic layer of a sheet passing therealong, a container for treatment fluid connected to the interior of said body for the discharge of said fluid through the perforations of said body onto said layer, heating means for said fluid and said sheet in said body, transport means in said housing for advancing said sheet through said channel past said body, and actuating means for concurrently operating said heating means and said transport means.

3,202,073
PASS TANK FOR PROCESSING FILM AND IMPROVED INTERLOCK THEREFOR
Leonard W. Gacki, White Plains, and Walter A. Windfeld, Hawthorne, N.Y., assignors to Medical Metals Incorporated, a corporation of New York
Filed May 21, 1962, Ser. No. 196,358
6 Claims. (Cl. 95—90)



1. In a pass tank for processing film and having a pair of oppositely opening doors hingedly mounted upon the hood of said tank, automatic latching means comprising, a pair of latch actuators on each of said doors; a pair of parallel linked elements mounted upon stationary plates and having angularly disposed slots therein adapted to movement by either pair of said actuators; means including the movement of one pair of said actuators out of said slots and alteration of the position of the other one pair of said actuators in its respective slots for tilting said linked elements to prevent the movement of the other pair of said actuators and means including the opening of either door to move one pair of said actuators to a different position in its slots to latch the opposite door and to detach completely the opened door from its latching linkage.

3,202,074
TRAYS
John W. Carlson, Chicago, Ill., assignor to Speed-O-Print Business Machines Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 29, 1962, Ser. No. 169,687
4 Claims. (Cl. 95—95)



1. A developing tray comprising

(1) a body portion including a container for holding a predetermined quantity of liquid,

(2) said container having a bottom wall,

(3) an air chamber mounted in said container,

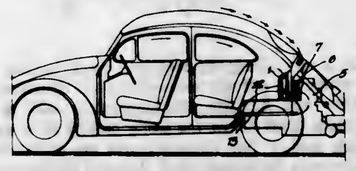
(4) said air chamber having

(a) an opening in the bottom thereof, and

(b) a top wall having a portion disposed above the maximum permissible operating level of the predetermined quantity of liquid in said container, and another portion disposed below said maximum permissible operating level of the predetermined quantity of liquid,

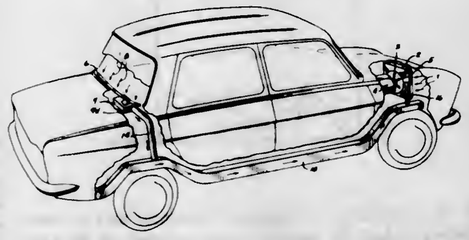
(5) vent means in said first-mentioned portion for opening and closing the interior of said chamber to the atmosphere above said level of said liquid to thereby control the amount of air in said chamber and thereby control the actual level of said quantity of said liquid in said container.

3,202,075
AIR CONDITIONING DEVICE FOR VEHICLES WITH AIR-COOLED ENGINES
John E. Eriksson, Box 1176, Jarbo, Sweden
Filed Jan. 4, 1961, Ser. No. 80,637
3 Claims. (Cl. 98—2)



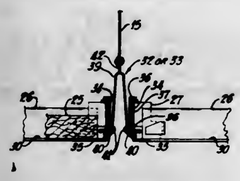
1. A return air inlet device for mounting in a compartment in a vehicle having an engine type heating system for supplying air to said compartment in said vehicle which device comprises an elongated chamber having front, rear and end walls, a closed bottom and an open top forming a return air opening, the rear wall having an outlet opening near its lower edge; mounted in said opening a tubular conduit adapted to extend through a rear wall of a compartment to communicate with a fresh air inlet of an engine heating system; and as a part of said chamber inclined buffer walls extending from said end wall to a point below the said outlet opening.

3,202,076
MEANS FOR EXTRACTING AIR FROM THE BODY OF A VEHICLE
Walter Fiesl, Paris, France, assignor to Société Anonyme Française du Ferodo, Paris, France, a company of France
Filed Feb. 25, 1963, Ser. No. 260,617
Claims priority, application France, Feb. 26, 1962, 889,192
4 Claims. (Cl. 98—2)



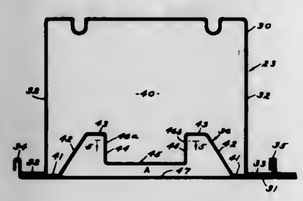
1. The combination in a motor vehicle of a passenger compartment therein, a motor for propelling said vehicle, cooling means for cooling said motor, and ventilating means for ventilating said compartment; said cooling means including a fan, driven by said motor, and operable to establish a flow of motor-cooling air through the fan whereby there is formed, at the air-intake side of the fan, a low pressure zone of lower pressure than the pressure in said compartment, and said ventilating means comprising an air duct, opening at one end thereof in a rear area of said compartment, and opening, at its other end, in said low pressure zone, whereby air in said compartment moves from the latter, through said duct, and into said low pressure zone.

3,202,077
EXPANSION CHANNEL
Jon W. Lee, Campbell, Calif., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Apr. 17, 1963, Ser. No. 273,760
6 Claims. (Cl. 98—40)



6. In a sub-ceiling support grid work having inverted T bar elements, diffuser elements of air distribution duct assemblies and hangers for suspending said grid work at a certain level below the main ceiling of a room and in which said T bar elements and air distribution diffuser elements have oppositely directed horizontal flanges all lying at the same level for supporting sub-ceiling elements, an expansion channel for cooperation with said grid work elements comprising in combination a pair of laterally spaced, vertically extending elongated side members, an outwardly directed flange on the lower portion of each side member, an elongated flexure member having downwardly extending spaced arms and a top center web, means on said web for suspending said flexure member from the main ceiling and cooperating engageable means on said side members and the lower parts of said arms for supporting said side members.

3,202,078
COMBINED STRUCTURAL AND AIR CONDITIONING SYSTEM FOR BUILDINGS
John B. Mesk, St. Clair Shores, William La Vern Niebling, Detroit, and Arthur B. Rein, Jr., Pontiac, Mich., assignors to The R. C. Mahon Company, Warren, Mich., a corporation of Michigan
Filed July 20, 1962, Ser. No. 211,955
10 Claims. (Cl. 98—40)



1. In a building, a combined structural and air conditioning system for handling large volumes of air comprising

spaced apart horizontal supports,

a plurality of structural cells extending in side-by-side relation across said supports,

each said cell having a length many times its width and height,

at least some of said structural cells defining longitudinally extending air conduits,

an insulating material over said structural cells,

each said structural cell having a bottom diffuser member with openings therethrough,

each said structural cell which defines an air conduit having an intermediate metering member extending along substantially the entire length thereof,

said intermediate member dividing said cell into a main chamber and a secondary chamber adjacent said diffuser member,

each said metering member having portions thereof spaced from the diffuser member and having openings along the length thereof,

said openings in each said metering member being positioned such that the axis thereof is at an angle to the direction of flow of air through said conduits,

means for introducing air to each said conduit having a metering member above said diffuser member,

at least some of said openings in said metering member having their axes extending in a direction such that the air is directed through the metering member at an angle other than perpendicular with respect to the general plane of said diffuser member,

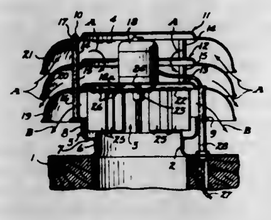
the aggregate area of the openings in said metering member being less than the aggregate area of the openings in said diffuser member such that a substantial static pressure is created in each said air conduit and the ratio of the velocity pressure in the openings in said metering member to the static pressure in said air conduit is relatively high,

each said structural cell defining an air conduit including a baffle wall portion against which the air passing through the metering member is directed.

3,202,079
QUICK RELEASE VENTILATORS
George M. Stelser, Akron, Ohio, assignor to Burt Mfg. Co., Akron, Ohio, a corporation of Ohio
Filed Apr. 15, 1963, Ser. No. 273,155
4 Claims. (Cl. 98—42)

1. In a large damper assembly adapted to be positioned in long runs on top of a building roof the combination of a substantially rectangular frame, a plurality of dampers pivotally mounted in the frame on horizontal axes positioned slightly off center so that each damper will move by gravity to a substantially vertical open position, a plurality of rack and gear means for moving each damper to an adjusted or closed substantially horizontal position, a plurality of shafts each mounting a portion of the gear means, a motor, a gear reducer connected to the motor and to at least one of the shafts, a plurality of clutches interconnecting the end of the shafts, mechanical linkage connecting the clutches for simultaneous operation, spring means biasing the linkage and tending to open all clutches, an elongated bar pivotally secured at its center to the linkage, flexible strand means secured to one end of the bar and adapted to extend to a roof and adapted to be releasably anchored there to urge the linkage to close all clutches, and a second flexible strand means secured to the other end of the bar and adapted to extend to the inside of a building and adapted to be releasably anchored there to urge the linkage to close all clutches, whereby release of either strand means allows the bar to pivot so the spring means moves the linkage which disengages all clutches and causes all dampers to move to open position by gravity.

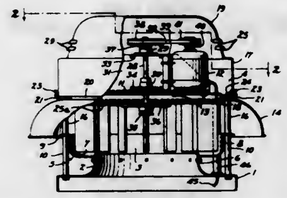
3,202,080
VENTILATORS
Loren Cook, Berea, Ohio, assignor to Loren Cook Company, a corporation of Ohio
Filed Oct. 5, 1962, Ser. No. 228,558
7 Claims. (Cl. 98—43)



1. A ventilator including a base for application to a curb on a roof of a building and having an annular conduit means extending upwardly therefrom, a tier spaced upwardly from said base and consisting of a radially extending circular wall having a central opening therein which terminates in a downwardly inclined annular baffle, means for supporting said tier in place, a blower arranged between said wall and said conduit means, means for providing a compartment for said blower including a second cylindrical wall extend substantially vertically upwardly relative to the base which surrounds the lower portion of said blower and which terminates below the upper portion of said blower and the circular wall of said tier, means for supporting the second cylindrical wall, a motor supported on the radially extending wall of said tier, a shaft extending through the central opening in the wall of the first tier which is secured to said blower and whichi s rotatable by said motor, means providing a compartment for said motor including a third circular wall arranged above said motor having its central portion arranged in alignment with said conduit means and a downwardly extending portion and said ventilator also including a downwardly inclined second baffle arranged parallel to and in spaced relation to the baffle of the first tier and providing therebetween an annular outlet passage for air from the motor compartment when said motor is energized to rotate said blower to draw air through said conduit means and force it outwardly between the second circular wall and the baffle of the first tier, means for supporting the third circular wall and the second baffle in place, and means for providing an opening leading into the motor compartment through which air may be drawn into the motor compartment to replace the air drawn outwardly between said baffles during the rotation of said blower.

3,202,081
VENTILATOR
Loren Cook, Berea, Ohio, assignor to Loren Cook Company, a corporation of Ohio
Filed Apr. 9, 1964, Ser. No. 358,571
10 Claims. (Cl. 98—43)

1. A ventilator including a base for application to a curb on the roof of a building and having an upwardly extending annular duct means, a radially extending circular first wall having a central aperture therein which is spaced upwardly from said duct means and terminates in an outwardly and downwardly inclined annular baffle, means for supporting said circular wall in spaced relation to said duct means, a rotatable blower arranged below said circular wall, means for providing a compartment for said blower including a second annular wall which surrounds said blower and terminates below the upper portion of said blower and said baffle but extends a sufficient distance vertically upwardly relative to the base above the lower portion of said blower to provide an annular outlet opening for the egress of air from said blower compartment which has substantially the same cross sectional area as the cross sectional area of the inlet duct means, means for supporting said second annular wall, a motor supported on the radially extending circular



wall, a shaft extending through the central opening in the circular wall which is connected to the blower and which is rotatable by said motor, a housing for said motor including a wall portion extending above said motor and an annular side wall surrounding the motor, means for providing air inlet means leading into the upper portion of the motor housing, and means for spacing said motor housing upwardly from said baffle to provide an annular air outlet opening from the motor housing so that the egress of air from the blower compartment will create a negative pressure above said baffle to cause air to circulate through said motor housing during the rotation of said blower.

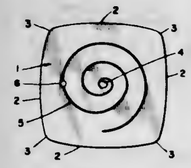
3,202,082
ADJUSTABLE VENTILATING LOUVER
George A. Viehmann, New Providence, N.J., assignor to Construction Specialties, Inc., Cranford, N.J., a corporation of New Jersey
Filed Aug. 17, 1962, Ser. No. 217,640
12 Claims. (Cl. 98—88)



2. In ventilating apparatus including a first frame carrying a plurality of pivotally mounted louver blades, a plurality of louver blade pivot members mounting the blades in the frame, each pivot member including a plate, a primary mounting pin and two secondary mounting pins

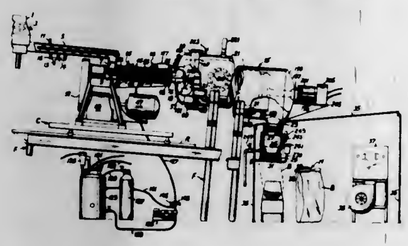
extending laterally from one side of the plate, and first and second axles extending laterally from the other side of the plate, a boss on each louver blade receiving the primary pin with the secondary pins bearing against the blade on each side of the boss, openings in the first frame receiving the first axles extending from the pivot members to mount the louver blades rotatably in the frame, and an actuating bar extending along the inside of the frame perpendicular to the blades and formed with openings to receive the second axles of the pivot members, whereby the louver blades pivot together.

3,202,083
ONE WAY FLOW VENTILATOR DAMPER
Charles W. Eichhorn, 26718A Oak Crossing Road, Newhall, Calif.
Filed Mar. 1, 1965, Ser. No. 436,067
5 Claims. (Cl. 98—116)



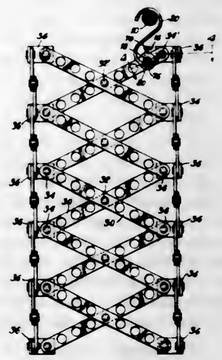
1. A normally closed room exhaust vent damper means for use with a vent having a grille extending thereacross, said damper means comprising a normally flat, resilient sheet of material impervious to air and having a portion thereof resiliently displaceable out of the plane of said sheet when in its normal flat condition in response to a pressure differential on opposite sides thereof to create opening for air passage therethrough, and means for mounting said sheet at the side of the grille adjacent to the vent opening; said sheet including a portion thereof positioned to permit said sheet to be secured in operative position at said side of the grille by the means by which the grille is mounted across the vent opening.

3,202,084
APPARATUS FOR PRODUCING A FOOD PRODUCT
Douglas Hale, Creve Coeur, George S. Vasilakes, St. Louis County, and Ronald J. Flier, St. Louis, Mo., assignors to Ralston Purina Company, St. Louis, Mo., a corporation of Missouri
Filed June 19, 1962, Ser. No. 203,640
11 Claims. (Cl. 99—235)



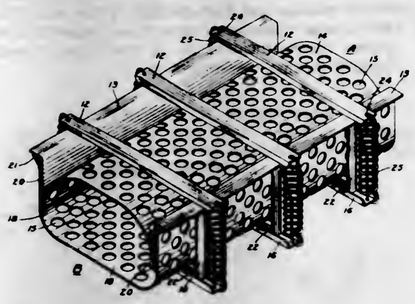
1. Apparatus for making sterile food pellets and packaging said pellets in sterile condition comprising an elongate tank mounted in fixed inclined and elevated position sloping downward from one end constituting its rearward end to its other end constituting its forward end, said tank having a port for drawing a vacuum therein to provide a sterile environment in the tank, an extruder outside the tank at the rearward end of the tank comprising a housing and a screw rotary in the housing, said housing having an inlet at one end and an outlet at the other, means for feeding meal to said inlet, means for adding moisture to the meal as it is fed to said inlet, means for cooling the housing adjacent its inlet end to prevent slipping of the meal therein, means for heating the housing adjacent its outlet end to heat the meal therein to sterilization temperature, an extrusion head within the tank adjacent the rearward end of the tank in communication with the outlet end of the extruder housing, means for driving the extruder screw for extrusion of meal through the extrusion head within the tank, means within the tank adjacent the rearward end of the tank for segmenting the extruded meal issuing from the extrusion head into pellets, an open-ended drying drum extending lengthwise of the tank and mounted for rotation on an axis extending lengthwise of the tank, means for rotating the drum, and means for heating the drum, the segmented pellets entering the drum at its rearward end, tumbling along the drum, and exiting from the drum through the forward end of the drum, the forward end of the drum being spaced from the forward end of the tank, said tank having a bottom outlet adjacent its forward end located forward of the forward end of the drum, a packer's enclosure below the forward end of the tank, the interior of said enclosure being adapted to be maintained in aseptic condition, and discharge means extending downward from said tank outlet into said enclosure having means for discharge of pellets in batches from the tank without substantial loss of vacuum in the tank.

3,202,085
MEANS FOR SHAPING ARTICLES SUCH AS MEAT PRODUCTS
Stephan L. Komarik, Chicago, Ill., assignor to The Griffith Laboratories, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 8, 1962, Ser. No. 215,737
7 Claims. (Cl. 99—350)



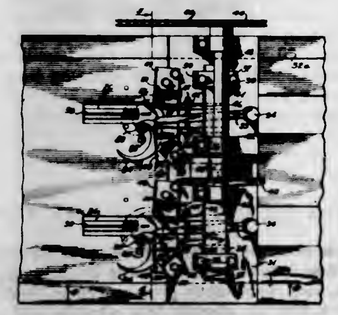
1. A cage suitable for gripping meat products subject to shrinkage and softening while being processed comprising a polygonal-sided cage of which each side is a lazy tongs with crossing arms each having three pivots, said arms having appreciably wide flat faces at the interior of the cage for gripping the meat, each of said lazy tongs having arms of the same dimensions between adjacent pivots, and rigid angular means pivoted to the ends of the arms of each lazy tongs connecting adjacent lazy tongs.

3,202,086
HAM RACK ASSEMBLY
Lee B. Brubaker, 22 Ohio Drive, Decatur, Ill.
Filed Sept. 19, 1962, Ser. No. 224,711
2 Claims. (Cl. 99—351)



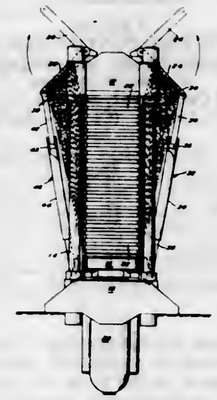
1. In a ham rack assembly, the combination of a first upper section comprising a semi-circular shell having perforations therein, said shell having on its outer surface parallel spaced bars of a greater width than the length of the shell, a second lower section having bars of the same character as that of the first section, uprights adjacent the ends of each bar acting as lateral supports for the sides of the lower shell, with tensioning means comprising springs connecting the ends of the bars of the upper section and the ends of the bars of the lower section.

3,202,087
METHOD AND APPARATUS FOR TYING BALES
Earl E. Burford, Rte. 1, Maysville, Okla.
Filed Apr. 14, 1965, Ser. No. 449,686
32 Claims. (Cl. 100—3)



32. A method of separately tying a succession of compressed bales during formation thereof with wire-like material comprising: advancing each bale during formation thereof in succession along a path; sequentially positioning a continuous length of wire-like material across the bale path to transversely engage each bale in succession during formation thereof; encircling the formed bale to be tied with the continuous length of wire-like material while simultaneously feeding a succeeding length thereof transversely across the path to be traversed by a succeeding bale during formation thereof; relaxing tension on the encircling wire-like material prior to severance thereof; partially tying the encircling wire-like material prior to severance thereof by twisting the same; severing the encircling wire-like material from the continuous length thereof; completing the tying of the severed encircling wire-like material; and retaining the continuous length of wire-like material in position to subsequently encircle a succeeding bale during formation thereof.

3,202,088
MULTIPLATEN PRESS
Otto Hammon, Scotch Plains, N.J., William H. Colbert, Wilmington, Del., and Duane Gambrell, Media, Pa., assignors to Baldwin-Lima-Hamilton Corporation, Eddystone, Pa., a corporation of Pennsylvania
Filed Nov. 30, 1962, Ser. No. 241,217
8 Claims. (Cl. 100—53)

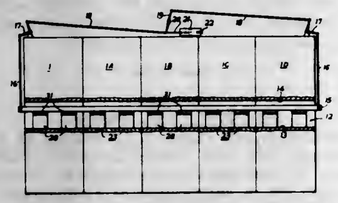


1. In a press comprising a stationary head plate, a plurality of lever arms each having one end pivotably connected to the head plate, a plurality of spaced platens juxtaposed to one another, said platens being disposed below said head plate and adapted to be moved upwardly toward said head plate, a separate flexible member extending between and directly interconnecting each platen with each arm, at least two preloaded hydraulic actuators each having one end pivotably coupled to a free end portion of one of said arms for rotating said arms in unison to move said platens in unision towards and away from said head plate, each actuator including means to limit the stress to which said members may be subjected as the platens are moved toward and away from said head plate by rotation of said arms, a bed plate below the lowermost of said platens, and a separate hydraulic means for moving said bed plate toward and away from said head plate.

3,202,089
SINGLE SHEET PRESSES
Edward Cecil Mills, Clifton, Bristol, England, assignor to Western Board Mills Limited, South Wales, a British company
Filed June 11, 1964, Ser. No. 374,497
Claims priority, application Great Britain, June 17, 1963, 24,078/63
6 Claims. (Cl. 100—214)

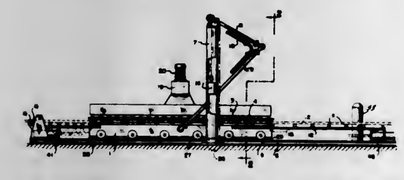
1. A single sheet press comprising a frame having a stationary press head, a platen mounted for vertical movement beneath said press head and adapted to be loaded with sheet material to be pressed, fluid pressure means beneath said platen and adapted to apply pressure to said platen to lift said platen toward said press head to apply pressure to sheet material interposed between said

platen and said head, means to ensure parallel movement of the loaded platen as it is raised to the pressure applying position and comprising a linkage system



mounted on said frame and supporting said platen at its opposite ends, and a single fluid cylinder means controlling said linkage.

3,202,090
APPARATUS FOR CONTINUOUS PRESSING
Nils Robert Alenius, Runebergagatan 4, Stockholm, Sweden
Filed Oct. 1, 1962, Ser. No. 227,470
11 Claims. (Cl. 100—224)



1. An apparatus for the pressing of continuously advancing sheet materials, particularly those constituted of wood and produced in the form of a continuous mat, comprising, in combination: a movable fluid operated single-opening platen press, between the platens of which the material is conveyed in a given path in a forward direction; a generally horizontal track disposed in substantially parallel relationship with respect to the path of said materials; a driving device for imparting to the press a reciprocating movement along said track; means for synchronizing a substantial part of the movement of the press in the direction of the advance of the material comprising: a blocking device, wherein the synchronizing of the forward movement with the advance of the material is attained by such blocking device, which is connected with the mechanism advancing the material and adapted to block the endeavour of the driving device to move the press forward at a greater speed than that at which the material advances, but to allow the return movement to take place freely; and means for closing the press on the material at the beginning of said synchronous movement, and for opening the press at the end of said movement.

3,202,091
LISTER CONTROLLED CHECK PRINTER
James W. Dodsworth, Mount Tabor, N.J., assignor to Monroe International Corporation, a corporation of Delaware
Filed June 24, 1963, Ser. No. 290,846
27 Claims. (Cl. 101—90)

1. In a business machine of the class described the combination comprising:

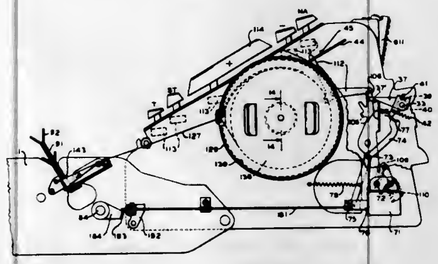
a first printing means including printing type members displaceable to selective value positions in accordance with an amount entered within said machine;

auxiliary printing means including printing type members settable to corresponding selected value positions with the said first printing means;

power means including a clutch in common for effecting a printing operation relative to both the said printing means;

a first control means normally operable to release said clutch in effecting for determining an operation of said power means;

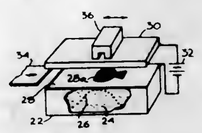
a secondary control means settable for disabling said clutch release and thus modifying the said first control means whereby to prevent said operation of said power means incident to an operation of said first control means;



means thereafter operable for releasing said secondary control means whereby to cause an engagement of said clutch and thereby operation of said power means; and

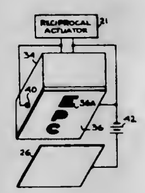
control means for effecting an operation of the latter said releasing means upon an insertion of a record form to printing position relative to the said auxiliary printing means.

3,202,092
ELECTROSTATIC PRINTING SYSTEM
Clyde O. Childress, Palo Alto, Calif., assignor to Electrostatic Printing Corporation of America, San Francisco, Calif., a corporation of California
Filed Feb. 1, 1963, Ser. No. 255,440
7 Claims. (Cl. 101—114)



3. In an electrostatic printing system of the type wherein an article is to be printed on with electroscopic powder particles, said electrostatic printing system having means for establishing an electric field wherein said article is positioned, said means for establishing an electric field having as an element thereof a conductive apertured screen with the apertures arranged in the form of a pattern desired to be printed, said article to be printed on having one side opposite to and spaced from one surface of said screen, and said electrostatic printing system also including a container for said powder particles with said screen constituting one side thereof, the particles of said powder being smaller than the apertures of said screen and having to be pushed therethrough to be guided by said electric field to said article, the improvement for pushing said powder particles through said screen comprising a mixture within said container of a plurality of soft magnetic particles and electroscopic powder particles sufficient to cover the pattern of apertures of said screen, said magnetic particles having a particle size larger than the apertures of said screen so as not to pass therethrough, and means positioned adjacent to the side of said article which is not opposite to said screen for magnetically attracting said magnetic particles toward said screen over the region of said pattern of apertures to push those powder particles which are between said magnetic particles and said screen through the apertures in said screen.

3,202,093
ELECTROSTATIC PRINTING
Clyde O. Childress, Palo Alto, Calif., assignor to Electrostatic Printing Corporation of America, San Francisco, Calif., a corporation of California
Filed Feb. 11, 1963, Ser. No. 257,614
5 Claims. (Cl. 101—114)



4. An electrostatic printing system comprising a hollow container having as the base thereof a relatively nonconductive screen having apertures therethrough arranged in a desired printing pattern, a relatively conductive medium positioned spaced from said screen and adjacent one side thereof, a mixture of powder particles and conductive carrier particles within said container, the size of said powder particles being smaller than said screen apertures to pass therethrough, the size of said carrier particles being larger than said screen apertures not to pass therethrough, means for moving said container for urging said conductive carrier particles toward the other side of said screen for enabling said conductive carrier particles to push said powder particles through said screen apertures, a source of potential, and means including a wall of said container for connecting said source of potential between said conductive carrier particles and said conductive medium for establishing an electric field therebetween to cause said powder particles to transfer to said conductive medium.

3,202,094
METAL STENCILS AND PROCESS FOR MAKING THEM
Carl Russell Smallman, Lexington, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Oct. 2, 1961, Ser. No. 142,186
5 Claims. (Cl. 101—128.2)

1. A process for forming a mask adapted to have very narrow indicia etched therein, comprising the steps of

(a) forming an assembly of sheets consisting of

(1) a first, relatively thin, sheet of an etchable material,

(2) a second, relatively thick, sheet of an etchable material, and

(3) a continuous bonding layer between the uniting said first and second sheets;

(b) affixing a first resist to the unbonded surface of said first sheet, and a second resist to the unbonded surface of said second sheet;

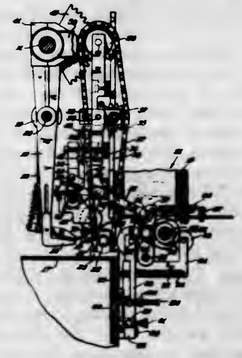
(c) removing from each of said resists the areas corresponding to the indicia to be etched, thereby exposing, at said areas, the unbonded surfaces of each of said first and second sheets, said areas being in registry;

(d) etching said first sheet with an etchant therefor, at the exposed areas in said first resist, thereby to etch through and expose said bonding layer to provide a sharp, dimensionally correct pattern of the desired size and shape for providing indicia through said mask when positioned against an object to be marked, the etching of said first sheet being without any significant undercutting;

(e) etching said second sheet with an etchant therefor, at the exposed areas in said second resist, thereby to etch through to and expose said bonding layer, while permitting undercutting of said sheet, said sheet being of sufficient thickness that said undercutting can take place during sketching, and to provide supporting strength for said mask; said etchants being ineffective to attack said bonding layer; and

(f) thereafter removing said bonding layer where so exposed by said etchants without any significant undercutting of said bonding layer, thereby to form said mask.

3,202,095
KEYING ASSEMBLY FOR CODING INSERTS
Eugene Sather, Washington, and Lester H. Stocker, Phillipsburg, N.J., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed May 21, 1963, Ser. No. 282,029
12 Claims. (Cl. 101—233)



1. In an inserter comprising a conveyor table with an insert magazine adjacent thereto and a rock shaft carrying a gripper jaw arm oscillated by the shaft between an insert gripping position adjacent the magazine and a position remote from the magazine and between which positions the gripper jaws of the arm transport an insert from the magazine onto the conveyor table,

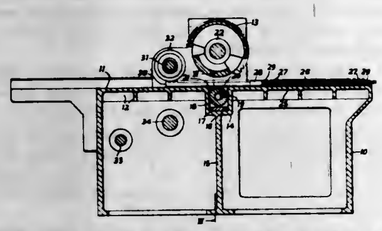
the improvement comprising a keying assembly including a printing roll mounted rotatably on the table adjacent to the magazine to imprint the inserts as they are transported,

means or driving said printing roll oscillatably including an endless flexable driving member coupled with the roll and trained over a rotatable member on a shaft located in adjacent spaced relation to said rock shaft.

a pinion mounted on said rotatable member shaft,

and a gear member mounted on said rock shaft and meshing with said pinion and thereby driving said endless flexible driving member and said printing roll in timed synchronization with oscillations of said gripper jaw arm.

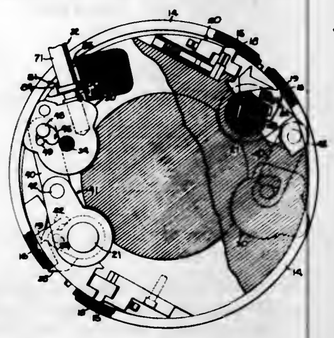
3,202,096
FLAT-BED LETTERPRESS PRINTING MACHINES
Arthur Willard Ranger, 16 W. Hill St., Brighton 1, Sussex, England
Filed Feb. 20, 1963, Ser. No. 259,813
Claims priority, application Great Britain, Feb. 28, 1962, 7,721/62
8 Claims. (Cl. 101—250)



1. A high speed flat-bed letterpress printing machine comprising:
(a) a main frame having an upper surface which is flat;
(b) a flat-bed of flat thin plate metal having an underface which flatwise engages and is reciprocable upon and in constant engagement with the upper flat surface of the main frame;
(c) the flat-bed carrying, during operation of the machine, the forme to be printed,
(d) driving means mounted on the main frame for effecting reciprocation of the flat-bed on the flat surface of the frame; and
(e) an impression cylinder carried on and transversely of the main frame above the flat-bed;
(f) the impression cylinder being pressed into engagement with the forme when the flat-bed travels in the direction of movement of the part of the cylinder adjacent the forme and being adapted to clear the forme during return movement of the bed;
(g) there being provided in the flat surface of the frame intermediate the ends thereof a low-friction support for the flat-bed which support extends parallel with and vertically below the impression cylinder so that during the impression stroke the flat-bed is supported by said low-friction support and by parts of the flat upper surface of the main frame at respective opposite sides of said low-friction support;
(h) said low-friction support comprising roller means extending parallel with the printing cylinder, the roller means at uppermost locations thereof being slightly above the level of the plane surface of the main frame which engages the underface of the flat-bed, said roller means comprising several rollers mounted on a common shaft carried in blades extending upwardly from a block disposed in a transverse trough formed in the plane surface of the main frame, the blades being disposed each between two of the rollers and having respective upper surfaces co-planar with the flat upper surface of the frame.

3,202,097
ACTUATING MECHANISM FOR TENSION LOCKUP PRINTING PLATE CYLINDERS
Frank J. Doyle, Bellwood, and Anthony Chudzik, Cicero, Ill., assignors to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed Sept. 4, 1963, Ser. No. 306,447
4 Claims. (Cl. 101—378)

1. In a tension lockup cylinder having a longitudinally disposed finger shaft journaled therein for rotation between plate unlocking and locking positions and carrying fingers resiliently biased for engaging and tensioning a printing plate when in the locking position, the combination comprising a hub journaled on the cylinder for rotation between first and second angular positions in a plane radial of the cylinder, a radial arm rigid with the finger shaft, a link pivotally connected at one end thereof to said arm, a floating pivot connection between the other end of said link and said hub, means defining a socket in said hub, a hand lever having one end removably insertable into said socket for effecting rotation of said hub, said floating pivot connection including first and second transverse pins carried by said link, means on said hub for forcing the first pin and link to shift said arm and shaft toward their locking positions with an increasing mechanical advantage as said lever rotates said hub from its first toward its second position, and further including means on said hub for successively

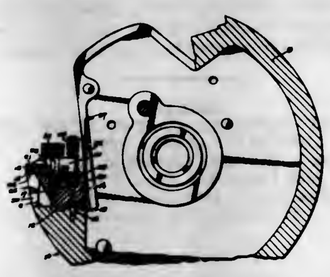


forcing said first and second pins and said link to shift said arm and shaft toward their unlocking positions with a decreasing mechanical advantage as said lever rotates said hub from its second toward its first position, a projection extending laterally from said lever adjacent said one end thereof, said projection being movable axially along said lever, and a latch plate rigid with the cylinder and located adjacent said hub, said latch plate having a recess shaped to afford entry or removal of said projection when the latter is in a first axial position on said lever as the hub is moved to or from its first position, and said recess being shaped to hold and retain said projection when the latter is in a second axial position on said lever and the hub is in its first position, so that said hub is releasably held in its first position and said finger shaft is releasably held in its unlocking position.

3,202,098
PLATE-GRIPPING MECHANISM FOR OFFSET PRINTING CYLINDER
Jack D. Keeler, Seattle, Wash., assignor to Norfin, Inc., Seattle, Wash., a corporation of Washington
Filed Mar. 5, 1962, Ser. No. 177,268
12 Claims. (Cl. 101—415.1)

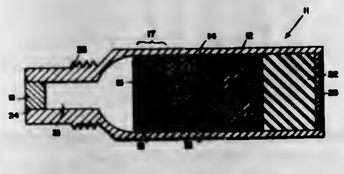
1. An offset printing cylinder having within its circumference a longitudinally extending re-entrant opening defining a pocket one wall of which provides a gripping surface disposed in angular relation to the perimeter of the cylinder, gripping means mounted in said pocket for movement both inwardly and outwardly relative thereto and in said movement guided directively from and directively toward said gripping surface as the gripping means moves inwardly and outwardly, respectively, and by said guided outward motion operating by wedge action to grip an inserted end edge of a plate between the gripping means and said gripping surface, said gripping means comprising a plurality of independently acting elements spaced apart at intervals of the length of the

pocket, and a manually activated means common to said several elements for moving the latter in concert for moving the gripping means in an inward direction for



releasing the plate, means being provided establishing an interconnection between the several fingers during said inward and outward movements.

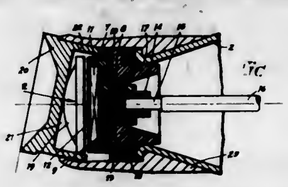
3,202,099
FLARE CARTRIDGE
Austin M. Wortley, Jr., Devon, and Barry Rothman, West Chester, Pa., assignors to Penguin Associates, Inc., Malvern, Pa., a corporation of Pennsylvania
Filed Oct. 16, 1963, Ser. No. 316,580
2 Claims. (Cl. 102—37.6)



1. A flare cartridge comprising an elongated cartridge casing having an inside diameter with a primer mounted at one end, an annular sealing layer sealing the primer in said cartridge casing, a cup-shaped pellet casing having an outside diameter and positioned in said cartridge casing with an open end facing said primer, said inside diameter being no more than four-thousandths of an inch larger than said outside diameter, a flare pellet contained in the pellet casing, a layer of resilient ignition material mounted on top of the flare pellet, a flash-hole expansion chamber formed in said cartridge casing between said primer and said pellet, an elongated rubber shock-absorbing plug mounted in said cartridge casing with one end adjacent the bottom of said pellet casing, a sealing layer sealing the other end of said plug in said cartridge casing, and engagement threads formed on the outside of said cartridge casing and spaced longitudinally away from its primer end for quick engagement and prealignment of the threads with a body tube of a flare gun.

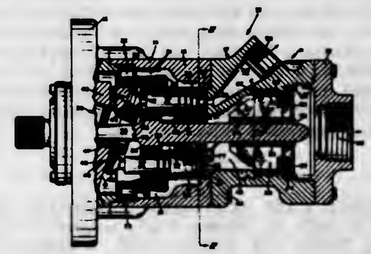
3,202,100
PIEZO-ELECTRIC FIRING MECHANISM
Jean Vilbejo, Burcht, Antwerp, Belgium, assignor to U.M.A.L., Societe Anonyme, Burcht, near Antwerp, Belgium
Filed Aug. 11, 1961, Ser. No. 130,871
Claims priority, application Belgium, June 2, 1961, 40,708, Patent 604,536
6 Claims. (Cl. 102—70.2)

1. A hollow-charge missile comprising a priming device, a striker head, an electric circuit interconnecting said striker head and said priming device by means of an electric conductor and a normally open contact having a first and second contact member, and an electric fuze incorporating said priming device and means for closing said contact, said striker head comprising from the front to the rear of said missile a movable striker element, a convex pressure pad, a piezo-electric device and an elastic seating, said striker head comprising a guide ring which is interposed between said piezo-electric



device and said elastic seating and a common casing forming parts of the front end of said missile holding in place the constituent parts of said striker head so that the constituent parts of said striker head are held in place by the common casing forming part of the front end of said missile.

3,202,101
METHOD AND MEANS FOR PREVENTING CAVITATION IN HYDRAULIC PISTON AND VANE PUMPS
Walter H. Thaker, Frankfort, Darby B. Neff, Worthington, and John F. Hodge, Columbus, Ohio, assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed July 5, 1963, Ser. No. 293,081
17 Claims. (Cl. 103—5)

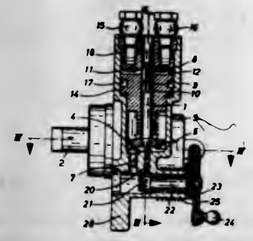


4. In a hydraulic fluid energy translating device of the positive displacement type having an inlet side, an outlet side, a plurality of fluid transporting cavities and means for rotating said cavities about an axis in a plane, the improvement which comprises a dynamic prerotation unit disposed on the inlet side of said fluid energy translating device, said dynamic prerotation unit comprising a housing including a chamber in communication with said cavities, a hollow rotator having radially extending vanes, mounted within said housing, and means for rotating said rotator about the axis of rotation of said cavities and in the direction of rotation of said fluid transporting cavities, said fluid flowing through said rotator, said rotator being effective to impart a rotational component to the velocity of said fluid, said rotational component being in the same direction as the direction of rotation of said fluid transporting cavities, said housing being configurated to establish axial communication between said rotator and said fluid transporting cavities, whereby fluid flowing through said rotator enters said cavities with substantially the same velocity imparted by said rotator.

3,202,102
DEVICE FOR LUBRICATING TWO-STROKE CYCLE INTERNAL COMBUSTION ENGINES USING LIGHT FUEL

Werner Stoege and Rudolf Schenk, Munich, Germany, assignors to Kugelfischer Georg Schafer & Co., Schweinfurt, Germany

Filed Nov. 6, 1961, Ser. No. 152,120
Claims priority, application Germany, Nov. 12, 1960, K 42,143
9 Claims. (Cl. 103—7)

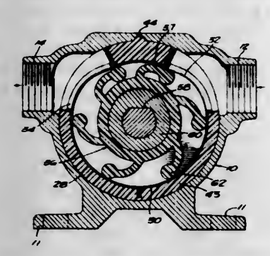


1. A valveless plunger type oil pump for lubricating internal combustion engines comprising a pump housing and a cylinder, a pump plunger with slot means disposed in said cylinder for simultaneous reciprocating and rotary movement, said cylinder and plunger forming a pressure chamber, a fuel-oil mixing chamber in said cylinder having inlet passages disposed approximately 180° apart and adapted to communicate with said slot means, oil inlet passage means disposed approximately 90° from said chamber inlet passages, fuel inlet passage means disposed approximately 90° from said mixing chamber inlet passages and approximately 180° from said oil passage means, said oil and fuel means adapted to communicate with said slot means, means for simultaneously reciprocating and rotating said plunger to communicate said pressure chamber and slot means first with said oil means, then with one of said inlet passages to deliver oil to said mixing chamber, then with said fuel passage means, and then with the other inlet passage to deliver fuel thereto, and outlet means for discharging fuel and oil from said mixing chamber, whereby said pump provides successive suction and successive delivery strokes.

3,202,103
FLEXIBLE CAM ACTUATED IMPELLER PUMP

Frank H. Sully, La Mirada, Calif., assignor to Western Brass Works, Los Angeles, Calif., a corporation of California

Filed Dec. 21, 1961, Ser. No. 161,130
6 Claims. (Cl. 103—117)

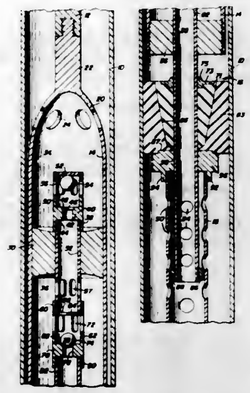


1. In a pump of the type having a housing receiving a driven shaft and an impeller having a plurality of blades thereon mounted upon said shaft the combination of a sleeve surrounding said impeller forming a surface contacting the blades of said impeller and an inert filler material connected to and surrounding said sleeve and supporting same in said housing, and a wear plate having a central opening through which said driven shaft may pass attached to said sleeve and abutting said impeller and the blades thereof to form a pump chamber, said sleeve, said filler material and said wear plate forming a single unit slidably removable from said housing.

3,202,104
GRAVITY POWERED CASING PUMP WITH DOUBLE-VALVED PISTON

Otto V. Reynolds, Bloomfield, N. Mex.
(640 Grant Way, Oxnard, Calif.)

Filed Mar. 5, 1963, Ser. No. 262,882
11 Claims. (Cl. 103—158)



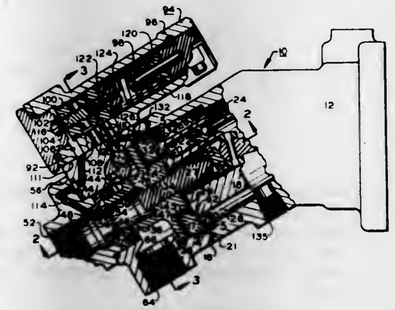
1. A gravity operated bottom hole casing pump installation comprising the unitary assembly of a pump unit and a packer unit movably connected thereto, said pump unit including a reciprocating pump barrel having a relatively slidable stationary piston therein dividing the barrel interior into an upper pump delivery chamber and a lower pump intake chamber, said piston being fixedly secured to and disposed upon the mid-portion of a hollow arbor and a hollow piston rod secured to and communicating with the lower end of said arbor and extending through and beneath and being movably secured to said packer unit, a delivery valve assembly and a standing valve assembly on the upper and lower ends respectively of said arbor upon the opposite sides of said piston and controlling fluid flow therethrough, each valve assembly comprising a valve seat and an upwardly opening non-return check valve controlling the associated seat.

3,202,105
POWER TRANSMISSION

Benjamin W. Badenoch, Orchard Lake, and Edward I. Brown, Bloomfield Township, Oakland County, Mich., and Clarence E. Liles, Los Angeles, Calif., assignors to Sperry Rand Corporation, a corporation of Delaware

Original application Jan. 14, 1959, Ser. No. 786,735, now Patent No. 3,108,542, dated Oct. 29, 1963. Divided and this application Nov. 5, 1962, Ser. No. 235,241
4 Claims. (Cl. 103—162)

1. A variable displacement fluid energy translating device comprising: pumping mechanism including a rotary cylinder barrel having a plurality of pistons reciprocating within axial cylinders opening to a valving face; a casing surrounding the pumping mechanism having a mounting face at one end with an axial opening through which said valving face is exposed; a head member having external connection inlet and outlet ports secured to said mounting face; a fluid distributing member comprising a valve plate and integral hollow pintle rotatably mounted in the head member, said valve plate having a valving face with inlet and outlet passages opening thereto and in fluid sealing engagement with the cylinder barrel valving face, said hollow pintle forming an outlet passage connected to the

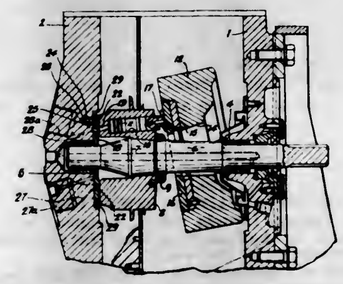


head member outlet port and the valve plate outlet passage; an inlet passage in the head member connecting the head member inlet port to the valve plate inlet passage; and means within said head member for rotating said fluid distributing member for varying the phase relation between the said valve plate inlet and outlet ports and the reciprocating pistons for varying the displacement of the pumping mechanism.

3,202,106
HYDRAULIC POSITIVE DISPLACEMENT ROTARY MACHINES

Donald Firth and Roger Harvey Yorke Hancock, East Kilbride, Glasgow, Scotland, and Christopher Philip John Meade, London, England, assignors to Council for Scientific and Industrial Research, London, England, a body incorporated under the laws of the United Kingdom

Filed Mar. 1, 1963, Ser. No. 262,110
Claims priority, application Great Britain, Mar. 13, 1962, 9,533/62
4 Claims. (Cl. 103—162)

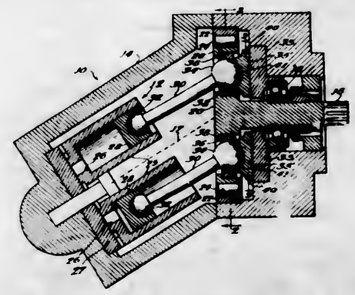


1. A hydraulic positive displacement rotary machine comprising a cam member, a port member, a cylinder block rotatable relative to the cam member and port member, a plurality of cylinders in the cylinder block, pistons reciprocable in said cylinders under the control of the cam member, a control member disposed between the cylinder block and the port member, registering inlet and outlet ports in the control member and port member, a plurality of smaller, independent ports in the control member at positions between the inlet and outlet ports, ports in the cylinder block communicating with said cylinders and opening through a face of the cylinder block directed towards said control member, each of said cylinder block ports registering with the inlet and outlet ports and said independent ports in the control member in the course of said relative rotation, and adjustment means for adjusting the angular position of the control member about the axis of rotation whereby the number of said independent ports which is blanked off by the port member can be varied.

3,202,107
PISTON ROD ASSEMBLY FOR FLUID TRANSLATING DEVICES

Damon D. Phinney, Boulder, Colo., assignor to Sundstrand Corporation, a corporation of Illinois

Filed June 28, 1963, Ser. No. 291,373
10 Claims. (Cl. 103—162)



1. In a pump having a housing, a drive shaft and rotor driven thereby, a cam plate, a rotatable cylinder block inclined relative to the axis of said rotor and driven by said drive shaft, a plurality of cylinders in said cylinder block, a plurality of pistons reciprocably mounted in said cylinders, each having a rod with the rod end in operable engagement with said rotor and actuatable by said cam plate, in combination therewith the improvement which comprises means for subjecting said cam plate to forces normal thereto and means for subjecting said rotor to forces radial thereto, said means for subjecting said cam plate to forces normal thereto comprising a slipper slidably mounted thereon and in mating facial juxtaposition with said rod ball end, and wherein said means for subjecting said rotor to forces radial thereto comprises a collar separate from the slipper circumferentially crimped about the mid-portion of said rod ball end and slidably secured in said rotor for limited movement therein.

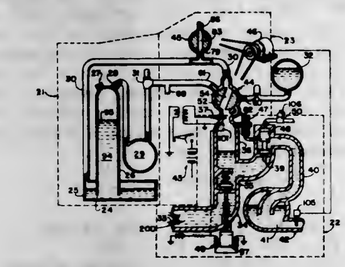
3,202,108
PUMPING METHOD AND APPARATUSES

Anderson Billy Fly and William David McDearmon, Jr., Amarillo, Tex., assignors, by mesne assignments, to Hydro-Torq Pump Company, Inc., Amarillo, Tex., a corporation of Texas

Filed Mar. 3, 1961, Ser. No. 93,110
14 Claims. (Cl. 103—249)

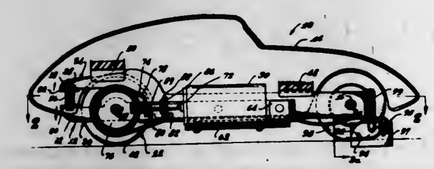
1. Apparatus for pumping fluid comprising a combustion chamber with an inlet for air and an inlet for fuel and a gas discharge outlet near the top thereof, valve means in each of said inlet and outlet for opening and closing each of said inlet and outlet, an air compressor and gas compressing means in said compressor and air compressor discharge means operatively connected to said compressor, said air compressor discharge means

opening through and opening and closing valve means to an air reservoir tank, said tank opening through an opening and closing valve means to said inlet for air and through a valve means to said inlet for fuel and



the gas discharge outlet of said combustion chamber operatively connected through an opening and closing valve means to said gas compressing means within said gas compressor.

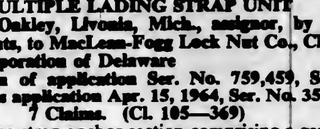
3,202,109
MINIATURE RACING CAR
Edward R. Stewart, 8522 Beverly Blvd., Los Angeles, Calif.
Filed Aug. 18, 1964, Ser. No. 390,321
19 Claims. (Cl. 104—60)



1. In a miniature racing car:
an axle having wheels at the ends thereof;
an axle drive gear connected to said axle;
operator controlled drive means including a drive shaft;
a pinion gear connected to said drive shaft for rotation therewith;
means supporting said drive means with said pinion gear continuously meshing with said drive gear to rotate said drive gear and said axle in response to operation of said drive means rotating said drive shaft and further supporting said drive means and drive shaft for movement relative to said axle with rotation of said pinion gear;
and brake means automatically operable with said drive means for normally preventing rotation of said axle and responsive to said movement of said drive means and drive shaft relative to said axle for allowing rotation of said axle.

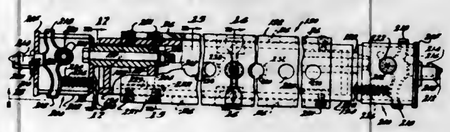
3,202,110
METHOD AND MEANS FOR ADJUSTING A TRAMWAY CABLE TENSIONING DEVICE
Tony R. Sowder, Spokane, Wash., assignor to Riblet Tramway Company, Spokane, Wash., a corporation of Washington
Filed July 15, 1963, Ser. No. 294,950
5 Claims. (Cl. 104—196)

1. The herein described method of selectively adjusting the effective length of a tensioning cable which extends between and mutually connects a counterweight and a tensioning carriage having a rotatable tension sheave about which is trained a manually controlled powered circulating tramway rope,
said tensioning cable having a portion constituting a tail rope having a running connection through and also releasably fastened relative to a snatch block anchored relative to one of said counterweight or tensioning carriage,
which consists in:
securing said tail rope for movement proportional to the movement of said circulating tramway rope;



unfastening the tail rope for running movement through said snatch block; and
controlling movement of said tail rope through said snatch block by manually controlled circulating movement of said circulating tramway rope.

3,202,111
FREIGHT BRACING APPARATUS
Harvey W. Chapman, Detroit, Mich., and Henry L. Dunlap, deceased, late of Dearborn, Mich., by Myrtle Estella Dunlap, special administratrix, Dearborn, Mich., assignors to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Application Sept. 11, 1957, Ser. No. 683,285, which is a division of application Ser. No. 457,474, Sept. 21, 1954, now Patent No. 2,834,304, dated May 13, 1958. Divided and this application July 3, 1962, Ser. No. 207,866
2 Claims. (Cl. 105—369)

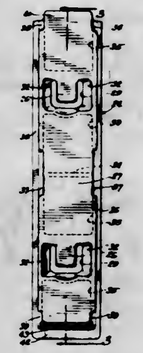


1. A freight engaging member adapted to extend between and be supported at opposite ends on support structure, said member comprising an elongated body having a longitudinally extending central axis and adapted to engage freight, a head at each end of said body and each including means adapted to connect said head to said support structure and hold said head against rotation relative thereto, and means mounting said heads on said body at opposite ends thereof for rotation relative to said body about a common axis offset from said central axis.

3,202,112
MULTIPLE LADING STRAP UNIT
Gilbert F. Oakley, Livonia, Mich., assignor, by mesne assignments, to MacLean-Fogg Lock Nut Co., Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 759,459, Sept. 8, 1958. This application Apr. 15, 1964, Ser. No. 359,917
7 Claims. (Cl. 105—369)

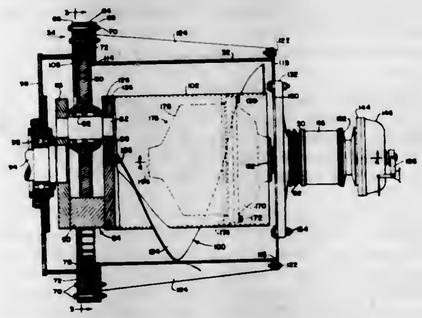
1. A lading strap anchor section comprising a generally elongated rectangular plate having a substantially flat front face and parallel sides and ends, flanges extending along said sides and displaced rearwardly of the front face, posts on the plate extending rearwardly of the front face beyond the rearmost surface of the plate, said plate and posts having openings therein extending from the front face of the plate through said posts to the rear faces

of said posts, tongues on the plates extending in the plane of the plate over said openings and in spaced relation to the rear faces of the posts, and elongated recesses in the front face of the plate extending inwardly from the side flanges and disposed substantially midway between said posts, said posts providing a means for welding said sec-



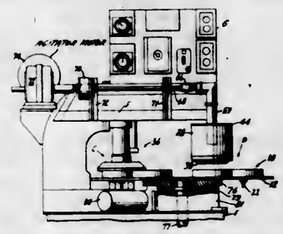
tions to a support for the section around the perimeter of the openings, said flanges providing supports for wall plates in abutting relation to the front face of the section, said recesses providing spaces for the reception of weld material for welding wall plates to the section, and said tongues providing anchors for lading straps or the like.

3,202,113
FORAGE WAFERING MACHINE
Mahlon L. Love, Osco, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Feb. 4, 1963, Ser. No. 255,828
17 Claims. (Cl. 107—14)



1. In a machine for wafering forage crops and the like, the combination of support means; die means in the form of an annulus carried by the support means on a generally horizontal axis and including a plurality of circumferentially spaced die cells and an inner peripheral track from which said cells radiate; means including a press wheel arranged eccentrically within the track for orbital movement about the annulus axis with the outer periphery of said wheel substantially in rolling contact with said track to force forage crops into the die cells;
a feed housing alined with the annulus on the axis thereof and having a first end substantially in axial register with said track and a second end axially spaced from said track, said housing having a feed inlet opening therein axially offset from the annulus; means carrying said housing on the support means; means for feeding forage crops axially of the housing and into the track, including a rotary feed element coaxially within said housing and having first and second ends respectively proximate to said first and second housing ends, said element having a hollow core opening axially at its second end; carrier structure coaxially fixed to the first end of the feed element and straddling the press wheel and coaxially journaled on the support means at the side of the annulus opposite to said element, said structure having eccentric means journaling the press wheel; speed-reduction drive means coaxially contained at least in part in said hollow core and including a rotatable driven member drivingly connected to said core, a support member coaxial with the core and rotatably carrying the driven member and axially exposed at said open end of the core, and a driving member engaging the driven member and projecting axially at the second end of said core and feed housing; means mounting the support member on the support means; and means for driving the driving member.

3,202,114
METHOD AND APPARATUS FOR THE PRODUCTION OF CRUMB SHELLS
James K. Cameron and Parker C. Welch, Charlottesville, Va., assignors to Continental Baking Company, Rye, N.Y., a corporation of Delaware
Filed Dec. 4, 1962, Ser. No. 242,306
25 Claims. (Cl. 107—54)

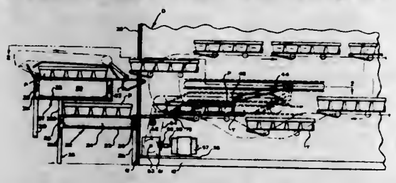


23. The method of preparing a crumb shell for pies from materials such as crackers, cookies and the like comprising the steps of preparing a relatively dry, nonflowable mixture of material crumbs, depositing a controlled amount of said mixture along the sides and on the bottom of the pie plate, and subjecting the entire surface of said deposited mixture to heat and a compressive force at the same time to form said crust, said heat ensuring complete release of said finished crust and said compressive force.

3,202,115
PUSHER TYPE TRANSFER APPARATUS FOR BAKING OVENS AND THE LIKE
Morris C. Jones, Jr., Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Aug. 21, 1961, Ser. No. 132,840
28 Claims. (Cl. 107—57)

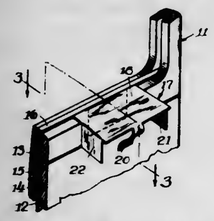
15. In combination; an oven having inner side walls defining an oven chamber and at least one outer side wall spaced from one of said inner side walls to define a compartment removed from the direct heat of burners in the oven chamber; a tray conveyor having spaced apart trays thereon movable along a generally longitudinal and a generally vertical run within the oven chamber; a dis-

charge conveyor adjacent one end of said generally longitudinal run; a pusher within the oven chamber having a portion extending into said compartment; a motor driven member in said compartment connected with said portion of the pusher for moving said pusher forwardly to transfer articles from said trays to said discharge conveyor and



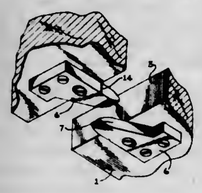
return the pusher; bearing means for swingably mounting said pusher on said member in said compartment; and means for controlling the position of said pusher; swinging the pusher upwardly at the end of its forward stroke and maintaining it substantially in raised position during its rearward stroke.

3,202,116
SERVING TRAY FOR AUTOMOBILES
Christian Wilson, 1590 Hawthorne Lane, Highland Park, Ill.
Filed Dec. 28, 1964, Ser. No. 421,577
4 Claims. (Cl. 108—46)



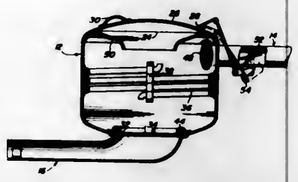
1. A serving tray for automobiles comprising a rigid body section, a handle projecting from one edge of said body section, a tail section hinged to the opposite edge of said body section, said tail section being insertable into the window well of an automobile door, and support sections hinged to the opposite ends of said body section, said support sections being adapted to engage the inner frame of an automobile door and cooperate with said tail section to hold said body section in horizontal position when said tail section is positioned within the window well of an automobile door.

3,202,117
TABLE LEAF ALIGNMENT DEVICE
Raymond W. Zimmerman, 31 21st Ave., San Francisco, Calif.
Filed July 18, 1962, Ser. No. 210,793
1 Claim. (Cl. 108—89)



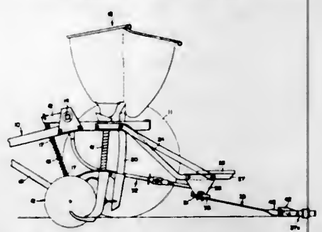
Extension table leaf alignment and leveling means including at least two spaced pairs of generally wedge-shaped plates for mounting adjacent to the parting surfaces of adjoining table leaves, one on each of said adjoining leaves; said plates on each one of said leaves having divergent lateral alignment surfaces canted with respect to said parting surfaces; said lateral alignment surfaces of said pairs of plates being in frictional engagement with each other upon closing of said parting surfaces; and the nose of each of said plates having a vertical alignment surface for engaging and supporting the adjacent table leaf.

3,202,118
MOTOR VEHICLE LITTER DISPOSAL
Joseph James Baldine, 25 Grandview Ave., Hubbard, Ohio
Filed Feb. 21, 1963, Ser. No. 260,192
6 Claims. (Cl. 110—18)



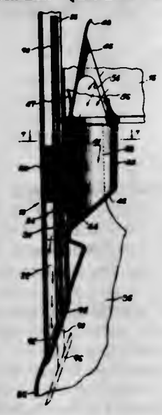
1. A litter disposal for use in vehicles, consisting of a combustion chamber, an access opening through the top of said chamber, a pivotally mounted closure for said access opening, a discharge opening through the bottom of said chamber, a foraminous guard covering said discharge opening, an electric heating element for igniting refuse provided within said chamber between said access opening and said discharging opening, and means for introducing an air flow into the upper portion of said chamber for movement therethrough and out the guarded discharge opening, said combustion chamber being substantially cylindrical, and said means for introducing an air flow including an intake pipe, said intake pipe having one end thereof communicating with the interior of the cylindrical chamber along a planar chord thereof offset relative to the center of rotation of the chamber, the other end of said intake pipe being in communication with a source of moving air, thereby producing a movement of the air about the interior of the chamber in a swirling manner.

3,202,119
COVERING DEVICES FOR GRAIN DRILLS
Robert E. Loomans, Horicon, Wis., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed June 29, 1961, Ser. No. 120,635
5 Claims. (Cl. 111—85)



1. In a grain drill, the combination with a frame, a footboard, rearwardly extending footboard supports fixedly connected at their forward ends with said frame, and a rockable shaft carried by said frame forward of the rear portions of said footboard supports, of a rockshaft, means rockably supporting said rockshaft on said footboard supports, generally fore-and-aft extending arms fixed at their forward ends to said rockshaft, ground-leveling blades pivoted to the rear ends of said arms, and an actuating connection between said rockshaft and said rockable shaft whereby operation of the latter acts through said rockshaft and arms to raise and lower said leveling blades.

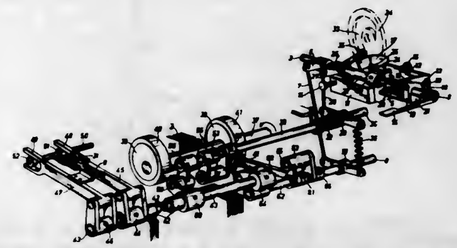
3,202,120
FERTILIZER DISTRIBUTING TOOL WITH REPLACEABLE CARTRIDGE
Robert C. Laffler, 237 Bradley Ave., Bergenfield, N.J.
Filed Nov. 19, 1963, Ser. No. 324,683
3 Claims. (Cl. 111—96)



1. In a portable, hand manipulated, fertilizer tool comprising a longitudinally extending trough-like main frame member having a handle at its upper end and a spade at its lower end, the combination with a replaceable cartridge to be used as a fertilizer supply hopper therefor, an apertured base mounted outside and intermediate the ends of said frame member for supporting the bottom of a cartridge adjacent said trough-like frame member, said base including conduit means for puncturing the bottom of said cartridge, means mounted adjustably on said frame member between said base and said handle for engaging the top of said cartridge to secure the same fixedly thereto, a receiving chamber below said base and in open communication with said conduit means for receiving fertilizer gravitating from said cartridge, a measuring chamber below said receiving chamber and within said frame member for receiving the gravitational flow of fertilizer from said receiving chamber, a rod extending within said trough-like frame member from said spade to said handle, a pair of longitudinally spaced valves mounted on said rod, the top valve for closing a passageway between said receiving chamber and said measuring chamber and the bottom valve for closing a discharge outlet within and through said spade, said valves being spaced so that when one valve is in its closed position the other valve will remain in its open position, spring urging means mounted on said rod to cause it to return to its uppermost position, whereby the lower valve will keep the discharge outlet within and through said spade normally closed.

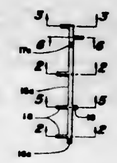
3,202,121
DIFFERENTIAL FEED CONTROL AND INDICATOR FOR SEWING MACHINES
Hans Orth, Alsenborn, Pfalz, and Herbert Wenz, Kaiserslautern, Pfalz, assignors to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany, a corporation of Germany
Filed Dec. 26, 1963, Ser. No. 333,291
10 Claims. (Cl. 112—209)

1. A sewing machine having main and auxiliary feed dogs and setting shafts therefor, and a feed stroke control and indicator mechanism for controlling the feed strokes in accordance with the respective angular positions of said shafts, said mechanism comprising a pair of rotatable concentric control shafts, motion-transmitting means connecting each of said control shafts with one of said setting shafts, a first adjusting member mounted upon one of said control shafts, a second adjusting member mounted upon the other of said control shafts, means to adjust and lock said members in varying relative angu-



lar positions of said control shafts, to effect a differential feed by said dogs in either sense from an existing equal main feed stroke adjustment thereof, and cooperating scale indicator means carried by said first and second members, to indicate the feed stroke differential set thereby, and means to independently adjust the angular position of one of said control shafts, to simultaneously vary the main feed stroke of said dogs substantially independently of the differential feed set by said members.

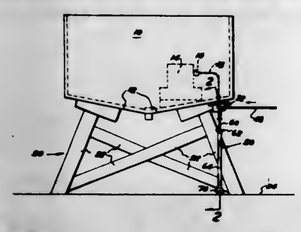
3,202,122
METHOD OF MAKING PRECISION FORMED METAL PARTS
William A. Bedford, Jr., Littleton, Colo.
Original application May 2, 1963, Ser. No. 277,611. Divided and this application July 7, 1964, Ser. No. 405,634
7 Claims. (Cl. 113—119)



1. The method of precision forming, from a flat and malleable metal sheet, an article having a body portion that is severed from the sheet to finished form, an appendage portion integral with the body portion that is severed from the sheet and then oriented to project transversely beyond surface planes of the body portion that correspond to surface planes of the sheet, and a hardened forged portion integral with the body portion, said method comprising:

(a) shearing the sheet to form a blank in the sheet for at least that portion of the article to be forged;
(b) cold forging a portion of the body to produce said forged portion while confining the metal being forged against extrusion, whereby the metal of the forged portion is both work hardened and finish formed;
(c) shearing the sheet to form the shape of any unsheared remainder of said article; and
(d) at a stage in the method following forging said forged portion, bending said appendage portion to its finished form and orientation relative to the body portion.

3,202,123
MARINE ENGINE COOLING COUPLER
Sydney F. Goodfriend, Huntington Woods, Mich., assignor of one-half to Cyril Feldman, Detroit, Mich.
Filed Aug. 15, 1962, Ser. No. 217,122
1 Claim. (Cl. 115—5)



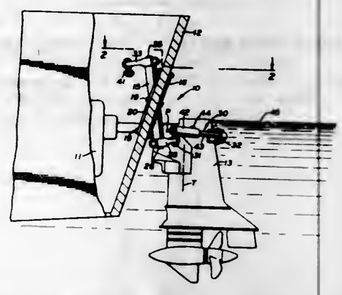
A device for coupling a source of water to a hull-mounted water intake scoop in a marine vessel situated externally of a body of water, comprising:
a cup-shaped member having an opening in a side wall adapted to connect to a source of water, the open face of said member being adapted to fit against said hull surrounding said scoop;
resilient material along the edges of said open face adapted to maintain a fluid-tight seal about said scoop;
a stem pivotally connected to the exterior of the bottom wall of said member;
a threaded rod journaled in said stem;
a nut threaded mounted upon said rod;
and a tube slidably mounted along said rod, whereby rotation of said nut in the direction causing it to move away from said member causes said tube to be moved in the same lineal direction as said nut.

3,202,124
NAVIGATIONAL VEHICLES
Pierre O. Calafat Mas, 17 Ave. Carnot, Saint-Max, Meurthe-et-Moselle, France
Filed Nov. 19, 1963, Ser. No. 324,617
Claims priority, application France, Nov. 30, 1962 917,199
1 Claim. (Cl. 115—1)



A navigational vehicle comprising, in combination, an elongated hull, at least four wheels mounted in pairs and located on both sides of said hull, in such a manner as to rotate about axle members substantially perpendicular to the longitudinal plane of the hull, said wheels comprising, at their intermediate portion, a tight recess which enables them to function as floating wheels, and at the periphery thereof transversal vanes adapted to bear on the water in order to ensure the propulsion of the vehicle, and means for rotating said wheels around their axes, each wheel comprising a frame enclosing at least one inflated inner tube and supporting vane members shaped as a herring-bone pattern, the top of which is located substantially in the planes passing through the axis of rotation of the wheels, said vane members being spaced apart from the frame.

3,202,125
STEERING ASSEMBLY FOR OUTDRIVE MARINE PROPULSION UNITS
John F. Morse, 21 Clinton St., Hudson, Ohio
Filed Apr. 2, 1964, Ser. No. 356,766
7 Claims. (Cl. 115—35)



1. A steering assembly for one or more Outdrive marine propulsion units utilizing at least one drive assembly attached to the transom of a boat and having a turning and tilting axis comprising, a generally vertically oriented quill piercing the transom and fixed thereto, a steering shaft rotatably mounted in said quill with an upper and lower end extending axially outwardly of said quill, a lower crank arm nonrotatably secured to the lower end of said shaft, a link bar for each drive assembly, one end of each said link bar pivotally attached to said lower crank arm, the other end of each said link bar pivotally attached to a drive assembly, an upper crank arm nonrotatably secured to the upper end of said steering shaft, said upper crank arm attached to a steering force transmission means.

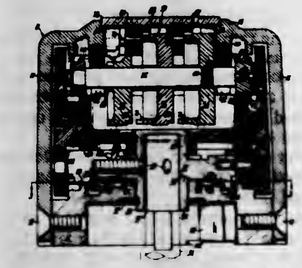
3,202,126
MARINE LATCH
Joseph E. Urbassik, Saginaw, Mich., assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 13, 1963, Ser. No. 330,303
10 Claims. (Cl. 115—41)

1. A marine drive comprising a forward joint housing, an outboard power leg supported for movement about a kick up axis relative to said forward joint housing, a first latch member carried by said outboard power leg portion and movable relative thereto between first and second positions, a second latch member carried by said forward joint housing and cooperable with said first latch member when in its second position to lock said outboard power leg portion against kick up movement, biasing means for moving said first latch member to its said second position and yieldably supporting said first latch member in its said second position and providing for movement of said first latch member into locking cooperative relationship with said second latch member upon movement of said outboard power leg portion to a predetermined position about the kick up axis, a latch release bracket engaging said first latch member and movable in a first direction to allow movement of said first latch member by said biasing means, means biasing said latch release bracket in said first direction, and an actuator member engaging said latch release bracket and controlling the movement thereof.

2. A latch mechanism for locking first and second relatively movable parts together comprising a first latch member carried by said first part and movable relative thereto between first and second positions, a second latch member carried by said second part and cooperable with said first latch member when in its second position to lock said first and second parts together, first biasing means for moving said first latch member to its said second position and yieldably supporting said first latch member in its said second position and providing for movement of said first latch member into locking cooperative relationship with said second latch member upon movement of said first part to a predetermined position relative to said second part, a latch release member engaging said first latch member and movable in a first direction to allow movement of said first latch member by said biasing means, second biasing means biasing said latch release member in said first direction, and an actuator member engaging said latch release member and movable to control the movement thereof.



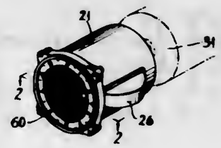
3,202,127
ROTARY OPERATOR WITH INDICATOR
Spencer Struble and William C. Fox, West Hartford, Conn., assignors to Veeder-Root, Incorporated, Hartford, Conn., a corporation of Connecticut
Filed Apr. 17, 1963, Ser. No. 273,631
8 Claims. (Cl. 116—115)



3. A rotary operator comprising a frame having a base and at least one arm extending outwardly from adjacent the periphery thereof, a hollow control knob member and an output rotor member supported for coaxial rotary movement with respect to the base, a counter having at least one indicia bearing element, means supported by the arm for rotatably supporting the indicia bearing element, means operatively connecting one of said members with said indicia bearing element, and differential drive means operatively connecting the knob and rotor members including opposed gear means on the base and knob member and at least one pinion rotatably mounted on the rotor member coacting with said gear means.

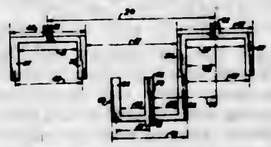
3,202,128
DIGITAL INDICATING DEVICE
Ronald William Cumming, Brighton, Victoria, and John Russell Baxter, Chadstone, Victoria, Australia, assignors to Commonwealth of Australia, Canberra, New South Wales, Australia
Filed Sept. 3, 1963, Ser. No. 306,195
Claims priority, application Australia, Sept. 10, 1962, 21,946
8 Claims. (Cl. 116—129)

1. A digital indicating device comprising
a face plate having an elongated opening therein;
an indicating member mounted rearwardly of said face plate;
said indicating member bearing digital markings extending in ordered sequence at spaced intervals along part of the surface thereof;
means for moving said indicating member in response to variation in the value of a quantity to be indicated to cause said part of said surface bearing said digital markings to travel behind said elongated opening in the direction of the elongation thereof;
a screening member overlying said face plate;
said screening member bearing a set of digital markings denoting fractional parts of the increment between the values of adjacent digital markings on said indicating member;
said screening member having a window extending beside said digital markings thereon and enabling a digital marking on said indicating member and a digital marking on said screening member to combine to display a composite number;



means for moving said screening member at a speed which is directly proportional to the speed of movement of said indicating member to cause said digital markings on said screening member and said window to move relative to said elongated opening in a direction substantially at right angles to the direction of elongation thereof;
the ratio of the speed of movement of said screening member to the speed of movement of said indicating member being equal to the ratio of the distance occupied by said set of digital markings on said screening member equivalent to the said increment and the distance between two adjacent markings on said indicating member; and
the boundaries of said window being inclined so as to produce a movement thereof relative to said opening in said face plate corresponding to the movement of said indicating member relative to said opening.

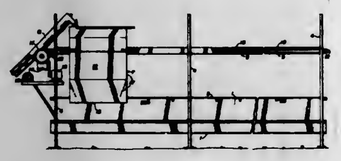
3,202,129
POINTER AND SCALE ARRANGEMENT
Roger J. Weldon, 6025 San Leandro, Tucson, Ariz.
Filed Nov. 13, 1962, Ser. No. 236,960
9 Claims. (Cl. 116—135)



6. In a device for accurately determining the relative position of a pointer between interval markers on a scale, the combination comprising, a scale, a plurality of equally

spaced interval markers on said scale, two tines extending from each of said markers, each tine having a width of 1/20 of the distance between the centers of said interval markers and having a distance between the centers of each of said tines of 9/20 of said distance, a pointer, three equally spaced pointer tines extending from said pointer, each of said pointer tines having a width equal to the widths of said two tines, said pointer tines having an overall width of 9/20 of said distance whereby the various relationships between the tines of the pointer and the tines of the markers will determine with accuracy the position of the pointer with respect to the scale.

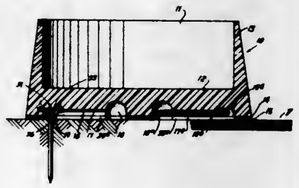
3,202,130
TRAVELING FEED HOPPER
William H. Sutton, Rte. 1, Box 213A, Keller, Tex.
Filed Oct. 14, 1963, Ser. No. 315,776
6 Claims. (Cl. 119—51.11)



2. Apparatus for feeding animals automatically in measured amounts at predetermined time intervals comprising, in combination, an elongated feed trough which may be arranged in the open and may traverse a plurality of adjoining pens each having one or more animals therein, a traveling feed hopper having track means whereby it is supported above the feed trough and having means whereby it is propelled longitudinally thereof at predetermined time intervals, means for supplying feed material to said hopper in one of its operative positions, means on said feed trough in selected predetermined positions spaced longitudinally thereof engageable with the feed material of said hopper as said hopper is advanced longitudinally relative to said feed trough to displace feed material therefrom, said hopper having an adjustable restricted bottom opening substantially coextensive with its length and having an open ended, horizontally extending delivery chute immediately below said opening positioned above said feed trough and aligned longitudinally therewith, and said last mentioned means consisting of a plurality of fixed blades each having an adjustable support whereby it is adjustable vertically above said feed trough and extending laterally and downwardly from its support and adapted to traverse said delivery chute as the hopper is advanced longitudinally relative to said feed trough, to thereby displace feed material from said delivery chute.

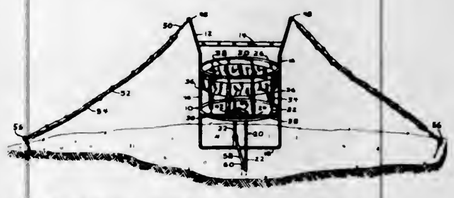
3,202,131
ANCHORED ANIMAL FEEDING BOWL
Wardwell Jones, 5045 Lahoma, Dallas, Tex.
Filed Nov. 8, 1963, Ser. No. 322,367
6 Claims. (Cl. 119—61)

1. A bowl including: a base; means extending upwardly from said base and defining with the said base an upwardly opening cavity, said base having downwardly opening recess means below said cavity; and a pair of prongs, said prongs being secured to said base for pivotal movement between retracted positions within said recess means and extended positions wherein said prongs extend perpendicularly downwardly from said base, said prongs being spaced from one another when in their extended positions, said base having a bottom surface provided



with friction means engageable with a smooth surface on which the bowl is placed for frictionally resisting sliding movement of the bowl on the smooth surface.

3,202,132
LIVESTOCK OILING DEVICE
Carl A. Lentz and Jacob A. Lentz, Lineville, Iowa
Filed Oct. 1, 1963, Ser. No. 312,944
5 Claims. (Cl. 119—157)

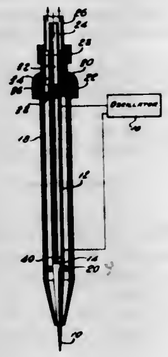


1. In a livestock oiling device,
a supporting frame including two vertically spaced apart horizontally disposed annular rods, a pair of U-shaped frame members having base portions which intersect at their center areas and having upstanding vertically disposed leg portions in supporting engagement with at least said bottom annular rod,
a plurality of elongated spaced apart elements vertically disposed between said rods and having their ends secured thereto,
a length of absorbent fabric material wrapped around each of said elements along their length, said material capable of being saturated with an insecticide,
an annular flexible curtain means of absorbent material secured to said frame adjacent the top annular rod and in overlapping relation to said elements, said flexible curtain capable of being saturated with an insecticide, and said curtain, adjacent elements and the bottom annular rod defining a plurality of feeding openings through said frame,
and a feed box secured to said support frame inwardly of said annular rods.

3,202,133
WRITING IMPLEMENT
Paul M. Platzman, Brookville, N.Y. (% Ultrasonic Industries Inc., Ames Court, Engineers Hill, Plainview, Long Island, N.Y.)
Filed Aug. 21, 1961, Ser. No. 132,796
7 Claims. (Cl. 120—8)

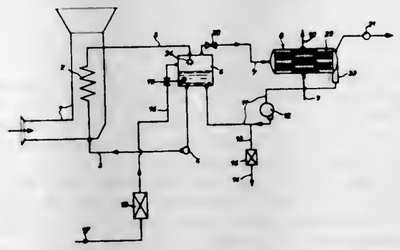
2. A writing implement comprising a relatively long, hollow case member which is open at one end, an ultrasonic transducer mounted within said case member, a relatively rigid writing probe having a relatively rounded apex connected to one end of said ultrasonic transducer and projecting through the open end of said case member, and said ultrasonic transducer being adapted to receive electrical oscillations and to produce mechanical vibra-

tions in response thereto, the outer surface of said probe being substantially continuous, a case, said probe being



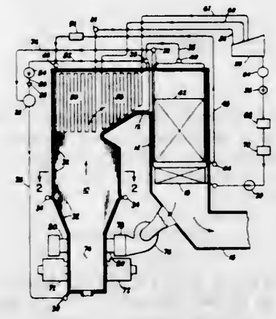
held to said case at one end in continuous fitting relationship to thereby prevent any fluid flow to said probe.

3,202,134
REGENERATION OF THE HEAT OF BOILER FLUE GASES
Marcel Marchetx, Neuilly-sur-Seine, France, assignor to G. & J. Weir Ltd., Glasgow, England, a company of England
Filed Dec. 30, 1963, Ser. No. 334,509
Claims priority, application France, Jan. 3, 1963, 920,404; Feb. 26, 1963, 926,117
8 Claims. (Cl. 122—1)



1. In a boiler installation having an outlet duct for flue gases, with a zone of relatively low teemperatures therein, a system for regenerating heat in flue gases in said outlet duct, comprising heat-exchange means for placing an auxiliary fluid, constituted by water, in heat-exchange relationship with said gases in said low-temperature zone of said outlet duct in order to heat said auxiliary fluid; means for partially vaporizing said heated auxiliary fluid outside said outlet duct, means for conveying said auxiliary fluid from said heat exchange means to said vaporizing means; means for condensing the vaporized portion of said auxiliary fluid so as to heat a second fluid, and means for conveying said vaporized portion of the auxiliary fluid from said vaporizing means to said condensing means; means for injecting said heated second fluid into said boiler installation to improve the efficiency thereof; means for withdrawing a portion of said condensed auxiliary fluid; means for feeding said withdrawn portion as make-up feed water for the installation; means for supplying water to compensate for said withdrawn portion of the condensed auxiliary fluid; and means for recycling in said heat exchanage means the remainder of the condensed auxiliary fluid together with said compensating water.

3,202,135
VAPOR TEMPERATURE CONTROL METHOD
Willburt W. Schroedter, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Original application July 27, 1961, Ser. No. 127,176. Divided and this application Dec. 17, 1963, Ser. No. 331,196
4 Claims. (Cl. 122—406)

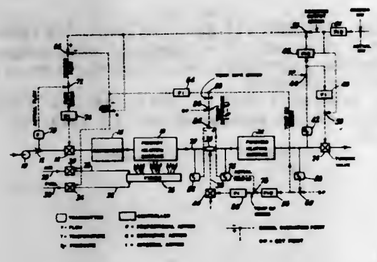


1. In a forced through-flow vapor generator operating at supercritical pressure and on the reheat cycle, said generator including a furnace through which combustion gases are conveyed with the furnace walls being lined with tubes which form part of the through-flow system, said generator also including predominatively convective reheating surface over which said combustion gases are conveyed, the method of increasing the heat input to said vapor reheating surface over what it would otherwise be with decreasing load comprising introducing a portion of the combustion gases after traversal of the reheating surface into the furnace in a manner to effect a decrease of the heat absorption in the furnace, increasing this gas recirculation as the load decreases, simultaneously recirculating a portion of the working medium through at least a portion of the through-flow system lining the furnace walls by withdrawing working medium from the through-flow system at a location downstream of the portion lining the furnace walls and introducing it into said system upstream of said portion with generally the entire heat content of this withdrawn fluid being contained in the fluid entering the portion of the circuit lining the furnace walls and increasing the proportion of the recirculating fluid to the total flow with decrease in load.

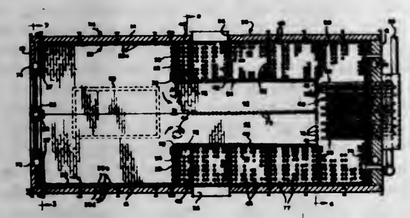
3,202,136
CONTROL SYSTEM FOR ONCE-THROUGH FLOW VAPOR GENERATOR
Richard D. Hottenstine, Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 28, 1962, Ser. No. 248,029
9 Claims. (Cl. 122—448)

1. A once through flow vapor generator comprising firing means and a through flow circuit having a superheating portion, desuperheating means in said superheating portion operative to lower the temperature of the through flow in passing through this last-named means, adjustable means regulating the effectiveness of said desuperheating means, means responsive to the temperature of the through

flow at a location downstream of the desuperheating means in the through flow circuit effective to regulate said adjustable means to correct transient temperature changes in said fluid and means responsive to the temperature difference of the through flow across said desuperheating means and little or no superheating surface effective to regulate the firing rate and flow through said through flow circuit so as to maintain this difference at a generally predetermined value.



3,202,137
STEAM GENERATING UNIT
Gustav A. Rehm, Milwaukee, Wis., assignor to Cleaver-Brooks Company
Filed Mar. 5, 1963, Ser. No. 262,923
7 Claims. (Cl. 122—473)



1. A boiler assembly comprising

a housing having floor, roof, front, rear and side walls defining a forward primary furnace space and a rear hot gas space,

a boiler structure including an upper drum disposed generally in the top center of the housing and extending from the front wall to the rear wall, and

a pair of lower drums generally parallel to and of the same length as the upper drum and disposed on opposite sides of the floor of the housing,

longitudinal wall means extending from the primary furnace space through the rear gas path and terminating short of said rear wall thereby defining,

a centrally disposed secondary furnace space, a superheater space and a reverse flow convection tube space on both sides of said secondary furnace space and superheater space,

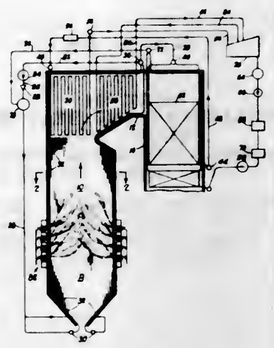
water wall tube means connecting the lower drums with the upper drum and lining the forward primary furnace space and the secondary furnace space,

convection tube means in the convection tube space connecting the lower drums to the upper drum, and superheater means mounted in said superheater space and aligned generally with the longitudinal axis of said secondary furnace space, said superheater means including a plurality of tubes lying in planes parallel to the longitudinal axis of said secondary furnace space to provide a minimum of resistance to the flow of combustion products through said superheater space and into the reverse flow convection tube space,

baffle means in said convection tube space to deflect the hot combustion products alternately up and down as they pass through the convection tubes,

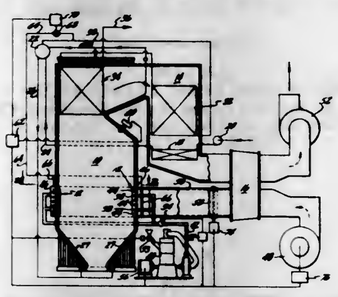
and an outlet in the side walls and roof of said housing at the end of said convection tube space.

3,202,138
VAPOR TEMPERATURE CONTROL METHOD
Willburt W. Schroedter, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed July 27, 1961, Ser. No. 127,176
3 Claims. (Cl. 122—479)



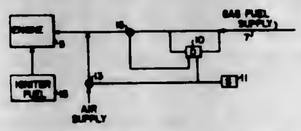
1. In a forced through-flow vapor generator operating at supercritical pressure and on the reheat cycle and which generator includes an elongated furnace through which combustion gases are conveyed with the furnace having a combustion gas outlet and fired at a location remote from said outlet and with the walls of the furnace being lined with tubes which form part of the supercritical through-flow system, said generator also including predominantly convection reheating surface over which said combustion gases are conveyed, said generator having the characteristic that with decrease in load the reheat temperature tends to decrease the method of increasing the heat input to said vapor reheating surface over what it would otherwise be with decreasing load thereby overcoming, at least in part, the tendency of the reheat temperature to decrease with decrease in load, comprising recirculating a portion of the working medium through at least a portion of the through-flow system lining the furnace walls by withdrawing working medium from the through-flow system at a location downstream of the portion lining the furnace walls and introducing it into said system upstream of said portion with generally the entire heat content of this withdrawn fluid being contained in the fluid entering the portion of the circuit lining the furnace walls and simultaneously adjusting the zone of combustion longitudinally within the furnace toward said outlet, increasing the proportion of the fluid circulated relative to the through-flow and moving the combustion zone toward said outlet as the load on the vapor generator decreased.

3,202,139
METHOD AND APPARATUS FOR OPERATING FURNACE
William L. Livingston, Bloomfield, Mathew P. Stengel, Windsor, and Larry D. McNair, West Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Feb. 14, 1962, Ser. No. 173,204
11 Claims. (Cl. 122—504)



1. In the operation of a furnace into which fuel and air are introduced and the fuel burned the method comprising continuously monitoring the burning of fuel in the furnace and in response to and directly after a flame-out terminating the fuel supply and substantially reducing the air supply to the furnace and introducing an inert gas thereinto in sufficient quantity and for a sufficient time to insure nonflammability of the furnace contents.

3,202,140
PROCESS AND APPARATUS FOR PREVENTING KNOCK IN GAS OPERATED ENGINES
John F. Kunc, Union, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed June 16, 1961, Ser. No. 117,534
10 Claims. (Cl. 123—1)



1. A method for operating a detonation-free engine on gaseous fuel which comprises: supplying a gaseous fuel comprising a major amount of methane to an engine, said engine capable of operating detonation free on said fuel; monitoring the presence of low octane gaseous fuel components in said fuel supply by the differences in physical constants between methane and a low octane component, which component will cause detonation in said engine under present operating conditions; and instituting corrective action in response to said monitoring to allow for detonation-free operation whenever said monitoring detects the presence of a low octane gas above a predetermined acceptable level, thereby effecting safe detonation-free operation of said engine.

3,202,141
METHOD OF OPERATING COMPRESSION IGNITION ENGINE
Wheeler G. Lovell, Bloomfield, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Continuation of application Ser. No. 148,277, Oct. 27, 1961. This application July 1, 1963, Ser. No. 295,585
6 Claims. (Cl. 123—1)

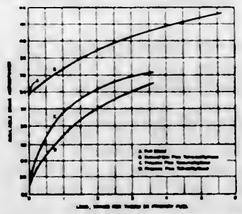
1. A method of operating a compression ignition engine which comprises the steps of:

(1) introducing into the combustion chamber of a compression ignition engine a combustible mixture which comprises a gaseous fuel, an organometallic combustion control additive and air,

(2) compressing said mixture to from about 1/12 to about 1/22 of its original volume so as to raise the temperature of said mixture to a level sufficient to ignite diesel fuel,

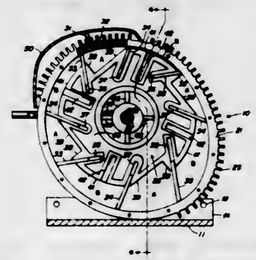
(3) injecting into the combustion chamber a pilot charge of diesel fuel so as to initiate combustion of the total mixture, the weight ratio of said pilot charge to said gaseous fuel being from about 0.01:1 to about 1:1;

said organometallic additive being selected from the group consisting of tetraalkyllead compounds containing from



one to about 6 carbon atoms in each alkyl group, and organic compounds of a metal having an atomic number of from 25–28, said organic compounds characterized by being hydrocarbon-soluble, by being covalent, by possessing in addition to said metal only elements selected from the group consisting of carbon, oxygen, hydrogen and nitrogen, by containing at least one group selected from the class consisting of cyclopentadienyl groups and the carbonyl group, and by containing from about 5 to 20 carbon atoms in the molecule; said organometallic additive being present in an amount such that the concentration of metal of said organometallic additive is from 0.001 to about 0.5 weight percent based on the weight of said gaseous fuel.

3,202,142
ROTARY ENGINE
Derrell C. Lockhart, Box 312, Newhall, Iowa
Filed July 22, 1963, Ser. No. 296,616
6 Claims. (Cl. 123—16)

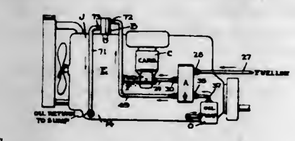


1. A rotary engine comprising a housing, an eccentric rotor rotatably supported by the housing, a first plurality of vanes mounted in substantially radial slots in the rotor, a second plurality of vanes mounted in non-radial slots in the rotor with the substantially radial and non-radial vanes alternately spaced, the vanes forming with the rotor and housing alternate compression and combustion chambers, a spark plug mounted in the housing to ignite fuel in the combustion chambers when they are near their maximum volume, a transfer tube connected to the housing to transfer compressed air from the compression chambers to the combustion chambers, and means for supplying fuel to the combustion chambers.

3,202,143
PRESSURE AND TEMPERATURE RESPONSIVE ENGINE SHUT-DOWN DEVICES

Joe E. Goodwin, Broomfield, Colo., assignor to Sentinel Distributors, Inc., Denver, Colo., a corporation of Delaware

Filed Sept. 24, 1963, Ser. No. 315,105
11 Claims. (Cl. 123—41.15)

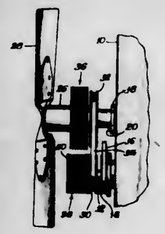


1. Apparatus for controlling the flow of fuel to an internal combustion engine in response to pressure and temperature conditions existing in a pressure lubricating system and a cooling system associated with the engine, comprising a valve in the fuel supply line of the engine, pressure actuated means normally subject to a pressure equal to that of the lubricant in said lubricating system for maintaining said valve in open position as long as the pressure exerted on said means is at least equal to a predetermined value, means operable to close said valve when the pressure exerted on said pressure actuated means drops below said predetermined value, and means responsive to the temperature of the coolant in said cooling system for reducing the pressure exerted on said pressure actuated means below said predetermined value when said temperature rises above a predetermined temperature, even though the pressure of the lubricant in said lubricating system remains at least equal to said predetermined value.

3,202,144
FAN REVERSING

Kenneth W. Nicholson, Chicago Ridge, and Grant W. Keller, Hinsdale, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey

Filed May 17, 1963, Ser. No. 281,102
3 Claims. (Cl. 123—41.49)

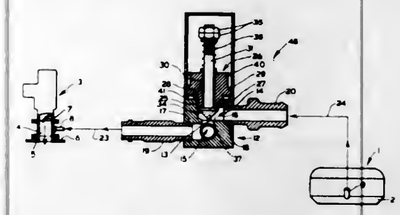


1. In combination with a machine having an internal combustion engine including a radiator, an arm pivotally mounted on said machine, a driven shaft rotatably mounted on said arm, a fan secured to said driven shaft for rotation therewith contiguous to said radiator, a countershaft rotatably mounted on said machine, means interconnecting said engine and said countershaft for rotating said countershaft, a pair of pulleys secured to said shafts for rotation therewith, a belt engageable with said pulleys for rotating said driven shaft and said fan in a forward direction so as to draw air through said radiator, a pair of friction wheels secured to said shafts for rotation therewith, said friction wheels being engageable for rotating said driven shaft and said fan in a reverse direction so as to blow air through said radiator faster than air is drawn through said radiator, one of said friction wheels having a relatively hard surface defining a plurality of grooves and the other of said friction wheels having a relatively soft surface engageable with said grooves for formation of a plurality of cooperating grooves in said relatively soft surface upon engagement of said friction wheels, and means for pivoting said arm between a first position engaging said belt with said pulleys and a second position engaging said friction wheels.

3,202,145
CRANKCASE FUME ELIMINATOR

John De Paolo, 1101 Green St., San Francisco, Calif.

Filed Dec. 26, 1963, Ser. No. 333,588
1 Claim. (Cl. 123—119)



A crankcase fume eliminator comprising;

(a) a hollow body providing a chamber therein having an upper portion and a lower portion and a verticle passageway connecting said upper portion and said lower portion having an annular horizontally disposed seat at its upper end coaxial therewith;

(b) an inlet opening into said upper portion and means for connecting said inlet with a line communicating with the crankcase of an internal combustion engine for carrying fumes from the latter to said upper portion;

(c) an outlet opening into said lower portion and means for connecting said outlet with the part of the fuel line leading from the carburetor to the intake manifold of said engine whereby the suction within said chamber will vary according to the speed of said engine with said suction being greatest at the idling speed of said engine and progressively less as said engine is accelerated;

(d) valve means including a valve member within the upper portion of said chamber coaxial with said seat movable from an elevated position when said suction in said chamber is least to a lowered position against said seat when said suction in said chamber is greatest;

(e) indicator means on said valve member projecting outwardly of said housing and visible for observation at all times;

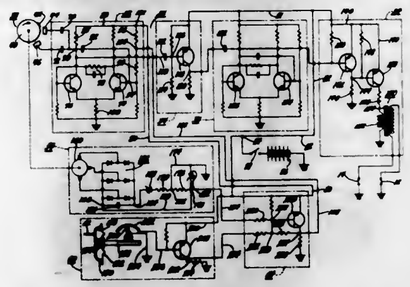
(f) yieldable means reacting between said indicator means and said housing yieldably holding said valve member elevated in open position spaced from said seat against the influence of suction within said chamber when said suction is least and movable under the influence of such suction to closed position when said suction is greatest; and

(g) said valve member being provided with a duct communicating between said upper and said lower portions of said chamber when said member is moved to said closed position for preventing accumulation of dangerous pressure in said crankcase when said crankcase eliminator is on an engine with said upper portion connected with such crankcase and with said lower portion connected with said carburetor in the event said valve member should be stuck in its closed position.

3,202,146
STATIC TRANSISTORIZED IGNITION SYSTEM

Brooks H. Short and Thomas E. Kirk, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 11, 1962, Ser. No. 187,169
11 Claims. (Cl. 123—148)



1. An ignition system for an internal combustion engine comprising, an ignition coil having a primary winding, an energizing circuit for said primary winding, first generator means driven by said engine for generating a first signal voltage which occurs in timed relationship with said engine, second generator means driven by said engine for generating a second signal voltage which is a function of speed of said engine, means for deriving a third signal voltage which is a function of engine load conditions, and means for making and breaking said primary winding energizing circuit in accordance with said first, second and third signal voltages.

3,202,147
METHOD FOR MAKING GIRDLES

Siegfried Roos, St. Maartensdijk, Netherlands, assignor to Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek ten behoeve van Nijverheid Handel en Verkeer, The Hague, Netherlands, a corporation of the Netherlands

Filed May 21, 1963, Ser. No. 282,123
2 Claims. (Cl. 125—30)

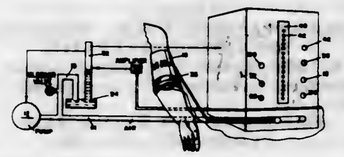


1. An improved method for making girdles on more than one rough stone at a time which comprises the steps of firmly affixing a rough stone between a dop and a counteracting pin, rotating said affixed rough stone about the axis of the center of its table, firmly affixing a second rough stone between a dop and a counteracting pin, rotating said affixed second rough stone about the axis of the center of its table, said axes of rotation of said stones crossing each other and unyielding with respect to each other, bringing the peripheral edges of the tables of said rotating rough stones into firm contact whereby the peripheral edges of the tables of said rotating rough stones work on each other, continuing the firm contact between said tables of said rotating rough stones by moving said axes of rotation of said stones toward each other until a girdle is formed on one of said rough stones, and a partial girdle is formed on the other of said rough stones, removing the semifinished stone having said girdle, replacing said semifinished stone having said girdle with a third rough stone and repeating the process to form a girdle on said rough stone having a partial girdle and a partial girdle on said third rough stone.

3,202,148
BLOOD PRESSURE MONITOR

Seymour B. London, 35 E. Dilido Drive, Dilido Ave., Miami, Fla.

Filed Nov. 27, 1962, Ser. No. 240,313
7 Claims. (Cl. 128—2.05)



2. A blood pressure monitor apparatus comprising:

(A) an inflatable cuff;

(B) pump inflating means in communication with said cuff;

(C) a bleeder valve positioned intermediate said pump inflating means and said cuff to allow said cuff to slowly decompress;

(D) electrically conductive detector means in communication with said cuff and responsive to the pressure gradient in said cuff;

(E) a display panel electrically connected to said pressure responsive detector, said display panel including visual indicia means corresponding to the pressure level gradients in said detector;

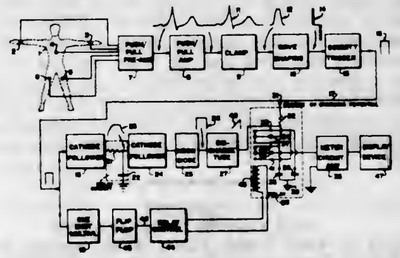
(F) a source of electrical energy supplying said pump inflating means, detector means, and display panel; and

(G) sound detecting means in communication with said cuff and relayed to said visual indicia independently of said source of electrical energy supplying said pump inflating means, detector means and display panel so as to limit electrical energization of said indicia, except as sounds are detected.

3,202,149
CARDIOTACHOMETER

Donald La Vern Emmons, La Puente, Calif., assignor to The Bircher Corporation, Los Angeles, Calif., a corporation of California

Filed Feb. 27, 1963, Ser. No. 261,374
12 Claims. (Cl. 128—2.05)



1. A cardiotachometer comprising:

electrical means to convert heart beats into corresponding pulses of substantially fixed width;

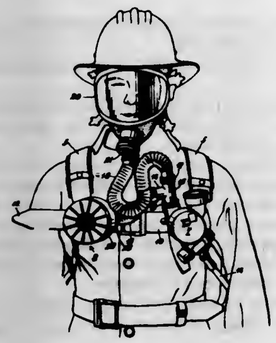
first and second capacitors;

circuit means connected to said electrical means to alternately charge and discharge one or the other of said capacitors at the rate of occurrence of said pulses;

control means to alternately connect said first and said second capacitors to said circuit means during successive sampling intervals; and

voltage measuring means for indicating the accumulated charge on one of said capacitors while the other of said capacitors is connected to said circuit means and thereby indicate the rate of occurrence of said heart beats during said successive sampling intervals.

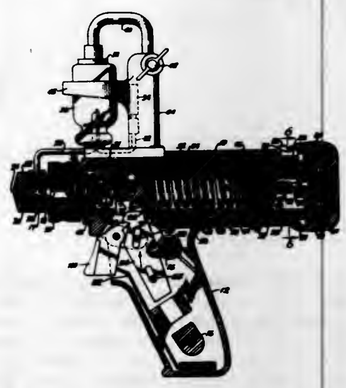
3,202,150
FILTER ATTACHMENT FOR A PRESSURIZED BREATHING APPARATUS
Arthur E. Miller, Buffalo, N.Y., assignor to Scott Aviation Corporation, Lancaster, N.Y., a corporation of New York
Filed June 11, 1962, Ser. No. 201,521
3 Claims. (Cl. 128—142)



1. Portable breathing apparatus comprising, in combination, a face mask, an exhalation valve connected to said mask, a filter tubularly connected to said mask for supplying filtered ambient air to said mask, a container of compressed breathing fluid, a demand regulator of the positive pressure type tubularly connected to said container and to said mask for supplying breathing fluid to said mask from said container on demand, and a check valve in the tubular connection between said filter and said mask preventing the escape of breathing fluid from said container through said filter, said filter, said container and said regulator being adapted to be carried by the user, wherein the tubular connections between said filter and said mask and between said regulator and said mask include a T fitting, means detachably connecting said fitting to said regulator, a first hose interconnecting said filter and said fitting, a second hose interconnecting said mask and said fitting, and means detachably connecting said second hose to said fitting both said means being interchangeable whereby said second hose can be detached from said fitting and attached to said regulator upon detachment of said fitting from said regulator.

3,202,151
MULTIDOSE JET INJECTOR
Alfred W. Kath, Grosse Pointe, Mich., assignor to R. P. Scherer Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 8, 1963, Ser. No. 271,205
4 Claims. (Cl. 128—173)

3. An injector instrument comprising an elongated body defining at one end a medicament chamber having a discharge orifice, a spring actuated plunger slidable within said medicament chamber, a spring assembly carried within said body between said medicament chamber and the other end of the body to actuate said plunger, a releasable latch mounted in said body and operatively associated with said spring assembly to lock said spring assembly in a compressed position, compressing means operatively associated with said spring assembly for compressing the spring assembly comprising a rotatable member having a helical groove thereon, a nut coacting with said rotatable member to be moved in a linear direction upon rotation of said rotatable member, said spring assembly being compressed between said latch and said nut when the nut is moved linearly in one direction upon



rotation of said rotatable member in one direction, a plurality of friction reducing rolling balls circulating through said groove in engagement with said nut, return means for providing continuous circulation of said balls within said groove, and return spring means operatively associated with said plunger for prepositioning said plunger and the uncompressed spring assembly after discharge of medicament from said medicament chamber by counter-rotating said rotatable member.

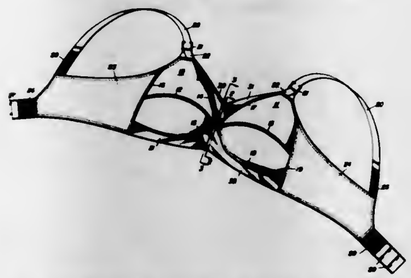
3,202,152
VACUUM EXTRACTOR FOR CHILDBIRTH
John F. Wood, 1933 Pacific Ave., Forest Grove, Oreg.; Richard E. Eby, 302 Chanticleer Lane, Hinsdale, Ill.; and Theodore C. Neward, 1246 E. 5th Ave., Pomona, Calif.
Filed Mar. 8, 1963, Ser. No. 263,850
5 Claims. (Cl. 128—361)



1. An extractor for childbirth comprising
an elongated hollow stem of stiff material having an opening at one end thereof communicating with the interior of the stem that enables the evacuation of air from said extractor through said stem,
a cup of stiff material having an open mouth over the front thereof,
said stem being fixedly joined to the back of said cup with the interior of the cup communicating with the interior of the stem, and

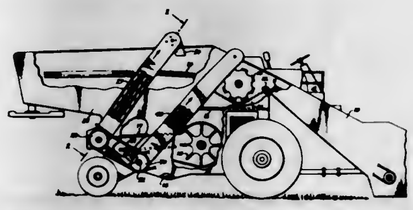
a vacuum-distributor element within said cup,
said element including a plate portion extending across the cup inwardly from the mouth thereof, and
a stud portion joined to said plate portion extending into and wedged within the interior of said stem,
said stud portion including means accommodating the passage of air over the length thereof.

3,202,153
BRASSIERE
Charles M. Sachs, Fort Lee, and Edward Jannicelli, Jr., Ramsey, N.J., assignors to International Latex Corporation, Playtex Park, Dover, Del., a corporation of Delaware
Filed Mar. 3, 1964, Ser. No. 349,072
6 Claims. (Cl. 128—483)



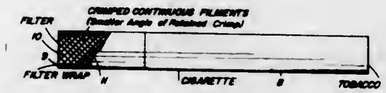
1. A brassiere embodying right and left breast pockets, a pair of crossed cradle bands made of stretchable fabric connecting the two pockets, one cradle band having a first edge connected to the inner margin of the right pocket and terminating near the top of the right pocket, a second edge extending freely from approximately the top of the right pocket down to the upper inner margin of the left breast pocket, a third edge connected to and along the upper inner margin of the left pocket and extending downwardly along and connected to the bottom margin of the left pocket, and a fourth edge constituting the bottom of the brassiere extending freely from below the bottom margin of the left pocket across the center of the brassiere to below the right pocket, the other cradle band being reversely corresponding, the free bottom edges of the cradle bands crossing each other at a slight angle, and back bands connected to the pockets and adapted to hold the brassiere on the body of the wearer, the said cradle bands being capable of stretching and pivoting simultaneously.

3,202,154
GRAIN SAVING ATTACHMENT FOR COMBINE
Carl H. Viebrock, P.O. Box 84, Douglas, Wash.
Filed July 3, 1963, Ser. No. 292,659
3 Claims. (Cl. 130—27)



1. In a threshing machine, threshing means including a threshing cylinder, a straw walker for transporting a bed-like layer of straw from the cylinder to be discharged at the rear of the machine, a sieve below said straw walker for carrying tailings; a fan below for directing air upwardly through the said sieve to remove chaff from the said tailings, a transverse trough adjacent the discharge end of said sieve, said trough being at all times uncovered for the reception and collection of tailings unworked by said airflow and discharged rearwardly over the end of said sieve, means mounting said trough to allow rotation of the trough about its longitudinal axis for adjustment of the height of the trailing lip of the trough, an auger in said trough for conveyance of tailings along the length of said trough to one end thereof, and an elevator at one end of said trough to receive the tailings from the auger and deliver them upwardly for distribution directly upon the layer of straw lying upon the straw walkers and thereby cause the grain therein to gravitate through the straw and be collected.

3,202,155
LIGHT WEIGHT CIGARETTE FILTER
James F. Caines, Richard F. Dyer, and James Knox Pannill, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 81,593, Jan. 9, 1961. This application June 5, 1964, Ser. No. 379,425
4 Claims. (Cl. 131—10)

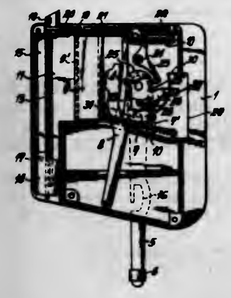


1. As a new article of manufacture a filter rod useful as a tobacco smoke filter comprised of a cylindrical bundle of at least 10,000 crimped continuous spun filaments of a denier per filament below 8, said crimp being uniform and of the order of at least 9 crimps per inch, said crimped filaments extending the length of the rod and some of said filaments being adhered to adjacent filaments at zones of contact by plasticizer action, a wrapper around the periphery of said rod, said rod being characterized in that the aforesaid initial uniform crimp in the filaments has not been materially diminished during the cylindrical blooming step employed in making the rods whereby the average angle of retained crimp of each of said crimped filaments is sharp and is less than 100° and the weight of this new rod is at least 3% less than the weight of a tension bloomed prior art rod containing filaments of equal denier and having like length, circumference, pressure drop and tobacco smoke removal efficiency.

3,202,156
APPARATUS FOR FILLING PAPER CIGARETTE TUBES WITH TOBACCO
Otto Kappeler and Rudolf Mesmer, Trossingen, Germany, assignors to Efka-Werke Fritz Klein G.m.b.H., Trossingen, Germany
Filed Jan. 15, 1964, Ser. No. 337,899
Claims priority, application Germany, Jan. 19, 1963, E 24,208
10 Claims. (Cl. 131—70)

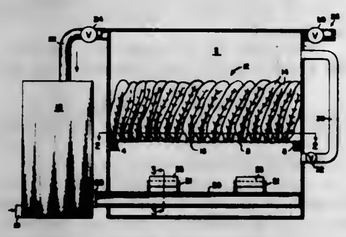
1. Apparatus for filling cigarette tubes with tobacco comprising, in combination:
(a) a support member;
(b) an operating member mounted on said support member for movement relative to said support member in a path between a starting position, an intermediate position, and a terminal position, said intermediate position being oppositely spaced from said starting and terminal positions;
(c) cooperating abutment means on said members for arresting movement of said operating member in said terminal position;

(d) fastening means for releasably fastening one of said abutment means to a corresponding one of said members in a plurality of positions spaced from each other in the direction of said path and for thereby varying the spacing between said intermediate and terminal positions;
(e) pressure means movable on said support member for compressing an amount of tobacco into a column;
(f) holding means on said support member for holding a cigarette tube;
(g) ejecting means movable on said support member for ejecting said column into a cigarette tube held by said holding means;



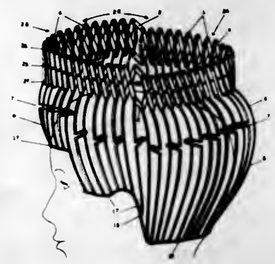
(h) first motion transmitting means interposed between said operating member and said pressure means for moving said pressure means over a fixed distance while said operating member moves from said starting position to said intermediate position; and
(i) second motion transmitting means interposed between said operating member and said ejecting means for moving said ejecting means while said operating member moves from said intermediate position to said terminal position, and for thereby ejecting said column over a distance which is a direct function of the spacing of said intermediate and terminal positions.

3,202,157
APPARATUS FOR TREATING OR CONDITIONING TOBACCO
Rush D. Touton, Wynnewood, Pa., assignor to Wurton Machine Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 17, 1961, Ser. No. 124,721
2 Claims. (Cl. 131—134)



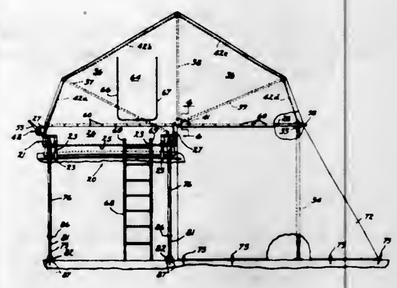
2. Apparatus for treating tobacco with conditioned air comprising a chamber, a screen fixedly mounted within said chamber for the support of tobacco leaves in an upstanding position to form a bed of tobacco leaves, air conditioning apparatus, said air conditioning apparatus introducing conditioned air below said screen in said chamber and including means discharging the conditioned air towards the butts of the leaves, and means to return air to said conditioning apparatus from the upper portion of said chamber, a by-pass conduit connecting the lower portion of the chamber below said bed to the upper portion of the chamber at a point remote from said air returning means for passage of by-passed air across and above said leaves and to said air conditioning apparatus and a valve controlling flow through said conduit.

3,202,158
HAIRCUTTING GUIDE
Francis A. Dumont, 163 Cornell St., Cranston 9, R.I.
Filed Jan. 17, 1962, Ser. No. 166,748
9 Claims. (Cl. 132—45)



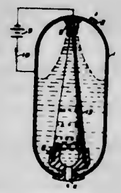
1. A haircutting guide comprising an expandable halo frame, downwardly depending bars for guiding a haircutter attached at their upper portions to said frame at spaced locations along the extent of the frame, the lower ends of said bars together being contoured to correspond to the desired hair line, means to hold the lower ends of the bars in spaced relation along the hair line, said bars being expanded laterally with respect to each other upon expansion of the encircling size of the halo frame.

3,202,159
CAR-TOP TENT STRUCTURE
Robert J. Reed, Lakewood, Ohio
(815 Boston Post Road, Rye, N.Y.)
Filed June 4, 1962, Ser. No. 199,794
4 Claims. (Cl. 135—1)



1. A car-top tent house comprising a generally rectangular box assembly having a bottom, pairs of side and end walls, and a rigid top panel hingedly connected along one end thereof to one of said end walls for swinging movement from a box closing position through 180° to an open position extending horizontally outwardly from one end of the box, a plurality of generally U-shaped arch-frames each having its opposite ends respectively pivotally connected to opposite sides of said box assembly for swinging about an axis parallel to and closely adjacent the hinge axis of said top panel and said one end wall, said arch-frames being proportioned for swinging from angularly diverging, generally upwardly arched positions when said top panel is in said open position to lowered positions inside of and below the upper edges of said box assembly when the top panel is in said box closing position, and a foldable fabric tailored to form a tent supported on and conforming to said arch-frames in their upwardly arched positions when said top panel is in said open position, said tent having a lower end wall and side wall periphery extending along and secured to the periphery of said box assembly when the top panel is in its open position for enclosing the upper surfaces of the entire box assembly in that condition with a continuous end and top portion of the tent fabric extending under tension from its peripheral securement to the other end wall of said box assembly, over each of its diverging arch frames, to its peripheral securement to the end of said top panel opposite the hinged end thereof for at least partially supporting the top panel in its open position and preventing sagging of the top portions of the tent between said arch frames.

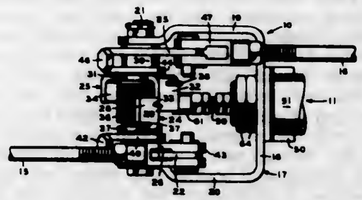
3,202,160
METHOD AND APPARATUS FOR ORIENTING FLUIDS IN ZERO GRAVITY FIELDS
J P Barger, Arlington, Mass., assignor to Dynatech Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed May 24, 1961, Ser. No. 112,426
23 Claims. (Cl. 137—1)



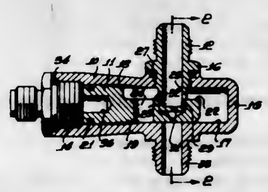
1. Apparatus for selectively positioning a dielectric liquid in a zero-gravity field comprising containing means for containing said liquid, generating means for generating a non-uniform electric field having its greatest field intensity in the vicinity of the position desired for said liquid, said containing means having an outlet in the vicinity of said greatest intensity.

3,202,161
ENGINE SAFETY CONTROL DEVICE AND SYSTEM
Grahame P. Richards, St. John, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Nov. 14, 1961, Ser. No. 152,311
5 Claims. (Cl. 137—18)

2. In a vehicle engine including fuel feeding means having throttle valve means for controlling the rate of fuel feed and being movable between an idle position of minimum feed and a throttle position increasing the flow rate for engine acceleration, and manual accelerator means for operating said throttle valve means and including an engine throttle linkage having accelerator and throttle rods; the combination of a safety device interposed between said accelerator and throttle rods comprising relatively rotatable first and second members to which said accelerator and throttle rods, respectively, are connected, means yieldably connecting said first and second members for normally providing concert movement of said members and rods between said idle and throttle positions, said system also including a normally inoperative air cylinder having piston ram means adapted for movement to engage said second member to effect the idle position thereof, and means for actuating said piston ram means including a solenoid coil and normally open switch means associated with a vehicle engine and adapted to be closed to energize said solenoid coil.



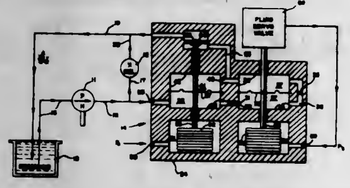
3,202,162
NORMALLY-CLOSED EXPLOSIVE-ACTUATED VALVE
Hans F. Eckardt, 18161 Allegheny Drive, Santa Ana, Calif., and John L. Marsh, 628 Arbolado Drive, Fullerton, Calif.
Continuation of application Ser. No. 27,870, May 9, 1960. This application Jan. 7, 1963, Ser. No. 249,953
5 Claims. (Cl. 137—68)



1. A normally-closed explosive-actuated valve, comprising an elongated hollow valve body having a closed end and an open end, the interior wall of said body being a relatively small-diameter cylinder adjacent said closed end and a relatively large-diameter cylinder adjacent said open end, said large-diameter and small-diameter cylindrical walls being axially spaced from each other and being connected by a frustoconical wall, an elongated one-piece ram mounted axially of said valve body for longitudinal movement therein, said ram having an inner portion which is disposed radially-inwardly of said small-diameter cylindrical wall when the valve is in open condition, positive stop means provided in said valve body to stop movement of said ram at a predetermined point relatively adjacent said closed end, said ram also having a tapered portion corresponding generally to said frustoconical wall of said valve body and disposed to come into forceful engagement therewith prior to engagement of said ram with said positive stop means, said inner portion of said ram being provided with a flat surface lying in a plane parallel to the axis of said ram and relatively adjacent thereto, said inner portion of said ram having a cylindrical recess formed therein relatively adjacent the extreme inner end of said ram, said inner portion of said ram also having a cylindrical port formed therethrough

parallel to said recess and disposed more remote than said recess from said extreme inner end of said ram, the axes of said recess and port being perpendicular to said flat surface, a nipple element mounted radially on said valve body and having a blind inner end extending into said recess, said nipple element also having a passage therethrough adapted to conduct fluid in response to removal of said blind inner end, said blind inner end of said nipple being associated with the main body thereof by a frangible connecting portion, said valve body having a radial outlet passage disposed coaxially with said nipple, said passage through said nipple and said outlet passage having diameters corresponding to each other and to that said open end of said valve body and adapted to be ignited to effect explosive propulsion of said ram inwardly until of said port through said ram, and a squib mounted in said ram engages said positive stop means, said port being so related to said recess that said port will be disposed coaxially with said passage through said nipple and with said outlet passage when said ram is engaged with said positive stop means to thereby create a straight-through flow passage through said port, said interior of said valve body being free of objects between said squib and said ram.

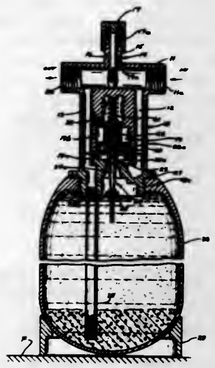
3,202,163
PRESSURE RATIO CONTROLLER
George R. Howland, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,517
9 Claims. (Cl. 137—98)



1. In a pressure ratio controller, the combination comprising:
(a) a first pressure drop device,
(b) a second pressure drop device,
(c) means for summing and comparing the sum of the pressure drops across said first and second pressure drop devices with a first input signal, and for adjusting the pressure drop across said first and second pressure drop device so that the sum of the pressure drops equal the first input signal,
(d) means for comparing the pressure drop across said second pressure drop device with a second input signal and for causing an output signal when the second input signal and the drop across said second pressure drop device are not equal,
(e) and means operable by said output signal for causing said second input signal to equal the pressure drop across said second pressure drop device.

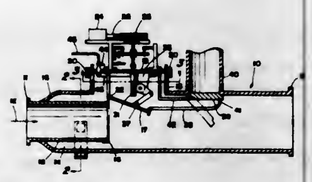
3,202,164
LIQUID SOLUTION FEEDING DEVICE
Richard G. Thompson, Stillwater, Richard D. Tyler, St. Paul, and Thomas W. Techler, North St. Paul, Minn., assignors to Union Tank Car Company, Jersey City, N.J., a corporation of New Jersey
Filed May 3, 1963, Ser. No. 277,772
5 Claims. (Cl. 137—101.11)

1. In apparatus for feeding a liquid into fluid flowing through a conduit, comprising:
(A) coupling means connectable to said conduit so that said fluid flows therethrough,
(B) means restricting flow through said coupling means so that the fluid pressure on the upstream side of said flow restricting means is greater than on its downstream side,
(C) means containing a supply of said liquid,
(D) pressure responsive means in a chamber,
(E) means defining a first passage connecting one side of said pressure responsive means to said coupling on the upstream side of said flow restricting means, and
(F) means defining a second passage connecting said liquid containing means to said coupling on the downstream side of said flow restricting means, said second passage communicating with the other side of said pressure responsive means,



the improvement in means for maintaining a substantially constant proportion of said liquid in said fluid even though the flow rate of said fluid varies, comprising:
(1) means defining a valve opening connecting said chamber to said liquid containing means, said valve opening providing the only passage permitting fluid in said first passage to enter said liquid containing means, and
(2) valve means connected to said pressure responsive means so as to move to vary the size of said valve opening to cause fluid from said first passage to flow therethrough in direct proportion to the rate of flow of fluid in said conduit.

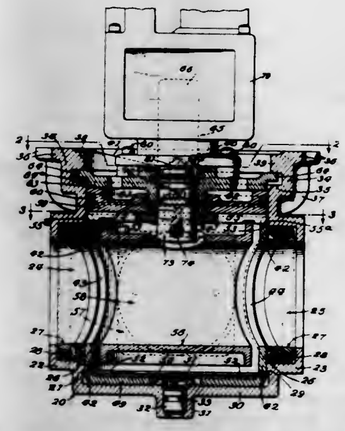
3,202,165
AUTOMATIC SEWER BACK-UP VALVE
Camillo Yavicoli, 4303 Tamalga Drive, South Euclid, Ohio
Filed Aug. 9, 1962, Ser. No. 215,903
3 Claims. (Cl. 137—107)



1. In a valve apparatus for controlling back-up flow in a sewer line, the combination of a pipe line for discharging sewage from an inhabited structure to a sewer, an internal flow sleeve having a discharge end of smaller diameter than said pipe line mounted within a portion of said pipe line in the path of liquid flow therein and

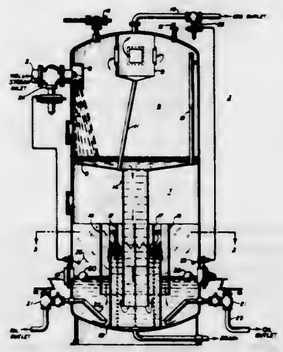
providing an annular chamber between said sleeve and said pipe line, a liquid-level sensing device disposed exteriorly of said pipe line, the wall of said portion of said pipe line being provided with openings establishing flow communication between said annular chamber and said liquid-level sensing device, said openings being shielded by said sleeve from exposure to the discharging flow of liquid in its normal direction of movement in said pipe line, but being exposed to back-up flow of liquid into said annular chamber, and valve means actuated by said liquid-level sensing device in response to a predetermined level of back-up flow into said chamber and through said openings for sealing said discharge end of said sleeve against said backup flow.

3,202,166
SHUT-OFF VALVE ASSEMBLY HAVING A REMOVABLE PLUG
Vincent A. Butler, Los Angeles, Calif., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 29, 1959, Ser. No. 816,808
14 Claims. (Cl. 137—115)



1. In a shut-off valve assembly having a valve plug axially withdrawable from a valve casing, said valve casing having a side wall concentric with said plug and formed with an inlet and an outlet; a normally non-rotatable valve sleeve interposed between said plug and said side wall, said valve sleeve having ports normally registering with said inlet and outlet respectively and controlled by said valve plug, cooperating means carried by said valve plug, said cooperating means being directly engageable and cooperable with said valve sleeve for closing said valve sleeve ports upon rotation of said valve plug relative to said valve sleeve, means for holding said valve sleeve against axial shifting, and means whereby said valve sleeve may be turned to close said inlet and outlet prior to withdrawal of said valve plug, a turnable member releasably engaged with said casing for normally holding said plug against withdrawal, said turnable member being turnable about an axis aligned with the axis of said plug to a predetermined position in which it is freed from engagement with said casing to permit plug withdrawal, said turnable member constituting an actuator for said valve-sleeve-turning means, and said valve-sleeve-turning means having a separable connection with said valve sleeve to disengage said turning means from said valve sleeve during plug withdrawal.

3,202,167
LIQUID DISTRIBUTION SYSTEM
Charles Edward De Young, Houston, Tex., and Irvine E. Gandee, Tulsa, Okla., assignors to National Tank Company, Tulsa, Okla., a corporation of Nevada
Continuation of application Ser. No. 26,140, May 2, 1960. This application Sept. 24, 1962, Ser. No. 226,483
10 Claims. (Cl. 137—173)

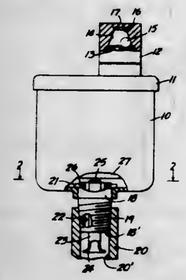


1. A system for distributing the liquids of a mixture of liquids and gas among a number of liquid processing units, including,
a vessel,
an inlet conduit connected to the vessel for introducing a mixture of liquids and gas into a first compartment within the vessel,
a gas outlet conduit connected to the vessel with which to discharge gas of the mixture from the vessel,
a collecting chamber connected to the first compartment to receive liquids from the first compartment,
a plurality of liquid outlets from the collecting chamber providing a weir in each outlet to flow a portion of the liquids over each weir and out of the collecting chamber,
a separate compartment connected to each liquid outlet,
a passage communicating each separate compartment to the first compartment in which the mixture of liquids and gas is introduced for applying the pressure of the gas to the surface of each portion of the liquids,
an outlet conduit connected to each separate compartment and a one of the number of liquid processing units for supplying liquids of the portion in the separate compartment to the processing unit,
and a level control mounted in each separate compartment and controlling the flow of liquids through the outlet conduit of each separate compartment to maintain the level of the liquids of the portion high enough to prevent discharge of gas from the vessel through any of the separate compartment outlet conduits.

3,202,168
AIR VALVE FOR HEATING SYSTEMS
Glenn B. Klinefelter, Mountainside, N.J., assignor to Gerton Heating Corporation, Cranford, N.J., a corporation of New York
Filed Jan. 17, 1963, Ser. No. 252,072
2 Claims. (Cl. 137—202)

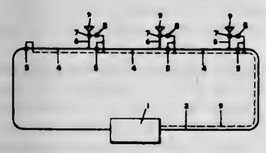
1. In air valve devices for hot water heating systems, a valve casing including a bottom wall, a nipple mounted in and projecting from said bottom wall, said nipple being

adapted to be coupled with a radiator, said nipple having a bore extending completely therethrough, a liquid feed tube arranged in and extending longitudinally of said nipple, said tube being greater in length than the length of said bore and having an outside diameter materially smaller than the diameter of the bore of said nipple, the upper end of said feed tube having a pair of laterally extending wing portions lying within the outside diameter



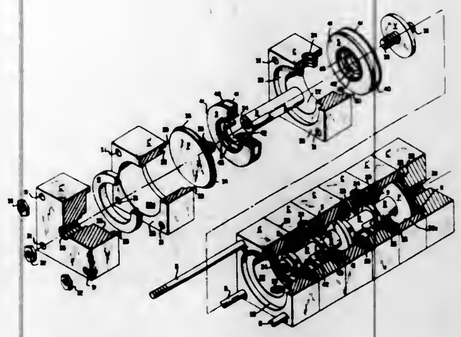
of said tube for seating said tube upon the upper end of said nipple within the casing of the device, the lower end of said feed tube having an outwardly flared annular portion greater in diameter than the diameter of said bore, and said flared portion, in combination with said wing portions, retaining the nipple and tube in an assemblage.

3,202,169
APPARATUS FOR PIPELINE TRANSPORT OF LIQUID, PARTICULARLY MILK
Hendrik Raayen, Rotterdam, Netherlands, assignor to Van Rietschoten & Houwens' Technische Maatschappij "Pneumatisk" N.V., Rotterdam, Netherlands, a corporation of the Netherlands
Filed June 14, 1963, Ser. No. 287,816
Claims priority, application Netherlands, June 15, 1962, 279,788
3 Claims. (Cl. 137—268)



1. An apparatus for pipeline transport of liquid, particularly milk, comprising a central receiving station, a ring conduit having its ends connected to the central receiving station, a plurality of delivery stations each having a delivery conduit connected to the ring conduit at respective different locations spaced along the ring conduit, a delivery valve in each of the delivery conduits, a plurality of distributor valves in the ring conduit and spaced therealong, each delivery conduit being connected to the ring conduit between two consecutive distributor valves, each delivery valve and distributor valve having a valve operating means, a valve operating circuit connected to each of the delivery and distributor valves, the valve operating means for the delivery valves and the valve operating means for the distributor valves being such that the delivery valves are opened by the valve operating circuit when the distributor valves are closed by such circuit and vice versa, means for selectively energizing the valve operating circuit to operate the delivery and distributor valves and a separately controlled operating means for each delivery valve for selectively disabling the controlling of each delivery valve by the valve operating circuit, whereby the contents of each delivery station may be separately emptied into the receiving station through the ring conduit.

3,202,170
VALVE ASSEMBLY OF INTERCHANGEABLE PARTS
Edward L. Holbrook, Greenville, S.C. (9388 Daly Road, Cincinnati, Ohio)
Filed Nov. 28, 1962, Ser. No. 240,519
23 Claims. (Cl. 137—269)



4. In a fluid-pressure control a valve member assembly for use in a sectionalized valve casing having radially inwardly projecting spaced annular valve seats in an elongated valve-chamber, said assembly comprising at least one disc-form valve member reciprocably disposed in said chamber between opposing valve-seats and having a threaded stud extending centrally from its opposite faces respectively, and coupling rods each having an internally threaded socket at each end thereof to cooperatively receive said studs, one of said rods being connected to a stud of each valve member, respectively, to form a supportable valve-stem therefor, whereby another identical valve member may be connected to the other ends of said coupling rods to form a tandem unitary multi-valve member assembly.

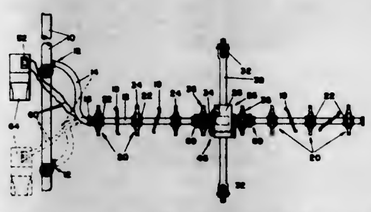
3,202,171
WELDED SLIDE VALVE CASING WITH SEALING FACE SUPPORTING MEANS
Hermann Rappold, Johannes Uerlichs, and Rudolf Müller, Duren-Birkesdorf, Germany, assignors to Hermann Rappold & Co. G.m.b.H., Duren-Birkesdorf, Germany
Filed June 1, 1962, Ser. No. 199,426
Claims priority, application Germany, June 9, 1961, R 30,493
6 Claims. (Cl. 137—340)

1. A shut-off slide valve casing, in particular for a hot air slide valve comprising a casing having peripheral flange portions, sealing faces upon said casing which cooperate with the sealing faces of the slider body, said casing having cooling spaces to cool said sealing faces upon said slide valve casing, said slide valve casing having said sealing faces being welded and supporting



means located adjacent said sealing faces for stiffening the same cooperating with said flange portions.

3,202,172
POWER UNIT FOR WHEEL-SUPPORTED FLUID CONDUIT
James A. Bergeron and James S. Stinnett, Spokane, Wash., assignors to Anderson-Miller Manufacturing Company, a corporation of Washington
Filed Apr. 15, 1963, Ser. No. 272,973
11 Claims. (Cl. 137—344)

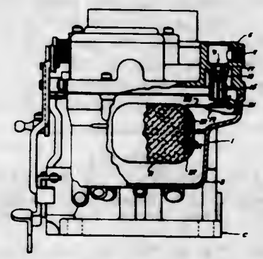


1. Driving means in wheel supported fluid conduit, comprising:
- a wheel supported drive tube encircling a portion of said conduit and journaled for rotation thereabout;
- clutch means rigidly interconnecting said drive tube and said conduit for coincident rotation and releasable to permit relative rotation of said drive tube and conduit; and
- manually controllable reversible power means drivingly interconnected to rotate said drive tube.

3,202,173
CARBURETOR
Jesse L. Szwargulski, Florissant, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Oct. 2, 1961, Ser. No. 142,364
2 Claims. (Cl. 137—426)

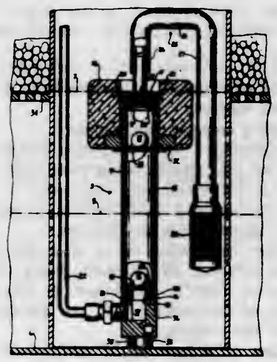
1. A carburetor comprising a fuel bowl, means forming an inlet passage into said fuel bowl, said means including a tubular portion having a circular valve seat coaxially formed therein and comprising part of said fuel passage, an elongated valve fitted within said tubular portion for axial movement therein and having a valve surface at one end fitted to said valve seat to close said fuel passage, a float lever pivotally mounted in said fuel reservoir, said float lever having a surface portion in

sliding contact with the other end of said elongated valve and normal to the axis of said tubular member and said elongated valve when said valve is closed, a float, a slot in said float, said float lever having an arm ex-



tending substantially at right angles to said float lever and extending into said slot, and resilient means fixed to said arm and pressing against the walls of said slot to adjustably hold said arm within said slot and to provide frictional engagement therewith.

3,202,174
FLOAT ACTUATED FILL VALVE
John Rudelick, Milwaukee, Wis., assignor to Bruner Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 25, 1963, Ser. No. 275,571
4 Claims. (Cl. 137—432)

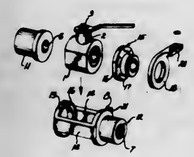


3. A liquid level responsive valve mechanism of the type comprising a valve body having inlet and outlet ports and an inwardly facing annular valve seat between said ports, a valve element in the body movable toward and from a closed position engaging the valve seat to block flow of liquid from the inlet port to the outlet port, and a float mounted externally of the valve body and constrained to up and down motion relative thereto so as to be responsive to the level of liquid in a vessel in which the valve mechanism is mounted, said valve mechanism being characterized by the following:
- (A) the valve seat faces downwardly, and the valve element is movable upwardly to and downwardly from its closed position;
- (B) the valve element and the float each comprises a magnetically permeable member;
- (C) one of said magnetically permeable members is a permanent magnet, so that the valve element can be magnetically connected with the float through the valve body for up and down motion to and from its

seat in unison with up and down motion of the float; and

(D) upwardly facing stop means is fixed inside the valve body spaced below the valve seat to be engaged by the valve element when the same is out of its closed position, said stop means being at a level at least as high as the lowest level to which the float can descend so that the magnetic connection between the valve element and the float always obtains as the float rises toward and reaches the liquid level at which valve closure is to take place.

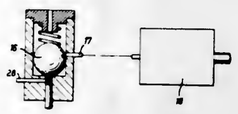
3,202,175
NIPPLE ATTACHMENT TO A VALVE BODY
Robert P. Dumm, Long Beach, Calif., assignor to Pacific Valves, Inc., Long Beach, Calif., a corporation of California
Filed May 6, 1963, Ser. No. 278,360
3 Claims. (Cl. 137—454.2)



1. A nipple attachment to a valve body comprising a pair of spaced nipples,
ribs extending between said nipples,
said ribs defining a valve receiving chamber therebetween, and said nipples being positioned one at each end of the valve receiving chamber,
the valve including a body having a passage therethrough aligned with said nipples,
said chamber being open on at least one side thereof to allow entrance of the valve body therethrough,
a compression ring in said chamber bearing against one face of the valve body, and slidably mounted in one of the nipples,
cam surfaces on a face of the compression ring,
and a cam ring rotatably mounted in said chamber and rotatably engaging said compression ring to press the compression ring against the valve body.

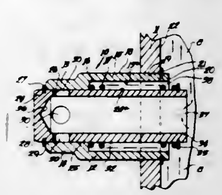
3,202,176
DISPLACEMENT RELAY
Willi Kirchner, Schweinfurt, Germany, assignor to Kugelfischer Georg Schafer & Co., Schweinfurt, Germany
Filed Aug. 11, 1960, Ser. No. 48,982
Claims priority, application Germany, Aug. 19, 1959, K 38,484
1 Claim. (Cl. 137—464)

Relay device of the character described comprising a cylinder, a ball type piston disposed in the cylinder, said cylinder having opposing inner ends, a spring located between one of the ends of the cylinder and the adjoining end of the piston for biasing the piston to a rest position against the other inner end of the cylinder, said piston having its peripheral portion in sealing engagement with the inner surface of said cylinder to substantially seal off communication between said opposing inner ends of said cylinder and the opposite sides of said piston, a bore in the other end of the cylinder, and actuating peg slidably disposed in said bore and bearing against the piston to move the piston a slight distance from its rest position, said peg having a smaller diameter at the inner end of the bore to define an annular space between the peg and the bore constituting an entry port for compressed air, which port is uncovered by the slight movement of the piston so that the compressed air, which is constantly present in the port, enters the cylinder to act against the



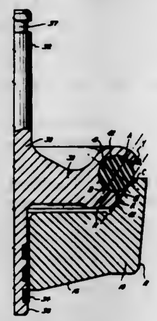
entire face of the piston and displace the piston further in the cylinder against the force of the spring, means supplying compressed air to said space, said entry port being small relative to the end face of the piston in the rest position of the piston and the air pressure being of such a value that it only causes movement of the piston when it acts on the entire end face of the piston, said cylinder having at least one air escape passage which is uncovered by such further movement of the piston in the cylinder.

3,202,177
PRESSURE REGULATING VALVE
Robert J. Klein, Elmhurst, and Christ P. Bozos, Hinsdale, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Nov. 20, 1961, Ser. No. 153,278
4 Claims. (Cl. 137—514.7)



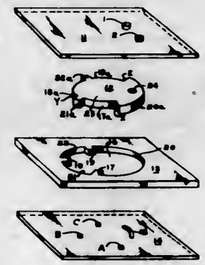
1. A capsule type pressure regulating valve for mounting snugly in an opening in a vessel wall containing a fluid under pressure comprising an outer element adapted to be lodged in an opening and having an outer peripheral flange means at one end of the valve for engaging and limiting outward movement of the element relative to a wall, an inner element reciprocal within the outer element and having an outer peripheral external flange means at the other end of the valve engageable with the outer element limiting movement of the inner element inwardly of the outer element, said outer element provided with a seat and said inner element provided with a seat, and resilient means between the seats urging the inner element to a closed position, said inner element having a passage having an aperture adapted for fluid communication with an opening in a vessel and having a port in the side wall of the inner element at said other end of the valve establishing communication between the passage and the outside of the inner element in an open position, the wall of the outer element being slidably engaged by the side wall of the inner element for closing and opening the port in the closed and open positions of the valve.

3,202,178
VALVES
Dunne Milton Wolfe, Oklahoma City, Okla., assignor to AMF American Iron, Inc., Oklahoma City, Okla., a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 405,301
2 Claims. (Cl. 137—516.29)



1. A slush pump valve comprising
a metal valve seat ring having an upper end and a lower end,
said seat ring having an upwardly inwardly facing conically tapered inner peripheral surface providing a valve seat,
a metal valve disc mounted for reciprocation in the line of the seat axis,
said valve disc having a downwardly outwardly facing outer peripheral seating surface conically tapered correlative to said valve seat adapted to engage the lower part of the valve seat when the disc is in the lowermost position of its range of reciprocation,
said valve disc also having a downwardly outwardly facing outer peripheral annular groove above said seating surface,
at least the portion of said disc having said groove being unitary,
an elastomer O-ring having durometer hardness in excess of 50 snapped into said groove,
said groove having a portion whose cross sections are semicircular providing a support surface,
said O-ring being in full contact engagement with said support surface,
the cone defined by the diameters of said semicircular cross sections being coaxial with and having the same size apex angle as the cone of said conically tapered seating surface of the valve disc,
the apex of said cone of said support surface being above the apex of said cone of said seating surface,
the cones of said seat, sealing surface and support surface having a taper angle between 20 and 50 degrees,
the perpendicular distance between said support surface cone being less than the radius of said semicircular cross section whereby said O-ring protrudes from said groove beyond the cone of said seatitng surface of the valve disc to engage said valve seat prior to the engagement thereof by said seating surface of the valve disc upon closure of the valve,
the thickness of the portion of said O-ring protruding beyond said seating surface cone of the valve disc being of the order of 5 to 10% of the diameter of the O-ring cross section,
said groove having a mouth formed by the portions of the groove lying outwardly downwardly from said support surface cone,
the minimum distance between the sides of said mouth of the groove being of at least about the same extent as the diameter of said semicircular cross sections to admit the O-ring,
the volume defined when said valve seat seating surface is in engagement with said valve seat by the lower side of said groove mouth and said valve seat and said support surface cone and a cone through the mid points of the diameters of said semicircular cross sections whose apex lies on the axis of the valve disc seating surface and whose apex angle is oppositely facing to and is the supplement of the apex angle of the seating surface cone apex angle being at least as large as one half the volume defined by said support surface and said support surface cone to accommodate the elastomer of the O-ring as it flows on closure of the valve,
the space between said support surface cone and said cone through the mid points and said valve seat and the upper side of said groove mouth when said valve is in closed position being at least as large as said one half the volume defined by said support surface and said support surface cone to accommodate the elastomer of the O-ring as it flows on closure of the valve,
the lower side of said mouth portion forming with the valve seat surface thereabove an obtuse angle.

3,202,179
FLUID AMPLIFIERS
Richard W. Vockroth, Jr., Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Feb. 5, 1962, Ser. No. 170,898
6 Claims. (Cl. 137—624.14)



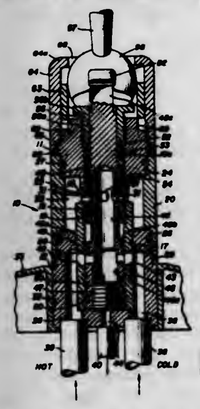
2. A pneumatic oscillator comprising a housing body having a central recessed portion with an oscillatable actuator positioned therewithin, a power channel formed in said oscillatable actuator in constant communication with a power input orifice and positionable for alternate communication with a pair of power output orifices, means for limiting the degree of rotation of said oscillatable actuator so that at each of its end limits the power channel is in alignment with one of the power output orifices, a pair of opposing fluid pressure reaction areas formed on said oscillatable actuator, a control input orifice in communication with each of said reaction areas, and feedback means extending from each of said power output orifices to the control input orifice in communication with the pressure responsive reaction area which tends to rotate the actuator in the direction necessary to position the power channel in communication with the other power output orifice.

3,202,180
FLUID PULSE GENERATOR
James L. Gray, Maple Glen, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 8, 1963, Ser. No. 257,336
9 Claims. (Cl. 137—625.15)



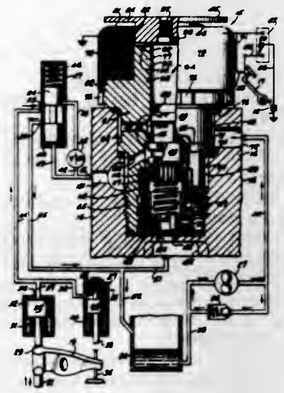
5. Fluid apparatus which comprises:
(a) a first body having a surface containing a group of spaced apart first ports therein with each in constant communication with fluid at a first value of pressure for a condition of equilibrium;
(b) a second body having a surface containing a group of spaced apart second ports therein with each in constant communication with fluid at a second value of pressure for said equilibrium differing from said first pressure value, said second body surface being adjacent to said first body surface;
(c) first means for permitting relative displacement between said surfaces such that each said first port can be placed into registration with said second ports one at a time in order to thereby upset said equilibrium during each said registration, where said first ports are arranged with respect to said second ports such that during relative displacement there can be only one registration at any one time of a pair of first and second ports both different from the pair of first and second ports of the immediately preceding timewise registration; and
(d) a second means responsive to each said equilibrium upset.

3,202,181
SINGLE LEVER MIXING FAUCET
Clarence W. West, Oak Park, Ill., assignor to Vance Industries, Inc., Chicago, Ill., a corporation of Delaware
Filed June 24, 1963, Ser. No. 289,921
16 Claims. (Cl. 137—625.17)



1. In a mixing faucet of the type characterized by a body having an axially extending central bore and an annular cavity communicating with the bore, a hollow closed end cylinder mounted for both reciprocation and rotation in said bore, which cylinder is provided with hot and cold water inlet means adjacent one end thereof and water outlet means adjacent the other end thereof, and means for reciprocating and rotating said cylinder; the provision in said body of three axially extending side bores, all of which side bores open laterally into said central bore, two of which side bores terminate in said body and the other of which side bores opens axially into said annular cavity, and a cylindrical liner in said central bore, which liner is provided with hot and cold water inlet ports for communication with the side bores terminating in said body.

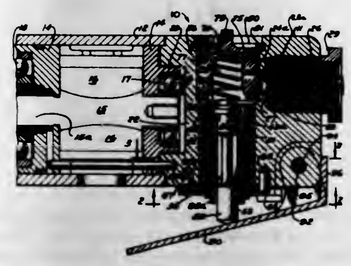
3,202,182
BALANCED POPPET VALVE
Girard S. Haviland, West Hartford, Conn., assignor to The Jacobs Manufacturing Company, West Hartford, Conn., a corporation of Connecticut
Filed Oct. 16, 1961, Ser. No. 145,298
4 Claims. (Cl. 137—625.27)



4. In a valve, a spool assembly movable axially as a unit and comprising a spool, a pair of axially spaced arcuate grooves in the spool, a pair of elastic rings mounted in the respective grooves, and a retainer sleeve having a bore surrounding the spool and having a retainer portion surrounding at least part of one of the rings, said sleeve having a shoulder at each end of the bore to resist axial movement of the sleeve relative to the rings.

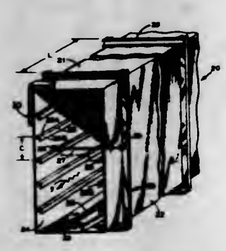
3,202,183
CONTROL VALVE
Carl J. Freuzel, Chicago, Ill., assignor to Skil Corporation, Chicago, Ill., a corporation of Delaware
Filed July 8, 1963, Ser. No. 293,501
7 Claims. (Cl. 137—637.4)

4. A control valve for reversing and regulating fluid flow comprising, a valve body having a bore opening at one end thereof exteriorly of said body, said body having an inlet port opening radially into said bore and a pair of passageways opening into said bore at points therealong longitudinally spaced from said inlet port, a liner sleeve fixedly mounted in said bore along a portion of the length of the latter, which sleeve has a pair of radially disposed openings in respective communication with said pair of passageways, a cylindrical plug rotatably mounted in said sleeve with the inner end of the plug terminating short of the inner end of said bore, which plug includes an axially extending through aperture, said plug having a radially extending port opening into said aperture and adapted for selective registration with respective openings in said sleeve upon rotation of said plug, said plug including a pair of generally diametrically oppositely disposed recesses formed in the outer surface thereof whereby when the port in said plug is in registry with one of said openings one of said recesses is in communication with the other of said openings and when the port in said plug is in registry with said other opening the other of said recesses is in communication with said one opening, said recesses being configured for defining with said liner a pair of axially extending spaces closed at the inner ends thereof and being adapted to be opened to atmosphere at the outer ends thereof, a cylindrical valve member co-axial with said plug and rotatably mounted in said bore adjacent the inner end of the latter, which member has a central



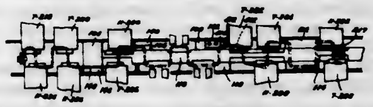
cavity adapted for communication with said aperture and which member has a groove formed in the outer cylindrical surface thereof, which groove has a depth varying uniformly along its length and which groove has an element extending along its length lying in a plane transverse to the longitudinal central axis of said member, said plane containing the longitudinal central axis of said inlet port, said member including a radially disposed passageway communicating said cavity with said groove adjacent the end of the latter having the greatest depth, whereby the rate of flow of fluid being admitted to said last mentioned passageway may be varied by rotation of said member, and means associated with said plug for selectively communicating said aperture with said cavity.

3,202,184
FLUE AND DUCT CONSTRUCTION
Russell L. Godshalk, Akron, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 18, 1960, Ser. No. 50,353
2 Claims. (Cl. 138—172)



1. A duct comprising plate means having their edge portions joined throughout their length to form an elongated fluid-tight tubular section, a plurality of spaced stiffeners extending longitudinally of said tubular section, said stiffeners being fixedly connected to the internal surface of said tubular section and arranged parallel to the flow of fluid therethrough, and a plurality of longitudinally spaced girth members disposed normal to said longitudinally extending stiffeners and fixedly positioned relative to said plate means and said stiffeners and connected at spaced intervals to the external surface of said tubular section, each of said girth members forming a closed rigid member resisting the tendency of said longitudinally extending stiffeners and said plate means to move outwardly.

3,202,185
METHOD FOR BENDING SINUOUS STRIPS
August T. Gonis, Harry H. Fanta, and Mitchell J. Shepard, Chicago, Ill., assignors, by mesne assignments, to Rockwell-Standard Corporation, a corporation of Delaware
Original application June 24, 1957, Ser. No. 667,432, now Patent No. 3,104,685, dated Sept. 24, 1963. Divided and this application Aug. 20, 1962, Ser. No. 224,882
8 Claims. (Cl. 140—71)



1. That method of twisting the straight-wire loop-connecting portions of a preformed formed sinuous wire strip to prevent distortion of the strip comprising: forcibly gripping adjacent oppositely opening loops at opposite ends of the straight-wire portion to be twisted connecting such loops, and rotating one of the loops about an axis offset from the axis of the straight-wire portion while holding the other loop stationary, said offset being such that upon release of said loops after said rotation said straight-wire portion will compensatively spring to a desired distortion correcting position within the strip.

3,202,186
CEILING HANGERS AND TOOLS FOR FORMING SAME
Louis L. Laberacki, 4932 Bryant Ave., Minneapolis 12, Minn.
Filed Nov. 6, 1961, Ser. No. 150,441
3 Claims. (Cl. 140—109)



1. A tool for twisting a free end of an elongated hanger shank, said hanger shank having a second end thereof restrained from movement, said tool comprising a guide member having a guide channel adjacent one edge thereof adapted to receive said elongated hanger shank, said guide member being provided with a cylindrical guide

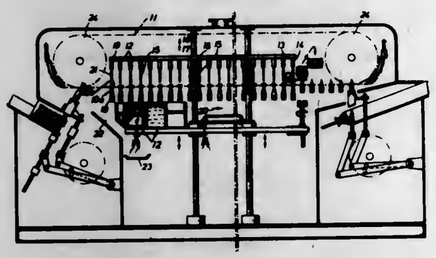
hole therethrough at substantially right angles to the longitudinal axis of said guide channel, a stop block fixedly attached to said guide member in position to engage said hanger shank when said hanger shank is in said guide channel and to position said cylnidrical guide hole a predetermined distance from the free end of said elongated hanger shank; and a driver member comprising an elongated tool shank adapted to be rotatably mounted in said guide hole of said guide member and having a driver head fixedly attached to said elongated tool shank, said driver head having a U-shaped receptacle, said receptacle being partially defined by a flat outer chordal wall surface spaced from said tool shank and extending substantially parallel to the longitudinal axis of said elongated tool shank and by an inner wall surface tangent to said tool shank and extending parallel to said outer chordal wall, said inner wall terminating along the tangent line between it and said tool shank, said driver head having a helical cam surface extending from a low point of said receptacle of said driver head and aligned with said inner wall surface of said receptacle concentric with said elongated tool shank and terminating along an outer edge of said inner wall of said U-shaped receptacle, said receptacle of said driver member being alignable with said guide channel of said guide member and adapted to receive said elongated hanger shank with said driver head contiguous to said guide member, said driver head being rotatable to form said elongated hanger shank into a coil around said tool shank.

3,202,187

MEANS FOR CLEANING AND FILLING AMPOULES, BOTTLES AND SIMILAR CONTAINERS

Wilhelm Pechmann, Dierath, Germany, assignor to Firma H. Strunck & Co., Maschinenfabrik, Cologne-Ehrenfeld, Germany, a corporation of Germany

Filed June 4, 1962, Ser. No. 199,825
Claims priority, application Germany, June 8, 1961, St 17,932
5 Claims. (Cl. 141—93)



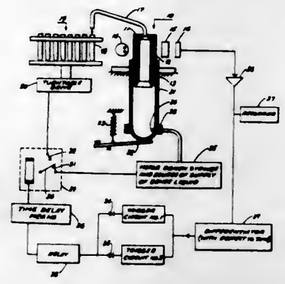
5. An apparatus for filling ampoules and similar open-ended containers, comprising conveyor means arranged to move the containers consecutively past a filling station so that the open end of each container faces upwardly; a filling device provided at said filling station and comprising substantially vertical tube means having a lower portion arranged to admit a filling substance into consecutive containers; holder means connected to said tube means; shifting means for moving said holder means so that the lower portion of said tube means may be inserted into and withdrawn through the open end of a container at said filling station; and an ejecting device located upstream of said filling station and arranged to test the dimensions of the open ends of consecutive containers and to eject from said conveyor means all such containers whose open ends are too narrow to permit entry of said tube means before such containers reach said filling station.

3,202,188

APPARATUS FOR MAKING CHEMICAL SEPARATIONS

Robert W. Allington, Lincoln, Nebr., assignor to Instrumentation Specialties Company, Lincoln, Nebr., a corporation of Nebraska

Original application Oct. 23, 1961, Ser. No. 147,015. Divided and this application Mar. 22, 1963, Ser. No. 267,211
14 Claims. (Cl. 141—130)



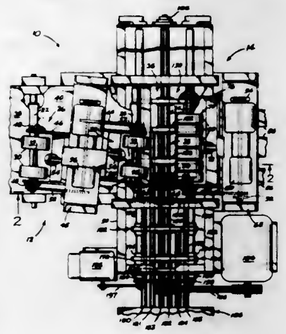
1. Apparatus for transferring fractioned liquid material from a container into separate collecting tubes, which apparatus comprises means causing the material to flow out of the container and through a cell, sensing means producing an output signal in correspondence with changes in a predetermined characteristic of the liquid phase of the material passing through said cell, control means responsive to changes in the output signal of the sensing means, a rack carrying a plurality of adjacently-disposed collecting tubes, and drive means for moving the rack to position a collecting tube to receive material discharged from the said cell, said control means actuating the said drive means upon predetermined changes in the output signal of the sensing means.

3,202,189

SAW APPARATUS

Harry C. Pearson, Portland, Oreg., assignor to Portland Iron Works, Portland, Oreg., a corporation of Oregon

Filed Nov. 29, 1962, Ser. No. 240,824
10 Claims. (Cl. 143—37)



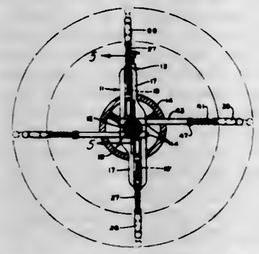
1. In saw apparatus,
an elongated saw arbor,
plural axially extending channels disposed circumferentially about the surface of said arbor,
plural saw mounts mounted in axially spaced relation on said arbor,
rigid shifter bars extending toward one end of said arbor mounted in said channels,
means connecting said shifter bars to said saw mounts with a different bar being connected to different ones of said saw mounts, and
means adjacent said one end of said arbor for moving said bars selectively,
movement of a bar being operable to produce movement of the saw mount connected thereto.

3,202,190

ADJUSTABLE PIPE MACHINING TOOL

John B. Gill, P.O. Box 2127, Torrance, Calif.

Filed July 14, 1959, Ser. No. 827,043
6 Claims. (Cl. 144—205)



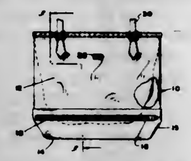
1. In a pipe machining tool having an arbor positionable in concentric relation to the end of a pipe and a radial arm mounted to revolve and advance along the arbor, a quick adjusting machining device comprising a tool block mounted for sliding movement along said arm, a threaded rod carried by said arm for radial reciprocation, said rod having its inner end rotatably connected to said tool block and having a manually engageable handle at its outer end, and a manually engageable element on said arm formed with a bore slidable over said rod and having a threaded portion selectively engageable with said rod so as to provide fine adjustment between the tool block and arm upon rotation of the rod with the threads engaged.

3,202,191

COMPARTMENTED BAG

Louis Kaplan, 277 Fullerton Ave., Newburgh, N.Y.

Filed Apr. 1, 1963, Ser. No. 269,669
3 Claims. (Cl. 150—30)



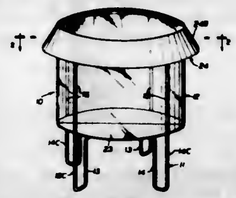
1. A compartmented bag, comprising an outer, pliable tubular body, open at its top and closed at its bottom, said tubular body having a circumferentially disposed opening formed in the wall thereof along a portion of its periphery, in spaced relation to said bottom wall, forming a compartment below said opening, and a pliable-walled, foldable sack suspended by the marginal edge portions of its opening, within said tubular body and secured to said body at the opening thereof.

3,202,192

PORTABLE KNOCK DOWN DISPLAY RACK

Andelfo J. Russo, Bluevelt, N.Y., and Cecil N. Henschel, Tenafly, N.J., assignors to Cadillac Wire Corp., Yonkers, N.Y., a corporation of New York, and Henschel-Steinau, Fort Lee, N.J., a co-partnership

Filed Dec. 17, 1962, Ser. No. 245,148
5 Claims. (Cl. 150—51)



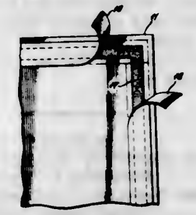
1. A lightweight, portable, knock down rack comprising a stand including a pair of leg members, each leg member having opposed upright leg extensions, a collapsible container detachably connected to and between said leg extensions, said container including a pair of semicircular ring segments pivoted to one another to define a collapsible circular support ring, means for detachably connecting said ring to said leg extensions in the assembled position of said rack, a readily foldable, transparent plastic bag connected to said ring, a bottom stiffening member fitted to the bottom of said bag, and a circular reversely folded skirt connected about the upper end of the rack, said skirt having an inner cylindrical portion adapted to circumscribe said bag so as to be disposed between the bag and said leg extension, said cylindrical portion having circumferentially spaced apertures through which said ring connecting means extend, and inclined outer portion circumscribing the upper end of the stand.

3,202,193

PROTECTIVE COVERING

R. Louis Ware, 2108 Middleford Road, Northfield, Ill.

Filed Feb. 5, 1963, Ser. No. 256,402
1 Claim. (Cl. 150—52)



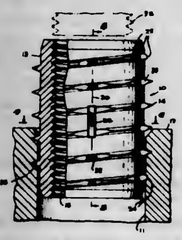
A protective article covering of variable size comprising
a plurality of bags formed of flexible sheet material with each bag providing a predetermined surface covering area bounded by the bag perimeter,
said bags being arranged with the peripheral edges of adjacent bags overlapping such that a covering having an area substantially equal to the sum of the predetermined surface covering areas of the plurality of bags is formed,
each of said bags including a front wall and a back wall joined together along their edges to provide double walls for said covering,
and means disposed around substantially the entire perimeter of each bag fastening the overlapping edges of adjacent bags together,
said means comprising an adhesive material normally covered by an easily removable masking strip, said strip being removed to attach said bags together.

3,202,194
SELF-LOCKING FASTENER
Harold V. Jones, 120 N. Walnut St., Champaign, Ill.
Filed Jan. 22, 1965, Ser. No. 432,046
3 Claims. (Cl. 151—7)



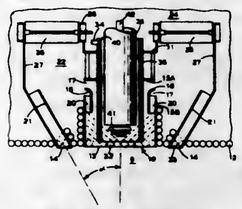
1. In a threaded fastener of the type having a head and a shank, the construction comprising, said shank being provided with a longitudinally extending slot which initially has parallel faces and which extends for a substantial distance from the end of the shank toward the head and is open at the end and at the sides of the shank, threads at said end of the shank, which threads extend for a short distance from the end of the shank and increase in diameter from said end, other threads of larger diameter which continue along the slotted portion of the shank from the first mentioned threads, and a one-piece tapered wedge of resiliently compressible material fitted into said slot and yieldably engaging said slot faces so that the latter diverge toward said end of the shank, thereby yieldably maintaining laterally opposed segments of the first mentioned threads spread apart to interfit with threads in an associated interiorly threaded member, and also yieldably maintaining laterally opposed segments of the second mentioned threads spread apart beyond the diameter of the threads in said associated member, the action of said wedge constituting the sole force yieldably holding said laterally opposed segments apart in spread relation, whereby when said associated member is threaded onto the first mentioned threads and then threaded beyond said first mentioned threads onto the second mentioned threads it will forcibly contract the slotted portion of the shank against the wedge to return said faces to their initially parallel relation, thereby securing the associated member tightly in place, said segments being spread apart by the wedge to an extent less than their elastic limit, whereby said wedge is retained in the slot by the squeezing action of said segments thereon.

3,202,195
SELF TAPPING INSERT HAVING INTERNAL LOCK
Robert Nemschotz, 1162 Angelo Drive, Beverly Hills, Calif.
Filed Sept. 30, 1963, Ser. No. 312,605
5 Claims. (Cl. 151—21)



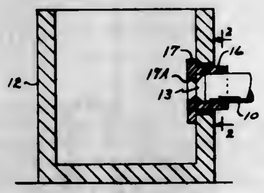
1. An insert comprising a generally tubular body having external threads to be screwed into a carrier part and having internal threads for reception of a coacting stud or the like, said external threads being centered essentially about a predetermined axis and having radially outer surfaces of non-circular cross-sectional shape defining a series of radially outwardly projecting peaks on the external threads spaced circularly about said axis, said external threads having their maximum radial thickness at said peaks, said outer surfaces, in advancing circularly between two successive peaks, being shaped to first advance progressively radially inwardly and then advance radially outwardly relative to said axis and relative to the minor diameter of said external threads, and to thereby truncate the external threads so that they first progressively decrease in radial thickness and then increase in radial thickness in extending between the outermost portions of two peaks, said outer surfaces having minimum radius portions located circularly between said peaks and at which said surfaces are nearest to said axis, individual ones of said minimum radius portions of said outer surfaces being recessed radially inwardly beyond a plane which is drawn to just touch the two adjacent peaks, said outer surfaces increasing in axial width as they advance radially inwardly, the wall of said generally tubular body being locally deformed radially inwardly at the location of one of said minimum radius portions and directly circularly between two circularly successive peaks and to an extent locally reducing the external radius at that location to a value less than the radius at others of said minimum radius portions between other circularly successive peaks, and locally reducing the diameter of said internal threads radially opposite said location to a value less than other portions of said internal threads, to provide a frictional lock with said stud.

3,202,196
METHOD AND APPARATUS FOR BURNING FUEL
John M. Rackley, Alliance, George Maust, Canton, and John H. Kidwell, Alliance, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed May 15, 1962, Ser. No. 194,841
5 Claims. (Cl. 158—1.5)



4. In combination with a boundary wall of a furnace, a fuel burner comprising means defining an elongated rectangular burner port in said boundary wall, a plurality of fuel introduction elements spaced within said burner port, means for introducing streams of fuel from said fuel introduction elements through said burner port into said furnace, means forming continuous narrow rectangular air introduction ports disposed along each of the longer sides of and spaced from said burner port, the discharge end of each of said ports being inclined only in a direction toward said burner port to project all of the air passing therethrough in a continuous uniform sheet of air in an intersecting direction with all of said streams of fuel so as to intersect therewith along their entire heights at a location displaced a substantial distance within said furnace, and means for separately introducing air in surrounding relationship with said streams of fuel so as to mix therewith and form a stable ignition zone between said boundary wall and the location of intersection of said sheets of air with said streams of fuel.

3,202,197
FURNACE INCLUDING REFRACTORY SEALING SLEEVE FOR THE NOZZLE OF AN OIL BURNER
George H. Knobloch, Atlantic Highlands, N.J. (3424 SE. 12th St., P.O. Box 2524, Pompano Beach, Fla.)
Filed Apr. 16, 1963, Ser. No. 273,385
3 Claims. (Cl. 158—4)



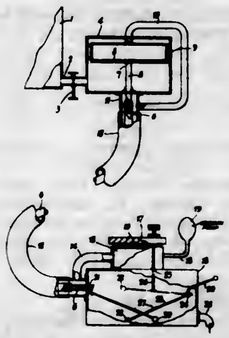
1. In combination a gun type oil burner and a walled combustion chamber, said combustion chamber being provided with an oval-shaped burner aperture, said oil burner having a gun type barrel for atomizing the oil, said barrel being provided with an air cone at its end a refractory sealing sleeve with its inside diameter fitted to said barrel of said gun type oil burner, said sleeve being provided with an enlarged formation at one end, said sleeve inserted through said oval-shaped aperture from within said wall of said combustion chamber to fit over the barrel of said burner and abut with the air cone end, said enlarged formation of said sleeve covering and sealing said oval-shaped aperture.

3,202,198
SAFETY VALVE ASSEMBLY FOR PULSE JET BURNERS AND THE LIKE
Franz Haag, Plochingen, and Rudolf Schork, Wernau, Germany, assignors to Junkers & Co. G.m.b.H., Wernau (Neckar), Germany
Filed Nov. 4, 1963, Ser. No. 321,132
Claims priority, application Germany, Nov. 28, 1962, J 22,706
11 Claims. (Cl. 158—4)



1. In a fuel burning apparatus, in combination, a pulse jet burner comprising a combustion chamber having a resonance duct and an air admitting suction duct; fuel supply conduit means for delivering fuel into said suction duct so that the fuel is mixed with air entering through said suction duct and the resulting mixture is then sucked into said combustion chamber where burning thereof during operation of the pulse jet burner will result in pressure waves and suction waves which will cause the pressure in said suction duct and in said conduit means to fluctuate above and below a permissible pressure range; pressure equalizing duct means communicating at one end with said fuel supply conduit means and at the other end with the atmosphere; and means for controlling the magnitude of pressure waves and suction waves reaching said fuel supply conduit means comprising pressure relief valve means arranged in said pressure equalizing duct means and arranged to open automatically in response to a pressure in said conduit means which is above said permissible pressure range, and vacuum valve means arranged also in said pressure equalizing duct means and arranged to open automatically when the pressure prevailing in said conduit means drops below said permissible pressure range whereby the pressure in said conduit means remains within said permissible pressure range.

3,202,199
CONTROL MEANS FOR VALVES
Anthony White Wood, Henley-on-Thames, England, assignor to Kerma (New Malden) Limited
Filed Sept. 5, 1962, Ser. No. 221,610
Claims priority, application Great Britain, Sept. 7, 1961, 32,184/61
3 Claims. (Cl. 158—42.1)

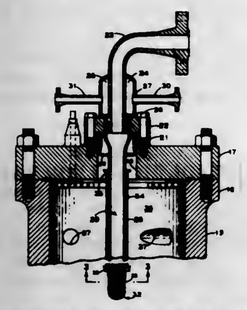


1. A safety control means for a valve from which a liquid gas or vapour is led into a conduit comprising a valve member, fluid pressure means for controlling the valve, means for operatively connecting an enclosed space surrounding that part of the conduit to be protected to the fluid pressure means for controlling the valve, means for establishing in the enclosed space a pressure different from that in the ambient atmosphere or in the conduit feeding the liquid gas or vapour, said pressure difference being adapted to operate the fluid pressure means for controlling the valve so as to open the valve, the arrangement being such that on removal of the pressure differential the valve is automatically closed to cut off the supply of liquid gas or vapour to the conduit, in which the conduit leads into a float chamber for establishing and maintaining a predetermined level of liquid therein, and in which means are provided for connecting the enclosed space with the ambient atmosphere in the event of the level in the float chamber exceeding the predetermined level.

3,202,200
METHOD AND APPARATUS FOR IGNITING AND BURNING GASEOUS FUEL
David M. Marshall, Akron, Ohio, and Andrew B. Steever, Old Greenwich, Conn., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 27, 1960, Ser. No. 65,447
8 Claims. (Cl. 158—109)

2. A fuel burner comprising an elongated tube having a closed end and a plurality of elongated discharge openings spaced around the periphery of and adjacent said closed end, means for cooling said elongated tube including a plurality of return bend tubes connected in gas tight relationship to define the wall and closed end of said elongated tube, means for passing a fuel constituent

through said elongated tube for discharge through said discharge openings in an outward direction from the closed end portion of said tube, wall means spaced from the wall of said elongated tube and defining a combus-



tion air flow passageway surrounding said elongated tube, and means for passing combustion air through said passageway in mixing relationship with the fuel constituent discharged through the openings of said elongated tube.

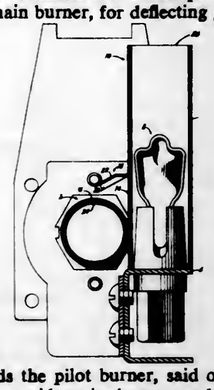
3,202,201
GAS BURNER FOR MELTING AND REFINING SCRAP METAL
Anthony J. Masella, Melrose Park, and Richard K. Matuschkovitz, Chicago, Ill., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 15, 1962, Ser. No. 166,175
11 Claims. (Cl. 158—109)



1. An apparatus for melting and refining scrap metals comprising, a body portion terminating in a head portion, said body portion defining five concentrically positioned chambers, an end wall in said head portion with a central passage defining a common nozzle in communication with the central chamber and the second concentric chamber, said common nozzle discharging gases in a downstream direction, means including a plurality of nozzles spaced around said common nozzle for discharging gases in divergent downstream directions and communicating with the fourth concentric chamber, passage means in said head portion and surrounding said nozzles to provide communication between the third and fifth chambers, spacing means to maintain said chambers in concentric arrangement and to close said chambers opposite said head portion, independent inlet means for gases communicating with said central chamber and with said second chamber, still another inlet means for oxygen in communication with said fourth chamber, and fluid coolant inlet and outlet means communicating with said third chamber and with said fifth outer chamber.

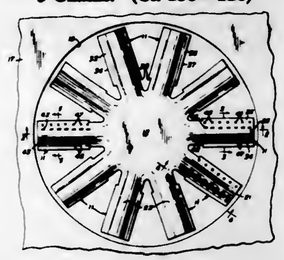
3,202,202
PILOT BURNER SHIELDS
William J. Kuhn, Springfield, and Paul E. Maurice, Ludlow, Mass., assignors to Heatbath Manufacturing Company, Inc., Springfield, Mass., a corporation of Massachusetts
Filed July 29, 1963, Ser. No. 298,119
5 Claims. (Cl. 158—115)

1. In combination, a main gas burner including at least one gas outlet, a pilot burner having at least one gas outlet, a substantially impervious shield open at the top, means for mounting said pilot burner adjacent to and extending slightly higher than said main burner, said shield being mounted in surrounding relationship to said pilot burner and extending considerably higher than said pilot burner, said shield having an opening therein, means protruding from said shield above the opening and extending towards the main burner, for deflecting gas from the main



burner towards the pilot burner, said opening being in a position above said main burner and below said pilot burner so that a low pressure zone is created adjacent said pilot burner and a high pressure zone is created adjacent the open end of said shield to thereby draw gas from said main burner through said opening to said pilot burner flame.

3,202,203
BURNER FOR GASEOUS FUELS
Robert D. Reed, Tulsa, Okla., assignor to John Zink Company, Tulsa, Okla., a corporation of Delaware
Filed Nov. 16, 1962, Ser. No. 238,151
3 Claims. (Cl. 158—116)



3. A spider type burner head for gaseous fuel comprising, a hollow hub, a plurality of hollow arms carried by said hub extending generally radially therefrom, means supplying a gaseous fuel under pressure into said hub for movement into said arms, each arm having a ridge extending lengthwise thereof forming the central downstream extremity of each arm, a surface at each side of said ridge forming a longitudinally extending cavity along each side of each arm, a longitudinally extending surface positioned outwardly of each first surface forming a generally downstream facing surface longitudinally of each side of each arm, each arm having main discharge ports spaced from each other along each side of said ridge with the axes of the main ports diverging from a longitudinal central plane of each arm which intersects the axis of said hub, each arm having discharge ports spaced from each other along each side of said ridge and positioned outwardly of the main discharge ports, each of said second discharge ports being of smaller area than each of said main discharge ports, a projection of an axis of each smaller discharge port at one of side of said ridge intersecting a projection

of the axis of an associated main discharge port whereby the gaseous fuel mixture escaping through each of the smaller discharge ports impacts the gaseous fuel stream escaping through a main port inwardly of the side of the associated arm providing diversion of the gaseous fuel mixture lengthwise within the associated cavity promoting stable burning of the gaseous fuel mixture, and means guiding air for movement downstream of the burner head over sides of said arms developing an eddy area downstream of each arm.

3,202,204
RADIANT GAS BURNER
Pierre Marie Lucien Jouard, Bellevue, France, assignor to Auguste Emile Boulet, Nice, France
Filed Feb. 20, 1963, Ser. No. 259,993
Claims priority, application France, Feb. 22, 1962, 888,888
6 Claims. (Cl. 158—116)



1. A gas burner comprising a body defining a mixing chamber having a terminal head, said head having an outlet opening, frame means bounding said opening, a covering for said outlet opening including a wire-gauze, and a cellular partition on the wire-gauze on a side thereof opposite the mixing chamber, said cellular partition being formed of intersecting strips, the wire-gauze and the partition being rigidly secured peripherally by said frame means, said partition being incurved toward the interior of the chamber and being applied with pressure against the wire-gauze to which is imparted a complementary incurved shape.

3,202,205
FUEL-AIR MIXER
Milo E. Webster, Rochester, N.Y., assignor to Berns O Matic Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 18, 1962, Ser. No. 245,552
3 Claims. (Cl. 158—118)



1. An air-gas mixer with means for choking comprising:
(a) an elongated fitting having a bore extending axially therethrough;
(b) a radially extending passageway through the wall of said fitting for passage of air from outside the fitting to within the bore;
(c) a nipple having a gas spud mounted on the outlet end thereof received in said bore with the gas spud disposed adjacent the radially extending passageway, said nipple being movable axially in said bore between a first fixed position and a second fixed position, the nipple in said first position obstructing air passage through said passageway for providing the choking action and in the second position providing less obstruction to such air passage for normal mixing;
(d) means for releasably securing the nipple in each one of said positions, said releasable securing means being responsive to an axially directed force manually applied to the nipple to release the nipple from secured condition in one of said positions permitting shifting of the nipple to the other of said positions and being responsive to placement of the nipple in said other position to actuate the securing means to secure the nipple in said other position.

3,202,206
MEANS FOR ADJUSTING STANDARD WINDOW SHADE TO WINDOW OPENING
Eugene P. Boulanger, 15506 Judy Court, Cleveland 11, Ohio
Filed May 24, 1963, Ser. No. 282,940
1 Claim. (Cl. 160—263)



In a window shade assembly for mounting in a window frame comprising a shade having a spring actuated roller with a round pintle at one end and a flattened pintle at the opposite end, a first bracket mounted on one side of the window frame and having a generally round opening receiving a round pintle of a standard shade roller, a second bracket having a slotted opening mounted on the opposite side of said window frame receiving a flattened pintle of a standard shade roller, means inserted between the brackets and the roller ends for centering the roller and adjusting a standard size window shade to said window opening without having to cut the shade, said means comprising a first cylindrical adapter having a slot formed centrally therein opening at one end thereof, said slot conforming to and receiving the flattened pintle of the standard shade, a flattened pintle formed at the opposite end of said adapter removably inserted into the slotted opening in said second bracket, a second cylindrical adapter having a slot formed centrally therein and opening to one end thereof, said slot conforming to and receiving the round pintle on the opposite end of the shade, and a round pintle formed on the opposite end of said second adapter removably inserted into said first bracket effective to suspend said shade in said window frame.

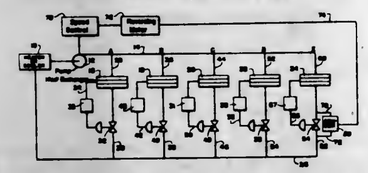
3,202,207
ROTARY REGENERATOR SEALING STRUCTURE
Richard Chute, Huntington Woods, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Dec. 2, 1960, Ser. No. 73,266
10 Claims. (Cl. 165—9)



1. In an apparatus having a regenerator adapted for passage of separate streams of gases through opposed surfaces of said regenerator, means for effecting a seal be-

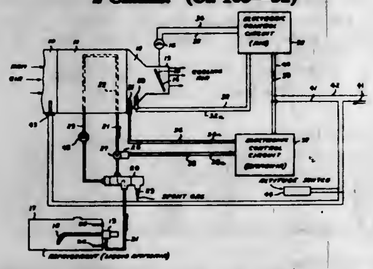
tween said separate streams of gases including a pair of resilient spaced sector plates adapted to engage said opposed surfaces respectively in fluid sealing relationship, each sector plate having an annular rim and a generally diametrically extending cross arm partitioning the area bounded by said rim into two sectors for passage of said gases therethrough, and means for bending said sector plates to concavo-convex shapes comprising a pair of resilient moment arms secured to the rim of each sector plate at diametrically opposed locations adjacent the opposite ends of said cross arm, each moment arm of each sector plate extending toward a corresponding moment arm of the other sector plate and resiliently engaging the latter arm at a location between said spaced sector plates in mutual force exerting relationship.

3,202,208
HEAT EXCHANGE SYSTEM WITH AUTOMATIC PUMP CONTROL
Paul Ludwig Geiringer, Tuckahoe, N.Y., assignor to American Hydrotherm Corporation, Long Island City, N.Y., a corporation of New York
Filed Aug. 22, 1962, Ser. No. 218,685
9 Claims. (Cl. 165—22)



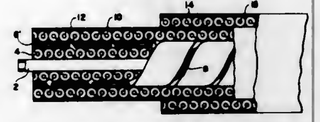
1. A closed circulation heat exchange system having a source of hot water supply connected to a supply line and a return line with a pumping means to force said hot water through said lines for return to said source, a plurality of individual heat exchanger units each connected between said supply and return lines with a throttling control valve associated with each individual heat exchanger unit for controlling the flow therethrough, and means including a pressure differential control unit having pressure connections on either side of at least one of said control valves that is located substantially at the end of the supply line remote from said source of supply to sense the pressure differential across said one valve in response to a change in heating demand and maintain said one control valve substantially unthrottled by proportionately varying the speed of the pumping means to establish automatic regulation of the water supply.

3,202,209
HEAT TRANSFER SYSTEM
Howard R. Otto, Kettering, and Ewald J. Kimm, Dayton, Ohio, assignors to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio
Filed May 10, 1961, Ser. No. 109,117
2 Claims. (Cl. 165—32)



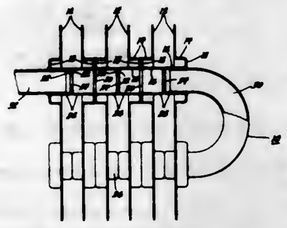
1. In a heat transfer system, the combination of a heat exchanger, means for flowing first and second fluids in separated relation through said heat exchanger for a transfer of heat therebetween, electrically energized control means responding to changes in the mass flow of said first fluid and to changes in temperature of said first fluid after passing through said heat exchanger for regulating flow of said fluids through said heat exchanger, an electrical supply line to said control means, and control switches in said line arranged to close said supply line for current flow to said control means in response either to the achieving of a predetermined high temperature of said first fluid prior to passing through said heat exchanger or to the achieving of a predetermined low ambient pressure.

3,202,210
HEAT EXCHANGER
Robert W. Hughes, Greensburg, Pa., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of abandoned application Ser. No. 833,011, Aug. 11, 1959. This application Nov. 14, 1961, Ser. No. 153,253
5 Claims. (Cl. 165—154)



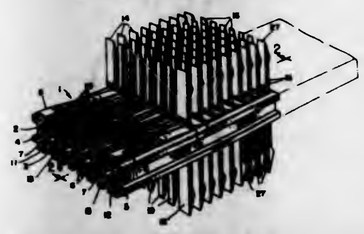
1. In a heat exchanger having a pair of elongated tubular members one of which encompasses the other and is laterally spaced therefrom and at least one of which is of a heat transferring material and which tubular members define a fluid flow path therebetween which path is divided into two parallel portions by means of an elongated heat transferring member extending axially of and intermediate said tubular members with each of said parallel portions having heat transfer means closely received therein to obtain a substantially greater rate of heat transfer in a direction laterally of said tubular members than in a direction axially thereof, the improvement comprising, having openings in said heat transferring member such that said heat transferring member has no rectilinear thermal flow path longitudinally between the end portions thereof and to permit fluid flow laterally between said parallel portions.

3,202,211
REFRIGERATING APPARATUS
James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 16, 1961, Ser. No. 110,397
10 Claims. (Cl. 165—179)



1. A heat exchanger unit comprising in combination, a plurality of substantially flat sheets, each having a plurality of relatively large diameter tubular projections integral therewith, each relatively large diameter tubular projection having a relatively small diameter tubular projection therein extending in a direction substantially opposite said first named tubular projection and forming a tube section, adjacent tube sections on adjacent flat sheets with terminal end portions thereof being located in abutting relationship, and means for bonding such abutting tube sections together for forming continuous fluid conduits.

3,202,212
HEAT TRANSFER ELEMENT
Richard W. Kritzer, Chicago, Ill., assignor to Peerless of America, Incorporated, Chicago, Ill., a corporation of Illinois
Filed July 29, 1963, Ser. No. 298,129
5 Claims. (Cl. 165—179)

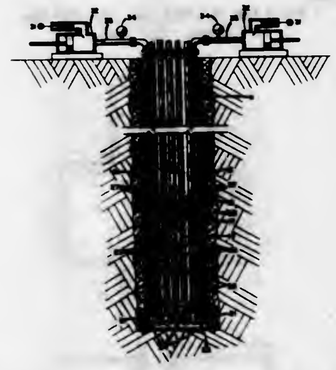


1. A heat transfer element comprising,
(a) a tubular member having an elongated wall,
(b) a plurality of outwardly projecting ribs extending longitudinally of said wall in laterally spaced-apart relation, and
(c) a series of spines projecting outwardly from said ribs, said spines
(1) having base portions integral with said ribs,
(2) being closely spaced apart along the length of said ribs, and
(3) having an elongated, substantially rectangular cross-section disposed transversely to the length of said ribs and which cross-section terminates at the outer ends of said spines in a thin edge portion,
(4) thereby providing a relatively high ratio of exposed surface to the mass, for high efficiency in heat transfer.

3,202,213
METHOD AND APPARATUS FOR CEMENTING LARGE DIAMETER CASINGS
George C. Howard, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed June 26, 1963, Ser. No. 290,765
8 Claims. (Cl. 166—21)

1. In the cementing of large diameter casing in a bore hole, the method comprising introducing a cement slurry at multiple points into an annular space exterior of a casing string positioned in a bore hole, said points being spaced around the periphery of said casing and near that end thereof away from the surface opening of said bore hole, and separately pumping a plurality of individual streams of said cement, each of said streams being pumped to a corresponding one of said spaced points under pressure to fill at least a portion of said annular space along the length of said casing, while maintaining the flow rates of all of said streams substantially equal, whereby uniform distribution of said cement in said annular space is achieved.

3. Apparatus for cementing casing in a bore hole, which apparatus comprises a relatively large diameter elongated tubular element having a first end and a second end and having means for installing said tubular element in a casing string to form a portion thereof; a plurality of orifices positioned near said second end and spaced around the periphery of said tubular element in a fixed relationship to one another; each of said orifices communicating with the exterior of said tubular element; a plurality of individual supply conduits, each connected to a corresponding one of said orifices; and a plurality

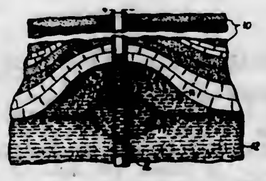


of connector means, each positioned on one of said supply conduits near said first end for separately connecting each of said supply conduits to an individual source of cement slurry.

3,202,214
PREPARATION AND USE OF SODIUM SILICATE GELS
Homer C. McLaughlin, Jr., Duncan, Okla., assignor to Halliburton Company, a corporation of Delaware
No Drawing. Filed Apr. 18, 1960, Ser. No. 22,681
22 Claims. (Cl. 166—30)

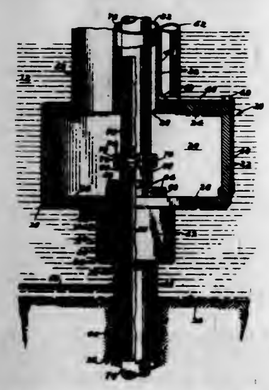
10. In a well treating method, the step of introducing into the well a gel-forming composition consisting essentially of an aqueous sodium silicate solution and a gelling agent therefor, said gelling agent being selected from the group consisting of (1) esters and lactones capable of undergoing hydrolysis in the presence of the sodium silicate solution, and (2) reducing agent-oxidizing agent admixtures capable of undergoing an oxidation-reduction reaction in the presence of the sodium silicate solution.

3,202,215
METHOD OF CONTROLLING FLUID FLOW
Alphonse F. Stancanis, 2035 Birch St., Des Plaines, Ill.
Filed June 21, 1962, Ser. No. 204,138
19 Claims. (Cl. 166—42)



1. A method of preventing salt water breakthrough in a well contacting a fluid to be produced having a control fluid lens in contact with a salt water table and where the natural electrical charge of the earth is positive, said control fluid having an electrical conductivity and a specific gravity less than that of salt water, comprising the steps of inserting a positive electrode within said well to a point below the uppermost level of the fluid to be produced and above said salt water table, and inserting a negative electrode within said well to a point a substantial distance below said positive electrode, said positive and negative electrodes being connected to a voltage source.

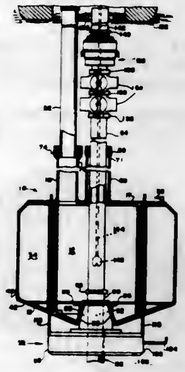
3,202,216
SUBMERGIBLE APPARATUS FOR UNDER-WATER OPERATIONS
John D. Watts and John Slack, Houston, Tex., assignors to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed Jan. 9, 1959, Ser. No. 785,984
18 Claims. (Cl. 166—46)



14. In off shore, underwater operations, the method of providing a submerged, watertight enclosure from which workmen perform manual operations on a submerged structure comprising: embedding in a submerged bottom the lower end of a pipe-like structure having an axial bore of substantially uniform inside diameter extending completely therethrough, the upper end of said pipe structure lying below the surface of the water; providing a housing having an opening in its bottom; sinking said housing in a guided path down to said pipe structure; releasably engaging the periphery of said opening with the upper end of said pipe structure at a location below the upper end of the bore of said pipe structure so as to form a chamber and so that the bore communicates with said chamber through said bottom opening and so that said housing is supported by said pipe structure against movement in a direction axial thereto; effecting a watertight seal between said housing and said pipe structure; providing access for workmen, tools and equipment between said chamber and the surface of the water; performing operations manually at the top of said pipe structure from a location within said chamber adjacent and above the top of said pipe structure; and removing said housing from the top of said pipe structure.

3,202,217
SUBMARINE CELLAR FOR DEEP WATER DRILLING OPERATIONS
John D. Watts and John Slack, Houston, Tex., assignors to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed Sept. 15, 1961, Ser. No. 138,523
17 Claims. (Cl. 166—46)

14. A method of conducting underwater well forming operations comprising: lowering a vertically disposed pipe structure through a body of water to a position at which the upper end remains above water; sealing an annular buoyancy tank of controllable buoyancy around said pipe structure at least at the upper end thereof; sequentially connecting sections of pipe to the above-water end of the pipe structure above said buoyancy tank and further lowering the pipe structure into said body of water to completely submerge said tank; increasing the buoyancy of said tank as said pipe structure is lowered; subsequently decreasing the buoyancy of said tank in order to increase the effective weight of said pipe structure; embedding the lower end of said pipe structure into the submerged bottom; removing said pipe sections from above said tank; releasably attaching a removable housing of a size to contain men around the top of said pipe structure, said housing extending to above water level; drilling downwardly through said housing and through said pipe structure into the submerged bottom; constructing and supporting a well head assembly on top of said pipe structure at a location above said tank; and releasing and removing said housing from the top of said pipe structure.

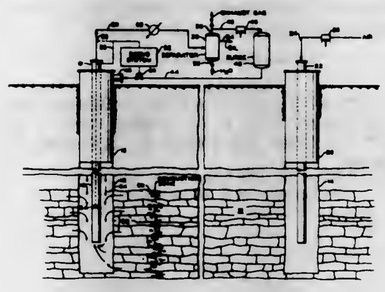


3,202,218
SUBMERGIBLE APPARATUS FOR UNDER-WATER OPERATIONS
John D. Watts and John Slack, Houston, Tex., assignors to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed June 18, 1962, Ser. No. 203,207
22 Claims. (Cl. 166—46)



1. A method of conducting well-forming operations in water where it is desired to effect a well head below the mud line of a submerged bottom comprising: setting a pipe of relatively large diameter substantially vertically into the submerged bottom with the upper end of said pipe above the surface of the water, releasably securing a vertically elongated housing which defines a chamber for workmen at the upper end of said pipe; driving said pipe and said housing downwardly to a position at which the top of said pipe lies below the mud line a distance substantially equal to the height of well-completion equipment to be mounted on the top of said pipe and at which the top of said housing remains above the water surface; conducting drilling operations from above the surface through said housing and through said pipe; establishing a well head at the upper end of said pipe within said chamber; installing a protective cover over said well head while said housing holds off mud; and subsequently permitting mud to substantially bury the protective cover by releasing and removing said housing.

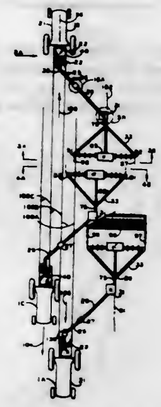
3,202,219
APPARATUS FOR PROTECTION OF IN SITU COMBUSTION WELLS
Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 9, 1962, Ser. No. 172,330
3 Claims. (Cl. 166—53)



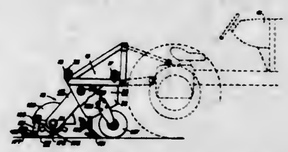
1. Apparatus comprising in combination a tubing string in a production well penetrating a combustible carbonaceous stratum, said string extending thru the well head at least to the level of said stratum; an effluent line connected with said tubing string at the well head; cooling means in said effluent line for liquifying hydrocarbons passed therethru; separation means in said effluent line for separating condensed liquids from uncondensed gases, including separate outlets for water, oil, and uncondensed gases; conduit means connecting the separate outlet for uncondensed gases of said separation means with the well bore within said stratum having a compressor therein for passing uncondensed gases from said separation means into hot produced gases passing from said stratum to the lower end of said tubing string; flow control means in said conduit; temperature sensing means for sensing the temperature of effluent hot gases; and means for regulating said flow control means in response to the sensed temperature so as to control said temperature within a desired range.

3,202,220
EARTHWORKING PROCESS
Charles Schlabs, Rte. 2, Hereford, Tex.
Original application Mar. 8, 1963, Ser. No. 264,000. Divided and this application Apr. 21, 1964, Ser. No. 361,437
1 Claim. (Cl. 172—1)

Process for concurrently treating earth mechanically with a two-way plow and a harrow comprising the steps of moving said plow, which is adapted for use in either of two operative positions, along a first direction in motion in a straight line along the longitudinal axis thereof, drawing behind and to one side of said plow a harrow comprising a plurality of earth treating elements with the axis of their engagement with the earth being parallel to each other, maintaining said harrow at a fixed distance from said plow by attachment of a rigid elongated spacing arm therebetween, fixing the angle of travel of said harrow relative to the axis of said spacing arm, and, positioning the harrow to travel in a path to one side of said plow and parallel to and at a fixed lateral distance from the line of direction of travel of said plow means during the said motion of said plow means along its longitudinal axis, and reversing the direction of motion of said plow and concurrently reversing the side of said plow on which said harrow is located while said harrow maintains contact with the ground.



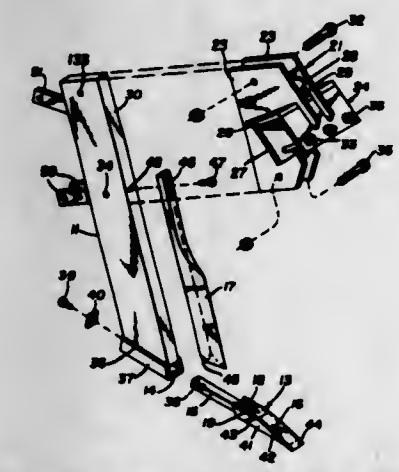
3,202,221
CULTIVATING APPARATUS FOR CROPS
James T. Monk, William A. Taylor, Jr., and Rufus P. Steadman, Louisville, Miss., assignors to Taylor Machine Works, Louisville, Miss.
Filed Jan. 31, 1963, Ser. No. 255,266
9 Claims. (Cl. 172—63)



3. In a cultivator for rows of plants, a framework, means attached to said framework for mounting said framework on a tractor for movement over the ground and over the plants, a transversely extending shaft, means rotatably supporting said shaft from said framework, drive means coupled to said shaft for the rotation thereof, a plurality of cultivator units respectively disposed in the spaces between said rows of plants and each of said cultivator units including a pair of earth-working heads disposed between an adjacent pair of rows of plants; each of said cultivator units additionally comprising a casing, pivot means pivotally mounting said casing on said framework with said casing depending therefrom and being adapted to depend between adjacent rows of plants in substantially centered relationship thereto, an axle, bearing means rotatably supporting said axle in said casing adjacent the lower end thereof and extending laterally therefrom in a direction substantially transverse relative to the direction of movement of said framework, said pair of earth-working heads being mounted on said axle for rotation therewith, said earth-working heads having a substantially frusto-conical shape, said earth-working heads being disposed on opposite sides of said casing and extending laterally in opposite directions for respectively working on adjacent sides of adjacent rows of plants, motion transmission means connecting said axle with said shaft for rotation therewith, a plurality of sweeps, and means respectively mounting said sweeps from said frame-

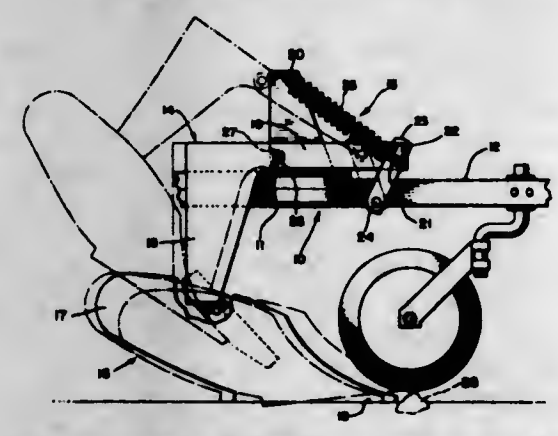
work forwardly of and between said pair of earth-working heads of said cultivator units for throwing dirt into the paths of said earth-working heads of said cultivator units.

3,202,222
TILLAGE MACHINE
Leonard Norris, Reinbeck, Iowa
Filed Dec. 13, 1963, Ser. No. 330,291
7 Claims. (Cl. 172—177)



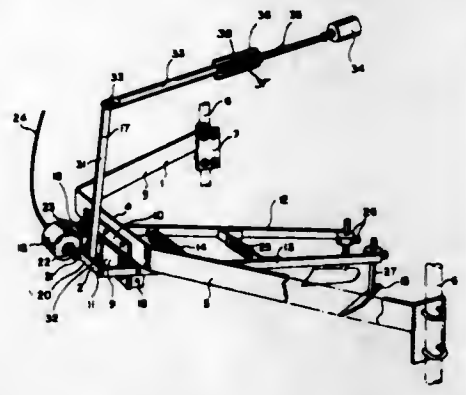
1. In combination, a bracket and a blade for sub-mulching,
said blade comprising a relatively heavy rigid plate like member,
a generally U-shaped member adapted to receive a laterally extending bar comprising part of a tractor hitch,
laterally spaced bolts received in the front edge of the legs of said U-shaped member and adapted to extend through both said legs in front of said bar, rigidly clamping said U-shaped member to said bar,
laterally spaced, vertically extending plates rigidly fixed to said U-shaped member and extending continuously from below said laterally extending bar to a position above it and extending around the back and legs of said U-shaped member,
said laterally spaced plates snugly receiving said blade therebetween,
a round member extending through said plates and said blade at the upper end thereof,
and a round member smaller than said first mentioned round member extending through said plates and through said blade at a position spaced from said first mentioned round member.

3,202,223
CUSHION PLOW TRIP
Ronald T. Fulton, Thiley Park, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Mar. 2, 1964, Ser. No. 348,740
6 Claims. (Cl. 172—264)



1. In trip plows and the like, a supporting frame member, a standard member carrying an earth working tool at its lower end, means for mounting said standard member on said frame member for longitudinal movement of the standard member relative to the frame member, said mounting member including pivot means accommodating swinging of said standard member upwardly in one direction about a transverse axis after a predetermined longitudinal movement of the standard member relative to the frame member in response to abnormal draft forces acting on the tool in said one direction, means in the mounting of said standard member on said frame member accommodating swinging of said standard member in the other direction about a transverse axis prior to said longitudinal movement of the standard member relative to the frame member in response to abnormal draft forces acting on the tool in said other direction, and spring means operatively connected between said frame member and said standard member for yieldably opposing said swinging of said standard member.

3,202,224
TOBACCO PLANT CULTIVATING ASSEMBLIES
James J. McElhone, R.R. 1, La Salette, Ontario, and Terence P. McElhone, 161 Church St., Brampton, Ontario, Canada
Filed Nov. 12, 1963, Ser. No. 322,987
2 Claims. (Cl. 172—305)



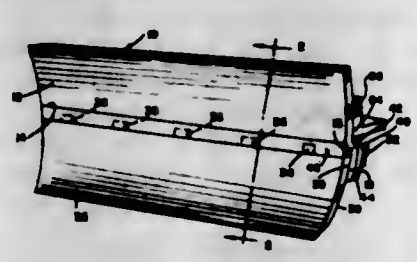
1. A tobacco plant cultivating assembly comprising in combination, a frame-work attached to a tractor in advance of the tractor operator's driving position, and a cultivating unit, said cultivating unit being attached to said frame-work, and comprising, in sub-combination a pair of cultivating arms having front and rear ends, a cultivating element on the rear ends of each of said arms, element-operating means including expansible power means for swinging at least one of said arms toward or away from the other, said frame-work being in the form of a horizontal yoke embodying a mid-piece and a pair of mutually divergent side-arms extending rearwardly from said mid-piece, said frame-work being attachable to said tractor in the vicinity of the front wheels thereof, said cultivating unit including at least one 2-plate hinge one plate of which is fixed to the said mid-piece, the other plate of which rotates about a horizontal transverse axis, said cultivating arms being attachable to the rotatable plate of said hinge, at least one of said arms being mounted for pivotal movement about a vertical axis, for vertical swinging movement about a horizontal axis, and extending rearwardly between said divergent side-arms of said yoke, said cultivating arms being spring-biased toward each other, and extending in advance of said mid-piece, said solenoid means extending between said arms for separating said rear ends thereof against said spring bias, upon energization thereof, and an upwardly projecting rod operatively secured between said front ends of said cultivating arms to the rotatable plate, for raising or lowering the same and said cultivating elements into out-of-use and operating positions respectively, in a vertical arc upon rotation in a vertical plane of said upwardly projecting rod.

3,202,225
JACK KNIFE TONGUE
Irwin W. Richardson, Lady Lake, Fla., assignor to I. W. Richardson Co., Inc., a corporation of Florida
Filed July 31, 1963, Ser. No. 298,915
3 Claims. (Cl. 172—328)



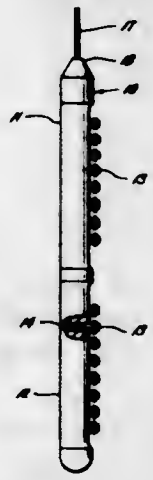
1. Apparatus for raising and lowering an earth-working implement comprising a frame having a fixed tongue, a segmental tongue pivotally connected to said fixed tongue adjacent one end thereof, means connecting the opposite end of said segmental tongue to a propelling vehicle, an upstanding lug mounted on each of said fixed and segmental tongues, adjustable fluid operated means connecting the free ends of said lugs, arms each connected at one end to one of said lugs, a lever pivotally connected at one end to the opposite ends of each of said arms, means for pivotally mounting each of said levers intermediate its ends on said frame, a link pivotally connected to the opposite end of each of said levers, a plurality of wheel-supporting members independently pivotally mounted on said frame, means pivotally connecting each link with one of said wheel-supporting members, wheels rotatably mounted on said wheel-supporting members, and an earth-working implement mounted on said frame, whereby actuation of said fluid means in one direction will raise said frame and move said earth-working implement from engagement with the earth and actuation in the opposite direction will lower the frame and move said implement into engagement with the earth.

3,202,226
REPLACEABLE CUTTING EDGE FOR A BLADE ASSEMBLY
Cyril W. Carson, 615 Division Ave., Ionia, Mich.
Filed Nov. 13, 1963, Ser. No. 323,291
8 Claims. (Cl. 172—719)



1. A blade assembly comprising: a moldboard providing a forward work engaging wall having a lower edge defined by an angularly disposed rearwardly directed flange, and an off-set wall substantially parallel to said work engaging wall depending from said flange and defining a seat; a detachable blade having an upper portion engaging said seat, said blade having an upper edge and carrying a plurality of spaced lugs integral therewith, each said lug being prismoidal, having rearwardly divergent walls, and projecting from said upper edge; said off-set wall containing an opening defining a passage for each said lugs, each opening being bounded by walls and including a reduced prismoidal socket portion formed in one of said bounding walls, complementing at least one of said rearwardly divergent walls; and locking means comprising elements received in said openings and engaging said lugs, substantially filling spaces between said lugs and opening walls, maintaining divergent walls of said lugs in contact with said complementing walls respectively, to lock said moldboard and blade together.

3,202,227
SWITCH CONTROL SYSTEMS
Maurice Esrun, Paris, France, assignor to Societe de Prospection Electrique, Procedes Schlumberger, Paris, France, a corporation of France
Filed May 9, 1961, Ser. No. 108,898
Claims priority, application France, May 12, 1960, 827,011, Patent 1,264,620
4 Claims. (Cl. 175—4)

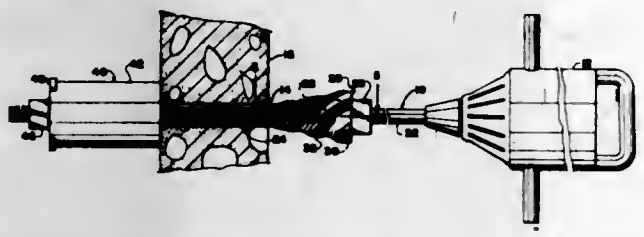


1. Apparatus including: a support adapted for passage through a well bore for positioning at various levels in a well bore by means of an electrical cable having cable conductors; a plurality of individual explosive means disposed in said support, and electrical firing means for each said explosive means so that such explosive means may be individually detonated at various levels in a well bore; an electrical distribution circuit in said support including first stepping switch means providing sequential electrical connection of a first cable conductor to each of said electrical firing means, and means for selectively supplying firing current via the first cable conductor to said first stepping switch; means synchronized to the movement of said first stepping switch for providing an electrical indication signal of the particular electrical connection of said first stepping switch, said signal indication means including two characteristically different impedance means for alternately providing only two indication signals, surface located, first indicating means coupled via a second conductor in the electrical cable to said signal indication means for indicating the particular electrical connection of said first stepping switch; surface located means including a second stepping switch means providing sequential electrical connections identical to said sequential connections of said first stepping switch and including means for providing an electrical indication signal of the particular electrical connection of said second stepping switch, and second indicating means coupled to said second stepping switch for indicating the particular electrical connection of said second stepping switch; surface located means coupled to said first and second switches for stepping said switches simultaneously.

3,202,228
DRILL APPARATUS AND DRILL BIT FOR ENLARGING APERTURES
Allan C. Schuster, Hutchinson, Kans.
(707 E. 66th Terrace N., Kansas City, Mo.)
Filed Jan. 30, 1963, Ser. No. 254,910
17 Claims. (Cl. 175—53)

16. A drilling apparatus comprising, an elongated drive member having means on one end portion to ad-

vance said member upon turning same and a cutting bit mounted on a central portion to turn therewith, said cutting bit being tapered inwardly and forwardly and having spaced cutting edges therealong, a means to advance said drive member and cutting bit into material being drilled, said means to advance having a portion in engagement with said means on said rod to advance same, and an abutment surface located between said portion in



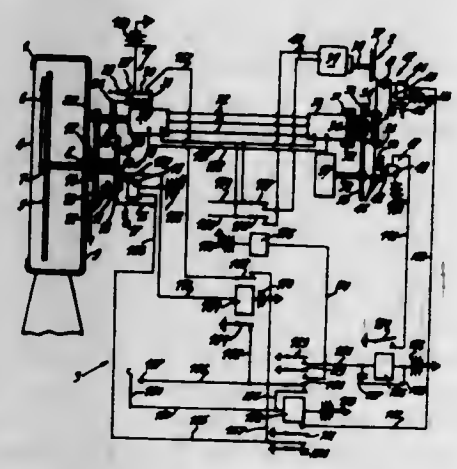
engagement with said means on said rod to advance same and said cutting bit, said apparatus constructed and adapted in use to enlarge existing apertures in a wall or the like when said elongated drive member is inserted through the aperture with the cutting bit in engagement with one side thereof, the means to advance operatively engaged to said means on said drive member to advance same on the opposite side thereof, and the elongated drive member rotated.

3,202,229

DEVICE FOR MEASURING AND PRINTING AN ANGULAR OR LINEAR DISPLACEMENT

Henri Edouard Alfred Borzer, Bethune, Pas-de-Calais, France, assignor to Manufacture de Bethune, Bethune, Pas-de-Calais, France, a company of France

Filed Nov. 15, 1963, Ser. No. 324,076
9 Claims. (Cl. 177—2)



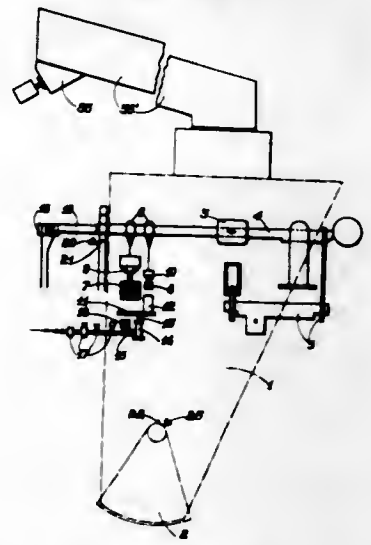
1. A device for use with displacement measuring and printing apparatus comprising: an electromechanical indicator unit, said electromechanical indicator unit including a movable element indicating the displacement to be measured, a pin on said movable element, an electromechanical brake adapted to block the movement of said movable element at a predetermined time, a toothed element adjacent said movable element, said toothed element having a feeler for engaging said pin; an electromechanical receiver unit including an electric motor for driving said toothed element, said electric motor being connected to said toothed element through a flexible toothed member, said electric motor also being connected to said printing apparatus through said flexible toothed member, an electromechanical clutch for making and breaking the motor connection to said toothed element and said printing apparatus by cooperating with said flexible toothed wheel; and an electric control unit connected to said electric motor, said electromechanical indicator unit, and said electromechanical brake and clutch.

3,202,230

METHOD OF AND BALANCE FOR THE PERIODICALLY REPEATED WEIGHING OF A PREDETERMINED QUANTITY OF MATERIAL

Edgard Brichard, Jumet, Belgium, assignor to Glaverbel, Brussels, Belgium, a Belgian company

Filed Mar. 12, 1963, Ser. No. 264,534
Claims priority, application Belgium, Apr. 4, 1962, 491,604, Patent 616,002
17 Claims. (Cl. 177—64)



1. A weighing machine comprising a weighing hopper, a beam connected to said hopper and having a taring cursor balancing said hopper, a plurality of masses having a total weight corresponding to the quantity of material to be weighed, means enabling said beam to carry said masses in depending relation thereon and enabling vertical movement of said masses to load and unload said beam, means operative to raise the masses in said carrying means to remove the weight thereof from said beam to check the tare of the machine, means controlled by said beam when the tare is correct for loading said weighing hopper and for progressively loading said masses on said beam in predetermined order, said hopper loading means including a material supply channel connected to said hopper and a first vibrator for such channel, and means for controlling the discharge of said hopper loaded with a given weight of material comprising a discharge channel connected to said hopper, a second vibrator connected to said discharge channel, a circuit including said first and second vibrators, a first relay and associated contact controlling the operation of said first vibrator, a second relay and associated contact controlling the operation of said second vibrator, and a contact common to said first and second relays and operable to render one of said relays inoperative to actuate its associated vibrator when the other of said relays is conditioned to operate its associated vibrator.

3,202,231

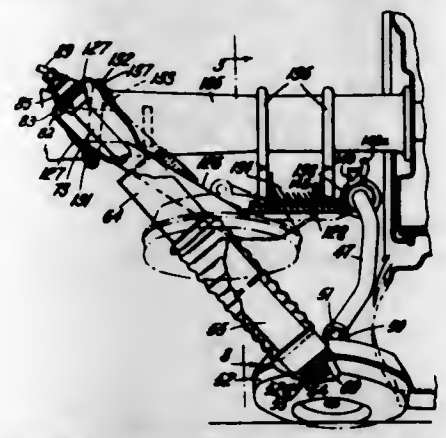
PARKING APPARATUS FOR MOTOR VEHICLES

Archibald James Butterworth, 7 Grove Gardens, Frimley, near Aldershot, Hampshire, England

Filed Dec. 6, 1961, Ser. No. 157,430
Claims priority, application Great Britain, Dec. 7, 1960, 42,051/60
1 Claim. (Cl. 180—1)

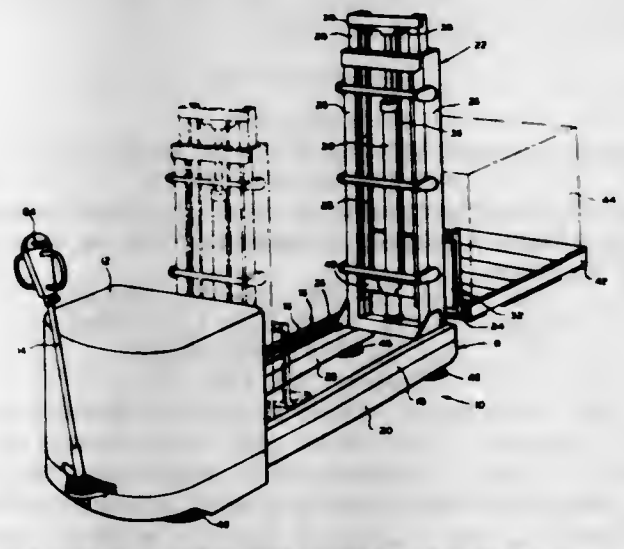
A parking apparatus for a motor road vehicle comprising two jacks disposed on opposite sides of the vehicle adjacent two of its road wheels respectively, a connection between a part of each jack and the vehicle, a ground-engaging roller associated with each jack, a mounting securing said roller to another part of the jack which is relatively extensible and contractible with respect to the first part, so that when said parts of the two jacks are extended the rollers engage the ground and lift the road wheels therefrom and the rollers come into driving engagement with the road wheels and which

mountings, when the rollers are in engagement with the ground, locate the axes of rotation of the rollers in two vertical planes respectively which converge and intersect one another in a vertical line of intersection that intersects a centrally disposed fore-and-aft extending line at a point of intersection closely adjacent the axis of the other two vehicle wheels, one of said axes of the rollers extending upwardly rearwardly outwardly and the other of the axes of the rollers extending upwardly forwardly inwardly, said rollers being on opposite sides of the vertical plane that includes the axes of the adjacent wheels,



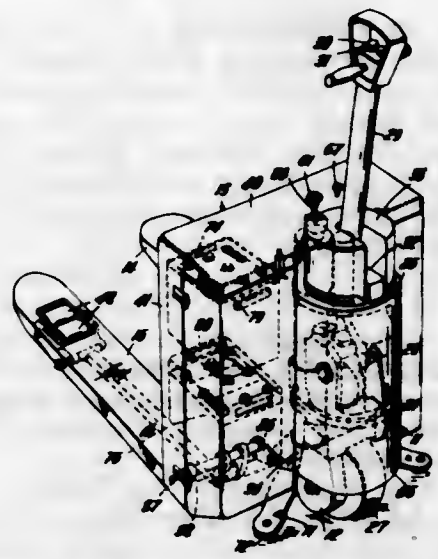
links pivotally mounting the rollers on the vehicle for vertical swinging movement about axes spaced from the jacks, each link having a spindle, bearings on the vehicle through which the spindles extend, each spindle having an extension, a helical spring encircling the extension, one end of the helical spring engaging a part of the vehicle, a part mounted for rotation on and relative to the extension, the other end of the spring engaging said part, and means for releasably securing said part to the extension in a rotated position of the part thereby to permit adjustment of the loading of the spring.

3,202,232
AIR FILM VEHICLE
Cyril B. Rogers, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed May 9, 1962, Ser. No. 193,515
7 Claims. (Cl. 180—7)



1. In a material handling vehicle having a body portion and load engaging means secured to the body portion, combined support and air film lubrication means secured to the body portion for supporting the body portion on a supporting surface and providing a lubricating air film between the surface and said combined support and air film lubrication means, said combined support and air film lubrication means including a source of pressurized air, a U-shaped plenum chamber forming a part of the body portion and connected to said source of pressurized air, said plenum chamber defining a space between the legs and bight portion thereof, a dirigible powered wheel assembly disposed in said space and connected to the body portion for propelling and steering the vehicle, said assembly including a yoke, a substantially vertically extending shaft secured to said yoke and pivotally connected to the body portion for movement about a substantially vertical axis, a wheel rotatably journaled in said yoke, spring means for resiliently biasing said wheel into contact with the supporting surface, air motor means for driving said wheel, said air motor means being connected to said source of pressurized air, and means for controlling pivotal movement of said assembly about said vertical axis.

3,202,233
PALLET OR STILLAGE TRUCKS
John Robert Vernon Dolphin and Cecil Goodacre, Basingstoke, England, assignors to Lansing Bagnall Limited, Basingstoke, England, a British company
Filed May 6, 1963, Ser. No. 278,177
Claims priority, application Great Britain, May 7, 1962, 17,468/62
1 Claim. (Cl. 180—13)

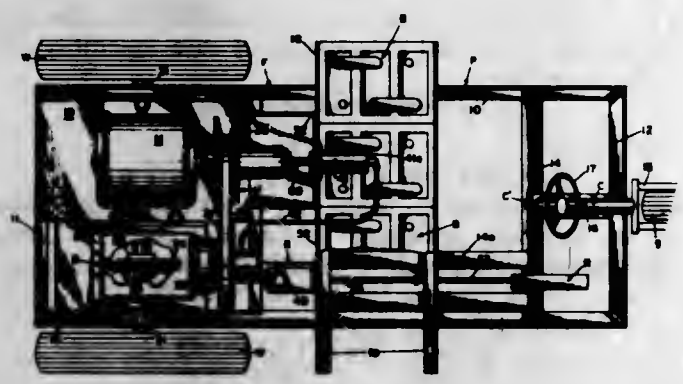


An industrial truck comprising a load-bearing-section having ground-engaging wheels at one end thereof, a carrier frame including a hydraulic jack having a cylinder and a piston rod, said piston rod being connected to the other end of said load-bearing-section, vertically spaced brackets fixed to said cylinder and having portions thereof extending horizontally from said cylinder in the direction away from said load-bearing-section, each said portion having a circular aperture therein, said apertures being coaxial and vertically aligned, and a motor-driven wheel mounting rotatably and removably mounted in said apertures.

3,202,234
ELECTRIC MOTOR DRIVEN VEHICLE HAVING DRIVER CONTROLLED VARIABLE SPEED DRIVE
Gordon W. Osborne, 180 Raeburn Ave., Rochester 19, N.Y.
Filed June 1, 1962, Ser. No. 199,489
3 Claims. (Cl. 180—65)

1. An electric powered industrial type cart including, in combination, traction wheels; an electric motor for driving said traction wheels, electric batteries; a power supply circuit from said batteries to said motor; a switch unit in said supply circuit operable to a position opening or to a position closing said supply circuit; said supply circuit constructed to supply the full voltage output of said batteries to said motor when said circuit is closed by said switch unit; said motor having a motor shaft driven thereby; an infinitely variable speed drive unit connected with said motor shaft and driven thereby; a drive mechanism connected with said traction wheels for driv-

ing said wheels; said drive mechanism including a driven shaft member connected with said variable speed drive unit and driven thereby to drive said drive mechanism and traction wheels; said infinitely variable speed drive unit including a variable pitch diameter driving sheave member mounted on and driven by said motor shaft, a variable pitch diameter driven sheave member mounted on said driven shaft member of said drive mechanism, and



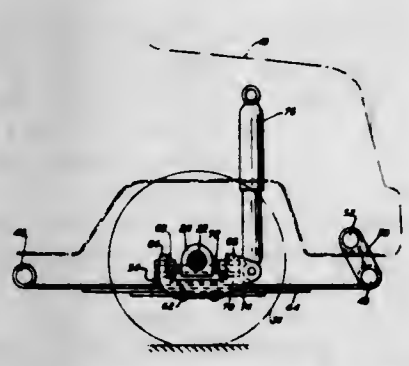
a belt member on and connecting said driving sheave member with and driving said driven sheave member; driver controlled and operated means operatively connected with said driving sheave member for selectively infinitely varying the pitch diameter thereof; and said driven sheave member including biasing means acting to continuously bias said driven sheave member to its maximum pitch diameter setting.

3,202,235

INDEPENDENT VEHICLE SUSPENSION SYSTEM

Dennis R. Warner, Northfield, Birmingham, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Aug. 20, 1963, Ser. No. 303,309
1 Claim. (Cl. 180—73)



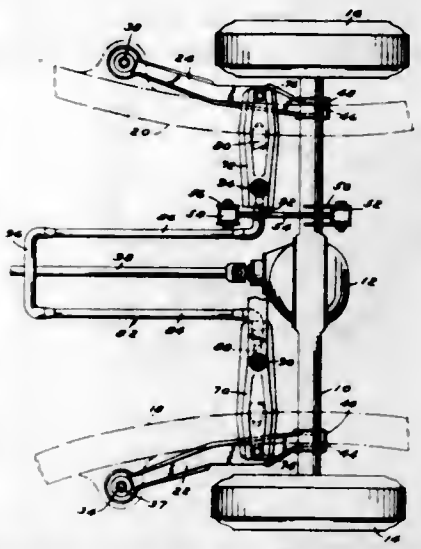
A motor vehicle suspension comprising a vehicle frame, a differential gear unit secured to said frame, driving shafts extending laterally from the left and right side of said unit, universal joints connecting the inner ends of said shafts to the outputs of said unit, a road wheel rigidly secured to the outer end of each of said shafts, housing means rotatably supporting the outer end of each of said shafts, a longitudinally extending leaf spring having its ends pivotally connected to said frame and spaced inwardly from each of said wheels, a centrally situated clamp secured to each of said springs, pivot means having a longitudinal pivot axis interconnecting each of said housing means and a said clamp, said pivot means comprising a pair of spaced apart elastic bushing assemblies adapted to permit longitudinal shaft movement parallel to said spring as well as pivotal movement about a longitudinal axis, the pivot axis of each of said bushing assemblies being arranged to intersect one of said drive shafts, a telescopic hydraulic shock absorber having its upper end connected to said frame and its lower end pivotally connected to one of said clamps.

3,202,236

LINKAGE TYPE VEHICLE SUSPENSION

William D. Allison, Grosse Pointe Farms, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Nov. 29, 1963, Ser. No. 326,789
5 Claims. (Cl. 180—73)



1. A vehicle suspension system having a vehicle chassis, a transverse axle, a wheel rotatably mounted at each end of said axle, a pair of generally longitudinally extending suspension arms each pivotally connected to said chassis and said axle, a pair of laterally extending links each having an outer end pivotally connected to said suspension arms, resilient mounting means connecting the inner ends of said links to said chassis, said links and resilient means being adapted to resiliently position said suspension arms laterally with respect to said chassis, said suspension arms extending forwardly and outwardly to provide an understeer effect upon lateral movement of said arms and axle, a torsion spring means having a pair of torsionally loaded segments, one of said segments being connected to one of said links and extending in a generally longitudinal direction, the other of said segments being connected to the other of said links and extending in a generally longitudinal direction, said torsion spring means being constructed to torsionally resist jounce and rebound movement of said links.

3,202,237

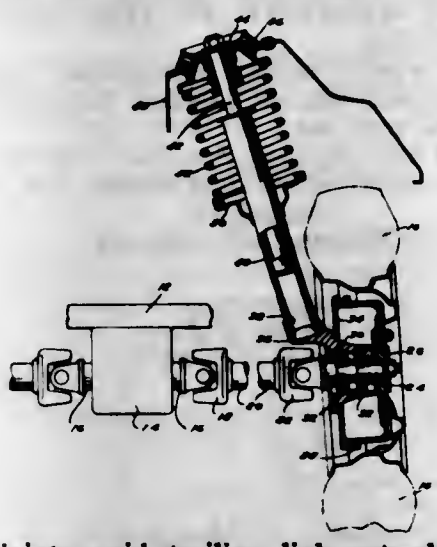
MOTOR VEHICLE SUSPENSION SYSTEM OF THE INDEPENDENT TYPE

Jozsef L. Dreisziger, Basildon, Essex, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

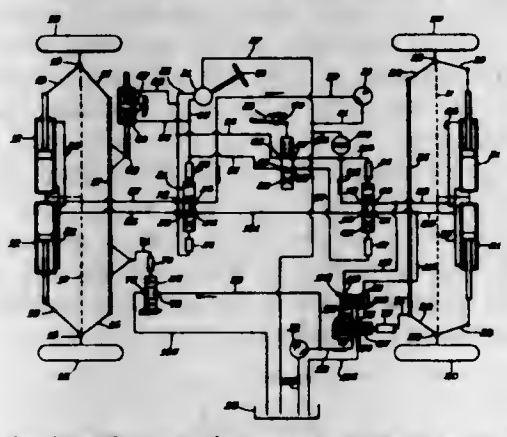
Filed Nov. 22, 1963, Ser. No. 325,600
Claims priority, application Great Britain, Dec. 12, 1962, 46,845/62
6 Claims. (Cl. 180—73)

1. An independent vehicle suspension system comprising a chassis, a differential gear unit secured to said chassis, a shaft of nonextensible length extending laterally from said differential gear unit, a wheel assembly, said shaft having a universal joint at its inner end connecting it with said differential gear unit and a universal joint at its outer end connecting it with said wheel assembly, a bearing housing rotatably supporting said wheel assembly, a linearly collapsible resilient suspension unit rigidly secured at its lower end to said housing, said suspension unit extending in an upward direction and having its upper end connected to said chassis, a trailing suspension link having one end pivotally connected to said chassis by a rubber bushing, pivot means pivotally connecting the other end of said trailing suspension link to said housing, said pivot means having a fixed pivot axis

generally parallel to a line drawn between the center of said bushing and the center of the inner one of said universal joints, said trailing link extending at an acute angle to said drive shaft.



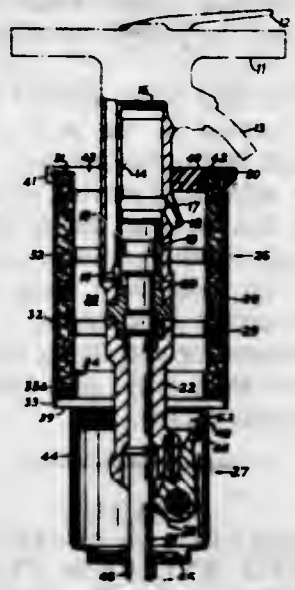
3,202,238
HYDRAULIC STEERING SYSTEMS
Don S. Strader, Mount Prospect, Ill., assignor to The Frank G. Hough Co., a corporation of Illinois
Filed Sept. 14, 1961, Ser. No. 138,107
25 Claims. (Cl. 180—79.2)



1. A hydraulic steering system for a motor vehicle having steerable forward and rearward wheel assemblies, hydraulic operating means to steer said assemblies, a steering pump, a first pilot operated valve, a second pilot operated valve, first hydraulic circuit means connecting said first pilot operated valve to said steering pump for operation of said first pilot operated valve responsive to operation of said steering pump, second hydraulic circuit means connecting said second pilot operated valve to said steering pump for operation of said second pilot operated valve responsive to operation of said steering pump and independent of the operation of said first pilot operated valve, a source of hydraulic fluid under pressure, and third hydraulic circuit means interconnecting said source of hydraulic fluid under pressure, said hydraulic operating means and said first and second pilot operated valves for steering movement of said forward and rearward wheel assemblies responsive to the operation of said first and second pilot operated valves by said steering pump.

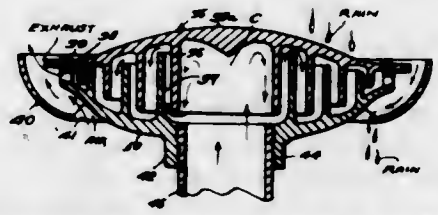
3,202,239
ACOUSTIC SHIELD FOR A TOOL POWERED BY A GAS-OPERATED MOTOR
Ronald Albert William Clarke, 21 Raymond Road, London SW. 19, England
Filed June 4, 1964, Ser. No. 372,470
Claims priority, application Great Britain, June 10, 1963, 23,932/63; July 12, 1963, 27,759/63
9 Claims. (Cl. 181—36)

1. In the known combination of a drill, hammer or like tool having an axially elongated body, a working member which extends from one end of the body and can be reciprocated axially of the body, and a gas-driven motor within the body operable to impart repeated impact blows to the working member, the body being formed to provide outlet means through which exhaust gas is discharged laterally of the body, together with an acoustic shield for the tool which is fitted to the body to surround and be spaced from a portion of the body including the part of



the body formed with said outlet means to provide a chamber for reception of exhaust gas from the outlet means, the improvement in said shield in which the shield comprises a rigid outer casing and a lining of sound-absorbent material on the inside wall of the casing, the lining co-operating with the body of the tool to form an axially extending passageway which is open to the atmosphere at one end thereof so that exhaust gas can pass freely through and out of said passageway.

3,202,240
MUFFLER WITH ASPIRATING MEANS
Kenneth L. Treiber, 402 Villamay Blvd., Alexandria, Va.
Filed Dec. 9, 1963, Ser. No. 329,325
6 Claims. (Cl. 181—51)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a combustion engine exhaust muffler:
a first, a second and a third plate means,
each of said plate means having an inner and an outer surface means,
each of said first and second plate means having a peripheral edge,
said third plate means having a first and a second edge,
said second plate means having a centrally apertured flange means providing an inlet means for hot exhaust fluids;
first spacing means connected between the peripheral edges of said first and second plate means,
outlet means formed by said spacing means between said peripheral edges;
second spacing means connected to the outer surface of one of said first and second plate means and connected to said third plate means;
means for entraining the atmosphere into the exhaust fluid having an input means and an output means, the input means for said means for entraining in-

cluding a channel means defined by the outer surface of said second plate means and the inner surface of said third plate means above said first edge of said third plate means and including said outlet means formed by said spacing means between said peripheral edges,

the output means for said means for entraining defined by the inner surface of said third plate means at said second edge of said third plate means and the peripheral edge of said first plate means,

a portion of said inner surface of said third plate means located in the path of the hot exhaust fluid from said outlet means;

said means for entraining serving to lower the temperature of said hot exhaust fluids which are directed upward by said third plate means resulting in a lower temperature for said third plate means relative to said first and second plate means,

and said means for entraining serving to direct rain and snow away from said outlet means through said channel means.

3,202,241

OIL WELL DRILLING SUBSTRUCTURE WITH ELEVATED EXTERIOR FLOORING

Homer J. Woolslayer, John W. Born, and Charles F. Cleveland, Tulsa, Okla., assignors to Lee C. Moore Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 21, 1962, Ser. No. 204,120
4 Claims. (Cl. 182—82)



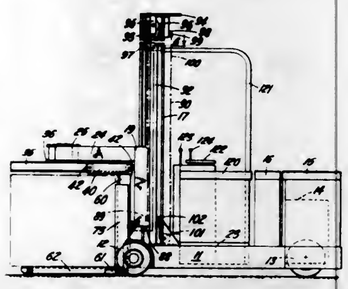
1. The combination with an oil well drilling substructure for supporting a power unit having an elevated deck, of an exterior floor section normally disposed in an elevated position above the substructure at substantially power unit deck level and extending from above an edge of the top of the substructure outward away from it, inclined links and substantially upright links supporting said floor section from the substructure, means pivotally connecting the opposite ends of the upright links to the inner portion of the floor section and to the underlying side of the substructure, means pivotally connecting the opposite ends of the inclined links to the outer portion of the floor section and to said side of the substructure above the lower ends of the upright links, and means for holding the floor section in said elevated position until it is desired to swing all of said section down below said lower ends of the upright links, the upright links being long enough for the lowered inclined links to hang substantially straight down and for the floor section to hang down from said hanging links with its top facing the adjacent side of the substructure in close proximity thereto.

3,202,242

INDUSTRIAL TRUCK WITH AN ELEVATABLE OPERATOR PLATFORM THAT IS MOVABLE WITH AND RELATIVE TO THE LOAD HANDLING MEANS

John Robert Vernon Dolphin, Basingstoke, England, assignor to Lansing Bagnall Limited, Basingstoke, England, a British company

Filed Apr. 10, 1963, Ser. No. 272,132
Claims priority, application Great Britain, Apr. 13, 1962, 14,345/62
4 Claims. (Cl. 187—9)



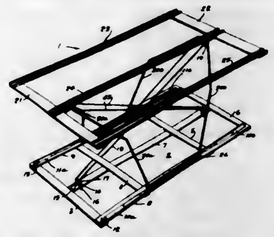
1. A material handling apparatus comprising a wheeled truck, a mast on said truck, a load-lifting carriage movable vertically on said mast, material handling means mounted on said carriage, power operated means for so moving the carriage, an operator's platform supported on and movable vertically with said carriage, means for moving said operator's platform vertically with respect to said carriage independently of the movement of said carriage, whereby the operator may move the operator's platform up and down to enable him to observe the material handling operation without moving the load, said mast being located between the material handling means and said operator's platform.

3,202,243

ELEVATOR FOR SHIPS

Edgar C. Seward, 2008 S. Randolph St., Arlington 4, Va.

Filed Aug. 6, 1963, Ser. No. 300,398
11 Claims. (Cl. 187—9)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An elevator for moving cargo between decks of a ship wherein the cargo dimensions exceed the dimensions of the openings in the decks of the ship, the elevator comprising:

(a) an upper platform;

(b) a lower platform;

(c) supporting arms each pivotally connected at its top end to said upper platform and having its lower end slidable along the plane of said lower platform;

(d) actuating means to cause said lower end of the supporting arms to slide back and forth along the plane of said lower platform;

(e) a safety hold mechanism of crisscross cable bracings between said upper and lower platforms, said cable bracings capable of being shortened or lengthened; and

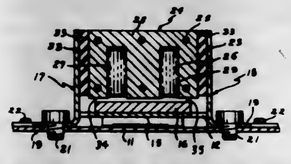
(f) an athwartship tilting connection between said upper platform and said supporting arms for tilting of said upper platform.

3,202,244

ELECTROMAGNETIC DEVICE WITH RESILIENTLY MOUNTED POLE UNIT

Jay N. Vogelsong, Columbus, Ind., and Charles E. Strain, Union, Ohio, assignors to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio

Filed June 26, 1962, Ser. No. 205,425
5 Claims. (Cl. 188—171)



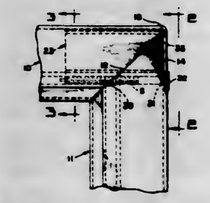
1. In a disc brake or the like, electromagnetic actuating means therefor, including a mounting plate, bracket means secured to said mounting plate in upstanding relation, said bracket means including a pair of opposed legs, a pole unit longitudinally disposed between said legs to present end surfaces in spaced relation to respective legs and to present a magnet face in spaced relation to said mounting plate, a pad of resilient deformable material contained between and secured to each leg and a respective end surface of said pole unit, said legs having feet secured to said mounting plate, said unit being positioned between said legs to effect a spacing of said magnet face from said mounting plate, and an armature between said pole unit and said mounting plate adapted to move to and from a position of engagement with said magnet face, said pads having the form of solid material substantially coextensive with said end surfaces and having a thickness substantially to space said pole unit from said legs and capable of yielding to absorb vibration and to allow said pole unit bodily movements of adjustment for flush mating contact of said magnet face with said armature, said solid material tending also to adsorb impact forces caused by the striking of said magnet face by said armature.

3,202,245

WINDOW AND DOOR FRAME CONSTRUCTION

Frank Le Tarte, Wales Township, St. Clair County, Mich., assignor to Le Tarte Enterprises, Smith Creek, Mich., a co-partnership

Filed Nov. 30, 1962, Ser. No. 241,194
7 Claims. (Cl. 189—36)



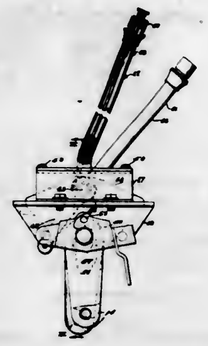
1. In a metallic frame, a corner construction, comprising: a pair of corner elements secured together in angular relationship; a gusset slidably mounted in a first one of said corner elements; and, a fastener means extended through the second one of said corner elements into fastening engagement with said first one of said corner elements and into fastening engagement with said gusset.

3,202,246

SELECTOR ASSEMBLY FLOOR SHIFT WITH CLUTCH CONTROL

Samuel A. Findley and Frank C. Rieger, Bronson, Mich., assignors to Kingston Products Corporation, Kokomo, Ind., a corporation of Indiana

Filed May 22, 1963, Ser. No. 282,282
3 Claims. (Cl. 192—3.5)



1. A gear selector assembly for an automotive transmission comprising

a gear selector lever having a bifurcated end,

a pin movable axially and angularly having a driven connection with said selector lever at said bifurcated end,

thereby to support said selector lever for pivotal movement,

a pair of gear changing arms selectively engageable in driven connection with said pin upon actuation of said selector lever,

a positioner member connected to the end of said pin and having an actuator leg movable in unison with said pin both axially and angularly,

self-centering spring-biased switch means for controlling a solenoid-operated clutch control circuit and having a lever assembly engageable with said actuator leg to operate said switch means in correlation with actuation of said selector lever,

and over-center toggle spring means operatively biasing said selector lever,

whereby when the selector lever has been actuated to place the transmission in gear the positioner member does not move sufficiently to break the clutch control circuit.

3,202,247

SELF-ADJUSTING CLUTCH BRAKE

Frederick C. Schmidt, Syracuse, and David L. Moore, De Witt, N.Y., assignors to Lipe-Rollway Corporation, Syracuse, N.Y., a corporation of New York

Filed Nov. 10, 1961, Ser. No. 151,523
5 Claims. (Cl. 192—13)

1. A clutch brake for a clutch having a driven member surrounded by a fixed sleeve member including:

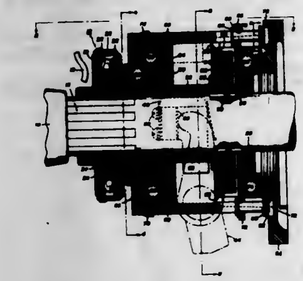
(A) the clutch releasing member mounted for sliding movement on the fixed sleeve member,

(a) said sleeve surrounding the driven member of said clutch and being spaced therefrom,

(b) a brake face formed on said sleeve,

(B) self-adjusting means connecting said releasing member to a brake pressure plate located rearwardly of said brake face,

(C) friction brake means mounted on said driven member for rotation therewith between said brake pressure plate and said brake face whereby said friction means is engaged by said pressure plate and brake face upon movement of the clutch releasing



member to first release said clutch and subsequently brake said driven member, and

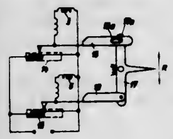
(D) said self-adjusting means being automatically movable in response to adjusting movement of said clutch releasing member to compensate for clutch wear.

3,202,248

ELECTROMAGNETIC CLUTCH AND BRAKE WITH MEANS TO ENERGIZE BOTH WINDINGS DURING TRANSITION

Horst Döpner, Konstanz (Bodensee), Germany, assignor to Telefunken Patentverwertungs-G.m.b.H., Ulm (Donau), Germany

Filed Aug. 7, 1961, Ser. No. 129,889
Claims priority, application Germany, Aug. 11, 1960, T 18,831
9 Claims. (Cl. 192—18)



1. In a controlled driving device with electromagnetically actuated friction coupling elements for transmitting a driving moment and a braking moment to the driven part of the device, the combination which comprises: a driving exciter winding and a braking exciter winding; and means for supplying current to both said windings for obtaining a current-torque characteristic which has a slope at the point where torque equals zero and for supplying only said driving winding with current in a regular drive condition of the device, only said braking winding with current in a regular brake condition of the device, and both said windings with current during a transition condition from regular drive condition to regular brake condition and vice versa in which transition condition when the current in one winding increases, the current in the other winding decreases.

3,202,249

CLUTCH AND BRAKE UNIT

Karl P. Schubert, Cleveland Heights, Ohio, assignor to The National Acme Company, a corporation of Ohio

Filed July 6, 1962, Ser. No. 207,959
4 Claims. (Cl. 192—18)

1. A drive unit including in combination a housing, a shaft in said housing,

means rotatively mounting said shaft,

a shifter member rotatively connected to said shaft and capable of axial shifting movement relative thereto, an annular groove on said shifter member,

a gear member,

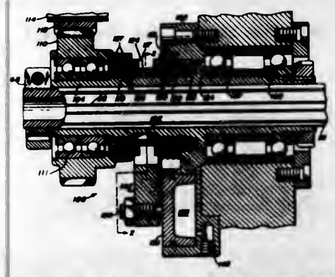
clutch plate means between said gear member and said shifter member,

spring means urging said shifter member in a first axial direction to normally engage said clutch plate means,

brake plate means between said housing and said shifter member,

wall means defining a cylinder in said housing having an axis parallel to and displaced from said shaft,

a piston in said cylinder,



connection means between said piston and said shifter member comprising lever means having first and second end portions,

said first end portion having a yoke with opposed arms disposed in said annular groove in said shifter member,

said second end portion engageable with said piston,

means pivotally connecting said lever means to said housing between said first and second end portions,

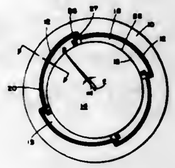
and movement of said piston causing pivoting of said lever means and axial movement of shifter member in a second axial direction to overcome said spring means and engage said brake plate means.

3,202,250

ONE-WAY CLUTCH WITH SURFACE COATING

Bertram A. Fulton, Lynnfield, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Original application Aug. 9, 1961, Ser. No. 130,276, now Patent No. 3,107,764, dated Oct. 22, 1963. Divided and this application Apr. 19, 1963, Ser. No. 274,226
9 Claims. (Cl. 192—45.1)



1. A one-way clutch, comprising in combination

(a) a unitary inner race;

(b) a unitary outer race co-axial with said inner race and defining a space therebetween;

(c) gripper means located and movable within said space and occupying substantially all of said space; and

(d) engaging means adapted to maintain said gripper means in contact with said races;

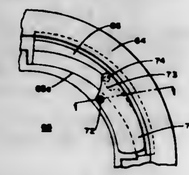
one of said races having a circular gripping surface concentric with said other race, said gripping surface being in direct area-to-area contact with a surface of said gripper means, the other of said races having at least one curvilinear cam-shaped surface in direct area-to-area contact with a surface of said gripper means, the said cam-shaped surface including a shoulder; said gripper means having circular and cam-shaped surfaces substantially corresponding to the surfaces of said races and in contact with substantially all of the circular gripping surface and substantially all of the curvilinear cam-shaped surface of said races, said gripper means being adapted to be limited by said shoulders upon relative rotary motion of said races in one direction and to lock said inner and outer races into a fixed position with relation to each other for the opposite direction of relative rotary motion of said races; said circular gripping surfaces of said one of said races and said gripper means being of materials which develop a higher static frictional force than said curvilinear cam-shaped surfaces of said other of said races and said gripper means.

3,202,251

ONE-WAY CLUTCH WITH SPEED RESPONSIVE MEANS

Bertram A. Fulton, Lynnfield, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Original application Aug. 9, 1961, Ser. No. 130,276, now Patent No. 3,107,764, dated Oct. 22, 1963. Divided and this application Apr. 19, 1963, Ser. No. 274,227
1 Claim. (Cl. 192—45.1)



A one-way clutch, comprising in combination

(a) a unitary outer race having a circular gripping surface;

(b) a unitary inner race having a plurality of curvilinear cam-shaped surfaces, co-axial with said outer race and defining a space therebetween;

(c) a plurality of wedge-shaped gripper means located and movable within said space and having circular and curvilinear cam-shaped surfaces substantially corresponding to the surfaces of said outer and inner races, respectively, and in contact with substantially all of said circular gripping surface and substantially all of said curvilinear cam-shaped surface, the sides of said gripper means defining contoured cam surfaces;

(d) pivoted mass means rotatably affixed to said inner race and having cam follower means adapted to bear on said contoured cam surfaces on said sides of said gripper means, whereby said pivoted mass means during overrunning of said inner race overcomes the effect of centrifugal force on said gripper means and forces said gripper means away from said outer race thereby reducing wear between said gripper means and said outer race.

(e) engaging means adapted to maintain said gripper means in contact with said races;

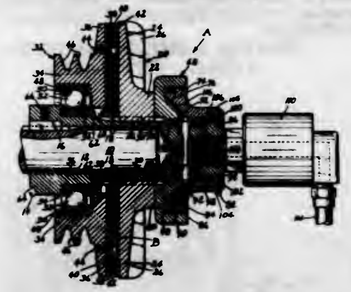
said circular gripping surface of said outer race having at least one groove and said circular gripping surface of said gripper means having at least one wedge adapted to fit said groove whereby said circular gripping surfaces are capable of developing a greater frictional force than said curvilinear cam-shaped surfaces.

3,202,252

FLUID PRESSURE OPERATED CLUTCH

Hugh K. Schilling, St. Paul, Minn., assignor to Horton Manufacturing Co., Inc., Minneapolis, Minn.

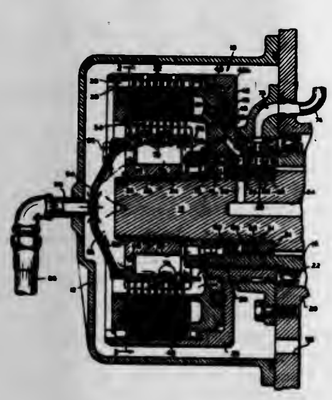
Continuation of application Ser. No. 67,360, Nov. 4, 1960. This application Apr. 23, 1963, Ser. No. 278,509
2 Claims. (Cl. 192—85)



1. An air operated clutch comprising, driven shaft means having an inward and an outward end and having an axial internal air passageway which opens to the outward end of said shaft means, axially fixed sheave means having secured thereto an annular outward facing friction face and being mounted for free rotation upon said shaft means, driven friction disc means located outward from said friction face and said sheave means and slidably carried by said shaft means for movement into and out of clutching engagement with said friction face of said sheave means, said disc means being rotatably fixed to said shaft means, spring means for normally urging said friction disc means out of engagement with said friction face of said sheave means, means interposed between said outward end of said shaft means and said driven disc means operable to slidably urge said disc means into clutching engagement with said friction face of said sheave means upon the introduction of air under pressure into the passageway of said shaft means, said interposed means including a pressure cylinder slidably carried by and rotatable with said shaft means, said pressure cylinder having a radial surface abuttingly engageable with said disc means and an annular flange extending therefrom, said pressure cylinder further having a conoidal pressure surface terminating at its outer periphery in radially spaced relation to the inner surface of the said annular flange whereby to define therewith an annular pressure surface normal to the longitudinal axis of said shaft means, an axially fixed piston member carried by and rotatable with said shaft means between the outward end thereof and said pressure cylinder, said piston member having an annular outer surface sealingly slidable within the said annular flange of said pressure cylinder and having an annular face normal to the longitudinal axis of said shaft means and abuttingly engageable with said annular pressure surface of said pressure cylinder, said piston member further having a conoidal pressure surface terminating at its outer edge with the said annular face thereof, said conoidal pressure surfaces of said pressure cylinder and said piston member being substantially coextensive with one another and being in closely spaced parallel relation to each other when the said annular face of said piston member is in contact with the said annular pressure surface of said pressure cylinder and defining therebetween an inclined annular pressure passageway, said shaft means having a cross hole formed therethrough and in communication with the internal

passageway of said shaft means and said pressure passageway whereby upon the admission of air under pressure thereinto pressure is exerted uniformly upon the entire annular pressure surface and conoidal pressure surface of said pressure cylinder to thereby slidably move said friction disc means into engagement with said friction face of said sheave means and rotate said sheave.

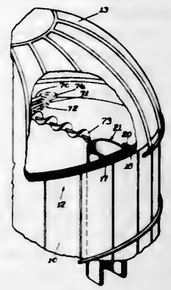
3,202,253
CLUTCH COOLING MEANS
Howard V. Merritt and Ronald H. Bolster, Jackson, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Dec. 4, 1961, Ser. No. 156,733
1 Claim. (Cl. 192—113)



A multiple disc friction engaging device comprising, an outer drum member, a first plurality of friction plates carried by the said outer drum member internally thereof, an inner hub member located within and coaxially of the said drum member, the said hub member being carried by a shaft adjacent one end thereof, a second plurality of friction discs carried externally by the said hub member and interleaved with the first-mentioned friction discs, a cap member secured to the said inner hub member for rotation therewith, substantially covering the said shaft end and forming with the said inner hub member and the said shaft end a mixing chamber, a non-rotatable housing surrounding the said outer drum member and the other aforementioned portions of the friction engaging device, the said cap member having a centrally located opening therein, means for discharging a liquid into the said chamber to impinge against the said shaft end including a conduit extending through the said housing and aligned with the said opening, the said opening admitting air to the said chamber for mixing with the said liquid, passage means for circulating the mixture of liquid and air radially outwardly over the friction discs, and other passage means within said housing providing for the return of the air from the said mixture to the mixing chamber after the mixture has been discharged from said outer drum member.

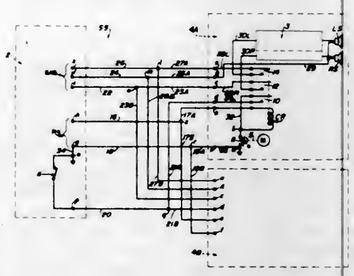
3,202,254
SILO CONSTRUCTION
Ray L. Oughton, Woodstock, Ill., and Wallace J. Macemon, Madison, Wis., assignors to Martin-Marietta Corporation, a corporation of Maryland
Filed Feb. 19, 1962, Ser. No. 173,959
5 Claims. (Cl. 193—15)

1. In a silo having a bottom door and a substantially continuous silo wall above said door, the combination comprising a longitudinally movable unloading chute, a pair of laterally and substantially uniformly spaced tracks, said tracks being attached to the interior surface of the continuous wall and extending longitudinally in an upward direction from the top of said bottom access door, said unloading chute comprising segments having laterally



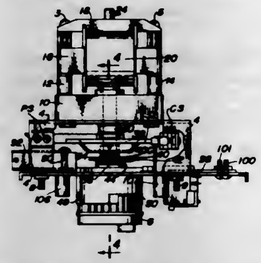
extending lips interengaged with said tracks to hold said segments on said wall while permitting longitudinal movement thereof, and said chute segments having an end flange portion adapted to coact with a cooperating portion of another chute segment, the surface of said wall between said spaced tracks and the chute segments forming a closed tubular structure.

3,202,255
SWITCHING ARRANGEMENT FOR COIN-OPERATED PHONOGRAPH SYSTEMS
Mahlon W. Kenney, Oak Park, and Robert Kapoun, Glenview, Ill., assignors to The Seeburg Corporation, Chicago, Ill.
Filed Aug. 2, 1963, Ser. No. 299,572
7 Claims. (Cl. 194—1)



1. A switching system for interconnecting a coin-operated main phonograph unit, at which records are stored for selection and play, and a coin-operated remote phonograph unit, at which records stored in the main phonograph unit may be selected and played, comprising:
relay means in the remote phonograph unit;
switch means adapted to be closed by said relay means in order to transmit audio signals from the main phonograph unit to the remote phonograph unit;
selection responsive means for energizing said relay means in response to a record selection made at the remote phonograph unit; and
self-locking means for retaining said relay means in an energized state for the duration of play of a record selected at the remote phonograph unit and of any subsequent records selected either at the main phonograph unit or at the remote phonograph unit prior to the termination of play of the selected record.

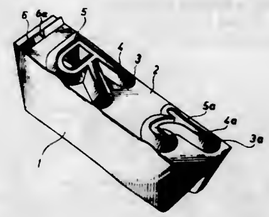
3,202,256
MULTIPLE PRICING CREDIT MECHANISM FOR COIN-RESPONSIVE EQUIPMENT
Herman G. Jensen, Chicago, Ill., assignor to The Seeburg Corporation, Chicago, Ill.
Filed Aug. 9, 1963, Ser. No. 301,064
15 Claims. (Cl. 194—15)



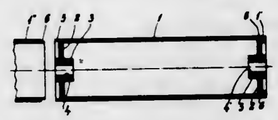
12. A multiple pricing credit mechanism of the character described, adapted for subtracting credit from a ratchet credit wheel in response to a given type of selection, the said ratchet credit wheel being of the type which may be rotated in a given direction in amounts corresponding to the credit units established by the deposit of coins in coin-responsive equipment, and comprising:
a frame;
a shaft journaled for rotation on the frame;
a driving gear;
means for detachably mounting the driving gear on the shaft for rotation therewith and for axially slideable movement thereon;
a first ratchet segment on the driving gear adapted to intermesh with the teeth of the ratchet credit wheel in order to effect rotation thereof by a first amount;
a second ratchet segment on the driving gear adapted to intermesh with the teeth of the ratchet credit wheel in order to effect rotation thereof by a second amount;
means for positioning the driving gear at a first axially fixed position on the shaft wherein the first ratchet segment is aligned with the ratchet teeth of the ratchet credit wheel and for repositioning the mounting member at a second axially fixed position on the shaft wherein the second ratchet segment is aligned with the ratchet teeth of the ratchet credit wheel;
drive means adapted to rotate the shaft in a direction such that the driving gear effects rotation of the ratchet credit wheel in a direction opposite to the said given direction; and
means for activating the drive means so as to effect one cycle of revolution for the shaft for each selection of the said given type which is made in the coin-responsive equipment,
whereby the said given type of selection may be priced at either a first or a second amount corresponding respectively to the amounts of rotation of the ratchet credit wheel effected by the ratchet segments.

3,202,257
BOLD FACE TYPE CHARACTERS HAVING RECESSED FACES
Karl Rhau, Wilhelmshaven, Germany, assignor to Olympia Werke A.G., Wilhelmshaven, Germany
Filed Sept. 16, 1963, Ser. No. 309,223
Claims priority, application Germany, Oct. 4, 1962, O 9,004
4 Claims. (Cl. 197—36)

1. In a typewriter, in combination, a cylindrical roller having a predetermined radius of curvature and adapted to support on its curved outer face a typewriter paper; a typewriter ribbon having a predetermined thickness and adapted to be located superimposed upon typewriter paper located on said roller; and a type adapted to be placed adjacent the outer face of the typewriter ribbon and including a type body having a top surface facing said typewriter ribbon but located spaced therefrom and a type character projecting from said top surface of the type body and having a wide front face spaced from said top surface and formed at least along the outer edge of said front face with a continuous projection projecting away from said top surface toward said typewriter ribbon adapted to engage the same, said continuous projection and said front face together defining a cavity having a depth less than said predetermined thickness of said typewriter ribbon so as to be adapted to be filled with a portion of said typewriter ribbon upon impact of said continuous projection on said ribbon, whereby a proper imprint of an area equal to that of the whole front face of said type character is produced on said typewriter paper.



3,202,258
ARRANGEMENT OF ROLLERS FOR CONVEYORS
Per-Christian Isaksen, Postboks 108, Fredrikstad, Norway
Filed July 1, 1963, Ser. No. 292,059
Claims priority, application Norway June 29, 1962
5 Claims. (Cl. 198—1)



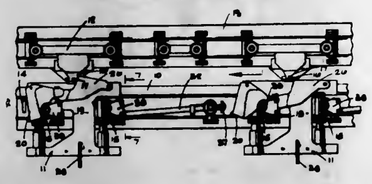
1. A roller which is adapted to form one of a plurality of rollers of a roller conveyor in which said plurality of rollers are respectively mounted for free rotation on a plurality of parallel shafts, said roller comprising a plurality of identical roller elements coaxially arranged with respect to each other in end-to-end relation and fixed to each other to form said roller from said plurality of roller elements, whereby a roller of a given length can be built up from a selected number of said elements, each of said elements having a hollow interior and including an elongated tubular member open at one end and carrying at its other end a transverse end wall formed with a central opening for receiving a shaft of the conveyor so that the open end of one element can be fixed to the end of the next element which carried said end wall while the roller will be supported for rotation at the central openings of the plurality of end walls of said elements, said end wall having an end portion adapted to be joined to the end portion of the next roller element at the open end of the latter, and a closure plate closing the open end of that one of said elements which is situated at the end of said plurality of elements and does not have its open end closed by another element, said closure plate also being formed with a central opening through which the shaft which supports the roller is adapted to pass, so that closure plate will also participate in the support

of said roller for rotary movement, and said closure plate having an exterior diameter equal to the exterior diameter of said roller elements.

3,202,259
CONVEYOR SYSTEMS FOR CONVEYING GOODS

Olaf John Barclay Orwin, Quinton, Birmingham, England, assignor to Fisher & Ludlow Limited, Tipton, England, a British company

Filed Dec. 17, 1963, Ser. No. 331,179
Claims priority, application Great Britain, Dec. 20, 1962, 48,243/62
7 Claims. (Cl. 198—1)

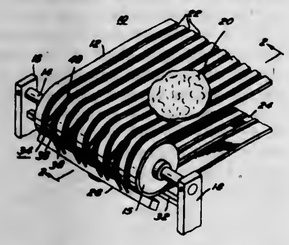


1. A conveyor system including a plurality of wheeled load supporting trolleys and a supporting trolley track along which the wheeled trolleys are adapted to be advanced, a load supporting wheel of each trolley having braking means, each braking means comprising a wedge member on the trolley adjacent the periphery of the load supporting wheel, the wedge member having a wedging surface of concave configuration, the axis of curvature of which is eccentric in relation to the axis of rotation of the load supporting wheel, so that the wedge surface and load supporting wheel tread converge relatively in a direction around the periphery of the wheel, corresponding to the direction of wheel rotation when the trolley advances in the reverse as opposed to the forward direction, and a braking element in the form of a ball disposed between the tread of said trolley wheel and the wedge surface of said wedge member, the arrangement being such that during normal, i.e., forward direction of advancement, of the trolley, the braking element tends to be displaced in the direction of relative divergence between the tread and wedging surface to permit of free rotation of the trolley wheel, and during any reverse movement of the trolley the braking element is displaced in the opposite direction, so as to become wedged between the wheel tread and the wedging surface.

3,202,260
CONVEYOR

Robert S. Wolf, Philadelphia, Pa., assignor to Philadelphia Belting Co., Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 17, 1962, Ser. No. 232,644
14 Claims. (Cl. 198—20)

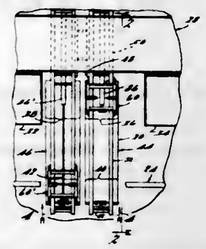


1. A conveyor belt system comprising a first and second conveyor belts, each mounted on a rotatable roll, said second conveyor belt being mounted adjacent to and below said first conveyor belt, said first conveyor belt having longitudinal grooves on the outer surface thereof, and a stripper finger assembly adapted to cooperate with the grooves on said first conveyor belt outer surface to strip material from said first conveyor belt and transport it to said second conveyor belt.

3,202,261
TRANSFER MECHANISM

Leon J. Pianowski, Detroit, Mich., assignor to The Udylite Corporation, Detroit, Mich., a corporation of Delaware

Original application Jan. 7, 1959, Ser. No. 785,479, now Patent No. 3,123,197, dated Mar. 3, 1964. Divided and this application June 6, 1963, Ser. No. 293,551
8 Claims. (Cl. 198—20)



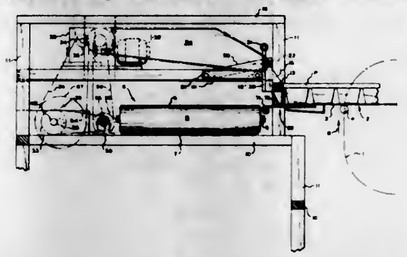
1. In combination, a transfer mechanism for use in transferring work carrying racks between a first conveyor and a second conveyor, both of which have supports spaced therealong adapted to carry said racks and both of which have a loading station and an unloading station and stop periodically at said stations, said transfer mechanism comprising a first track extending between the unloading station of said first conveyor and the loading station of said second conveyor, a second track extending between the unloading station of said second conveyor and the loading station of said first conveyor, a loading cart on said first track, an unloading cart on said second track, means for moving said carts along said tracks rack supporting means on each of said carts movable vertically relative thereto, means including a pivotally mounted lift track engageable with said rack supporting means for raising said rack supporting means of said loading cart while it is at said unloading station of said first conveyor for picking up a rack therefrom, means including a pivotally mounted lift track engageable with said rack supporting means for lowering said rack supporting means of said unloading cart while it is at said loading station of said first conveyor for transferring a rack thereto, and means preventing substantial vertical movement of each of said rack supporting means relative to its cart while its cart is at one of said stations of said second conveyor.

3,202,262
RECIPROCATING PUSHER TRANSFER APPARATUS

Morris C. Jones, Jr., Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York

Filed Mar. 28, 1963, Ser. No. 268,758
9 Claims. (Cl. 198—24)

1. Transfer apparatus comprising guide means defining a substantially horizontal path; a loader carriage member having article engaging means movable forwardly along said path from a first position to a second position; means on said carriage member rockably supporting the latter on said guide means; an endless driven member movable in a continuous orbital path having forward and reverse runs above said article engaging means; link means connected to said means rockably supporting the carriage member and to said endless member for movement about said orbital path; support post means extending upwardly from said article engaging means and rigidly connected to said article engaging means forwardly of said means rockably supporting the carriage member;

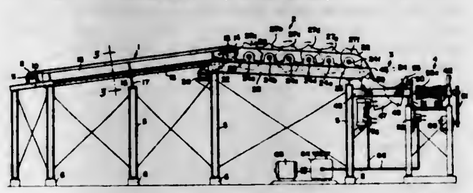


abutment means on said support post means above said endless member and engageable with said link means upon movement of the latter to said reverse run to rock said carriage member about said supporting means; and means for driving said driven member.

3,202,263
LOG DECK AND SEPARATOR

Frank G. Stuller, William H. Gumz, and Eugene J. Anderson, Milwaukee, Wis., assignors to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Sept. 22, 1964, Ser. No. 398,264
4 Claims. (Cl. 198—34)



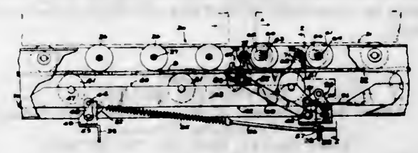
1. Log handling apparatus having a receiving end and an opposite discharge end, comprising a frame having horizontal shafts arranged in a series parallel to and between said ends, a series of discs fixed to each shaft at spaced intervals and having aligned lobes, the upper lobes of the discs of each shaft forming cradles in which individual logs may be carried and transferred from trough to trough and from end to end of the apparatus, drive means operatively connected to said shafts to turn the same so that the peripheral speed of the discs and the movement of the cradle of each shaft nearer said discharge end is progressively faster toward said end whereby the different speeds of said lobes effects separation of the logs during transfer from said receiving end to said discharge end for individual delivery of the logs to other conveyor means or the like at the said discharge end.

3,202,264
LIVE ROLLER CONVEYOR

Homer S. Harrison, Detroit, Mich., assignor to Mechanical Handling Systems Inc., Detroit, Mich., a corporation of Michigan

Filed June 12, 1962, Ser. No. 201,914
18 Claims. (Cl. 198—127)

1. A conveyor comprising
a frame,
a plurality of conveyor rollers extending transversely and rotatably mounted in the frame,
a belt driven beneath the conveyor rollers,
a plurality of pressure roller sections positioned at longitudinally spaced points beneath said belt for urging the belt into engagement wtih the conveyor rollers to drive the conveyor rollers and, in turn, articles in succession along said conveyor rollers,
means for mounting each said section for movement toward and away from the belt to move the belt into and out of driving engagement with the conveyor rollers,
a trigger roller individual to each said pressure roller section, means for mounting said trigger roller in series with the conveyor rollers with its axis movable longitudinally relative to the axis of the conveyor for engagement by said belt,

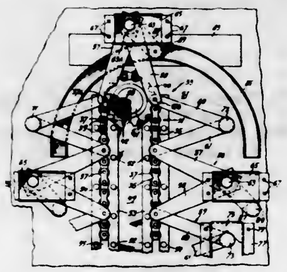


said trigger roller being movable rearwardly by tracking along the underside of an article due to engagement of the trigger roller with the belt when an article is interrupted over the trigger roller in its movement on the conveyor,
a clutch adapted to engage and grip said belt,
means actuated by the movement of the trigger roller longitudinally of the conveyor for momentarily engaging said clutch with the belt,
and means operated by the clutch for moving the pressure rollers away from the belt.

3,202,265
CONVEYOR ASSEMBLY FOR CONVEYOR DRIVEN EQUIPMENT

Walter G. Anders, Tonawanda, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 28, 1961, Ser. No. 162,884
9 Claims. (Cl. 198—158)



1. In conveyor driven equipment of the class described, a conveyor including a pair of spaced endless conveyor chains movable along a vertical path, a plurality of carriers having opposite ends arranged between said spaced conveyor chains, means interconnecting said carriers to said conveyor chains to transmit motion of the conveyor to the carriers, said interconnecting means including a first and a second linkage means for each carrier at one end of said carriers and connected to the carriers and to one of said conveyor chains, said first and second linkage means each carrying a portion of the weight of the carriers and subjected to compression and tension forces, said first linkage means including a pair of arms pivotally joined at adjacent ends by a pivotal connection secured to the said one ond of the carriers, the other ends of said pair of arms being attached at spaced points on said one conveyor chain, each of said arms being subjected to

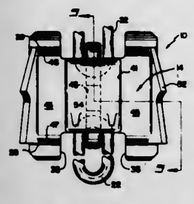
either a compression force or a tension force and exerting a force on its point of attachment to said one conveyor chain, said second linkage means including a pair of second arms joined at adjacent ends by a pivotal connection engaging the carrier, the other ends of said pair of said second arms being attached at spaced points on said one conveyor chain, each of said second arms being subjected to either a compression force or a tension force and exerting a force on its point of attachment to said one conveyor chain, the adjacent arms of said first and said second linkage means for an individual carrier having unlike forces exerted thereon and having a common point of attachment to said one conveyor chain for those arms.

3,202,266
CONVEYOR BELTS
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany
Filed Apr. 12, 1962, Ser. No. 187,077
Claims priority, application Germany, Apr. 20, 1961, Sch 29,581
7 Claims. (Cl. 198—195)



1. An articulated conveyor belt for compressing and feeding tobacco, tea and other material, comprising a plurality of plate-like outer articulation links, side edges on said outer links, sharp corners projecting from said side edges, a plurality of inner articulation links pivotally engaging said outer links so that side edges of succeeding outer links lie adjacent one to the next with a space therebetween, and solid, resilient filler strips provided in said spaces between said sharp corners of adjacent side edges and being arranged so that said corners bite into said filler strips at least where the belt travels along a plane surface, whereby to seal said spaces.

3,202,267
LOG HAUL CHAIR
Charles H. Watters, 1895 W. 60th Ave., Vancouver, British Columbia, Canada
Filed May 25, 1964, Ser. No. 369,740
11 Claims. (Cl. 198—200)



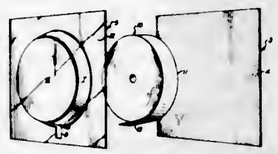
1. In log haul chain-link conveyors a log haul chair to replace a link in the chain comprising a base, a pair of longitudinally spaced hooks rigidly connected to the base and oriented in the direction of the link to be replaced, said hooks having free ends extending towards each other and being adapted to engage the chain links adjacent to the first-mentioned link, a cap secured to the base, having a portion thereof extending between the free ends of the hooks to thereby form a link-shaped enclosure, and means on the cap to grippingly engage the hook, to prevent spreading of the latter when a load is applied to the conveyor.

3,202,268
COIN HOLDER
Raymond R. Ward, North Royalton, Ohio, assignor to Ray-Craft, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 25, 1964, Ser. No. 347,167
5 Claims. (Cl. 206—.81)



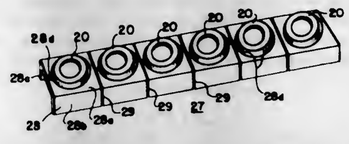
5. A coin holder comprising a pair of spaced, parallel, rigid walls; an integral, cross-shaped, flexible divider member formed of resilient plastic disposed between said walls; said divider having four radiating arms terminating in flared portions adjacent to the edges of said walls; adjacent pairs of said arms defining coin holding compartments within said holder with each said compartment opening at edge portions of said walls; adjacent of said flared portions cooperantly restricting the entrance to each said compartment whereby coins are releasably retained within said compartments with portions thereof protruding from said compartments beyond said edges of said walls; means defining an aperture through each said flared portion adjacent to edge portions of said walls; said walls having pairs of cooperant posts projecting into each said aperture from opposite ends of said aperture; each said post having an angled surface adjacent to its distal end for camming said posts apart as they move into said aperture from opposite ends thereof. each said post having a step spaced away from said distal end and adapted to snap over the step of the other post when said walls are pressed firmly against said divider member whereby said walls and said divider member are mechanically interlocked together.

3,202,269
CONTAINER FOR TEXTILE TAPES, RIBBONS AND THE LIKE
Herbert Lewis and Moniek Levy, Penrith, New South Wales, Australia, assignors to Cuckson Textiles Proprietary Limited, New South Wales, Australia, a company of Australia
Filed Mar. 7, 1963, Ser. No. 263,570
6 Claims. (Cl. 206—52)



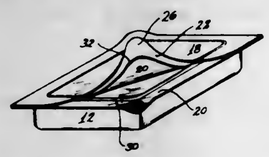
1. A container comprising a flat base and a covering member of transparent sheet material having a flat marginal portion secured to said base, a pre-formed recess being provided in a central portion of the covering member to define a cavity between the covering member and the base, a roll of material in said cavity, said covering member including a wall bounding said recess, a slot being provided in the wall bounding the recess and a slot being provided in said covering member in said flat portion and constituting an extension of the slot in the wall, said roll of material having a free end protruding through the slot in the wall.

3,202,270
QUICK ATTACHING BUTTON
Kenneth P. Schory, 535 Park Plaine, and Thomas M. Steinbach, 1804 S. Crescent Ave., both of Park Ridge, Ill.
Filed Nov. 23, 1962, Ser. No. 239,670
5 Claims. (Cl. 206—56)



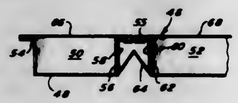
1. A cartridge of quick attaching buttons comprising a channel-shaped member provided with a plurality of button openings in the bight portion thereof, a quick attaching button in each of said openings, each button comprising a button portion having the edges thereof spaced from the bight portion of said member by integrally formed bridging means, an attaching element having a portion thereof molded into said button portion, and another portion projecting from the underside of said button portion and extending into the channel of said channel-shaped member.

3,202,271
EASY OPENING CONTAINER
Douglas Kirk, Barrington, Ill., assignor to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey
Filed Dec. 11, 1962, Ser. No. 243,778
5 Claims. (Cl. 206—56)



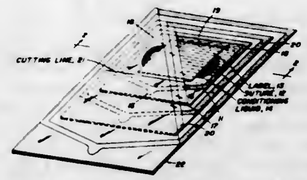
1. A container having an item to be packaged therein and comprising a body portion of thermoplastic material and having a lid formed of a plurality of superposed sheets of material, one said sheet being joined to said body portion to provide a seal line coextensive with the periphery of said body portion and a second said sheet being joined to said first sheet to provide a second seal line substantially parallel to and substantially coextensive with said first seal line but laterally spaced therefrom thereby providing a tear track between said seal lines.

3,202,272
FOOD CONTAINER
Arthur D. Hertzog, 116 N. 11th St., Allentown, Pa.
Filed Mar. 16, 1964, Ser. No. 352,245
6 Claims. (Cl. 206—56)



1. A container comprising a single sheet of material, a series of discrete cavities having open ends formed in said sheet, said sheet being folded so that each cavity has a flange adjacent its open end separate and spaced from the flange of an adjacent cavity, said sheet also being folded so that a portion of said sheet connects adjacent cavities below said flanges, said portion including means for bending ajacent cavities relative to each other.

3,202,273
SUTURE PACKAGE FOR SERVING SUTURES STERILE TWICE
Charles T. Riall, Danbury, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine
Filed Dec. 14, 1962, Ser. No. 245,365
3 Claims. (Cl. 206—63.3)



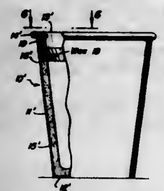
1. A suture package comprising an outer, sealed, flexible, strippable envelope, dry and sterile on the inside, containing a second, sealed, flexible, strippable envelope, dry and sterile inside and out, containing an inner third, sealed, flexible envelope, sterile inside and out, each of said envelopes being readily cuttable with scissors, in which third envelope is a sterile suture; whereby the outer envelope can be stripped to release a sterile double wrapped suture, both of which wrappings may be severed at a single pass by sterile scissors, at a line above the enclosed suture and at such a location that both the second and third envelopes are simultaneously cut without compromising the sterility of the suture, the operator, or the scissors, and the contained suture released for sterile use; and additionally whereby a second sterile stripping may occur where a compromise of sterility of the second envelope is encountered, and the sterile inner envelope released in sterile condition, which envlope may be opened at a single pass by sterile scissors, at a line above the enclosed suture without compromising the sterility of the suture, the operator, or the scissors, and the contained suture released for sterile use, said strippable outer and second envelopes being strippable by grasping one of a pair of projecting edges extending beyond the seal line of such envelope in each hand and separating the edges, thereby separating at least in part the peripheral seal while retaining any contaminants in their original location on the surface of the envelope being stripped, and peeling the envelope back, whereby the contents are sterilely presented.

3,202,274
PACKAGING
Galen J. Klusmire, Westlake, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 7, 1963, Ser. No. 300,606
1 Claim. (Cl. 206—65)



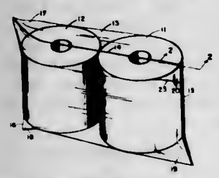
A package comprising a shaped article in an oriented thermoplastic entirely heat shrunk membrane, said membrane conforming only to a portion of the surface of said article, and the area of the article in contact with the thermoplastic heat shrunk overwrap being substantially greater than the area of contact obtained by heat shrinking of the overwrap alone.

3,202,275
COATED CUP AND METHOD OF COATING THE SAME
Roy G. Loughary, P.O. Box 6727, Portland 66, Oreg.
Filed Oct. 8, 1963, Ser. No. 314,665
2 Claims. (Cl. 206—65)



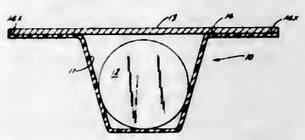
2. A plurality of coated cups each cup comprising a frusto conical shaped cup having a side wall and a bottom each having an inner surface, a continuous uninterrupted coating adhering directly to substantially the entire inner surface of the side wall and the inner surface of the bottom of the cup and ever exposed to the interior space of the cup, said coating being a substance dissolvable in either hot or cold liquid to produce a liquid for human consumption, said plurality of cups being arranged in stacked nested relation to one another so that the side wall of each cup protects the coated inner surface of the side wall of the adjacent cup in which said each cup is nested against the entrance of moisture and other extraneous matter, said substance of the coating being a dry effervescent powder, the coating terminating short of the upper edge of the cup to provide an uncoated area, a ring of paraffin covering said uncoated area so that the outer surface of the side wall of each cup engages the paraffin ring of the adjacent cup in which said each cup is nested to effect a moisture tight seal therebetween to protect the effervescent powder from deteriorating.

3,202,276
PACKAGE FOR CYLINDRICAL ARTICLES OR OBJECTS
Robert V. Burt and Alson R. Harm, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 23, 1963, Ser. No. 332,480
7 Claims. (Cl. 206—65)



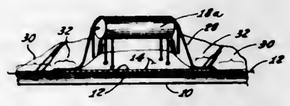
6. A package for at least two cylindrical articles having their axes in parallel relation and having their flat end surfaces in two parallel planes substantially perpendicular to said parallel axes comprising a web of wrapper material having spaced parallel edges when in flat condition, said wrapper material being a flexible, heat sealable, thermoplastic, organic polymer material, said wrapper being fitted snugly around said cylindrical articles to form a substantially rectangular tube with two opposite surfaces of said substantially rectangular tube superposed on said flat end surfaces of said cylindrical articles, said substantially rectangular tube having a longitudinal seam joining the spaced parallel edges of the wrapper material to complete the tube, the axis of said substantially rectangular tube being substantially perpendicular to and intersecting the axes of said cylindrical articles, said cylindrical articles being in abutting relationship intermediate their axes, an end seam formed at each end of the substantially rectangular tube surrounding said cylindrical articles, said end seams being substantially parallel to the axes of said cylindrical articles, said end seams being formed snugly against the cylindrical surfaces of said cylindrical articles, an excess of wrapper material normally extending outwardly from the flat end surfaces of said cylindrical articles after said end seams have been formed, said excess wrapper material being folded inwardly between the arcuate surfaces of the cylindrical articles at the ends of the package and the superposed end portions of said wrapper in the area where said wrapper is joined by said end seams.

3,202,277
DUAL SEAL PACKAGE
William Lewi, 37—01 Vernon Blvd., Long Island City, N.Y.
Filed Mar. 19, 1964, Ser. No. 353,143
1 Claim. (Cl. 206—78)



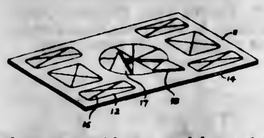
A rigid tamper proof dual sealed package for merchandise encapsulated therein comprising a rigid transparent plastic sheet having at least one merchandise holding cavity, having a suitable wide peripheral flange about said cavity, an article of merchandise disposed in said cavity and a suitably coated planar relatively rigid board sheet disposed over said peripherally flanged sheet in edge to edge relationship, said package having parallel spaced-apart heat-pressure seals securing said flange to said rigid board, one of said seals being an inner seal line located adjacent to said holding cavity and the other being an outer seal line located at the continuous extreme edges of said two sheets, said outer seal line sealing said extreme edges of said two sheets continuously into a single bonded tamper proof integral edge.

3,202,278
ARTICLE PACKAGE AND METHOD OF MAKING THE SAME
Robert Taylor, La Crescenta, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed May 8, 1962, Ser. No. 193,275
8 Claims. (Cl. 206—80)



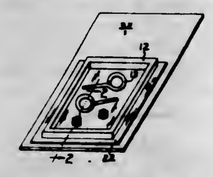
3. A package for articles comprising: a mounting card comprising relatively stiff, and uniformly air-porous material; a layer of relatively non-porous barrier material on one surface of said mounting card, said layer of barrier material covering a larger portion of the surface of said card than the plan form area of an article to be packaged thereon to substantially reduce the air-porosity of the covered portion; and a thermoplastic cover sheet vacuum-drawn over said article and to said card, said cover sheet being drawn tightly against the uppermost surfaces of said article to secure the article in position on said barrier material and away from the side surfaces of the article and to the periphery of said barrier material to adhere to the remaining uncovered portions of said surface of said card about said barrier material whereby an enclosure is formed for said article.

3,202,279
PACKAGE CONSTRUCTION AND METHOD
John R. Czerkies, Rome, and Edwin C. Peck, New Hartford, N.Y., assignors to General Electric Company, a corporation of New York
Filed July 9, 1963, Ser. No. 293,677
5 Claims. (Cl. 206—80)



2. A package assembly comprising a backing member provided with at least one depressed recess area, at least one packaged part carried on said area, and a sheeting member positioned over said part and in adherent contact with said backing member, said backing member being provided with a plurality of slots therethrough defining a plurality of generally triangular tabs sequentially mutually adjacent one another and occupying substantially the entire space in said recess area, each of said tabs having an apex at a common point near the center of the recess area and having a base at the edge of the recess area, whereby the tabs can be peeled from said sheeting member without tearing either of said members to facilitate removal of said part through said backing member.

3,202,280
CARD MOUNTED DISPLAY PACKAGE OF MERCHANDISE
Robert L. Larson, Auburn, Mass., assignor to Parker Metal Goods Company, Worcester, Mass., a corporation of Massachusetts
Filed Nov. 14, 1963, Ser. No. 323,661
1 Claim. (Cl. 206—80)

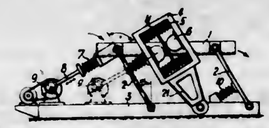


A display package comprising a flat cardboard support member, a plurality of articles to be displayed mounted on the board with spaces between the articles and a transparent thermoplastic film molded about each of the articles and conforming to the shapes thereof and partially encapsulating and fixing said articles in position, said film being in contact with but unattached to the support in said spaces, said film having a hollow molded bead extending continuously around the articles to provide stiffness to the film and support, a lateral flange extending outwardly from the bead, and an adhesive securing only the flange to the support.

3,202,281
METHOD FOR THE FLOTATION OF FINELY DIVIDED MINERALS
David Weston, 129 Adelaide St. W., Toronto, Ontario, Canada
Continuation of application Ser. No. 788,175, Jan. 21, 1959. This application Oct. 1, 1964, Ser. No. 400,817
5 Claims. (Cl. 209—166)

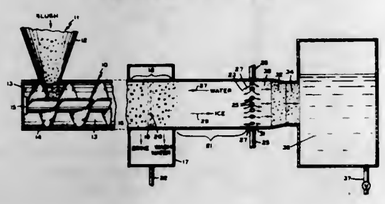
1. A method for the flotation of finely divided minerals which comprises, forming a pulp of a finely divided mineral in a first liquid, providing a second liquid comprising a mineral flotation treating reagent effectively immiscible with said first liquid and feeding a mechanical dispersion of said liquid mineral flotation treating reagent in a finely divided state into a selected zone of said first liquid, applying ultrasonic vibration to the finely divided reagent entering said zone, maintaining within said zone a localized concentration of said mineral flotation treating reagent, progressively passing the pulp through said zone whereby to apply said mineral treating reagent to said mineral, and then subjecting the treated mineral to flotation.

3,202,282
VIBRATORY SCREEN
Jaroslav Růžička, 74 Krizikovova, Prague 10, Czechoslovakia
Filed Apr. 3, 1962, Ser. No. 184,754
Claims priority, application Czechoslovakia, Apr. 8, 1961, 2,142/61
8 Claims. (Cl. 209—365)



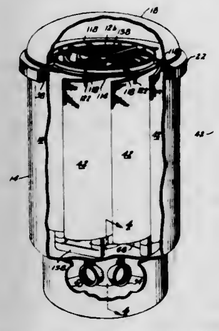
1. A vibratory screen operating in resonance and comprising:
(a) a supporting frame;
(b) a screen casing;
(c) at least two pairs of inclined struts pivoted at one end to said supporting frame and at the other end to the screen casing;
(d) a vibration drive mounted on the supporting frame;
(e) a connecting rod attached to said vibration drive;
(f) a resilient connection member having one end portion attached to said connecting rod and another end portion operatively connected to the screen casing;
(g) a plurality of balancing frame means,
(1) at least one balancing frame means being arranged at each side of the screen casing and mounted on carrier struts pivoted to said supporting frame,
(2) the common center of gravity of said balancing frame means coinciding with the center of gravity of said screen casing;
(h) springs having linear characteristic curves on each balancing frame means;
(i) a plurality of lateral bracket means mounted on said screen casing,
(1) said springs bearing with one end on the associated balancing frame means and with the other end on a respective lateral bracket means, said ends of the springs being spaced in a predetermined direction,
(2) whereby each frame means is resiliently connected to a respective bracket means for reciprocating movement relative thereto in said direction toward and away from a position of equilibrium; and
(j) resilient non-linear abutment members interposed between each bracket means and the associated frame means for limiting said movement.

3,202,283
PROCESS AND APPARATUS FOR SEPARATING AN ICE-LIQUID MIXTURE
Chien Liu, Stamford, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Feb. 8, 1962, Ser. No. 171,993
10 Claims. (Cl. 210—71)



1. A method for separating ice and liquid in a feed mixture which comprises continuously advancing said mixture, compressing said mixture so that the ice forms a substantially solid pack as the mixture is introduced into a draining zone, introducing under pressure, downstream of said draining zone and in direct contact with the packed ice, a wash liquid which is in part directed counter-current to said ice mass, withdrawing from said draining zone the liquid present in the feed together with the wash liquid and removing the washed ice mass downstream of the point of said wash liquid introduction.

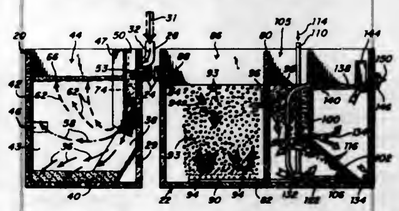
3,202,284
FILTER APPARATUS AND METHOD
Charles E. Wade, 18238 Gragmont, Covina, Calif.
Filed Jan. 14, 1963, Ser. No. 251,093
13 Claims. (Cl. 210—75)



6. A filter apparatus for filtering foreign matter from liquids comprising a housing means, means for introducing the liquid to be filtered into the bottom of the housing means, means for imparting a circular motion to the incoming liquid comprising an inlet chamber having a tangentially positioned inlet channel, means for imparting outward and upward motion to said incoming liquid, filter element means within the housing for filtering the liquid comprising a plurality of separate filter elements to deflect the upwardly and outwardly moving liquid by impingement against the element surfaces, said filter elements having spaces therebetween to provide discontinuous paths of flow outwardly and circumferentially, and outlet means for the filtered liquid.

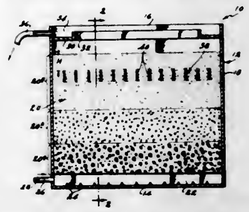
11. A method for filtering liquid comprising causing the liquid to be rotated in an inlet portion of a filter chamber, positioning filter elements each having a gradually varying radius of curvature and having a filter cake surface extending radially outwardly, and causing the liquid to move outwardly between adjacent filter elements to impinge on the filter cake surface at an arcuate angle to be deflected thereby in a discontinuous spiral flow of liquid not parallel to filter surfaces.

3,202,285
SEWAGE TREATMENT STRUCTURES
Frederick P. Williams, Montgomery County, Ohio (713 N. Euclid Ave., Dayton 7, Ohio)
Filed Aug. 8, 1961, Ser. No. 130,109
9 Claims. (Cl. 210—195)



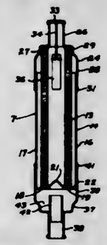
1. Structure for aerobic bacteria treatment of sewage comprising a container provided with an inlet passage and an outlet passage, a partition member, the partition member separating the container into two compartments, there being a first compartment and a second compartment, the inlet passage being in communication with the first compartment and the outlet passage being in communication with the second compartment, a gas diffuser at the bottom of the first compartment from which gas is forced outwardly, a first baffle and a second baffle within the second compartment, the first baffle being substantially vertical, the second baffle being angularly inclined and disposed below the first baffle and spaced therefrom, there being a passage between the second baffle and the bottom of the second compartment, the partition member having an opening therethrough for movement of material from one compartment to the other compartment, a gas diffuser below the second baffle, and a scum conduit extending from an upper portion of the second compartment to the gas diffuser which is below the second baffle.

3,202,286
FILTERING APPARATUS
Pieter Smit, Santpoort, Netherlands, assignor to N.V. Octrooien Maatschappij "Activit," Amsterdam, Netherlands
Filed May 14, 1962, Ser. No. 194,620
14 Claims. (Cl. 210—286)



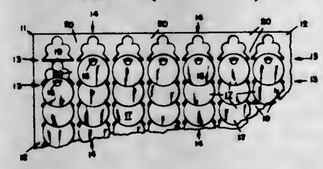
1. A filtering apparatus of the upflow type, comprising a housing containing a filter bed of granular solids which are static during normal filtering operation, inlet means and outlet means respectively supplying a liquid to said housing and removing liquid from said housing at vertically spaced apart locations so that the liquid to be filtered is passed upwardly through said filter bed, and at least one grating extending across said housing within said filter bed, said grating being disposed adjacent the top of the filter bed and spaced downwardly from the top surface of the latter and also below said outlet means, said grating having an open area of at least 75% of the cross-sectional area of said housing to permit a relatively high rate of flow of the liquid through said filter bed while preventing cracking of the latter.

3,202,287
FUEL FILTER WITH SEDIMENT CHAMBER
Alex N. Szwargulski, St. Louis, and Edgar W. Niemeyer, Normandy, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 684,301, Sept. 16, 1957. This application Oct. 2, 1961, Ser. No. 142,406
2 Claims. (Cl. 210—306)



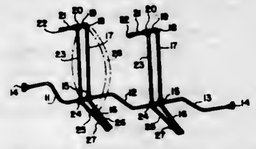
1. A fuel filter comprising an elongated tubular body member having a transverse wall closing one end thereof, said transverse wall including a centrally positioned inwardly projecting conical boss, a plurality of apertures spaced by bridge portions around the outer periphery of said transverse wall and an annular seat positioned between said spaced apertures and the base of said conical boss, a cup-shaped element having a nozzle at the end thereof and an annular shoulder extending laterally about said nozzle, the end of said cup-shaped element being telescoped with and sealed to the other end of said tubular body member, a tubular filter fitted within and spaced from said tubular body member, said tubular filter having one end thereof seated against said annular seat portion of said transverse wall and the other end thereof seated against the annular shoulder of said cup-shaped element, a tubular inlet structure including a cylindrical portion and an end wall portion, said cylindrical portion telescopically fitting said one end of said tubular body and being in sealed relationship therewith, said end wall portion including an outwardly extending centrally positioned nozzle structure, and a standpipe sealed in said nozzle structure and having one end thereof extending into said tubular inlet structure to a point beneath and spaced from said conical boss to provide a sediment chamber thereabout.

3,202,288
MOBILE TYPE SIGN
Warren T. Thrasher, Seminole, Okla., assignor to The Daw Corporation, Seminole, Okla., a corporation of Oklahoma
Filed Oct. 25, 1962, Ser. No. 233,016
3 Claims. (Cl. 211—13)



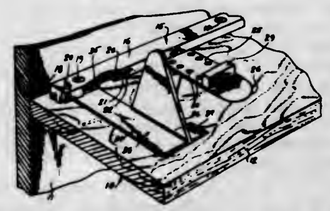
1. A base for a mobile sequin sign, comprising: a sheet of bendable material having rows and columns of tongues cut therefrom defining rows and columns of openings, each of said tongues having a relatively wide base portion, a relatively narrow neck portion and a head portion, said neck portion having a rounded upper surface for low friction support of a sequin of said sign, said head portion being transversely curved so as to pass through an aperture in said sequin when being placed thereon, said head portion being flattenable to retain said sequin on said neck portion, the portions of said sheet between said opening defining web portions of small areas to facilitate curving said sheets by bending thereof along lines passing through aligned ones of said web portions and/or to facilitate flexing breaking of said sheet into strips of desired widths along said lines.

3,202,289
STAND FOR BICYCLES AND THE LIKE
Frederic M. Burditt, 127 Coolidge Hill, Cambridge, Mass.
Filed July 1, 1963, Ser. No. 291,983
9 Claims. (Cl. 211—22)



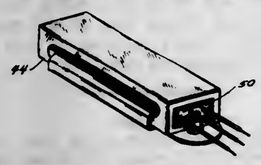
1. A stand for holding upright a cycle having a wheel to be embraced on the side thereof, said wheel being positionable in an upright reference plane at a fixed angle to said stand, comprising in combination, a base member, a first upright member supported by the base member and extending upwardly therefrom and adapted to engage a first side of a said wheel, a second upright member disposed substantially parallel to said first upright member and at a distance therefrom, and a cross-member pivotally connected to said first upright member and carrying said second upright member to swing said second upright member in an arc about the axis of the first upright member upon the swinging of said cross-member about the first upright member, the said second upright member upon being swung in said arc being variously spaced from said upright reference plane to permit a said wheel to be positioned in said upright reference plane and intermediate said first and second upright members and to be clamped between said upright members in said upright reference plane upon the swinging of said second upright member by said cross-member toward said upright reference plane.

3,202,290
BOOK-CARE SYSTEM
Richard Harvey, 66 Denton Ave., Lynbrook, N.Y.
Filed July 30, 1964, Ser. No. 386,363
8 Claims. (Cl. 211—43)



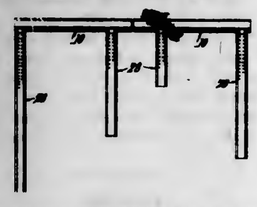
1. A book-care system comprising a shelf adapted to support books in upstanding position and having a front edge, a retainer secured to said shelf spaced rearwardly from said front edge, a page rest on said shelf and extending forwardly from said retainer for supporting engagement with the nether page edges of an upstanding book on said shelf, and connecting means detachably securing said retainer to said page rest to hold the latter in position.

3,202,291
MOUNTING BRACKET FOR TRIMMER POTENTIOMETERS
Raymond C. Root, Columbus, Nebr., assignor to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska
Filed July 11, 1963, Ser. No. 294,324
4 Claims. (Cl. 211—49)



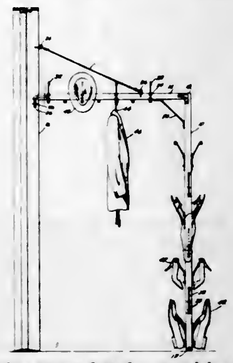
1. In a mounting bracket for rectangular in cross-section potentiometers, said potentiometer having an elongated longitudinally extending slot formed in opposite longitudinal vertical side walls,
a horizontal sheet portion of spring material, said sheet portion having parallel walls extending perpendicularly upwardly therefrom,
at least one longitudinally disposed corrugation formed in each of said parallel walls,
said corrugation being V-shaped in cross-section with their apexes extending horizontally inwardly to be yieldably received in said elongated slot in the adjacent vertical side wall of said potentiometer,
and apertured tab portions extending outwardly from the ends of said sheet portion and in the plane thereof securing said bracket to a support or the like.

3,202,292
ADJUSTABLE RACK OF THE APERTURED PANEL TYPE
John J. Deliso, 475 Shrewsbury St., Worcester, Mass.
Filed May 25, 1964, Ser. No. 369,910
2 Claims. (Cl. 211—87)



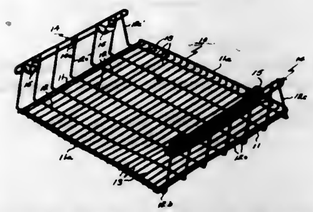
1. An article support comprising a main support member adapted to be mounted in generally horizontal position on a wall or the like, said main support member comprising a generally horizontal portion, a flange at each edge thereof, one of said flanges being arranged along the top edge of said main support member, and the other flange being arranged along the lower edge thereof, means securing the flange at the upper edge to said wall, the flange at the lower end of the main support member having an edge bearing against said wall, said flanges being of substantially equal extent, an upturned supporting lip extending along the flange at the lower edge of the main support member,
a series of generally vertically arranged apertured article-supporting racks dependingly mounted on the main support member and interengaging means between the horizontal support member and the vertical racks for dependently supporting the latter on the former,
said interengaging means comprising the upturned supporting lip and a downturned lip on each depending rack at the upper end thereof, the lower ends of the racks being plain, the turned-down lip on each depending rack being slidable along the supporting lip on the main support member to adjust the racks correspondingly,
each depending rack including a main body portion, a vertically arranged flange at each edge thereof and being adapted to contact said wall, and means on said flanges providing for attachment of said racks to the wall in selected adjusted position along the main support member.

3,202,293
APPAREL SUPPORT RACK
Granvel Franklin, 2534 St. John St., Flint, Mich.
Filed Apr. 1, 1964, Ser. No. 356,486
3 Claims. (Cl. 211—96)



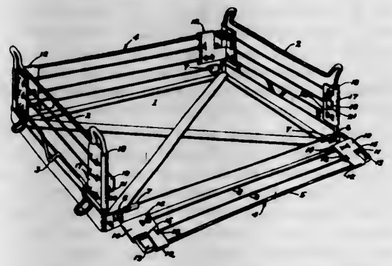
1. A clothing apparel rack comprising an upright member having a bearing member secured at a lower end thereof, a horizontal member secured at an upper end of said upright member and disposed for pivotal mounting to a door jamb, a plurality of apparel supporting members pivotally mounted and secured to said upright member and said horizontal member, said support members each extending angularly outward from said upstanding and said horizontal members.

3,202,294
SHIFT TYPE NESTING AND STACKING RECEPTACLE
Joseph A. Rogus, Willowick, Ohio, assignor to Mid-West Metallic Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 13, 1964, Ser. No. 337,426
7 Claims. (Cl. 211—126)



1. A receptacle adapted for tiering and nesting with a second like receptacle and comprising a generally planar rectangular bottom having parallel side frame members rigidly secured along two opposite sides thereof, a plurality of parallel cross wires extending beneath said bottom at right angles to said side frame members and rigidly secured thereto and extending a predetermined distance laterally beyond said side frame members and then having side wall portions bent upwardly in approximately parallel planes generally perpendicular to the plane of said bottom, said planes spaced laterally outside of said side frame members, said wires in each side wall portion inclined to the vertical in said parallel planes so as to nest with like wires of a second like receptacle, a top side wall member extending along each of said two opposite sides and rigidly secured to the upper ends of the side wall portions of said cross wires on the outer surfaces thereof, four tiering seat members rigidly secured one near each end of each top side wall member and extending inwardly from the associated side wall member less than said predetermined distance and providing seats vertically directly above tiering points on certain ones of said cross wires closely outside said side frame members, said seats being below said top side wall members and recessed in said seat members, and there being sufficient space between each of said seat members and the tops of said side wall portions of said certain cross wires, and all on the same side of said seat members, to permit a plurality of said certain cross wires to nest there, whereby when two like receptacles are tiered, said seat members prevent endwise movement of said cross wire tiering points and said seat members prevent lateral movement of said side frame members, and the upper one of two like receptacles can be nested into the lower receptacle by a slight horizontal shift.

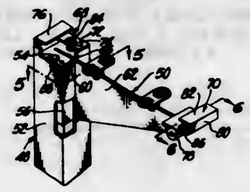
3,202,295
SIDE OPENING CARRIER
Clarence Drader, R.R. 2, South Edmonton, Alberta, Canada
Filed Feb. 4, 1964, Ser. No. 342,413
2 Claims. (Cl. 211—126)



1. In a carrier having a base framework with carrying bails journalled rotatably at opposite ends of the framework and movable from an upright to a folded position with respect to the framework, carrier sides journalled rotatably at opposite sides of the framework, means securing the sides in an upright position to the carrier bails when the carrier bails are in an upright position, such means being releasable manually to allow the sides to be opened with respect to the carrier, the means for securing the sides in an upright position comprises catches positioned on the carrying bails to project laterally on both sides of the carrier, and a rail contained in each carrier side, such rail positioned to engage at its ends with the catches projecting from the bails, said rail being resiliently flexible so that it may be distended manually to release the ends of the rail from the catches and allow the carrier side to be moved outwardly with respect to the carrier.

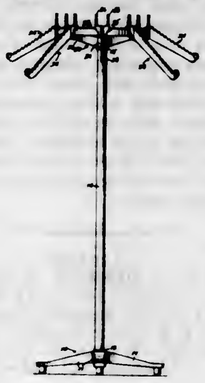
3,202,296
POST ASSEMBLY
Arthur G. Diack, 1049 E. 65th St., Inglewood, Calif.
Original application Aug. 28, 1961, Ser. No. 134,273. Divided and this application Oct. 8, 1964, Ser. No. 402,450
4 Claims. (Cl. 211—134)

1. A post assembly mountable on a supporting structure, and including:
(a) a square tube provided with internal screw troughs on two opposite sides thereof, and provided with a central longitudinal slot in a third side thereof, said slot extending from one end of said tube toward the other end thereof;



(b) a shelf bracket including a block inserted into said one end of said tube and secured to said tube;
(c) said shelf bracket also including an arm secured to said block within said tube and projecting laterally outwardly from said tube through said slot therein; and
(d) said block being recessed to receive said screw troughs.

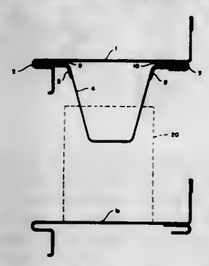
3,202,297
CLOTHES DISPLAY STAND
Peter Semonoff Hardy, Trumbull, Conn., assignor to Peerless Aluminum Foundry Co., Inc., Bridgeport, Conn., a corporation of Connecticut
Filed Apr. 3, 1964, Ser. No. 357,215
7 Claims. (Cl. 211—163)



1. A display stand comprising a floor-engaging base, a vertical post extending upwardly from said base, a vertical spindle at the upper end of said post, a rotatable head member including a central hub engaged upon said spindle, a plurality of radial spokes extending outwardly from said hub, and a circular rim carried upon the outer ends of said spokes having an annular beveled surface at its inner side adjacent its lower edge, and a plurality of rack arm members each comprising clamp means including a vertical wall portion, a pair of spaced hook means extending rearwardly from the upper end of said wall portion for hook engagement over the upper edge of said rim with spaced points of the inner side thereof, a lip portion extending rearwardly from the lower end of said wall portion for disposition beneath said rim, and a thumb screw carried by said lip portion centrally between said hook means having a conical end for wedging engagement with said beveled surface of said rim adjacent its lower edge at a point midway between said points of engagement of said hook means, and an arm portion extending forwardly from said wall portion of

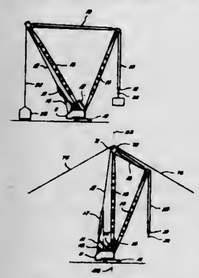
said clamp means having means for receiving a plurality of clothes hangers or the like in longitudinally spaced relation thereon.

3,202,298
BOOK-END
Rudolf Johan Koreska, Hvidegaard, Birkerod, Denmark
Filed Oct. 1, 1962, Ser. No. 227,412
6 Claims. (Cl. 211—184)



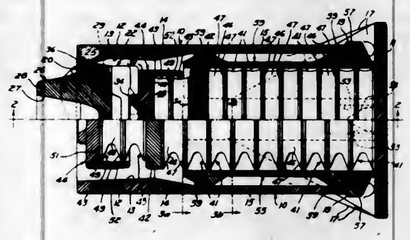
1. A book-end adapted to engage displaceably in grooves provided opposite each other on the underside of a first book-shelf, comprising at least one elongated, substantially flat guide member engaging in one of said grooves, and a downwardly projecting portion rigid with said guide member to support a book or the like on a second shelf mounted underneath, said projecting portion being in close proximity to one of said grooves on at least the frontal side of said first shelf, said guide member having a length that is between 30% and 40% of the distance between said grooves, so that lateral pressure applied to said projecting portion in a direction perpendicular to a line connecting said grooves, and applied just under said first shelf, will cause lateral sliding displacement of the book-end without turning about a vertical axis, while similar pressure applied at the bottom of said projecting portion, in the proximity of said second shelf, will not cause lateral displacement thereof owing to excessive friction encountered between said guide member and the associated groove.

3,202,299
MOBILE GUY DERRICK AND COUNTER BALANCING CRANE
Mitchell A. Decuir, Beaumont, Tex., assignor to T. S. Decuir, Geismar, La.
Filed July 22, 1963, Ser. No. 296,665
15 Claims. (Cl. 212—59)



1. A crane comprising:
a platform mounted for generally horizontal rotation on mobile support means,
a mast pivotally mounted on said platform for rotation with said platform and for pivotal movement through a first vertical arc,
power means mounted on said platform for pivotally moving said mast through said first arc,
a boom pivotally mounted adjacent the lower end of said mast for rotation with said platform and said mast and for pivotal movement through a second vertical arc,
means connected to said mast for moving said boom through said second arc independent of the movement of said mast through said first arc, and
attaching means rotatably mounted on said mast for securing guy means thereto during operation as a guyed crane.

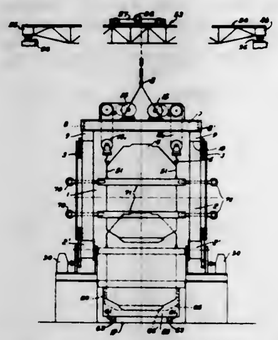
3,202,300
DRAFT GEAR
Donald R. Holm, Markham, and William D. Wallace, Homewood, Ill., assignors to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,761
7 Claims. (Cl. 213—22)



1. In a friction draft gear of the type which is characterized by a generally cylindrical housing having a closed end and an open end which is provided with an internal tapered friction surface, by a series of friction shoes in the open end of said housing and operably associated with said friction surface thereof, and by a wedge member engageable with said shoes and adapted for actuating same upon movement thereof inwardly of said housing, the improvement which comprises, in combination therewith, a longitudinally stacked series of resilient rubber-like pads disposed in centered relationship in said housing inwardly of said friction shoes for resiliently resisting inward movement thereof with the innermost pad being disposed against the closed end of said housing, follower means disposed between the outermost pad and said friction shoes, alignment means disposed in said housing and fitting about certain peripheral portions of said pads for retaining same in said stacked relationship, said alignment means having a non-broken longitudinal dimension which is at least equal to the longitudinal dimension of said stack of pads, and means on said alignment means which cooperate with said housing for preventing longitudinal and rotatable movement of said alignment means relative to said housing and for laterally stabilizing said alignment means in a manner such that said stack of pads is retained in centered relationship in said housing.

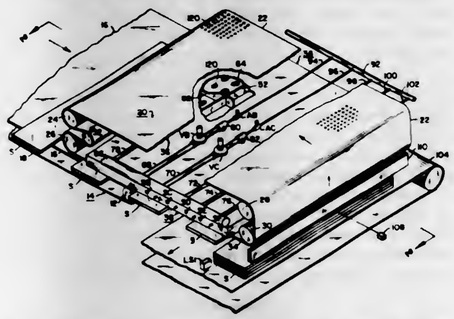
3,202,301
EQUIPMENT FOR HANDLING DRUMS
Jean-Baptiste Daveze, St.-Etienne, France, assignor to Compagnie des Ateliers et Forges de la Loire St.-Chamond-Firminy - St. - Etienne - Jacob Holtzer, Paris, France, a corporation of France
Filed Feb. 16, 1962, Ser. No. 173,766
Claims priority, application France, Feb. 23, 1961, 853,594
1 Claim. (Cl. 214—1)

Apparatus for handling a container, said apparatus comprising a cage on which the container is disengageably supported; means mounting said cage for rotation about a horizontal axis; a plurality of circumferentially arranged drive pins on said cage; a first support means positioned above said cage and having a part shaped to fit over and engage a part of said cage of corresponding shape; means for moving said first support means to bring said part thereof into engagement with said part of said cage with said first support means resting on said cage; means projecting from said first support means and being engageable between and with adjacent drive pins for ensuring



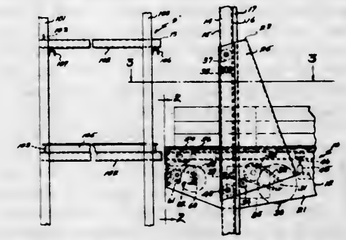
that said first support means will be horizontal when resting on said cage; second support means for supporting said container on said cage through the intermediary of said first support means; and means for lowering said container with respect to said first support means and hence with respect to said cage.

3,202,302
VACUUM TRANSFER CONVEYOR
Thomas A. Insolio, Jeannette, Pa., assignor to American-Saint Gobain Corporation, Kingsport, Tenn., a corporation of Delaware
Filed June 20, 1962, Ser. No. 203,771
2 Claims. (Cl. 214—1)



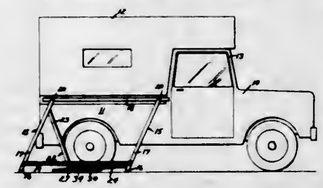
1. A transfer conveyor comprising an endless perforated belt threaded around a pair of spaced turnaround pulleys and having a lower run and an upper run, a vacuum chamber positioned between said upper run and said lower run, said vacuum chamber having a planar bottom wall in abutting relation with a surface of the lower run of said belt, said bottom wall having a plurality of spaced apertures therein substantially larger than said perforations in said belt, said chamber having a plurality of lateral walls forming a plurality of separate lateral compartments, vacuum means for each of said compartments, control means for each of said compartments, means to urge different sized articles into abutting relation with the under side of said belt lower run at a first location wherein said article is held against the surface of said belt by the vacuum in said chamber, and a plurality of spaced sensors positioned at one side of said belt at a second location, said sensors arranged to provide a signal as said article is conveyed to said second location, and means connecting said sensors to said control means, said last named means operable to actuate a sufficient number of said control means at said second location to deenergize said vacuum means in certain of said compartments to thereby release said article from said belt at said second location.

3,202,303
REVERSING LOAD STOP
Anthony R. Chasar, Cleveland, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 4, 1962, Ser. No. 185,058
6 Claims. (Cl. 214—16.4)



1. In a load storage apparatus, a load support comprising a pair of spaced, channel shaped members having their open sides facing each other; said members having upper and lower parallel flanges; an extractor movable into said support between said members and supported at its edges by said lower flanges; a vertically movable platform mounted upon said extractor and movable from a load release position below said upper flanges to a load support position above said upper flanges; power means moving said extractor into and out of said support to deposit or retrieve a load thereat by bridging said load across said members; pressure sensitive reversing means mounted upon said platform in such manner as to strike a load bridged across said members when said platform is in the load support position only; said power means responsive to actuation of said reversing means in such manner as to reverse the direction of movement of said extractor; said load support having stop means disposed beyond a load thereon in the direction of movement of said extractor into said support whereby a load on said support which is too light to actuate said reversing means is retained against sliding to effect positive actuation of said reversing means.

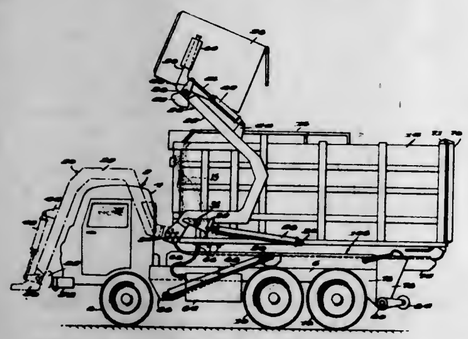
3,202,304
CAMPER SUPPORT
Hugh C. Lannen, East 4236 Hartson, Spokane, Wash.
Filed Feb. 24, 1964, Ser. No. 346,962
6 Claims. (Cl. 214—38)



4. A support for one side of a camper unit normally carried at the rear of a truck body, the camper unit having outwardly directed longitudinal ledges formed thereon at each side normally protruding beyond the sides of the truck body, comprising:
a pair of parallel upright members each having a

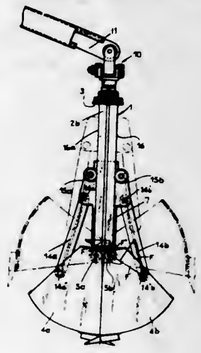
triangular configuration including an enlarged base adapted to rest upon a supporting ground surface;
a horizontal member pivoted to the upper ends of said upright members about parallel transverse axes spaced apart by a distance equal to the spacing between the bases of said upright members;
and a diagonal member pivotally connected at its ends to said upright members about a pair of axes parallel to the pivotal axes of said horizontal member, the respective pivotal member of said diagonal axes being adjacent opposite ends of said upright members, said diagonal member being comprised of upper and lower rigid sections pivotally connected to one another about a third axis also parallel to the pivotal axes of said horizontal member and located intermediate the first-named axes of said diagonal member, the two sections having portions thereof overlapping one another, the distance between the pivotal axis of the lower section of said diagonal member and the pivotal axis between said upper and lower section being such that the lower section, when pivoted to a position in contact with the supporting ground surface, maintains said horizontal member at an elevation immediately below that of the ledge of the camper unit to be supported thereon;
and releasable means pivotally connected to the two sections of said diagonal member adapted to selectively lock the two sections in an aligned configuration.

3,202,305
MATERIAL HANDLING APPARATUS
George R. Dempster, Knoxville, Tenn., and William A. Herpich, Galion, Ohio; Trust Company of Georgia, executor of said George R. Dempster, deceased; said Herpich assignor to Dempster Brothers, Inc., Knoxville, Tenn., a corporation of Tennessee
Filed Dec. 8, 1960, Ser. No. 74,632
8 Claims. (Cl. 214—302)



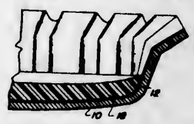
6. In apparatus of the character described, the combination of a vehicle, a separable body unit detachably mounted on the vehicle for removal therefrom, power means on the vehicle for moving the body unit onto or off the vehicle, a pair of lifting arms pivotally mounted to the body unit and movable between one position wherein the arms extend in front of the vehicle when the body unit is mounted on the vehicle and another position wherein the arms extend above the body unit, first fluid pressure actuated means on the body unit for moving the arms between said positions, compaction means inside the body unit for compressing material within the body unit, second fluid pressure actuated means on the body unit for actuating the compaction means, a source of fluid pressure on the vehicle, and fluid pressure supply lines having detachable couplings therein for connecting the source of fluid pressure on the vehicle to the first and second fluid pressure actuated means on the body unit to be disconnected upon removal of the body unit from the vehicle.

3,202,306
GRAB BUCKET
Jacques Bienaime, Paris, France, assignor to Yumbo, Genas, Isere, France, a body corporate of France
Filed July 31, 1963, Ser. No. 298,850
Claims priority, application France, Aug. 28, 1962, 908,020
7 Claims. (Cl. 214—656)



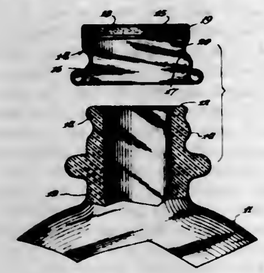
1. A grab bucket comprising a fluid motor structure having a substantially vertical fixed rod-piston means and a cylinder shaped sliding movable assembly, said rod-piston means comprising a piston having a lower face and an upper face and a rod protruding upwardly from said upper face, means at the upper end of said rod for suspending the latter, said rod-piston means also including fluid supply duct means opening on said lower face and in the vicinity of said upper face respectively, said cylinder shaped sliding movable assembly having an upper end provided with an axial opening for the passage of said rod and a closed lower end, a frame structure rotatably mounted on said rod in the vicinity of the upper end thereof, the axis of rotation of said frame structure being coincident with the axis of the rod, said frame structure and said sliding movable assembly both including guide means adapted to cooperate with each other during the motion of said sliding movable assembly, shells articulated on said frame structure, and link means pivotally connected with said sliding movable assembly and with said shells whereby the motion of said sliding movable assembly causes the opening and closing of said shells.

3,202,307
PLASTIC LINERS
William C. Rainer and Joseph G. Germak, Baltimore, and James P. Hamilton, Glen Burnie, Md., and Arthur W. Sloan, William D. Stewart, and Karl A. Schellenberg, Alexandria, Va., assignors to Crown Cork & Seal Company, Inc., Baltimore, Md., a corporation of Maryland
Filed Dec. 31, 1954, Ser. No. 478,986
6 Claims. (Cl. 215—39)



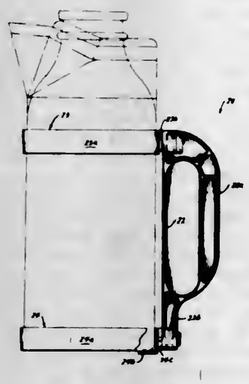
1. A container closure comprising a shell having a cushion liner comprising a foamed vinyl chloride polymer plastisol, including a mold lubricant in the liner.

3,202,308
CLOSURE LINERS
Albert L. Botkin, 3018 W. Hood Ave., Chicago, Ill.
Filed May 28, 1962, Ser. No. 198,088
8 Claims. (Cl. 215—40)



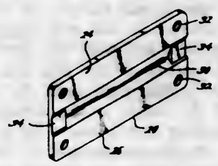
8. A screw cap assembly comprising a rigid cap member adapted to fit over the lip of a hollow container, said cap member having a substantially flat portion adapted to rest on said lip and a raised portion adapted to ring the neck of said container, said raised portion having at least one projection inward adapted to engage an outward projection on said container neck, at least one of said projections being biased to provide tightening of said cap on said container lip upon application of torque, a cap liner adapted to set against said flat portion of said cap said cap liner having a compressible board layer and having an impervious layer of an ordered polyolefin film directly attached to said board layer.

3,202,309
CARRYING DEVICE
Walter M. Simpson, 624 Senate Ave., Evansville, Ind.
Filed Mar. 23, 1964, Ser. No. 354,516
3 Claims. (Cl. 215—100)



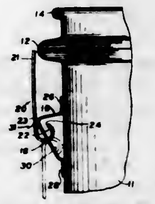
1. A carrying device for a container comprising a rigid frame member extending along a side of said container, a rigid container encircling upper member, and a rigid container receiving base member having a substantially upstanding container encircling wall and a container engaging bottom wall, said rigid container encircling upper member and said rigid container receiving base member each being laterally and rotatably mounted on said rigid frame member.

3,202,310
HINGE AND LATCH ASSEMBLY
Harold V. Tibbets, Houston, Tex., assignor to Texas Tennessee Industries, Inc., Houston, Tex., a corporation of Texas
Filed May 10, 1963, Ser. No. 279,472
8 Claims. (Cl. 220—30)



1. A picnic chest including:
a receptacle,
a top,
at least one integral flexible coupling interconnecting the top and receptacle, the flexible coupling composed of polyalmer plastic and including,
an elongate top strap adjacent the top,
an elongate corresponding bottom strap adjacent the receptacle,
an elongate flexible thin web interconnecting the straps, and defining the line of flexure, said web being approximately one fourth the thickness of either strap,
an enlarged anti-tear section within and at each end of the web extending from strap to strap, the thickness of the anti-tear section being substantially twice that of the web, and
means fastening the straps to the chest.

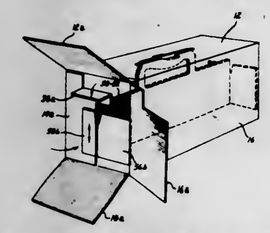
3,202,311
BAIL EARS
Raymond A. Heisler, Wayne, N.J.
(657 Dakota Trail, Franklin Lakes, N.J.)
Filed Aug. 30, 1963, Ser. No. 305,775
4 Claims. (Cl. 220—91)



1. An earred container having ears attached on oppositely disposed sides of the container the ears receiving and retaining a U-shaped bail having inwardly formed curved ends, the bail and ends being in a common plane, the earred container and bail in combination comprising: (1) a container haivng a side wall terminating in a top rolled edge; (2) oppositely disposed bail receiving ears attached to the side of the container at a predisposed distance below the top rolled edge, each bail ear being attached to the side of the container by at least the ear's upper and lower portion, the ear being further characterized in that each attached ear has a sloped portion intermediate its attached upper and lower portion, said sloped portion of the attached ear extending upwardly and outward y from the lower attached portion; (3) a bail-receiving aperture of preselected size formed in the sloped ear portion, the aperture being formed intermediate the upper and lower attached portion; and (4) a U-shaped bail having inturned ends curved to enter the bail receiving aperture in the ear, each end being formed in an incomplete loop, said bail

being further characterized in that as mounted in the ears and with the plane of the bail substantially parallel to the top rolled edge of the container, the bail will have an absence of bias for the ends to move in a direction in said plane, and the bail and ear being further characterized in that when assembled each end of the inturned loop of the recumbent bail will engage a lower inner surface of the sloped element of the ear and a portion of the curved bail end will engage a shoulder portion of the aperture and with this shoulder as a fulcrum bend the U-portion of the bail into a lesser arc, and in an amount sufficient to bend the bail so as to cause the bail to lie closer to the container side wall and with such bending bias to cause the bail to be frictionally retained by the engagement of the end of the bail with the sloped portion of the ear and in this recumbent position until moved therefrom by manipulation of the bail and further characterized in that said bail when moved to a carrying position will engage the upper outer surface of the sloped ear and by engagement of the curved bail end and the upper outer surface of the ear to bow the bail into a greater arc and in an amount sufficient for the bail to occupy a position away from the container upper rim.

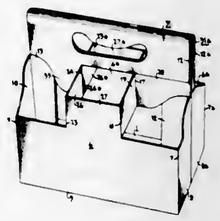
3,202,312
CARTON CONSTRUCTION
William G. Atkinson, London, Ontario, Canada, assignor to Somerville Industries Limited, London, Ontario, Canada
Filed Jan. 10, 1963, Ser. No. 250,704
8 Claims. (Cl. 220—165)



1. A carton having a top wall, a bottom wall, two side walls and two end walls, said end walls being formed of overlapped extensions of said top, bottom and side walls, a vertically shiftable internal partition extending lengthwise of said carton, a handle extending upwardly from said partition, a slot in the top wall through which said handle protrudes while said partition is shifted upwardly, at least one guide flap carried at either end of said partition and held within said end walls for vertical reciprocation therein, bearing means within each of said end walls against which the upper edges of said guide flaps are juxtaposed when said partition is shifted vertically to its uppermost position, said bearing means comprising a hinged flap cut from one of said end wall forming extension members and folded downwardly over one of said guide flaps, the said upper edges of said guide flaps bearing against the underside of the hinge portions of said hinged flaps.

3,202,313
MULTI-CELL CARRIER
Daniel Wainberg, Westmount, Quebec, Canada
Filed Nov. 14, 1962, Ser. No. 237,686
Claims priority, application Canada, Aug. 3, 1962, 855,189
28 Claims. (Cl. 220—113)

1. A multi-cell carrier comprising a bottom; a pair of mutually opposed side walls each hingedly connected to an associated marginal side edge of said bottom; a pair of mutually opposed end walls each constituted by a pair of end wall panels each integrally and hingedly connected to an associated vertical terminal edge of an associated said side wall; first and second pairs of vertical post members, the members of each said pair being secured together; each said member of said pairs thereof being hingedly and integrally connected to an associated vertical terminal edge, remote from said associated side wall, of an associated said end wall panel; at least a pair of primary handle panel members each integrally and hingedly connected to an associated one of said first pair of vertical post members and secured in face-to-face contact therewith adjacent one end thereof; the members of each said pair of vertical post members being secured in face-to-face contact with one another and extending from adjacent the upper edge of the said primary handle panel members to substantially adjacent the lower edge of the said end wall panels; two pairs of spaced parallel transverse partitions; each said pair of transverse partitions, at one end thereof, being integrally and hingedly connected to an associated adjacent side wall adjacent the upper edge of the latter; the other end of one of said transverse partitions, in each pair thereof being integrally and hingedly connected to an associated said primary handle panel member; a pair of connecting members; one end of said

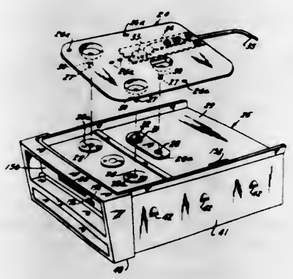


connecting members being integrally and hingedly connected to the other end of the remaining transverse partition in each pair thereof; each said connecting member, at its other end, being integrally and hingedly connected to an associated one of said second pair of vertical post members; said secured pairs of vertical post members, said secured pair of primary handle panel members, and said secured connecting members thereby forming a combined longitudinal partition and carrying handle extending along, and adjacent to, the central longitudinal axis of the carrier; each said pair of transverse partitions extending normal to, and between, said combined longitudinal partition and carrying handle and an adjacent said side wall; each said connecting member being coplanar with an adjacent primary handle panel member and having a selected edge extending parallel with, and adjacent to, a lower edge of its said adjacent primary handle panel member, said selected edge defining a line of rupture; whereby, when said multi-cell carrier is being carried and upon movement of the contents of the carrier about the vertical axis of the latter, inertial torque is resiliently taken up by each said connecting member along its defined line of rupture thereby inhibiting rupture of the connections between the transverse partitions and the combined longitudinal partition and carrying handle.

3,202,314
SERVICE INDICATOR
Henry A. Sherwood, Short Hills, N.J., assignor to U.S. Servicator Corp., Clifton, N.J., a corporation of Delaware
Filed July 10, 1964, Ser. No. 381,871
25 Claims. (Cl. 221—2)

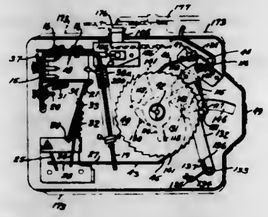
1. In a service indicator the combination of a compartment having an openable cover, a stack of cards

within said compartment, means biasing said stack away from said cover, said compartment including first means defining an elongated opening, second means for ejecting a card located on the side of said stack remote from said cover through said opening, said opening being



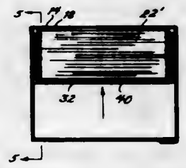
too narrow to permit passage therethrough of more than one card at a time, all cards of said stack being of identical size and shape and a restricting means positioned to make the center of the opening narrower than the ends thereof.

3,202,315
SERVICE INDICATOR
Henry A. Sherwood, Short Hills, N.J., assignor to U.S. Servicator Corp., Plainview, N.Y., a corporation of Delaware
Continuation of application Ser. No. 154,311, Nov. 22, 1961. This application Aug. 13, 1963, Ser. No. 301,864
16 Claims. (Cl. 221—15)



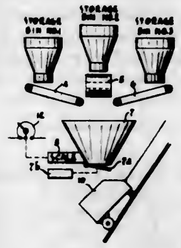
1. A service indicator comprising a drive means, an electric circuit which when closed and energized actuates said drive means, an actuator means driven by said drive means, a compartment, a stack of cards disposed within said compartment, said cards arranged in a programmed sequence, said actuator means having a part in engagement with a card at a first side of said stack, means energized by said drive means for operating said actuator means through a complete uninterruptable positive feed stroke after a predetermined operation of said drive means, said actuator means when operated positively driving said card forward along a feed path to a position in which said card is partially ejected from said compartment through an opening therein to a position where the card will remain for an indefinite period prior to complete removal of the card from the compartment and additional means in engagement with said stack for moving the next card following said card into alignment with said opening after said card has been completely removed from said compartment.

3,202,316
BIASED STACK FACIAL TISSUE DISPENSER
Bernard Silver, deceased, late of North Hills, Pa., by Phyllis R. Silver, executrix, North Hills, Pa., assignor to Electro-Nite Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 24, 1963, Ser. No. 311,250
4 Claims. (Cl. 221—59)



1. A facial tissue dispenser comprising a cardboard box, said box having upstanding side walls joined by horizontal top and bottom walls, said top wall having a dispensing opening therein, a stack of facial tissues in said box, an elastic strip having its ends secured to said side walls and passing beneath said stack of facial tissues, a cradle, said cradle being placed below said stack of facial tissues between said stack of facial tissues and said elastic strip, said elastic strip biasing said cradle upward towards said top wall and resiliently biasing said facial tissues against said top wall, said cradle being channel-shaped, said cradle having upstanding cradle side walls, said cradle side walls having a height substantially equal to one-half the height of said box side walls whereby said cradle side walls act as a limit stop for movement of said cradle, said elastic strip being secured on the inside surface of said box side walls adjacent said top wall, said cradle side walls having notches along the top edge thereof, said cradle side wall notches being spaced in accordance with the ends of said elastic strip to prevent interference between said cradle side walls and the ends of said elastic strip.

3,202,317
DETECTION AND CONTROL SYSTEM
Douglas W. Fath, Brookfield, Frank J. Kloewein, Milwaukee, and Gene C. Lutsch, Hales Corners, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed June 10, 1963, Ser. No. 286,590
13 Claims. (Cl. 222—14)



1. In a detecting and control system for controlling dispensing of material to form batches thereof having a preselected amount of material therein:
an electrical power supply source;
a balanced bridge circuit supplied from said source;
means in one branch of said bridge circuit which is settable to preselect a desired amount of material to be dispensed thereby to unbalance said bridge circuit;

a continuously-indicating meter-relay connected directly to the output of said bridge circuit and control means operated thereby responsive to said bridge circuit when so unbalanced for initiating the dispensing of the material;
means connected in another branch of said bridge circuit for rebalancing the same;
means responsive to dispensing of said material for operating said rebalancing means in proportion to a substantially uniform characteristic of the material thereby to provide a continuous and accurate measure of the amount of material that has been dispensed and to rebalance said bridge circuit when the preselected amount of material has been dispensed,
and means responsive to operation of said bridge circuit to an adjustable point in rebalancing direction for stopping the dispensing of material.

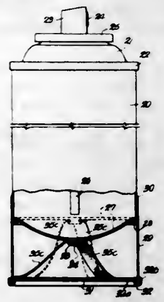
3,202,318
TOY WATER PISTOL
Henry Black, 306 E. 171st St., Bronx 57, N.Y.
Filed May 4, 1964, Ser. No. 364,468
15 Claims. (Cl. 222—39)



1. A toy water pistol comprising an elongated cylindrical casing having a chamber therein and having a barrel, a main nozzle in the end of the barrel having a plurality of ducts leading to the atmosphere and pointing toward the front of the casing, a plurality of auxiliary nozzles on the top of the casing having ducts pointing in a variety of directions, a trigger guard and a handle below the casing, the handle having a chamber communicating with the chamber in the casing, said chambers adapted to hold a fluid, valve mechanism in the casing for providing communication between the ducts in the auxiliary nozzles and the chambers, mechanism in the chamber in the handle for pumping fluid out of the chambers into the ducts, and a trigger in the trigger guard for actuating said pumping mechanism.

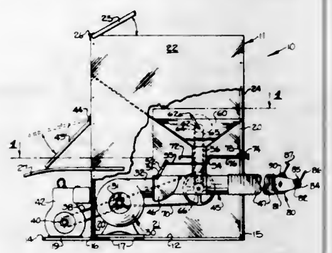
3,202,319
PRESSURE INDICATING DISPENSER CONTAINER
Roy Howard, 1135 Jefferson Ave., Buffalo, N.Y.
Filed Nov. 21, 1963, Ser. No. 325,292
9 Claims. (Cl. 222—41)

1. In a pressurized dispensing container having a volume enclosing side wall and at least a partial bottom closure, the combination of a resilient diaphragm sealed peripherally with respect to said bottom closure having one side thereof exposed to the pressures of the interior of the container and the other side thereof exposed to atmospheric pressure external of said container, said bottom closure comprising an essentially frusto-conical flange in transverse cross section peripherally secured to said side wall and having said diaphragm affixed centrally thereof, and means associated with said container and cooperating with said diaphragm operative to indicate the rela-



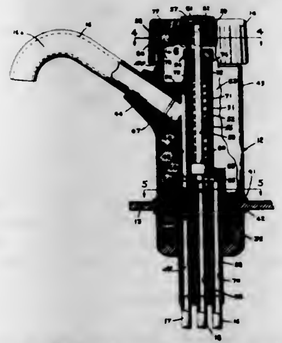
tive level of pressure interiorly of the can according to deformation of the diaphragm by said pressures.

3,202,320
APPARATUS FOR DISPENSING DRY GRANULAR MATERIAL BY MEANS OF AN AIR CURRENT
Roy C. Patton, P.O. Box 171, Jacksonville Beach, Fla.
Filed Nov. 13, 1962, Ser. No. 237,182
6 Claims. (Cl. 222—57)



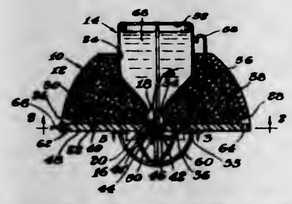
1. Apparatus for dispensing dry granular material comprising
(a) blower means for creating an air stream and directing the air stream through an exhaust opening therein,
(b) an elongate conduit communicatively connected at one end to the exhaust opening of said blower means and having a discharge nozzle at its other end,
(c) a hopper adapted to contain a supply of the dry granular material and being communicatively connected to said conduit intermediate the ends thereof for dispensing the dry granular material into said conduit,
(d) a control valve mounted between said hopper and said conduit and movable between open and closed positions for controlling the dispensation of the dry granular material into said conduit,
(e) a vertically disposed clapper valve mounted within said conduit for pivotal movement about a pivot disposed adjacent the top of said conduit and having the portion of the valve below the conduit disposed in the path of the air stream being directed through the conduit by said blower means for sensing the flow of air through the conduit,
(f) means connecting said clapper valve to said control valve so that said clapper valve will move said control valve to its open position in response to the flow of air through the conduit and to the closed position in response to interruption of the flow of air through the conduit, and
(g) valve means mounted on said discharge nozzle of said elongate conduit remote from said hopper and manually operable to close said discharge nozzle to the passage of air therethrough for interrupting the flow of air through the conduit so that said clapper valve and said control valve in response thereto terminate the dispensation of dry granular material into said conduit.

3,202,321
HOT WATER HEATING AND DISPENSING APPARATUS
Arthur B. Homeyer, Cedar Grove, N.J., assignor to Delta-T-Inc., Cedar Grove, N.J., a corporation of New Jersey
Filed Oct. 17, 1963, Ser. No. 316,874
4 Claims. (Cl. 222—108)



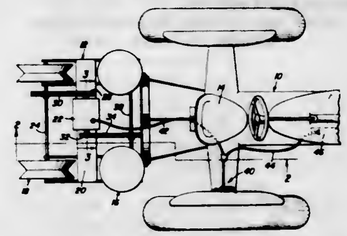
1. In a hot water dispensing head communicated with a hot water system holding a heating element and a hot water supply at substantially atmospheric pressure:
(a) a discharge passageway formed in said dispensing head,
(b) conduit means communicating said discharge passage with the hot water supply,
(c) second conduit means in the dispensing head communicated with a pressurized source of water,
(d) third conduit means communicating with said second conduit means and with the hot water supply,
(e) valve means interposed in said second conduit means operable to regulate the flow of water from the source,
(f) said valve means having a cap associated with the dispensing head and displaceable from a non-operating position to initiate flow of water from the discharge passage,
(g) and means forming a vented expansion chamber in the head communicated with the discharge passage.

3,202,322
FLOATING DISPENSING DEVICE
Robert D. Cleary and James A. Kelly, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 2, 1963, Ser. No. 327,262
11 Claims. (Cl. 222—173)



1. Apparatus for dispensing a liquid solution into a body of liquid, comprising
(a) A flotation member, said flotation member having a solution container receiving section therein;
(b) a hollow container having a closable neck part, said hollow container being disposed in the container receiving section of said flotation member;
(c) a dispenser head assembly including a closure element having a pair of bores extending therethrough, said closure element being coupled to said neck part;
(d) a wick assembly, said wick assembly being coupled to one of the bores in said closure element and extending from said closure element, and
(e) tubular venting means for equalizing pressure within said container, said venting means extending through the other of said bores in said closure element.

3,202,323
REMOTELY CONTROLLED CHANGE SPEED FEED CONTROL FOR AGRICULTURAL MACHINES
Emmit E. Powell, Bloomfield, N. Mex. (R.R. 2, Heyworth, Ill.)
Filed Oct. 18, 1963, Ser. No. 317,256
6 Claims. (Cl. 222—177)



1. In combination with a towing vehicle having an operator's station thereon and a trailer hitched to the vehicle for mounting a material distributing mechanism, means for controlling the rate of discharge of material from said distributing mechanism comprising; a step ratio transmission mounted on said trailer and having a plurality of speed ratios and a neutral condition interrupting drive of the distributing mechanism, power operated ratio changing means operatively connected to the transmission for altering the speed ratio thereof, means drivingly connecting the transmission between the distributing mechanism and the trailer for drive of the distributing mechanism in response to movement of the trailer at a selected speed ratio to said movement, and remote control means mounted on the vehicle adjacent said operator's station and operatively connected to the ratio changing means for controlling operation of the distributing mechanism and changing the speed ratio of the transmission without stoping movement of the vehicle.

3,202,324
PLASTIC BAGS FOR INJECTABLE SOLUTIONS
Bernard Honnet and Pierre Marie Simonet, Paris, France, assignors to Societe Francaise des Laboratoires Labaz Societe Anonyme, Paris, France
Filed Oct. 5, 1962, Ser. No. 228,575
Claims priority, application France, Oct. 6, 1961, 875,220, Patent 1,310,582
1 Claim. (Cl. 222—131)

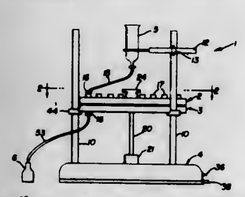
A bag of flexible plastic material for containing a solution, said bag being constituted by a single piece of material defining a tubular body of flatted section with a base at each of opposite ends of said body, at least one of said bases having curved surfaces and sufficient flexibility for being deformable between an invaginated position within said tubular body and a protruding position, said one base in the invaginated position thereof permitting the bag to be self standing, a sealed tongue on the

other of said bases including suspension means, said tongue being originally open and adapted for permitting the introduction into said bag of said solution, said tongue



being sealed after the solution has been introduced into said bag, and discharge means on said one base for removing the solution from said bag.

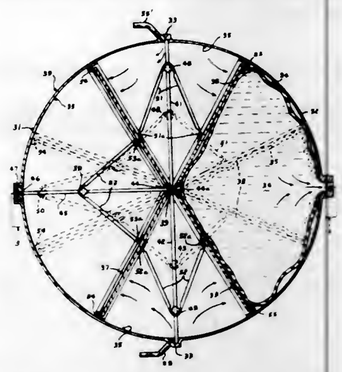
3,202,325
FRACTION COLLECTOR
Emmett L. Durrum, Redwood City, Calif., assignor to Durrum Instrument Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 1, 1963, Ser. No. 269,604
4 Claims. (Cl. 222—181)



3. Fraction collector structure comprising a supporting structure, a feeder rotatably mounted on said supporting structure and having a feeder passage, a continuous motion drive mechanism connected to said feeder and operable to move said feeder passage continuously around a circular line of travel, a stationary distributor having a plurality of separate channels therein arranged around a circle beneath said circular line of travel, a chromatographic column vessel mounted on said supporting structure above said feeder, and a flexible tubing connecting said vessel to said feeder passage.

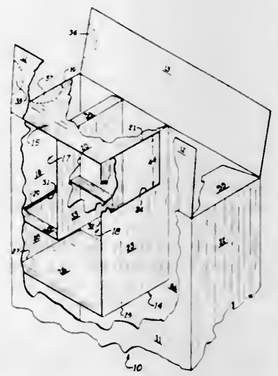
3,202,326
LIQUID EXPULSION SYSTEM
Albert L. Young, Rolling Hills Estates, Los Angeles, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 14, 1964, Ser. No. 337,691
11 Claims. (Cl. 222—386.5)

1. A liquid dispensing device subject to induced G loading comprising a container having a smooth inner spherical surface, a pair of substantially circular vane members disposed in substantially back-to-back relation across a diameter of said spherical surface with their peripheries in substantially contiguous relation to said spherical surface, said vane members each comprising two semicircular half portions arcuately movable around a substantially common flexure axis across the diameter of the spherical surface toward each other, means between said semicircular half portions of said vane members and said smooth inner spherical surface to prevent liquid leakage around the peripheries of said semicircular half portions, for retaining a liquid fluid between the said semicircular half portions of each vane member and the spherical surface, adjustable stabilizing means connected between the half vane portions of each of the vane members and said container for stabilizing the positions and relative movement of the semicircular half portions of vane members relative to the container and toward each other to discharge a liquid fluid when contained therebetween and prevent swashing and C.G. shift of said liquid due to G loading of the container in any direction, where-



by movement of said semicircular half vane portions of each vane member toward each other will discharge a liquid contained in said container between the semicircular half-vane portion of each vane member from said container.

3,202,327
EXPENDABLE DISPENSING PACKAGE
Thomas H. Haynie, Jr., Houston, Tex., assignor of one-fourth to Ernest R. Archambeau, Houston, Tex.
Filed Aug. 31, 1964, Ser. No. 393,307
20 Claims. (Cl. 222—455)



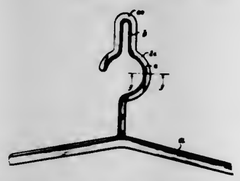
1. In a tubular carton having top and bottom walls connected by pairs of opposed upright end and side walls and an outlet opening defined in one of said walls proximate the junction of said top wall with one of said upright walls, a metering dispenser comprising: partitioning means between said side walls for dividing the interior of said carton into three separate compartments, one of said compartments being in communication with said outlet opening; first access means providing communication between said one compartment and another of said compartments; second access means providing communication between said other compartment and the remaining one of said compartments; and means integral with said partitioning means and in engagement with said side walls for maintaining said partitioning means frictionally engaged with said side walls.

3,202,328
MEANS OF DISPLAYING ARTICLES OF CLOTHING AND THE LIKE
James Henry Burrell, 526 Church St., Palmerston North, Wellington, New Zealand
Filed Sept. 2, 1964, Ser. No. 393,888
Claims priority, application New Zealand, Sept. 13, 1963, 136,004
6 Claims. (Cl. 223—67)



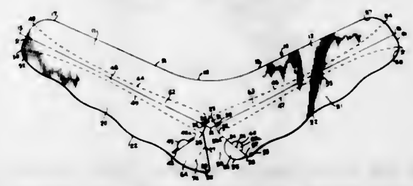
1. An inflatable display device, which when fully inflated with a gaseous medium is capable of assuming a predetermined three-dimensional form adapted to the article, such as clothing, to be displayed thereon; said device comprising sheet material formed to enclose a hollow air-tight interior and including front and rear areas having a common marginal fold line, and a substantially rectangular piece of flexible material bridging said fold line and having its opposite edges secured to said front and rear areas at points spaced respectively from said fold line, thus providing a pocket at one end of the device between the laminations formed by the basic sheet material and the added piece of material, for the reception of a stiff base member for the reinforcement and support of the device when it is inflated.

3,202,329
SUSPENSION MEANS FOR A GARMENT HANGER
Hermann Schmidt, Unterm Born 3, Elze, Hannover, Germany
Filed Jan. 16, 1964, Ser. No. 338,208
Claims priority, application Germany, Jan. 19, 1963, Sch 32,619
1 Claim. (Cl. 223—85)



A unitary plastic garment hanger comprising an elongated body adapted to receive a garment, means for supporting said body comprising a shank extending at right angles from the body, having one end rigidly connected to the body and the other end curving into a sector-shaped hook having a wide mouth opening; said shank extending substantially on a diametric line in relation to the sector-shaped hook; said hook, diametrically opposite said shank having an elongated extension providing a narrow outwardly extending closed end slot which is in substantial alignment with the shank; said slot being formed by integral outwardly extending parallel closely spaced portions of the hook; said spaced parallel portions being joined at their outer ends by a curved portion closing said slot and adapting said extension to receive a supporting member.

3,202,330
GARMENT CONTOUR ATTACHMENT FOR WIRE HANGERS
Ray Hawkins, 606 N. Riley Ave., Indianapolis 1, Ind.
Filed Mar. 11, 1963, Ser. No. 264,352
1 Claim. (Cl. 223—98)



For a garment hanger having a central, upstanding tachment adapted to be placed over and to rest on said hook shank and a pair of arms each sloping downwardly from opposite sides of the shank, a garment contour at-hanger arms, the attachment being made out of a stiff, bendable material and comprising

a pair of panels, each extending oppositely from approximate abutment along a panel transverse line;

each of said panels having an opposing opening entering therein from said transverse line to receive said hanger shank therebetween;

arms extending outwardly and downwardly from opposite sides of said panels, the arm on one panel side being continuous throughout the combined panel lengths, and the arm on the other panel side being divided by having separate end portions extending from said transverse line;

one of said arm end portions underlapping the other when in set-up condition;

an approximately semi-circular primary tab hinged along and extending from said other arm end portion;

a secondary, approximately semi-circular tab of smaller area than that of said primary tab extending freely into said other arm end portion;

said underlying arm end portion having a slot therethrough approximately at the edge of the overlapping arm edge portion and having a length subprimary tab and further having a semi-circular cut-out opening of an area equal to that of said secondary tab extending centrally from that side of said slot farthest removed from said overlapping arm edge;

said primary tab extending through said slot and around stantially equal to the diametrical width of said under said arm underlapping end portion;

said secondary tab entering with a tight fit into said cut-out; and

said slot and cut-out being located in reference to said other arm edge to cause said continuous arm to bow away from said panels on the one side, and the two arm portions to bow from the other panel sides.

3,202,331
SKIN-DIVER'S BRACELET
Robert McKinstrie, 14584 Faust, Detroit 23, Mich.
Filed Feb. 14, 1963, Ser. No. 258,527
1 Claim. (Cl. 224—28)

As a new article of manufacture, a bracelet or the like adapted to be worn when bathing or skin-diving comprising, a body portion of substantially cup-like configuration, a mating cover portion of similar configuration, the edges of said cup-like body and cover portions being arranged to overlie one another when said cover is assembled on said body portion, mutually opposed interlocking lips extending continuously around the edges of said body and cover portions to form a snap-type closure fastener and to seal the body interior when the

cover is in its closed position, thereby providing a moisture-proof receptacle, said body and cover portions being attached by a strap-like hinge portion, said body portion having strap portions extending oppositely there-



from and having mating fastening means for attaching the body portion to a human wrist, the entire article being of unitary, integral, molded construction of flexible, moisture-proof material.

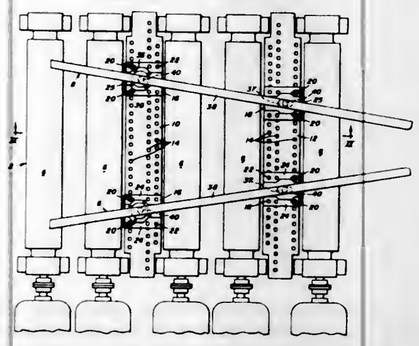
3,202,332
LUGGAGE CARRIER
Keith K. Walker, Ruthven, Iowa
Filed Apr. 22, 1963, Ser. No. 274,717
6 Claims. (Cl. 224—42.03)



1. In a luggage carrier for attachment to the rear end of an automobile, comprising
first and second spaced apart support arms each having a first end portion adapted to be secured to an automobile, the first end portion of said first arm terminating in a downwardly extending portion which in a turn terminates in second portion extending parallel to said first portion,
a container having a bottom side with one end pivotally secured to the free end of said second support arm,
a third support arm pivotally connected to the container at the free end on the bottom side thereof, said third arm adapted to pivot upwardly against the bottom side of said container and be secured there by engagement with said second portion of said first support arm, said third support arm adapted to pivot downwardly for engagement with the ground upon said container being pivoted rearwardly of said first end portions of said first and second support arms;
and releasable means for engagement with said container and said first support arm for securing said container in a closed position extending transversely of said first and second support arms.

3,202,333
ROLLING-MILL SIDE GUIDES
Henry L. Skiba, 10614 Ave. F, Chicago 17, Ill., and Elijah R. Wagner, 9718 S. Peoria St., Chicago 43, Ill.
Filed Aug. 29, 1963, Ser. No. 305,258
3 Claims. (Cl. 226—189)

1. A rolling-mill guide for a rolling mill having a horizontally-disposed conveyor table for delivering workpieces to a roll pass which comprises a pair of spaced, perforated platens extending transversely of said conveyor table, a pair of spaced stools removably disposed on each of said platens, means adjustably positioning each of said stools along its respective platen, said means including bottom flanges on opposite sides of each of said stools, each of said bottom flanges having at least one perforation therethrough adapted to register randomly with the perforations in said platens, and a locking pin removably



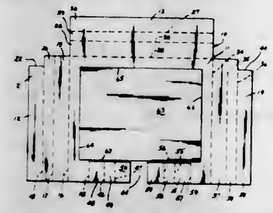
inserted through said registered perforations, a pair of spaced bars extending substantially transversely over said pair of platens, each of said bars being supported by two of said stools one on each of said platens, said bars being adjustable toward and away from each other by adjustment of said stools along said platens, and means securing each of said bars to its respective stools.

3,202,334
GLASSINE LINED OIL CONTAINER
Baynard R. Whaley, Charles K. Dunlap, Jr., and Richard W. Turnage, Hartsville, S.C., assignors to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina
Filed Jan. 2, 1963, Ser. No. 248,917
4 Claims. (Cl. 229—4.5)



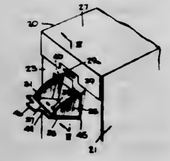
1. A container body for the packaging of oil and the like comprising, in combination, a plurality of spirally wound strips adhesively secured together in overlapping relationship to form a container body, said plurality of strips including an inner strip of oil impervious glassine spirally wound to form an inner ply for said container body with adjacent convolutions forming an inner spiral seam, a relatively narrow, spirally wound strip of oil impervious glassine extending across said inner spiral seam and secured to said glassine inner ply with a thermoplastic adhesive, said narrow glassine strip thereby sealing said inner spiral seam and forming with said glassine inner ply and oil impervious barrier for said container body.

3,202,335
CUSHIONED PACKING INSERT
Larry J. Budd, Elmhurst, Ill., assignor to Pallet Devices, Inc., Des Plaines, Ill., a corporation of Illinois
Filed Oct. 3, 1962, Ser. No. 228,174
11 Claims. (Cl. 229—14)



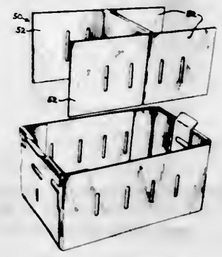
1. A cushioning pad comprising,
a parallel sided sheet of paperboard having at least three of its margins scored along three spaced lines providing three flaps along each of said margins with an opposite pair of the margins each having an outer most flap having a cut-away notch area at its corner,
the three scored margins being folded at the scorelines disposing the outer most flaps in normal relation to a central area of the sheet forming a tubular enclosure along at least three sides of the central area including parallel enclosures and a transverse enclosure packing in said tubular enclosures, and
a relatively flat paperboard plate attached with a central area of the sheet and having its outer edges engaged against inside walls of said outer most flaps of said tubular enclosures holding said flaps snugly against said packing,
one of said flaps on said parallel enclosures being lapped on top of and secured with a confronting one of the flaps on the transverse enclosure extending between the parallel enclosures securing said enclosures in upright folded relation about the central area of the sheet disposed there between and with each of said cut-away notch areas being peripherally fitted about a pair of the folded flaps on the transverse enclosure.

3,202,336
CARTON POURING SPOUT
Max Bord, 3835 Sedgewick Ave., Bronx 63, N.Y.
Filed Apr. 12, 1963, Ser. No. 272,610
15 Claims. (Cl. 229—17)



11. In a carton the combination comprising first and second side panels connected to one another along a common foldline and disposed at an angle with respect to one another, and first and second end flaps connected to an end portion of said first and second side panels, respectively, said first side panel having a cover flap extending from a hinge line disposed adjacent to an aperture therein, said first end flap having an opening disposed adjacent to the inner surface of said first side panel with said opening substantially in register with said aperture, first said end flap having a spout flap formed therein and extending from an additional hinge line, said spout flap being disposed in register with said opening with the hinge line thereof adjacent to the hinge line of said cover flap.

3,202,337
PAPERBOARD CONTAINER
Robert G. Cramer, Temperance, Mich., and Gerald Eugene Perry, Perrysburg, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed Nov. 23, 1962, Ser. No. 239,547
1 Claim. (Cl. 229—32)

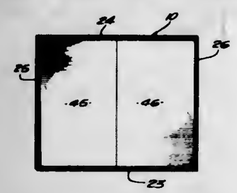


A corrugated paperboard container comprising:
(a) a bottom panel;
(b) four side wall panels foldably connected to said bottom panel and folded to upstanding relationship to form a continuous rectangular side wall for said container;
(c) means for securing adjacent pairs of side walls together, said means including a first corner flap foldably secured to a side edge of one of said pair of side wall panels, a second corner flap foldably secured to the side edge of said first corner flap, a third corner flap foldably secured to the side edge of said second corner flap, said corner flaps extending the full height of said container;
(d) said first corner flap folded into parallel contact with the interior surface of the other of said pair of side wall panels, said second corner flap reversely folded into parallel contact with said first corner flap, and said third corner flap folded into parallel contact with said one of said pair of side wall panels, said corner flaps thereby forming a corner support for said container;
(e) a locking tab foldably secured to the upper free edge of the other of said pair of panels and folded to interlock between said first and second corner flaps;
(f) closure means for closing the upper end of said container; and
(g) an H-shaped divider disposed within said container and having each of its parallel sides disposed parallel to said one of said adjacent pairs of side wall panels and closely adjacent thereto and extending substantially the full length thereof, whereby portions of said divider are in positive engagement with said corner flaps and act as retaining means for retaining said corner flaps in said folded positions.

3,202,338
CATHODE-RAY TUBE CONTAINER
Gilbert Sherman, San Pedro, Calif., assignor, by mesne assignments, to T.V. Container Company, Los Angeles, Calif., a corporation of California
Filed Nov. 9, 1961, Ser. No. 151,216
11 Claims. (Cl. 229—39)

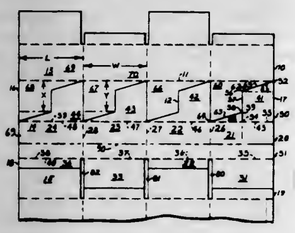
1. A container comprising: a first generally rectangular box having closed and open ends, said first box having first and second pairs of sides, said first pair of sides each having a length at said first box open end of a predetermined uniform width less than the width thereof at said first box closed end, said second pair of sides having a uniform width and being bent in a manner conforming to the shape of the side edges of said first

pair of sides, said lengths of said first pair of sides having flaps on each side thereof bent around the upper ends of said second pair of sides; and a second rectangular



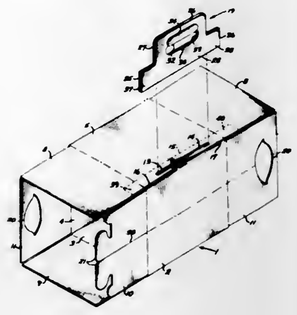
box having closed and open ends, said second box open end being telescoped over said length of said first pair of sides and over the upper ends of said second pair of sides.

3,202,339
CONTAINER
Maurice G. Franklin, Jr., Muncie, Ind., assignor to St. Joe Paper Company, Jacksonville, Fla., a corporation of Florida
Filed Apr. 24, 1964, Ser. No. 362,250
11 Claims. (Cl. 229—39)



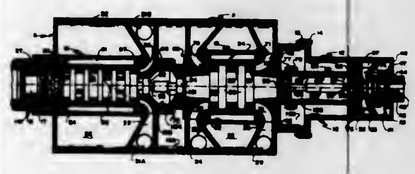
1. An integral blank for folding into a container comprising a top portion, a body portion and a bottom portion, said body portion including four side wall panels each having side edges and an upper edge and a lower edge, said top portion including four top flaps having lower edges connected by fold lines to respective said wall panel upper edges, said bottom portion including four bottom flaps having upper edges and lower edges, said bottom flap upper edges being connected by score lines to and substantially coextensive with respective said wall panel lower edges, each said bottom flap having a side edge substantially in alignment with one said wall panel side edge and extending vertically and outwardly to a first point a first distance from said upper edge of said bottom flap greater than one-half the predetermined distance between the side edges of the adjacent wall panel and equal to or less than said predetermined distance, each said bottom flap lower edge extending from said first point inwardly to a second point equally spaced between said wall panel side edges at a second distance measured vertically and outwardly from said upper edge of said bottom flap of at least one-half said predetermined distance and less than said first distance, each said bottom flap lower edge further extending generally vertically and inwardly from said second point to a third point spaced adjacently vertically and outwardly from said upper edge of said bottom flap, each said bottom flap further extending inwardly from said third point and terminating at a fourth point generally at the intersection of the other said wall panel side edge and said upper edge of said bottom flap.

3,202,340
CARTON OR THE LIKE WITH HANDLE
Robert E. Johnston, Chicago, Ill., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Dec. 21, 1962, Ser. No. 246,501
3 Claims. (Cl. 229—52)



1. A carton for carrying heavy loads, comprising: a wall including a plurality of faces and end closure flaps closing the ends of said carton; one of said faces provided with a glue flap hingedly connected thereto and extending the entire length of said face and secured to an adjacent face; reinforcing pads secured to the end flaps adjacent said glue flaps at each end thereof; said adjacent face and glue flap having an elongated aperture extending therethrough; said aperture through said glue flap positioned a distance closer to said hinge connection than the outer end thereof; said aperture in said glue flap and adjacent face being coextensive; a double thickness carrying handle for said carton; said handle having a first portion extending through said aperture in said glue flap and adjacent face and being the same width as said aperture and a second portion abutting the glue flap and reinforcing pads on said end flaps and being the same width as said wall; said handle being provided with hand holes in said first portion whereby said second portion of said handle supports said carton and inadvertent buckling of said carton is prevented by the abutment of said second portion of said handle with the reinforcing pads secured to said end flaps.

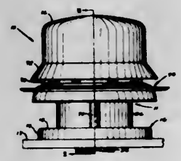
3,202,341
TURBOMACHINES ASSEMBLY
James K. La Fleur, Hermosa Beach, Calif., assignor to The La Fleur Corporation, Torrance, Calif., a corporation of California
Filed Apr. 18, 1963, Ser. No. 274,045
12 Claims. (Cl. 230—116)



1. A multistage turbomachine, comprising: a housing, a stator, and a rotor, said stator and rotor being multistaged in construction, said stator and rotor being formed

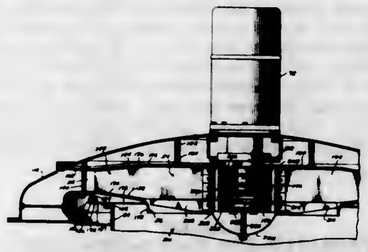
for and as an integral interior assembly unit separate from said housing and formed exteriorly to the shape of substantially surfaces of revolution, bearings carried by said assembly at the ends of said rotor for the rotational support thereof in said assembly, said housing being formed interiorly substantially to the shape of surfaces of revolution conforming to and interfitting with said interior assembly surfaces, said exterior and interior surfaces being so formed that said interior assembly may be fitting as a unit centrally of said housing by axial movement of said unitary assembly into close envelopment by said housing, and annular sealing means located between said housing and said interior assembly adjacent said surfaces.

3,202,342
FAN EQUIPMENT
Robert A. Wasson and Sewell H. Downs, Kalamazoo, Mich., assignors to Clarage Fan Company, Kalamazoo, Mich., a corporation of Michigan
Filed Jan. 8, 1964, Ser. No. 336,434
12 Claims. (Cl. 230—117)



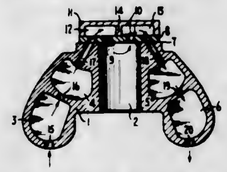
1. A gas moving apparatus, comprising:
an outer casing having a portion of substantially circular cross section;
a centrifugal impeller having an inlet side;
shaft and bearing means secured with respect to said casing and rotatably supporting said impeller so that said impeller is substantially coaxial with, external of, and spaced from one end of said portion of circular cross section, said impeller having its inlet side opposing said end of said portion and spaced therefrom;
a sleeve substantially coaxial with, and secured near one end thereof to, the inlet side of said impeller, said sleeve extending from said impeller toward said casing and being coaxial with said shaft and bearing means, said sleeve defining therewithin an inner passageway, and said sleeve and said casing defining therebetween an outer passageway, rotation of said centrifugal impeller around the axis of said shaft effecting movement of gas axially along said inner passageway toward said impeller and radially away from said impeller;
a plurality of axial flow blades mounted upon said sleeve at intervals around the periphery thereof and spaced axially from said impeller, said blades being arranged within said outer passageway so that said rotation of said impeller causes said blades to effect movement of gas axially along said outer passageway away from said impeller; and
a plurality of guide vanes disposed within and at intervals around said outer passageway near said axial flow blades, said vanes being mounted on and extending substantially radially inwardly from said casing a distance less than half the radial distance between said casing and said sleeve adjacent said vanes.

3,202,343
COMPRESSOR ARRANGEMENT
Dieter K. Emmermann, John H. Davids, and Wallace E. Johnson, Beloit, Wis., assignors to Desalination Plants (Developers of Zarchin Process) Limited, Tel Aviv, Israel, a limited company of Israel
Filed May 16, 1962, Ser. No. 195,118
18 Claims. (Cl. 230—127)



1. In a low pressure system for moving a fluid at high speed from a first low pressure compartment into a second low pressure compartment which is maintained at a higher pressure than said first compartment, a compressor arrangement adapted to be disposed between said compartments with an inlet opening into said first compartment and an outlet opening into said second compartment, said compressor including a rotatable hub carrying at least one pair of flexible, elongated blades of thin cross section, said hub being provided with a bore extending parallel to the axis of rotation of the hub, said bore opening to the periphery of the hub, each compressor blade being joined to another compressor blade to form a pair of blades having a common bight portion, said common bight portion of said pair of blades being seated in the bore with the pair of blades extending through the opening of the bore, and means for mounting the common bight portion of said pair of compressor blades to said compressor, said mounting means incuding a pin in the space defined by the common bight portion for urging the bight portion against the wall of the bore and a shoe member positioned between the pair of blades and disposed partially in said slot for maintaining the blades in spaced relation, said pin and corresponding shoe member cooperating to hold the pair of blades to said hub.

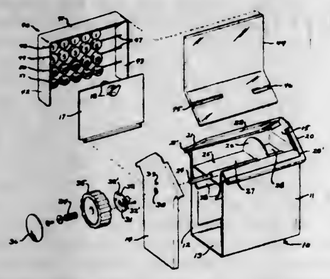
3,202,344
PISTON COMPRESSOR, ESPECIALLY FOR REFRIGERATION
Mads Clausen, Elsmark, Nordborg, Denmark, assignor to Danfoss ved Ing. M. Clausen, Nordborg, Denmark, a company of Denmark
Filed Aug. 10, 1962, Ser. No. 216,708
3 Claims. (Cl. 230—232)



1. In a process for producing a plurality of piston compressors of different types, particularly for use in small refrigerating machines of different ratings, the steps of forming a plurality of like compressor body castings, each being formed with a front face, a compressor cylinder opening in said face and at least one silencing chamber on each of opposite sides of said cylinder, forming passages connecting a respective chamber on each side of said cylinder with said front face, machining said

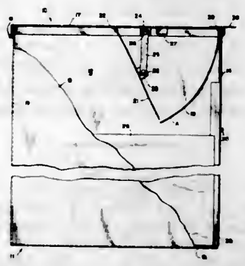
cylinders to selected different sizes forming a plurality of valve units fitting over the front ends of said cylinders, each valve unit being formed with an inlet valve and a discharge valve, forming a plurality of covers each with two cavities separated by a partition, securing said covers on said front faces of said castings overlying said valve units, with one cavity of each of the covers positioned to provide communication between the chamber on one side of said cylinders and the inlet valve and the other cavity of each of said covers positioned to provide communication between a chamber on the opposite side of said cylinder and the discharge valve, and with a cavity of each of other selected covers positioned to provide communications between said inlet valve and chambers on opposite sides of said cylinder, whereby compressors of different ratings and characteristics are produced from like castings.

3,202,345
APPARATUS FOR TABULATING AND COLLECTING PURCHASE PAYMENTS
Earl J. Kuehl and La May R. Kuehl, both of 11127 W. Bluemound Road, Milwaukee, Wis.
Filed Feb. 20, 1964, Ser. No. 346,209
4 Claims. (Cl. 232—1)



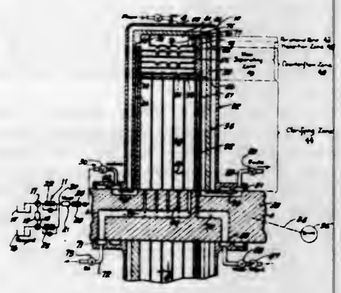
1. An apparatus for collecting a customer's purchase payments, comprising: a box-like container having a bottom, a pair of end walls, and having front and back walls with transparent upper sections, said transparent front wall section having a slotted opening therein through which money may be inserted by a customer, and one of said walls having a key-operated removable panel permitting the withdrawal of money deposited in said container; a horizontal rod rotatably mounted in the upper portion of said container and projecting through and beyond one of said container end walls; a flat plate mounted on and for rotation with said rod, said plate substantially spanning the length and width of said container to define the bottom of a money-receiving compartment in the upper portion of the container with which compartment said slotted front wall opening communicates, said compartment being visible through said transparent wall portions, and said plate defining the top of a non-visible money-accumulating compartment therebelow; downwardly-inwardly curved inner wall elements on said container front and back walls closely adjacent said plate longitudinal edges, said wall elements being curved on an arc corresponding to the arc described by said plate longitudinal edges when said plate is rotated; and a knob on the outer, projecting end of said rod to facilitate the manual rotation or tilting movement of said plate, said plate being tiltable within the limits of said curved wall elements to cause money resting thereon to shift about, thus enabling a viewer to see and count said money, and said plate being adapted to be manually rotated beyond the confines of said curved inner wall elements to cause said money to fall into the lower, money-accumulating compartment of said container.

3,202,346
RECEPTACLE
Philip F. Jacobs, 226 Brookville Lane, Old Brookville, Glen Head, N.Y.
Filed Oct. 11, 1963, Ser. No. 315,484
5 Claims. (Cl. 232—43.3)



4. A receptacle, comprising a casing having oppositely disposed side walls connected by back and front walls with the upper ends thereof defining an opening, a closure member for said opening pivotally connected along the rearward portion thereof to the upper edge portion of said wall, a tamping flap extending across said opening between and pivotally connected to said side walls adjacent to the upper ends thereof for movement through a predetermined arc, said tamping flap from the rear to the front thereof being substantially shorter than said closure member, an arcuate guide member connected to said front wall adjacent to the upper end thereof and extending downwardly and rearwardly in said casing along a portion of said arc, means including a lever connecting said tamping flap to said closure member for moving said tamping flap through said arc when said closure member is moved through a substantially smaller arc as it is opened and closed, means including a foot pedal connected to said casing and to said closure member for operating the latter, and stop means for limiting to a predetermined angle the extent to which said closure member can be opened and thereby limiting the corresponding movement of said tamping flap.

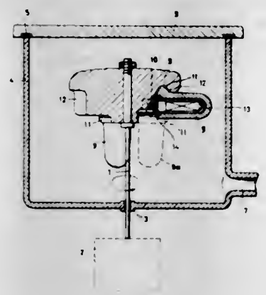
3,202,347
COUNTERCURRENT FLOW CENTRIFUGAL SEPARATOR
Benjamin H. Thurman, 60 Gramercy Park N., New York 10, N.Y.
Filed May 2, 1960, Ser. No. 26,033
2 Claims. (Cl. 233—15)



1. A centrifugal separator for the processing of mixtures of glyceride oils and the like containing centrifugally separable material, said separator including: a rotor and

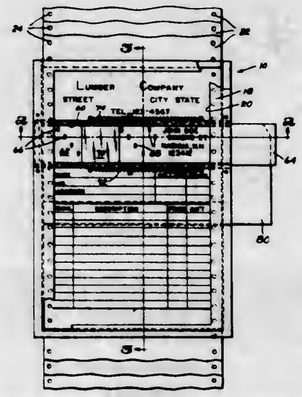
means for journalling said rotor to turn about a horizontal axis, the outermost interior of said rotor providing a peripheral zone bounded outwardly by an internal cylindrical peripheral wall of said rotor extending substantially parallel with said axis, there being a main annular separating zone radially inward of said peripheral zone; a plurality of cylindrical apertured bands extending around said axis in said main annular separating zone and spaced radially from each other, the annular interband space between the two outermost of said bands being a delivery space open at one end thereof; walls forming an annular equalizing space on one side of the radial midplane of said rotor having its sole outlet to said one end of said delivery space, said equalizing space and said peripheral zone being spaced from each other in the direction of said axis, and including a wall therebetween separating the same, said separating wall extending between the outermost of said two bands and said peripheral wall of said rotor; means for delivering the mixture under pressure to said equalizing space for equal distribution to said one end of said delivery space, said mixture flowing along said delivery space in the direction of said axis, the separable material moving outward by centrifugal force through the apertures of the outer of said two bands to collect in said peripheral zone, the oil moving inward from the apertures of the inner of said two bands to an oil withdrawal position near said axis; means for continuously removing said oil from said oil withdrawal position to a position exterior of said rotor; and means for removing collected material from said peripheral zone.

3,202,348
CENTRIFUGE HAVING AN IMPROVED CENTRIFUGE CELL
Karl Strohmaier, Tubingen, Germany, assignor to Martin Christ, Osterode (Harz), Gipsmuhlenweg, Germany, a corporation of Germany
Filed Dec. 5, 1962, Ser. No. 242,492
10 Claims. (Cl. 233—26)



1. A centrifuge comprising a rotatable member, at least one cup pivotally connected suitably near its open end to said member to swing outwardly in response to centrifugal force as said member rotates, and a centrifuge cell in the form of an open-ended, closed bottom tube disposed with its closed bottom seated in said cup, said cup being free to swing outwardly until the longitudinal axis of said cell is approximately horizontal, and said cell having a plurality of passageways in its side walls extending lengthwise thereof, each passageway opening at one end through the open end of the cell, the other end of one passageway opening into the closed bottom of the cell and the other ends of the other passageways opening into the interior of the cell, each at a different level.

3,202,349
MACHINE FOR AND METHOD OF ACCOUNTING
Raymond D. Brown, Hollis, N.H., assignor to Royal Business Forms Incorporated, Nashua, N.H., a corporation of New Hampshire
Filed Mar. 5, 1963, Ser. No. 262,991
7 Claims. (Cl. 234—45)

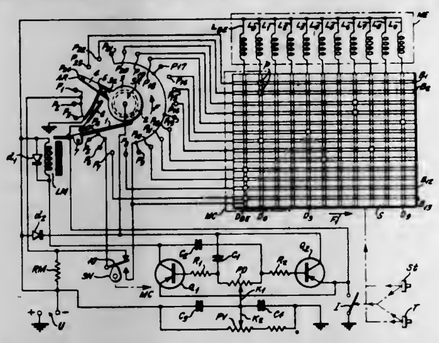


1. An autographic register comprising: a writing plate having an opening thereacross; a plurality of superimposed forms resting on said plate and extending across said opening; a transversely extending trough positioned below said opening to receive a data card; means located over said forms and said card to receive, in parallel relationship thereto, a customer plate having predetermined holes cut therein; punches positioned above the location of said customer plate and limited to vertical movement relative thereto whereby when said punches are depressed they will pass through the holes in the customer plate and make corresponding holes in the forms and the card; and other punches laterally spaced from the customer plate and limited to vertical movement relative thereto for simultaneously punching other predetermined holes in said forms and said card.

3,202,350
DIGITAL PRINTING SYSTEM
Roger P. J. Pinard, Ruell, Seine et Oise, France, assignor to Societe de Mecanographie Japy, Paris, France, a French company
Filed June 6, 1961, Ser. No. 115,237
Claims priority, application France, June 20, 1960, 830,578
12 Claims. (Cl. 235—59)

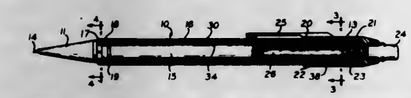
1. In combination with calculator mechanism including digital members each settable to a plurality of digital settings to indicate a multidigit amount stored in the calculator and typewriter mechanism including a plurality of digital type-printing keys and printing solenoids associated with the respective keys and individually energizable to actuate said keys; a system for printing a multidigit amount stored in the calculator comprising a selector matrix having a first set of electrically conductive elements each connected to one of the respective printing solenoids and a second set of electrically conductive elements mechanically connected for displacement by the respective digital members and means for electrically interconnecting each second element with only that first element corresponding to the digital setting of said second element; a stepper switch independent from said mechanisms and comprising a displaceable switch arm and a series of switch contacts respectively connected to said second elements and sequentially engageable by said arm; a stepper

electromagnet energizable for stepping said switch arm over the said series of contacts; and circuit means connected to said electromagnet and to said switch arm cyclically operative for applying energizing voltage pulses



of predetermined duration to the magnet and arm alternately whereby to step the switch arm over the series of contacts and energize said solenoids to sequentially print the digits of a multidigit amount stored in the calculator.

3,202,351
COMBINED WRITING IMPLEMENT AND SLIDE RULE
Sandor J. Baranyl, Norwalk, Conn. (1020 Ridgeway Ave., Rochester, N.Y.)
Filed Sept. 28, 1962, Ser. No. 226,873
12 Claims. (Cl. 235—79.5)



1. The combination with a slide rule having a cylindrical body, a cylindrical slide slidable thereon and a cylindrical cursor slidable on said body; of a writing implement, comprising a core including a front end providing a writing tip, a tubular shell secured to said front end and surrounding said core in spaced concentric relation to provide a cylindrical space therearound, said shell having a butt end, a rear cap, means readily detachably connecting said cap to said shell and core so as to provide a second and enlarged cylindrical space beyond said butt end, said cylindrical slide rule body and slide being slidably mounted on said core in said first named cylindrical space, said cursor being disposed in said enlarged cylindrical space beyond said butt end of said shell, and said slide rule body, slide and cursor being readily removable from said core upon detachment of said cap from said shell.

3,202,352
SLIDE RULE
Paul M. Pepper, 185 Rustic Place, Columbus 14, Ohio
Filed July 29, 1963, Ser. No. 298,227
8 Claims. (Cl. 235—83)

1. A calculating device of the circular disc type comprising:

(A) a first spiral scale representing a first function extending from a pivot point and extending to the outer periphery of said disc;

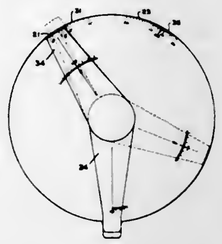
(B) a second spiral scale juxtaposed to said first spiral scale and representing a second function;

(C) a pair of pivotly mounted arms on said disc and extending from said pivot point, at least one of said arms extending beyond the outer periphery of said disc;

(D) a first and a second auxiliary scale positioned on said disc beyond the outer turn of scale spiral scales,

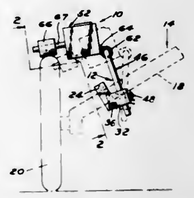
(1) said first auxiliary scale representing a third function having graduations laid out according to the differences of said first and third functions,

(2) said second auxiliary scale representing a fourth function having graduations laid out according to the differences of said second and fourth functions;



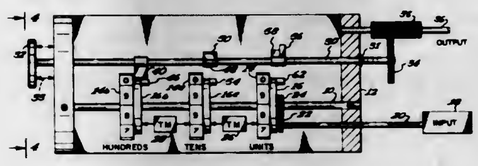
(E) said graduations on said first and second auxiliary scale so positioned on said disc and angularly related that in determining an unknown when the first of said arms is set at register and the second of said arms is set on one of said spiral scales, and said pair of arms moved without changing the angle therebetween setting on one of said auxiliary scales the reading originally set on said spiral scale, said answer is read on said spiral scale.

3,203,353
YARDAGE INDICATOR ATTACHMENT FOR A GOLF CART
James E. Nowak, 19973 E. Williams Court, and Robert T. Quail, 2073 Hawthorne, both of Grosse Pointe Woods, Mich.; and Charles R. Jenks, Jr., 22204 Sunnydale, St. Clair Shores, Mich.
Filed Oct. 15, 1963, Ser. No. 316,239
6 Claims. (Cl. 235—95)



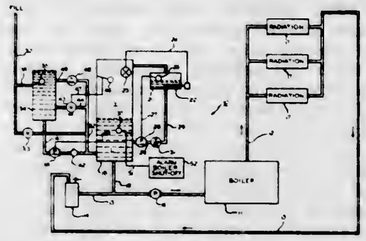
1. Apparatus for use with a golf cart to automatically indicate the distance from the ball to the green comprising a device having a counter assembly for registering and visually indicating distances, said device also having a rotatable driving wheel for operating said counter assembly, and means for mounting said device on said golf cart in a manner such that said driving wheel engages and is rotated by one of the wheels of said golf cart and operates said counter assembly in reverse when said golf cart is moved along the ground, said mounting means including an L-shaped bracket bar one arm of which provides a spindle on which said device is rotatably mounted, a spiral spring encircling said spindle and urging said device in such a direction about the axis of said spindle as to press said driving wheel against said one wheel of said golf cart, a mounting block rotatably and slidably receiving the other arm of said bracket bar, means for locking said other arm on said mounting block in selected positions of longitudinal and rotative adjustment, said mounting means also including a second block adapted to be secured directly to said golf cart, and means for securing said mounting block on said second block in selected positions of rotation about an axis parallel to the axis of said spindle, one of said blocks having serrations contacting the other to resist relative rotation.

3,202,354
PREDETERMINING COUNTER
James H. Snyder, Wayzata, Minn., assignor to Honeywell Inc., a corporation of Delawar.
Filed Aug. 15, 1963, Ser. No. 302,310
10 Claims. (Cl. 235—132)



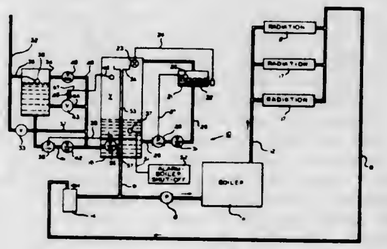
1. A predetermining counter, comprising: a succession of counter wheels mounted on a common non-rotating axis and including a units wheel and a plurality of higher order wheels; driving means for rotating said units wheel at a predetermined rate; transfer means connecting each lower order wheel to a next higher order wheel; said counter wheels each comprising a number wheel having a series of numbers evenly indexed on the periphery thereof, and a predetermining wheel of small diameter concentrically attached to said number wheel; said predetermining wheels each having a recess formed in the periphery thereof adjacent a first index position on said number wheel; a separate cog member attached to an outer side of each of said predetermining wheels directly adjacent said recess and extending therefrom parallel to said common axis; a rotatable output shaft mounted adjacent the periphery of said counter wheels and parallel to said common axis; said output shaft having a separate kicker tooth affixed thereto for each of said predetermining wheels; each of said kicker teeth lying in a plane parallel to said outer side of the associated predetermining wheel and said plane intersecting said cog member; said output shaft having a first position with said kicker tooth of said highest order wheel lying in the path of said highest order cog member, and said lower order kicker teeth being mounted on said output shaft out of the path of said lower order cog members; said highest order cog member contacting said kicker tooth upon rotation of the first index position of said highest order counter wheel through the arc occupied by said kicker tooth to thereby rotate said output shaft to place said next lower kicker tooth in line with said next lower cog member; a similar sequence of events occurring succesisvely with each of said lower order teeth until said lowest order kicker tooth is placed in position to be contacted by said lowest order cog member on said units wheel at the end of the predetermined count; and at least one blocking tooth associated with each of said kicker teeth; said blocking teeth being mounted on said output shaft and adapted to ride the periphery of said associated predetermining wheel to prevent spurious rotation of said output shaft; said blocking teeth each meshing with said recess in said corresponding predetermining wheel to aid said corresponding kicker tooth in rotating said output shaft.

3,202,355
HOT WATER HEATING SYSTEM HAVING AUXILIARY PRESSURIZING MEANS
Gilbert F. Carlson, Skokie, Ill., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Dec. 28, 1962, Ser. No. 247,891
5 Claims. (Cl. 237—8)



1. In a closed hot liquid heating system having a boiler and heat radiation means connected between the supply and return lines to said boiler, including means for circulating liquid through said heat radiation means, an auxiliary pressurizing vessel connected to said system and adapted to receive a quiescent quantity of heating liquid which changes in amount according to the expansion or contraction of heating liquid in the system, the improvement in said system which comprises an auxiliary boiler including a supply connection between said auxiliary boiler and said auxiliary vessel for heating liquid, said auxiliary boiler being much smaller than said auxiliary pressurizing vessel, a vapor connection between said auxiliary boiler and the vapor space in said auxiliary vessel above the level of liquid contained therein, means for applying heat to said auxiliary boiler including means responsive to the pressure in said auxiliary vessel for regulating said heat applying means, a pump in said supply connection between said auxiliary boiler and said auxiliary vessel, and means responsive to the quantity of liquid in said auxiliary boiler for controlling the operation of said last named pump.

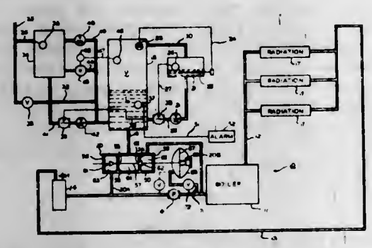
3,202,356
HOT WATER HEATING SYSTEMS HAVING AUXILIARY PRESSURIZING MEANS
Donald B. Gardner, Mount Prospect, and Frank E. Dameron, Chicago, Ill., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Dec. 28, 1962, Ser. No. 247,892
1 Claim. (Cl. 237—8)



In a closed hot liquid heating system having a boiler and heat radiation structure connected therein, including means for circulating liquid through said radiation structure, an auxiliary pressurizing vessel connected to said

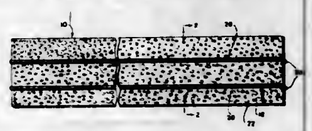
system and adapted to receive a quiescent quantity of heating liquid which changes in amount according to the expansion or contraction of heating liquid in the system, an auxiliary pressurizing boiler of extremely small volume as compared to the volume of said auxiliary pressurizing vessel connected to said auxiliary pressurizing vessel for supplying vapor under pressure to the vapor space above the level of liquid contained in said auxiliary pressurizing vessel, means for applying heat to said pressurizing boiler including means responsive to the pressure in said auxiliary pressurizing vessel for regulating said heat applying means; the improvement in said system in which said auxiliary pressurizing vessel is connected to said system by a pipe extending through the body of liquid in said auxiliary pressurizing vessel and terminating at a point above the maximum height of liquid therein, means supported within said auxiliary pressurizing vessel and providing for miscibility of vapor above the liquid in said auxiliary pressurizing vessel with the liquid returning from said system to said vessel by said pipe upon expansion of said liquid, and check valve means located between said pipe and the volume of liquid in said auxiliary pressurizing vessel whereby the liquid returning to said auxiliary pressurizing vessel returns thereto only by said pipe and said miscibility providing means.

3,202,357
PRESSURIZED HOT WATER HEATING SYSTEM HAVING AUXILIARY PRESSURIZING VESSEL
Gilbert F. Carlson, Skokie, Ill., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Jan. 23, 1963, Ser. No. 253,441
3 Claims. (Cl. 237—8)



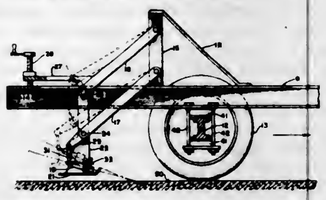
1. In a closed hot water heating system comprising a boiler and radiation means connected to said boiler in a closed circuit including supply and return lines for said radiation means, a pump for circulating water through said closed circuit, an auxiliary pressurizing vessel including a connection therefrom to said closed circuit, said auxiliary pressurizing vessel being adapted to receive expanded water from said system upon the expansion of water in said system and to return water to said system upon contraction of water in said system, said pressurizing vessel containing the water therein in a normally quiescent fashion undisturbed by circulation in said closed circuit and having means for maintaining the liquid therein under pressure, and valve means in said connection and intermediate said pump and said auxiliary pressurizing vessel for determining whether said auxiliary pressurizing vessel is connected to the suction or discharge sides of said pump, said valve means including a first connection to the suction side of said pump, a second connection to the discharge side of said pump, a valve actuating member moving in response to pressure conditions at said pump to alternately connect said auxiliary pressure vessel to said first and second connection.

3,202,358
FLEXIBLE WATERPROOF TRACTION PAD
Arthur W. Griswold, 508 1st Ave., Asbury Park, N.J.
Filed July 25, 1961, Ser. No. 126,714
1 Claim. (Cl. 238—14)



A traction pad comprising a sheet of plastic-treated cloth, a pair of spaced and narrow flexible strips extending longitudinally on the sheet and protruding therefrom, each strip extending approximately within one third from the edge of the sheet, a flexible first waterproof coating on both sides of the sheet, a plurality of abrasive particles distributed on both sides of the coated sheet and embedded in a flexible layer adhering to the coating, said particles partially projecting from the flexible layer, and a thin flexible coating of paint extending over the particles, the strips and the flexible layer on both sides of the pad, the first flexible waterproof coating and said flexible layer of paint being formed of rubber to bind the abrasive, and the paint coated particles forming an irregular surface on the pad.

3,202,359
LOW ANGLE SPRAYING MACHINE
Edwin R. Gill, Jr., Millerton, N.Y., assignor to Karl W. Flocks, Washington, D.C.
Filed Oct. 23, 1961, Ser. No. 146,910
6 Claims. (Cl. 239—1)

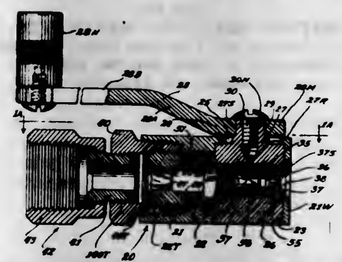


1. A low angle spraying machine for spraying a ground surface comprising a wheel mounted chassis including a plurality of wheels, an axle attached to said wheels, and studs and shock absorbers connecting said axle to said chassis whereby any springing motion of said chassis is minimized; a frame mounted on said chassis; parallel motion linkage attached to said frame; spraying means positioned vertically by the operation of said parallel motion linkage; and automatic adjusting means to change the angle that the spray from said spraying means makes with the ground surface being sprayed whereby the angle that the spray from said spraying means makes with the ground surface changes in direct relationship to the change in height above the ground surface of said spraying means.

3,202,360
SPRAY HEAD
Edward J. O'Brien, Glen Ellyn, Ill., assignor to Spraying Systems Co., a corporation of Illinois
Filed June 17, 1963, Ser. No. 288,198
4 Claims. (Cl. 239—119)

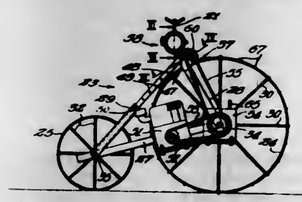
1. In a spray head, an elongated body having front and rear ends and a longitudinal passage extending axially to open through front and rear ends of the body, means at the rear end of the body for connecting the same to a spray gun, said body having a transverse cylindrical chamber near its front end opening through one side of the body and terminating short of the other side to provide a wall at said side, said wall having an opening

therein centrally of said chamber, a mounting cylinder in said chamber having a hub projecting through said opening, a handle removably secured through said opening to said mounting cylinder for holding the cylinder in position in said chamber and for imparting rotative movement to define spraying and cleaning positions of said cylinder displaced 180° from each other, said cylinder having a diametric passage therethrough having a shoulder near one end thereof, said diametric passage being



located in said cylinder in position to be coaxial with said longitudinal passage of the body when said cylinder is in its cleaning position or its spraying position, a spray orifice member in said diametric passage, a sleeve-like lock nut threaded into said diametric passage and holding said orifice member in position determined by said shoulder, and sleeve-like sealing means in said longitudinal passage for sealing engagement with the surface of the cylindrical member about said diametric passage.

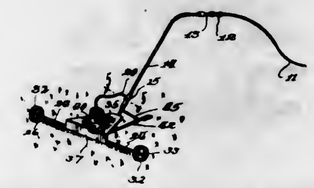
3,202,361
MOBILE IRRIGATION DEVICE
David Kane, 108 Tuttle Road, San Antonio, Tex.
Filed Sept. 12, 1963, Ser. No. 308,440
3 Claims. (Cl. 239—212)



1. A mobile irrigation device comprising an elongated irrigating conduit having a plurality of water distribution means at spaced intervals therealong,
and a plurality of wheel assemblies supporting said conduit at spaced longitudinal intervals, said wheel assemblies comprising:
a pair of wheels,
a substantially triangular frame comprising upwardly convergently related frame members one of which has a portion extending upwardly beyond the other and one of which is longitudinally adjustable for raising and lowering said upwardly extending portion selectively,
and a head structure on said upwardly extending portion supporting the conduit.

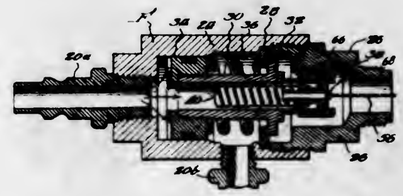
3,202,362
SOLUTION DISPENSING ASSEMBLY
George R. Wright, 1140 Pam-Anne Drive, Glenview, Ill.
Filed Oct. 16, 1963, Ser. No. 316,556
6 Claims. (Cl. 239—287)

1. An assembly for dispensing a solution of liquid concentrate and water, said assembly comprising:
a water inlet tubular member;
a sleeve member one end of which is connected to one end of said inlet member;
a first tubular member attached to the remaining end of said sleeve member;
additional tubular members joined to and angularly disposed to said first tubular member, said additional members having perforations therein;
a container mounting plate having an opening therein mounted on at least one of said tubular members;



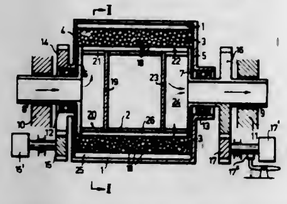
a solution supply container frictionally maintained within said opening;
a flexible hose having one end located within said container and the remaining end attached to said sleeve member; and
a pair of wheels for rolling said assembly across a surface, one of said wheels being attached to one end of a perforated member while the remaining wheel is attached at one end of another of said perforated members.

3,202,363
AUTOMATIC FOGSPRAY DEVICE
Wilbert G. Kautz, West Unity, and Dale F. Gorman and Cecil G. Dominique, Bryan, Ohio, assignors to The Aro Corporation, Bryan, Ohio, a corporation of Ohio
Filed July 1, 1963, Ser. No. 291,706
11 Claims. (Cl. 239—413)



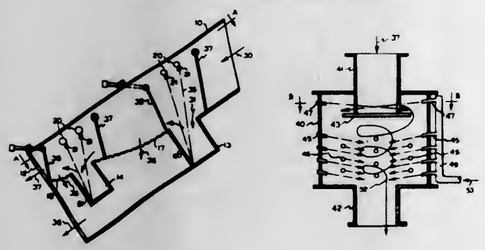
1. Automatic fogspray means comprising the combination with a high pressure hydraulic spray gun of a hollow body having therein a hydraulic spray nozzle receiving from said gun liquid to be sprayed, an elongated spray tube carried by said body in alignment with the discharge orifice of said nozzle, means for introducing air under pressure into said body to ented said spray tube with the material issuing from said nozzle, said spray tube having a substantially closed end remote from said nozzle and lateral discharge openings spaced inwardly with respect to said end to direct and distribute the material as it is discharged from said spray tube, an air valve seat in said hollow body, a valve disc, means normally biasing said valve disc seated on said valve seat, and means automatically operated by hydraulic pressure from said spray gun when the gun is operative for unseating said valve disc relative to said valve seat.

3,202,364
METHOD OF AND APPARATUS FOR GRINDING MATERIAL
Walter Wieland, Aargau, Switzerland, assignor to Cementfabrik Holderbank-Wildegg A.G., Holderbank, Aargau, Switzerland, a corporation of Switzerland
Filed Oct. 23, 1962, Ser. No. 232,436
Claims priority, application Switzerland, Nov. 3, 1961, 12,691/61
9 Claims. (Cl. 241—30)



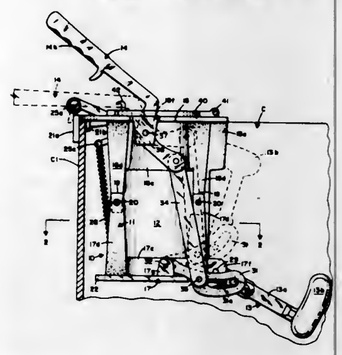
1. The method of grinding material comprising the steps of forming a layer of movable grinding elements in an annular space whose inner and outer peripheries are defined by a pair of radially spaced, coaxial, circular cylindrical walls; accelerating said walls at the same rate to the same predetermined angular velocity about their longitudinal axes; braking one of said walls to thereby bring it to rest and produce relative movement between the grinding elements; admixing the material to be ground with said layer of grinding elements so that it is ground by the relative movement of those elements in relation to one another; and discharging the ground material from said layer.

3,202,365
PHOSPHATE RECOVERY APPARATUS
James A. Barr, Jr., Washington, D.C., and Charles H. Greene and Clarence G. Olson, Lakeland, Fla., assignors, by mesne assignments, to Chemical Cleaning, Inc., New Orleans, La., a corporation of Louisiana
Filed Apr. 9, 1962, Ser. No. 186,605
7 Claims. (Cl. 241—42)



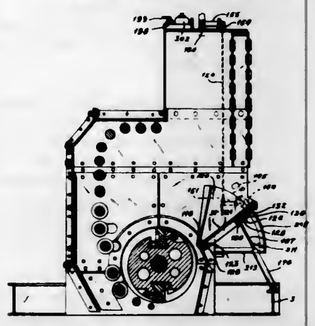
1. An apparatus for treating a matrix material to separate at least one component therefrom which comprises, a confined chamber through which said matrix material is passed to be treated, inlet means for introducing downwardly said matrix material into the upper end of said confined chamber, outlet means from said confined chamber for treated matrix material, said outlet means being located at a point below said inlet means, a plurality of jet nozzles within said confined chamber disposed between said inlet means and outlet means for subjecting said matrix material in said chamber to high velocity jets of liquid having a nozzle velocity in excess of 342 ft./sec., said jet nozzles being directed to contact said matrix material passing through said confined chamber with jets of liquid issuing therefrom in the direction of said passage of said matrix material therethrough, baffle means, said baffle means being disposed to oppose on its upper surface the direction of matrix flow by gravity through said chamber whereby said matrix material introduced into said chamber during its movement through said chamber is directed by said baffle means into the path of and into contact with said jets of liquid, at least a portion of said plurality of said jet nozzles being disposed and directed to contact said matrix material with jets of liquid on said upper surface of said baffle means.

3,202,366
BOTTLE BREAKING APPARATUS
Robert C. Harmon, 601 Pinewood Drive, Dunedin, Fla.
Filed May 17, 1963, Ser. No. 281,260
1 Claim. (Cl. 241—99)



A bottle breaker comprising means forming a surface for receiving a bottle thereagainst, said surface having an opening for exposing a part of a bottle thereagainst to a hammer, means comprising a member yieldingly urging a bottle to said surface, and a hammer movable in a path through said opening for striking a bottle yieldingly held to said surface, said member comprising a lever having a soft rubber-like element attached to one end and disposed opposite said surface, and a spring urging said lever in a direction to urge said element to a bottle aligned with said surface.

3,202,367
TWO HAMMER SINGLE ROTOR CRUSHER WITH HYDRAULIC OPERATED FEED CHUTE
Virgil H. Nixon, Joplin, Mo., assignor to Missouri-Rogers Corporation, Joplin, Mo., a corporation of Missouri
Filed May 24, 1963, Ser. No. 282,989
9 Claims. (Cl. 241—186)



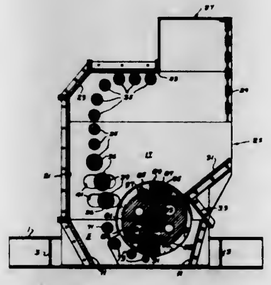
1. In an impact crusher having a housing with an inlet opening in the upper portion thereof and a discharge opening at the bottom thereof, a single rotor journalled above said discharge opening and having hammers arranged thereon with axially extending faces exposed on one side

facing the direction of rotation of said rotor, and peripheral surfaces thereon constituting the maximum radius of said rotor and defining a hammer circle during rotation; side walls for said housing at opposite ends of said rotor; and a reducing chamber which includes said side walls, a feed chute located between the said side walls with its discharge end disposed adjacent said hammer circle and a breaker bar grating located between said side walls and extending from above the hammer bar circle to a point closely adjacent the hammer bar circle and spaced from the edge of said feed chute in the direction of rotation of said rotor, the improvement which comprises,

(1) said rotor being located so that only the upper portion of the hammer circle is disposed in said reducing chamber, and

(2) said hammers being so spaced circumferentially of said rotor so that only one hammer at a time travelling in the hammer circle passes through said reducing chamber.

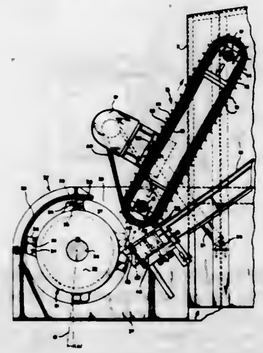
3,202,368
SINGLE ROTOR CRUSHER
Virgil H. Nixon, Joplin, Mo., assignor to Missouri-Rogers Corporation, Joplin, Mo., a corporation of Missouri
Continuation of application Ser. No. 837,053, Aug. 31, 1959. This application Aug. 26, 1963, Ser. No. 305,025
20 Claims. (Cl. 241—189)



1. In a crusher of the type having a rotor, an open-front housing, and a series of horizontal breaker bars in vertically spaced relationship adjacent the back of the housing; the improvement that comprises at least one of said bars being readily deactivated and another of said bars being adjustable toward and away from the rotor, said readily deactivatable bar being below said adjustable bar distance greater than the space between the bars of said series, thereby to permit both primary and secondary crushing within the rotor by removal of the lower bar and adjustment of said other breaker bar.

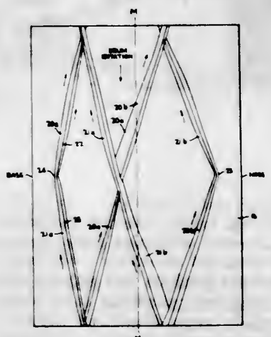
3,202,369
ROTARY SHEET METAL TEARING DEVICES
Sebastian F. Judd, Milwaukee, Wis., assignor to Steel Briquette Corp., Wauwatosa, Wis., a corporation of Wisconsin
Filed Jan. 16, 1963, Ser. No. 251,884
12 Claims. (Cl. 241—190)

1. A device for tearing sheet metal scrap comprising a housing having a receiving opening, a drum-shaped rotor rotatably mounted in said housing, a fixed shearing means having a serrated cutting edge supported adjacent the periphery of the rotor and extending substantially the length thereof and having a series of projecting points defining V-notches between points, and a plurality of shear knives which are V-shaped in plan view and which have points projecting from the periphery of said rotor each shaped to cooperate with one of the V-notches in shearing out a piece of metal from the leading edge of scrap fed into said receiving opening, said fixed shearing means being angled downwardly and forwardly toward the rotor and the shear knives of the rotor being so positioned with respect to the angle of the fixed shearing



means as to provide for coaction of the points of the rotor knives with the apexes of the V-notches before the angled sides of the rotor knives arrive at shearing position whereby shearing takes place with a minimum of power, said knives on the drum being so staggered circumferentially and axially as to provide for sequential engagement with the scrap metal until pieces have been sheared throughout the width of the scrap.

3,202,370
METHOD OF WINDING YARN
William H. O'Brien, Warwick, R.I., assignor to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts
Filed Sept. 12, 1961, Ser. No. 137,544
4 Claims. (Cl. 242—43.2)

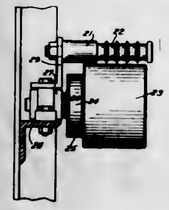


1. The method of winding yarn onto a conical package comprising the steps of rotating the package while positively traversing the yarn axially back and forth between the base and the nose thereof wherein said yarn is positively traversed from approximately the mid-point of said package to said nose at a predetermined accelerating rate of speed and is positively traversed from said nose to said approximate mid-point at a predetermined decelerating rate of speed, said deceleration being at a greater rate than said acceleration.

3,202,371
FEEDING MECHANISM FOR LACE PACKAGING MACHINE

Robert B. Parker, North Scituate, R.I., assignor to Bured, Inc., a corporation of Rhode Island

Filed May 1, 1961, Ser. No. 115,843
3 Claims. (Cl. 242—47.01)

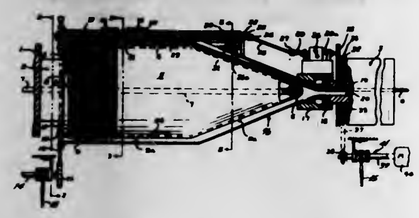


1. A strand handling machine, a take-up mechanism for handling the strand at a controlled linear rate, a feed mechanism comprising a rotatable drum, a fixed rod adjacent to but spaced from and extending across the surface of said drum in the direction of the rotatable axis thereof about both of which a strand may be led to embrace them and be fed as tensioned to have driving engagement with the drum and means for driving the drum at a speed faster than said linear rate of feed to provide a slack length of strand between the drum and take-up mechanism.

3,202,372
CABLE STORAGE AND RETRIEVER UNIT

Harry R. Meline and Niel R. Petersen, Minneapolis, Minn., assignors to the United States of America as represented by the Secretary of the Air Force

Filed Nov. 12, 1963, Ser. No. 323,185
7 Claims. (Cl. 242—54)

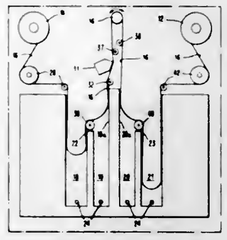


1. A wire rope cable retrieving and payout device for an aircraft arresting wire rope cable comprising, a fixed support, an elongated stationary cable retrieving, storage and payout drum fixed on said support against rotation having an elongated cylindrical cable receiving portion extending axially away from said support, terminating in an outer substantially conical end portion faired into the outer end of said cylindrical portion, arresting cable guide means fixed in concentric outwardly spaced relation to the apex end of said conical end portion, means for dead-ending a wire rope arresting cable on said cylindrical portion adjacent said fixed support, cable retrieving or laying pulley movable along the surface of said drum substantially tangent thereto in parallel relation to said cylindrical cable receiving portion thereof between a point spaced outwardly toward the outer extremity of said conical end portion to a point adjacent said fixed support, means for producing a planetary motion of said pulley concentrically around said stationary drum while simultaneously advancing said pulley along said cylindrical drum surface in a direction from said fixed support toward said conical end portion at a rate of axial movement relative to the axis of said drum substantially equal to but not less than the diameter of the arresting cable when dead-ended on said drum by said dead-ending means, during each cycle of planetary motion of said pulley means around the axis of said drum, whereby said pulley picks up said arresting cable and wraps a layer of coils of said cable on said cylindrical portion in close side-by-side relation from said dead-ending means toward said conical end portion, said means including means for moving said pulley outwardly away from said cylindrical portion out of the path of said cable extending from said cylindrical drum portion to said cable guide means to permit the wraps of the cable to be severally withdrawn along the surface of the drum and across said conical portion when the cable is withdrawn through said arresting cable guide means.

3,202,373
TAPE TRANSPORT WITH NON-LINEAR BUFFER LOOP BOXES

Trevor D. Reader, Wayne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 8, 1962, Ser. No. 164,794
4 Claims. (Cl. 242—55.12)



3. A tape recording unit comprising: a supply reel, a takeup reel, a capstan operable to engage the tape for movement between said supply reel and said takeup reel along a predetermined tape path, a recording head positioned along said tape path adjacent said capstan, first and second loop boxes disposed between said capstan and said supply reel and said capstan and said takeup reel, respectively, each of said loop boxes comprising, first and second sections, said first and second sections being separated by a wall member shorter than the outside walls defining the loop box, said wall member being closer to the side wall of said second section than that of said first section, means connecting a source of vacuum to said first and second sections whereby the arcuate lengths of tape disposed in said first and second sections normally tend to equalize.

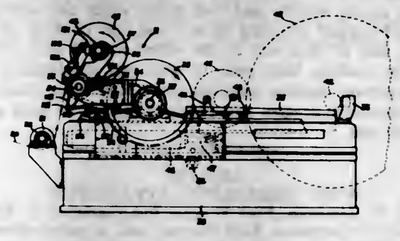
3,202,374
WEB WINDING MACHINERY

Richard W. Phelps, Fulton, N.Y., assignor to The Black-Clawson Company, Hamilton, Ohio, a corporation of Ohio

Filed June 17, 1963, Ser. No. 288,236
12 Claims. (Cl. 242—65)

3. Apparatus for winding a web of sheet material on a core to form a roll of such material comprising:
driving means for initiating rotation of said core by force applied about the axis thereof to start the winding of said sheet material on said core and to obtain a smooth hard start of the roll of material on the core; and

further driving means subsequently operable for completing the winding of said roll by rotating the roll

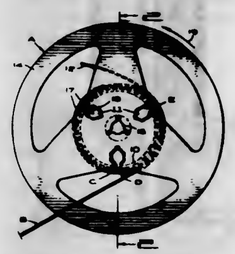


of material by force applied to the surface of the roll of material.

3,202,375
SELF-THREADING TAPE RECORDING REEL

Leon W. Dinkin, 100 Font Blvd., San Francisco, Calif.

Filed Mar. 23, 1964, Ser. No. 353,787
7 Claims. (Cl. 242—74)



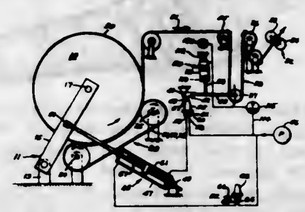
1. In combination, a magnetic sound recording tape of ferrous oxide material, and a self-threading tape recording reel, the latter comprising:
(a) a reel having a hub on which the sound recording tape may be wound:
(b) a permanent magnet band secured to the hub of the reel;
(c) and a protective shield mounted over and covering the magnetic band to protect impressions on the tape from distortion of erasure by the magnetic band;
(d) the shield being made from a substance so that the magnetic field will pass therethrough to thus attract and anchor a free end of the tape to the hub, when this free end is brought into the magnetic field, with the tape itself and the magnet band constituting the sole means for anchoring the tape to the hub.

3,202,376
ROLLSTAND DRIVE

Orville V. Dutro, 5068 N. Commonwealth, and Sherman H. Hewson, 640 Knight Way, both of La Canada, Calif.

Filed Nov. 6, 1962, Ser. No. 235,889
24 Claims. (Cl. 242—75.1)

1. A rollstand drive and control for turning a roll of web material to feed the material at a controlled rate and tension, comprising: an outfeed drive engaging the materia at a location spaced from the roll, which outfeed drive exerts a demand for material from the roll; support means at least in part supporting the roll, the roll being rotatably supported; friction drive means adapted to contact and turn the roll, said drive means operating at a constant speed; adjustment means adapted to variably adjust the normal force between the roll and the drive means; a pair of laterally spaced-apart, fixed parallel rollers, a movable sensing roller; material withdrawn from the roll passing over both of said fixed rollers, and over said sensing roller to form a loop between the fixed rollers, and thence to the outfeed drive, whereby a difference in linear speed of material at the point of departure from the roll and at the outfeed drive changes the length of the loop, and thereby the position of said sensing roller; and control means responsive to the position of the sensing roller for

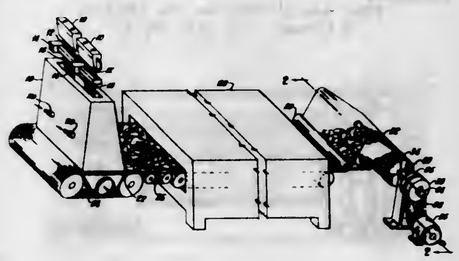


variably adjusting the output of the adjustment means, whereby variation in loop length permits the sensing roller position to change, causing the control means to adjust the adjustment means and thereby the said normal force between the drive means and the roll, thereby to adjust the slippage rate therebetween, and cause the roll speed to change to restore the loop to a desired length indicative of correct tension and linear speed.

3,202,377
CONSTANT TENSIONING PACKAGING SYSTEM

Vernon C. Ross, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed June 29, 1962, Ser. No. 206,226
3 Claims. (Cl. 242—75.5)



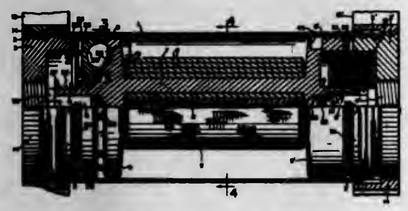
1. Drive means for a cylindrical web packaging device comprising:
a rotatably mounted mandrel;
motor means;
a pressure fluid actuated clutch operatively connecting said motor means and said mandrel, said clutch including an expansible chamber means forming a part thereof and having a pressure fluid inlet;
a source of pressure fluid;
conduit means having one end connected to said source of pressure fluid and the other end connected to the expansible chamber means through the pressure fluid inlet of said clutch; and
an automatic programming means independent of said rotatably mounted mandrel for cyclically varying the amount of pressure fluid admitted to the expansible chamber means of said clutch in proportion to the increase in radius of the cylindrical package on said mandrel so as to maintain the peripheral speed of said cylindrical package substantially constant.

3,202,378
MOTOR DRIVEN REEL FOR KITES
Roger L. Williamson, 2377 East 3595 South, Salt Lake City, Utah
Filed Mar. 8, 1963, Ser. No. 263,870
3 Claims. (Cl. 242—84.1)



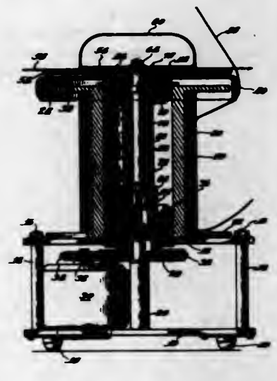
1. An electric kite winder including, in combination, a case having a handle and a reel enclosure integral therewith; a reel journaled within said reel enclosure; an electric motor disposed within said reel enclosure; means mechanically intercoupling said motor to said reel, enabling said motor to drive said reel, said reel enclosure provided with an opening; line means routed through said opening and wound upon said reel; battery means operatively disposed within said handle; switch means mechanically disposed on said case; and means electrically interlocking said switch means, said battery means, and said motor in a series circuit, and wherein said mechanically intercoupling means comprises gear reduction means, said reel enclosure being provided with a second opening, said gear reduction means including a gear protruding upwardly in proximity with said second opening, enabling manual retention of the latter.

3,202,379
SAFETY HARNESS DEVICE
Robert J. Wrighton, Newport Beach, and James E. Glauser, Downey, Calif., assignors to Pacific Scientific Company, San Francisco, Calif., a corporation of California
Filed Apr. 1, 1963, Ser. No. 269,633
5 Claims. (Cl. 242—107.4)



1. A harness device comprising a reel having spaced annular collars, a casing for said reel having spaced bearings supporting said reel while permitting rotation and limited axial movement thereof, a strap confined between said collars and wound upon said reel, said strap extending outwardly of said casing for connection to the body of the user, a rewind spring connected between said casing and said reel permitting unwinding of said strap and causing rewinding thereof during normal movements of the user, a thrust member opposite one collar of said reel, said collar and said thrust member having opposed tapered sockets, inertia balls in said sockets, a spring interposed between said reel and said thrust member for urging the latter towards said collar to retain said inertia balls in said sockets, first gripping means provided on said thrust member and on one end of said casing, and second gripping means provided on the second of said reel collars and on the other end of said casing, said inertia balls acting, upon the acceleration of the strap outwardly of said reel beyond a predetermined rate, to roll within said tapered sockets to cause movement of said thrust member against said spring and away from said one reel collar, effecting actuation of said first gripping means and the binding of one end of said reel to said casing, further rolling of said balls in their sockets causing said reel to move axially within said casing and effect the actuation of said second gripping means and the binding of the other end of said reel to the other end of said casing, thereby locking both ends of said reel substantially simultaneously against outward movement while transmitting torsional stresses and resulting strains to both ends of said reel.

3,202,380
WIRE DEREELING APPARATUS
Hugh W. Hosbein, Fort Wayne, Ind., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan
Filed June 10, 1963, Ser. No. 286,759
9 Claims. (Cl. 242—128)

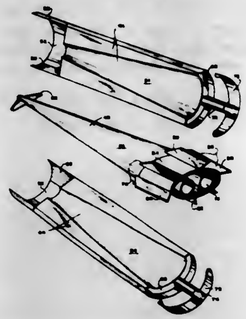


1. In a dereeling apparatus, a frame, a vertical post thereon, a drive element rotatable on said post, means for rotating said drive element, a hub on said frame surrounding said drive element and adapted to have one end of the drum of a reel positioned thereon with one flange of the reel resting on said frame, a driven tube extending upwardly from said drive element, said drive element having a driving connection with said driven tube, a dereeling flange overlying the other flange of the reel and connected with said driven tube for support and rotation thereby, a stationary disc above said dereeling flange, said post having an extension upwardly through said driven tube for supporting said stationary disc, and radially arranged bristles supported by said stationary disc and extending beyond the peripheral edge thereof to be sequentially engaged by wire dereeled from the reel.

3,202,381
RECOVERABLE ROCKET VEHICLE
Hans F. Wuenscher, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Nov. 8, 1961, Ser. No. 151,114
7 Claims. (Cl. 244—1)
(Granted under Title 35, U.S. Code (1952), sec. 266)

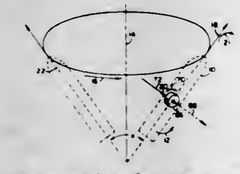
5. A multiple stage rocket vehicle wherein each stage is cylindrical and comprises
(1) thrust directing means and
(2) separable inner and outer sections,
(3) each section having stabilizer and control surfaces integral therewith, said inner section being of generally ellipsoidal cone shape,
(4) said outer sections fitting around said inner section and mating with said inner section and each other at the interfaces thereof,

(5) said outer sections presenting cylindrical outer surfaces when mated to one another,
(6) said sections being releasably secured together, thus serving to make said sections separable,



(7) each said section forming an aerodynamically self-sufficient wing serving to make said sections capable of return flight.

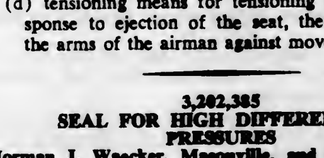
3,202,382
ROCKET YAW CONE REDUCTION DEVICE
Talbot A. Chubb, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 30, 1963, Ser. No. 277,057
5 Claims. (Cl. 244—14)



1. A device for reducing the yaw cone of a spinning and precessing rocket comprising:
(a) support means including a shaft, said support means being rotatably mounted within said rocket on an axis coaxial with the rocket spin axis so as not to partake of the spin of the rocket shell,
(b) a continually rotating momentum means mounted on said shaft and rotatable with said support means,
(c) angular rate sensing means on said support for detecting tumble of said rocket about said shaft, said angular rate sensing means producing an output signal according to the tumble of said rocket, and
(d) torque producing means receiving said signal produced by said angular rate sensing means for applying a torquing force to said support whereby said shaft is maintained in a position tangent to the yaw cone of said rocket.

3,202,383
AIRCRAFT
John P. Le Bel, 1948 E. 5th Ave., Mesa, Ariz., and Hugh E. Nichols, Rte. 1, Box 16, Higley, Ariz.
Filed Oct. 25, 1961, Ser. No. 147,526
11 Claims. (Cl. 244—42)

1. A flying wing airplane comprising a wing having a pair of plates affixed to opposite ends in substantially chordwise relationship to said wing, each of said plates having a chordwise length at least as great as the chord length of the corresponding end stations of said wing and having a bottom profile lower than the bottom of the profile of said wing at said end stations, said wing having a top surface comprising a plurality of airfoil surfaces having together the same span as said wing and each adapted and arranged to define a ram air intake between a leading edge of a trailing one of said airfoil surfaces and a spanwise trace of a preceding airfoil surface, in a chord position of said preceding airfoil surface behind the line of center of pressure of said preceding airfoil



surface by locating said leading edge substantially above the rearwardly projected contour of said preceding airfoil surface, and duct means in said wing for inducting engine combustion air from said intake to an air breathing engine, said trailing airfoil surface being movable relative to said top surface of said wing to vary the proximity of the leading edge of said trailing airfoil surface to said preceding airfoil surface whereby to adjust the size of the frontal area of said intake.

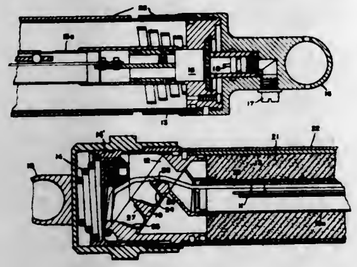
3,202,384
VEHICLE EJECTION SEATS
James Martin, Southlands Manor, Southlands Road, Denham, near Uxbridge, England
Filed Feb. 13, 1964, Ser. No. 344,609
Claims priority, application Great Britain, Feb. 18, 1963, 6,486/63
8 Claims. (Cl. 244—122)

1. An aircraft ejection seat having a restraining system comprising, in combination:
(a) two restraining lines;
(b) first securing means for securing one end portion of each line to a restraining harness adjacent the abdomen of an airman occupying said seat;
(c) second securing means for securing another portion of each restraining line to a respective arm of said airman; and
(d) tensioning means for tensioning each line in response to ejection of the seat, thereby to restrain the arms of the airman against movement.

3,202,385
SEAL FOR HIGH DIFFERENTIAL PRESSURES
Norman J. Waecker, Masonville, and Hugh D. MacDonald, Jr., Clementon, N.J., and Francis J. Shelling, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed May 5, 1964, Ser. No. 365,215
5 Claims. (Cl. 244—122)
(Granted under Title 35, U.S. Code (1952), sec. 266)

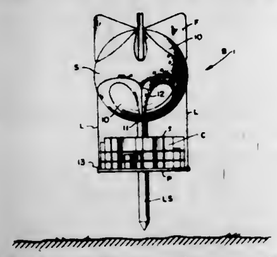
1. In an ejection seat apparatus for use in aircraft in which an initial thrust is imparted to an ejection seat by the operation of a propellant actuated piston type thruster

and a subsequent thrust is imparted to said seat by the operation of a propellant actuated rocket fired in response to a predetermined travel of said seat, said rocket having a venturi nozzle closed during application of pressure from propellant actuating said thruster but adapted to open during application of a less pressure from propellant actuating said rocket, the combination therewith of the improvement for reducing the hazard to the body of said aircraft and an occupant thereof not being simultaneously ejected with ejected personnel, from plug and



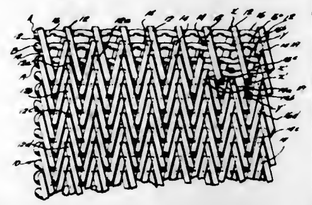
sealing material blown out of said venturi nozzle and accelerated in the rocket exhaust, said improvement including a tapered, thin-walled cup within said venturi nozzle mating therewith and having a convex base fitted with an outer and lower tapered nozzle portion and adapted to withstand the propellant pressure of said thruster against the inside of said cup and capable of being consumed under said less pressure of said rocket propellant tending to blow said cup outward and downward, said cup being formed of a consumable material.

3,202,386
AERIAL CARGO DELIVERY DEVICE
Foy McCullough, Jr., 61 Ticonderoga, China Lake, Calif.
Filed Dec. 30, 1963, Ser. No. 334,674
6 Claims. (Cl. 244—138)
(Granted under Title 35, U.S. Code (1952), sec. 266)



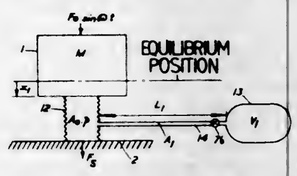
4. An aerial cargo delivery device comprising
an inflatable aerodynamic drag member;
a cargo supporting shroud secured to said drag member;
a vertically arranged landing spike so disposed as to pass downwardly through said shroud and terminate at a lowermost impact end;
means defining a pressure plate secured at the uppermost end of said landing spike and disposed adjacent said drag member;
drag member inflating means secured to said pressure plate for introducing an inflating medium into said member for thus initiating an inflation thereof; and
means for activating said drag member inflating means as said member is ejected from an airborne vehicle so that the drag member may be inflated and exert an aerodynamic drag effect on said platform as it descends, and further function as a shock absorbing mechanism as the impact end of said landing spike strikes the ground for thus causing said pressure plate to act against said medium.

3,202,387
WOVEN WIRE CONVEYOR BELT
Donald E. Andrews, Fred L. Hooper, and Charles W. Whaples, Cambridge, Md., assignors to Cambridge Wire Cloth Company, Cambridge, Md., a corporation of Maryland
Filed Dec. 6, 1963, Ser. No. 328,712
6 Claims. (Cl. 245—6)



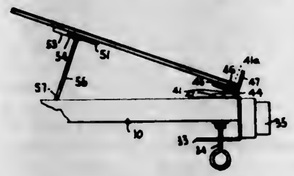
1. A corduroy weave wire belt comprising:
a plurality of helically coiled spirals, the spirals comprising spirals of right-hand twist and left-hand twist of approximately equal pitch positioned alternately in a nested relation; and
a plurality of connecting rods extending lengthwise through the spirals, each of the spirals having an even number of rods extending therethrough and the number being at least four, each rod being transversely notched and each rod having the right-hand twist and the left-hand twist spirals alternately hinged thereon across the length of the rod in the notches so as to maintain a straight-tracking belt.

3,202,388
VIBRATION ISOLATORS
Aubrey J. H. Goodwin, Shandon by Helensburgh, Scotland, assignor to Yarrow and Company Limited, Glasgow, Scotland, a British company
Original application May 5, 1959, Ser. No. 811,178, now Patent No. 3,091,103, dated May 28, 1963. Divided and this application May 23, 1963, Ser. No. 282,762
9 Claims. (Cl. 248—8)



1. A vibration isolator for isolating from a first body a periodic force applied to a second body while at the same time transmitting to the first body a constant force applied to the second body, which vibration isolator comprises a variable-volume fluid-filled container for interposition between the said two bodies, a first vessel containing a fluid, first conduit means of which the effective cross-sectional area is less than the effective cross-sectional area of the said container, which contains a body of fluid and which communicates with both the interior of the said container and the interior of the first vessel and provides the sole means of such communication, at least one additional vessel containing a fluid, additional conduit means of which the effective cross-sectional area is less than the effective cross-sectional area of the said container, which contains an additional body of fluid and which communicates with both the interior of the said container and the interior of the additional vessel and provides the sole means of such communication, the said container, vessels and conduit means together forming a closed system, and the mass of each of the said bodies of fluid, the dimensions of the conduit means containing that body of fluid, the apparent bulk modulus of the fluid in the vessel with the interior of which that conduit means communicates and the degree of damping applied to that body of liquid being such that, at a particular frequency of the periodic force, which is different for each of the said bodies of fluid, the inertia reaction of that mass substantially balances the force exerted on that body of fluid by the fluid in that vessel.

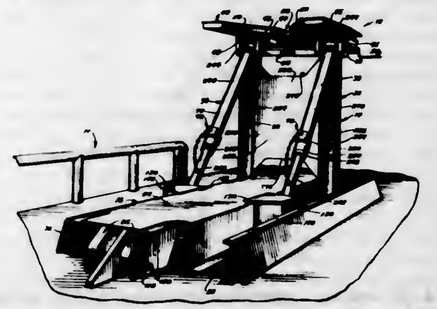
3,202,389
COMBINED FLATIRON SUPPORT, ELECTRIC OUTLET, AND EXTENSION CORD
Robert H. Zoller, Brooklyn, N.Y., assignor to Travco Plastics Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed Dec. 9, 1963, Ser. No. 329,018
2 Claims. (Cl. 248—117.4)



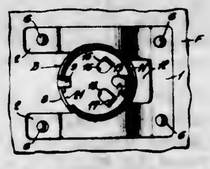
1. An iron support comprising a generally flat rest member adapted to be located over an ironing board for carrying an iron, said rest member having heat insulation on its underside, and pivotal mounting means below said rest member for swingably mounting the latter on an ironing board, said mounting means comprising a clamp for detachable securement to an ironing board, and a swivel upstanding from said clamp and connected to said rest to mount the latter for swinging movement about a generally vertical axis, in combination with hinge means having a generally horizontal axis and connected between said swivel and rest member to mount the rest member for swinging movement both about vertical and horizontal axes, said hinge means being connected to the rearward region of said rest member for upward and downward swinging movement of the forward rest-member region, and retractile strut means depending from the underside of said rest member for supporting the latter in an upwardly swung position, said strut means comprising an angulate member having long and short arms and pivotally connected to said rest member for selected dependency of said arms into bearing engagement with an ironing board.

3,202,390
FIFTH WHEEL STAND
Robert M. Sherrie, Lansing, Mich., and Jack W. Berger, Calumet City, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Original application Mar. 9, 1959, Ser. No. 797,989. Divided and this application Nov. 21, 1963, Ser. No. 325,376
5 Claims. (Cl. 248—119)

1. A fifth wheel stand for railroad cars comprising a lift structure and a fifth wheel plate structure carried by said lift structure, said lift structure comprising a first strut adapted to be pivotally secured at one end thereof to the car, a second strut adapted to be pivotally secured at one end thereof to the car in spaced relation from said one end of said second strut, means for pivotally securing said other ends of said struts together, said fifth wheel plate structure being secured to at least one of said struts adjacent the said one end thereof, said first strut comprising an extensible and contractible member, and means for releasably locking said first strut in contracted relation when the stand is operatively mounted on the car, said second strut when the stand is operatively mounted on the car serving a slever means for swinging said plate structure along an arcuate path between a lowered inoperative position and an elevated operative position, said first strut when locked in its contracted position when the stand is operatively mounted on the car holding said plate structure in its elevated position, said second strut comprising a telescoping member, resilient means for biasing said second strut in extended relation, and means for releasably locking said second strut against telescoping action when the stand is operatively mounted, said struts being in extended relation in the lowered inoperative position of said plate structure and said second strut when in extended relation having a length that is sufficient to position said fifth wheel plate at least at the elevation of kinpins of trailers and the like to be carried by the railroad car when the stand is operatively mounted on the car and said second strut is substantially vertically disposed, the last mentioned means being effective to releasably lock said second strut against contraction after the said fifth wheel plate structure has been positioned adajcent the kingpin of the trailer or the like.



3,202,391
MOUNTING BRACKETS FOR TUBULAR FURNITURE LEGS
Henry Rudow, 4101 Priscilla Lane, and Maurice Rudow, 6801 Hunt Court, both of Baltimore, Md.
Filed Oct. 17, 1963, Ser. No. 316,809
8 Claims. (Cl. 248—188)



2. A sheet metal mounting bracket for selectively mounting differently sized tubular furniture legs adapted to be affixed to the underside of a furniture unit, said bracket being of small depth and having a circular seat for the end of the leg, projections extending transversely to said seat at diametrally opposed portions thereof, an integral tongue extending transversely from one of said projections in overlying relation to said seat and displaced from the base of said seat, said tongue adapted to engage an angularly-shaped slot at the end of the tubular leg to permit a rectilinear movement of the leg against

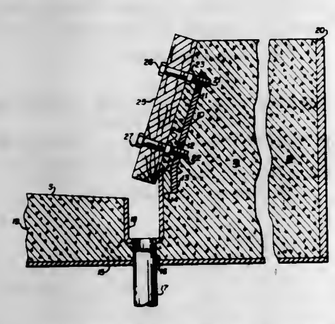
the seat followed by a rotary movement of the leg with respect thereto to lock the leg thereagainst, and at least one additional integral projection extending transversely from said seat adjacent to said other projection adapted to selectively stabilize the support of tubular legs of different diameters.

3,202,392
DRAFTING APPARATUS
Richard A. Wallace, Norristown, Pa., assignor to Control Data Corporation, a corporation of Minnesota
Filed July 10, 1963, Ser. No. 294,129
16 Claims. (Cl. 248—455)



1. A drafting apparatus comprising a flat drafting board, an elevator means structurally interrelated with said board for causing the upper edge of the board to move through an arcuate path while reciprocating the lower edge of the board, said elevator means including a selectively adjustable means for retaining the board in a desired plane at an angle with respect to the horizontal.

3,202,393
FORM HOLDING BRACKET
Chester W. Pettit, Box 64, Greenford, Ohio
Filed Aug. 30, 1962, Ser. No. 220,477
3 Claims. (Cl. 249—2)



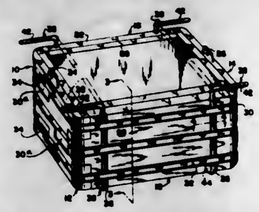
1. The combination of a bridge deck construction incorporating a U-shaped drainage channel having spaced side walls and means for supporting a concrete form above one side of said U-shaped drainage channel, said means comprising an elongated metal supporting bar having an offset lower end portion secured to one side of one side wall of said U-shaped drainage channel, said concrete form being in contact with the other side of said side wall, spaced threaded apertures in the upper portion of said elongated metal supporting bar and fasteners positioned in said apertures and extending through and engaging said concrete form, said upper portion of said supporting bar being in spaced parallel relation to said concrete form.

3,202,394
PRESTRESSING MEANS FOR SLAB CASTING FORMS
Theodore W. Shoe, Troy, Ohio, assignor to The Flexicore Co., Inc., Dayton, Ohio, a corporation of New York
Filed May 17, 1963, Ser. No. 281,312
1 Claim. (Cl. 249—94)



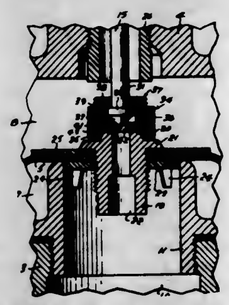
In combination, means for providing a casting region of adjustable length for prestressed slabs in a casting form having a maximum length of about 40 feet, said casting form being of steel having a generally U-shaped section with the sides reenforced by steel channels on the outside thereof extending the length of said form, each channel having a flange adjacent the top edge of the form side with the flange extending outwardly away away from the form, the flanges having regularly spaced apertures therethrough, at least one bulkhead assembly for mounting along a desired region along the length of said casting form, said assembly being capable of handling the total load of a plurality of tensioned steel strands with a minimum of waste of excess length of steel strand, said assembly comprising two sub-assemblies, one sub-assembly being a strand deflecting sub-assembly and the other being a strand stress bar sub-assembly, said strand deflecting sub-assembly comprising a generally flat steel plate extending across the casting form and being long enough to overlie the top flanges of the casting form channels, said plate having apertures therethrough for registration with the channel flange apertures, bolts for anchoring said steel plate in desired position along the top of said casting form, a dead bulkhead supported from said plate and extending into the casting form to define the end of a casting region, said dead bulkhead having apertures therethrough for accommodating prestressing strands, strand deflecting guides depending from the plate and extending from the outer face of said dead bulkhead and provided with guide slots for guiding the tensioned strands upwardly from the bottom of the casting form while retaining said strands in their normal positions laterally of the form sides so that looking down upon a casting form in normal casting position all strands appear straight, said stress bar sub-assembly comprising a bar extending across said casting form and having its ends overlying said apertured channel flanges, the cross bar ends being apertured to register with the channel flange apertures, bolts for anchoring said cross bar in desired position along the casting form, said stress bar sub-assembly being anchored at a region beyond the dead bulkhead and outside of the casting region, a cross end plate rigidly secured to said cross bar and having apertures therethrough for said tensioned strands, said bar apertures being about level with the casting form edges and being alined with the strand guide slots to permit strands to continue straight as seen in plan, said cross end plate and cross bar together providing a structural angle less than 90°, said stress bar sub-assembly being oriented so that the cross end plate will receive the upwardly guided strands substantially normal thereto when spaced a predetermined short distance from the strand deflecting sub-assembly, said cross end plate having an outer face remote from the strand deflecting sub-assembly for accommodating strand chucks to seat against said outer face, the strand length from the dead bulkhead to the chucks being waste.

3,202,395
HOT TOP WITH ROTATING HANGER MEANS
Walter R. Beattie, Independence, Ohio, assignor to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware
Filed Apr. 3, 1963, Ser. No. 270,362
8 Claims. (Cl. 249—202)



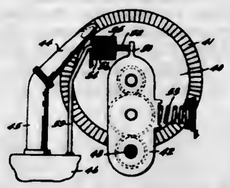
7. In a hot top for ingot molds, hanger means for suspending said hot top in an ingot mold, said hanger means comprising a first part for engaging the mold and a second part for engaging the hot top and a third part interconnecting the first and second parts, and means connecting said hanger means to said hot top and supporting said hanger means for movement while said parts are interconnected and while said hanger means is connected to said hot top between a storage position wherein said hanger means is located inwardly of the outer sides of the hot top and an operative position wherein said first part of said hanger means extends outwardly of said hot top for engaging said mold and supporting the hot top therein.

3,202,396
PILOT OPERATED DIAPHRAGM FLUSH VALVE
John J. Delany and Edwin C. Baisel, Brooklyn, N.Y., assignors to Coyne & Delany Co., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 118,139, June 11, 1961. This application June 2, 1964, Ser. No. 371,979
4 Claims. (Cl. 251—30)



1. In a flush valve mechanism of the character described comprising a hollow valve body, a flexible diaphragm mounted in said valve body in position to define a lower chamber and an upper chamber, said valve body being provided with a discharge port and an inlet port into said lower chamber and an open ended tubular sleeve which extends upwardly through said lower chamber and provides an outlet passageway between said chambers and said discharge port, a cylindrical disk which is slidably mounted in the upper end of said tubular sleeve and is provided with a plurality of spaced downwardly extending guide members which slidably engage the inner wall of said tubular sleeve, said diaphragm being secured to said cylindrical disk, said diaphragm being provided with a restricted by-pass member which provides constant communication between said lower and upper chambers, said diaphragm being adapted to seat upon and close the open upper end of said tubular sleeve, and a bleeder valve mechanism by which the pressure in said upper chamber is adapted to be reduced as said flush valve mechanism is actuated; said bleeder valve mechanism comprising a closure member made up of a lower cup shaped member having an internally threaded cylindrical side wall and a bottom wall, a downwardly and outwardly flaring frusto-conical opening formed in said bottom wall, an upper inverted cup shaped member having a top wall and an exteriorly threaded cylindrical side wall which is threaded into said lower cup shaped member to provide a closure member chamber, a centrally disposed circular aperture extending through the said top wall of said upper cup shaped member, a seat washer clamped in said lower cup shaped member between the bottom wall thereof and the lower end of the said cylindrical side wall of said upper cup shaped member, a bleeder port extending through said seat washer in axial alignment with the said frusto-conical opening in the said bottom wall of said lower cup shaped member; a centrally disposed cylindrical stud carried by said diaphragm, an axial bore in said cylindrical stud providing communication between said upper chamber and said outlet port, said cylindrical stud having an upwardly extending frusto-conical head which is complementary to the said frusto-conical opening, a plunger by which said closure member is mounted in said upper chamber for up and down movement therein whereby said seat washer is adapted to be moved into engagement with said frusto-conical head with said frusto-conical aperture enveloping said head, mounting means by which said plunger is mounted for vertical reciprocation in axial alignment with said frusto-conical head; said plunger comprising a cylindrical body portion which is disposed within said closure member chamber, a cylindrical stem extending upwardly therefrom through the said circular aperture into said mounting means, and a downwardly extending conical tip which is adapted to open and close said bleeder port, the diameter of said bottom portion being less than the inside diameter of said closure member chamber and greater than the diameter of the said circular aperture in the top wall of said upper cup shaped member and the height of said body portion being less than the depth of said closure member chamber, and the diameter of said cylindrical stem being less than the diameter of the said circular aperture through which said stem extends, whereby said closure member may shift laterally and tilt in any direction as said closure member is moved into engagement with said frusto-conical head.

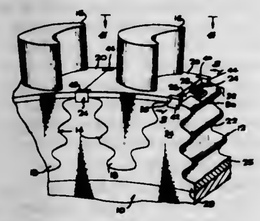
3,202,397
SYSTEM FOR CONTROLLING THE MAXIMUM TORQUE DEVELOPED BY FLUID TURBINES
Francis Richard Ellenberger, Marblehead, Mass., assignor to General Electric Company, a corporation of New York
Filed June 27, 1963, Ser. No. 291,199
7 Claims. (Cl. 253—59)



1. Means for controlling the maximum torque imposed on a turbine wheel by a stream of motive fluid comprising:
(a) a turbine wheel,

(b) movable mounting means rotatably supporting said turbine wheel and adapted to move said wheel to vary the degree of immersion of the wheel in the motive fluid stream and thereby vary the magnitude of the torque exerted on the wheel by the fluid stream,
(c) stop means limiting the maximum degree of immersion of the wheel in the motive fluid stream,
(d) and adjusting means responsive to the pressure of said motive fluid stream for varying the position of said stop means such that a substantially constant maximum torque is scheduled at all pressures.

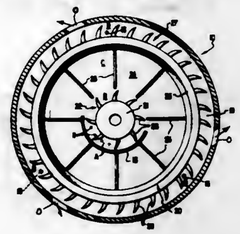
3,202,398
LOCKING DEVICE FOR TURBINE ROTOR BLADES
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Joseph A. Goodrich and Kenneth T. Ingham
Filed Nov. 5, 1962, Ser. No. 235,588
6 Claims. (Cl. 253—77)



1. A turbine rotor having axial spaced opposite faces, spaced, axially extending peripherally dovetailed grooves therein defining projections between the adjacent grooves, each of said projections having an axial channel in the peripheral surface thereof extending to the opposite axial faces of the rotor, said channels having identically opposed circumferentially extending recesses communicating with each of said channels, blades having dovetailed groove projections interengaging said dovetailed grooves in said rotor and having circumferentially extending platforms overlying said projections and the channels and recesses therein, each of said platforms having axially spaced ends terminating in the corresponding plane of the axial opposed ends of the rotor, a recess in each end of the said platform overlying said projections and the channels therein and complementary to said channels, a key in each of said channels having projections thereon fitting the identically opposed recesses and underlying said platforms, and a projection in each end of said key fitting the recesses in each end of the platform to prevent the blades from being axially displaced from the rotor.

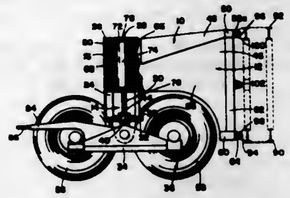
3,202,399
MULTIPLE-STAGE STEAM TURBINE
Rudolf Bär, 22 Stockholmer Strasse, Stuttgart-Zuffenhausen, Germany
Filed Jan. 24, 1963, Ser. No. 255,571
Claims priority, application Germany, Mar. 20, 1962, B 65,626; Mar. 22, 1962, B 66,475
6 Claims. (Cl. 253—86)

1. A steam turbine having an axis of rotation, comprising:
housing means,
rotor means rotatably supported within said housing means and constituted by a circular column, said rotor means including first turbine means, compressor means disposed radially outwardly of said first turbine means and second turbine means disposed radially outwardly of said compressor means,
supply means for supplying steam to said first turbine means to impart rotary movement to said rotor means in one direction,



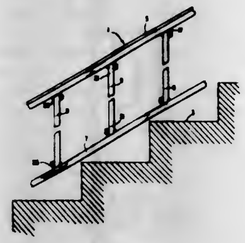
further means including said compressor means for regenerating the steam used by said first turbine means,
and means for conducting the regenerated steam from said compressor means to said second turbine means to act upon said second turbine means in the direction of rotation of said rotor means.

3,202,400
DETACHABLE GOOSENECK
Truett M. Cone, Fort Worth, Tex., assignor to Mid-Continent Supply Co., Fort Worth, Tex., a corporation of Delaware
Filed Nov. 7, 1962, Ser. No. 236,038
5 Claims. (Cl. 254—2)



3. In combination with a wheeled dolly unit, a gooseneck structure comprising an upstanding support member carried by the dolly unit, a connection portion slidably secured to the support member for reciprocal movement with respect thereto, means cooperating between the support member and the connection portion to provide said reciprocal movement for alternate raising and lowering of the connection portion with respect to the dolly unit, said connection portion being provided with an outwardly directed portion extending from the support member and beyond the dolly unit and movable simultaneously with the connection portion, means provided on the outer extremity of the said outwardly directed portion for detachable connection with equipment to be transported for raising and lowering of the equipment simultaneously with the connection portion, guide means cooperating between the support member and the connection portion for facilitating the reciprocation of the connection portion and maintaining the proper alignment between the connection portion and support member, said guide means comprising an apertured channel member provided on the support member, an outwardly extending apertured flange member provided on the connection portion and slidably disposed within the channel member, and pin means cooperating between the apertured channel member and apertured flange member for retaining the connection position in the raised position whereby the equipment will be maintained in a raised position during transporting thereof.

3,202,401
BALUSTRADE
Paul Bastin, 3672 Pennsylvania Ave., Weirton, W. Va.
Filed Apr. 1, 1963, Ser. No. 269,242
1 Claim. (Cl. 256—21)



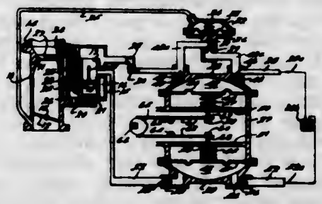
A balustrade comprising
upper and lower parallel rails lying in the same plane,
a plurality of elongated upright spindles extending between the rails,
openings in the rails receiving the end portions of the spindles, the openings in the rails being longer along the length of the rails than the corresponding thickness dimension of the end portion of the spindle received in the opening and having a width to fit closely the corresponding thickness dimension of the end portion of the spindle received in the opening,
a pliable member carried by each rail at one end of each opening in the rail, each pliable member having a width dimension greater than the thickness dimension of the pliable member, the pliable members being arranged with their width dimension at right angles to the plane of the rails and being located at the same end in one direction of all openings in the lower rail and at the same end in the other direction of all openings in the upper rail, the length dimension of the pliable members being normal to the rails with the pliable members of each rail projecting toward each other,
a face on each pliable member opposed and contiguous to a face on each spindle,
removable fastening means passing through the opposed faces of each pliable member and spindle at a point spaced from and between the rails and connecting the pliable member and the spindle in rigid relation to each other with the end of the spindle located at the end of the associated opening in the rail contiguous to the associated pliable member thereby leaving the other end of the opening unoccupied,
the rails and the spindles being relatively resistant to bending so that on racking the balustrade by moving the lower rail in the one direction and the upper rail in the other direction, the rails and spindles will retain their shape but the pliant members will bend, the location of the fastening means, the shape of the pliable members and the width of the openings acting to constrain the spindles to move in the plane of the rails, whereby the balustrade will remain in parallelogram shape with the end portions of the spindles remaining in the associated openings and moving toward the unoccupied ends of the associated openings.

3,202,402
ROTARY VIBRATOR
Stig Glertz-Hedström, Kollasmasen Gard, Kalvsta, Sweden, assignor to Aktiebolaget Vibro-Verken, Solna, Sweden, a corporation of Sweden
Filed Apr. 18, 1963, Ser. No. 273,992
Claims priority, application Sweden, Apr. 25, 1962, 4,614/62
2 Claims. (Cl. 299—1)



1. A rotary vibrator comprising an elongated casing, a surface of revolution on the interior of the casing, an elongated member in the casing formed by two sections joined by a reduced size section, a surface of revolution on each of the two sections coaxial with the casing surface and in sliding contact therewith, means unbalancing the elongated member with respect to the axis of the sliding surfaces, a flexible shaft to rotate the member attached thereto, and a tube containing the flexible shaft integral with and extending from the casing with the interior of the tube and casing in direct communication.

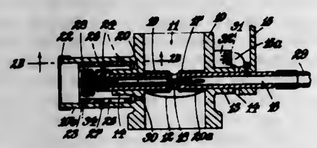
3,202,403
RETURN FLOW CARBURETOR
Thomas M. Ball, Bloomfield Hills, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Original applications June 5, 1959, Ser. No. 818,349, now Patent No. 3,098,895, dated July 23, 1963, and Mar. 23, 1961, Ser. No. 97,775, now Patent No. 3,127,454, dated Mar. 31, 1964. Divided and this application Jan. 30, 1963, Ser. No. 254,875
3 Claims. (Cl. 261—36)



1. In a carburetor for an internal combustion engine having a fuel and air induction system, a floatless fuel bowl, duct means connecting said bowl and system, a fuel pump having an inlet and an outlet, first conduit means connecting said outlet with said fuel bowl for supplying fuel to the latter upon operation of said pump, means for maintaining the fuel in said bowl at a predetermined level comprising an overflow weir in said bowl defining at least in part a chamber adapted to receive excess fuel overflowing said weir from said bowl when the fuel in said bowl attains said predetermined level, fuel return means for returning excess fuel from said chamber to said inlet including a fuel return conduit in communication with said chamber to drain fuel therefrom upon overflow of excess fuel thereinto from said bowl, means for diverting a portion of the fuel in said first conduit means from said fuel bowl and system including bypass conduit means connecting said first conduit means with said fuel return means, means for proportioning the fuel flow from said fuel pump to said bowl and bypass conduit means including a predetermined restriction in said first conduit means at a location between said bowl and the connection of said bypass conduit means with said first conduit means, said means for proportioning also including valve means in said bypass conduit means for controlling fuel flow in the latter, and means responsive to engine load for

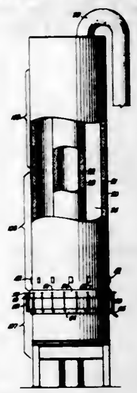
adjusting said valve means comprising means responsive to changes in the air flow in said system and operably connected with said valve means for adjusting the latter to increase the fuel flow in said first conduit means to said fuel bowl with increasing air flow.

3,202,404
FLOW CONTROL DEVICES IN A CARBURETOR
Joseph Brandwood and Grace Brandwood, both of 42 Upper North St., Brighton 1, Sussex, England
Filed Jan. 2, 1962, Ser. No. 163,633
Claims priority, application Great Britain, Jan. 2, 1961, 1/61
1 Claim. (Cl. 261—39)



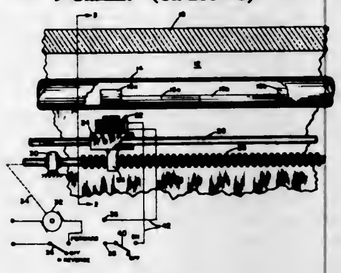
A flow control device for use with an internal combustion engine comprising a body having an air flow duct extending therethrough; a disc valve within the duct, a spindle rotatively mounted in said body and supporting the disc valve within the air flow duct, the spindle bisecting the disc valve, a lever secured to the spindle and operable to rotate said spindle and to adjust the disc valve between a first position substantially obstructing air flow through the duct and a second position in which the air flow is substantially unobstructed by the disc valve, there being a cross-bore extending between the surfaces of the disc valve and opening into the air duct through said surfaces at the center thereof, and said crossbore further intersecting the spindle, said spindle having a first bore part extending therethrough from one end thereof to adjacent said cross-bore, said one end of the spindle being adapted for connection to a pressure fuel source, a flow control orifice connecting and opening directly into said crossbore and into said first bore part, said spindle further having a second bore part extending therethrough from the other end thereof to said crossbore, a needle valve longitudinally movable in said second bore part, said needle valve having at its one end a shaped tip projecting through said orifice, said shaped tip increasing the effective flow area of the orifice on longitudinal movement of the needle valve in one direction in the second bore part and decreasing said effective flow area on movement of the needle valve in the opposite direction thereby determining the flow of fuel from the first bore part through the orifice into said cross-bore, a mechanical connection means converting angular movement to linear movement and interconnecting said spindle and said needle valve and displacing said needle valve longitudinally in said one direction in said second bore part by rotation of said spindle to adjust the disc valve from its first position to its second position, a lateral extension of the body defining a chamber into which projects said other end of the spindle and the end of the needle valve remote from its shaped tip, said mechanical connection means comprising a control sleeve mounted in said chamber for longitudinal sliding movement, there being a helical slot in said sleeve, a pin on said spindle and engaging said helical slot, a bellows connecting said control sleeve and said other end of said needle valve, said bellows forming a flexible wall of a pressure space in said chamber, and a pressure connection from said air flow duct on the downstream side of said disc valve to said pressure space.

3,202,405
VERTICAL SHAFT KILN AND METHOD OF OPERATION THEREOF
Robert O. Stanley, Kansas City, Kans., assignor to Midland Lime, Inc., Bonner Springs, Kans., a corporation of Kansas
Filed July 18, 1962, Ser. No. 220,112
10 Claims. (Cl. 263—29)



1. A vertical shaft kiln comprising, in combination, an elongate upright outer wall, an elongate upright inner wall concentrically placed within the outer wall and extending substantially the length thereof whereby to provide a uniform width annulus therebetween, a refractory lining on the outer surface of the inner wall and the inner surface of the outer wall, said inner wall having a top closure thereabove, a bottom air access inlet means to the space enclosed thereby and a top exhaust means therefrom below said top closure whereby to permit cooling of same by air circulation therewithin, a plurality of burners concentrically arranged in the inner and outer walls whereby to discharge into a burning zone in said annulus therebetween, the burners on the inner and outer walls positioned at substantially the same height, means at the base of said annulus to discharge treated materials therefrom, and means at the top of said annulus to collect and discharge combustion gases therefrom.

3,202,406
FURNACE APPARATUS AND CONVEYOR THEREFOR
William L. Tack, Lexington, Mass., assignor to Clevite Corporation, a corporation of Ohio
Filed July 27, 1960, Ser. No. 45,640
9 Claims. (Cl. 266—5)



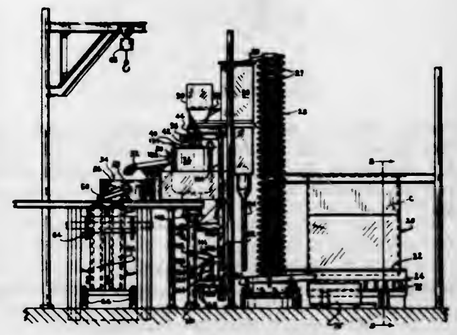
1. Alloying apparatus for semiconductor devices comprising: thermal insulating wall means enclosing a furnace chamber; an elongate enclosed member of non-magnetic refractory material extending through said chamber and adapted to slidably receive a plurality of semiconductor alloying boats having an outer cross-sectional configuration substantially conforming to the inner cross-sectional configuration of said enclosed member and being slidably receivable therein; guide rod means disposed externally of and extending parallel to said enclosed member; magnetic flux-generating means mounted for movement along said guide rod means; and at least a pair of magnetic bodies, adapted to be slidably received within said enclosed member and to be disposed therein at opposite ends of a train of the alloying boats; said magnetic means being operative to selectively position said alloying boats in opposite directions within said passage through selective magnetic attraction with said magnetic bodies.

4. Conveyor apparatus comprising: non-magnetic means defining an elongated passage for the conductance of a mass to be conveyed; a pair of parts of magnetic material adapted to be slidably received within said passage on opposite sides of the mass in non-interconnected relationship therewith; guide means extending parallel to said passage exteriorly thereof; an electromagnet mounted for translatory movement along said guide means for selectively positioning said parts therewith by magnetic attraction whereby the mass may be selectively positioned in opposite directions in said passage; and means for selectively energizing and de-energizing said electromagnet.

3,202,407
BLAST FURNACE STOCKLINE WEARING PLATES
William E. Slagley, East Chicago, and Charles F. Kirkland, Hammond, Ind., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed May 24, 1962, Ser. No. 197,393
21 Claims. (Cl. 266—25)

1. In a blast furnace including a shell, a lining, and material discharging means at the top thereof:
- a plurality of circumferentially arranged, vertically disposed wear elements around the interior of the furnace;
- each wear element constituting a vertically disposed plate extending continuously along the vertical dimension of the area of initial and normal rebound impact of material discharged from said discharging means;
- means on said furnace shell and means on said wear elements cooperating to maintain the wear elements in inwardly spaced relation to the furnace shell and to mount said wear elements for vertical movement relative to the furnace shell;
- a first relatively stationary refractory material, adjacent the furnace shell, between said shell and said wear elements;
- a cast second refractory material, adjacent said wear elements, between the latter and said shell, and vertically movable with said wear elements;
- and a layer of refractory shear face material between said first and second refractory materials.

3,202,408
APPARATUS FOR MELTING BRASS CHIP SCRAP
Olavi A. Huhtala, Newtown, and Robert L. Stockus, Orange, Conn., assignors to Chase Brass & Copper Co., Incorporated, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 23, 1960, Ser. No. 58,057
6 Claims. (Cl. 266—33)

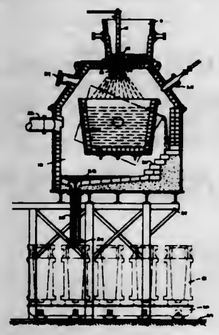


1. Apparatus for melting loose brass chip scrap which comprises a crucible furnace for holding a body of molten brass and a covering blanket of finely divided fluent carbonaceous material, conveyer means for transporting said chip scrap to said furnace and for distributing it across the surface of said carbonaceous blanket, a mechanical pusher disposed above the level of molten metal in said furnace and adapted and arranged to be brought into contact with said carbonaceous blanket and the loose chip scrap deposited thereon for promoting submergence of the chip scrap in said blanket, said pusher comprising a paddle having a substantially broad flat undersurface and a sloping upper surface, support means for said paddle comprising a column positioned laterally of said furnace and an arm on said column from which said paddle is suspended, and reciprocating means located below the top of the furnace for supporting said column and reciprocating it axially to produce agitation of said carbonaceous blanket by said paddle.

3,202,409
APPARATUS FOR DEGASSING MOLTEN METALS
Sydney Farrer, Sheffield, England, assignor to The Bryan Donkin Company Limited, Chesterfield, England, a company of Great Britain
Filed June 8, 1962, Ser. No. 201,116
Claims priority, application Great Britain, June 16, 1961, 21,918/61
4 Claims. (Cl. 266—34)

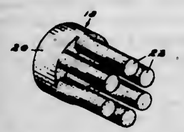
1. In combination, a vacuum chamber; a container supported on said chamber for receiving a mass of molten metal; means for teeming molten metal from said container into said chamber whereby it falls freely in discrete droplets therein; a vacuum surrounded vessel within the vacuum chamber for intercepting said droplets which are thus collected in said vessel to coalesce as a further mass of molten metal; means for teeming said further mass from the vacuum surrounded vessel whereby it once again falls freely in discrete droplets to reform as a

pool in the bottom of the vacuum chamber, said means comprising means for tilting said vacuum surrounded vessel; means for subjecting the molten metal to a cascading action before it reforms as a pool in the bottom of the



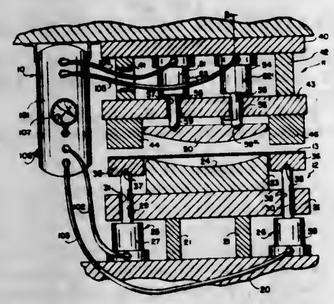
vacuum chamber, said means comprising a stepped surface formed in the bottom of said chamber; and means for discharging the molten metal in the bottom of the vacuum chamber, said means comprising a barometric leg.

3,202,410
RESILIENT BUSHING
Herbert P. Schell, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 2, 1961, Ser. No. 142,229
4 Claims. (Cl. 267—1)



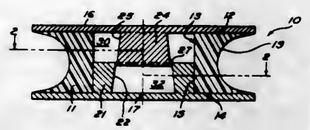
1. A resilient bushing having concentric inner and outer sleeve members, a resilient piece interposed between said members, said piece having an annular portion at one end and a plurality of axially extending fingers protruding therefrom said fingers being loaded in compression.

3,202,411
FLUID SPRING SYSTEM
Elmer F. Heiser, 5880 Lotusdale Drive, Parma Heights 30, Ohio
Filed Oct. 11, 1963, Ser. No. 315,549
5 Claims. (Cl. 267—1)



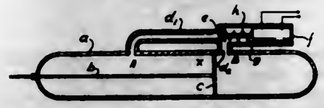
1. In combination, die apparatus for use in forming material comprising work engaging members including first and second die members, certain of said members being movable members constrained to move along a linear path relative to a cooperating member, a fluid spring associated with a respective one of said movable members and its cooperating member for applying a substantially constant force yieldably urging the movable member along said path toward engagement with the work, said spring comprising a cylinder member fixed to the respective cooperating member and having a bore therein with an axis extending substantially parallel to said path, a piston member operating in said bore, a piston rod operatively connected to said piston member and extending outwardly from one end of said cylinder member to engage the respective one of the movable members, said piston rod being mechanically free of the respective movable member for movement relative thereto along the axis of the rod in a direction away from the respective movable member and the outer end thereof contacting the outer side of the respective movable member and being movable angularly in a universal manner with respect thereto whereby the location of engagement of the movable member and piston rod may move along a path different from the axis of the cylinder during the yielding of the spring, means supporting said piston member in said cylinder member for universal angular movement relative to the cylinder member, and a closed system for supplying gas under high pressure to said cylinder comprising a reservoir tank charged with gas under high pressure and conduit means connecting said tank to said cylinder with the pressure through said tank, cylinder and conduit means being uniform.

3,202,412
SHOCK ATTENUATING DEVICES
Walter H. Trask, Santa Clara, Calif., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed Mar. 6, 1964, Ser. No. 349,846
14 Claims. (Cl. 267—1)



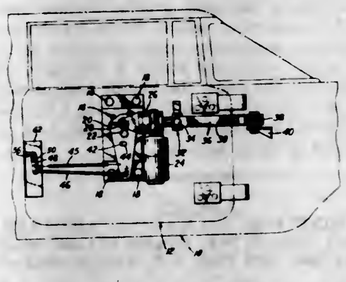
1. A compressible shock attenuating unit comprising, a unitary resilient member having a pair of opposite and parallel force-receiving surfaces and a generally cylindrical central opening extending therethrough between said pair of force-receiving surfaces, a pair of non-extensible support elements each bonded to one of said force-receiving surfaces and overlying the opposite ends of said central opening to provide a closed chamber, the wall portion of said resilient member intermediate said bonded force-receiving surfaces being distortable radially outwardly upon movement of said non-extensible support elements toward one another upon the application of compression forces to the unit, separate means fixedly associated with each one of said pair of support elements and extending inwardly of said chamber with said means serving to divide said chamber into at least two parts, a flowable dampening medium filling both parts of said chamber, and orifice means defined between said two parts of said chamber by said separate means fixedly associated with said support elements, the volumes of said two parts of said chamber being varied during compression of said unit and movement of said separate means fixedly associated with said support elements toward one another with one part of said chamber decreasing in volume and the other part increasing in volume and with said dampening medium being metered through said orifice means between said two parts of said chamber from the part which decreases in volume to the part which increases in volume, whereby to attenuate compressive shock forces applied to said unit.

3,202,413
FLUID-PRESSURE DEVICES FOR VEHICLE SUSPENSIONS OR THE LIKE
Paul Jacques Colmerauer, Paris, France, assignor to Hoesch A.G., Dortmund, Germany
Filed Apr. 11, 1963, Ser. No. 272,392
Claims priority, application France, Apr. 13, 1962, 894,345
8 Claims. (Cl. 267—34)



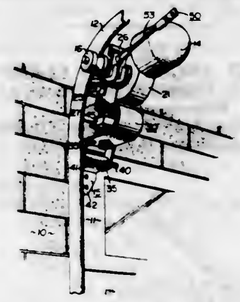
1. A fluid-pressure device adapted to be used in vehicle suspensions or the like, comprising, in combination, a cylinder containing a compressible fluid; a piston slidable along the interior of the cylinder; a piston rod fixed to said piston and extending therefrom fluid-tightly and slidably through one end of said cylinder; a pair of outlet means axially spaced with respect to each other along said cylinder and communicating with the interior thereof; non-return valve means coacting with one of said outlet means and movable between an open position providing fluid flow through said one outlet means in either direction and a closed position limiting fluid flow through said one outlet means in only one direction, said non-return valve means normally assuming one of said positions; and moving means operatively connected to said non-return valve means for moving the latter to the other of said positions, whereby when said non-return valve means closes said one outlet means, said piston when situated between said pair of outlet means and advancing toward said one outlet means will encounter substantially increased resistance to movement of said piston toward said one outlet means from the moment when said valve means closes said one outlet means.

3,202,414
VEHICLE DOOR ACTUATOR
Milton E. Simmons and John A. Schinn, Rochester, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 15, 1962, Ser. No. 166,209
5 Claims. (Cl. 268—3)



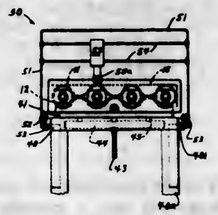
3. Power operated door mechanism comprising, a door movable between open and closed positions, a latch for retaining the door in the closed position, a rotatable jackscrew mounted within said door, reversible power means for rotating said jackscrew, means interconnecting said latch and said jackscrew for releasing said latch due to jackscrew reaction upon energization of said power means, and reciprocable nut means disposed within said door and threadedly engaging said jackscrew to open or close said door in accordance with the direction of rotation of said power means.

3,202,415
AUTOMATIC DOOR OPERATOR
Edward E. Lodge, 2881 Plymouth Road, Cleveland 24, Ohio
Filed Mar. 22, 1962, Ser. No. 181,647
6 Claims. (Cl. 268—59)



1. In a door operating device for use with a vertically slidable door mounted on two side tracks; reversible electric motor means; electric circuit means for operating said motor means; driving roller means driven by said motor means and in driving engagement with one of said side tracks, pivot means for connection to the door for pivoting motion about an axis parallel to the axis of said driving roller means and rigid against other motions; and a U-shaped connector formed from flat stock rigidly connected to said pivot means and rigidly connected to said motor means; said U-shaped connector having two spaced apart legs and providing spring motion of the legs toward each other as the door undergoes excess resistance to motion, safety switch means electrically connected in said circuit means and mounted in respect to said U-shaped connector to be actuated when excess resistance to door motion is encountered; said pivot means, said U-shaped connector and said driving roller means in engagement with said track forming a rigid connection between the door and the motor means except for said pivoting motion which connection restrains the door against cocking motion in respect to the said side tracks.

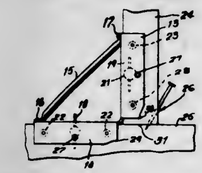
3,202,416
APPARATUS FOR PANEL BOARD ASSEMBLY
Chester S. Wright, 1000-B Caldwell Lane, Nashville, Tenn.
Filed Feb. 20, 1961, Ser. No. 90,432
1 Claim. (Cl. 269—20)



A jig for a panel board assembly having a corrugated member comprising, in combination, a plurality of fingers adapted to be inserted within spaces defined by corrugations of said corrugated member, each of said fingers having a collapsible outer surface with a conductive portion thereon, fluid carrying means extending within each

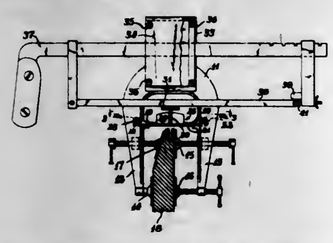
of said collapsible outer surfaces of said fingers to a point proximate the end thereof, the space in each of said fingers between the inside of said collapsible outer surface and said fluid carrying means communicating with a common chamber, and means circulating fluid through a circulation path in said jig including said fluid carrying means, said space between said fluid carrying means and the inside of said collapsible outer surface in each finger, and said chamber to effect selective engagement of said conductive portion on each of said collapsible outer surfaces of said fingers with the inner surface of each corrugation.

3,202,417
RIGHT ANGLE STUD CLAMP
William G. Eisenmann, 6825 Forest Ave., Ridgewood 27, N.Y.
Filed May 9, 1963, Ser. No. 279,063
2 Claims. (Cl. 269—97)



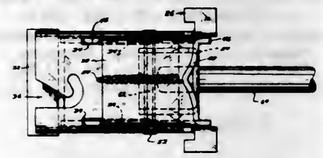
1. A right angle stud clamp, comprising
angularly related open channels, one proportioned to seat over the sill of the framing of a building and the other to receive a stud to stand on that sill at a right angle, and
adjustable clamps on said channels for securing the first mentioned channel over the sill of a building structure and for securing a stud within the second channel,
said channels integrally united and consisting of a continuous steel channel made up of a back and side flanges with said side flanges cut down to the back and the back bent at the point of cut into right angled relation and said clamping means mounted on said side flanges.

3,202,418
SAW GUIDE AND GAUGE TOOL
Eddie A. Dare, 220 S. Alfred Ave., Elgin, Ill.
Filed Oct. 30, 1963, Ser. No. 320,016
7 Claims. (Cl. 269—290)



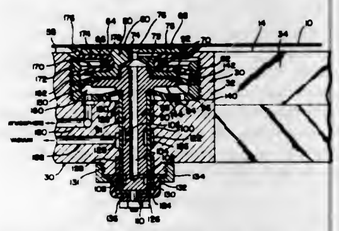
1. A hack saw guide comprising an inverted C-clamp having spaced depending legs, a plurality of adjustable pads on said C-clamp, an upstanding wall on the upper end of said C-clamp, a guide plate secured to and spaced from one face of said wall adapted to receive and guide a hack saw frame between the wall and plate, a support plate bridging said legs, a work piece guide member secured to said support plate, and means to adjust the support plate and guide member.

3,202,419
FORM CLAMP
Harold K. Nansel, Waverly, Nebr., assignor to Burg Manufacturing Company, Waverly, Nebr., a corporation of Nebraska
Filed Feb. 19, 1963, Ser. No. 259,758
12 Claims. (Cl. 269—236)



3. In a form clamp, an inverted U-shaped bracket having a top, two sides, and rearward and forward ends, a pair of elongated slots in said bracket, a carriage on the top of said bracket, arms on the forward end of said carriage and extending forwardly and downwardly therefrom through said slots, a cam means mounted within said bracket and being in engagement with said arms whereby the rotation of said cam means in one direction will move said carriage forwardly on said bracket, and means on said bracket for receiving and retaining the hook on a concrete wall tie.

3,202,420
VACUUM FEEDING DEVICE
Norman E. Dovey, 1922 Indiana Ave., Anderson, Ind.
Filed May 29, 1963, Ser. No. 284,181
12 Claims. (Cl. 271—32)

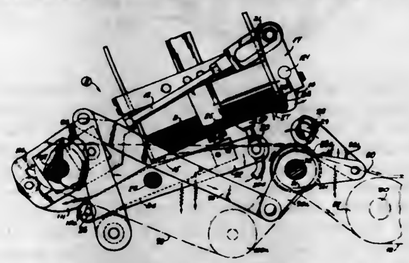


1. A reciprocative shuttle movable in a horizontal feeding direction and in a retracting direction for feeding in a horizontal direction the bottom sheet from a stack of sheets, said shuttle comprising: a head having a generally flat gripping surface generally parallel with said bottom sheets, first means for creating a vacuum adjacent said gripping surface to pull said gripping surface upwardly against said bottom sheet, second means for shifting said gripping surface downwardly below the under surface of said stack at least while said shuttle is moving in said retracting direction and under the leading edge of said bottom sheet, and said gripping surface having a knurled surface to increase the gripping force between said bottom sheet and said gripping surface.

3,202,421
MACHINE FOR PACKAGING ARTICLES
Henry Ganz, Teaneck, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Application Aug. 4, 1960, Ser. No. 47,892, now Patent No. 3,083,510, dated Apr. 2, 1963, which is a continuation of application Ser. No. 677,387, Aug. 9, 1957. Divided and this application Aug. 21, 1962, Ser. No. 218,317
1 Claim. (Cl. 271—51)

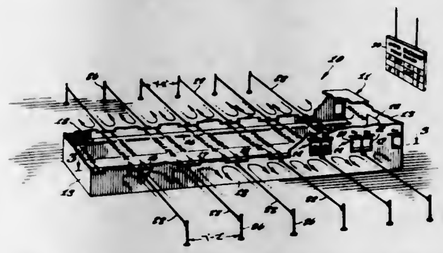
In a machine for feeding sheets and the like at predetermined intervals from a delivery means to a receiving means, a plurality of roller means disposed in the path

of travel of the sheets being delivered, one of said roller means having an axis of rotation substantially parallel to the face of the sheet being delivered adjacent thereto and at substantially right angles to the direction of feed, the other of said roller means being adjacent said one roller means and having its axis of rotation substantially parallel to that of said one roller means, means for rotating said one roller means, means for holding said other roller means in peripheral driving engagement with said one roller means so that said other roller means is continu-



ously rotating in all positions thereof, said other roller means being driven only by said one roller means, and means for rolling said other roller means around the axis of said one roller means until it rolls over the leading edge of the sheet being delivered, the rolling action of said other roller means increasing the speed of rotation thereof at the moment of its contact with the leading edge of the sheet for increased effectiveness of the combined roller means in pulling the sheet between the two roller means.

3,202,422
RACE TRACK BETTING BOOTH
Robert D. Smith, 2742 E. Tremont Ave., Bronx, N.Y.
Filed Apr. 17, 1963, Ser. No. 273,690
1 Claim. (Cl. 272—2)



In a race track betting booth, the combination of a housing of generally longitudinal configuration having parallel opposite long walls and parallel opposite end walls, said long walls being spaced apart and said end walls being spaced apart defining a central compartment therebetween, each vertical and edge of each of said long walls being in abutment with a vertical end edge of each of said end walls, said long walls and said end walls being of equal height, each of said long walls having a plurality of windows therethrough, said windows being arranged in a horizontal row, said windows each being of rectangular configuration, said row being located approximately midway between the upper and lower edges of said long walls, said windows in one of said long walls being in transverse alignment with the windows in the other of said long walls, said windows in each long wall being generally arranged in sets, each of said sets comprising two of said windows in adjacent relationship, each of said windows having a rectangular frame, a space between each one of said sets, said space being approximately the same width as the width of each of said sets, a window of each set having means thereabove designating said window as a "seller" window, the other window of each set having means thereabove designating said other window as a "payer" window, and a longitudinally configurated counter within said compartment adjacent each said long wall, said counter having a flat upper side, and extending the full length of each said long wall, each said counter having straight longitudinal side edges and one of said edges being adjacent and in abutment with the inner side of said long wall, said counter having straight lateral end edges which are in abutment with the inner side of the opposite end walls, and said housing having a doorway with door on an end wall.

3,202,423
TOY SIMULATED FEEDING DISH
James R. Becker, Oceanside, N.Y., assignor to Amsco Industries, Inc., Hatboro, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1964, Ser. No. 404,034
7 Claims. (Cl. 272—8)



4. A toy simulated feeding dish comprising a bowl-shaped container, a transparent cover on said container, a medial tray intermediate said cover and the bottom of said container dividing said container into an upper visible chamber and a lower concealed chamber, said tray having an upwardly concave surface and an aperture centrally disposed therein, a valve vertically reciprocable in the aperture and normally acting as a closure therefor when said container is in upright position, a liquid retained in said container selectively in said upper chamber and said lower chamber, magnetic means associated with said valve, and a steel spoon, said spoon actuating said valve when juxtaposed therewith above said cover and causing said liquid to drain in small quantities at a time from said upper chamber through said aperture into said lower concealed chamber to produce an illusion of consumption of food, and means to return said liquid from the concealed chamber to the visible chamber when the dish is inverted.

3,202,424
BALANCING GAME APPARATUS
Merrill S. Patterson, Willoughby, Ohio (Meadowlawn Drive, Bldg. 4-1, Mentor, Ohio)
Filed Dec. 4, 1962, Ser. No. 242,210
2 Claims. (Cl. 273—1)

1. A balancing game comprising a plurality of hollow cylinders,
each of said cylinders having a collar formed at one end thereof,
one of said cylinders having a plug of resilient material received in the other end opposite to said one end,
the other of said cylinders each having a tubular insert received in the other end opposite to said one end with said tubular insert projecting outwardly beyond said other end,
a sphere,
a lug carried by said sphere and projecting outwardly from a point on the periphery of said sphere,

said lug having a diameter less than the inner diameter of said cylinders,

said sphere being adapted to be joined to said cylinders by inserting said lug into one of said other of said cylinders, the remaining cylinders being adapted to



be interconnected through telescopic reception of said tubular inserts with said cylinder having said plug being the last cylinder joined whereby said joined cylinders and said sphere may be balanced vertically in the palm of the hand.

3,202,425

BOMBING GAME APPARATUS WITH LIGHT BEAM PROJECTING SIMULATED ANTIAIRCRAFT GUN

Burtis W. Van Hennik, 99 Lenore Lane, Farmingville, N.Y.

Filed June 10, 1964, Ser. No. 374,097
4 Claims. (Cl. 273—101.1)

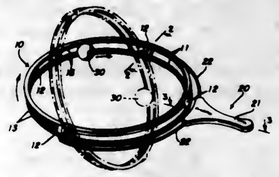
3. A bombing game apparatus, comprising a board having a target area positioned surfacedly thereof, a groove provided in said board and disposed peripherally of said target area, a housing having top and bottom walls, a gun barrel swivelly mounted upon the top wall of said housing, a tongue extending integrally of said bottom wall, said tongue being slidably securable within said groove, a pylon tower removably connected at one end thereof to said board, said tower extending upwardly of the latter, a tubular sleeve swivelly secured to the other end of said pylon tower, a tubular member slidably receivable within said tubular sleeve, a model airplane flexibly suspended from one end of said tubular member, electrically operable means on said model airplane for releasably supporting a simulated bomb, handle means integral with the other end of said tubular member and switch means within handle means, said switch means being manually actuatable externally of said handle means, said switch means being included in a circuit for controlling said supporting means and operable to release a simulated bomb carried by said model airplane, said housing being manually movable within said groove and said gun barrel being directable at said airplane.

3,202,426

WHIRLING BALL RUNWAY

Royce E. Carper, 3828 Little York Road, Dayton, Ohio

Filed Feb. 19, 1964, Ser. No. 345,998
3 Claims. (Cl. 273—110)



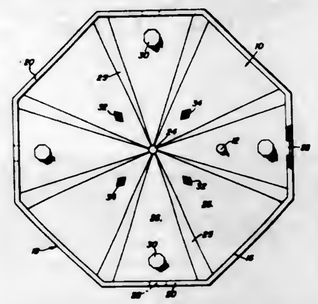
1. A game of skill comprising a pair of concentric equidistantly spaced rails providing an interior annular track free of obstruction, a handle having a grip and a pair of divergent arms, said arms having diametrically opposed pivot supports adjacent their outer ends in contact with said track defining an axis diametric of said track, said track being journalled on said pivot supports in freely rotatable spaced relation with said handle, and in combination therewith a ball of somewhat greater diameter than the spacing between said rails adapted to be received thereon to be whirled therearound by centrifugal force when the track is moved in circles by manipulation of said handle, providing for simultaneous rotating motion of said track and whirling motion of said ball throughout all angular positions of said track with respect to said handle.

3,202,427

HOCKEY TYPE GAME DEVICE

Chris Patent, R.R., Randolph, Nebr.

Filed Apr. 2, 1963, Ser. No. 270,008
1 Claim. (Cl. 273—126)



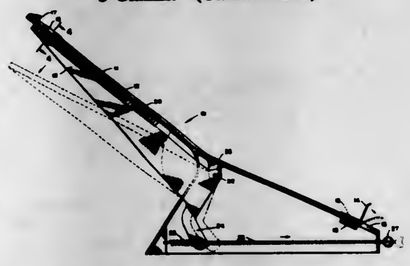
A game apparatus comprising a game board, a puck, said game board having a flat playing surface and eight equal length edges, an upstanding peripheral wall completely about said gameboard paralleling and projecting upwardly from the edges thereof, the portions of the wall paralleling every other edge each having a single goal slot completely therethrough, the remaining portions of said wall being imperforate, each slot being defined by a top, bottom and sides, a single centrally located starting point at the center of the playing surface, boundary stripes on the playing surface extending radially inward from each corner of the peripheral wall to the center of the playing surface so as to define eight radial alleys, and four upwardly projecting deflectors on said playing surface, one deflector being aligned with and located between the center of the playing surface and each goal slot, each deflector being of a width approximately equal to the width of its corresponding slot, means for positioning said deflectors a distance from their corresponding goal slot so that the approach spacing between said deflector and the opening in the corresponding goal slot of said deflector through which said puck can successfully pass is only slightly wider than the maximum diameter of said puck so as to have a significantly major portion of the distance from the center of the playing surface to the slot between the center and the deflector, thereby requiring a controlled intial movement of the puck from the center starting point in order to afford a clear second shot to the goal slot, said four deflectors constituting the sole obstructions of the playing surface.

3,202,428

MAGNETIC GAME EMPLOYING A PROPELLED DISK AND A RUNWAY

Edouard M. Sire, 69 W. 9th St., New York, N.Y.

Filed May 14, 1964, Ser. No. 367,337
3 Claims. (Cl. 273—126)



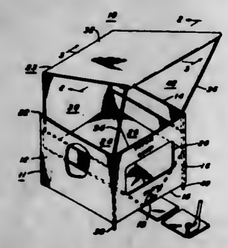
1. A magnetic game comprising a permanent magnet disk polarized on the respective faces thereof, an upwardly extending runway along which said disk is adapted to be propelled, a spring striker arm at the forward end of said runway for striking the disk and propelling it up said runway, a series of separated score marks on the rearward end of said runway, a movable arm below said rearward end, a series of permanent magnets secured to said movable arm in complementary disposition to said score marks whereby each one of said permanent magnets is normally adjacent to one of said score marks so that a disk which stops near one of said score marks will be arrested and fixed into a score position by a permanent magnet, and means to withdraw said movable arm so as to release an arrested disk and permit it to slide down said runway by gravity and back to said striker arm.

3,202,429

GOLF CHIPPING AND PUTTING TARGET INCLUDING BALL RETURN MEANS

Albert S. Richman, 900 E. McPherson St., Philadelphia 50, Pa.

Filed Apr. 11, 1962, Ser. No. 186,782
6 Claims. (Cl. 273—182)



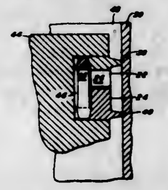
3. A golf practice device comprising a box including a front foremost wall of said device and side walls, said front wall having a first putt opening extending upwardly from the bottom edge thereof and intermediate said side walls, a second chip opening larger than and above said first opening, an angularly disposed chute in said box extending from the top portion of said box rearward of said front wall to the bottom of said first opening, a back portion extending upwardly from the upper end of said chute and a top portion extending from said back portion above said box, and means for supporting said top portion above said box, said supporting means and top portion defining a third pitch opening larger than and above said first and second openings, said chute being in open communication with said first, second and third openings and being adapted to deliver golf balls which may pass through said openings to said first opening.

3,202,430

PISTON RING ASSEMBLY

Helmuth Gunther Braendel, Malvern, Pa., assignor to Wilkening Manufacturing Co., Philadelphia, Pa., a corporation of Delaware

Filed June 25, 1962, Ser. No. 204,964
2 Claims. (Cl. 277—79)



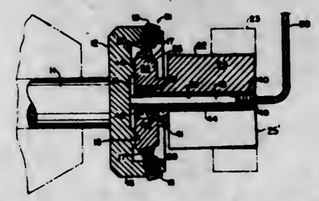
1. A piston ring assembly comprising an annular upper rail, an annular lower rail, said rails having surfaces for establishing intimate contact with the sides of a piston groove, each rail having a radially outwardly extending projection terminating in a wall engaging end face of substantial width parallel to the longitudinal axis of said rails, an undulated equalizer juxtaposed to and radially inwardly of said rails, an angled surface on the inner periphery of said rails, substantially the entire angled surfaces on the undulations of said equalizer mating only with the angled surface of said rails, said equalizer biasing said rails radially outwardly and being the sole means for establishing intimate rail contact with the sides of a piston groove, said wall-engaging end face and said angled surface of each rail being substantially bisected in cross section by an imaginary radially directed line.

3,202,431

UNIVERSAL EXPANDING CHUCK

Harry A. Moody, New Fairfield, Conn., assignor to The Dunham Tool Company, Inc., New Fairfield, Conn., a corporation of Connecticut

Filed Oct. 26, 1962, Ser. No. 233,346
7 Claims. (Cl. 279—2)



1. A device for internally chucking a workpiece comprising:

(a) a collet having inner and outer end portions,

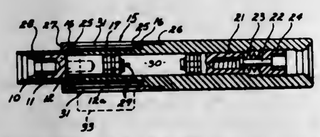
(b) said inner end portion defining a cavity therein,

(c) said outer end portion defining an axial bore extending from the free edge thereof to said cavity,

(d) said bore being convergently tapered at the free edge of said outer end portion,

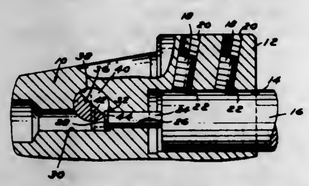
(e) said outer portion defining a plurality of radial slots extending from said bore to the surface of said outer portion to form a plurality of jaws,
(f) a hollow expander rod with a head integral therewith,
(g) said expander rod being adapted to be axially displaced in said bore and said head being adapted to be axially displaced in said cavity,
(h) said expander rod having internal threads at its free end,
(i) actuating screw means cooperating with said internal threads,
(j) said screw means being maintained in a predetermined relation with a reference surface,
(k) whereby rotation of said screw means in a predetermined direction tends to drive the free end of said expander rod over said screw means and into said tapered portion of said bore to expand said jaws.

3,202,432
HYDRAULICALLY ACTUATED ARBOR AND CHUCK CONSTRUCTION
Gordon N. Cameron, 1322 Hampton Road, Grosse Pointe Woods 36, Mich.
Filed Mar. 7, 1963, Ser. No. 263,468
5 Claims. (Cl. 279—4)



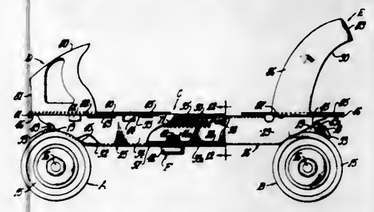
1. A holder of the class described comprising a holder body, a deflectable slotted shell mounted on said body, a sleeve constructed of relatively more flexible material covering the slotted portions of said shell, means defining a sealed fluid chamber on a side of said sleeve remote from said shell, said means including O ring seals compressed against the ends of said sleeve, and means for establishing hydraulic pressure in said chamber for actuating said sleeve and shell to a holding position.

3,202,433
ADAPTER WITH ADJUSTMENT FOR SETTING CUTTERS
Arthur George Davis, 854 Grand Marais, Grosse Pointe Park, Mich.
Filed Feb. 24, 1964, Ser. No. 346,670
8 Claims. (Cl. 279—9)



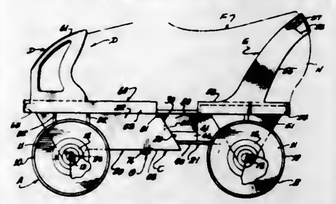
1. In a tool holder having a socket in its outer end for receiving a tool shank, means for axially adjusting the shank in said socket including a pin, an axial passage in said holder opening into the bottom of said socket, said pin being axially slidable in said passage and having its outer end projecting into said socket, and means carried by said holder for axially adjusting said pin including a rotor extending transversely of said pin and mounted for rotation in said holder, said rotor having a peripheral notch presenting an abutment surface spaced from the axis of said rotor and engageable with said pin to axially move said pin when said rotor is rotated, and means for rotating said rotor, said means for rotating said rotor including a rod axially slidably mounted in a passage in said holder, one end of said rod engaging said rotor at a point spaced from the axis of said rotor so as to rotate said rotor upon axial movement of said rod, and means for axially moving said rod.

3,202,434
SKATE WITH SPRING LOADED COUPLING MECHANISM
Robert J. Goodman, Los Angeles, Calif., assignor to Sekur-All Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 15, 1964, Ser. No. 342,846
25 Claims. (Cl. 280—11.26)



18. In an adjustable-length skate, in combination: an extensible bridge comprising respective forward and rear beam sections having respective slide means interengaging to provide a longitudinally slidingly extensible connection therebetween; means for securing said beam sections to one another in selected positions of extension, for sizing the skate to feet of varying sizes; a heel platform mounted upon and secured to the rear beam section; a toe platform having means mounting it upon the forward beam section for longitudinally slidable adjustment thereon; a pair of shoe-coupling jaws consisting of a single toe jaw and a single heel jaw, each of integral yoke form secured to a respective platform, said jaws being shaped for reception of respective toe and heel portions of a shoe or foot and for a lateral confining action thereon free of lateral clamping action; and spring means acting between said toe platform and said forward beam section, for spring-loading said toe jaw against a toe extremity whereby to effect spring-loaded longitudinal clamping action of the respective jaws against a shoe or foot.

3,202,435
MOLDED PLASTIC SKATES
Robert J. Goodman, Los Angeles, Calif., assignor to Sekur-All Corporation, Los Angeles, Calif., a corporation of California
Filed July 21, 1964, Ser. No. 387,263
26 Claims. (Cl. 280—11.26)



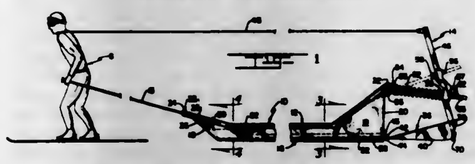
1. In an adjustable-length skate, in combination: respective forward and rear beam sections, both of molded plastic material, one being a tubular box beam of generally rectangular cross-section and the other including a beam body slidably telescoped within said box beam and having upper and lower longitudinal side margins fitted in the longitudinally extending internal corners of said box beam with free-sliding clearance; locomotion supports carrying the forward and rear ends of said beam sections respectively; said box beam including a bottom web provided with a longitudinally extending latch slot having pairs of laterally opposed keeper notches and intervening pairs of keeper teeth laterally spaced, with narrowed gaps between their opposed extremities, and a latch comprising a plunger slidable vertically in said beam body and a bolt having opposite side portions thereof engageable in a selected pair of said notches to latch said beam sections to one another in a selected length adjustment, said plunger having a shouldered lower end from which said bolt projects downwardly, said shouldered lower end being normally seated upon said bottom web so as to position said bolt in said slot; said latch being yieldable upwardly in response to finger tip pressure against its lower end, to release said bolt from said notches so as to permit adjustment of the skate for length.

3,202,436
SKI POLES
Henry J. Barreca, 925 Prospect Place, Brooklyn 13, N.Y.
Filed Nov. 4, 1963, Ser. No. 320,996
6 Claims. (Cl. 280—11.37)



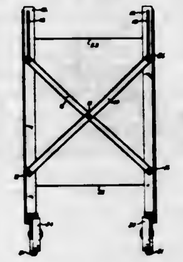
1. A ski pole comprising an elongated shaft having a bottom section tapered toward the free and thereof, a snow engaging member having an opening therein registering with said tapered section above said free end thereof, an elastomeric sleeve engaging said bottom section as well as said snow engaging member for securing said snow engaging member to said shaft, and a relatively rigid collar engaging and compressing said sleeve, said collar being open at both ends thereof and locking said sleeve and said snow engaging member to said shaft.

3,202,437
SLED
Arthur C. Masbruch, 12 S. Zephyr, Denver, Colo.
Filed Jan. 20, 1964, Ser. No. 338,917
10 Claims. (Cl. 280—18)



1. A sled of one-piece construction comprising a main body including a raised, elongated center section curving laterally and downwardly in opposite directions away from the longitudinal axis of said sled, said center section progressively decreasing in curvature from the rearward to the forward end, and front, side and rear end wall portions forming upwardly directed continuations of said center section.

3,202,438
MERCHANDISE HANDLING UNIT
Wallace B. Frankuln, Kansas City, Mo., and Morris Kaufman, Morton Grove, Ill., assignors to Elco Products Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 25, 1963, Ser. No. 275,635
1 Claim. (Cl. 280—42)

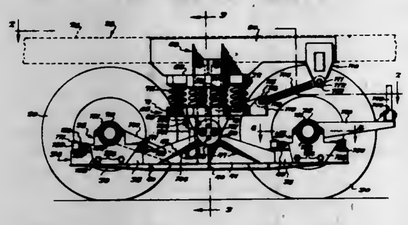


A merchandise handling unit having a forwardly open load containing area defined by a pair of duplicate side members, and connecting means joining said members through which said side members are positioned to occupy opposed parallel upright planes in forwardly extending relation to said connecting means at variable distances apart, said connecting means including a pair of link arms pivoted together in scissor-like relation and a pivotal connection between said side members and the upper and lower ends of said link arms, said latter pivotal connection including a vertically extending slot in each side member and a connecting member joining said side member and the link arm associated therewith via said slot to accommodate vertical movement of the link arm relative to said side member incident to relative movement of said link arms, each connecting member having a threaded forward end portion with which a nut has threaded engagement and each connecting member having a head at its rearward end, and means for locking said side members in fixed relation at selected distances apart including a lever hinged to each connecting member via a pivot pin joining said lever to the head of the connecting member with which it is associated whereby said lever is movable relative to said connecting member in planes in radial relation to the axis of the pivotal connection between said side members and said link arms between a horizontally swung locking position in rearwardly extending relation to said connecting member and a downwardly swung released position in collapsed relation to said connecting member, said lever having a handle portion about which the hand of an operator may be comfortably flexed for propelling or otherwise moving the unit.

3,202,439
TANDEM AXLE SPRING SUSPENSION
Albert F. Hickman, Eden, N.Y.
Filed June 11, 1962, Ser. No. 201,585
5 Claims. (Cl. 280—104.5)

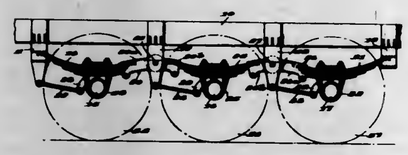
1. In a tandem axle spring suspension adapted to be interposed between a vehicle frame and a pair of tandem axles each with rubber tired wheels journalled at the ends thereof and the suspension having a tubular walking beam at each side of the frame with its ends adjacent the corresponding axle ends and means resiliently supporting said frame on the central portions of said walking beams and permitting opposite vertical movement of the opposite ends of each walking beam to permit independent upward movement of said axle ends; the combination therewith

of means connecting the ends of said axles to the ends of said walking beams with such connecting means for at least one of said axles comprising a bearing member journalled on each end of said one of said axles for oscillation about a generally horizontal axis extending transversely of said frame, a saddle structure carried by each of said bearing members and including vertical side plates arranged along opposite sides of the corresponding tubu-



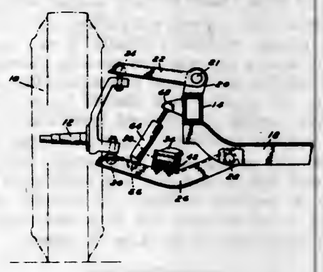
lar walking beam, a cross member connecting said side plates and extending through openings in the sides of the corresponding tubular walking beam, a rubber pad housed within the corresponding tubular walking beam and mounted on top of each of said cross members below and compressed downwardly by the corresponding walking beam, said pad flexing horizontally lengthwise of said axles to permit movement of said saddle structure and axle lengthwise of said axles.

3,202,440
LOAD APPORTIONING TANDEM SUSPENSION STRUCTURE FOR VEHICLES
John N. Apgar, Sr., 644 Metape W., Bound Brook, N.J.
Filed Nov. 21, 1963, Ser. No. 325,244
3 Claims. (Cl. 280—104.5)



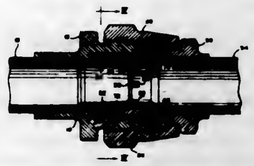
1. In a tri-axle tandem assembly for carrying the load at the rear end of a semi-trailer unit, the combination comprising four depending hanger brackets spaced longitudinally along each side of said semi-trailer unit, three dead non-steerable axles secured in parallel, spaced relation transverse to the longitudinal axis of said trailer unit and located between said hanger brackets, leaf springs individual to and secured intermediate the ends thereof to each of said axles, the front and rear hanger brackets serving to carry the front and rear ends of the front and rear springs respectively, and rocker beams pivotally mounted on the inner two brackets at each side of said semi-trailer unit, the two lever arms of said rocker beams extending towards each other and which carry corresponding ends of the leaf springs secured to the center axle being shorter than the other two lever arms of said rocker beams which carry the rear and front ends respectively of said front and rear springs, thereby to establish an asymmetrical division of the loading on said axles wherein the center axle carries more load than the lead and trail axles.

3,202,441
TORSION SPRING VEHICLE SUSPENSION
Clark A. Tea, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 27, 1963, Ser. No. 326,603
10 Claims. (Cl. 280—124)



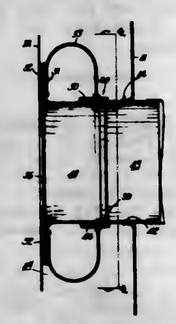
1. A vehicle suspension system comprising a chassis frame, a road wheel, a support member rotatably supporting said road wheel, a first suspension arm pivotally interconnecting said support member and said frame, a second suspension arm pivotally connecting said support member and said frame, a suspension spring interposed between said frame and one of said arms, said spring comprising a torsional member formed of flat leaf spring stock with an eye portion at each of its ends, said ends being pivotally connected to said chassis and said one arm respectively, a torsion type roll bar having an end running generally parallel to said spring and secured to said spring.

3,202,442
COUPLING
John C. Abbey, Parma, and Thomas E. Hawkins, Jackson, Mich., assignors to Aeroquip Corporation, Jackson, Mich., a corporation of Michigan
Filed May 19, 1961, Ser. No. 111,332
1 Claim. (Cl. 285—3)



A coupling comprising interconnectable first and second axially aligned passaged body members providing a flow path, said first body member having a cylindrical bore provided with a first rupturable diaphragm sealing said bore, a substantially cylindrical passaged member carried by first body member and extending into said bore, diaphragm piercing means carried by said cylindrical member and disposed adjacent said first diaphragm, a cylindrical passaged extension carried by and protruding from said second body member having a second rupturable diaphragm sealing the protruding end thereof, means for drawing said body members together into an axially aligned coupled assembly, the outer and inner diameters of said cylindrical extension being predetermined to allow telescoping movement of said extension between said cylindrical member and said bore and to define a first annulus formed between the outer surface of said extension and the wall of said bore and a second annulus formed between the inner surface of said extension and the outer surface of said cylindrical member whereas during the drawing together of said body members the protruding end of said extension forces said diaphragms against said piercing means and thereafter entraps at least a portion of the pierced first diaphragm in said first annulus and entraps the pierced second diaphragm in said second annulus to thereby remove said diaphragms from said flow path, and means forming a seal between said body members during and after assembly.

3,202,443
VENTING STRUCTURE FOR A COMBINATION WASHER-DRIER
Richard P. Bergeson, Newton, and Paul S. Decatur, Grinnell, Iowa, assignors to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Apr. 19, 1961, Ser. No. 104,085
5 Claims. (Cl. 285—20)



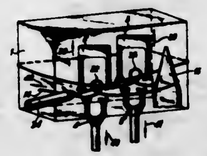
1. In apparatus of the character described, the combination with a pair of spaced substantially parallel walls having approximately aligned openings therein and wherein one wall is stationary with the other wall being oscillatably movable in a plane substantially parallel thereto, of conduit structure for connecting the openings, said structure including a first conduit section having a fixed location within the opening in the stationary wall, a second conduit section bridging the space between the first conduit section and said movable wall, said second conduit section having its proximate end in coaxially movable telescoped relation with the first fixed section, the other end of the second conduit section providing an annular facing flange parallel to said movable wall, and resilient means connected between said first and second sections yieldingly urging the second conduit section and thus said annular facing flange in a direction towards the movable wall.

3,202,444
BALL JOINT SUSPENSION KIT
Willard A. Rowlett, 409 Hatley Drive, Oklahoma City, Okla.
Filed Sept. 5, 1961, Ser. No. 135,926
1 Claim. (Cl. 287—87)



A suspension ball and socket joint for connecting a steering knuckle to the distal end of a load supporting arm comprising: a housing connected with said arm, said housing having a segmental spherical inner and outer wall, said housing having an opening; a stud having a segmental spherical ball end portion in bearing engagement with the inner spherical wall of said housing, said stud having a tapered shank end portion integral with the ball end portion and extending outwardly away from the housing opening and connected with said steering knuckle; a cup-shaped plastic anti-friction member having inner and outer segmental wall portions and having a frusto-conical shaped neck at one end thereof coaxially surrounding the tapered end portion of said shank in sealing engagement therewith, said anti-friction member having said inner spherical wall portion surrounding and engaging the adjacent outer spherical wall surface of said housing, the end portion of said cup-shaped anti-friction member which surrounds the outer segmental spherical wall of said housing terminating in a radially outwardly extending flange; an annular spring retaining member having an inner surface contiguously engaging a portion of the outer spherical surface of said anti-friction member, said annular spring retaining member having a radially extending flange providing a flat surface, intersecting its inner spherical surface and being in face to face contact with and retained by said radially outwardly extending flange on said anti-friction member, said annular spring retaining member having an annular groove on its outer surface facing toward said steering knuckle; and a heavy loaded tapered helical compression spring coaxially surrounding the shank of said stud and interposed between and engaging said steering knuckle and the groove in said annular spring retaining member, said annular spring retaining member also having an axial extending flange on the outer periphery of its radial flange, which axial flange extends over and completely covers the outer periphery of said radially outwardly extending flange on said anti-friction member.

3,202,445
APPARATUS FOR TYING A KNOT
Erwin Froendling, Lohlstrasse 3, Bayreuth, Germany
Filed June 4, 1963, Ser. No. 285,258
Claims priority, application Germany, June 5, 1962, F 36,994
14 Claims. (Cl. 289—4)



1. An apparatus for tying a knot in a strap, comprising, in combination, holding means for holding a piece of a strap about an object and for holding the ends of the piece; a holding member movable relative to said holding means from a first position spaced from said object for forming a pair of co-extensive sections in one end of said piece to a second position closely adjacent said object; a pair of loop-forming means for forming in said pair of sections, respectively, a pair of crossed loops; threading means for engaging the other end of said piece and being movable through said crossed loops to pull said other end through the same; and means for operating said holding means, said loop-forming means, and said threading means in a timed sequence so as to form and tighten a knot in which said holding member is located, and for moving said holding member relative to said holding means and said object to said second position so that the knot is placed adjacent said object before being tightened.

3,202,446
HOOK POSITIONER

Spencer W. Long, Inglewood, Calif., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed Jan. 15, 1963, Ser. No. 251,514
6 Claims. (Cl. 294—82)

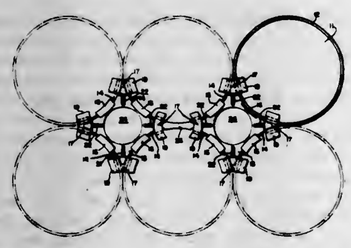


1. In a device of the class described, the combination of: a stem member, a housing member encircling the stem member to define an annular space therebetween, means including a thrust bearing supporting one member on the other for relative rotary movement, said means also including a compression spring mounted within said annular space to permit relative telescopic movement of said members, one of the members having a shoulder, a friction plate mounted on the other member and adapted to frictionally engage said shoulder, means preventing rotary movement of the friction plate with respect to said other member, a retainer element on the latter said member permitting limited axial movement of said friction plate with respect to said other member, bias means interposed between said friction plate and said member for moving said friction plate in a direction to contact said shoulder, said friction plate engaging said retainer element upon telescopic movement of said members in a direction to compress said spring.

3,202,447
CAN HOLDING DEVICE

Robert E. Whaley, 35 Grove Ave., and Herman J. Catalucci, 16 Appleton Place, both of Leominster, Mass.

Filed Oct. 29, 1962, Ser. No. 233,709
8 Claims. (Cl. 294—87.2)



1. Means for holding a plurality of cans of the type having an outstanding bead at the junction of the can end and the can body and for forming a rigid package therefrom when the cans are arranged in a regular array with bead to bead contact between abutting cans, said means comprising a frame member adapted to be inserted in the void between abutting cans and to rest adjacent the body of each such abutting can; a plurality of horizontal span members supported by said frame, each such span member adapted to pass over the bead portions of two such abutting cans near the point of contact therebetween; a downwardly depending vertical tab on each side of each such span member adapted to lie against the inside edge of the corresponding bead and a plurality of locking blades extending upwardly at the sides of said frame, each said locking blade adapted to lie against the body of one such abutting can and to engage with and cooperate with the underside of the outer edge of the bead of such can, each said span member located at the junction of two sides of said frame and each said locking blade being centered on the corresponding side of said frame intermediate said junctions.

3,202,448
DISPLAY CARRIER

Jan Peter Stern, Yonkers, N.Y., and Robert Morton Mitchell, West Norwalk, Conn., assignors, by mesne assignments, to R. A. Jones and Co., Inc., Covington, Ky., a corporation of Kentucky

Filed May 22, 1958, Ser. No. 737,077
4 Claims. (Cl. 294—87.2)

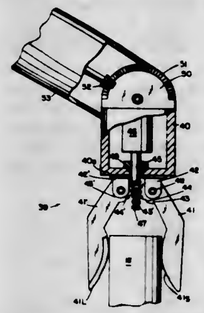


1. A multi-container carrier separable into a plurality of coasters comprising a plurality of individual container holders, said container holders being aligned in parallel rows, a web of resilient plastic material of a thickness to be readily frangible at predetermined points, said container holders being unitary with and supported by said web and disposed substantially in the same plane as said web, each of said holders having means to permit insertion of a container therein in one direction and removal of said container in an opposite direction, said means comprising an annular ring having a curved upper edge forming an interior groove, said holders being of the same resilient material as said web, said ring having a singular unitary means for frictionally and releasably holding a single container, said singular means comprising a depending skirt of said resilient material adapted to extend around at least a portion of the top rim of one of said containers, said skirt having a resilient, inwardly directed annular projection adapted to maintain said rim between said projection and said ring, said skirt having an outwardly flaring annular flange to facilitate insertion of said containers and to catch moisture when said holders are used as coasters, said rings being spaced so that any containers being grasped thereby are positioned adjacent one another whereby they mutually support each other, opposed finger holes in said web between said rings for grasping said carrier and breaking grooves in said web between each pair of adjacent rings to permit separation thereof from said web upon the application of pressure thereto, whereby a group of containers may be transported place to place as a unit and said rings, when individually separated from said web, may be utilized as coasters for the containers secured therein.

3,202,449
ARTICLE MANIPULATION DEVICE

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J.

Filed Apr. 29, 1963, Ser. No. 276,622
4 Claims. (Cl. 294—88)



1. Article handling apparatus comprising in combination with a base, a pair of article clamping members, means for pivotally mounting said clamping members on said base whereby said members may be opened and closed against an article for clampingly engaging and retaining said article, reversible motor means mounted on said base, a drive-shaft extending from said motor means, a worm gear provided on said shaft, portions of each of said clamping members being shaped with gear teeth which engage the worm gear and extend radially away from the pivotal axis of said member whereby rotation of said shaft by said motor means will simultaneously drive both said clamping members in rotation about their respective axes either together or apart for engaging and releasing articles between said clamping members.

3,202,450
INSULATOR LIFTER

James F. Servis, Boise, Idaho, assignor, by direct and mesne assignments, of one-half to Gerald A. M. Petersen, Santa Clara, Calif., and one-half to Anita E. Petersen, Saratoga, Calif.

Filed Mar. 14, 1963, Ser. No. 265,271
5 Claims. (Cl. 294—91)



1. An insulator lifter for lifting, by means of a pulley line to the cross arm of a high tension wire tower for manual connection thereto, tandemed insulators of the type having a plurality of dish-like porcelain units with bell-like caps extending normal thereto linked together in close proximity concentrically and one above the other; said lifter comprising a seat having a flat plate base and an upstanding flange thereon for confining a dish-like porcelain unit therein, said seat having a U-shaped slot formed therein opening to one side of said seat for receiving and embracing the bell-like cap of a depending porcelain unit, a rubber-like surfacing on said base and upstanding flange for cushioning a porcelain unit, a backbone spine extending upwardly from said base diametrically opposite the open end of said U-shaped slot therein, a lifting eye on the upper end of said backbone spine connectable to a pulley line for raising said seat into engagement with a porcelain unit, and a lateral pull line connecting means at the lower end of said backbone spine at the plane of said base facilitating relative lateral withdrawal of said seat from a porcelain unit seated therein and relative withdrawal of an adjacent bell-like cap attached thereto via the open end of said U shaped slot when said seat is lowered after connection of the upper end of a tandemed insulator being lifted to a cross arm as aforesaid.

3,202,451
VEHICLE UNDERBODY STRUCTURE

Edgar Auger, Oak Park, and Horace L. Browne, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Aug. 18, 1960, Ser. No. 50,500
6 Claims. (Cl. 296—28)



1. A vehicle underbody floor pan assembly comprising a passenger floor pan unit and a rear floor pan unit forming an extension of said passenger floor pan unit, said passenger compartment floor pan unit comprising a formed panel having a drive shaft tunnel forming a longitudinal structural member thereof, said rear floor pan unit being provided with a pair of spaced channel sections forming longitudinally extending side rails, said side rails terminating beneath said formed panel inwardly of the rear and lateral edges of the latter and in parallel spaced relationship to said drive shaft tunnel, and torque box means coupling said floor pan units together, said torque box means comprising the outer rear corners of said formed panel, the parts of said side rails extending therebeneath, and sheet metal members attached thereto to complete structural box sections contiguous to said formed panel rear corners.

3,202,452
AUTOMOBILE BODY SUPPORTING AND REINFORCING STRUCTURE

Karl Wilfert, Stuttgart-Degerloch, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart, Germany

Filed Apr. 8, 1963, Ser. No. 271,361
Claims priority, application Germany, Apr. 12, 1962, D 38,658
5 Claims. (Cl. 296—28)

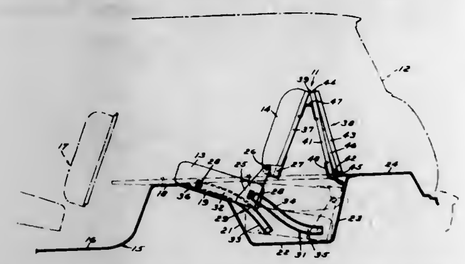
1. In an automobile having a body with a lower part and an upper part, said upper part comprising a top and only a pair of front posts and a pair of rear posts secured to said lower part and to said top for supporting said top, said rear posts being very narrow and spaced from each other at a distance smaller than the width of said lower part and said top and falling within a plane which substantially coincides with the rear edge of said top so that the view from the inside of the automobile to

the outside is practically unobstructed in all directions by opaque parts between said lower body part and said top, and a pair of ribs integral with said rear posts se-



cured to said top and slightly projecting therefrom and extending longitudinally of the automobile along said top and spaced from the side edges thereof.

3,202,453
RETRACTABLE SEAT
Jesse W. Richards, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 9, 1963, Ser. No. 293,826
9 Claims. (Cl. 296—66)



1. In a vehicle body having a foldable seat storage compartment in the floor thereof,

a seat assembly comprising a seat portion and a back rest portion hingedly connected one to the other,

said seat assembly in normal operative position having its seat portion disposed substantially out of said storage compartment at one edge thereof and its back rest portion in upstanding relation to said seat portion,

coacting guide means on said seat portion and the walls of said vehicle body controlling movement of said seat portion from said operative position to an inoperative position within said storage compartment,

and a panel hingedly connected to and extending between said back rest portion and the opposite edge of said storage compartment for bracing said back rest portion in upstanding relation to said seat portion,

said back rest portion being swingable beneath said hinged panel from upstanding relation to said seat portion into a substantially horizontal inoperative position within said storage compartment,

said hinged panel, back rest portion and seat portion being superimposed one above the other when said back rest portion and seat portion are in inoperative position.

3,202,454
RETRACTABLE TARPAULIN COVER FOR OPEN-TOP TRUCK BODIES AND THE LIKE
Floyd L. Neidlinger, 326 Loomis Ave., Cuyahoga Falls, Ohio
Filed June 13, 1963, Ser. No. 287,584
3 Claims. (Cl. 296—100)

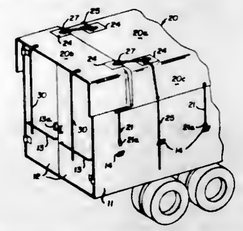
1. A retractable tarpaulin adapted for covering use on the open top portion of a trailer body having forward, rear, and side walls and at least one rear door, comprising:

(A) a flat tarpaulin having

(1) a central portion corresponding in area dimension to the area dimension of said open top portion of said trailer body, and

(2) front, side and rear edge portions bounding said central portion and respectively depending downwardly into covering relationship with portions of said front, side and rear walls when said central portion of said tarpaulin is covering said open top portion of said truck body;

(B) a series of tie ropes secured to the edges of said portions and adapted to secure said tarpaulin in place on said truck body;



(C) and tarpaulin retracting means including,

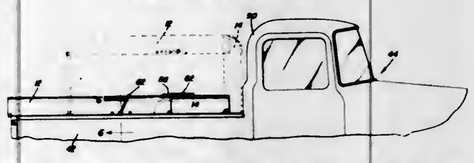
(1) longitudinally spaced guide rings secured to said tarpaulin in longitudinal alignment, and

(2) a control rope having one end secured to said rearmost ring and being passed through said forwardmost ring with the free end of said rope being accessible from the ground adjacent one side of said trailer body, and

(3) the longitudinal distance between said rings being slightly greater than the tarpaulin that overhangs said door

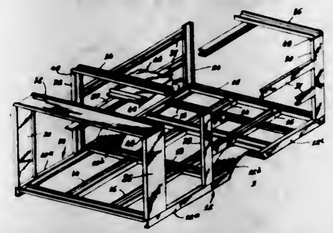
(a) whereby movement of said rope forwardly will move said rear portion of said tarpaulin upwardly and forwardly of said rear portion and out of covering relationship with said rear door.

3,202,455
RETRACTABLE PICKUP TRUCK BED COVER
Mike E. Grotz, 48 Swan St., Sheridan, Wyo.
Filed June 24, 1963, Ser. No. 289,979
7 Claims. (Cl. 296—100)



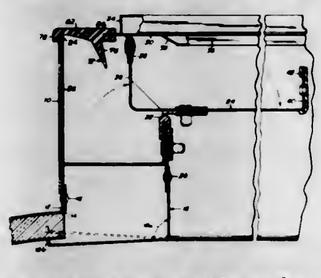
1. In combination with a vehicle bed, a cover movable between an upper and lower position with respect to the bed comprising vertically adjustable frame means movable between said upper and lower positions mounted on said vehicle and overlying said bed, relatively pivotable cover elements mounted on said frame means, said cover elements being axially aligned in said lower position and normal to each other in said upper position, window means formed in one of said cover elements for affording an unobstructed view through said one cover element when it has assumed its upper position, and flexible closure means carried by the other of said cover elements and automatically shiftable relative to said one element to a position covering said window means when said cover is in its lower position.

3,202,456
BODIES FOR COMPACTION TRUCKS AND THE LIKE
Phil Cadotte, 30½ Meadow St., Norwalk, Conn.
Original application Mar. 15, 1963, Ser. No. 265,450. Divided and this application Apr. 23, 1964, Ser. No. 377,149
5 Claims. (Cl. 296—101)



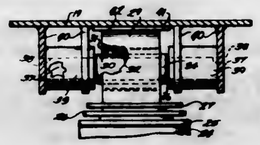
1. A vehicle body comprising a frame having a bottom which comprises outer longitudinal channel members each comprising two parts spaced apart and interconnected by upwardly curving wheel covers defining wheel housings for the rear wheels of a chassis on which the body is mounted, two longitudinal channel members disposed in parallel between the outer members, and cross channel members, a two level sheet metal floor having a main portion resting on the bottom of the frame and lateral marginal portions offset upwardly from the main portion and extending over the wheel covers, vertical channel members extending upwardly from and similarly disposed along the outer members respectively of the bottom, channel members extending longitudinally between the vertical members on each side of the frame, and transverse channel members extending between the tops of opposed pairs of vertical members, sheet metal side walls fixed to the inside of the vertical members along each side of the frame, and sheet metal fixed to the under surface of the transverse members comprising the top of the frame, the sheet metal side walls being welded to the lateral margins of the sheet metal floor and top.

3,202,457
RETRACTABLE AND EXTENSIBLE ROOF ASSEMBLY
John R. Wiley, Elkhart, Ind., assignor to Excel Corporation, Elkhart, Ind., a corporation of Indiana
Filed Jan. 24, 1964, Ser. No. 342,330
1 Claim. (Cl. 296—137)



In an extensible and retractable weatherproof top assembly comprising a frame having side members of H-beam construction with the outer wall thereof extending upwardly, front and rear cross members rigidly affixed at the ends of the said side members, a flexible top of a sheet of pliable material, said top being pivotally attached at one end to said frame and slidably attached at the other end to said frame, said top being movable to a raised position and a lowered position, a pair of arcuate side panels pivotally attached and sealed at one edge to said frame, said side panels being pivotal to a raised position wherein the free edges thereof form a sealed juncture with the top, said side panels being pivotal to a lowered position, an extension on the pivotally attached edges of the side panels, said extension forming a sealed juncture with the top when the panels are in a lowered position, the improvement comprising a flexible weatherstrip fitted on each side edge of said top and extending the length thereof, each of said side edges of the top being spaced from the outer walls of the adjacent H-beam side members, each of said weatherstrips extending through and over the space between the respective side edges of the top and adjacent H-beam side member, an integrally formed tip on the outer edge of each weatherstrip extending the length thereof, said tips being bent downwardly at an angle of at least 90° with the horizontal, said tips sealingly engaging the upper edges of the outer walls of the H-beam side members when the top is in the lowered position thus serving as a seal for the H-beam and as a double seal for the juncture of the top and said side panel extensions and for the pivotally attached edge of the side panel and frame, said tips serving as deflectors when the top is in the raised position to shield the juncture of the top and free edges of the side panels.

3,202,458
RESILIENT SNUBBING CONNECTION BETWEEN THE TILTING BODY AND THE HOIST CYLINDER
E. A. Domes, Wheaton, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Sept. 28, 1962, Ser. No. 226,965
2 Claims. (Cl. 298—22)



1. In a vehicle having a longitudinally extending chassis frame, and a dump body on said frame movable from a lowered to a raised dump position;

(a) a lifting device comprising,

(b) a fluid extensible device,

(c) means pivotally connecting said extensible device to said frame below said dump body,

(d) an extensible and retractable member on said extensible device,

(e) a trunnion on said extensible and retractable member,

(f) said trunnion including a first bore extending transversely with respect to said frame,

(g) bracket means connected to and projecting from said body,

(h) a sleeve carried within said first bore,

(i) a cylindrical compressible member having a transverse opening and being carried within said sleeve,

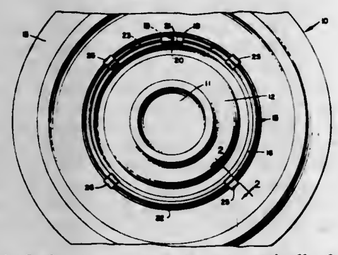
(j) a cylindrical bearing having a second transverse bore and being supported within said opening of said cylindrical compressible member,

(k) a shaft carried by said bearing within said second bore, said shaft being supported by said bracket means,

(l) and an impact plate-forming stop means on said body spaced above said trunnion a predetermined distance and engageable by said trunnion during movement of said extensible and retractable member to limit the end movement of the first bore with respect to the bearing and the shaft, thereby preventing complete compression of said cylindrical

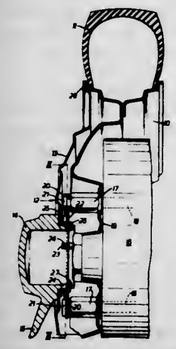
compressible member whereby said cylindrical compressible member retains sufficient resiliency to cushion the dump body as it moves between its lowered and raised position.

3,202,459
WHEEL BALANCER
Comer C. Pierce, 1551 Alexandria Place, Jacksonville, Fla.
Filed Oct. 10, 1963, Ser. No. 315,187
6 Claims. (Cl. 301—5)



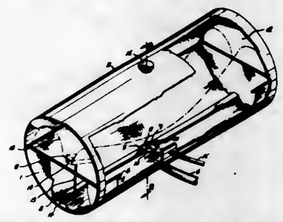
1. A device to compensate automatically for and correct imbalance in a rotatable wheel or the like above a critical speed, comprising a hollow tubular annulus, metallic aggregate partially filling said annulus and having a volume equal to at least 64% of the volume within said annulus and having a weight at least twice the maximum imbalance to be compensated, a flexible expansion joint in said annulus, and means for securing said annulus to a wheel rim.

3,202,460
WHEEL COVER FOR ROAD VEHICLES
Richard Frederick Holbrow, Creek End, Burcot, Oxfordshire, England
Filed Mar. 11, 1964, Ser. No. 351,124
Claims priority, application Great Britain, Mar. 12, 1963, 9,832/63; July 16, 1963, 28,031/63
3 Claims. (Cl. 301—37)



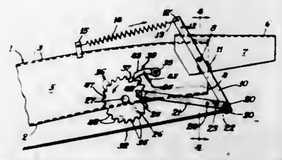
1. A hub cap device for fastening to a vehicle road wheel secured to the vehicle by means of headed studs as hereinbefore defined, the device comprising a hub cap of generally disc form, a boss rotatably mounted centrally on said cap for rotation relative to the cap and wheel, a fastening member of substantially plate form secured to said boss for rotation therewith, hook means formed integrally with and in a plane of said fastening plate for engagement behind the stud heads upon rotation of said boss and fastening plate in one direction, and locking means formed integrally with said fastening plate to engage the stud heads and prevent inadvertent disengagement of said hook means from the stud heads.

3,202,461
RAISABLE FLUIDIZING STRIP CONTAINER DISCHARGE MECHANISMS
Hamilton Neil King Paton, Bellevue, Wash., assignor, by mesne assignments, to Grans-Flow Equipment, Ltd., Vancouver, British Columbia, Canada, a corporation of British Columbia, Canada
Filed Dec. 27, 1962, Ser. No. 247,688
9 Claims. (Cl. 302—52)



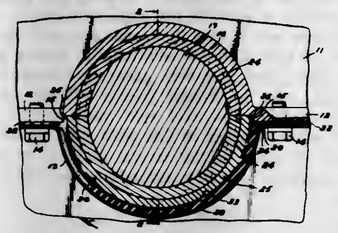
9. Mechanism for unloading small particle material from a horizontally elongated container, comprising a flexible, gas-impervious lining extending lengthwise of the lower portion of the container including portions extending along the sides and across the ends of the container of an extent sufficient to overlie the wall of the container in contiguous engagement therewith, means securing the upper portion of said lining with a gas-tight seal in a horizontal plane completely around the inside of the container, a discharge port located in the floor of the container between its ends, two elongated, longitudinally rigid fluidizing strips extending respectively from opposite sides of said discharge port lengthwise substantially to the ends of the container, raisable into positions inclined downwardly toward said discharge port and connected both to the end portions and side portions of said lining, gas supply means connected to said two fluidizing strips for discharge of gas thereform to fluidize material in the container, and gas supply means connected to supply gas under pressure between said flexible lining and the container wall to billow the lower portion of said side and end lining portions away from the container wall and thereby raise said fluidizing strips into inclined position.

3,202,462
DEFLECTOR DELIVERY CONTROL FOR HARVESTING MACHINES
John D. Segredo, Chicago, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Oct. 9, 1963, Ser. No. 315,013
5 Claims. (Cl. 302—61)



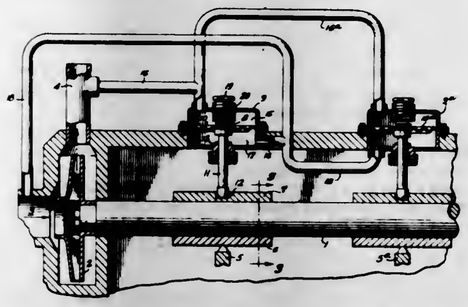
1. A deflector control for a material-delivering duct having a discharge end, a deflector pivoted to the duct on an axis transverse to the direction of flow of the material, a ratchet wheel journaled to the duct, a crank connected to the ratchet wheel and spaced radially from the axis of rotation thereof, a pitman link pivoted at spaced points to the crank and to said deflector at one side of its axis of pivot, biasing means connected to the duct and to said deflector at a point opposite to the point of connection of the deflector with the pitman link, and a pivoted dog on the chute engaging the ratchet wheel.

3,202,463
BEARING CAP, BLOCK AND OIL PAN SEAL
Howard D. Fatt, Inkster, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Continuation of application Ser. No. 61,312, Oct. 7, 1960. This application May 31, 1962, Ser. No. 199,580
9 Claims. (Cl. 308—23)



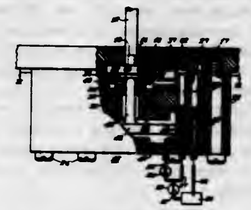
1. An internal combustion engine comprising a cylinder block having an upper rear main bearing support terminating in a saddle shaped portion, a rear main bearing cap mounted in part in said saddle shaped portion, said rear main bearing cap having a peripheral groove, a seal having an intermediate portion and an upstanding projection at each end of the intermediate portion located in said peripheral groove and terminal flanges extending outwardly from said seal between the intermediate portion and each upstanding projection, each of said upstanding projections being disposed between the saddle shaped portion and the rear main bearing cap confined in said saddle shaped portion, each of said terminal flanges underlying a portion of the cylinder block adjacent said saddle shaped portion, and an oil pan underlying said cylinder block and in contact with the intermediate portion and the terminal flanges of said seal.

3,202,464
AUTOMATIC LOAD CONTROL
Jacques Pierre Chaboseau, Brevannes, Seine-et-Oise, and Christian Mech, Paris, France, assignors to Societe Rateau, Paris, France, a company of France
Filed May 28, 1963, Ser. No. 283,776
Claims priority, application France, Jan. 22, 1963, 922,141
9 Claims. (Cl. 308—73)



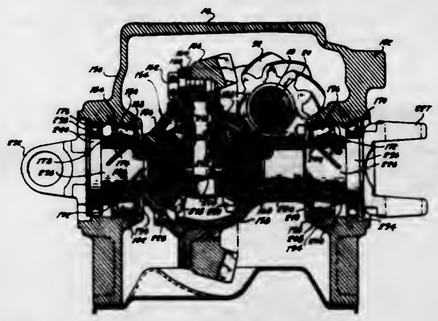
1. A hydrodynamic bearing comprising a plurality of bearing slippers disposed around the bearing axis at least one of which slippers is radially movable, pre-load means for applying an external load to said radially movable slipper urging it towards the bearing axis and means for automatically controlling the value of the external load applied by the pre-load means so as to maintain between pre-determined limits the thickness of the lubricant film established under hydrodynamic conditions, despite variation in one or more of the parameters on which the film thickness depends.

3,202,465
THRUST BEARINGS
Frank C. Rushing, Pittsburgh, Pa., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 3, 1945, Ser. No. 580,786
4 Claims. (Cl. 308—160)



1. Thrust bearing means for a rotatable shaft having a bearing surface comprising, in combination, a plurality of elements having bearing surfaces to cooperate with said shaft bearing surface, said elements being radially spaced from the center of said shaft bearing surface, and resiliently mounted upon flat spring segments arranged with their flat surfaces substantially perpendicular to the shaft axis, coiled springs biasing said segments and said elements towards said shaft bearing surface, a second shaft having a relatively small bearing surface engageable with the central portion of said shaft bearing surface, and means for relatively axially moving said elements and said second shaft whereby said second shaft is engaged and disengaged with said shaft bearing surface and said element surfaces and said second shaft surface may be interchanged as thrust surfaces cooperating with said shaft bearing surface as a thrust bearing.

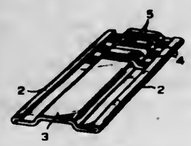
3,202,466
MOUNTING ARRANGEMENT WITH SELF-COMPENSATING ROLLER BEARINGS
Robert Eugene Kaptur, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,619
2 Claims. (Cl. 308—207)



2. A bearing arrangement rotatably journalling a rotary structure within a housing, said housing being formed of a material having a coefficient of thermal expansion that exceeds the corresponding coefficient for said rotary structure, a pair of aligned bearing openings formed in said housing, a roller bearing assembly received within each opening for journalling said rotary structure at spaced locations, each bearing assembly comprising a tapered outer race and a tapered inner race with tapered roller bearing elements disposed therebetween, the smaller diameter ends of said rollers being located on the inboard side of their respective bearing assemblies, the axes of rotation

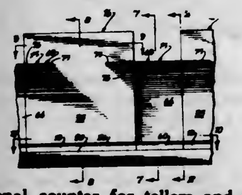
of said bearing elements lying in the plane of a cone having an apex situated on the inboard side of the bearing opening for the assembly, a shoulder formed in said bearing opening, said outer race engaging said shoulder, said rotary structure having shaft portions extending through said inner races, each shaft portion being threaded, and a nut threaded on each threaded portion engageable with its associated inner race whereby an independent preload is applied to each inner race, said preload acting toward the inboard side of said bearing assembly, said outer race and its cooperating bearing opening being provided with an interference fit, said interference fit being relaxed as the temperature of said housing increases, the running clearance of said bearing elements being maintained relatively constant as said outer races are shifted away from each other upon an increase in the temperature of said housing.

3,202,467
THIN-WALLED CAGES FOR CYLINDRICAL ROLLERS
Karl-Albert Eckstein, Herzogenaurach, near Nurnberg, Germany, assignor to Industriewerk Schaeffler OHG, Herzogenaurach, Germany, a corporation of Germany
Filed Oct. 27, 1964, Ser. No. 406,864
Claims priority, application Germany, Nov. 2, 1963, J 24,668
5 Claims. (Cl. 308—217)



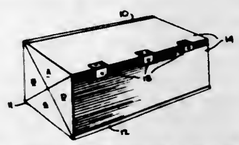
1. A thin-walled cage for cylindrical rollers comprising two annular rims integrally connected together by profiled crossbars which bound the slots for accommodating the rollers and which guide and retain the rollers, the annular rims formed at both axial ends of the cage by folding over the cage ends to provide narrow rims of double the sheet metal wall thickness, the rim walls being parallel and closely adjacent to one another and the abutting ends of the annular rims being connected to each other by welding after the originally flat strip has been bent to a circular form.

3,202,468
SECTIONAL COUNTER FOR TELLERS AND THE LIKE
Francis C. Kegel, Kenmore, N.Y., assignor to APF Industries, Inc., Buffalo, N.Y., a corporation of New York
Filed July 2, 1962, Ser. No. 206,946
8 Claims. (Cl. 312—140.1)



1. A sectional counter for tellers and the like, comprising a plurality of separable sections of different height connected in end face-to-face tandem, each section having a vertical panel on the customer side extending upwardly to at least counter height, a vertical kickboard panel on the customer side below and in rear of said vertical panel, a horizontal bottom panel extending from said vertical panel toward the teller side, a horizontal upper panel extending from said first mentioned vertical panel toward the teller side, and means forming a wireway one wall of which is formed directly by one of said horizontal panels and another wall of which is formed directly by one of said vertical panels, said means forming a wireway in each of the sections being in the same vertical plane and having their ends adjacent one another and one of said sections additionally having a pair of upright side panel members generally perpendicular to the vertical and horizontal panels thereof and joined to edges thereof, and said side panel members being provided with openings in line with said means forming a wireway in each of the several sections to join them into a common wireway extending the length of the counter.

3,202,469
PORTABLE MULTIPLE-SECTION DISPLAY CASES
Joseph Lawe, New York, N.Y., assignor to The Setwell Company, Traverse City, Mich.
Filed Jan. 15, 1963, Ser. No. 251,673
1 Claim. (Cl. 312—200)

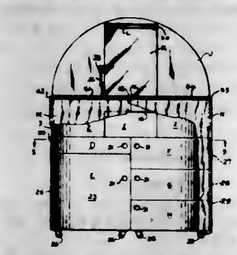


A portable combination display case and container for erecting exhibitions of articles, said case comprising:
(A) four prismatic quadrants of like construction, each including a vertical back panel,
(B) a wedge-shaped canopy attached to the upper end of each of said panels and provided with lighting means to illuminate said quadrants,
(C) a wedge-shaped platform attached to the lower end of each of said panels to elevate an article displayed thereon and to provide a stage therefor, said platform including a hinged door to provide a useable storage area,
(D) a partition extending between at least one of said platforms and the associated canopy, and
(E) means hinging said back panels together whereby when said quadrants are folded together they form a transportable rectangular box, and when unfolded they are arrangeable into a variety of configurations for exhibition purposes.

3,202,470
PORTABLE VANITY CABINET FOR WOMEN
Ruby M. Lage, 1628 Plaza Drive, San Leandro, Calif.
Filed July 2, 1964, Ser. No. 379,791
4 Claims. (Cl. 312—227)

1. In a portable vanity:
(a) a rear flat vertical wall;
(b) a semi-circular front wall having its ends secured to the two vertical edges of the rear wall, the central portion of the front wall having a recess therein bounded by the upper and side edges;
(c) parallel partitions spaced apart and extending from the rear wall to the front wall and having their front edges placed adjacent to the side edges of said recess;
(d) a first quadrant-shaped horizontal bottom wall extending from the rear wall and having an edge placed adjacent to the lower edge of one of the partitions, this same edge having an end placed adjacent to the lower end of the recess side edge disposed closest to said bottom wall;

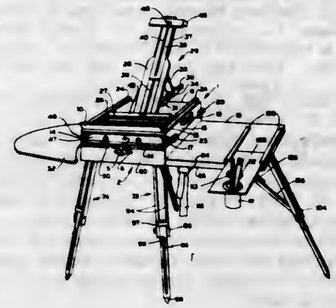
(e) a middle horizontal bottom wall extending from the rear wall and having parallel sides secured to the parallel partitions; the front edge of said middle bottom wall lying adjacent to the upper edge of said recess; said middle bottom wall being at a higher elevation than said quadrant-shaped bottom wall; and



(f) a second quadrant-shaped horizontal bottom wall extending from the rear wall and having an edge placed adjacent to the lower edge of the other partition, this same edge having an end placed adjacent to the lower end of the recess side edge disposed closest to said second named quadrant-shaped bottom wall; said second quadrant-shaped bottom wall lying in the same plane as said first quadrant-shaped bottom wall.

3,202,471
ARTIST'S BOX, EASEL AND TABLE
Quitman L. Wilson, 725 16th St., Eureka, Calif.
Filed Nov. 5, 1963, Ser. No. 321,618
11 Claims. (Cl. 312—231)

1. An artist's box comprising:
(a) A rectangular box having vertically disposed side and end walls and horizontally disposed top and bottom walls closing the upper and lower sides of said box;
(b) said box comprising a lower part that includes said bottom wall and a portion of said side and end walls adjoining it, and an upper part that includes said top wall and the side and end walls above said lower part;
(c) a hinge connecting said lower part with said upper part for swinging said lower part to a horizontally disposed offset position at one side of said upper part;
(d) a plurality of horizontally disposed legs above said bottom wall within the confines of said side and end walls;
(e) pivot means connecting one of the the ends of each of said legs to said upper part at spaced points for swinging said legs to positions extending divergently downwardly from points respectively adjacent to said side and end walls for supporting said upper part above the ground;



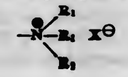
(f) a bottom-supporting-leg also disposed horizontally within the confines of said side and end walls and above said bottom wall;
(g) means swingably connecting one end of said bottom-supporting-leg with said lower part at a point remote from said hinge when said lower part is swung to said offset position for supporting said lower part from the ground in said offset position when said plurality of legs support said upper part horizontally above the ground;
(h) an easel on said top wall above the latter;
(i) easel pivot means on said upper part swingably supporting said easel for swinging of the latter from a substantially horizontal position over said top wall to an upright position extending upwardly therefrom for supporting a canvas or board thereon in painting position.

CHEMICAL

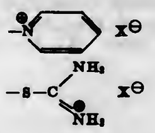
3,202,472
PROCESS FOR PREPARING EVEN DYEINGS ON CELLULOSE MATERIALS IN A LONG BATH
Edwin Baier, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Oct. 1, 1963, Ser. No. 312,876
Claims priority, application Germany, Oct. 3, 1962, F 37,954
1 Claim. (Cl. 8—54.2)

I claim:

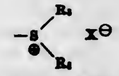
A process for producing even dyeings on shaped articles of a material selected from the group consisting of natural and regenerated cellulose in a long bath, which consists of treating said shaped articles in a dilute weakly acid solution at a temperature between about 20° and 100° C. with a water-soluble organic dyestuff selected from the group consisting of monoazo, disazo, metal-phthalocyanine and tetraphenyl-metal phthalocyanine dyestuffs free from anionic groups and containing at least one cationic radical selected from the group consisting of



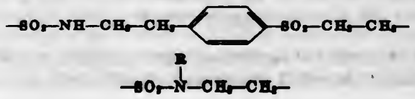
wherein R_1 represents a lower alkyl group, R_2 represents a member of the group consisting of a hydrogen atom, the benzyl group and a lower alkyl group and $X^{\ominus}$ represents an acid radical



and



wherein R_3 represents lower alkyl groups and $X^{\ominus}$ is defined as above, which groups are linked to a carbon atom of an aromatic nucleus of the dyestuff molecule through a bridge member selected from the group consisting of



wherein R represents a member of the group consisting of a hydrogen atom and an alkyl group, and

$$-SO_2-CH_2-CH_2-$$

and fixing the dyeings so obtained by treating them with an acid binding agent in an aqueous bath at a temperature between 40° and 100° C.

3,202,473

PROCESS OF CREASEPROOFING CELLULOSIC FABRICS WITH TETRAKIS(N-METHYLOLCARBAMOYLETHYL)ETHYLENEDIAMINE

Bethlehem K. Andrews, Metairie, and John G. Frick, Jr., New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed May 10, 1963, Ser. No. 284,768
1 Claim. (Cl. 8—116.3)
(Granted under Title 35, U.S. Code (1952), sec. 266)

A process for treating a cellulosic textile fabric comprising: impregnating said cellulosic textile fabric with an aqueous solution containing, by weight, about 10% tetrakis(N-methylolcarbamoylethyl)ethylenediamine, and from 0.5% to 3.0% of an acid cataylst; removing the water by volatilization; curing the dried cellulosic textile fabric for 0.5 to 10 minutes at temperatures of 120° to 160° C.; washing the cured cellulosic textile fabric to remove unreacted materials, and drying the cured, washed cellulosic textile fabric.

3,202,474

PROCESS FOR CROSSLINKING CELLULOSE WITH FORMALDEHYDE ADDUCTS OF DIVINYL SULFONE

Clark M. Welch, New Orleans, La., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Jan. 23, 1962, Ser. No. 168,288
4 Claims. (Cl. 8—120)
(Granted under Title 35, U.S. Code (1952), sec. 266)

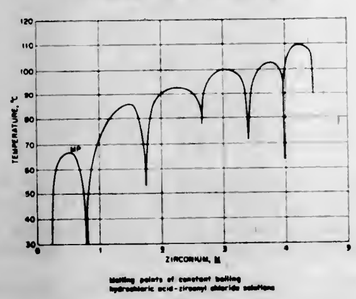
1. A process for crosslinking cellulose which comprises wetting the cellulose with a solution in an inert volatile solvent of an alkaline catalyst together with an addition product previously formed by the base-catalyzed reaction of formaldehyde with divinyl sulfone, the wetted cellulose subsequently being kept at 20–170° C. for from 0.5 to 30 minutes, resulting in a treated cellulose which in the form of fabric exhibits increased wrinkle resistance and enhanced dimensional stability.

3,202,475

METHOD FOR COLLECTING ZIRCONIUM TETRACHLORIDE

Theodore A. Gens, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed May 15, 1963, Ser. No. 280,759
9 Claims. (Cl. 23—14.5)



Boiling points of constant boiling hydrochloric acid-zirconyl chloride solutions

1. A method of condensing a gas comprising zirconium tetrachloride which comprises contacting said gas with the vapor in equilibrium over refluxing hydrochloric acid to form an aqueous solution of zirconyl chloride containing up to about 365 grams of Zr per liter.

3. In a method treating a neutron-irradiated nuclear fuel composition containing zirconium and a nuclear fuel selected from uranium and plutonium by hydrochlorination of said composition with gaseous hydrogen chloride at a temperature in the range 350° C. to 800° C. to selectively volatilize zirconium tetrachloride and volatilize fission product chlorides, the improvement which comprises contacting a jet stream of said zirconium tetrachloride-containing vapor with the vapor in equilibrium above refluxing water.

3,202,476

USE OF NICKEL ARSENIDES AND NICKEL TO PROMOTE PHASE SEPARATION IN LIQUID-LIQUID EXTRACTION

Thomas Joseph Collopy, Cincinnati, Ohio, John Herbert Mueller, Fort Thomas, Ky., and Wendell Sims Miller, Cincinnati, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Dec. 4, 1963, Ser. No. 328,141
9 Claims. (Cl. 23—14.5)

1. The method of promoting phase separation in liquid-liquid solvent extraction wherein an aqueous phase and an organic solvent phase are contacted in an extraction zone and the resulting mixed phases are separated which comprises providing in said zone a finely divided additive selected from the group consisting of nickel metal and the nickel arsenides NiAs and $NiAs_2$.

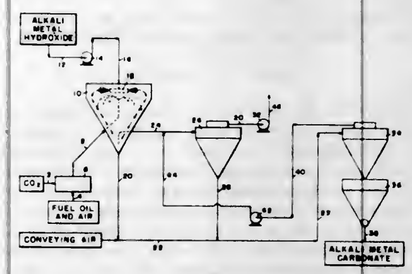
3. In the process for purification of uranium values which comprises contacting a nitric acid solution containing said uranium values, together with impurities, with an organic solution of tributyl phosphate in an inert organic diluent in an extraction zone whereby said uranian values are selectively extracted into said organic solution and separating the resulting uranium-bearing organic phase from the resulting aqueous phase, the improvement which comprises providing a finely divided additive selected from the group consisting of nickel metal and the nickel arsenides NiAs and $NiAs_2$ in said zone.

3,202,477

METHOD OF PRODUCING ALKALI METAL CARBONATE

John E. Loeffler, Jr., Lyndhurst, Robert A. Springer, North Madison, and Ernest L. Bolick, Painesville, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

Filed Jan. 18, 1962, Ser. No. 167,088
14 Claims. (Cl. 23—63)



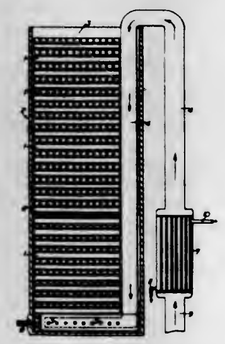
1. A method of producing an alkali metal carbonate comprising the steps of forming discrete particles of a solution of an alkali metal hydroxide in a reaction chamber, injecting a heated gas containing carbon dioxide into said chamber, the amount of carbon dioxide in said chamber being in excess of that required to react with the alkali metal hydroxide in said particles of said solution, allowing particles of said solution to move generally concurrently with the movement of said gas in said chamber, maintaining the average minimum reaction temperature in said chamber above about 200° F., maintaining the relative humidity of said gas such that water is vaporized from said solution, whereby the alkali metal hydroxide is reacted with the carbon dioxide and is converted to the corresponding alkali metal carbonate in a dry particulate form, and removing said dry particulate alkali metal carbonate and the remainder of said gas from said chamber.

3,202,478

PROCESS FOR MANUFACTURING FUNGICIDAL MICRONISED TRIBASIC COPPER CHLORIDE

Arthur Hindle, Sharda Manubhai Raval, Sharda Dhirajlal Damani, Hasmukhrai Govindji Damani, and Kantilal Gulabrai Damani, all of 248 Samuel St., Bombay 3, India

Filed Nov. 28, 1960, Ser. No. 72,199
Claims priority, application Great Britain, Feb. 23, 1960, 6,346/60
4 Claims. (Cl. 23—97)



1. Process of preparing micronised tribasic copper chloride comprising treating tribasic copper chloride with hydrochloric acid in accordance with the following reaction:

$$CuCl_2 \cdot 3Cu(OH)_2 + 6HCl \rightarrow 4CuCl_2 + 6H_2O$$

to form copper chloride, adding water to the copper chloride so formed to obtain a solution thereof, bringing the said solution of copper chloride in contact with metallic copper and bubbling air through the solution having metallic copper in contact therewith, and while the air is being bubbled adding 0.05 to 0.1% based on the total quantity of copper chloride present in the liquor to be treated, of a basic catalyst selected from the group consisting of sodium carbonate, sodium hydroxide, ammonia, ammonium carbonate and urea, to the metallic copper containing copper chloride solution, rapidly bubbling a large excess of hot air at about 80° C. therethrough, whereby micronised tribasic copper chloride is formed in suspension in the solution according to the following reaction:

$$4CuCl_2 + 12H_2O + 6O_2 + 12Cu \rightarrow 4[CuCl_2 \cdot 3Cu(OH)_2]$$

at least 66% of said tribasic copper chloride having an average particle size below 3 microns.

3,202,479

SEPARATION OF RUTHENIUM FROM AQUEOUS SOLUTIONS

Joseph J. Katz, Chicago, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Aug. 8, 1950, Ser. No. 178,355
12 Claims. (Cl. 23—140)

1. A process for separating ruthenium values from aqueous acid solutions, which comprises adding an oxidation catalyst to said solutions and introducing ozone in a concentration of at least 0.5% by weight thereinto whereby ruthenium tetroxide is formed and volatilized.

3,202,480

IMPROVED STRENGTH LOW DENSITY ALUMINA SPHERES

William G. Nixon, Westchester, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 6, 1961, Ser. No. 101,058
2 Claims. (Cl. 23—143)

1. A method for producing improved strength low density alumina spheres which comprises digesting aluminum in an acidic chlorine compound to form a resulting alumina sol having a ratio of aluminum metal to chloride of from about 1.15 to about 1.50, adding hydrogen bromide and water to said sol to increase the halogen content thereof and provide a reduced ratio of aluminum metal to total halogen present, adding an alkaline material having a buffering effect which slows down gelation of the sol and maintains it below gelation conditions, passing droplets of said sol into an oil bath and forming hydrogel spheres therein, thereafter aging and drying to completely drive off bromine from the resulting spheres to form improved strength alumina spheres.

3,202,481

PURIFICATION OF NITRIC ACID

Howard B. Bradley and Robert G. Pankhurst, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 4, 1962, Ser. No. 199,633
8 Claims. (Cl. 23—159)

1. A process for removing arsenic, phosphorus and sulfur impurities from nitric acid which comprises contacting the nitric acid with an oxidizing agent and a molybdenum compound to form high-boiling point oxidized impurity compounds and complex compounds, and separating the high-boiling point oxidized impurity compounds and complex compounds from the nitric acid.

3,202,482

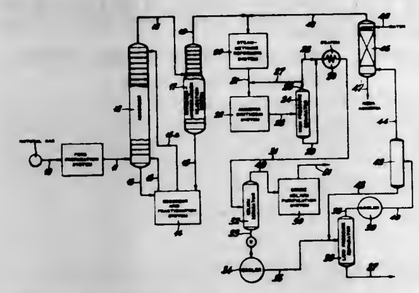
PURIFICATION OF HELIUM CONTAMINATED BY NITROGEN

Charles A. Herster, Elmhurst, N.Y., assignor to Heli-Chem Products, Inc., a corporation of Delaware

Filed Jan. 11, 1962, Ser. No. 165,574
4 Claims. (Cl. 23—209)

1. In a process for recovering helium from natural gas, the steps which comprise contacting natural gas with liquid hydrocarbon oil which is substantially propane in an absorption zone to remove higher hydrocarbons and a substantial portion of methane from the gas stream, cooling and fractionating said gas stream to remove a substantial portion of the nitrogen component and reduce the hydrocarbon content to a minor amount of methane in the gas stream, subjecting said gas stream to stream reforming conditions to increase the hydrogen content of

the gas stream, contacting said gas stream with ammonia synthesis catalyst under conditions producing liquid ammonia, and flashing the liquid ammonia to recover helium dissolved therein.



3,202,483
TESTING OF SOLUTIONS
Thomas J. McKeon, Cresskill, N.J., and John P. O'Hara, Staten Island, N.Y., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
Filed May 28, 1963, Ser. No. 283,770
6 Claims. (Cl. 23—230)



1. A method for determining the presence of chloride ion in an aqueous solution which comprises providing an aqueous solution containing chloride ion and adjusted to a pH value between about 6 and about 10, providing a composite comprising silver chromate deposited on an absorbent, and contacting said composite with said aqueous solution whereby silver chloride is formed.

3,202,484
SELF-DEMOUNTABLE SUPPORT
Elmer A. Weaver, Spring Mount, and Robert L. Pollack, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of Agriculture
Filed Apr. 2, 1963, Ser. No. 270,084
3 Claims. (Cl. 23—259)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A device for introducing a sample into an open flask for oxygen-filled, closed-flask combustion analysis, comprising, in combination, a flask closure member adapted to extend into and seal the opening of said flask and being capable of rotation therein, a bearing member rigidly secured to said flask closure member, and a sample-carrying member detachably mounted on said bearing member;

(a) said bearing member comprising an elongated member coaxially secured by one end thereof to the end of said flask closure member which extends into the flask, said bearing member being bent at its unsecured end into a leg perpendicular to its longitudinal axis;

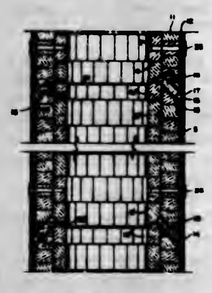
(b) said sample-carrying member comprising an elongated attaching member, a sample holder secured to one end thereof, a closed loop intermediate the ends of said attaching member adapted to pivotally engage the leg of the bearing member, the axis of said closed loop being perpendicular to said attaching member, said attaching member being provided at the end remote from the sample holder with an open U-shaped loop in a plane perpendicular to the plane of said closed loop and adapted to engage the bearing member at an intermediate point thereof to prevent rotation of the sample-carrying member when horizontally disposed with the open loop extending upwardly, whereby, upon rotation of the closure member, the closed loop on the sample-carrying member disengages from the leg of the bearing member, permitting the sample-carrying member to drop to the bottom of the flask.

3,202,485
SUBLIMATION APPARATUS
Alton F. Armington, Lexington, and Joseph R. Weiner, Marblehead, Mass., assignors to the United States of America as represented by the Secretary of the Air Force
Filed May 1, 1962, Ser. No. 191,654
1 Claim. (Cl. 23—264)
(Granted under Title 35, U.S. Code (1952), sec. 266)



Sublimation apparatus comprising means for evacuating a container, a vertically oriented tube-shaped container having a closed end and an open end, said open end being sealed to said evacuating means, a pair of elongated, vertically oriented, interchangeable, open ended tubes of a size to be telescoped and inserted within said first-mentioned tube, said elongated tubes each having a portion of reduced external diameter at one end and increased internal diameter at the other end such that each of said elongated tubes may be partially inserted within the other of said elongated tubes, a removable, solid plug adapted to be inserted in the bottom one of the lowermost of said pair of elongated tubes with a tight fit and having a portion in contact with the closed end of said first-mentioned tube, and an induction heating means around the lower end of said tube-shaped container to heat a melt in the lowermost of said pair of elongated tubes within said container to cause condensation of said melt to form on the uppermost of said pair of elongated tubes.

3,202,486
REACTION VESSEL WITH REFRACTORY LINING
Rocland Verduin, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 31, 1962, Ser. No. 220,636
Claims priority, application Netherlands, Dec. 21, 1961, 272,882
6 Claims. (Cl. 23—284)

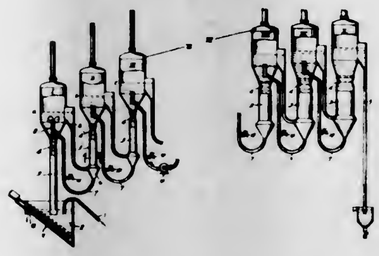


1. In a vertical reaction vessel which comprises an outer metal shell, an inner refractory ceramic lining composed of facing bricks and spaced radially inwardly from the shell, and at least one layer of insulating material interposed between said shell and facing bricks, the improvement of means for supporting said facing bricks from the shell which comprises:

(a) means providing an annularly disposed upwardly and inwardly directed abutment face on the shell, and

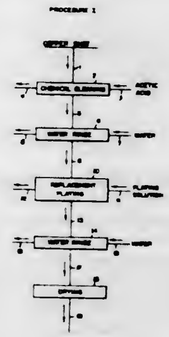
(b) a ring of support bricks in supported relation to said abutment face extending inwardly and upwardly therefrom through said layer of insulating material at an angle to the shell and having their inner and upward ends in supporting relation to said facing bricks, said supporting bricks being loaded in compression along an axis extending inwardly and upwardly from said abutment face.

3,202,487
MULTIPLE EFFECT, GRAVITY CLASSIFICATION CRYSTALLIZATION METHOD AND APPARATUS
Hans Dommsing, Kassel-Kl., Germany, assignor to Winterhall A.G., Kassel, Germany
Filed Dec. 8, 1960, Ser. No. 74,682
10 Claims. (Cl. 23—295)



1. In a crystallization process, the steps of passing through a plurality of consecutive treatment stages maintained at progressively decreasing temperatures a stream of a concentrated aqueous of crystallizable material the solubility of which in said aqueous progressively decreases at the progressively decreasing temperatures maintained in said consecutive treatment stages so as to cause in each of said treatment stages formation of small crystals which upon passage into the following treatment stages will increase in size so as to form larger crystals, said stream of concentrated aqueous being moved in upward direction at each of said consecutive treatment stages at a speed smaller than the speed at the preceding treatment stage so as to form at each treatment stage an upwardly directed stream portion moving upwardly at a speed which is smaller than the speed of upward movement at the preceding treatment stage but greater than the speed of upward movement at the following treatment stage so that at each of said treatment stages the size of said larger crystals which will be adapted to move downwardly in said upwardly directed stream due to their weight will be greater than the size of downwardly moving larger crystals in the upwardly directed stream of the following and smaller than at the preceding treatment stage; reintroducing said downwardly moving larger crystals from each of said treatment stages into the immediate preceding treatment stage at a point located upwardly of said upwardly directed stream portion in which said thus reintroduced larger crystals due to their larger size will also move downwardly in a direction opposite to the flow of the respective upwardly directed stream portion thereby further increasing in size; and repeating said reintroduction of larger crystals from any treatment stage into the preceding treatment stage at a point located above said upwardly directed stream portion until substantially all of said larger crystals while growing larger are accumulating at a point of the first one of said consecutive treating stages located below said upwardly directed stream portion thereof.

3,202,488
SILVER-PLATED COPPER POWDER
John E. Ehrreich, Arlington, and Donald H. Avery, Nahant, Mass., assignors to Chemerics, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Mar. 4, 1964, Ser. No. 349,361
5 Claims. (Cl. 29—192)

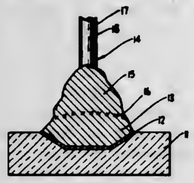


3. A metal powder for rendering plastic compositions electrically conductive comprising a copper-bearing powder having a continuous thin electrically adherent stable coating of silver thereon, said powder having a matte appearance in loose form, said coating having been deposited by replacement plating with the plating being terminated by depletion of silver ions in the plating solution and the thickness of said coating being less than that which would be obtainable if an excess of said silver ions were available in said plating solution, and the conductivity of said metal powder changing less than 50% when said powder is exposed to an oxidizing atmosphere at 400° F. for 24 hours.

3,202,489
GOLD-ALUMINUM ALLOY BOND ELECTRODE ATTACHMENT

Bob G. Bender, Garden Grove, and Leonard Bernstein, Fullerton, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Dec. 1, 1959, Ser. No. 856,389
5 Claims. (Cl. 29—195)



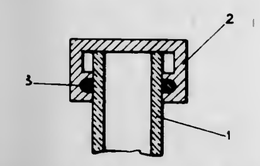
1. A method of attaching electrodes to an aluminum-silicon surface on a silicon semiconductor device, which comprises: assembling an electrode, an essentially gold-tin eutectic bonding alloy of 80% gold and 20% tin by weight and having a melting temperature below 410° C., and a semiconductor material having an aluminum-silicon surface; heating the assembly to a bonding temperature between the melting temperature of said alloy and 410° C.; and cooling the assembly.

5. A semiconductor device comprising a silicon type semiconductor crystal, a predominantly aluminum surface on said crystal and an electrode bonded to said surface at a bonding temperature below 410° C. with an alloy consisting essentially of between 68 and 82% gold by weight and the balance tin.

3,202,490
SEALING STRUCTURE

Andre Velte, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, Paris, France

Filed Mar. 5, 1962, Ser. No. 177,348
Claims priority, application France, Mar. 23, 1961, 856,555
5 Claims. (Cl. 29—195)



1. A brazed sealing structure, comprising a ceramic insulating part, a metal part made of a material selected from the group consisting of substantially pure beryllium and beryllium alloys, and a brazing material joining the ceramic insulating part and the metal part, said brazing material being a metal selected from the group consisting of gold, copper, nickel, silver and the alloys thereof.

3,202,491
HYDROCARBON OIL SLUDGING INHIBITOR COMPOSITION

Donald A. Maxwell and William M. Gearhart, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 24, 1962, Ser. No. 197,265
12 Claims. (Cl. 44—63)

1. A composition consisting essentially of the mixture of (1) an imide-amide reaction product obtained by reacting ethylenediamine tetraacetic acid with an aliphatic primary amine having 4–24 carbon atoms per molecule at a mole ratio of amine to acid of at least about 2:1 and at a temperature of at least about 190° C., said reaction product having an average content of amine salt groups and carboxyl groups of at most one of such groups per molecule of reaction product, and (2) a hydrogenated condensation product of a reducing sugar and a long chain aliphatic amine, the weight ratio of the imide-amide reaction product to the hydrogenated condensation product being in a range from about 9:1 to about 500:1.

3,202,492
BORON COMPOUNDS AND FUELS CONTAINING THE SAME

Chien-wei Liao, Beachwood, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 18, 1961, Ser. No. 145,988
4 Claims. (Cl. 44—69)

1. A hydrocarbon fuel of the gasoline boiling range containing a compound selected from the group consisting of compounds formed by

(a) reacting in the appropriate molar ratio to form a metaborate ester
  (1) metaboric acid, with
  (2) a saturated, aliphatic, monohydroxy alcohol of from 1 to 12 carbon atoms, and
(b) further reacting the metaborate ester in a 2:1 molar ratio with a member selected from the group consisting of a primary, aliphatic monoamine of from 8 to 30 carbon atoms and mixtures of such amines,

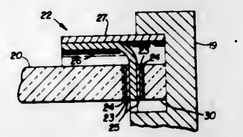
said compound being present in an amount to provide from .002 to 0.1 wt. percent baron.

2. A leaded hydrocarbon fuel of the gasoline boiling range containing from 0.5 to 6 ml./gal. of a tetraalkyl lead and a compound formed by the reaction in a 2:1 molar ratio, of (a) diisopropyl carbinyl metaborate, and (b) a mixture of primary, aliphatic monoamines of from 12 to 14 carbon atoms, said compound being present in an amount to provide from .002 to 0.1 wt. percent boron.

3,202,493
ART OF SEALING QUARTZ TO METAL

Oskar Heil, San Mateo, Calif., assignor to Eitel-McCullough, Inc., San Carlos, Calif., a corporation of California

Original application Feb. 18, 1959, Ser. No. 793,993, now Patent No. 3,115,957, dated Dec. 31, 1963. Divided and this application Dec. 26, 1962, Ser. No. 247,145
8 Claims. (Cl. 65—43)

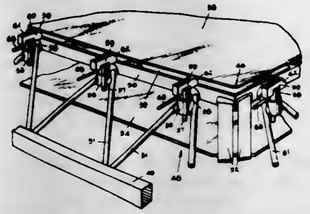


1. A method of making a quartz-to-metal seal wherein the metal member has a coefficient of thermal expansion greater than the quartz member comprising the steps of depositing on the quartz a coating of a metal selected from the group consisting of molybdenum, tantalum, zirconium, titanium and columbium, said metal being in the form of discrete particles no larger than molecules at the time of arrival at the surface being metalized, heating said coating at a temperature and time combination which will sinter the coating without transforming the quartz to a crystalline form, and then bonding to said coating a member made of metal which will not alloy with the metal of said coating, the last-mentioned bonding being accomplished by the application of pressure at a temperature below the melting temperature of both the metal of said coating and the metal of said metal member.

3,202,494
METHOD AND APPARATUS FOR PRODUCING MULTIPLE SHEET GLAZING UNITS

John A. Woods, Lancaster, Ohio, Donald E. Sharp, deceased, late of Maumee, Ohio, by Ohio Citizens Trust Co., executor, Toledo, Ohio, and Alfred E. Badger, Maumee, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Continuation of application Ser. No. 567,185, Feb. 23, 1956, which is a continuation of application Ser. No. 300,884, July 25, 1952. This application Apr. 12, 1960, Ser. No. 21,682
3 Claims. (Cl. 65—58)

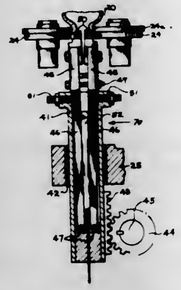


1. A method of producing multiple sheet glazing units, which comprises supporting the marginal edge portions of one sheet of glass in spaced relation above those of another glass sheet, moving said marginal edge portions of the sheets as a unit past a heat source which heats said marginal edge portions and causes them to be fused to one another, and progressively removing a portion of the support for the upper sheet nearest the heat source prior to movement of the previously supported marginal edge portions of said sheets past said heat source while retaining support for the sheet along areas farther removed from said heat source until the marginal edge portions are sealed substantially along their entire length.

3,202,495
APPARATUS FOR FORMING MOUTH PORTIONS OF SMALL GLASS CONTAINERS

Otto Zauner, Vineland, N.J., assignor, by mesne assignments, to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Apr. 23, 1962, Ser. No. 189,544
4 Claims. (Cl. 65—277)

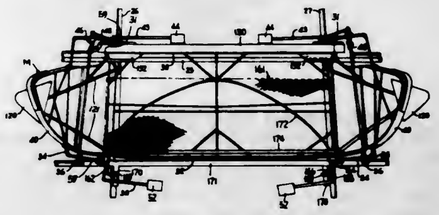


3. Glassworking apparatus for forming internal surfaces of the mouth portion of glass containers with reentrant contours comprising a mandrel member having a hollow body portion, a pair of arm members mounted in pivotal relation within said body portion, a pair of semi-circular forming elements individually mounted on the free ends of said arm members in juxtaposed relation projecting from said body portion, an expansible sleeve of flexible material disposed between an intermediate region of said arm members in contacting relation with said arm members, valve means for introducing pressurized fluid into said expansible sleeve to effect expansion of said forming elements and for releasing fluid from said expansible sleeve, spring means for effecting contraction of said forming elements upon release of said pressurized fluid from said sleeve, and limiting means for controlling the maximum expansion of said forming elements.

3,202,496
APPARATUS FOR BENDING GLASS SHEETS WITH HEAT ABSORBERS

James S. Golightly, Fox Chapel, and Harold E. McKelvey, New Kensington, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 30, 1961, Ser. No. 99,629
5 Claims. (Cl. 65—288)

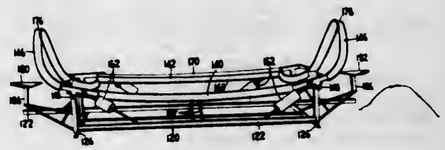


1. A glass bending mold adapted to bend a glass sheet in a hot atmosphere and comprising an upper shaping surface conforming in elevation and outline to the shape of the bent glass sheet, said shaping surface enclosing a relatively flat area portion, and a heat absorbing member of open mesh configuration and of given area and thickness aligned with and spaced from the relatively flat area portion and positioned so as to face a surface of the glass sheet when supported on said shaping surface, said heat absorbing member having a smaller effective surface area than that of a solid member of the same area and thickness by virtue of its open mesh configuration.

3,202,497
GLASS BENDING MOLD WITH A HEAT ABSORBER

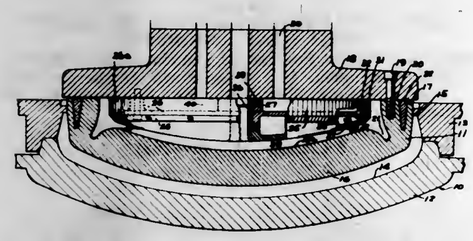
James S. Golightly, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Original application May 16, 1958, Ser. No. 735,736. Divided and this application May 16, 1963, Ser. No. 281,002
8 Claims. (Cl. 65—288)



1. In apparatus for bending glass sheets, an outline type mold comprising a peripheral rail having a curved shaping surface formed thereon for receiving and supporting the marginal portion of a glass sheet bent on said mold, said shaping surface being curved to conform to the curved surface of the bent sheet, a solid heat absorbing member disposed below said shaping surface and occupying a portion of the area below that enclosed within the outline of said shaping surface, said heat absorbing member having a relatively thick portion adjacent said rail and a relatively thin portion, and means for supporting said heat absorbing member in said relation to said shaping rail.

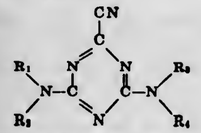
3,202,498
GLASS FORMING PLUNGER
Julius J. Terek, Toledo, Ohio, assignor, by mesne assignments, to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 17, 1961, Ser. No. 110,806
4 Claims. (Cl. 65—362)



1. In an apparatus for forming a glass article having one portion connected to the other by a curved portion of small radius wherein said apparatus includes a mold and a plunger which is moved relative to the mold to press the gob of glass, the internal surface of the mold having a configuration corresponding to the external surface of the article which is to be formed, said plunger having an external surface corresponding to the internal surface of the article to be formed and comprising a base portion and a flange portion connected to said base portion by a sharply curved portion at the area of juncture with the base portion and extending upwardly from the base portion, said plunger having an internal surface and means for circulating a liquid coolant across said internal surface to continuously remove heat and cool the plunger, said plunger being formed with a peripheral groove therein in the inner surface thereof opposite the molding surface thereof at the curved portion, the improvement for eliminating film boiling at the inner surface of the plunger at the groove which comprises means defining a plurality of extended thermally bonded surfaces on the internal surface of the plunger at said peripheral groove, said surfaces extending into the path of the liquid coolant.

3,202,499
HERBICIDAL COMPOSITIONS AND METHOD FOR INHIBITING THE GROWTH OF PLANTS THEREWITH
Enrico Knüsli, Riehen, near Basel, Switzerland, assignor to J. R. Geigy A.-G., Basel, Switzerland
No Drawing. Filed Nov. 1, 1961, Ser. No. 149,170
Claims priority, application Switzerland, Nov. 2, 1960, 12,237/60
10 Claims. (Cl. 71—2.5)

1. Method for inhibiting the growth of plants which comprises bringing into contact with at least a part of the plant, in an amount sufficient to inhibit plant growth, a compound of the formula



wherein R_1 is a member selected from the group consisting of lower alkyl, lower alkoxy(lower)alkyl, lower alkylmercapto(lower)alkyl, lower alkenyl, lower alkenyloxy(lower)alkyl and lower alkenylmercapto-(lower)alkyl, and

R_2, R_3 and R_4 independently of each other represent a member selected from the group consisting of hydrogen, lower alkyl, lower alkoxy(lower)alkyl, lower alkylmercapto(lower)alkyl, lower alkenyl, lower alkenyloxy(lower)alkyl and lower alkenylmercapto-(lower)alkyl.

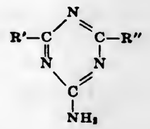
3,202,500
1:1-ETHYLENE-2:2-DIPYRIDYLIUM QUATERNARY SALTS
Ronald Frederick Homer, Wokingham, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed May 2, 1962, Ser. No. 191,749
Claims priority, application Great Britain, Aug. 25, 1961, 30,742/61
9 Claims. (Cl. 71—2.5)

1. A 1:1′-ethylene-2:2′-dipyridylium quaternary salt having a lower alkyl radical substituent located at a position selected from the 4, 5 and 6 positions of the dipyridylium ion and a second lower alkyl radical located at a position selected from the 4′, 5′ and 6′ positions of the said ion.

6. The method of selectively controlling grass species which comprises applying thereto a herbicidally effective amount of a 1:1′-ethylene-2:2′-dipyridylium quaternary salt having a lower alkyl radical substituent located at a position selected from the 4, 5 and 6 positions of the dipyridylium ion and a second lower alkyl radical located at a position selected from the 4′, 5′ and 6′ positions of the said ion.

3,202,501
ANTICAKING AGENTS
Johan Birger Pettersson, Ola Aksens, Tore Natvig Jacobsen, and Leif Hammer, Ljungaverk, Sweden, assignors to Stockholms Superfosfat-Fabriks Aktiebolag, Stockholm, Sweden, a company of Sweden
Filed Mar. 12, 1963, Ser. No. 264,725
8 Claims. (Cl. 71—28)

1. A novel composition comprising an admixture of a predominant amount of a pulverulent material consisting of discrete particles which normally has a tendency to cake, said discrete particles being coated with a very small amount of an anticaking agent characterized by the formula:



wherein:

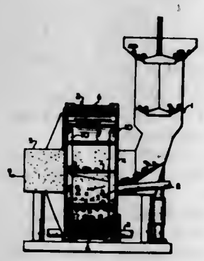
R_1 is selected from the group consisting of R, NHCOR and NHR;

R″ is selected from the group consisting of R, NHCOR, NHR, NH_2, OH and COOR;

R is an alkyl group having 8–20 carbon atoms.

3,202,502
PROCESS FOR THE COMMINUTION OF SILICEOUS IRON ORES
John Barry Lean, Mayfield, New South Wales, and Howard Knox Worner, New Lambton, New South Wales, Australia, assignors to The Broken Hill Proprietary Company Limited, Newcastle, New South Wales, Australia, a corporation of Victoria
Filed Dec. 11, 1961, Ser. No. 158,238
Claims priority, application Australia, Dec. 16, 1960, 67,633/60
2 Claims. (Cl. 75—1)

1. Process for the high temperature autogenous grinding of ores, which comprises tumbling and autogenously grinding lump iron ore in a grinding drum fitted with lifters and rotated at speeds within about 30% of the critical speed of the drum while maintaining a sufficient layer of ore on the inner circumference of the drum to afford protection of the drum surface against wear and chemical action and provide a heat insulating medium,



concomitantly providing the ore in the grinding drum with a chemically active atmosphere, and maintaining the temperature within the drum between 200° C. and 1300° C.

3,202,503
PRODUCTION OF HIGH QUALITY STEEL FROM IRON SAND
Tetsuo Shimamura and Kiyoshi Sasagawa, both of Tokyo, Japan, assignors to Yawata Iron & Steel Co., Ltd., and Tokoku Denka Kogyo Kabushiki Kaisha, Tokyo, Japan, both corporations of Japan
No Drawing. Filed May 1, 1961, Ser. No. 106,514
Claims priority, application Japan, July 5, 1960, 35/30,529
1 Claim. (Cl. 75—38)

In a process for making high quality steel from iron sands by making pig iron from said iron sands and refining the pig iron in an oxygen top blowing converter to produce high quality steel, the steps of (1) charging a rotary kiln with titanium containing iron sand and a reducing agent and heating the so-obtained mixture at a temperature of from 1,000 to 1,250° C. thereby producing partially reduced iron having a rough surface and porous structure and concomitantly reducing said iron sands until sponge iron containing 20 to 40% metallic iron and up to 5% Fe_2O_3 is produced and (2) charging an electric smelting furnace with said sponge iron together with additional reducing agent and flux, and refining said sponge iron to produce pig iron containing at least 3.89% carbon which is convertible to high quality steel.

3,202,504
PROCESS FOR REFINING AND IMPROVING THE QUALITY OF STEEL AND OTHER FERROUS METALS
Heber J. Hamlet, 6915 SE. 66th Ave., and Loyal H. McCarthy, 809 American Bank Bldg., both of Portland, Oreg.
No Drawing. Filed Aug. 7, 1961, Ser. No. 129,531
7 Claims. (Cl. 75—53)

1. A method for manufacturing steel and other ferrous metals, consisting of (1) charging the furnace with enough of the metal being melted to entirely cover the floor of the furnace; (2) placing on top of the metal then in the furnace, for each square foot of area in the plane of the slag line, one and one-third pounds of lava alone; (3) charging the furnace with the remainder of the metal to be melted; (4) melting the metal to a flux or fluid state and then charging the furnace on top of the melted metal with two-thirds of a pound of lava alone for each square foot of area in the plane of the slag line; (5) adding alloying elements for producing a metal of the desired characteristics and quality in the final product.

3,202,505
METHOD OF MANUFACTURING TUNGSTEN FROM AMMONIUM PARATUNGSTATE
Pieter van den Berg, Thomas Antonius Cornelis Jacobs, and Arnoldus Wilhelmus Joseph Verheijen, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 10, 1962, Ser. No. 208,811
Claims priority, application Netherlands, July 17, 1961, 267,184
2 Claims. (Cl. 75—84)



1. A method of manufacturing tungsten metal from ammonium paratungstate with the use of potassium silicate as a dope, comprising the steps reducing the ammonium paratungstate to ammonium tungsten bronze by heating it from 400° to 600° C. in a reducing atmosphere until a bronze having at least an ammonia content of 0.5% by weight has formed, adding the dope and heating the resultant mixture in a reducing atmosphere to thereby reduce the bronze to tungsten.

3,202,506
HIGH-TEMPERATURE OXIDATION-RESISTANT COBALT BASE ALLOYS
David E. Deutsch, Walnut Creek, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Jan. 23, 1963, Ser. No. 253,511
10 Claims. (Cl. 75—171)

1. A cobalt base alloy consisting essentially of 15 to 24% by wt. of chromium, 6 to 12% by wt. of tungsten, up to a maximum of 12% by wt. of at least one material selected from the group consisting of tantalum, niobium and molybdenum, 0.30 to 1.25% by wt. of carbon, 0.05 to 2.5% by wt. of yttrium and the remainder being cobalt.

3,202,507
PHOTOGRAPHIC METHOD USING A LIGHT SENSITIVE VISIBLE IMAGE-BEARING MASKING LAYER WHICH INCLUDES AN ANTI-HALATION LAYER
Robert H. Sprague, Chagrin Falls, and John A. Stewart, Parma, Ohio, assignors to Horizons Incorporated, a corporation of New Jersey
No Drawing. Filed Nov. 22, 1961, Ser. No. 154,331
3 Claims. (Cl. 96—27)

1. A method of diminishing fogging of ultraviolet sensitive masters when making diazo prints from said masters which comprises

providing a photographic element to be used as the master, said photographic element comprising in combination a photographic support layer, a photosensitive composition layer coated on one side of said support layer and an ultraviolet absorbing layer coated on the opposite side of said support layer, said photosensitive composition consisting essentially of an N-vinylamine and a halogen containing organic compound represented by the general formula A—C—X_3 wherein A is selected from the group consisting of H, Cl, Br, I, alkyl, aryl and aralkyl and each X is selected from the group consisting of Cl, Br and I;

preparing a master from said photographic element by photographically exposing the photosensitive composition thereon to a suitable dose of radiation to produce a latent image in said layer;
developing a visible image in said layer by gently heating the same;
and then preventing fogging of said masters during the making of diazo prints from said masters by positioning said photographic element during the exposure used for the making of diazo prints so that the ultraviolet absorbing layer is positioned between said image bearing layer and the illumination provided for making said diazo prints.

3,202,508
IMAGE PHOTOPOLYMERIZATION TRANSFER PROCESS

Robert Bernard Heiart, Middletown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

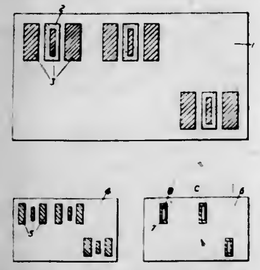
No Drawing. Filed July 13, 1961, Ser. No. 123,651
17 Claims. (Cl. 96—28)

1. In a process for reproducing an image at normal atmospheric conditions and room temperature from a stratum of a photopoylmerizable composition having a stick temperature below 30° C. and comprising a non-gaseous ethylenically unsaturated compound containing at least one terminal ethylenic group having a boiling point above 100° C. at normal atmospheric pressure and being capable of forming a high polymer by free-radical initiated, chain-propagating addition polymerization, which process comprises (1) exposing said stratum imagewise with actinic radiation, (2) pressing the resulting exposed surface of said stratum with the surface of an image-receptive support and (3) separating the two surfaces whereby an image corresponding to the underexposed image areas is transferred to the surface of the image-receptive support; the improvement comprising placing a removable cover sheet in intimate contact with said stratum prior to the exposing step, said cover sheet being capable of uniformly transmitting actinic radiation and having low permeability to oxygen, and removing said cover sheet after exposure and prior to said pressing step (2).

3,202,509
COLOR PHOTOENGRAVING TECHNIQUES FOR PRODUCING CONDUCTOR DEVICES

Cyril Francis Drake and Raymond Harry Hutchins, London, England, assignors to International Standard Electric Corporation, New York, N.Y.

Filed Oct. 27, 1960, Ser. No. 65,323
Claims priority, application Great Britain, Dec. 24, 1959, 43,887/59
9 Claims. (Cl. 96—36)



1. A method of producing a plurality of masks having cut-out portions which will be in register when the masks are superposed which comprises:
(a) constructing a master drawing having regions in different colours each corresponding in shape to a different one of said cut-out portions, said regions being on a black background;
(b) photographing said drawing on coloured film, whereby said regions appear on said film in their respective colours with the background opaque;
(c) producing a plurality of further photographs from said coloured film each containing opaque regions corresponding to the regions of a particular colour but no other region, the background being transparent, said further photographs being exactly the same size and capable of exact registration;
(d) providing a plurality of thin metal sheets, one for each further photograph;
(e) coating said sheets with a light-sensitive material whose resistance to a developer is increased by the action of light;
(f) exposing said sheets, thus coated, to light through respective ones of said further photographs, whereby in each case the regions corresponding to the opaque regions on the further photographs will be unaffected, while the resistance to the developer of the background is increased;
(g) treating the sheets with developer to remove the unexposed parts of the light sensitive layer; and
(h) etching away the portions of the sheets from which the light sensitive layer has been removed, leaving holes through the sheets corresponding in shape to the original respective colour regions on said drawing.

3,202,510
PRODUCTION OF ENCAPSULATED LIGHT-SENSITIVE DIAZOTYPE COMPOSITIONS AND COATINGS

Walter G. Hollmann, Deerfield, Ill., assignor to The Frederick Post Co., Chicago, Ill., a corporation of Illinois

No Drawing. Filed July 11, 1961, Ser. No. 123,103
12 Claims. (Cl. 96—75)

1. A light-sensitive diazotype composition in a dry coat on a carrier base comprising all the ingredients which together effect the formation of an image at an elevated temperature, including a solid light-sensitive diazo compound and a solid coupling agent therefor, at least one of the ingredients being encapsulated finely divided particles thereof within shells of normally solid film-forming material which melts at said elevated temperature.

3,202,511
PHOTOGRAPHIC LAYERS SUITABLE FOR THE SILVER DYESTUFF BLEACHING PROCESS

Rudolf Mory, Dornach, and Helmut Boehl, Bottmingen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Feb. 1, 1962, Ser. No. 170,495
Claims priority, application Switzerland, Feb. 15, 1961, 1,808/61
11 Claims. (Cl. 96—99)

1. A photographic layer for the silver dyestuff bleaching process, which contains silver halide and at least one complex copper compound of a monoazo pigment that corresponds to the formula

$$\begin{array}{l}(CO)_{n-1}-OH\\ |\\ R_1-N=N-Py\end{array}$$

in which R_1 represents a radical selected from the group consisting of a benzene and a naphthalene radical to which the group

$$-(CO)_{n-1}-OH$$

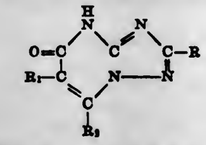
is bound in a position vicinal to the azo group, Py represents the radical of a 5-pyrazolone bound in 4-position to the azo group, and n represents a whole number of at the most 2.

3,202,512
PHOTOGRAPHIC SILVER HALIDE EMULSIONS STABILIZED WITH TETRAZAINDENE COMPOUNDS

Leslie Alfred Williams, Woolstone, Middlesex, England, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 23, 1962, Ser. No. 175,283
12 Claims. (Cl. 96—109)

1. A photographic silver halide emulsion containing a stabilizing amount of a compound selected from those represented by the following general formula:



wherein R represents a member selected from the class consisting of amino, methylamino, mercapto, methylmercapto and ethylmercapto, R_2 represents a member selected from the class consisting of a hydrogen atom and a lower alkyl group, R_1 represents a member selected from the class consisting of a hydrogen atom, a carboxyl radical and a carbalkoxyl radical containing from 2 to 5 carbon atoms.

3,202,513
PHOTOPOLYMERIZABLE COMPOSITIONS CONTAINING STANNOUS SALTS OF ACIDS AND ELEMENTS PRODUCED THEREFROM

Glen Anthony Thommes, Red Bank, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 3, 1960, Ser. No. 33,638
15 Claims. (Cl. 96—115)

1. A photopolymerizable composition comprising
(1) 10 to 60 parts by weight of a normally non-gaseous, ethyleniclaly unsaturated compound, containing 1 to 4 terminal ethylenic groups, having a molecular weight less than 1500 and a boiling point above 100° C. at normal atmospheric pressure, and being capable of forming a high polymer by photoinitiated addition polymerization,
(2) 0.001 to 10 parts by weight of an addition polymerization initiator activatable by actinic light and inactive thermally below 85° C. that is selected from the group consisting of benzoin, pivaloin; benzoin methyl and ethyl ether, alpha-hydrocarbon-substituted benzoins; benzophenone; uranyl nitrate and anthraquinones;
(3) 40 to 90 parts by weight of a compatible, coherent film-forming, macromolecular organic polymer having a molecular weight greater than 10,000, and
(4) 0.3 to 3.0 parts by weight of a stannous salt of an acid.

3,202,514
ANIMAL FOOD AND METHOD OF MAKING THE SAME

Hovey M. Burgess, Greenwich, Conn., and Robert W. Mellentin, St. Anne, Ill., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed July 15, 1963, Ser. No. 295,604
16 Claims. (Cl. 99—2)

1. A deformable and shape-retaining nutritionally balanced meat-based palatable moist animal food composition of substantially neutral pH of 6.0–8.0 and adapted to be packaged in non-hermetic packaging material without sterilization and stored for long periods without refrigeration comprising a pasteurized matrix of proteinaceous meaty materials and vegetable protein concentrate normally capable of supporting bacteriological growth and having an aqueous solution of water soluble solids including sugar incorporated in said matrix materials in bacteriostatic amount, the moisture level in said composition being less than 30% and greater than 15% by weight thereof and imparting plasticity to the composition, the level of the water soluble sugar solids being greater than 15% and up to 35% by weight of said composition, the weight level of said water soluble solids being greater than that of said moisture and the sugar level constituting a major percent by weight of the water soluble solids, a major proportion by weight of said matrix materials being in a substantially hydrated condition, said aqueous solution being uniformly dispersed throughout said matrix, said composition having an effective level of antimycotic in intimate contact with said matrix materials, whereby the composition is maintained in a mold-free condition.

3,202,515
STABILIZATION OF FOAM IN FERMENTED MALT BEVERAGES

Irwin M. Stone, Staten Island, N.Y., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

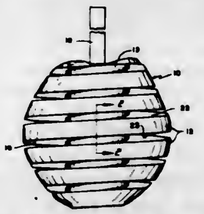
No Drawing. Filed Jan. 10, 1962, Ser. No. 165,726
1 Claim. (Cl. 99—48)

In the method of improving the foam characteristics of malt beverages which comprises adding to said beverages a water soluble zinc compound, the improvement which comprises adding to said beverages a non-toxic chelating agent for zinc which eliminates the astringent taste due to the presence of zinc ions without adversely effecting the beneficial effects of the zinc ions on the foam characteristics of the malt beverages, said chelating agent being selected from the group consisting of glycine, the salts of ethylene diamine tetraacetic acid, N-hydroxyethyl ethylene diamine tetraacetic acid, cyclohexane, 1,2-diamino tetraacetic acid, diethylene triamine penta acetic acid, and sodium glutamate, and being added in an amount ranging from 5% to 80% of the combined weight of water soluble zinc compound and the chelating agent.

3,202,516
COATED APPLE PRODUCT

Westcott N. Veale, Langley, British Columbia, Canada, assignor to Mallet Products Ltd., North Surrey, British Columbia, Canada, a corporation of Canada

Filed Nov. 7, 1961, Ser. No. 150,766
4 Claims. (Cl. 99—138)



1. An edible product comprising an apple of a fairly solid texture, said apple being cut to form a plurality of thin projections attached to and radiating from a central core that can be bitten off said core, said core extending longitudinally of the product and maintaining the projections in spaced relationship and generally lending a degree of rigidity to said product, said thin projections being spaced from each other longitudinally of the core, and the exposed surface of the apple being covered with an edible coating.

2. An edible product as claimed in claim 1 including a handle inserted into the core and projecting outwardly therefrom to form a handle for the product.

3,202,517
ZINC FILLED GALVANIC COATING
Enos D. Jarboe, St. Louis, and William R. Keithler, Kirkwood, Mo., assignors to Plas-Chem Corporation, St. Louis, Mo., a corporation of Missouri
No Drawing. Filed Jan. 15, 1963, Ser. No. 251,492
9 Claims. (Cl. 106—14)

9. A method of preparing a zinc filled liquid galvanic coating composition capable of forming a protective film upon surfaces to which it is applied, comprised of a zinc filler and a liquid vehicle which comprises adding 1 to 2 mols of an amine selected from the group consisting of primary and secondary amines and alkanolamines having a carbon chain length of 1 to 10 carbon atoms to 1 to 2 mols of zinc chloride to form a mixture, adding about 0.025 to 0.1 mol antimony trichloride to the mixture, subsequently adding 0.1 to 1 mol of an alkyl silicate to the mixture to obtain the liquid vehicle, said alkyl silicate having its alkyl groups of a carbon chain length of 2 to 9 carbon atoms and then mixing powdered zinc filler with said liquid vehicle, said vehicle and zinc filler being employed in the ratio of about 1 part vehicle to 2 to 6 parts by weight of zinc filler.

3,202,518
METHOD OF MAKING HIGH SURFACE AREA CERAMICS
Osgood J. Whittemore, Jr., Princeton, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
No Drawing. Filed June 5, 1961, Ser. No. 114,649
5 Claims. (Cl. 106—40)

1. A method of making a porous ceramic material of high surface area comprising firing a mixture of silicate mineral and an acid decomposable carbonate at a temperature above 600° C. and below that of vitrification of the silicate mineral, and acid leaching the fired product whereby the surface area of the fired product is significantly increased.

3,202,519
CARBON-MINERAL REFRACTORY
Carleton B. Scott, Los Alamitos, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Oct. 9, 1961, Ser. No. 143,554
12 Claims. (Cl. 106—56)

1. A refractory composition having a high degree of thermal and mechanical shock resistance consisting essentially of a matrix of metal oxide powders cemented together substantially entirely by vitreous carbon deposited from a hydrocarbon vapor at 900° to 1150° C., said refractory comprising from 5 to about 75 weight percent of said vitreous carbon and being free of vitreous ceramic bonds.

3,202,520
CONCRETE CEMENT COMPOSITION
Charles R. Enoch, King of Prussia, Pa., assignor to Resco Products, Inc., Norristown, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 2, 1964, Ser. No. 348,784
4 Claims. (Cl. 106—85)

1. A concrete cement composition suitable for blending with aggregate to prepare rapid setting concrete which will set within about two hours to yield a non-hygroscopic cast concrete, said composition consisting essentially of a uniform blend of a mixture of a phosphate derived from phosphoric acid and from alumina, and containing from 15 to 55 weight percent of P_2O_5 and from 45 to 75 weight percent of alumina, and from 5 to 18 weight percent of magnesium oxide.

3,202,521
CEMENT COMPOSITIONS AND THE METHOD OF CONTROLLING THE AIR CONTENT THEREOF
Edwin N. Lorenzen, Denver, Colo., assignor to Protex Industries Inc., Denver, Colo., a corporation of Colorado
No Drawing. Filed Sept. 12, 1963, Ser. No. 308,356
10 Claims. (Cl. 106—90)

3. A hydraulic cement mix consisting essentially of hydraulic cement, aggregate, at least enough water to provide for hydraulic setting of the cement and, as an air-detraining agent, up to about 0.3 percent of sodium dioctyl sulfosuccinate based on the weight of cement present in the mix.

3,202,522
CEMENTITIOUS PRODUCT
Julie Chi-Sun Yang, Middlesex, N.J., and Elburt F. Osborn, State College, Pa., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 28, 1961, Ser. No. 162,737
12 Claims. (Cl. 106—99)

1. A fiber reinforced, cementitious article of manufacture of the monolithic, hydrothermal reaction product of autoclaving a hydrated mass of an admixture consisting essentially of:
(a) approximately 12.5%–85% by weight of ground granulated blast furnace slag having a crystalline content of less than about 15% by weight thereof,
(b) approximately 0.25%–32% by weight of calcium silicate having a water solubility providing at least 0.1 gram of CaO per liter and at least 2 mols of CaO per mol of SiO_2,
(c) approximately 0%–75% by weight of silica, and
(d) approximately 0–27.5% by weight of calcium sulfate,
(e) with reinforcing inorganic fiber dispersed throughout said admixture in amount of approximately 5%–50% by weight thereof,
at pressures of at least approximately 50 p.s.i.g. up to approximately 600 p.s.i.g. for periods of at least about 2 hours up to about 36 hours varying proportionately with the pressure.

3,202,523
METHOD AND APPARATUS FOR APPLYING EXPENDABLE PROTECTIVE COATINGS ON FINISHED SURFACES
Ronald P. Steeg, Cuyahoga Falls, Ohio, assignor to Alside Inc., a corporation of Ohio
No Drawing. Filed June 12, 1962, Ser. No. 201,820
9 Claims. (Cl. 106—271)

1. A method of prevention of scratching and marring of the decorated side of a sheet metal article during handling, shipping and erection which comprises the steps of preparing a solution of an admixture of polyethylene glycol and a solvent selected from the group consisting of methanol, toluene and xylene with said polyethylene glycol having a molecular weight of from about 1,000 to not more than about 20,000 and with said glycol being about 4 percent to about 40 percent by weight of said solution; and applying said solution to said sheet metal article; and evaporating the solvent from said solution.

3,202,524
MANUFACTURE OF TITANIUM DIOXIDE
James Thomson Richmond, Grimsby, England, assignor to Laporte Titanium Limited, London, England, a British company
No Drawing. Filed Nov. 10, 1961, Ser. No. 151,438
Claims priority, application Great Britain, Nov. 17, 1960, 39,596/60
14 Claims. (Cl. 106—300)

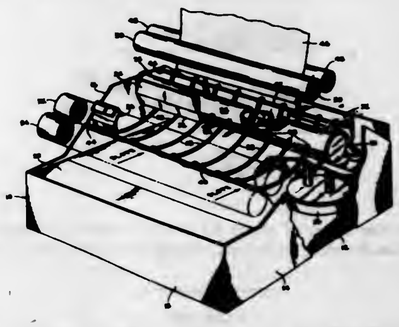
1. A continuous process for the manufacture of titanium dioxide from at least one titanium-containing substance selected from the group consisting of mineral rutile, leucoxene and a concentrate prepared by reacting a titanium dioxide-containing material with a substance selected from the group consisting of hydrochloric acid and hydrogen chloride gas, which comprises performing the following process steps:
(a) incorporating at least one metal oxide selected from the group consisting of magnesium oxide, calcium oxide and zinc oxide with the titanium-containing substance in a quantity such that the molar ratio of the metal oxide to the titanium dioxide content of the titanium-containing substance is at least 2:1,
(b) calcining the mixture of metal oxide and titanium-containing substance at a temperature within the range of from 900° C. to 1,300° C. to form at least one metal titanate,
(c) dissolving the metal titanate in hydrochloric acid to form a solution,
(d) heating to precipitate titanium dioxide,
(e) separating the precipitated titanium dioxide from the solution,
(f) neutralising the remaining solution by incorporating therewith at least one metal oxide corresponding to the metal titanate formed in process step (b),
(g) thermally decomposing the neutralised solution at a temperature within the range of from 200° C. to 900° C. to give steam, hydrogen chloride and the said metal oxide,
(h) recycling at least the greater part of the hydrogen chloride formed to process step (c).

3,202,525
ADDITION OF SEA WATER DURING PRECIPITATION OF SILICA PIGMENT
Oliver W. Burke, Jr., 586 Intracoastal Drive, Fort Lauderdale, and Carey B. Jackson, Pompano Beach, Fla.; said Jackson assignor to said Burke
No Drawing. Filed Oct. 3, 1961, Ser. No. 142,494
14 Claims. (Cl. 106—306)

1. In a process for forming siliceous pigment as a precipitate from an aqueous medium containing sodium silicate, the improvement which comprises
(a) reacting the sodium silicate in the aqueous medium with sea water and acidulating agent to form the pigment,
(b) the sea water being added to the aqueous medium in the proportion of from about one-half liter to about fifteen liters of sea water per mole of alkalinity, calculated as Na_2O, of the sodium silicate, and
(c) said proportion being added to the aqueous medium prior to the completion of the precipitation of the pigment therefrom.

3,202,526
METHOD AND APPARATUS FOR LIQUID DEVELOPMENT OF LATENT IMAGES
Ralph G. Ostensen, Morton Grove, Ill., assignor to SCM Corporation, a corporation of New York
Filed Oct. 5, 1961, Ser. No. 143,086
14 Claims. (Cl. 117—37)

1. In the method of developing a latent electrostatic image placed on a sheet by application of a liquid developer on the sheet, the improvement comprising the steps of guiding the sheet containing a latent electrostatic image downwardly toward a developer station; deflecting the leading edge of the sheet upwardly by guide means solely contacting the lower surface of the sheet to thereby provide a curved sheet portion at the developer station having a declivity; evenly distributing the liquid developer as a thin film uniformly across the sheet in a direction perpendicular to its direction of travel only on the upper surface of the declivity of the curved sheet at the developer station by depositing the liquid developer on the sheet surface through gravity fall from a supply means that is spaced from the upper surface of the latent image on the sheet to provide total sheet coverage with a minimum penetration of the liquid



into the upper sheet surface and substantially no contact by the lower sheet surface with said liquid developer; and removing excess liquid from the sheet while the sheet is adjacent the developer station to produce an image on a substantially dry sheet.

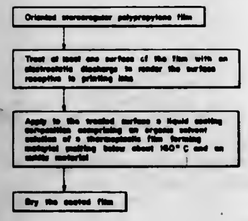
3,202,527
METHOD OF FINISHING
Albert W. Stevens, Indianapolis, Ind., assignor to Lilly Industrial Coatings, Inc., a corporation of Indiana
No Drawing. Filed June 14, 1962, Ser. No. 202,404
1 Claim. (Cl. 117—45)

A method of finishing surfaces to produce a smooth multi-colored effect consisting of:
(a) coating said surface with a pigmented baking enamel
(b) applying a texture coating to said surface while the enamel coating is still wet, said texture coating comprising a plasticizer, a solvent for said enamel coating and a different colored pigment than said enamel coating, said pigment being present in approximately $1/750$ the concentration of pigment in said enamel coating, and
(c) heating said surface to a temperature sufficient to cause thermal setting of both the basic enamel and texture coatings.

3,202,528
HEAT-SEALABLE POLYPROPYLENE FILM AND METHOD FOR PRODUCING SAME
Earl Gordon James, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,253
2 Claims. (Cl. 117—47)

1. The method of producing heat-sealable, oriented, stereoregular polypropylene film comprising treating at least one surface of said film with an electrostatic discharge to render the surface receptive to printing inks, applying to the treated surface a liquid coating composition comprising a solution in an organic solvent of a thermoplastic film-forming material selected from the group consisting of copolymers of vinylidene chloride and acrylonitrile, copolymers of vinyl chloride and vinyl acetate, chlorinated rubbers, nitrocellulose and polyamides and melting at below about 160° C. and an acidic material selected from the group consisting of citric acid, hexachloroendo-

methylene tetrahydrophthalic acid, and the resinous reaction product of α-terpinene and maleic anhydride, said acidic material being present in a compatible amount



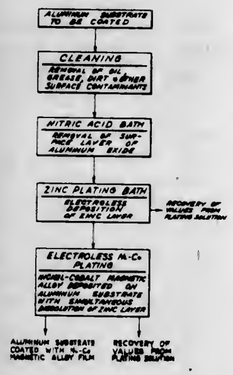
within the range of about 20 to about 60% by weight of the film-forming material, and then drying the coated film.

3,202,529

DISPOSITION OF NICKEL-COBALT ALLOY ON ALUMINUM SUBSTRATES

William N. Dunlap, Jr., and Ernest W. Jones, Philadelphia, and James V. Wright, North Wales, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 8, 1962, Ser. No. 215,735
4 Claims. (Cl. 117—50)



1. A method of depositing a nickel-cobalt alloy film directly onto an aluminum substrate which comprises depositing a layer of zinc on said aluminum substrate by contacting said aluminum substrate with an aqueous alkali metal zincate solution and placing the zinc coated aluminum substrate into the contact with an aqueous nickel-cobalt-containing solution, said nickel-cobalt-containing solution having the composition:

	Gms./1.
$CoCl_2.6H_2O$	60–35
$NiCl_2.6H_2O$	2–25
Rochelle salt	200
NH_4Cl	50
$NaH_2PO_2.H_2O$	20

and effective for the deposition of a nickel-cobalt alloy directly onto said aluminum substrate with the simultaneous dissolution of the zinc coating from said aluminum substrate into said solution to effect deposition of said nickel-cobalt alloy directly upon said aluminum substrate.

3,202,530

METHOD OF FORMING A COMPOSITE METAL ARTICLE

Wade Wolfe, Jr., and James F. Murphy, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Nov. 30, 1961, Ser. No. 156,150
2 Claims. (Cl. 117—50)

1. A method of surface alloying a metal sheet comprising:

(A) providing a copper sheet,

(B) cold working a surface layer of said sheet to impart a metastable formation thereto capable of forming surface alloys with metals deposited thereon,

(C) depositing an alloying element consisting essentially of a metal selected from the group consisting of silicon, titanium, aluminum, chromium, nickel, zinc, tin, lead and gold to said sheet while said surface layer thereof is in said metastable state within four hours of said cold working,

(D) maintaining intimate contact between said sheet and said alloying element while simultaneously continuing said deposition of said alloying element until said element has alloyed with said sheet to the desired depth.

3,202,531

METHOD OF COATING STEEL SURFACE WITH ALKALI SILICATE AND ZINC DUST

James Patrick Dowd, Houston, Tex., assignor to Napko Corporation, Houston, Tex., a corporation of Texas

No Drawing. Filed July 27, 1962, Ser. No. 213,034
2 Claims. (Cl. 117—62)

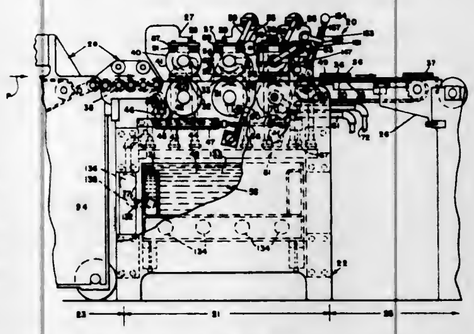
1. The method of curing a coating on a steel surface, said coating consisting of the dried film of an alkali silicate and zinc dust, which comprises applying to said coating, the reaction product of phosphoric acid and propylene oxide wherein the mole ratio of propylene oxide is between 0.25 and 0.55 to one mole of phosphoric acid.

3,202,532

GLOSSY COATING MACHINE AND METHOD

Raymond A. Labombarde, Lowell Road, Nashua, N.H.

Continuation of application Ser. No. 69,055, Nov. 14, 1960. This application May 13, 1964, Ser. No. 369,654
36 Claims. (Cl. 117—64)



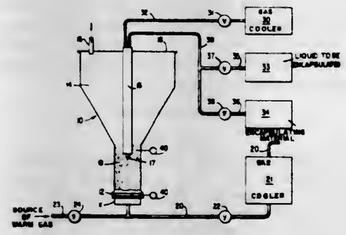
26. A method for producing a high gloss finish on a plurality of flat paper box blanks advancing individually and successively along a path into the nip of a pair of opposed rolls, with a wet, slippery hot melt coating on one face thereof, one said roll having a hard smooth metal face and the other said roll having a yieldable rubber face, said method comprising the steps of simultaneously reverse roll coating a layer of said hot melt coating composition onto the other face of each successive blank from said rubber faced roll at said nip, thereby tending to urge said blanks rearwardly on said path, while chilling said hard, smooth faced roll at said nip and rotating same forwardly to harden the said wet, slippery hot melt coating on the said one face of each successive blank and advance the said blank through said nip.

3,202,533

METHOD OF ENCAPSULATING LIQUIDS

George F. Sachsel, Worthington, and Herman Nack, Columbus, Ohio, assignors, by mesne assignments, to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 24, 1962, Ser. No. 212,056
8 Claims. (Cl. 117—72)



1. A method for encapsulating liquids comprising forming discrete frozen core particles of the liquid, fluidizing a bed of said frozen core particles and coating said frozen core particles with a continuous solid film of encapsulating material while said frozen core particles are in a fluidized condition.

3,202,534

PROCESS AND COMPOSITION FOR THE AFTER-TREATMENT OF PHOSPHATE COATINGS

Eduard Dach, Frankfurt am Main, Willy Herbst, Hofheim, Taunus, Fritz Rochlitz and Hans Scherer, Frankfurt am Main, and Herbert Vilcsek, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 28, 1961, Ser. No. 134,115
Claims priority, application Germany, Aug. 30, 1960, F 31,999
7 Claims. (Cl. 117—75)

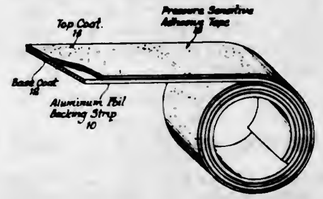
1. A process for improving the corrosion protection of phosphatized metal surfaces, which process comprises after-treating said phosphatized metal surfaces at a temperature from about 4° C. to about 70° C. for a period of from about 3 seconds to about 3 minutes with a solution containing a total of from about 0.008 percent by weight to about 2 percent by weight of at least one alkene phosphonic acid selected from the group consisting of vinyl phosphonic acid, propene-2,3-phosphonic-1-acid and propene-1,2-phosphonic-1-acid, and of at least one polymer selected from the group consisting of polyvinyl phosphonic acid, copolymers of vinyl phosphonic acid, copolymers of an acid derivative of vinyl phosphonic acid which derivative contains only one free hydroxyl group at the phosphorus atom per monomer unit, polyacrylic acid, and a copolymer of vinyl methyl ether and maleic anhydride, the comonomeric component of said copolymers of vinyl phosphonic acid and of said copolymers of said acid derivative of vinyl phosphonic acid comprising at least one substance selected from the group consisting of acrylic acid, acrylic acid alkyl esters, methacrylic acid, vinyl acetate, and acrylonitrile, the weight ratio of said monomeric alkene phosphonic acid to said polymer being between 98:2 and 20:80, and finally drying said metal surfaces.

3,202,535

THERMALLY STABLE PRESSURE-SENSITIVE ADHESIVE TAPE AND METHOD FOR MAKING SAME WITH PLURAL SILICONE COATINGS

Raymond A. Gaynes, Oak Lawn, Ill., assignor to Mystik Tape, Inc., Chicago, Ill., a corporation of Illinois

Continuation of application Ser. No. 746,746, July 7, 1958. This application Jan. 22, 1964, Ser. No. 339,527
10 Claims. (Cl. 117—75)



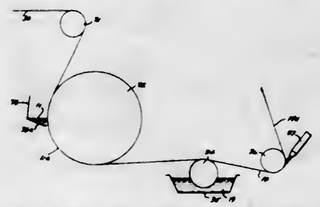
1. An article of manufacture comprising: a backing formed of aluminum foil; an intermediary coating adherently disposed upon said backing and comprising a heat-cured reaction product of a formulation consisting by weight of 100 parts of an organo-silicon polymeric resin and from 0.1 to 5 parts of an accelerator selected from the group consisting of benzoyl peroxide, 2,4-dichlorobenzoyl peroxide, and tertiary butyl perbenzoate; and a pressure-sensitive adhesive layer adherently formed upon said intermediary coating and comprising the heat-cured reaction product of a formulation consisting by weight of 100 parts of an organo-silicon polymeric resin, from 0.1 to 4 parts of an accelerator selected from the group consisting of benzoyl peroxide, 2,4-dichlorobenzoyl peroxide and tertiary butyl perbenzoate and from 5 to 20 parts of a filler selected from the group consisting of titanium dioxide, hydrated alumina, zinc oxide, silicon oxide, asbestos, and calcium carbonate, and in which the organo-silicon polymeric resin of each coating is composed of (1) 40–75% by weight of a benzene soluble resin copolymer of SiO_2 units and $R_3SiO_{\frac{1}{2}}$ units wherein R is a group selected from the group consisting of methyl, ethyl, propyl, vinyl and phenyl radicals, at least 90% of the total R radicals being aliphatic, and in which copolymer resin the ratio of $R_3SiO_{\frac{1}{2}}$ to SiO_2 units is from 0.6:1 to 0.9:1 inclusive, and (2) from 25–60% by weight of a hydroxyl end blocked diorgano-polysiloxane fluid of from 5,000 to less than 1,000,000 cs. viscosity at 25° C. in which polysiloxane the organic radicals are selected from the group consisting of methyl, ethyl, vinyl and phenyl radicals, at least 75% of the total number of radicals being aliphatic.

3,202,536

METHOD AND APPARATUS FOR COATING PAPER

Jerome P. Brezinski, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Nov. 8, 1961, Ser. No. 151,081
10 Claims. (Cl. 117—83)



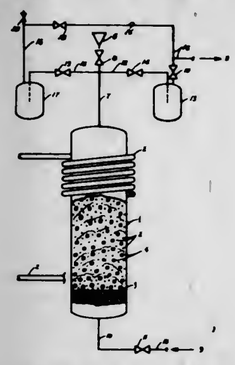
6. A method of double-wet coating one side of a continuously advancing paper web, which comprises the steps of mechanically spreading on one side of said web a first

layer of a liquid coating having a minimum viscosity of 4000 centipoises to fill in surface irregularities on said web and present a smooth outer surface for said first layer, next applying to without substantially intermixing with said smoothly spread first layer while it is wet a second layer of liquid coating having a viscosity of 100 to 1500 centipoises, and apply a jet of air to said coated web to remove only excess of said second layer while it is wet and without substantially intermixing said layers and to leave a residue of said second layer which is of substantially uniform thickness and which presents a smooth outer surface irrespective of irregularities on the original web surface.

3,202,537
METHOD OF METAL PLATING BY FLUIDIZED BED

Vello Nermann, Chapel Hill, N.C., and Hamilton B. Prestridge, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Filed May 1, 1962, Ser. No. 191,480
20 Claims. (Cl. 117—100)

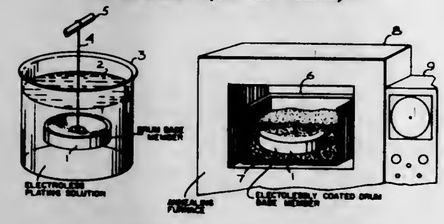


1. A process for plating a substrate with a metal derived from a heat-decomposable carbon-containing metal compound comprising effecting contact between said substrate heated to a temperature sufficient to decompose said compound and a body of said compound existing in the solid state of aggregation while said substrate and said compound are in a constant state of motion induced by a gaseous medium in contact therewith.

3,202,538
MAGNETIC RECORDING DEVICE AND METHOD FOR PRODUCING SAME BY ELECTROLESS PLATING

John C. Beyaert, North Hollywood, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed June 4, 1963, Ser. No. 285,853
17 Claims. (Cl. 117—119.2)



1. A process of producing on a base member a magnetic recording medium having high magnetic retentivity, a coercivity of at least about 200 oersteds and permanent adhesion to said base member, which process comprises the successive steps of:

chemically depositing a smooth amorphous, at least essentially nonmagnetic coating which includes nickel and about 8–11 percent by weight of phosphorus on the surface of a base member by electroless plating,

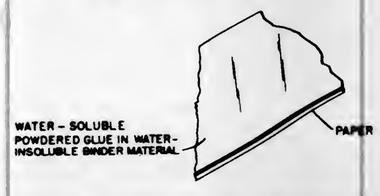
heating said coating to a selected temperature of about 200–400° C. for a time sufficient to substantially convert said coating to a microcrystalline structure, whereby the coercivity thereof is increased to at least about 200 oersteds and the hardness thereof and retentivity thereof are substantially increased so as to permit the use of said coating as a magnetic recording medium, and

then cooling said coating to ambient temperature at a rate not in excess of about 30° C. per hour and sufficiently slow as to prevent substantial deterioration of the magnetic properties produced therein, whereby an essentially smooth and crack-free magnetic recording medium is provided which is permanently bonded to said base member.

3,202,539
NON-CURLING GUMMED PAPER

Frederick W. Holt, Jr., Troy, and John F. Byrne and Robert B. Reif, Columbus, Ohio, assignors, by direct and mesne assignments, to The Brown-Bridge Mills, Inc., Troy, Ohio, a corporation of Ohio

Filed Dec. 17, 1957, Ser. No. 703,323
5 Claims. (Cl. 117—122)



1. A non-curling gummed paper comprising a paper base having adherent thereto a dry non-tacky water-activatable adhesive coating, said coating comprising as a dispersed phase discrete solid particles of water-activatable adhesive which are dispersed in an exterior phase which binds the particles to one another and to the paper, which exterior phase comprises an essentially continuous film of a resinous material in itself insoluble in water, but which taken separately as a dry film has plastic extensibility and low elastic recovery and is capable of absorbing at least about five percent of water.

3,202,540
SEALING STRIP COMPRISING RUBBER BASE COATED WITH RUBBERY CEMENT CONTAINING SILICONE GUM

Donald E. Stare, Donald R. Strack, and Harold J. Reindl, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed May 19, 1960, Ser. No. 30,078
3 Claims. (Cl. 117—138.8)

1. A sealing strip adapted to seal a closure member to a frame member and to be carried by one of said members, said sealing strip being flexed upon each opening and closing movement of the closure member and consisting essentially of a rubbery base taken from the class consisting of natural rubber and polychloroprene, a coextensive slip coat covering the entire external surface of said base, said slip coat consisting essentially of an initially fluid rubbery cement which includes a devolatilized methyl vinyl silicone gum having a very high molecular weight of about 200,000 and containing about .2 mol percent of a vinyl group therein in quantities of about 20% by weight of the rubbery ingredients in the cement and dispersed throughout the slip coat in an uncured condition and adapted to bleed to the surface thereof for enhancing the lubricating qualities of the slip coat.

3,202,541
PROCESS FOR IMPREGNATING FABRICS WITH AQUEOUS POLYMERIC IMPREGNATING COMPOSITION

Jerome Hochberg, Newburgh, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 31, 1960, Ser. No. 53,061
4 Claims. (Cl. 117—140)



1. A process which comprises impregnating a fabric with a composition comprising a water insoluble polymeric impregnant and an aqueous solution of water-soluble, ethylenically-unsaturated gelling agent, polymerizing said gelling agent below about 100° C. to gel the aqueous solution and evaporating water from the resulting product.

3,202,542
RELEASE COATING CONTAINING A POLYORGANOSILOXANE RESIN AND EITHER A POLYORGANOSILOXANE GUM OR A HIGH VISCOSITY POLYORGANOSILOXANE OIL

John A. Poje, Grand Rapids, Mich., assignor to Peninsular Silicones, Inc., Grand Rapids, Mich., a corporation of Michigan

Filed June 6, 1961, Ser. No. 121,290
8 Claims. (Cl. 117—161)

1. A cooking implement having a coat of an intimate mixture consisting essentially of, in parts by weight, about 15 parts of an organosiloxane resin in which there are from 0.95 to 1.9 monovalent hydrocarbon radicals per silicon atom at least 50% of which are methyl radicals, and about 0.05 to 2 parts of a material selected from the group consisting of a polyorganosiloxane oil having a viscosity in excess of about 200,000 centistokes at 25° C. and a polyorganosiloxane gum having a viscosity in excess of about 400,000 centistokes at 25° C. said polyorganosiloxane resin containing from 0.95 to 1.9 monovalent hydrocarbon radicals per silicon atom, said polyorganosiloxane oil containing from about 1.8 to 2.1 hydrogen and hydrocarbon radicals per silicon atom, and said polyorganosiloxane gum containing about two monovalent hydrocarbon radicals per silicon atom.

3,202,543
METHOD OF FORMING A THIN FILM GRID

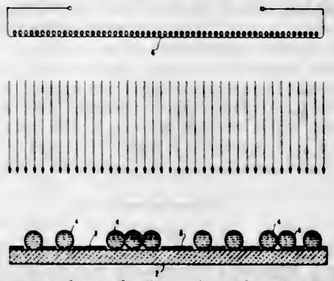
Rudolf E. Thun, West Hurley, and Edward S. Wajda, Kingston, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 1, 1962, Ser. No. 199,450
4 Claims. (Cl. 117—210)

3. A method for making a metallic grid comprising the steps of:

spreading an aqueous dispersion of solvent and of polystyrene spheres onto a suitable substrate, said polystyrene spheres having a diameter of the order of 1000 A. or less;

evaporating said solvent so as to form an apertured mask of polystyrene spheres onto said substrate;



evaporating a predetermined number of molecular layers of metal onto said substrate through said mask; and

removing said spheres after said evaporation of metal has been terminated.

3,202,544
ALKALINE ACCUMULATOR

Wolf E. Vielstich, Bonn, Germany, assignor to The Electric Storage Battery Company, a corporation of New Jersey

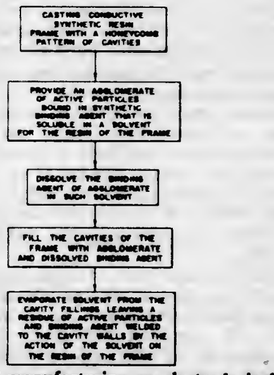
Filed June 2, 1961, Ser. No. 114,426
6 Claims. (Cl. 136—6)

1. An alkaline accumulator for the storage of electrical energy comprising, in combination, a negative electrode of Raney nickel which contains hydrogen, a positive electrode selected from the group consisting of nickel hydroxide and silver oxide, and an alkaline electrolyte.

3,202,545
ELECTRODES FOR STORAGE BATTERIES, FUEL CELLS AND THE LIKE, AND METHOD OF MANUFACTURING SAME

Raymond Emeriat, Paris, France, assignor to Societe des Accumulateurs Fixes et de Traction (Société Anonyme), Romainville, Seine, France, a company of France

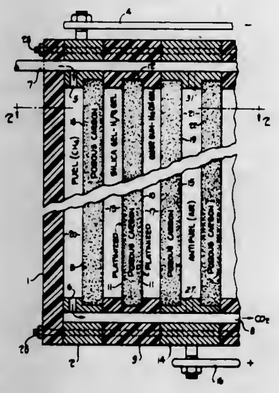
Filed May 15, 1961, Ser. No. 109,925
Claims priority, application France, May 16, 1960, 827,480
4 Claims. (Cl. 136—38)



1. A method of manufacturing an electrode including the steps of forming an electrically conducting supporting frame constituted by a thin rigid plate of polystyrene in-

corporating a conductive medium, said frame having ribs on at least one face, said ribs delimiting cavities disposed according to a substantially honeycomb pattern, providing an agglomerate of active particles bound together by polystyrene as a binding agent, dissolving the binding agent of said agglomerate in a solvent which is also a solvent for said polystyrene constituting the frame, applying said agglomerate containing the dissolved binding agent into the cavities of said frame, and evaporating the solvent of said so applied agglomerate so as to obtain in said cavities after evaporation of the solvent an active portion of residue that is pervious to gases and impervious to liquids comprising numerous small openings through its thickness and which residue adheres to the bottom and the walls of said cavities as a result of action of the solvent prior to evaporation on the synthetic material of the frame.

3,202,546
ELECTROCHEMICAL REACTION APPARATUS
Robert A. Rightmire, Twinsburg, and Philip S. Fay, Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 17, 1961, Ser. No. 103,431
7 Claims. (Cl. 136—86)



1. In an electrochemical reaction apparatus for the production of electrical energy from the electrochemical interaction of two separate, gaseous reactants,

support means,

a pair of porous electrodes carried by said support means in spaced relationship to one another and each of said electrodes being respectively permeable to one of said gaseous reactants, and having exposed external surfaces, and internal surfaces in facing, spaced relationship,

a porous, electrolyte-repellant, electronically-conducting, ion-impermeable barrier having catalytically active surfaces positioned in spaced relationship between said interior surfaces of said electrodes,

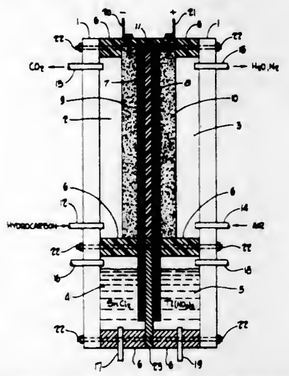
a gelled, aqueous, acidic, ion-containing and conducting medium in contact between said porous electronically conducting barrier and one of said electrodes,

a gelled, aqueous, basic, ion-containing and conducting medium in contact between said porous electronically conducting barrier and the other of said electrodes,

means for supplying said electrochemical reactants respectively to said exposed surfaces of said electrodes,

and means for exhausting products of electrochemical interaction away from said electrodes.

3,202,547
ELECTROCHEMICAL REACTION APPARATUS
Robert A. Rightmire, Twinsburg, Philip S. Fay, Cleveland, Ohio, and Melvin J. Mazurowski, Buffalo, N.Y., assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 4, 1961, Ser. No. 129,423
8 Claims. (Cl. 136—86)



1. In an electrochemical reaction apparatus:

(a) housing means including;

(b) a fuel chamber;

(c) an antifuel chamber;

(d) barrier means for isolating said fuel chamber from said antifuel chamber;

(e) an electron conductor operably supported within said housing means and communicating with the fuel chamber;

(f) a second electron conductor spaced from said first electron conductor and operably supported within said housing means and communicating with said antifuel chamber, said second electron conductor being disposed in confronting relation to said first electron conductor;

(g) a liquid-impermeable ion-exchange membrane isolating said electron conductors from one another;

(h) reservoir means spaced from said electron conductors and adapted to contain liquid ion-containing and conducting medium;

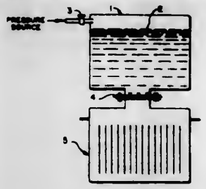
(i) capillary means operably connected between said reservoir means and said electron conductors to provide a reaction interface between the ion-containing and conducting medium and each of said electron conductors, said liquid-impermeable, ion-exchange membrane being effective to isolate said interfaces;

(j) means for supplying fuel and antifuel respectively to said isolated fuel and antifuel chambers; and

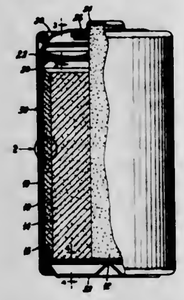
(k) means for exhausting products of electrochemical reaction away from said electron conductors.

3,202,548
RESERVE TYPE ELECTROCHEMICAL BATTERY
Otto T. Adlhart, Orange, and Howard R. Knapp, Red Bank, N.J., assignors to the United States of America as represented by the Secretary of the Army
Continuation of application Ser. No. 67,145, Nov. 3, 1960. This application Aug. 30, 1962, Ser. No. 220,972
1 Claim. (Cl. 136—90)

A reserve type electrochemical battery that can be activated without heating devices in less than one second at temperatures of −70° C., said battery including a container holding a liquid anhydrous ammonia solution of potassium thiocyanate therein, a cell compartment separated from the container by a diaphragm, means for rupturing said diaphragm so that the liquid anhydrous ammonia solution of potassium thiocyanate can enter said cell compartment, and where said cell compartment comprises a magnesium anode and a cathode including an expanded metallic grid structure having a mixture pasted on both sides thereof and wherein said mixture is of a depolarizing compound selected from the group consisting of mercuric sulfate and lead sulfate thoroughly mixed with non-reactive conductive material selected from the group consisting of graphite and carbon black to which organic binder is added, and where the electrodes are separated by a plastic spacer.



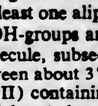
3,202,549
LEAK-RESISTANT DRY CELLS
Lewis F. Urry, Parma, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed May 1, 1961, Ser. No. 106,768
8 Claims. (Cl. 136—132)



1. In a leak-resistant dry cell comprising a cupped container-electrode of a consumable metal having therein a depolarizer mix and electrolyte, the top surfaces of which are disposed below the top open end of said container-electrode, and having a thin shielding layer of a plastic material adhered to the exterior side walls and bottom thereof, and a jacket surrounding said cupped container-electrode and having a top closure locked in liquid-tight engagement therewith, said top closure being disposed over the top open end of said container-electrode and defining a free space above said depolarizer mix and electrolyte; the improvement which comprises the provision of additional thin shielding layers of plastic material adhered to the interior side walls above said depolarizer mix within said free space and to the interior bottom of said container-electrode.

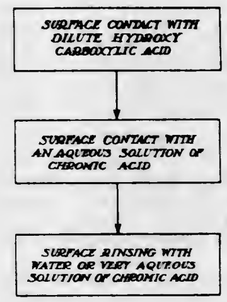
3,202,550
PROCESS FOR DYEING ALUMINIUM OXIDE LAYERS
Hans Grossmann, Oberwil, Basel-Land, and Heinz Keller, Basel, Switzerland, assignors to Durand & Huguenin A.G., Basel, Switzerland, a Swiss company
No Drawing. Filed Aug. 13, 1962, Ser. No. 216,335
Claims priority, application Switzerland, Aug. 16, 1961, 9,593/61
12 Claims. (Cl. 148—6.1)

1. A process for the dyeing of aluminum oxide layers on a metallic base material selected from the group consisting of aluminum and aluminum containing alloys which comprises contacting the said oxide layer with an organic dyestuff which contains at least one substituent group of the formula



wherein A represents a member selected from the group consisting of P, As and Sb.

3,202,551
METHOD FOR PRODUCING ADHERENT COATINGS ON IRON AND STEEL PARTS
Heinz Gerischer, Stuttgart-Vaihingen, Willy Herbst, Hofheim, Taunus, Heinz Ludwig, Frankfurt am Main, Helmut Schaefer, Hofheim, Taunus, and Ernst Wegner, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
Filed Sept. 7, 1962, Ser. No. 222,195
Claims priority, application Germany, Sept. 13, 1961, F 34,918
11 Claims. (Cl. 148—6.2)



1. The method of producing adherent uniform coatings on iron and steel parts, particularly for preventing corrosion and providing adherence of lacquers and varnishes, which method consists essentially of contacting the surface of said metal parts in a first step at a temperature between about 3° C. and about 80° C. with an aqueous solution (I) containing about 0.5% by weight to about 20% by weight of at least one aliphatic hydroxycarboxylic acid with 1 to 3 COOH-groups and having not more than 6 C-atoms in its molecule, subsequently in a second step at a temperature between about 3° C. to about 80° C. with an aqueous solution (II) containing about 0.1% by weight to about 10% by weight of chromic acid, and rinsing the surface of the metal parts thus treated in a third step at a temperature between about 3° C. and about 80° C. with at least one liquid (III) selected from the group consisting of water and an aqueous solution containing chromic acid in a concentration not exceeding 0.08% by weight.

3,202,552
COMBINED HEAT TREATMENT AND LEACHING OPERATIONS FOR THE PRODUCTION OF HOLLOW ARTICLES
John Thexton, Malvern, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 12, 1962, Ser. No. 201,993
Claims priority, application Great Britain, June 30, 1961, 23,791/61
2 Claims. (Cl. 148—13)

1. A process of leaching cored ferrous metal filler from filled passages in a hot worked metal object made of an alloy containing by weight about 13.5% to about 15.75%

chromium, about 10% to about 55% cobalt, about 4% to about 9.5% aluminum, about 0.5% to about 2% titanium with the total of said aluminum plus said titanium not exceeding about 10.5%, about 0.05% to about 0.5% carbon, up to about 10% molybdenum, up to about 10% iron, up to about 0.02% boron, up to about 0.5% zirconium, upto about 5% tungsten, up to about 1% manganese, up to about 2.5% silicon, up to about 2% niobium, up to about 2% tantalum and up to about 3% berryllium

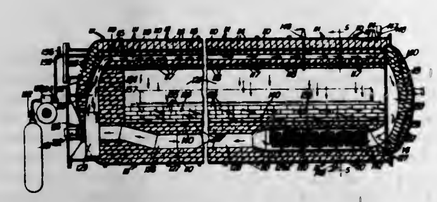


with the balance being essentially nickel, comprising causing carbide phases in the microstructure of said alloy to agglomerate in the grain boundaries thereof by heating said filled hot worked metal object at a temperature of about 1040° C. to about 1080° C. for about 0.5 to about 4 hours, air cooling said filled hot worked metal object to room temperature and thereafter removing the ferrous metal filler therefrom by leaching in a hot, aqueous solution of nitric acid for up to about 100 hours.

3,202,553
METHODS OF HEAT TREATING ARTICLES

Ben Greene, Braefoot Farm, Fossoway, Scotland

Filed Dec. 19, 1960, Ser. No. 76,906
10 Claims. (Cl. 148—20.3)



1. A method of heat-treating articles in which the articles, after being heated by direct exposure to heating means within a furnace chamber, are cooled while still in the furnace chamber by circulation through the furnace chamber of a cooling gas made up of any of the gases hydrogen, helium, nitrogen and argon at a pressure above thirty pounds per square inch absolute.

3,202,554
WELD ARRESTING COMPOSITIONS

Jean-Claude Hornus, Neuilly-sur-Seine, France, assignor to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia

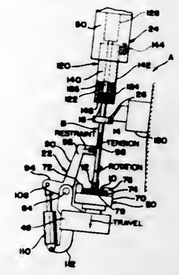
No Drawing. Filed Feb. 7, 1962, Ser. No. 171,559
Claims priority, application France, Feb. 10, 1961, 852,359
3 Claims. (Cl. 148—22)

1. A weld-arresting composition consisting of an aqueous solution containing from 3 to 40% of a finely divided cleavable silicate, from 1 to 25% of a thickener which adjusts the consistency of the composition selected from the group consisting of a synthetic resin and hydrophylic bentonite, and the balance essentially water, said composition being free from corrosive impurities.

3,202,555
APPARATUS AND METHOD OF INDUCTIVELY HARDENING A SHAFT-LIKE MEMBER

Robert G. Armstrong, Chardon, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 260,691, Feb. 25, 1963. This application Sept. 28, 1964, Ser. No. 402,983
2 Claims. (Cl. 148—131)



1. In an induction heating apparatus for surface hardening a steel shaft having first and second ends, said apparatus comprising: a first clamping device for holding said first end, a second clamping device for holding said second end, power means for rotating said clamping devices and said shaft as a unit, an inductor surrounding said shaft, a high frequency power source for energizing said inductor with a high frequency alternating current, drive means for causing relative movement between said rotating shaft and said energized inductor, said relative movement being at a rate sufficient to raise the temperaturen of the surface of said shaft to its hardening temperature and means for progressively quenching said shaft after it has been heated, the improvement comprising: a power means for exerting a force between said first and second clamping means to impose a tensile stress in said rotating shaft of a magnitude below the yield point of said shaft, an abutment positioned adjacent said rotating shaft and near the midpoint between the ends of said shaft and means for shifting said abutment away from said shaft when said inductor is moving along said shaft in the vicinity of said midpoint.

3,202,556
METHOD FOR GELLING WATER-BEARING EXPLOSIVE COMPOSITIONS CONTAINING GALACTOMANNAN GUMS

Joseph D. Chrisp, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 23, 1963, Ser. No. 296,932
14 Claims. (Cl. 149—20)

1. A process for gelling galactomannan gums which comprises mixing water, galactomannan gum, about from 0.05 to 20% by weight, calculated as metal and based on the weight of galactomannan, of at least one crosslinking agent selected from the group consisting of compounds of the metals antimony and bismuth soluble in the system, and base, said gelation being carried out at a pH of about from 6 to 13.

8. In the process for gelling water-bearing explosive compositions containing galactomannan gums with crosslinking agents in situ, the improvement which comprises uniformly incorporating therein about from 0.5 to 20%, calculated as metal and based on the weight of galactomannan, of at least one crosslinking agent selected from the group consisting of compounds of the metals antimony and bismuth soluble in the system, and base, said gelation being carried out at a pH of about from 6 to 13.

3,202,557
BURN INHIBITOR FOR FLUOROCARBON BOUND PROPELLANTS

Martin H. Kaufman, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Mar. 13, 1964, Ser. No. 352,433
5 Claims. (Cl. 149—109)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A burn inhibitor paste for fluorocarbon-containing propellant grains consisting essentially of the following ingredients

(1) a ketone solution of the copolymer of vinylidene fluoride perfluoropropylene, and

(2) a curing agent selected from the group consisting of tetramethylene tetramine, and hexamethylene tetramine.

3,202,558
PROCESS FOR INSULATING AN ELECTRIC COIL

William H. Gottung, Ballston Lake, Edward J. Kelch, Scotia, and Robert W. Stevens, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Dec. 23, 1960, Ser. No. 77,940
2 Claims. (Cl. 156—56)



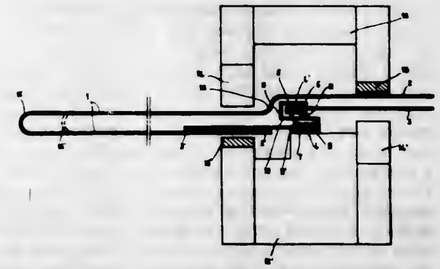
2. The process for insulating an electric coil comprising the steps of placing an insulating compound between adjacent strands comprising the leads extending outwardly from the coil body, applying an initially viscous insulation on the concave sides of the coil end turns to form a convex surface, wrapping a ground insulation on the conductor surfaces of the coil, applying heat and mechanically exerting pressure to the sides of the slot portions of the coil for obtaining partial curing of the insulation and bonding of the layers of insulation to each other and to the conductor surface, enclosing the coil in a closed vessel, and subjecting the insulated coil therein to a pressure and temperature sufficient to obtain the application of force to the insulation on the end portions of the coil, and subjecting the coil to an insulation curing temperature thereby obtaining curing of the insulation.

3,202,559
METHOD OF FORMING PLASTIC BAGS WITH SLIDE FASTENER TAPE ASSEMBLIES WELDED THERETO

Leon Ker Lagoarre, Boulogne-sur-Seine, France, assignor to Ets. NEB, S.A.R.L., Boulogne-sur-Seine, France, a body corporate of France

Filed Dec. 22, 1960, Ser. No. 77,615
Claims priority, application France, Jan. 19, 1960, 816,043
5 Claims. (Cl. 156—66)

1. A method of manufacturing bags made of plastic material provided on their upper edges with slide fastener tapes formed by profiled strips of plastic material provided with longitudinal ribs and grooves having complementary profiled sections, each groove of one strip being aligned with a corresponding rib of the other strip, whereby the ribs and grooves of one strip are engaged by the slide into the grooves and ribs of the other to close the bag and can be separated by said slide to provide the opening thereof, said method comprising the step of providing a continuous film of plastic material, folding said film along a line parallel to its longitudinal axis and situated in the vicinity thereof whereby the free longitudinal edges of said film are shifted laterally with respect to one another so that one edge portion extends beyond the other, laying the said profiled strips in a head to tail position on the inner faces of said shifted edges respectively, pressing and welding a length of the strips on the respective film edges in the said position, displacing the folded film and the strips longitudinally along a distance



equal to the welded length and subsequently welding a new length, whereby the continuous folded film is provided on its edges with continuous fastening strips, thereafter cutting and welding transversely the film provided with fastening strips at regular intervals corresponding to the width of the bags, the transverse weldings being made from the fold forming the bottom of the bag up to the lower edge of the fastening strips, engaging a slide on said strips and firmly connecting both strips together on their ends.

3,202,560
PROCESS AND APPARATUS FOR FORMING GLASS-REINFORCED PLASTIC PIPE

Vesta F. Michael, Wichita, Kans., assignor to Rock Island Oil & Refining Co., Inc., Wichita, Kans., a corporation of Kansas

Filed Jan. 23, 1961, Ser. No. 84,069
14 Claims. (Cl. 156—162)



1. In a process for forming a glass roving-resin pipe, the steps comprising applying a solidifiable coating of low melting point to a pipe form having a center section of magnetic susceptibility, allowing said coating to solidify, applying a coating of curable resin having a higher melting point than that of said solidifiable coating in the cured state to said latter coating, curing the resin coating, applying helical wraps of glass roving under tension along the length of said pipe form over said cured resin coating, said tension being of such magnitude as to cause deformation of said pipe form, said deformation increasing as the pipe form center is approached and decreasing as the pipe form ends are approached, applying additional uncured resin to said helical wraps of glass roving so as to impregnate the same, exerting increasing magnetic forces of attraction on the center section of said pipe form in direct opposition to the deformation forces exerted on said pipe form by said roving wraps as the center thereof is wrapped by said helical wraps, and decreasing said magnetic attractive forces as said pipe form ends are wrapped by said helical wraps of impregnated glass roving, curing the additional

resin impregnating said roving after a pipe of desired thickness has been formed, applying heat to the pipe form interior to melt said coating of low melting point, and removing the pipe from said pipe form.

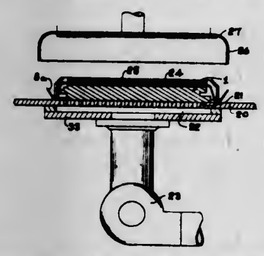
2. In an apparatus for forming a substantially straight, elongate tubular member on a hollow mandrel; said tubular member being formed at least in part from longitudinally disposed roving, and helical wrappings which are wound about said mandrel under such tension along the length of said mandrel as to bend said mandrel, the combination comprising a rotatable mandrel fabricated of material which expands upon heating, mountings for said mandrel engaging opposed end portions thereof, means for applying a helical wrap to said mandrel along the length thereof under such tension as to pull the engaged portions of the mandrel out of longitudinal alignment with the remainder of the mandrel toward the applying means, non-alignment of the engaged portion of the mandrel being at a maximum at said mandrel center and at a minimum at opposed mandrel end limits, a central portion of said mandrel being magnetically attracted, electromagnetic means exerting attractive forces on said magnetically attracted portion in opposition to said forces exerted by the wrap-applying means whereby said mandrel may remain substantially straight in the normal course of apparatus operation, means for energizing said electromagnetic means whereby the same will exert an attractive force on said magnetically attracted means in accordance with the point of engagement of said wrap on said mandrel, anchor means abutting opposed end portions of said hollow mandrel for engaging opposed end portions of longitudinal roving strands, means for applying a heat hardenable material to roving disposed on said mandrel whereby said roving becomes impregnated with said heat hardenable material, and means for heating the interior of said mandrel whereby said mandrel longitudinally expands forcing said anchor means apart thereby increasing the tension in said longitudinal roving strands anchored to said anchor means, the heat applied to the interior of said hollow mandrel by the heating means simultaneously curing said heat hardenable material as said longitudinal strands are under tension.

3,202,561

METHOD FOR MAKING ACOUSTICAL TILE WITH THERMOPLASTIC FILM COVERING

Vernon L. Swanson, Somerville, and William A. Jack, Hampton, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed Mar. 30, 1961, Ser. No. 99,448
6 Claims. (Cl. 156—216)



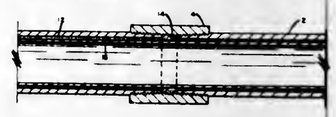
6. A method of forming a cellulosic fibrous acoustical panel comprising forming a plurality of perforations in a surface of the cellulosic panel so as to open the body thereof to better absorption of sound, maintaining the panel with a moisture content less than it would contain under average ambient conditions, and applying a sheet of thermoplastic covering material to the perforated surface and side edges of the panel before the panel reaches an equilibrium moisture condition with the atmosphere adjacent thereto.

3,202,562

METHOD OF INSTALLING A LINER IN A COUPLE-JOINTED CONDUIT

Harold M. Lang, Earl R. Jennings, George C. Howard, and Lawrence B. Wilder, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Nov. 15, 1961, Ser. No. 152,386
2 Claims. (Cl. 156—294)



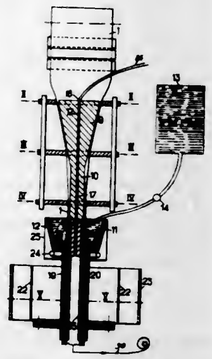
1. A method for preventing the rupture of a thin, collapsible film liner when the latter is placed in a couple-jointed conduit having objectionable irregularities on the inner surface thereof and subjected to elevated pressures, which comprises spreading over said surface a thin layer of a thixotropic substance of grease-like consistency, said layer having a substantially uniform surface whereby said irregularities are covered, thereafter placing said liner in the resulting interiorly coated conduit, and forcing the walls of said liner into substantially complete and continuous contact with said layer.

3,202,563

APPARATUS FOR MAKING REINFORCED FLEXIBLE TUBING

Joseph Charvet, Paris, France, assignor to Societe à responsabilite Limitee: Tuyaux Flexibles Rudolph, Paris, France

Filed May 28, 1962, Ser. No. 198,154
Claims priority, application Belgium, June 2, 1961, 604,544
11 Claims. (Cl. 156—466)



1. Apparatus for manufacturing reinforced flexible tubing in which a tubular reinforcement is obtained from a flat sheet which is continuously supplied and progressively deformed until it has a circular cross-section and is thereafter passed through at least one bath of a material susceptible of furnishing an outer coating for said tubular reinforcement, said apparatus comprising in combination,

a central guide in the form of a cone having a vertically disposed axis,

and at least two spaced annular guides around said conical guide and disposed to provide between said annular guides and said conical guide an annular space allowing the passage of said sheet,

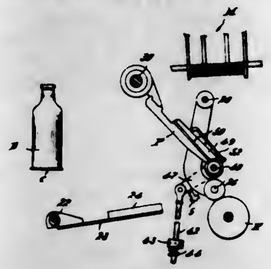
and conventional means for advancing said tubular reinforcement in the direction of said vertical axis formed by said sheet.

3,202,564

MEANS FOR POSITIONING A LABEL RELATIVELY TO A PICKER

Sidney T. Carter, Shrewsbury, Mass., assignor to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin

Filed Mar. 26, 1963, Ser. No. 268,030
26 Claims. (Cl. 156—569)



11. In a labeling machine of the kind in which a two-bladed, gum-coated picker receives labels from a magazine while its blades are closed and carries the label to a transfer station at which the label is taken from the picker by a transfer pad which applies the label to the article to be labeled, the transfer pad being of a width substantially less than that of the label, means for separating the blades after the picker has taken a label from the magazine but before it arrives at the transfer station, in combination, a suction device having suction ports spaced apart a fixed distance which approximates the width of the space between the picker blades when they are fully separated, and means for moving said suction device into contact with the exposed face of the label while the picker blades are still closed and for creating suction at said ports before the picker blades open thereby to prevent lateral motion of the label in one direction or the other from its initial position as the blades separate.

3,202,565

MOLDED BRASSIERES

Billy Loftin, Charlotte, N.C., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

Filed Sept. 27, 1961, Ser. No. 141,172
7 Claims. (Cl. 161—73)



1. A molded brassiere comprising two outer fabric layers and an intermediate fabric layer therebetween, said intermediate layer containing deposits of a bonding agent integral with deposits of the same bonding agent in said outer fabric layers, the concentration of said bonding agent being greatest in said intermediate layer and diminishing in said outer layers in such a manner that the amount of said bonding agent in said outer layers comprises at least about 10% of the amount of said bonding agent present in said intermediate layer.

3,202,566

TUBE BLANK

Milton O. Schur, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Sept. 4, 1962, Ser. No. 221,263
2 Claims. (Cl. 161—102)

1. A blank for conversion into a convolutely wound tube body comprising a web of body stock having a repetitive formation of label indicia on one side thereof, a coating of barrier material on the opposite side of the stock defining a first pattern, a coating of adhesive applied to said opposite side of the stock to define a second



pattern and a ribbon of barrier material activator on said opposite side overlaying said first pattern to define a third pattern, said barrier material extending over and around one edge of said body stock to define a narrow ribbon of barrier material on the label side of said stock.

3,202,567

FLAME RETARDANT FIRE BARRIER CONSTRUCTIONS

Richard L. Muri, Ashland, and Ronald E. Collette, Natick, Mass., assignors to Ludlow Corporation, a corporation of Massachusetts

No Drawing. Filed Sept. 24, 1962, Ser. No. 225,904
3 Claims. (Cl. 161—162)

1. A flame retardant barrier construction characterized by low flame spread and smoke development comprising plies of low burning characteristics selected from the group consisting of metal foil, plastic film, and paper, which plies are adhered together with a non-burning laminant which liberates fire extinguishing products under combustion conditions comprising, an intimate blend of vinyl acetate homopolymer, a tackifier selected from the group consisting of sulfonamide-formaldehyde, urea-formaldehyde and melamine-formaldehyde resins, a filler selected from the group consisting of titanium dioxide, clay, talc, calcium carbonate, calcium silicate, magnesium carbonate, dolomitic limestone and mixtures thereof and a plasticizer adapted to evolve hydrogen halide rapidly at flaming temperatures selected from the group consisting of tris-beta-chloro ethyl phosphate, tris-dichloro propyl phosphate, tris-chloro bromo propyl phosphate and tris-dibromo propyl phosphate.

3,202,568

SAFETY GLASS AND ITS PRODUCTION

Emile Clement Cottet, Lyon, Henri Rhety, Venissieux, and Aime Louis Rocher, Ste. Colombes-les-Vienne, France, assignors to Societe des Usines Chimiques Rhone-Poulenc, Paris, France, a French body corporate

No Drawing. Filed Mar. 8, 1961, Ser. No. 94,165

Claims priority, application France, Mar. 31, 1960, 823,025

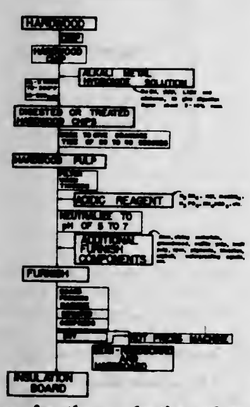
12 Claims. (Cl. 161—193)

1. Safety glass comprising a reinforcing sheet of a plasticized polyvinyl butyral composition containing 0.5% to 2.5% of its weight of an orthosilicic acid ester of an organic hydroxy compound having at least 3 carbon atoms in the molecule the said sheet being interposed between and adhering to two glass sheets.

3,202,569
COLD CAUSTIC FIBERBOARD MANUFACTURE

William G. Cogan, Charlotte, N.C., and Gilbert Godin, Millington, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed June 22, 1961, Ser. No. 118,883
11 Claims. (Cl. 162—13)



1. A process for the production of wood fiberboard comprising the steps of digesting hardwood chips in a 2.5%–10%, by weight, caustic solution for about ¼ to 2 hours at about 70° F.–200° F. and at a pressure in the approximate range of from atmospheric pressure to 300 p.s.i.g., separating the digested chips from the body of the digesting liquor, refining the digested chips into a fibrous mass, neutralizing the separated fiber mass, forming a furnish comprising the refined fibers, forming a fibrous mat from said furnish by applying portions of the furnish to a foraminous support and partially dewatering the furnish on said support, sufficient furnish being applied per area of support to create a partially dewatered web having a thickness of at least about ½ inch, and then compressing said partially dewatered board to remove further water therefrom and to increase the density thereof.

3,202,570
METHOD OF FORMING A FIBERBOARD CONTAINING A FIRE-RETARDANT HYDRATED BORATE AND PRODUCT THEREOF

Otis R. Videen, Cloquet, Minn., assignor to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed June 12, 1961, Ser. No. 116,301
12 Claims. (Cl. 162—159)

1. A fiberboard comprising essentially a combustible fiber content and a fire-retardant particulate content of hydrated borate salt having the general formula

$$aMO \cdot bB_2O_3 \cdot cH_2O$$

wherein MO includes from 10 to 30 moles of CaO per 30 moles of B_2O_3 and wherein there are from 40 to at least 180 moles of H_2O per 30 moles of B_2O_3.

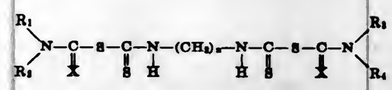
11. In a method of forming a rigid porous fire-retardant board comprising forming a slurry of combustible vegetable fibers and an excess of a retainable fire-retardant quantity relative to said fibers of finely divided particles of a composition of boron oxide, dewatering said slurry to form a mat, and drying said mat to a rigid porous board, the improvement wherein said composition is substantially insoluble in water during the formation of the slurry and the dewatering and drying thereof, and contains hydrating water of constitution resistant to loss during said drying of the mat.

3,202,571
NEW FUNGICIDAL COMPOUNDS

Krijn van den Boogaart, Vlaardingen, Netherlands, assignor to Fabriek Van Chemische Producten Vondelingenplaat N.V., Rotterdam, Netherlands, a corporation of the Netherlands

No Drawing. Filed Dec. 29, 1959, Ser. No. 862,468
Claims priority, application Netherlands, Apr. 15, 1959, 238,098
8 Claims. (Cl. 167—22)

7. A method of controlling fungi on materials subject to attack by fungi, comprising treating said material with a fungicide comprising at least one compound having the formula



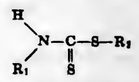
in which R_1, R_2, R_3 and R_4 represent alkyl having from 1 to 10 carbon atoms, X represents an atom selected from the group consisting of oxygen and sulfur atoms, and n is an integer from 2 to 3.

3,202,572
AGENT FOR COMBATING NEMATODES

Horst Werres and Heinz-Eberhard Freund, Berlin-Charlottenburg, and Ernst-Albrecht Pieroh, Berlin-Hermsdorf, Germany, assignors to Schering AG, Berlin, Germany

No Drawing. Filed Dec. 13, 1960, Ser. No. 75,467
Claims priority, application Germany, Dec. 15, 1959, Sch 27,135
15 Claims. (Cl. 167—30)

1. A method for combating nematodes attack of plants, which comprises applying to the earth in the area in which the plant grows a compound of the formula:



wherein R_1 is selected from the group consisting of halogen-substituted phenyl and halogen-substituted alkylphenyl wherein the alkyl is a lower alkyl, and wherein R_2 is selected from the group consisting of alkyl, lower alkenyl, phenyl, alkylphenyl wherein the alkyl is a lower alkyl, and nitro-, halogen- and amino-substituted alkyl, lower alkenyl, phenyl and alkylphenyl in an amount of at least 50 mg. per liter of earth.

3,202,573
PROPARGOXYPHENYL N-METHYLCARBAMATES AND THEIR USE AS PESTICIDES

Albert H. Hamstra, Newark, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 31, 1961, Ser. No. 113,673
6 Claims. (Cl. 167—30)

1. A propargoxyphenyl N-methylcarbamate.

6. The method of killing insects which comprises contacting insects directly and indirectly with a propargoxyphenyl N-methylcarbamate.

3,202,574
GUAR SEED-BORIC ACID OR -BORAX EMBALMING COMPOSITION AND METHOD

Julius F. T. Berliner, Chicago, Ill., assignor to Meser Paper Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed July 12, 1963, Ser. No. 294,740
4 Claims. (Cl. 167—49.5)

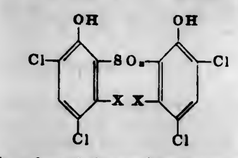
1. A composition for filling dead body cavities, comprising flour of guar seed, borax powder, and inert powdered filler; the proportion of filler to guar seed being from about 20–1 to 4–1, and the proportion of borax to guar seed being from about 0.25 percent to 7 percent.

3,202,575
COMPOSITION FOR TREATING FASCIOLIASIS AND METHODS OF TREATMENT

Willem Kruyt, Haarlem, Samuel van der Meer, Amstelveen, and Hendrik Pouwels, Amsterdam, Netherlands, assignors to N.V. Nederlandsche Combinatie voor Chemische Industrie, Amsterdam, Netherlands, a limited-liability company of the Netherlands

No Drawing. Filed Apr. 2, 1963, Ser. No. 269,861
Claims priority, application Netherlands, Apr. 5, 1962, 276,860, 276,861; Feb. 28, 1963, 289,630
5 Claims. (Cl. 167—53)

1. A method of treating animals infected with fascioliasis, consisting essentially in orally administering to an animal infected with fascioliasis therapeutically effective amounts of an anthelmintic composition having, as its essential active component, a chlorinated bisphenol of the formula:



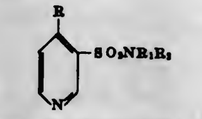
in which X is selected from the group consisting of hydrogen and chlorine, and n has a numerical value of 1, when X represents hydrogen, and a numerical value in the range from 1 to 2, when X represents chlorine.

3,202,576
ANTICOCCIDIAL COMPOSITIONS AND METHODS OF USING SAME

Edward F. Rogers, Middletown, and Robert L. Clark, Woodbridge, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed May 31, 1963, Ser. No. 284,376
16 Claims. (Cl. 167—53.1)

1. An anticoccidial composition comprising an animal feedstuff having dispersed therein a 3-pyridine sulfonamide of the formula



where R is selected from the class consisting of hydrogen and methyl, and R_1 and R_2 are each selected from the class consisting of hydrogen and lower alkyl.

3,202,577
PROCESS OF TREATING DIARRHEA WITH RESINS

Richard Louis Markus, Montclair, N.J., assignor to White Laboratories, Inc., Kenilworth, N.J., a corporation of New Jersey

No Drawing. Filed May 25, 1962, Ser. No. 197,568
8 Claims. (Cl. 167—55)

1. The process of treating diarrhea in humans which comprises the oral administration to a person suffering from diarrhea of dosage units of a loosely cross-linked swellable resin, which resin consists essentially of a polymer of an ethylenically unsaturated carboxylic acid cross-linked with about 0.01 to 2.0 percent by weight of a cross-linking agent, wherein the monomer of the said carboxylic acid is capable of both homopolymerization and copolymerization, and wherein the cross-linking agent is an aliphatic compound having at least 6 carbon atoms in the chain, and at least two double bonds, separated by at least two carbons atoms, in the chain at the terminal carbon atoms thereof, and wherein the cross-linking agent is capable of forming a solution with the monomer of the said carboxylic acid.

3,202,578
POLYMERIC LAXATIVE COMPOSITION AND METHOD OF USING SAME

Howard E. Parker, Bryan, Ohio, assignor to Paul B. Elder Company, Bryan, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 27, 1957, Ser. No. 686,600
13 Claims. (Cl. 167—56)

1. The method for treating constipation in humans comprising orally administering an effective amount of a composition consisting essentially of a compound having the formula:

$$HO(C_2H_4O)_a(C_3H_6O)_b(C_2H_4O)_cH$$

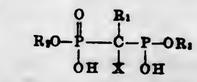
wherein the mol-weight of the (C_2H_4O) groups is 10% to 90% of the polymer and b is an integer between about 25–32.

3,202,579
PHOSPHINIC ACID DERIVATIVES FOR PROTECTION OF HAIR FROM DAMAGE IN BLEACHING AND DYEING THE SAME

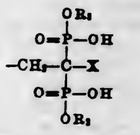
Peter Berth, Duesseldorf-Benrath, and Günter Reese, Duesseldorf, Germany, assignors to Therachemie Chemisch Therapeutische Gesellschaft m.b.H., Duesseldorf, Germany

No Drawing. Filed Sept. 19, 1963, Ser. No. 310,165
Claims priority, application Germany, Mar. 2, 1963, T 23,551
5 Claims. (Cl. 167—88)

1. A composition for the prevention of damage to hair upon dyeing and bleaching and for the improvement of gloss, elasticity and grip of said hair, comprising substances selected from the group consisting of at least one oxidizing dye, a bleach, and mixtures thereof, plus 0.01 to 10 percent of a substance selected from the group consisting of phosphonic acid derivatives, their water-soluble methanol, ethanol, propanol, butanol, and amyl alcohol esters, and their sodium, potassium, ammonium, and ethanolamine salts; said phosphonic acid derivatives having the formula



wherein R_2 and R_3 individually are selected from the group consisting of hydrogen and an alkyl having 1 to 5 carbon atoms; X is selected from the group consisting of —OH and —NH_2; and R_1 is selected from the group consisting of phenyl, a saturated aliphatic group having 1 to 5 carbon atoms, and the group having the configuration



3,202,580
REEL-TYPE CONTROL ROD DRIVE AND BRAKE AND BRAKING MECHANISM

Peter Fortescue, Rancho Santa Fe, and Francis R. Bell, La Jolla, San Diego, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 11, 1963, Ser. No. 257,693
6 Claims. (Cl. 176—36)

1. For use in a nuclear reactor having a vertically movable control rod, a cable for suspending said rod, a motor,

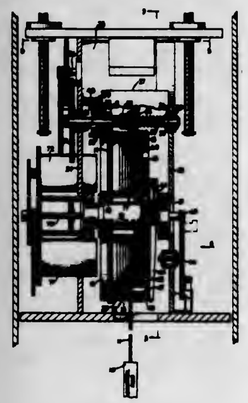
means including a clutch for connecting the motor to said cable for adjusting the operating height of the rod, and means for promptly disengaging the clutch in case of an emergency which requires a quick fall of the control rod, the method of controlling said emergency fall of the control rod to prevent the rod from arriving at a desired final position at excessive speed while not unduly slowing down the fall of the rod to a safe position, which method comprises,

(a) first disengaging said clutch so as to permit the rod to fall quickly to a safe position

(b) while using a percentage of the energy developed in said emergency fall to effect uni-directional rotary movement of a flywheel geared to and driven by said cable,

(c) and then, after the rod reaches a safe position, progressively increasing said percentage automatically during the later period of the emergency fall of the rod, thereby progressively decelerating the fall of the rod during said final period to a safe speed before the rod reaches its bottom position, and

(d) then disconnecting said cable from said flywheel and permitting said flywheel to continue its said uni-directional movement.



3. For use in a nuclear reactor having a vertically movable control rod, a cable for suspending said rod, a motor, and means connecting the motor to said cable for adjusting the height of the rod,

means for controlling the fall of the control rod in an emergency which requires a quick fall of the rod so as to prevent the rod from arriving at a desired lower position at excessive speed while not unduly prolonging the emergency fall of the rod, which means comprises,

(a) a rotatable support for said cable including a reel for suspending said rod during normal operation of the reactor,

(b) a rotatable flywheel,

(c) means for drivingly connecting the support to said flywheel so as to rotate the flywheel uni-directionally throughout the descent of the rod, including a free-wheeling clutch permitting said wheel to continue its said rotation free from the cable after said rod reaches its bottom position in the reactor,

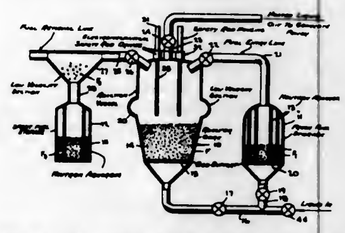
(d) a clutch for disengaging said motor from said cable at the start of the emergency fall,

(e) and including means, operating subsequent to the arrival of the rod at a safe position, for progressively transferring from the rod to the wheel a sufficient amount of the kinetic energy acquired by the rod in its fall to progressively decelerate the fall of the rod to a safe speed before the rod reaches its bottom position.

3,202,581
LIQUID FLUIDIZED BED NUCLEAR REACTOR AND METHOD FOR REDUCING PARTICLE ABRASION THEREIN

Harold N. Barr and Donald H. Peterson, Baltimore, Md., assignors to Martin-Marietta Corporation, a corporation of Maryland

Filed Jan. 20, 1960, Ser. No. 3,690
7 Claims. (Cl. 176—46)

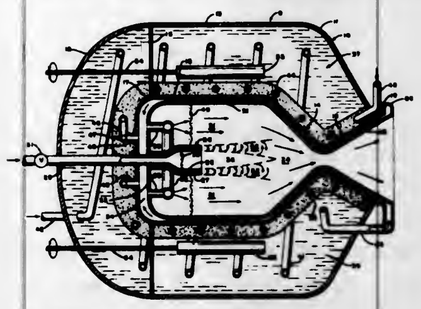


1. A method of reducing the abrasion of fluidized particles in a liquid fluidized bed of a nuclear reactor, comprising the step of admixing particles of graphite with the fluidizing liquid and particles of said fluidized bed, the average particle size of said graphite particles being such that they have a terminal velocity in said fluidizing liquid which is less than the velocity of said fluidizing liquid, and said graphite particles constituting about 5% to 20% by weight of said fluidizing liquid.

3,202,582
GASEOUS NUCLEAR ROCKET

Frank E. Rom, Avon Lake, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Aug. 28, 1961, Ser. No. 134,478
14 Claims. (Cl. 176—52)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A gaseous nuclear reactor comprising

an outer shell,

a double wall heating cell axially disposed within said outer shell, said cell including a casing having an integral hemispheroidal fore end and a convergent-divergent nozzle in communication with the casing aft end,

a double wall circular nozzle protruding inwardly within said heating cell along the center line thereof, said circular nozzle having one end secured to said double wall hemispheroidal fore end, and in communication with a source of gaseous fissile material,

a hollow band positioned within said heating cell in spaced concentric relationship with said circular nozzle, said band having a free end terminating in close proximity to the vertical exit plane of said circular nozzle and a secured end in communication with said hemispheroidal fore end,

a toroidal nozzle concentrically positioned within said heating cell between said band and said casing, said toroidal nozzle being in communication with said fore end,

a second toroidal nozzle concentrically positioned within said heating cell between said band and said circular nozzle,

a graphite reflector-moderator adjacently disposed to said heating cell,

means for cooling said graphite reflector-moderator,

a heavy water reflector-moderator disposed between said graphite reflector-moderator and said outer shell,

means for cooling said heavy water reflector-moderator, and

a plurality of control drums situated between said graphite reflector-moderator and said heavy water reflector-moderator cooling means.

3,202,583
METHOD OF MAINTAINING SHEATHING CONTACT IN HOLLOW FUEL ELEMENTS DURING NUCLEAR REACTOR OPERATION

Marc Salesse, Gif-sur-Yvette, Jacques André Stohr, Bures-sur-Yvette, and Maurice Gauthron, Paris, France, assignors to Commissariat à l'Energie Atomique, Paris France

Filed May 3, 1960, Ser. No. 26,640
Claims priority, application France, May 13, 1959, 794,568
4 Claims. (Cl. 176—59)

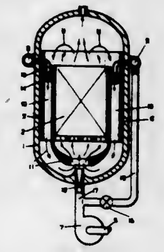
1. In a method for maintaining contact between inner sheaths and hollow cylindrical fuel portions in a nuclear reactor cooled by a heat exchange fluid in which an outer sheet is formed about and in contact with the external surface of a hollow fuel portion and an inner sheet is in engagement with the inner surface of the fuel portion until thermal expansion of the fuel portion separates the fuel portion from the inner sheet, the steps of pre-heating the heat exchange fluid by first contact with the fuel portions and then forcing the inner sheet into engagement with the inner surface of the fuel portion after thermal expansion of the fuel portion by heat and pressure applied thereto by recirculation of the heated heat exchange fluid.

3,202,584
PRESSURIZED WATER REACTOR PLANT WITH IMPROVED JET PUMP ARRANGEMENT

Maarten Bogaardt, The Hague, Wouter G. Bonsel and Matthijs Muyzkes, Scheveningen, and Wilhelmus W. Nijs, Rijswijk, Netherlands, and Abraham Balbout, Brussels, Belgium, assignors to Reactor Centrum Nederland, The Hague, Netherlands, an institute of the Netherlands

Filed Jan. 23, 1962, Ser. No. 168,156
Claims priority, application Netherlands, Jan. 26, 1961, 260,537
11 Claims. (Cl. 176—61)

1. A pressurized water reactor plant comprising a vertical casing, a plurality of vertical elongated fuel elements in said casing constituting a nuclear reactor core, means supporting said fuel elements in spaced relation to define a plurality of substantially vertical passages, a heat exchanger, conduits interconnecting said casing and said heat exchanger to form a closed circuit, said circuit being completely filled with water acting both as a coolant and as a moderator, a main pump in one of said conduits having a pressure outlet and a suction inlet and adapted to circulate water through said closed circuit, said core having a lower inlet end and an upper outlet end and defining together with the casing an upper space, a lower space and a space surrounding said core and interconnecting said upper space and said lower space outside the core and inside said casing, and a jet pump disposed in said space



surrounding the core, said jet pump including a jet tube connected to the pressure outlet of said main pump, the jet pump having a suction inlet directed towards the upper space in the casing into which the outlet end of the core opens, the jet pump having a pressure outlet directed towards the lower space in the casing to which the inlet end of the core is in communication.

3,202,585
HIGH TEMPERATURE NIOBIUM-UO_2 NUCLEAR FUEL SHEET

Harry P. Kling, Baltimore, Md., and Lawrence Sama and Seymour Priceman, Seaford, Bernard Brodwin, Brooklyn, and Abraham Eisa, New Rochelle, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Nov. 2, 1959, Ser. No. 850,490
6 Claims. (Cl. 176—69)

1. The method of making a nuclear fuel element in the form of a ribbon characterized by excellent strength and oxidation resistance in air at high temperature that consists in preparing a core comprising enriched uranium dioxide in a matrix of a metal selected from the group consisting of niobium, niobium-molybdenum and niobium-molybdenum-titanium, cladding the core with an alloy selected from the class consisting of niobium-titanium, and niobium-titanium-aluminum alloys, and dipping the clad core in a molten metal bath selected from the group consisting of aluminum and aluminum-11 w/o silicon.

3,202,586
METHOD FOR CONTROLLING THE COMPOSITION OF URANIUM CARBIDE AND NUCLEAR FUEL ELEMENT THEREOF

Bradley A. Webb, Granada Hills, and Nathan R. Koenig, Citrus Heights, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Aug. 10, 1962, Ser. No. 216,078
9 Claims. (Cl. 176—70)

1. A method of preparing stoichiometric uranium monocarbide from nonstoichiometric uranium carbide which comprises adding to nonstoichiometric uranium carbide selected from the class consisting of hyper- and hypostoichiometric uranium carbide an alloying metal having a relatively low thermal neutron absorption cross section and a ΔF value for carbide formation between UC and UC_2 and reacting the admixture to form stoichiometric uranium monocarbide and a composition selected from the class consisting of metal carbide and metal-uranium alloy formed by respective reaction with initially present nonstoichiometric uranium carbide se-

lected from the class consisting of hyper- and hypostoichiometric uranium carbide, respectively.

6. A uranium carbide nuclear reactor fuel element having a carburizable metal cladding stabilized against carburization by carbon transfer from the fuel material which comprises, in combination, a carbon-stable nuclear reactor fuel material consisting essentially of stoichiometric uranium monocarbide containing a composition selected from the class consisting of metal carbide and metal-uranium alloy formed by respective reaction with initially present nonstoichiometric uranium carbide selected from the class consisting of hyper- and hypostoichiometric uranium carbide, respectively, the metal portion of said metal carbide and metal-uranium alloy being selected from an alloying metal having a relatively low thermal neutron absorption cross section and a ΔF value for carbide formation between UC and UC_2, and a carburizable metal cladding for said fuel material.

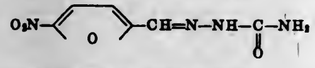
3,202,587

METHOD OF ELIMINATING BACTERIAL CONTAMINATION OF MOLASSES MEDIUM IN THE PRODUCTION OF CITRIC ACID BY FERMENTATION

Roman Janovich Karklign, Pootsem 12, Apt. 5, and Velta Karlovna Berkolde, Dreilenu 6, Apt. 2, both of Riga, U.S.S.R.

No Drawing. Filed June 22, 1962, Ser. No. 204,632
2 Claims. (Cl. 195—36)

1. In the process of making citric acid by fermentation of fresh molasses medium the improvement comprising eliminating bacterial contamination of such molasses medium by adding an effective amount of 5-nitro-2-furaldehyde semicarbazone having formula



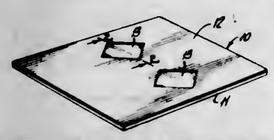
as an antiseptic to fresh molasses medium.

3,202,588

METHOD OF MAKING DECORATIVE METAL SHEET

Howard A. Fromson, Rogues Ridge Road, Weston, Conn.

Filed Aug. 30, 1961, Ser. No. 135,042
7 Claims. (Cl. 204—18)



1. The method of producing a decorative surface on a composite sheet having a layer of stainless steel joined to an underlying layer of aluminum, which comprises coating the surface of the stainless steel layer with a protective acid-resisting material, then removing predetermined portions of the stainless steel layer and exposing surface areas of the underlying aluminum layer, then anodizing the exposed surface areas of the aluminum layer and then removing the coating of protective material from the surface of the stainless steel layer.

3,202,589

ELECTROPLATING

John Edwin Bride, Mentor, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

Filed Sept. 12, 1963, Ser. No. 308,590
6 Claims. (Cl. 204—32)

6. The method of electropolishing cast zinc base articles which comprises, subjecting the article to electropolishing in an electrolytic cell in which the article is the anode, the electrolyte is comprised substantially of an aqueous alkali metal hydroxide solution in the amount between about 450 and 900 grams of alkali metal hydroxide, between about 20 and 100 grams of zinc oxide and the trivalent chromic ion equivalent of between about 1.5 and 3 grams of basic chromic sulfate per liter of solution, maintained at a temperature between about 60 and 220° F., the cathode is a conducting material, and the current passing between the anode and the cathode has a current density of between 50 and 800 amperes per square foot and is maintained at a voltage of about 8 for a period of about 0.25 to 8 minutes, to polish the article and clear out any surface pores therein.

3,202,590

ELECTRODEPOSITION OF COBALT-PHOSPHORUS ALLOYS

Herman Koretzky, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 19, 1960, Ser. No. 50,568
2 Claims. (Cl. 204—43)

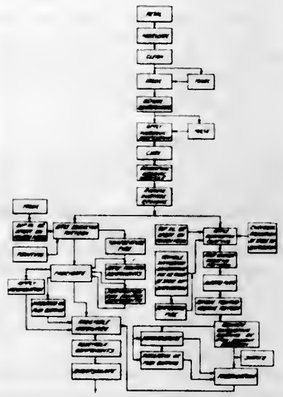
1. A method of electroplating magnetic coatings of cobalt-phosphorus alloys on a substrate which comprises subjecting said substrate to electrolytic action in a plating bath having a pH of about 4.0, consisting essentially of about 50 grams per liter of cobalt ions and about 9.5 grams per liter of hypophosphite ions at a current density of 550 amperes per square foot to produce thereby a magnetic coating having a coercive force of about 320 oersteds when such deposition takes place for about 10 minutes at room temperature.

3,202,591

METHOD OF MAKING AN ELECTRIC CIRCUIT STRUCTURE

Robert A. Curran, Wayland, Mass., assignor to Electralab Printed Electronics Corporation, Needham Heights, Mass., a corporation of Massachusetts

Filed Nov. 24, 1961, Ser. No. 154,505
7 Claims. (Cl. 204—38)



1. A method of forming a sealed oxide layer on a base of metal having film forming characteristics comprising the steps of anodically forming a layer of an oxide of said metal on said base,

applying a silicone material having minute particles of an electrically insulating inorganic material suspended therein to said oxide layer,

gelling said silicone material by heating said base to a temperature of at least about 400° F.,

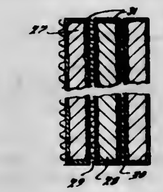
and subsequently further heating said base to a temperature of at least about 1000° F. to decompose said silicone material and form an electrically non-conductive residue, and removing the non-conducting residue from the surface of said oxide layer.

3,202,592

INDUCTANCE-CAPACITANCE DEVICE AND METHOD OF MANUFACTURE

Thomas F. Carmichael, Plymouth, Mich., and Elmore C. Ayer, Bryan, Ohio, assignors to Syncro Corporation, Oxford, Mich., a corporation of Michigan

Filed Aug. 3, 1960, Ser. No. 47,310
1 Claim. (Cl. 204—58)



In a method of manufacturing an inductance-capacitance unit, the steps of placing a pair of metallic foil strips and porous dielectric separators between said strips in overlapping relation, winding said strips and separators to form a coil, connecting the metallic strips in an anodizing circuit by placing the coil in an anodozing bath within a tank, connecting both strips to one side of a direct current source to act as an anode, and connecting said tank to the other side of said source to act as a cathode, and anodizing both of said strips in the wound coil to create anodized coatings in the surfaces of both of said strips which the anodizing fluid contacts directly and through said porous separators.

3,202,593

ELECTROLYTIC PRECIPITATION OF COPPER

William Hardisk, Wilmington, Del., assignor, by mesne assignments, to Metallurgical Processes Ltd., Nassau, New Providence, Bahamas, a corporation of the Bahamas

No Drawing. Filed Aug. 23, 1962, Ser. No. 218,827
3 Claims. (Cl. 204—106)

1. A method for recovering by electrolysis up to 99.9% of the total amount of dissolved copper as high grade copper from fresh acidic electrolyte solution having a comparative high concentration of copper comprising the steps of introducing a batch of said electrolyte solution into an electrolytic cell in contact with lead anodes and copper cathodes, maintaining a constant current density for the cathode of about 10 amps per sq. foot of cathode, continuing the electrolysis until the copper content of the solution is down to about 0.05 gram/liter with the last portion of said recovered copper being in the form of a loose and darkened deposit on the cathodes, recharging said cell with a fresh batch of said copper containing electrolyte, and repeating the above electrolysis steps to additionally collect said fresh copper on said same cathodes supporting said last portion of loose and darkened deposit whereby the loose and darkened deposit is incorporated with the fresh copper deposited and automatically converted to an adherent, hard and bright form of high grade copper as the fresh copper is deposited thereover from said fresh electrolyte.

3,202,594

PROCESS FOR ACTIVATING PLATINUM ELECTRODES

Raymond Steele, Westtown, Pa., assignor to J. Bishop & Co. Platinum Works, Malvern, Pa., a corporation of Pennsylvania

No Drawing. Filed May 28, 1962, Ser. No. 197,938
10 Claims. (Cl. 204—140)

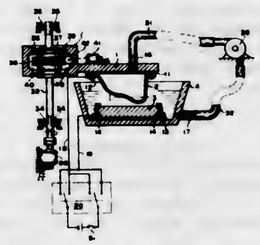
10. The method of providing an effective platinum-coated titanium anode for the electrolysis of brine in the production of chlorine comprising the steps of electrolyzing the platinum coating cathodically in an alkaline solution, heat treating the anode at a temperature within a range from 700° F. to 1000° F. to bring about some recrystallization of the platinum, contacting the platinum coating with an alkali metal amalgam to deposit a coating of mercury on the platinum coating, and heating the anode from room temperature up to a temperature in the order of 500° F. to 900° F. to first bring about further alloying of the mercury and platinum and then to expel the mercury thereby leaving the platinum coating on the anode in an activated condition.

3,202,595

ELECTRO-CHEMICAL MACHINING PROCESS

Kiyoshi Inoue, 182 3-Chome, Tamagawa-Yoganaechi, Setagaya-ku, Tokyo, Japan

Filed Aug. 23, 1960, Ser. No. 51,448
11 Claims. (Cl. 204—143)



6. An electro-chemical machining process comprising operatively positioning a pre-formed hollow electrode constituted by two metals having different electrolysis voltages and a workpiece in an electrolyte within an electrolytic cell, connecting said electrode and workpiece to an electrical source to provide electrolytic action to electrolytically corrode the metal of the electrode having the lower electrolysis voltage whereby a perforated electrode is produced, exhausting the electrolyte from the cell and electrochemically machining the workpiece by reversing the polarity of said electric source and continuously ejecting electrolyte from within said perforated hollow electrode against the workpiece.

3,202,596

SACRIFICIAL ANODE BONDED WITH EPOXY RESIN

Gerard P. Canevari, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Nov. 2, 1961, Ser. No. 149,579
6 Claims. (Cl. 204—148)

4. A process for attaching to a metallic structure a plate of a metal of higher electromotive activity comprising: (1) cleaning a portion of a relatively continuous surface of the structure, (2) coating one surface of the metallic plate with an epoxy resin adhesive produced by the reaction of an epihalohydrin and a dihydric phenol, said surface containing a plurality of ridges, 1 to 20

mils deep, and (3) pressing said coated surface to the cleaned continuous surface of the metallic structure so



that the peaks of the ridges on said metallic plate touch the structure.

3,202,597

IRRADIATION POLYMERIZATION OF COMPRESSED PARTICULATE TRIOXANE

Carroll F. Doyle, Ellicott City, and Harry C. Helmlinger, Jr., Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed June 24, 1963, Ser. No. 290,251

5 Claims. (Cl. 204—154)

1. A method for preparing finely divided fibrous polyoxymethylene which comprises compressing particulate trioxane under a pressure in excess of about 500 lbs./sq. inch to form a self-sustaining cohesive sheet of trioxane particles, irradiating said sheet in the solid state with high energy ionizing irradiation to form active polymerization sites therein, heating said irradiated sheet to a temperature of from about 30 to 61° C. to cause polymerization, separating non-polymerized trioxane from polyoxymethylene which is formed, and grinding said polyoxymethylene to obtain finely divided polyoxymethylene fibers having a major dimension of less than 50 microns and a length diameter of the ratio greater than 10:1.

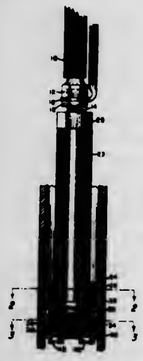
3,202,598

ELECTROLYTIC POLISHING TOOL

Loren C. Covington, Henderson, and Robert L. Powell, Las Vegas, Nev., assignors to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware

Filed Mar. 22, 1963, Ser. No. 267,106

1 Claim. (Cl. 204—224)



A tool including an electrode useful for electrolytic polishing of the interior surface of a metal tube comprising;

(a) an electrically conductive electrolyte supply tube,
(b) means for connecting electric current to said supply tube,
(c) means for supplying electrolyte to the interior of said supply tube,
(d) an electrolyte distributor ring attached to a lower part of said supply tube having peripheral outlets communicating with the interior of said supply tube,
(e) a sealing ring of electrically insulating material surrounding said supply tube,
(f) means including a rigid sleeve surrounding said supply tube and having a tapered lower end engaging the walls of a central hole in said sealing ring and a nut threaded on to said supply tube bearing on the top of said sleeve thereby to adjust the outside diameter of sealing ring by pressure of the lower end of said sleeve against the wall of said central hole in said sealing ring, to provide sealing engagement of the said sealing ring with the interior of a metal tube to be polished,
(g) an electrode including a ring of electrically conductive metal connected to said supply tube and disposed below said distributor ring, and,
(h) electrical insulating means covering the lower face of said electrode.

3,202,599

DIRECT CURRENT SOURCE FOR ELECTROLYTIC METAL MACHINING WITH ZENER DIODE SURGE PROTECTION

Hans Schierholt, Aachen, Germany, assignor to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany, and Allgemeine Elektricitats-Gesellschaft, Berlin-Grunewald, Germany

Filed Sept. 5, 1961, Ser. No. 135,977

Claims priority, application Germany, Sept. 7, 1960 D 34,196

2 Claims. (Cl. 204—224)



1. In an electro-erosion machining apparatus an electric operating circuit comprising a direct current source, a tool electrode connected to said source, a workpiece electrode connected to said source, and a working gap in said circuit between said tool electrode and said workpiece electrode, said gap being filled with an electrolyte, a non-linear resistor connected across said working gap, said non-linear resistor comprising a Zener diode having a breakdown voltage which is lower than the critical arcing or sparking voltage across the working gap between said tool and workpiece electrodes, a bridging arrangement across said Zener diode, said bridging arrangement comprising a series combination of a resistor and a condenser in parallel with said Zener diode, and a regulator coupled to said circuit, said regulator responding to the rate of change of the working current in said circuit to regulate the voltage of said direct current source.

3,202,600

CURRENT CONDUCTING ELEMENT FOR ALUMINUM REDUCTION CELLS

Charles Eric Ransley, Chesham Bois, England, assignor to The British Aluminium Company Limited, London, England, a company of Great Britain

Original application May 23, 1957, Ser. No. 660,994, now Patent No. 3,028,324, dated Apr. 3, 1962. Divided and this application June 12, 1961, Ser. No. 125,318

Claims priority, application Great Britain, May 4, 1951, 10,548/51, 10,549/51; Aug. 3, 1951, 18,490/51; Apr. 15, 1952, 9,474/52; Jan. 14, 1954, 1,154/54, 1,155/54; Mar. 10, 1955, 7,135/55, 7,136/55, 7,137/55; May 1, 1957, 13,948/57

13 Claims. (Cl. 204—279)

1. A current-conducting element consisting essentially



of at least one of the carbides of titanium, zirconium, tantalum and niobium, said element carrying a tenaciously adhering coating of aluminum.

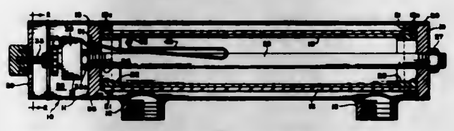
3,202,601

WATER CONDITIONING APPARATUS

William G. Green, St. Petersburg, Fla., assignor, by mesne assignments, to Aquatron Engineering Corp., St. Petersburg, Fla., a corporation of Florida

Filed Feb. 9, 1962, Ser. No. 172,236

1 Claim. (Cl. 204—302)



A water treatment apparatus for subjecting water to a constant electrostatic field, said apparatus comprising:

(a) a tubular metal shell having axially spaced inlet and outlet connections,
(b) first and second support members disposed in said shell with said inlet and outlet connections therebetween,
(c) a sleeve of water impermeable dielectric insulating material concentrically disposed in said shell and having its opposite ends held by said first and second support members in spaced relation to the inner surface of said shell so as to define therein a passageway for water flow from said inlet to said outlet,
(d) a cylindrical electrode disposed in said sleeve so as to be fully electrically insulated from said shell and from said water,
(e) tie rod means extending through said support members and through said electrode and sleeve so as to clamp said sleeve between said support members,
(f) one of said support members being disposed inwardly of the adjacent end of said shell so as to define a recess therein in which one end of said rod terminates,
(g) a power supply mounted in said recess on said one end of said rod, said power supply comprising a voltage multiplier rectifier network, the components of which are sealed in a cup surrounding a stud secured to said rod,
(h) a disc-like panel mounted on said stud in said recess,
(i) control switch and indicating means mounted on said panel, and
(j) a closure member for said recess, said closure member being engaged in said end of said shell and removably secured to said stud,
(k) said power supply having a line cord for connection to a source of alternating current, and having high voltage, direct current output leads connected to said shell and said cylindrical electrode, respectively.

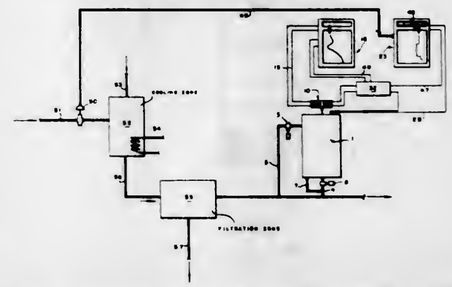
3,202,602

AUTOMATIC OPERATION AND PROCESS CONTROL

John B. Beaugh, Lee M. Johnson, and Leland W. Pohler, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Dec. 26, 1961, Ser. No. 161,847

6 Claims. (Cl. 208—33)



1. In a continuous oil process wherein a selected pour point temperature of said oil determines the operating conditions of said process, a method for automatically controlling said process comprising sequentially sampling a portion of said oil, vibrating a probe in said oil while cooling said oil sample, recording an electrical signal generated in response to the vibrational energy of said probe, measuring the temperature of said oil sample coincident with a definite break in said recorded electrical signal caused by a reduction in the damping action of said oil on said probe wherein the pour point temperature of said oil is determined, comparing said determined pour point temperature with said desired pour point temperature, and changing an operating condition of said process in accordance with said comparison to achieve said desired pour point temperature in the operation of said process.

2. A method in accordance with claim 1 in which the process is solvent dewaxing of said oil.

3,202,603

HYDROCRACKING OF HIGH BOILING HYDROCARBON OILS TO PRODUCE AROMATICS AND FUEL GASES

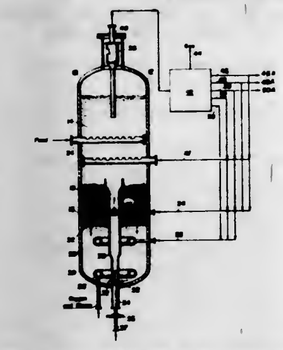
Percival C. Keith, Peapack, and Edwin S. Johanson and Seymour C. Schuman, Princeton, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 119,640, June 26, 1961. This application Aug. 16, 1963, Ser. No. 302,580

8 Claims. (Cl. 208—107)

1. A process for the high temperature hydrocracking of heavy liquid hydrocarbons to produce normally gaseous materials together with a light aromatic liquid fraction with a minimum yield of other normally liquid materials, which comprises injecting a hydrocarbon oil having a Ramsbottom carbon value of at least about 8 into a cracking zone containing particulate solids at a temperature substantially above 1100° F. and under a pressure of at least 200 p.s.i.g. with a hydrogen partial pressure of at least 35 p.s.i. thereby producing a gaseous overhead and depositing carbonaceous material on the solids, passing said solids from the cracking zone to a combustion zone, contacting said solids in the combustion zone with an oxygen containing gas and steam to produce a temperature of at least 1600° F. thereby removing the carbonaceous deposit from the solids and reheating the solids to a predetermined temperature, returning the reheated solids to the cracking zone, separating the effluent from the reactor into a gaseous frac-

tion, a light normally liquid aromatic fraction, and a heavy normally liquid fraction, recycling to the combustion zone said heavy normally liquid fraction in an amount corresponding to at least 5% by volume of the fresh feed in order to establish the desired hydrogen



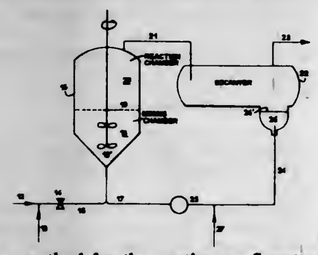
partial pressure in the cracking zone, and producing from the process a major quantity of fuel gas having a unit heating value of 900–1100 B.t.u. per cubic foot; a specific gravity of 0.6 to 0.7, and a molecular weight of 17 to 20 which is substitutable with and for natural gas.

3,202,604

SWEETENING PETROLEUM PRODUCTS

Edouard Welsang, Le Havre, and André Marie Valet, Fontenay-aux-Roses, France, assignors to Société Anonyme dite: Compagnie Francaise de Raffinage, Paris, France, a French corporation

Filed July 11, 1960, Ser. No. 42,133
3 Claims. (Cl. 208—204)



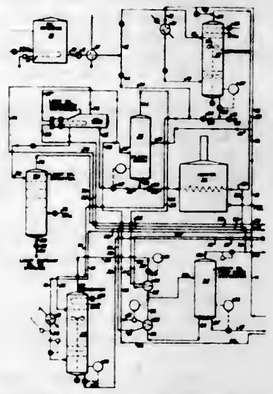
1. In a method for the continuous flow treatment of a liquid hydrocarbon phase with an aqueous alkaline phase immiscible therewith and including a dispersed oxidation catalyst insoluble in both said aqueous phase and said hydrocarbon phase for the oxidation and removal of sulfur compounds in said liquid hydrocarbons, the steps which comprise continuously introducing said liquid hydrocarbon phase and said aqueous phase with said insoluble catalyst dispersed therein into a mixing zone, subjecting said liquid hydrocarbon and aqueous phase to agitation in said mixing zone for the intimate dispersal and intermixture thereof, continuously withdrawing said mixture, and dispersion from said mixing zone into a reaction zone having an inlet end and an outlet end, continuously flowing said intermixed and dispersed liquid hydrocarbon and aqueous phases and insoluble dispersed catalyst through said reaction zone from said inlet end thereof toward said outlet end while said oxidation and removal of said sulfur compounds is effected in said reaction zone, maintaining in said reaction zone substantially less agitation than in said mixing zone but sufficient for preventing separation of said hydrocarbon and aqueous phases yet insufficient for effecting undesired intermixing of newly entered hydrocarbon adjacent said inlet end of said reaction zone with treated hydrocarbon adjacent said outlet end of said reaction zone, continuously withdrawing from said outlet end of said reaction zone said mixture of liquid hydrocarbon and aqueous phases, separating said treated liquid hydrocarbon from said aqueous phase and said dispersed catalyst in a decantation zone, and withdrawing said aqueous phase and dispersed catalyst therein from said decantation zone for recycling into said mixing zone for treatment of a subsequent quantity of liquid hydrocarbon phase.

3,202,605

PROPANE DEASPHALTING PROCESS

Aaron K. Redcay, Cambridge, Mass., assignor to The Badger Company, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed June 6, 1962, Ser. No. 200,440
12 Claims. (Cl. 208—337)



1. The method of operating a solvent extraction system comprising contacting an extractable oil with a liquified volatile solvent at a temperature and pressure close to the critical at which the liquid solvent is converted to a gas and separating the extract phrase from the raffinate phase, heating the extract phase sufficient to flash the solvent into vapors at the pressure of the system, extracting the raffinate with fresh solvent under conditions similar to the first extraction to produce a second extract phase, and then passing the extract phase of the second extraction into heat exchange with the solvent vapors at the high temperature and pressure as recovered from the first extract while slightly reducing the pressure of the second solvent extract phase where, by the heat exchange and slight reduction of pressure on the extract phase, the solvent dissolved in said extract phase is converted to vapors and the vaporized solvent separated from the first extract is liquified.

3,202,606

LUBRICANT CONTAINING CALCIUM SALTS OF ACETIC ACID, C_{14} TO C_{30} FATTY ACID, AND PHOSPHOSULFURIZED POLYOLEFIN

Arnold J. Morway, Clark, and Albert J. Bodner, Linden, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,154
8 Claims. (Cl. 252—17)

1. A fluid lubricating oil composition suitable for marine diesel cylinder lubrication comprising a major amount of mineral lubricating oil and calcium salts of: (A) about 3 to 10 wt. percent of acetic acid and C_{14} to C_{30} fatty acid in a relative mole ratio of about 5 to 50 mole equivalent proportions of acetic acid per mole equivalent of C_{14} to C_{30} fatty acid, and (B) about 0.2 to 5.0 wt. percent of a phosphosulfurized polymer of a C_2 to C_6 monoolefin, said polymer having a molecular weight of about 600 to 4,000 Staudinger.

3,202,607

METAL WORKING FLUIDS

John E. Koch, Jr., Bayonne, N.J., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 21, 1961, Ser. No. 161,254
10 Claims. (Cl. 252—49.5)

1. A non-aqueous fluid mixture adapted to use in aqueous metal working compositions comprising about 20 to 80 weight percent of at least one member selected from the group consisting of propylene glycol and dipropylene glycol; and about 10 to 60 weight percent of a polyoxyethylene adduct of castor oil having 18–65 weight percent combined ethylene oxide.

5. A metal working fluid comprising about 1 to 200 parts by weight water per part of non-aqueous fluid mixture claimed in claim 1.

3,202,608

LUBRICATING COMPOSITIONS AND POLYMERIC ADDITIVES THEREFOR

Adriaan H. Wagenaar, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 9, 1962, Ser. No. 185,883
Claims priority, application Netherlands, May 2, 1961, 264,248, 264,249
18 Claims. (Cl. 252—49.9)

1. A mineral lubricating oil composition comprising a major amount of mineral lubricating oil and from 0.1% to 10% of an oil-soluble reaction product obtained by reacting between 20° C. and 120° C. in the presence of an aromatic hydrocarbon solvent, a copolymer of an unsaturated aldehyde selected from the group consisting of acrolein and methacrolein and a C_{12-18} alkyl methacrylate, in which the monomer ratio is from about 0.8:1 to about 1.3:1, respectively, with an amine selected from the group consisting of an alkylamine and an alkanolamine, to form a plurality of aldimine groups in the copolymer, followed by treatment with an alkyl phosphite, the final product having a nitrogen content of from about 0.44% to about 1.99% nitrogen and a phosphorus content of from about 0.53% to about 3.80% and a molecular weight of from 10,000 to 1,000,000.

3,202,609

HIGH MOBILITY PHOTOCONDUCTOR SINTERED SHAPES AND PROCESS FOR THEIR PREPARATION

Arnold Reisman and Melvin Berkenblit, Yorktown Heights, and George Cheroff and Frederick Hochberg, Peekskill, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 31, 1962, Ser. No. 170,015
2 Claims. (Cl. 252—501)

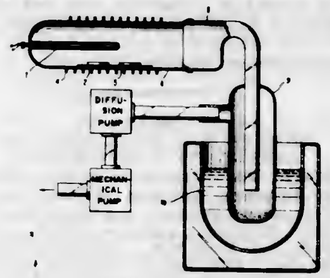
1. Cadmium selenide photoconductor sintered disc shapes having a high effective mobility of about 700–50,000 $cm.^2$/volt sec. prepared by process which comprises:

(1) mixing cadmium selenide polycrystalline powder with sufficient copper as in solution to yield a material containing 100 to 400 parts per million of the copper by weight;

(2) pressing the doped cadmium selenide powder into disc shapes at a pressure from 25,000 to 100,000 pounds per square inch;

(3) equilibrium sintering the pressed discs at a temperature between 700°–1100° C. for from 1 hour to 8 hours in a vacuum at a pressure from $1–7\times10^{-6}$ mm. of mercury;

(4) then steady state sintering these discs at a temperature of 500°–600° C. for 1 to 5 hours in a vacuum at a pressure from $1–7\times10^{-6}$ mm. of mercury;



(5) now subjecting the sintered discs to oxygen-nitrogen atmosphere equilibration heat treatment at 535° C. for 1 to 5 hours in an atmosphere of 1% oxygen and 99% nitrogen at one atmosphere of pressure;

(6) and then subsequently air quenching the sintered shapes to room temperature.

3,202,610

LUBRICANTS CONTAINING POLYMERIC EXTREME PRESSURE AGENTS

Herbert C. Evans, Halton, and Peter Kirby, Kelsall, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 31, 1962, Ser. No. 213,621
Claims priority, application Great Britain, Feb. 28, 1962, 7,896/62
8 Claims. (Cl. 252—58)

1. A lubricating oil composition consisting essentially of a major amount of lubricating oil and from about 2% to about 5% of an oil-soluble polymer of a C_{1-6} hydrocarbyl substituted allyl halid compound the hydrocarbyl radical being in the 2-position and selected from the group consisting of alkyl and aryl groups, said polymer being prepared by polymerizing said allyl halide compound in the presence of a neutral solvent and catalyst consisting essentially of aluminum alkyl and titanium halide, the mole ratio being between 0.05:1 and 1:1 respectively, said polymer having a molecular weight of from about 300 to about 1000.

3,202,611

CAPACITOR ELECTROLYTE

Roy A. Canty and Rudolph G. Griffin, Palo Alto, Calif., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

No Drawing. Filed Dec. 13, 1962, Ser. No. 244,294
5 Claims. (Cl. 252—62.2)

1. A thixotropic electrolyte for use in electrolytic capacitors consisting essentially of a mixture of particulate silica in the .015–.020 micron range and a solution of acid, said acid mixture containing 5–8% by weight of particulate silica to 92–95% by weight of acid solution.

3,202,612

COMPOSITION FOR BRIGHT POLISHING ALUMINUM

George D. Nelson, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 5, 1960, Ser. No. 73,511
6 Claims. (Cl. 252—79.2)

1. A composition, suitable for brightening the surfaces of aluminum and aluminum alloys, which comprises from about 45 to about 90 weight percent of phosphoric acid,

from about 1 to about 10 weight percent of nitric acid, from about 2 to about 35 weight percent of water, from about 0.004 to about 0.04 weight percent of dissolved copper, an ammonium salt in an amount sufficient to produce in said composition from about 0.15 to about 4 weight percent of ammonium ions, and from about 1 to about 8 weight percent of an organic saturated aliphatic acid having in its molecule between about 1.5 and about 4.5 carbon atoms per acid group.

3,202,613

PROCESS FOR PRODUCTION OF DETERGENT COMPOSITIONS

Lojo Habicht, Bad Pyrmont, and Arno Walter Fritz Klage, Hamburg, Germany, Per Hjorth Rasmussen, Copenhagen, Denmark, and Glenn Ashmore Glossop, Short Hills, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 24, 1960, Ser. No. 38,419
Claims priority, application Germany, July 20, 1959, P 23,213

1 Claim. (Cl. 252—121)

A method for producing a detergent composition of low bulk density which comprises mixing at a temperature up to about 50° C. an aqueous slurry comprising a water-soluble higher alkyl benzene sulfonate detergent and a compound substantially non-reactive therein and which releases carbon dioxide when heated, said compound being selected from the group consisting of sodium carbonate and bicarbonate, said slurry containing about 0.1 to 2% of a material selected from the group consisting of potassium stearate, methylcellulose, sodium polyacrylate, polyvinyl alcohol, polyvinylpyrrolidone and polyacrylamide which assists in producing a product of decreased density, to form a substantially homogeneous aqueous mixture having a solids content between about 75 to 85%, milling said slurry and forming solid films thereof in thin ribbon form, the mixing and milling being effected at a temperature insufficient to substantially release the carbon dioxide content from said films, drying the ribbons in hot air at a drying temperature from about 100° C. to 250° C. and sufficient to cause the substantial generation of the carbon dioxide content from the ribbons thereby decreasing their density, and reducing the ribbons to a substantially dust-free particulate form having a bulk density of about 0.35–0.45 and a moisture content of less than 10%.

3,202,614

PROCESS FOR BREAKING PETROLEUM EMULSIONS

Willard H. Kirkpatrick, Sugar Land, and Virgil L. Seale, Houston, Tex., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 25, 1962, Ser. No. 205,063

10 Claims. (Cl. 252—342)

1. A process for breaking emulsions of the water-in-oil type which comprises subjecting the emulsion to the action of an organic, dicarboxy acid mixed ester of (a) an oxyethylated, organic-solvent-soluble mono-alkyl phenol-formaldehyde condensation product, the alkyl group having between 5 and 15 carbons inclusive, the weight ratio of ethylene oxide to condensation product falling between about 2.5:1 and 1:2.5, respecitvely, and (b) polyoxyalkylene glycol having a molecular weight of at least 1200, said glycol selected from the group consisting of polyoxypropylene glycol and oxyethylene, oxypropylene glycol in a weight ratio of oxyethylene to oxypropylene not exceeding 4:1, the weight ratio of oxyethylated condensation product to polyoxyalkylene glycol being at least 1:4 and not more than 4:1, respectively, and the dicarboxy acid nuclei of said ester having the carboxyl groups thereof esterified with both components (a) and (b), the mol ratio in said ester of said dicarboxy acid to the total mols of (a) and (b) being in the range of 1–2:1, respectively, and said ester having a degree of esterification in the range of a diester of said dicarboxy acid to polyesters of low order of polymerization.

3,202,615

PROCESSES FOR BREAKING PETROLEUM EMULSIONS

Willard H. Kirkpatrick, Sugar Land, and Virgil L. Seale, Houston, Tex., assignors to Valco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Original application June 8, 1959, Ser. No. 818,563. Divided and this application June 25, 1962, Ser. No. 205,068

8 Claims. (Cl. 252—342)

1. A process for breaking emulsions of the water-in-oil type which comprises subjecting the emulsion to the action of a dicarboxylic acid mixed ester in which the ester components consist of (a) an oxyalkylated organic-solvent-soluble phenol-formakdehyde condensation product having 4–15 phenolic nuclei, said phenol being a monoalkyl phenol with a 5–15 carbon alkyl group, the weight ratio of alkylene oxide to condensation product falling between about 1:2 and 9:1, respectively, the phenol-formaldehyde condensation product being oxyalkylated with ethylene oxide and propylene oxide, the ratio of propylene oxide to ethylene oxide being at least 1:4, respectively, and (b) polyoxyalkylene glycol having a molecular weight of at least 1200, said glycol selected from the group consisting of polyoxypropylene glycol and oxyethylene, oxypropylene glycol in a weight ratio of oxyethylene to oxypropylene not exceeding 4:1, the weight ratio of oxyalkylated condensation product to polyoxyalkylene glycol being between 1:4 and 4:1, and (c) an organic, dicarboxy acid, the esterified carboxyl groups of the dicarboxy acid nuclei of said ester being esterified with both components (a) and (b), the mol ratio in said ester of said dicarboxy acid to the total mols of (a) and (b) being in the range of 1–2:1, respectively, and said ester further having a water-solubility of not more than two parts by weight per 100 parts of distilled water at equilibrium at 70° F.

3,202,616

COLORIMETRIC DETERMINATION OF FLUORIDE CONTENT OF WATER

Pratt H. Johnson, St. Petersburg, Fla., assignor to Milton Roy Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 17, 1962, Ser. No. 195,416

1 Claim. (Cl. 252—408)

A storable colorimetric reagent for use in single reagent automatic colorimeters to determine minute quantities of fluoride in water, said reagent consisting essentially of an aqueous mixture of:

(a) 3 aminomethylalizarin-NN-diacetic acid in proportion equivalent to about .980 gram per liter of reagent,
(b) sodium acetate in proportion equivalent to about 160 grams per liter of reagent,
(c) lanthanum nitrate in proportion equivalent to about 1.304 grams per liter of reagent,
(d) polyvinyl pyrrolidone in proportion equivalent to about 20 grams per liter of reagent,
(e) glacial acetic acid in proportion to about 160 milliliter per liter of reagent,
(f) isopropanol in proportion equivalent to about 240 milliliter per liter of reagent and
(g) 50% sodium hydroxide in proportion equivalent to about 0.4 milliliter per liter of reagent.

3,202,617

PROCESS FOR PRODUCING A HYDROSILICON POLYMER BASED CATALYST

Eduard Enk and Gottfried Piskarski, Burghausen, Upper Bavaria, and Hellmuth Puchala, Munich, Germany, and Rudolf Kloss, deceased, late of Burghausen, Upper Bavaria, Germany, by Erika Kloss, Maria Kloss, and Emil Kloss, legal representatives, all of Wurzburg, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany

No Drawing. Filed Apr. 12, 1961, Ser. No. 102,614
Claims priority, application Germany, Apr. 19, 1960, W 27,679

6 Claims. (Cl. 252—429)

1. A process for producing catalysts for polymerization of unsaturated organic compounds consisting essentially of (A) reacting at 10°–200° C. (1) a hydrogensilicon polymer containing 10–200 mol percent of units of the formula

$$R_nH_mSiO_{\frac{4-n-m}{2}}$$

and up to 90 mol percent of units of a formula selected from the group consisting of $SiO_{4/2}$, $RSiO_{3/2}$, R_2SiO and $R_3SiO_{1/2}$ where each R is a monovalent radical selected from the group consisting of hydrocarbon radicals and halogenohydrocarbon radicals, n has an average value of 1 to 2, m has an average value from 1 to 2, the sum of $m+n$ is less than 4, there being from 3 to 120, inclusive, silicon atoms in said polymer, with (2) .001 to 1.0 mol per mol of hydrogensilicon units (1) of a compound selected from the group consisting of halides, alkoxides, halogen alkoxides, aryloxides, halogen aryloxides and trialkylsiloxy halides of Al, and thereafter (B) reacting the reaction product from (A) with (3) .02 to 2 mols per mol of hydrogensilicon units of a compound selected from the group consisting of titanium tetrachloride and vanadium oxytrichloride.

3,202,618

CATALYST COMPOSITION CONSISTING OF A PLURALITY OF OXIDES SUPPORTED ON A ZIRCONIA AND/OR HAFNIA BASE AND PROCESS OF PREPARING SAME

Joseph Jaffe, University City, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed June 5, 1961, Ser. No. 114,665

8 Claims. (Cl. 252—469)

4. A solid catalyst consisting essentially of a catalytically active mixture of metal oxides in the following proportions:

$$(CuO)_a\cdot(MO)_{1-a}\cdot Cr_2O_3\cdot xM'O_2$$

wherein M is selected from the group consisting of cobalt and iron, M' is a tetravalent transitional metal selected from the group consisting of zirconium, hafnium and mixtures thereof, a is a fractional number of from 0.1 to 0.9 and x is a number of from 1 to 8.

6. The process of preparing a catalyst which consists essentially of the steps of intimately mixing finely divided CuO, Cr_2O_3, an oxide of a divalent metal selected from the group consisting of iron and cobalt and an oxide of a tetravalent transitional metal selected from the group consisting of Zr, Hf and mixtures thereof, in an amount sufficient to provide a mixture having a

$$CuO:MO:Cr_2O_3:M'O_2$$

mol ratio of from 0.1 to 0.9 mol CuO, to from 0.9 to 0.1 mol of MO, to about 1 mol of Cr_2O_3 and to from about 1 to 8 mols of $M'O_2$, where M is said divalent metal and M' is said tetravalent metal, and calcining said mixture at a temperature in the range of from about 600° F. to 1200° F. until a catalytically active inorganic oxide complex is formed.

3,202,619

GRAPHITIC NEUTRON REFLECTOR CONTAINING BERYLLIUM AND METHOD OF MAKING SAME

Robert Le Baron, Washington, D.C., assignor to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,516

17 Claims. (Cl. 252—478)

1. A process for producing an essentially graphitic body suitable for use as a neutron reflector material in atomic reactors in which at least a few tenths of one percent of a beryllium compound is uniformly dispersed in the graphitic body which comprises mix-mulling raw petroleum coke particles and a hydrocarbon plasticizing agent and a minor amount of beryllium compound, cooling the resultant mixture, milling the cooled mixture, forming a compact body from said mixture, and then baking and graphitizing the formed body.

ERRATUM

For Class 252—501 see:
Patent No. 3,202,609

3,202,620

POLYURETHANE PLASTICS

Rudolf Merten, Cologne-Flittard, and Erwin Müller and Günther Braun, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 23, 1960, Ser. No. 71,175
Claims priority, application Germany, Nov. 27, 1959, F 29,945; Jan. 30, 1960, F 30,425

19 Claims. (Cl. 260—2.5)

18. A cellular polyurethane plastic prepared by a process which comprises reacting in the presence of a blowing agent an organic polyisocyanate with a polyol prepared by a process which comprises condensing a carbohydrate having at least 4 carbon atoms, an oxo compound selected from the group consisting of aldehydes and ketones and a member selected from the group consisting of alcohols and phenols.

3,202,621

ASPHALT-EPOXY COMPOSITIONS AND METHOD OF MAKING THE SAME

Sidney W. Street, Murray Hill, N.J., assignor to Reichhold Chemicals, Inc., White Plains, N.Y.

No Drawing. Filed July 27, 1960, Ser. No. 45,547

4 Claims. (Cl. 260—18)

1. A method of preparing cured asphalt-epoxy compositions having high resistance to hydrocarbon fuels and lubricating oils comprising mixing (1) a monoester of a polyalkylene glycol having a molecular weight not exceeding 1000 and a monocarboxylic fatty acid which contains at least 12 carbon atoms and at least one double bond per molecule, (2) asphalt and (3) the reaction product of a polymeric carboxylic fatty acid of at least 24 carbon atoms containing the dimer and trimer as major constituents and stoichiometric amounts of a polyglycidyl ether of a polyhydric phenol having an epoxy equivalent weight of up to 300, and heating the resulting blend at elevated temperatures to form a cured rubber-like product, the weight ratio of asphalt to said reaction product being

between about 1 to 28 and about 3 to 1, the amount of said monoester ranging from about 1 to 14% based on the weight of asphalt and said reaction product.

3,202,622

VINYL HALIDE RESIN STABILIZERS COMPRISING HYDROLYZED MIXTURES OF METAL PHENATES, METAL SALTS OF MONOCARBOXYLIC ACIDS AND ORGANIC PHOSPHITES

James P. Scullin, Pompton Lakes, and Theodore A. Girard, Wayne Township, Passaic County, N.J., assignors, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Aug. 28, 1961, Ser. No. 134,062
10 Claims. (Cl. 260—23)

1. In the process for the production of stabilizers for vinyl halide resins which comprises forming a mixture comprising (a) an alkaline earth metal salt of a substituted phenol, said substituted phenol having as substituent at least one alkyl group containing from 4 to 12 carbon atoms; (b) a salt of a polyvalent metal selected from the group consisting of cadmium, zinc, tin, zirconium, calcium, and mixtures thereof, and a monocarboxylic acid selected from the group consisting of alkanoic acids containing from 2 to 22 carbon atoms, benzoic acid, alkylbenzoic acids, chlorobenzoic acids, alkoxylbenzoic acids, hydroxybenzoic acids, and mixtures thereof; (c) an organic phosphite selected from the group consisting of trialkyl phosphites, triaryl phosphites, dialkyl monoaryl phosphites, and monoalkyl diaryl phosphites; and (d) a hydrocarbon solvent, the improvement which comprises adding to said mixture at a temperature in the range of approximately 110° F. to 190° F. approximately 0.1% to 5.0%, based on the total weight of said metal salts and organic phosphite, of water.

3,202,623

PROCESS OF PREPARING RUBBERIZED COMPOSITIONS

Herbert A. Endres, Cuyahoga Falls, Ohio, Harold B. Fuller, Hot Springs, Ark., and Paul W. Gilkeson, Jr., Houston, Tex., assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 19, 1961, Ser. No. 83,640
7 Claims. (Cl. 260—28.5)

1. The process of preparing a powdery, free-flowing, rubber-hard bitumen composition comprising the steps of (1) adjusting the water content of a slurry of a powdered hard bitumen composition having a softening point above 200° F. but not over 400° F. until a slurry of about 25% by weight of hard bitumen and about 75% by weight of water is formed, said hard bitumen particles ranging in size from about 5 microns in diameter to about 50 microns in diameter, 90% of said particles being less than 10 microns in diameter, (2) maintaining the pH of said slurry above 7.0, (3) said hard bitumen slurry being mixed with a diene polymer rubber latex, said rubber being present in said mixture in the proportion of about 5 to 40% by weight of said rubber to about 95 to 60% by weight of said hard bitumen composition, (4) adding a coagulant to co-precipitate the rubber and hard bitumen to form a composition wherein the hard bitumen particles are coated with films of rubber, (5) drying and pulverizing the co-precipitated mixture in order to rupture said films of rubber to cause surface areas of said hard bitumen particles to protrude through the films and (6) recovering composite particles comprised of hard bitumen and associated discontinuous rubber particles to provide a powder wherein at least 95% will pass through a 60-mesh U.S. standard sieve.

3,202,624

CHLOROPRENE POLYMER IN THE FORM OF ELONGATED PARTICLES

Chester Herbert Gelbert, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 28, 1960, Ser. No. 78,829
2 Claims. (Cl. 260—29.7)

1. A process for preparing a porous elastic sheet of chloroprene polymer gel particles of elongated shape, said process comprising mixing a latex of chloroprene polymer under conditions of high shear with a precipitant, said high shear being that which is sufficient to produce said elongated shape, said precipitant being made prior to said mixing by mixing magnesium chloride and calcium chloride solutions with an excess of sodium hydroxide solution, said precipitant containing at least 0.05 mole of magnesium compounds and at least 0.0005 mole of calcium compounds per liter, said mixing of latex and precipitant being followed by collecting said particles of elongated shape as a sheet by filtration, then removing water by suction, and then drying said sheet.

3,202,625

COMPOSITION FOR WATER BASE PAINTS

Roy W. Tess, Orinda, and Paul R. Van Ess, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 2, 1961, Ser. No. 118,782
9 Claims. (Cl. 260—29.6)

4. A method of making a stable latex comprising copolymerizing a monomeric mixture consisting essentially of (1) from about 4% to about 50% by weight of total monomer of vinyl pivalate, (2) from about 49.5 to 95.5% by weight of total monomer of an alkyl acrylate having from 4 to 12 carbon atoms, and (3) from about 0.5 to 5% by weight of total monomer of an alpha-beta-vinylidene carboxylic acid in an aqueous emulsion containing an anionic emulsifier at a temperature between about 0° C. and 90° C. using a free radical catalyst, stabilizing said emulsion by the addition of a nonionic emulsifier, and adjusting the pH to a value between 8 and 11 with ammonium hydroxide.

3,202,626

MODIFIED POLYTETRAFLUOROETHYLENE DISPERSIONS AND SOLID PRODUCTS

Vincent G. FitzSimmons, McLean, Va., and William A. Zisman, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Dec. 28, 1961, Ser. No. 163,382
4 Claims. (Cl. 260—29.6)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An aqueous ammoniacal thixotropic gel dispersion of pH in the range of from above 7 up to 8 of polytetrafluoroethylene and colloidal boehmite alumina fibrils which bear adsorbed acetate ions in amount corresponding to from about 8 to 11% by weight acetic acid thereon, said colloidal alumina fibrils bearing adsorbed acetate ions being present in a proportion of from about 0.1 to 5% by weight on the polytetrafluoroethylene.

3,202,627

PROCESS FOR PREPARING A GRAFT OF DIENE-STYRENE-ACRYLATE INTERPOLYMER WITH A VINYL CARBOXYLIC ACID

Paul R. Van Ess, Berkeley, and Roy W. Tess, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 31, 1961, Ser. No. 127,796
9 Claims. (Cl. 260—29.7)

1. A process for preparing freeze-thaw mechanical stable latex which comprises adding a minor portion of a monomer mixture consisting essentially of from 10% to 20% of a conjugated diene, from 2% to 55% of a compound selected from the group consisting of styrene and ring-substituted styrene, from 20% to 87.5% of a compound selected from the group consisting of alkyl acrylates having from 4 to 12 carbon atoms, alkyl methacrylates having from 8 to 16 carbon atoms and mixtures thereof, and from 0.5% to 5% by weight of the monomer mixture of an alpha-beta vinylidene carboxylic acid to an aqueous emulsion comprising an emulsifier and a free-radical initiator, and then adding incrementally during the polymerization the major portion of said monomer mixture while maintaining the temperature of the reaction mixture between about 15° C. and 100° C. until at least 70% conversion but less than 95% conversion is achieved, then adjusting the emulsion temperature to from 20° C. to 60° C. and adding from 0.05 to 10 parts per 100 parts of monomer of an alpha-beta vinylidene carboxylic acid, then allowing the polymerization to proceed to substantial completion.

3,202,628

CHLORINATED POLYETHYLENE-ACRYLATE COATING FOR CHLOROSULFONATED POLYETHYLENE

Richard H. Burd, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 9, 1962, Ser. No. 165,252
12 Claims. (Cl. 260—32.8)

1. A composition suitable for coating a chlorosulfonated polyethylene containing substrate, said composition consisting essentially of in weight relationship from 175 to 225 parts of a 40 percent solution in toluene of an acrylic resin produced by copolymerizing a 4:1 mixture of methyl methacrylate and ethyl acrylate, from 30 to 50 parts of chlorinated polyethylene containing from 48 to 55 percent chlorine, from 45 to 75 parts of xylene, and a minor proportion of stabilizing agents.

3,202,629

CROSS-LINKED COMPOSITION OF POLYETHYLENE WITH PIGMENT OF THE GROUP CONSISTING OF LITHOPONE AND ANTIMONY OXIDE

Ting Hung Ling, Marion, Ind., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware

No Drawing. Filed Apr. 17, 1959, Ser. No. 806,996
3 Claims. (Cl. 260—41)

1. The process of preparing a composition of polyethylene and a pigment of the group consisting of lithopone and antimony oxide in which the polyethylene chains are cross-linked both with themselves and with said pigment which comprises intimately mixing together from about 20% to about 80% by weight of polyethylene, correspondingly from about 20% to about 80% by weight of said pigment, and from about 0.5% to about 5% by weight of an organic free radical generating peroxide, and heating the resulting mixture to a temperature above the decomposition temperature of said peroxide, whereby free radicals are generated within the mixture and cross-linking of the polyethylene chains both with themselves and with the pigment ensues and a composition which is thermally stable for a substantial period of time at 260° C. is produced.

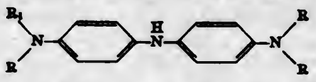
3,202,630

BIS(DIALKYLAMINO)DIPHENYLAMINES AS ANTIOZONANTS FOR RUBBER

Frank A. V. Sullivan, Westfield, N.J., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Dec. 8, 1959, Ser. No. 858,021
4 Claims. (Cl. 260—45.9)

1. Vulcanized rubber having incorporated therein from about one to about five parts per 100 parts of rubber of an antiozonant consisting of a compound of the formula:



wherein each R is the same member of the group consisting of the one to four carbon alkyl radicals and R_1 is selected from the group consisting of R and hydroxyethyl.

3,202,631

STABILIZING POLYURETHANES WITH TETRA ALKYL GUANIDINES

Ernest E. Fenner, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 16, 1961, Ser. No. 145,502
16 Claims. (Cl. 260—45.9)

1. In a process for obtaining a stabilized polyurethane elastomer wherein a reactive hydrogen containing compound of about 700 to 6000 molecular weight and selected from the class consisting of polyesters, polyether polyols and polyesteramides, is reacted with substantially an equivalent amount of an organic diisocyanate to form a polyurethane elastomer and is then heat treated to give a product which is processible, the improvement comprising incorporating within the heat treated product from about one-tenth to one part of a tetra alkyl guanidine per hundred parts of elastomer by weight.

3,202,632

STABILIZATION OF VINYL RESINS WITH AN ALKALINE EARTH METAL PHENOLATE-CARBON DIOXIDE REACTION PRODUCT

Robert E. Lally, Verona, Frederick J. Ihde, Jr., Mountain Lakes, and Louis J. Pulver, Clifton, N.J., assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey

No Drawing. Filed May 2, 1962, Ser. No. 191,717
11 Claims. (Cl. 260—45.95)

1. A composition of matter consisting essentially of

(I) A vinyl halide resin selected from the group consisting of:

(1) homopolymers of vinyl chloride,

(2) homopolymers of vinyl bromide,

(3) homopolymers of vinylidene chloride,

(4) copolymers of vinyl chloride containing in an amount up to about 20% by weight of said copolymer of at least one ethylenically unsaturated monomer copolymerizable therewith selected from the group consisting of vinyl acetate, styrene, diethyl maleate, maleic anhydride, esters of acrylic acid and vinylidene chloride,

(5) copolymers of vinyl bromide containing in an amount up to about 20% by weight of said copolymer of at least one ethylenically unsaturated monomer copolymerizable therewith selected from the group consisting of vinyl acetate, styrene, diethyl maleate, maleic anhydride, esters of acrylic acid and vinylidene chloride, and

(6) copolymers of vinylidene chloride containing in an amount up to about 20% by weight of said copolymer of at least one ethylenically unsaturated monomer copolymerizable therewith selected from the group consisting of vinyl acetate,

styrene, diethyl maleate, maleic anhydride, esters of acrylic acid and vinyl chloride, and

(II) an alkaline earth metal phenolate-carbon dioxide reaction product, present in stabilizing amounts, consisting of the reaction product prepared by reacting:

(1) an alkaline earth metal phenolate which is the reaction product of an alkaline earth metal compound selected from the group consisting of barium oxide, barium hydroxide, strontium hydroxide, calcium oxide, calcium hydroxide and magnesium hydroxide and a hydrocarbon substituted phenol having a molecular weight from about 154 to about 431 wherein the amount of metal in said alkaline earth metal compound does not exceed 1.5 equivalents per one equivalent of said phenol and contacting the resulting reaction product with,

(2) carbon dioxide at a temperature of from about 0° F. to 300° F.

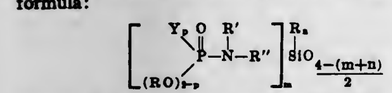
3,202,633

ORGANOSILICON COMPOUNDS CONTAINING PHOSPHORUS AND NITROGEN

Frank Fekete, Monroeville, Pa., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 25, 1960, Ser. No. 44,884
25 Claims. (Cl. 260—46.5)

8. A siloxane comprising groups represented by the formula:



wherein Y is a member selected from the group consisting of the monovalent hydrocarbon groups, and the halogen-substituted monovalent hydrocarbon groups, R is a monovalent hydrocarbon group, R′ is a member selected from the group consisting of the hydrogen atom and the monovalent hydrocarbon groups R″ is a divalent hydrocarbon group, m is an integer that has a value from 1 to 3 inclusive, n is an integer that has a value from 0 to 2 inclusive, $(m+n)$ has a value from 1 to 3 inclusive, p is an integer that has a value from 1 to 2 inclusive, and each nitrogen atom is interconnected to silicon through at least three carbon atoms.

3,202,634

SILARYLENESILOXANE BLOCK COPOLYMERS

Robert L. Merker, Pittsburgh, Pa., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed Aug. 24, 1960, Ser. No. 51,594
28 Claims. (Cl. 260—46.5)

1. A soluble organosiloxane block copolymer exhibiting polymeric crystallinity at 25° C. and in which the copolymeric molecules consist essentially of (A) amorphous segments consisting of linked repeating units of the formula R'_2SiO having an average minimum number of at least 10 units of R'_2SiO and (B) crystallite segments consisting of linked repeating units of the formula $—Si(R)_2Z(R)_2SiO—$ having an average minimum number of at least 3 units of $—Si(R)_2Z(R)_2SiO—$, where each R′ is selected from the group consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, each R is a monovalent hydrocarbon radical free of aliphatic unsaturation, and Z is a divalent radical selected from the group consisting of p-phenylene, 4,4′-biphenylene, 4,4′-diphenylene ether, 4,4′-dimethylene benzene, and 4,4′-dimethylenediphenyl ether radicals, the molar ratio of total R'_2SiO units to total $—Si(R)_2Z(R)_2SiO—$ units ranging from 10:90 to 95:5.

3,202,635

MODIFIED MELAMINE RESINS

Joachim Galinke, Duesseldorf-Holthausen, Germany, assignor to Henkel & Cie. G.m.b.H., Duesseldorf-Holthausen, Germany, a corporation

No Drawing. Filed Sept. 28, 1960, Ser. No. 58,900
Claims priority, application Germany, Oct. 23, 1959, H 37,724
2 Claims. (Cl. 260—67.6)

1. A modified melamine resin, comprising melamine and formaldehyde, in a molar ratio of 1:2 to 1:6, and approximately 0.0005 to 0.1 mol, per mol melamine, of a melamine having at least one alkyl radical substituted by a hydroxyl group, said alkyl radical having 2–4 carbon atoms bound on a nitrogen atom in the triazine ring of said substituted melamine, and said hydroxyl group being separated from said nitrogen atom by at least two carbon atoms.

3,202,636

ISOCYANATO TERMINATED URETHANE CURED WITH A CARBOXYLIC ACID HYDRAZIDE

Erwin Windemuth, Leverkusen, and Fritz Kassack, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 20, 1961, Ser. No. 90,233
Claims priority, application Germany, Feb. 22, 1960, F 30,599
7 Claims. (Cl. 260—75)

1. A process for preparing polyurethane plastics which comprises reacting a carboxylic acid hydrazide with an excess of an organic polyisocyanate, said organic polyisocyanate being a resinous isocyanate-terminated prepolymer having a molecular weight of at least 400 and prepared by the process which comprises reacting a monomeric organic polyisocyanate with an organic compound containing active hydrogen containing groups as determined by the Zerewitinoff method which are reactive with isocyanate groups.

3,202,637

OIL ADDITIVES AND LUBE OILS CONTAINING THEM

Sidney R. Epton and John Hughes, Wirral, and Joseph M. Soesan, London, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 26, 1963, Ser. No. 311,655
Claims priority, application Great Britain, May 28, 1959, 18,203/59
8 Claims. (Cl. 260—77.5)

1. An oil-soluble salt of a polymeric amine selected from the group consisting of poly (vinyl pyridine), poly-(vinyl picoline), poly(vinyl quinoline), and poly(para-amino styrene), and N-hydrocarbyl C_{1-12} carbamic acid, said polymeric amine salt having a molecular weight of from 75,000 to 1,000,000.

3,202,638

FREEZE-THAW MECHANICALLY STABLE LATEX OF A TERPOLYMER OF STYRENE, ALKYL ACRYLATE AND AN ALPHA-BETA VINYLIDENE CARBOXYLIC ACID

Paul R. Van Ess, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 1, 1961, Ser. No. 114,047
9 Claims. (Cl. 260—78.5)

1. The method of making freeze-thaw mechanically stable latex by copolymerizing at least three monoethylenically unsaturated polymerizable monomers in an emulsion system comprising mixing (1) a single monomer mixture consisting essentially of from about 4 to about 40% of the member selected from the class consisting of styrene, alkyl-substituted styrene wherein said alkyl groups contain from 1 to 4 carbon atoms and halo-substituted styrene, said substituted styrenes being ring substituted, from about 55 to 95% of an alkyl acrylate having from 4 to 7 carbon atoms, and from about 0.5–5% by weight of an alpha-beta vinylidene carboxylic acid, (2) an aqueous emulsion consisting essentially of (a) an alkali metal salt of an alkyl aryl polyethyoxyethanol sulfate, (b) a sulfosuccinic acid salt and (c) a condensation product of ethylene oxide and alcohols containing alkyl groups having from 6-15 carbon atoms, and (3) an oxidizing agent, and adding reducing agent in an amount sufficient to cause polymerization while simultaneously keeping the temperature of the reaction mixture between about 15 and 85° C., said (a) and (b) being each employed in the range of from 0.3 to 3% by weight based on total monomer and said (c) being employed in the range from 0.5 to 10% by weight based on total monomer.

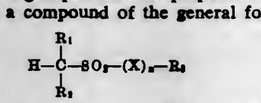
3,202,639

PROCESS FOR THE PRODUCTION OF POLYMERS CONTAINING C-H ACID GROUPS

Josef Witte, Cologne-Stammheim, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed July 22, 1960, Ser. No. 44,560
Claims priority, application Germany, Aug. 1, 1959, F 29,081
12 Claims. (Cl. 260—79.3)

1. As a new composition of matter, a polymer containing C-H acid groups which is prepared by the polymerization of a compound of the general formula:



wherein R_1 and R_2 each represent a member selected from the group consisting of nitrile, alkyl sulfonyl, aryl sulfonyl, aralkyl sulfonyl, and cycloalkyl sulfonyl, R_3 represents a member selected from the group consisting of vinyl, acryloxy, acrylamido, and methacrylamido, X is selected from the group consisting of alkylene and arylene, and n is 0 or 1, said polymerization being conducted in the presence of a free radical-forming catalyst which is present in an amount of 0.1–5% by weight based on the monomer weight.

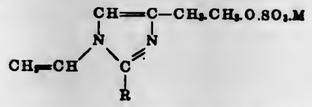
3,202,640

METHOD FOR PRODUCING ACRYLONITRILE-β-[1-VINYL - IMIDAZOLYL - (4)] - ALKYLSULFATES POLYMERS

Masakazu Taniyama, Michihiko Kawakatsu, Natsuo Sawa, Yasuhiro Iwasaki, and Masatoshi Yoshida, all of Kitajima-machi, Itano-gun, Japan, assignors to Toho Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed July 14, 1961, Ser. No. 125,035
Claims priority, application Japan, July 22, 1960, 35/32,150
5 Claims. (Cl. 260—79.3)

1. A method of preparing polymeric materials which comprises copolymerizing in the presence of a free radical catalyst a compound of acrylonitrile and a monomer, said acrylonitrile being at least 85% by weight of the compound and said monomer being the remaining percentage by weight of the compound, said monomer having the structure:



wherein R represents a member of the group consisting of hydrogen and an alkyl radical having 1 to 4 carbon atoms and M represents a member of the group consisting of hydrogen, an alkali metal and an alkaline earth metal.

5. The method as recited in claim 1 wherein a third monomer is copolymerized with said acrylonitrile and said monomer, said third monomer having an unsaturated olefinic function therein and being not more than 10% by weight of the monomer mixture, and said third monomer is a member selected from the group consisting of acrylic acid, an ester of acrylic acid, methacrylic acid and an ester of methacrylic acid.

3,202,641

PREPARATION OF ACRYLONITRILE COPOLYMERS

Akira Nakajima, Nakano, and Kenji Takeya, Kanaoka, Saidaiji, Japan, assignors to Japan Exlan Company Limited, Osaka, Japan

Filed Sept. 4, 1962, Ser. No. 220,998
Claims priority, application Japan, Sept. 5, 1961, 36/32,549
5 Claims. (Cl. 260—79.3)

1. A process for producing a copolymer of acrylonitrile and at least one ethylenically unsaturated compound which comprises copolymerizing a mixture of the monomers containing at least 85% by weight of acrylonitrile in an aqceous organic solvent free medium in the presence of a chlorate sulfite catalyst, the process being characterized by the fact that the polymerization is carried out in the presence of at least one sulfonic acid compound selected from the group consisting of ethylenically unsaturated aliphatic sulfonic acids and their water soluble salts in an amount of from 0.1 to 3% by weight based upon the total weight of the monomeric mixture, and at a pH from 2 to 3.5.

3,202,642

HOMOPOLYMERS AND COPOLYMERS OF ISOPROPENYLNAPHTHALENES AND PROCESSES OF PRODUCING THE SAME

George F. Hardy, Drexel Hill, Pa., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 27, 1961, Ser. No. 91,645
15 Claims. (Cl. 260—85.5)

1. A polymer selected from the group consisting of homopolymers of an isopropenylnaphthalene and copolymers of an isopropenylnaphthalene and an ethylenically unsaturated compound, said polymer having a molecular weight of at least 10,000 and being suiable for use as a molding compound, prepared by a process which comprises polymerizing a monomer material selected from the group consisting of a monomer of an isopropenylnaphthalene and a monomer mixture of an isopropenylnaphthalene and an ethylenically unsaturated compound in the presence of a catalyst selected from the group consisting of alkali metals, alkali metal hydrides, alkali metal alkyls, alkali metal aryls and addition compounds of alkali metals with polynuclear aromatic hydrocarbons in amount about 0.01 to 5% by weight of the monomer, and recovering the polymer from the resulting polymerization mass.

3,202,643

3,4,5,5,5-PENTAFLUOROPENTADIENE AND A HOMOPOLYMER THEREOF

Eldon E. Frisch, Midland, Mich., and Omar W. Steward, Leicester, England; said Steward assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed July 2, 1962, Ser. No. 207,044
2 Claims. (Cl. 260—92.1)

1. The composition of matter 3,4,5,5,5-pentafluoro-1,3-pentadiene.

2. A homopolymer of 3,4,5,5,5-pentafluoro-1,3-pentadiene.

3,202,644

SURFACE TREATED CARBON BLACK AS POLYMERIZATION CATALYST AND METHOD OF POLYMERIZATION THEREWITH

Joel A. Yancey, Wellesley, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Dec. 11, 1964, Ser. No. 417,763
32 Claims. (Cl. 260—93.7)

25. A process for polymerizing a substance chosen from the group consisting of a mono-olefin, mixtures of mono-olefins, a di-olefin, mixtures of di-olefins, and mixtures thereof which comprises contacting said substance at temperatures between 25° C. and 250° C., with a catalyst comprising

(a) Carbon black having an average particle diameter of less than about 0.1 micron and having chemically linked directly to oxygen atoms in the surface thereof at least about 1×10^{-4} equivalents per gram of structures conforming to the formula:

$$MM'_vX_nR_y$$

wherein M is chosen from the group consisting of the metals of Groups II*b* and III*b*; M' is a metal of Group I; *v* is a number from 0 to 1; each X is any halogen; *n* is a number from 0 to 2; each R is chosen from the group consisting of hydride and monovalent hydrocarbon radicals; and *y* is a number from 1 to 3; and

(b) a compound conforming to the general formula:

$$TO_aX_b$$

wherein T is chosen from the group consisting of the metals of groups IV*a*, V*a*, VI*a*, VII*a* and period 4 of Group VIII; O is oxygen; *a* is a number from 0 to 2; each X is any halogen; and *b* is a number from 1 to 7.

3,202,645

SURFACE TREATED INORGANIC SOLID POLYMERIZATION CATALYST AND METHOD OF POLYMERIZATION THEREWITH

Joel A. Yancey, Wellesley, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Dec. 16, 1964, Ser. No. 418,919
32 Claims. (Cl. 260—93.7)

25. A process for polymerizing a substance chosen from the group consisting of a mono-olefin, mixtures of mono-olefins, a di-olefin, mixtures of di-olefins, and mixtures thereof which comprises contacting said substance at temperatures between 25° C. and 250° C., with a catalyst comprising

(a) a finely-divided inorganic solid having an average particle diameter of less than about 0.1 micron and having chemically linked directly to oxygen atoms in the surface thereof at least about 1×10^{-4} equivalents per gram of structures conforming to the formula:

$$MM'_vX_nR_y$$

wherein M is chosen from the group consisting of the metals of groups IIb and IIIb; M' is a metal of Group I; *v* is a number from 0 to 1; each X is any halogen; *n* is a number from 0 to 2; each R is any hydrocarbon radical or hydrogen; and *y* is a number from 1 to 3, and

(b) a compound conforming to the general formula:

$$TO_aX_b$$

wherein T is chosen from the group consisting of the metals of Groups IVa, Va, VIa, VIIa and period 4 of Group VIII; O is oxygen; *a* is a number from 0 to 2; each X is any halogen; and *b* is a number from 1 to 7.

3,202,646

PRODUCTION OF CIS-POLYBUTADIENE IN AN AROMATIC-ALIPHATIC MIXED DILUENT

Floyd E. Naylor, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 25, 1961, Ser. No. 140,192
9 Claims. (Cl. 260—94.3)

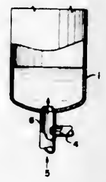
1. In a process for polymerizing 1,3-butadiene in the presence of an iodine-containing catalyst which polymerizes butadiene to a polymer containing at least 85 percent cis 1,4-addition and which forms on mixing components comprising an organoaluminum compound and a titanium halide, the improvement which comprises charging to a polymerization zone said catalyst, 1,3-butadiene and an aromatic hydrocarbon diluent; after polymerization reaction is initiated in the substantial absence of aliphatic hydrocarbon diluent, continuously introducing into said polymerization zone an aliphatic hydrocarbon diluent until termination of the polymerization reaction, the amount of aliphatic hydrocarbon diluent added being a major proportion of the total diluent and a major portion of the polymerization being performed in the presence of said aliphatic diluent; and recovering the polymer of 1,3-butadiene so produced.

3,202,647

ELASTOMER RECOVERY PROCESS

David B. Todd and William R. Keeler, Berkeley, and Ronald C. Balfour, Torrance, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Nov. 19, 1962, Ser. No. 238,663
6 Claims. (Cl. 260—94.7)



1. A process for recovering a synthetic elastomer from its solution in a hydrocarbon solvent which comprises

(1) feeding the solution in one orifice of a two fluid nozzle,

(2) feeding steam at a pressure of between about 90–130 p.s.i.g. into a second orifice of said nozzle, whereby crumb is instantaneously formed and solvent instantaneously flashed off,

(3) receiving the crumb in a water bath,

(4) separating the crumb from the water, and

(5) drying the crumb.

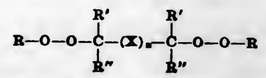
3,202,648

SCORCH-RESISTANT POLYETHYLENE COMPOSITIONS AND METHOD

Harold K. Latourette, Pennington, and Ernest R. Gilmont, Princeton, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 8, 1961, Ser. No. 150,875
23 Claims. (Cl. 260—94.9)

1. Scorch resistant composition useful in the production of crosslinked polyethylene, consisting essentially of 100 parts by weight of polyethylene, 0.1 to 10 parts by weight of an organic peroxide from the group consisting of (a) bisperoxides having the following formula:



wherein X is $-CH_2-CH_2-$, $-CH=CH-$, or $-C\equiv C-$,

n is an integer from 1 to 2, R is a tertiary alkyl group having 4 to 8 carbon atoms, and R' and R'' are hydrocarbon radicals each having 1 to 8 carbon atoms from the group consisting of individual unconnected hydrocarbon radicals and alkylene radicals connected to form cycloalkylene radicals, and (b) monoperoxides containing attached to the peroxygen group a saturated tertiary alkyl group having 4 to 8 carbon atoms and in which the other group attached to the peroxygen group is from the group consisting of alkyl, cycloalkyl and aralkyl groups, and 0.1 to 4 parts by weight of a nitrite from the group consisting of the alkyl, cycloalkyl and aralkyl nitrites having 5 to 18 carbon atoms.

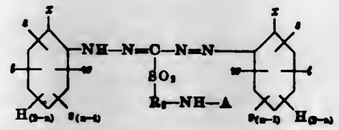
3,202,649

METAL-CONTAINING REACTIVE AZO DYES

Willy Steinemann, Basel, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed May 3, 1962, Ser. No. 192,287
Claims priority, application Switzerland, Feb. 26, 1960, 2,161/61
7 Claims. (Cl. 260—146)

1. A member selected from the group consisting of the copper, nickel and cobalt complex compounds of a dye of the formula



wherein

R_2 represents a member selected from the group consisting of phenylene, methylphenylene, dimethylphenylene, methoxyphenylene, dimethoxyphenylene, carboxyphenylene and naphthylene,

x represents a member selected from the group consisting of hydroxy and carboxy,

s represents a member selected from the group consisting of hydrogen, methyl, chlorine, nitro and lower alkanoylamino,

t represents a member selected from the group consisting of hydrogen, chlorine, methyl and nitro,

v represents a member selected from the group consisting of methylsulfonyl, sulfonic acid, sulfonic acid amide, sulfonic acid lower alkylamide, sulfonic acid di-(lower alkyl) amide, sulfonic acid lower hydroxyalkylamide, sulfonic acid di-(lower hydroxyalkyl)-amide, sulfonic acid lower alkoxyalkylamide, sulfonic acid cycloalkylamide, sulfonic acid carboxy-lower alkylamide, sulfonic acid lower alkylamide-sulfonic acid and sulfonic acid mononuclear arylamide substituted by one to two water-solubilizing groups,

w represents a member selected from the group consisting of hydrogen and chlorine,

A represents a member selected from the group consisting of unsubstituted monohalogenopyrimidyl, monohalogeno-6-methylpyrimidyl, monohalogeno-6-lower carbalkoxypyrimidyl, monohalogeno-6-trichloromethyl - pyrimidyl, monohalogeno - 5 - halogenopyrimidyl, unsubstituted dihalogenopyrimidyl, dihalogeno-5-lower alkylpyrimidyl, dihalogeno-5-lower carbalkoxypyrimidyl, dihalogeno - 5 - carboxypyrimidyl, dihalogeno-5-carboxymethylpyrimidyl, dihalogeno - 5 - halogenovinylpyrimidyl, dihalogeno-5-allylpyrimidyl, trihalogenopyrimidyl, 2,4-dihalogenopyrimidyl - 5 - methylene, 2,4 - dihalogeno-6-methylpyrimidyl - 5 - methylene, 2,4,6-trihalogeno-pyrimidyl-5-methylene, 2,4,6-trihalogeno-pyrimidyl-5-acetyl, 4,6-dihalogeno-1,3,5-triazinyl-2, 4 - halogeno - 6 - amino-1,3,5 - triazinyl-2, 4 - halogeno - 6-lower alkylamino-1,3,5 - triazinyl - 2, 4 - halogeno-6-di-(lower alkyl)-amino-1,3,5-triazinyl-2, 4-halogeno-6-lower hydroxyalkylamino - 1,3,5-triazinyl-2, 4-halogeno-6-di-(lower hydroxyalkyl) - amino - 1,3,5-triazinyl-2,4-halogeno-6-lower alkoxyalkylamino-1,3,5-triazinyl-2,4-halogeno-6-lower carboxyalkylamino - 1,3,5-triazinyl - 2,4-halogeno-6-N-lower alkyl-N-lower carboxyalkylamino-1,3,5-triazinyl-2, 4-halogeno-6-lower sulofalkylamino-1,3,5-triazinyl-2, 4-halogeno-6-N-lower alkyl-N-lower sulfoalkylamino-1,3,5-triazinyl-2, 4-halogeno - 6-phenylamino-1,3,5-triazinyl1-2, 4-halogeno-6-N - lower alkyl - N-phenylamino-1,3,5-triazinyl-2, 4-halogeno - 6 - N-lower hydroxyalkyl-N-phenylamino-1,3,5-triazinyl-2, 4-halogeno-6-carboxyphenylamino-1,3,5-triazinyl-2, 4-halogeno-6-sulfophenylamino-1,3,5-triazinyl-2, 4-halogeno-6-disulfophenylamino-1,3,5-triazinyl-2, 4 - halogeno-6-sulfonaphthylamino-1,3,5,-triazinyl-2, 4-halogeno-6-disulfonaphthylamino-1,3,5-triazinyl - 2, 4 - halogeno-6-trisulfonaphthylamino-1,3,5-triazinyl-2, halogeno-lower alkanoyl, dihalogeno-lower alkanoyl, lower alkenoyl, halogeno-lower alkenoyl and dihalogeno-lower alkenoyl, halogen having an atomic weight between 35 and 81, and *n* is one of the integers 1 and 2.

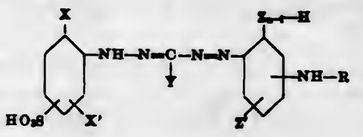
3,202,650

METAL-CONTAINING REACTIVE AZO DYES

Willy Steinemann, Basel, Switzerland, assignor to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed May 3, 1962, Ser. No. 192,288
Claims priority, application Switzerland, May 30, 1960, 6,121/60
5 Claims. (Cl. 260—146)

1. A dyestuff selected from the group consisting of the 1:1-copper and 1:1 nickel complex compounds of dyestuffs of the formula



wherein

X is a member selected from the group consisting of —OH and —COOH in ortho position to the —NH—N= bridge,

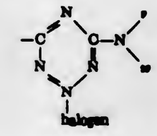
Z is a member selected from the group consisting of —O— and —COO— in ortho position to the —N=N— bridge,

X' is a member selected from the group consisting of H, $-SO_3H$, Cl, $-NO_2$ and —COOH,

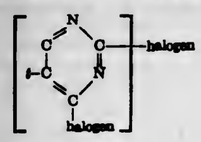
Z' is a member selected from the group consisting of H, $-CH_3$ and $-SO_3H$,

Y is a member selected from the group consisting of lower alkyl-CO—, lower alkyl-SO_2—, phenyl-SO_2—, chlorophenyl-SO_2—, lower alkylphenyl-SO_2—, nitrophenyl-SO_2—, carboxyphenyl-SO_2—, lower alkoxyphenyl-SO_2— and naphthyl—SO_2—.

R is a member selected from the group consisting of halogenoacetyl, halogenopropionyl, dihalogenopropionyl, halogenoacrylyl, 4,6 - dihalogeno - 1,3,5 - triazinyl-2-, 2,4 - dihalogeno - 6 - methyl-pyrimidyl-5-methylene, monohalogeno-1,3,5-triazinyl of the formula



and dihalogenopyrimidyl of the formula



wherein

halogen has an atomic weight between 35 and 81,
v is a member selected from the group consisting of hydrogen, lower alkyl, and lower hydroxyalkyl,
w is a member selected from the group consisting of hydrogen, lower alkyl, lower hydroxyalkyl, lower alkoxyalkyl, lower carboxyalkyl, lower sulfoalkyl, lower hydroxysulfoalkyl, phenyl, carboxyphenyl, sulfophenyl and disulfophenyl,
t is a member selected from the group consisting of hydrogen, chlorine, bromine, methyl, allyl, carboxy and carboxymethyl,
n is one of the integers 1 and 2,

and the whole dye molecule bears one to four SO_3H groups.

3,202,651

PROCESS FOR THE PRODUCTION OF o-HYDROXY AZO COMPOUNDS

Fritz Suckfüll, Leverkusen, Helmut Dittmer, Cologne-Stammheim, and Ernst Messmer, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Oct. 10, 1960, Ser. No. 61,354
Claims priority, application Germany, Oct. 24, 1959, F 29,698; Dec. 2, 1959, F 29,992
4 Claims. (Cl. 260—194)

1. A process for the production of ortho-hydroxy azo compounds which consists in reacting a diazotate of the formula

$$R—N=N—O^{(-)}$$

wherein R is a member selected from the group consisting of a compound of the benzene and naphthalene series; with a diazonium compound of the formula

$$R_1—N\equiv N^{(+)}$$

wherein R_1 is a member selected from the group consisting of a component of the benzene and naphthalene series, at least one of R and R_1 being of the naphthalene series; the reaction being carried out at a pH of about 9–12 and at a temperature of about 0°–60° C.

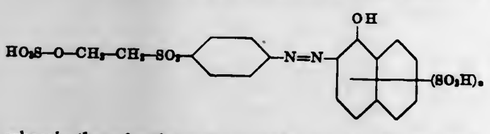
3,202,652

REACTIVE WATER-SOLUBLE MONOAZO-DYESTUFFS

Fritz Meininger, Frankfurt am Main, and Walter Noll, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 12, 1963, Ser. No. 264,720
Claims priority, application Germany, Mar. 16, 1962, F 36,287
4 Claims. (Cl. 260—200)

1. Water-soluble monoazo-dyestuffs having the formula



wherein the subscript *n* represents an integer from 2 to 3.

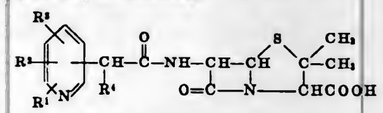
3,202,653

6-[α-HYDROXY- AND α-AMINO-α-PYRIDYLACETAMIDO]PENICILLANIC ACIDS AND SALTS THEREOF

Lee C. Cheney, Fayetteville, and John C. Godfrey, Syracuse, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 1, 1963, Ser. No. 269,716
10 Claims. (Cl. 260—239.1)

1. A member selected from the group consisting of the acids having the formula



wherein R^1, R^2 and R^3 are each a member selected from the group consisting of hydrogen, chloro, bromo, fluoro, iodo, nitro, (lower)alkyl, (lower)alkoxy, (lower)alkylthio, (lower)alkylamino, di(lower)alkylamino, (lower) alkanoylamino, (lower) alkanoyl and (lower) alkylsulfonyl and wherein R^4 is a member selected from the group consisting of hydroxyl, amino, (lower)alkyl and phenyl- and their pharmaceutically acceptable nontoxic salts.

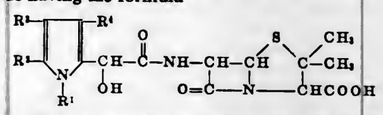
3,202,654

6-[α - HYDROXY- AND α-AMINO-α-PYRROLYLACETAMIDO] PENICILLANIC ACIDS AND SALTS THEREOF

Yvon Gaston Perron, Ville d'Anjou, Quebec, Canada, assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 8, 1963, Ser. No. 271,516
10 Claims. (Cl. 260—239.1)

1. A compound selected from the group consisting of the acids having the formula



wherein R^1 is a member selected from the group consisting of hydrogen, (lower)alkyl, phenyl, chlorophenyl, phenethyl, (lower)alkanoyl, (lower)alkylsulfonyl and cycloalkyl having from 5 to 7 carbon atoms inclusive and wherein R^2, R^3 and R^4 are each a member selected from the group consisting of hydrogen, chloro, bromo, fluoro, iodo, nitro, (lower)alkyl, (lower)alkoxy, (lower)-alkylthio, di(lower)alkylamino, (lower)alkanoylamino, (lower)alkanoyl and (lower)alkylsulfonyl; and the pharmaceutically acceptable nontoxic salts thereof.

6. 6 - (2 - pyrrolylglyoxylamido)penicillanic acid.

10. 6 - [α - amino - α - (2 - pyrrolyl)acetamido]penicillanic acid.

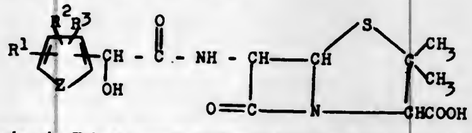
3,202,655

6-[α-SUBSTITUTED-α-(2- OR 3-HETEROCYCLIC) ACETAMIDO]PENICILLANIC ACID AND NONTOXIC SALTS THEREOF

Yvon G. Perron, 7711 Du Mail Ave., Ville d'Anjou, Quebec, Canada, and Lee C. Cheney, Woodchuck Hill Road, R.D., Fayetteville, N.Y.

No Drawing. Filed July 5, 1963, Ser. No. 293,135
5 Claims. (Cl. 260—239.1)

1. A compound selected from the group consisting of the acids having the formula



wherein Z is a member selected from the group consist-

ing of sulfur and oxygen and wherein R^1, R^2 and R^3 are each a member selected from the group consisting of hydrogen, chloro, bromo, fluoro, iodo, nitro, (lower)alkyl, (lower)alkoxy, (lower)alkylthio, di(lower)alkylamino, (lower)alkanoylamino, (lower)alkanoyl, and (lower)alkylsulfonyl and the pharmaceutically acceptable nontoxic salts thereof.

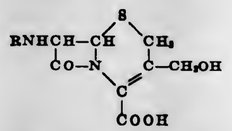
3,202,656

DERIVATIVES OF CEPHALOSPORIN C

Edward Penley Abraham and Guy Geoffrey Frederick Newton, Oxford, and Jonathan d'Arcora Jeffery, Liverpool, England, assignors to National Research Development Corporation, London, England, a British corporation

Filed Apr. 4, 1961, Ser. No. 100,731
Claims priority, application Great Britain, Apr. 11, 1960, 12,866/60
8 Claims. (Cl. 260—243)

1. A compound of the formula



wherein R is selected from the group consisting of hydrogen, α-aminoadipyl, benzyloxycarbonyl, benzoyl, nitro-benzoyl, chlorobenzoyl, alkylbenzoyl, methoxybenzoyl, ethoxybenzoyl, and a radical of a carboxylic acid having the formula



wherein R_1 and R_2 are each selected from the group consisting of hydrogen, alkyl of 1 to 10 carbon atoms, phenyl, nitro-phenyl, chlorophenyl, phenylalkyl, methoxyphenyl, ethoxyphenyl and R_3—O— wherein R_3 is selected from the group consisting of alkyl of 1 to 10 carbon atoms, phenyl, nitro-phenyl, chlorophenyl, phenylalkyl, methoxyphenyl and ethoxyphenyl.

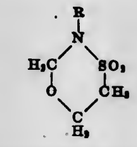
3,202,657

N-ARALKYL- AND N-ARYL DERIVATIVES OF TETRAHYDRO - OXATHIAZINE-(1,4,5)-DIOXIDE-(4,4) AND PROCESS FOR PREPARING THEM

Rudolf Kühne and Fritz Meininger, Frankfurt am Main, and Rolf Wilhelm Pfirrmann, Heidelberg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

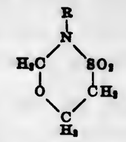
No Drawing. Filed Nov. 27, 1962, Ser. No. 240,437
Claims priority, application Germany, Nov. 30, 1961, F 35,442
9 Claims. (Cl. 260—243)

1. A heterocyclic compound selected from the group consisting of compounds having the formula



wherein R represents a member of the group consisting of benzyl, phenyl, methyl-phenyl, carbethoxy-phenyl, nitro-phenyl, amino-phenyl, nitro-chlor-phenyl, dimethyl-nitro-phenyl, methyl-nitro-methoxy-phenyl, benzoyl-phenyl, phenyl-azo-phenyl and naphthyl.

2. A process for preparing heterocyclic compounds having the formula



wherein R represents a member of the group consisting of benzyl, phenyl, methyl-phenyl, carbethoxy-phenyl, nitro-phenyl, nitro-chlor-phenyl, dimethyl-nitro-phenyl, methyl-nitro-methoxy-phenyl, benzoyl-phenyl, phenyl-azo-phenyl and naphthyl which comprises reacting a sulfonamide having the formula

$$R—NH—SO_2—CH_2—CH_2—OX$$

wherein R is as defined above and X is a member of the group consisting of hydrogen, $—SO_3H$, $—SO_3K$, $—PO_3H_2$ and —CHO with formaldehyde in the presence of an acid selected from the group consisting of formic acid and diluted mineral acids at a temperature in the range of about 20° C. to about 120° C., the molar ratio of said sulfonamide and formaldehyde being in the range of about 1:1 to 1:10.

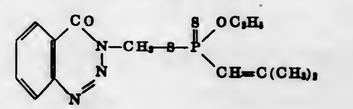
3,202,658

THIONOPHOSPHONIC ACID ESTERS AND A PROCESS FOR THEIR PRODUCTION

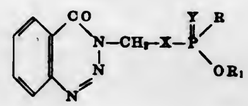
Walter Lorenz, Wuppertal-Vohwinkel, and Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Feb. 16, 1960, Ser. No. 8,928
Claims priority, application Germany, Feb. 28, 1959, F 27,831
3 Claims. (Cl. 260—248)

1. The compound of the following formula



3. A thiophosphonic acid ester of the following formula



in which R stands for alkenyl having up to 8 carbon atoms, R_1 stands for lower alkyl having up to 4 carbon atoms and X and Y each stand for sulfur.

3,202,659

2,5,8-TRIHYDRAZINO-TRI-s-TRIAZINE AND PROCESS THEREFOR

Charles D. Wright, North St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Feb. 29, 1960, Ser. No. 11,922
2 Claims. (Cl. 260—249.6)

1. 2,5,8-trihydrazino-tri-s-triazine.

3,202,660

PROCESS FOR THE PREPARATION OF 3-ARYLAMINO-1,3-DIAZACYCLOALKENES

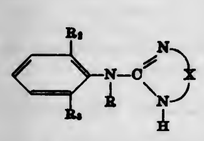
Karl Zelle, Karl-Heinz Hauptmann, and Helmut Stahle, Ingelheim, Germany, assignors, by mesne assignments, to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany

No Drawing. Filed Oct. 1, 1962, Ser. No. 227,527

Claims priority, application Germany, Oct. 9, 1961, B 64,319

2 Claims. (Cl. 260—254)

1. The method of preparing 2-arylamino-1,3-diazacycloalkenes-(2) of the formula



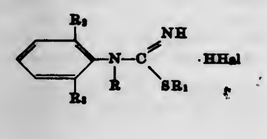
wherein

R is selected from the group consisting of hydrogen and lower alkyl,

X is selected from the group consisting of straight and branched chain alkylene of 2 to 3 carbon atoms, and

R_2 and R_3 are selected from the group consisting of methyl, ethyl and chlorine,

which comprises forming a mixture consisting solely of an aryl-substituted isothiouronium salt of the formula



wherein

R, R_2 and R_3 have the meanings previously defined,

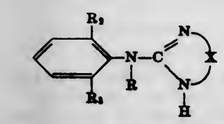
R_1 is lower alkyl, and

Hal is selected from the group consisting of chlorine, bromine and iodine,

and a lower alkylene diamine of the formula

$$H_2N—X—NH_2$$

wherein X has the meanings previously defined, heating said mixture at a temperature of 100–200° C. for a period of 10 to 120 minutes, making the reaction mixture alkaline and isolating a free 2-arylamino-1,3-diazacycloalkene base of the formula



wherein R, R_2 and R_3 and X have the meanings previously defined, from the reaction mixture.

3,202,661

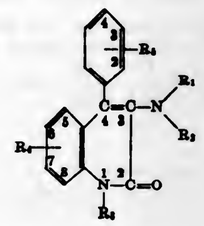
SUBSTITUTED 3-AMINO 4-PHENYL QUINOLONES

Bernard Brust, Clifton, Rodney Ian Fryer, West Orange, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 27, 1962, Ser. No. 240,406

8 Claims. (Cl. 260—288)

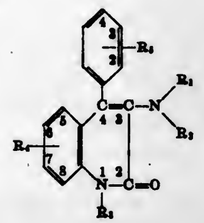
2. A compound selected from the group of compounds consisting of compounds of the formula



and pharmaceutically acceptable acid addition salts thereof

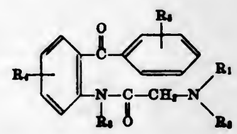
wherein R_1 and R_2 are each selected from the group consisting of hydrogen, lower alkyl and, taken together, lower alkylene; R_3 is selected from the group consisting of hydrogen and lower alkyl and R_4 and R_5 are each selected from the group consisting of hydrogen, halogen, trifluoromethyl, nitro, lower alkylmercapto and lower alkoxy, R_4 being other than halogen when R_5 is hydrogen.

8. A process for the preparation of compounds of the formula



wherein R_1 and R_2 are each selected from the group consisting of hydrogen, loyer alkyl and, taken together, lower alkylene and at least one of R_1 and R_2 is other than hydrogen; R_3 is selected from the group consisting of hydrogen and lower alkyl and R_4 and R_5 are each selected from the group consisting of hydrogen, halogen, trifluoromethyl, nitro, lower alkylmercapto and lower alkoxy, R_4 being other than halogen when R_5 is hydrogen

which comprises heating a compound of the formula



wherein R_1, R_2, R_3, R_4 and R_5 have the same meaning as above

whereby to effect the cyclization thereof.

3,202,662

NOVEL DERIVATIVES OF RING E KETO YOHIMBE ALKALOIDS AND INTERMEDIATES THEREFOR

Jay Donald Albright and Leon Goldman, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 24, 1963, Ser. No. 282,860

8 Claims. (Cl. 260—288)

1. 18α-benzoyloyohimban-17-one.

3,202,663

RING E SUBSTITUTED YOHIMBANES

Jay Donald Albright and Leon Goldman, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation of application Ser. No. 192,984, May 7, 1962. This application Aug. 12, 1963, Ser. No. 301,617

2 Claims. (Cl. 260—288)

1. A member selected from the group consisting of 17α-hydroxyyohimban-18α-carbonitrile and a pharmaceutically acceptable acid-addition salt thereof.

3,202,664

METHOD AND APPARATUS FOR DEALKYLATING AND HYDROGENATION OF ORGANIC COMPOUNDS

James Douglas Brooks, Wahroonga, New South Wales, and Raymond John Harrison, Drummoyne, New South Wales, Australia, assignors to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a corporation of Australia

Filed May 18, 1962, Ser. No. 195,799

Claims priority, application Australia, May 23, 1961, 4,900/61

7 Claims. (Cl. 260—290)

1. Process for dealkylating and hydrogenating gaseous by-product compounds from gas and coke production, said by-products comprising alkyl aromatic hydrocarbons, alkyl phenols, and alkyl aromatic bases admixed with paraffinic and olefinic hydrocarbons, comprising

(1) mixing said compounds in the gaseous state with molecular hydrogen,

(2) contacting the resultant gaseous admixture with metallic filament in a reaction zone while concomitantly maintaining said zone at a temperature sufficiently high to prevent condensation of organic vapors, said filament being heated to a temperature between 1000 and 1500° C., whereby atomic hydrogen is formed at said filament, and

(3) condensing the resultant dealkylated product.

3,202,665

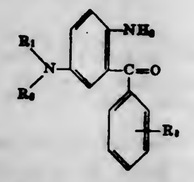
5-PIPERIDINO- AND 5-DILOWERALKYLAMINO-2-AMINO-BENZOPHENONES

Werner Metlesics, Clifton, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 9, 1962, Ser. No. 178,566

1 Claim. (Cl. 260—294.7)

A compound of the formula



and pharmaceutically acceptable acid addition salts thereof wherein R_1 and R_2 are selected from the group consisting of, individually, lower alkyl and, taken together with the nitrogen atom, piperidino, and R_3 is selected from the group consisting of hydrogen, halogen, lower alkyl, lower alkoxy and trifluoromethyl.

3,202,666

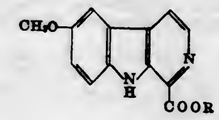
SUBSTITUTED 9H-PYRIDO(3-4-b)INDOLE-1 CARBOXYLIC ACID AND DERIVATIVES

Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,662

2 Claims. (Cl. 260—295)

1. A compound selected from the group consisting of (1) substituted 6-methoxy-9H-pyrido[3,4-b]indoles of the formula



wherein R is a member selected from the group consisting of hydrogen and a lower alkyl group of 1–4 carbon atoms, and (2) physiologically acceptable acid addition salts thereof.

3,202,667

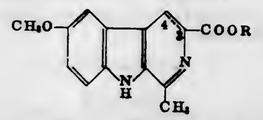
6 - METHOXY - 1 METHYL - 9H - PYRIDO[3-4-b] INDOLE - 3 - CARBOXYLIC ACID, ESTERS AND ITS ACID ADDITION SALTS

Jacob Szuszkovicz and Gilbert A. Youngdale, both of Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,804

5 Claims. (Cl. 260—295)

1. A compound selected from the group consisting of (1) substituted 6-methoxy-1-methyl-9H-pyrido[3,4-b]indoles of the formula



wherein R is a member selected from the group consisting of hydrogen and lower alkyl of 1–4 carbon atoms, and the 3–4 linkage is selected from linkages consisting of single and double bonds, and (2) physiologically acceptable acid addition salts thereof.

3,202,668

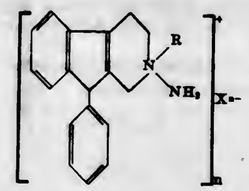
N-AMINOPHENINDAMINIUM SALTS

Bernard Rudner, Pittsburgh, Pa., and Mary Jo Walch, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed May 22, 1962, Ser. No. 196,607

5 Claims. (Cl. 260—296)

1. A compound of the formula:



wherein R is lower alkyl and X is an anion and *n* is equal to the charge of anion X.

3,202,669

6 - METHOXY - 1 - (3,4,5 - TRIMETHOXY PHENYL)-9H - PYRIDO[3,4-b]INDOLE AND ITS ACID ADDITION SALTS

Jackson B. Hester, Jr., Portage Township, Kalamazoo County, and Jacob Szmuszkovicz, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,663

3 Claims. (Cl. 260—296)

2. 6-methoxy-1-(3,4,5 - trimethoxyphenyl)-9H-pyrido-[3,4-b]indole.

3,202,670

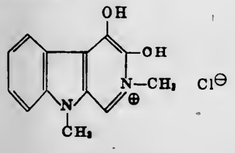
9 - METHYL - 3,4 - DIHYDROXY - 9H - PYRIDO-[3,4-b]INDOLE METHOCHLORIDE

Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,685

1 Claim. (Cl. 260—296)

9-methyl-3,4-dihydroxy-9H-pyrido[3,4-b]indole methochloride of the formula



3,202,671

2,9 - DIMETHYL - 4 - HYDROXY - 1,2,3,4 - TETRAHYDRO - 9H - PYRIDO[3,4-b]INDOLE AND ITS ACID ADDITION SALTS

Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,688

2 Claims. (Cl. 260—296)

2. 2,9 - dimethyl - 4-hydroxy-1,2,3,4-tetrahydro-9H-pyrido[3,4-b]indole.

3,202,672

4-AMINO-2,9-DIMETHYL-1,2,3,4-TETRAHYDRO-9H-PYRIDO[3,4-b]INDOLE AND ITS ACID ADDITION SALTS

Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,805

2 Claims. (Cl. 260—296)

2. 4 - amino-2,9-dimethyl-1,2,3,4-tetrahydro-9H-pyrido [3,4-b]indole.

3,202,673

1,3,4-OXA(OR THIA)DIAZOLE COMPOUNDS

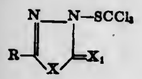
Jean Metivier, Choisy-le-Roi, and Roger Boesch, Vitry-sur-Seine, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France

No Drawing. Filed June 13, 1963, Ser. No. 287,497

Claims priority, application France, June 19, 1962, 901,238; Nov. 30, 1962, 917,159; Apr. 30, 1963, 933,251

9 Claims. (Cl. 260—307)

1. A compound of the formula:



wherein X and X_1 represent members of the class consisting of oxygen and sulphur atoms, and R represents a member of the class consisting of hydrogen, alkyl, halogeno-alkyl, nitro-alkyl, cyano-alkyl, alkenyl, alkyl and alkenyl the chain of which is interrupted by a member of the class consisting of oxygen, sulphur, sulphoxyl, and sulphonyl, alkylthio, alkoxycarbonyl, carbamoyl, N-alkyl-carbamoyl, N,N-dialkylcarbamoyl, phenyl, naphthyl, phenylalkyl of 7 to 10 carbon atoms, naphthylalkyl of 10 to 12 carbon atoms, phenylalkyl of 7 to 10 carbon atoms and naphthylalkyl of 10 to 12 carbon atoms the alkyl moieties of which are separated from the aryl group by a member of the class consisting of oxygen and sulphur, phenylalkyl of 7 to 10 carbon atoms and naphthylalkyl of 10 to 12 carbon atoms the alkyl moieties of which are interrupted by a member of the class consisting of oxygen, sulphur, sulphoxyl and sulphonyl, cycloalkyl, cycloalkyl-alkyl, furyl, pyridyl, 1,3,4-oxadiazolyl, furylalkyl, pyridylalkyl, 1,3,4-oxadiazolylalkyl, and phenyl, naphthyl, phenylalkyl, naphthylalkyl, furyl, pyridyl, 1,3,4-oxadiazolyl, furylalkyl, pyridylalkyl, and 1,3,4-oxadiazolylalkyl groups as aforesaid carrying as substituents at least one member of the class consisting of halogen, nitro, cyano, alkyl, alkoxy, alkenyl, alkenyloxy, alkylthio, trichloromethylthio, hydroxy, alkoxycarbonyl, alkanesulphonyl, trifluoromethyl, carbamoyl, sulphamoyl, and N-alkyl-substituted carbamoyl and sulphamoyl, the said alkyl, alkenyl, alkoxy and alkane groups each containing not more than 4 carbon atoms.

3,202,674

PHENETHYLAMINE DERIVATIVES

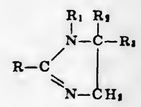
Andre L. Langis, St. Laurent, Quebec, and Marie-Genevieve Paule Stegen, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 24, 1961, Ser. No. 112,197

Claims priority, application Canada, Mar. 5, 1960, 793,895; Mar. 3, 1961, 818,303

1 Claim. (Cl. 260—309.6)

A phenethylamine derivative selected from the group which consists of a base of the formula



in which R is selected from the group consisting of benzyl, monohydroxybenzyl, methylbenzyl and naphthylmethyl; R_1 is β-phenethyl; R_2 is selected from the group consisting of hydrogen and alkyl of from one to three carbon atoms; and R_3 is selected from the group consisting of hydrogen and methyl; and the hydrochloride and picrate salts thereof.

3,202,675

1-BENZYL-2,5-BIS(CHLOROMETHYL)PYRROLIDINE AND ACID-ADDITION SALTS THEREOF

Noel F. Albertson, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 26, 1961, Ser. No. 147,729

3 Claims. (Cl. 260—313)

1. A compound of the class consisting of 1-benzyl-2,5-bis(chloromethyl)pyrrolidine and acid-addition salts thereof.

3,202,676

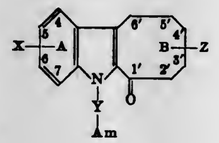
SUBSTITUTED N-AMINOALKYL 1'-KETO-HEXAMETHYLENE INDOLES

Leonard M. Rice, Minneapolis, Minn., and Meier E. Freed, Philadelphia, and Elisabeth Hertz, Bryn Mawr, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 1, 1963, Ser. No. 255,699

3 Claims. (Cl. 260—319)

1. A compound of the group consisting of an N-amino (lower)alkyl-1^1-keto-hexamethyleneindole of the formula:



(I)

and the pharmaceutically acceptable acid addition salts thereof; wherein X is a member selected from the group consisting of hydrogen, lower alkyl and lower alkoxy, Y is lower alkylene, Z is a member selected from the group consisting of hydrogen and lower alkyl, and Am is a member selected from the group consisting of amino, mono(lower)alkylamino, di(lower)alkylamino and pyrrolidino.

3,202,677

ETHERS OF INDOLYL-BENZYL ALCOHOLS

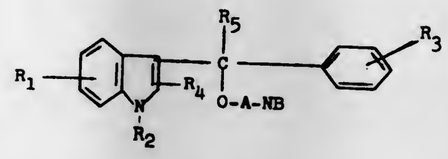
Robert Cornelis Roozemond, Haarlem, North Holland, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Farbrieken v/h Brocades Stheeman en Pharmacia, Amsterdam, Netherlands, a Dutch corporation

No Drawing. Filed Sept. 10, 1963, Ser. No. 307,803

Claims priority, application Great Britain, Sept. 14, 1962, 35,212/62, 35,213/62; Sept. 28, 1962, 36,984/62; Oct. 19, 1962, 39,754/62, 39,756/62

9 Claims. (Cl. 260—319)

1. A compound selected from the group consisting of bases of the formula



and non-toxic acid-addition salts thereof, wherein R_1 is selected from the group consisting of hydrogen, halogen, and lower alkoxy, R_2 is selected from the group consisting of hydrogen, lower alkyl and phenyl (lower alkyl), R_3 is selected from the group consisting of hydrogen, halogen, trifluoromethyl, lower alkyl and lower alkoxy, R_4 is selected from the group consisting of hydrogen and lower alkyl, R_5 is selected from the group consisting of hydrogen and lower alkyl, A is lower alkylene and NB is a basic nitrogen-containing radical selected from the group consisting of mono(lower alkyl)amino, di(lower alkyl)amino, piperidino, piperazino, morpholino and N'-(lower alkanoyloxy)piperazino.

3. N,N-dimethyl-2-[α-(1-methylindol-3-yl)-benzyloxy]-ethylamine.

3,202,678

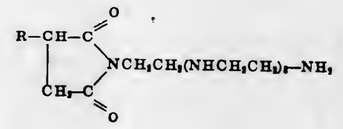
ALKENYL SUCCINIMIDES OF TETRA-ETHYLENE PENTAMINE

Frank A. Stuart, Orinda, Robert G. Anderson, Novato, and Alan Y. Drummond, Richmond, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Aug. 24, 1959, Ser. No. 835,411

3 Claims. (Cl. 260—326.5)

1. A compound



wherein R is a polyolefin radical of from 30 to 200 carbon atoms and is derived from an olefin of 2 to 5 carbon atoms.

3,202,679

PREPARATION OF ALKENYL SUCCINIC ANHYDRIDES

Harry W. Andrewsen, San Rafael, and Chester D. Gordon, Richmond, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

Filed June 30, 1961, Ser. No. 121,115

3 Claims. (Cl. 260—346.8)

3. A process for producing alkenyl succinic anhydrides, which comprises:

(1) forming an approximately saturated solution of maleic anhydride in a C_3–C_4 alkylene polymer having a molecular weight in excess of 200 in a reaction zone maintained at a temperature of about 400 to about 480° F. and at a pressure not exceeding the vapor pressure of maleic anhydride at the maintained temperature;

(2) allowing liquid maleic anhydride present in excess of the amount which will dissolve in the reaction solution under said conditions of temperature and pressure to distill off as vapor from the reaction zone;

(3) condensing the thus withdrawn maleic anhydride vapors and passing the condensate into a maleic anhydride receiving zone;

(4) continuously returning the condensed liquid maleic anhydride from said receiving zone into said reaction zone to maintain in this latter a substantially saturated maleic anhydride concentration;

(5) just prior to the time when the solubility of maleic acid in the maleic anhydride solution in the receiving zone is exceeded, dumping the entire maleic anhydride content of said receiving zone into said reaction zone;

(6) reducing the temperature of the reaction zone to from about 380 to about 350° F.;

(7) maintaining the content of the reaction zone at the reduced temperature for a time sufficient to isomerize maleic acid in the maleic anhydride solution essentially completely to fumaric acid;

(8) thereupon evaporating reacted maleic anhydride from the reaction zone; and

(9) separating fumaric acid from the reaction product.

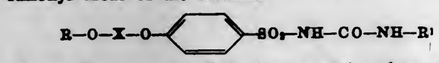
3,202,680

NEW BENZENESULFONYL UREAS AND PROCESS FOR THEIR MANUFACTURE

Gerhard Korper, Frankfurt am Main, and Walter Aumüller, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

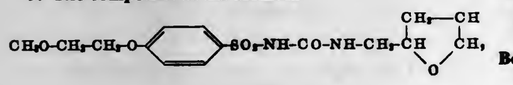
No Drawing. Filed July 17, 1962, Ser. No. 210,579
Claims priority, application Germany, July 28, 1961, F 34,554
9 Claims. (Cl. 260—347.2)

1. Compounds of the group consisting of (1) benzene sulfonyl ureas of the formula



wherein R represents alkyl of at most 4 carbon atoms, X represents alkylene of 2 to 3 carbon atoms and R^1 is a member selected from the group consisting of alkyl of 2 to 8 carbon atoms, alkenyl of 2 to 8 carbon atoms, cycloalkyl of 3 to 8 carbon atoms, cycloalkyl of at most 8 carbon atoms, methoxy-propyl, ethoxy-propyl, methoxy-butyl, methylmercapto-propyl, ethyl-mercapto-propyl, tetrahydro-α-furfuryl, benzyl and phenyl ethyl, and (2) pharmaceutically acceptable basic salts thereof.

9. The compound of the formula



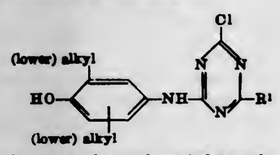
3,202,681

METHOD OF STABILIZATION WITH A SUBSTITUTED TRIAZINE AND COMPOSITIONS STABILIZED THEREBY

Martin Dexter, White Plains, Martin Knell, Ossining, and Eric A. Roskin, Bronx, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Original application Feb. 21, 1961, Ser. No. 87,520. Divided and this application Apr. 4, 1963, Ser. No. 273,538
3 Claims. (Cl. 260—249.5)

1. A compound of the formula:



wherein R^1 is a member selected from the group consisting of dialkylhydroxyanilino and alkylmercapto.

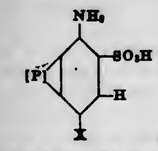
3,202,682

SYNTHETIC PIGMENTS OF THE ANTHRAQUINONE TYPE

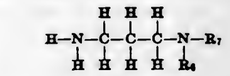
Chi K. Diea, Williamsville, N.Y., and Charles F. Douty, Pittsburgh, Pa., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 27, 1961, Ser. No. 127,112
1 Claim. (Cl. 260—371)

A pigment produced by heating in an aqueous alkaline medium a bromamine acid component having the formula:



wherein, P is selected from the group consisting of the phthaloyl radical and the 3-acetamido-phthaloyl radical; and X is a radical selected from the group consisting of bromo and chloro; with a diamine component having the formula:



wherein, R_6 is selected from the group consisting of hydrogen and an alkyl group having from 1 to 4 carbon atoms; and R_7 is an alkyl group having from 1 to 4 carbon atoms; precipitating the resultant pigment reaction product, said precipitation of the pigment taking place directly as the pigment is formed when the reaction is carried out in a weakly alkaline medium in which the pigment is insoluble and being effected by acidification of the reaction mixture when the reaction is carried out in a strongly alkaline medium in which the pigment is soluble, and separating the precipitated pigment from the reaction mixture.

3,202,683

HALOGENATED AND OLEFINICALLY UNSATURATED 3-KETO-STEROIDS AND METHOD FOR MAKING THE SAME FROM THE CORRESPONDING 3-KETO-STEROID CARBOXYLIC ACIDS

Bernhard Krieger, Senne II, Kreis Bielefeld, and Egbert Blanke and Emanuel Kaspar, Kamen, Germany, assignors to Schering AG., Berlin, Germany

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,246
Claims priority, application Germany, Nov. 24, 1962, Sch 32,382, Sch 32,383; Aug. 21, 1963, Sch 33,735
22 Claims. (Cl. 260—397.3)

1. A process for the halogenation of 3-keto-steroid carboxylic acids selected from the group consisting of 3-keto-sterpid-22-oic acids and 3-keto-steroid-20-oic acids by exchange of a carboxyl group of said acids for halogen, which process comprises reacting said acids with a halogenating agent in the presence of a heavy metal compound.

11. 20-halo-Δ^4-pregnene-3-one.

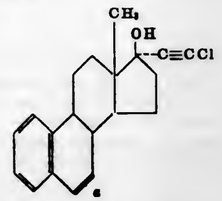
3,202,684

17α-CHLORETHYNYL STEROIDS AND PROCESS FOR THEIR PREPARATION

Derek Burn, Peter Feather, and Vladimir Petrow, London, England, assignors to The British Drug Houses Limited

No Drawing. Filed Feb. 19, 1963, Ser. No. 259,732
Claims priority, application Great Britain, Feb. 23, 1962, 7,119/62
12 Claims. (Cl. 260—397.5)

1. A process for the preparation of 17α-chlorethynyl steroids having, apart from substituents in rings A, B, C and D, the formula



wherein *a* is a single or double bond, which process comprises reacting a corresponding 17-oxo-steroid in liquid ammonia with a chloracetylide of a metal selected from the group consisting of alkali and alkaline earth metals and subsequently regenerating the desired derivative from the complex so formed.

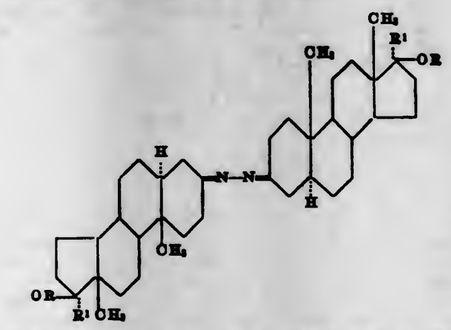
3,202,685

3,3'-STEROID AZINES

Andrew John Manson, North Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 30, 1963, Ser. No. 305,867
2 Claims. (Cl. 260—397.5)

1. A compound of the formula



wherein R is a member of the group consisting of hydrogen and lower-carboxylic acyl, and R^1 is lower-alkyl.

3,202,686

PREPARATION OF 13-ALKYLGONA-1,3,5(10),8,14-PENTAENES

Gordon Alan Hughes, 615 Lansmere Ave., and Herchel Smith, 800 Chesthunt Lane, both of Wayne, Pa.

Filed Apr. 27, 1964, Ser. No. 362,572
15 Claims. (Cl. 260—397.45)

5. A chemical compound having the gona-1,3,5(10),8,14-pentaene nucleus, said nucleus having attached thereto, in the 13-position, a polycarbon-alkyl radical.

9. 13β-methyl - 3 - methoxygona - 1,3,5(10),8,14-pentaen-17-one.

3,202,687

PURIFICATION OF ALPHA-BRANCHED SATURATED MONOCARBOXYLIC ACIDS WITH A CHELATING AGENT

Johan M. Vos, Gosling R. Schuurman, and Cornelis Groot, all of Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 28, 1961, Ser. No. 98,766
Claims priority, application Netherlands, Apr. 7, 1960, 250,282
3 Claims. (Cl. 260—419)

1. In a process for the purification of crude reaction products consisting essentially of alpha-alkyl substituted saturated monocarboxylic acids obtained by the reaction of mono-olefinically unsaturated hydrocarbons with carbon monoxide and water in the presence of a catalyst selected from the group consisting of admixtures of boron trifluoride and water and admixtures of boron trifluoride, water and phosphoric acid, the combination of consecutive steps consisting essentially of: (a) separating the reactor effluence into an upper liquid organic phase containing crude reaction products consisting essentially of said alpha-alkyl substituted monocarboxylic acids and a lower liquid catalyst phase, (b) separating the phases and washing the crude reaction product phase countercurrently with water in a continuous operation, (c) contacting said crude reaction products with a sequestering agent selected from the group consisting of the unsubstituted acylic saturated dicarboxylic acids having up to eight carbon atoms, citric acid and the alkali metal salts thereof at a temperature of from about 20 to 100° C., (d) separating said sequestering agent from the resulting mixture, (e) washing said crude reaction products after the removal of said sequestering agent therefrom, at a temperature of from about 20 to 100° C. with an aqueous alkali metal bicarbonate solution, (f) and distilling the the resulting washed crude reaction products.

3,202,688

MOLYBDENUM CHLORIDE ALKYLPHENOLATES

Howard J. Mateon, Harvey, Ill., assignor, by mesne assignments, to Sinclair Research Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Apr. 4, 1958, Ser. No. 726,321, now Patent No. 3,047,500, dated July 31, 1962. Divided and this application Sept. 13, 1961, Ser. No. 143,267
3 Claims. (Cl. 260—429)

2. A molybdenum chloride alkyl phenolate product comprising, as its major constituent, molybdenum dichloride tri(alkyl phenolate) and also comprising minor amounts of a member selected from the group consisting of the corresponding mono-, di- and tetra(alkyl phenolates), each of said alkyl groups containing no more than 18 carbon atoms and the total alkyl carbon atoms in each alkyl phenolate moiety being 6 to 24, and said phenolate product being soluble in mineral lubricating oil.

3,202,689

PROCESS FOR SEPARATING COPPER VALUES FROM COBALT AND NICKEL VALUES

Sherman C. Lashua, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application Sept. 6, 1960, Ser. No. 53,912. Divided and this application Aug. 24, 1964, Ser. No. 397,389
1 Claim. (Cl. 260—438)

A method of separating copper ions from a solution containing copper ions and contaminating ions of at least one of the metals of the group consisting of cobalt and nickel ions which comprises contacting the solution at a pH in the range of 2.5 to 5.0, with N-hydroxymaleamic acid, thereby forming a precipitate containing the copper ions and separating therefrom the precipitate containing the copper.

3,202,690

PREPARATION OF THIOCYANOPHENOLS

Edward P. Previc, Berwyn, Ill., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 8, 1962, Ser. No. 228,870
10 Claims. (Cl. 260—454)

1. A process for preparing a thiocyanophenol which comprises dissolving a phenol selected from the class consisting of phenol and a lower alkyl phenol and ammonium thiocyanate in an inert anhydrous solvent therefor, adding chlorine to the solution to liberate thiocyanogen to react with said phenol whereby the thiocyanophenol and thiocyanic acid are formed, adding anhydrous ammonia to said solution at a temperature below 50° C. in an amount at least sufficient to neutralize the thiocyanic acid to form ammonium thiocyanate, and subsequently recovering the thiocyanophenol.

3,202,691

PURIFICATION OF SULFONYL ESTERS

Alan John Maurice Weaban and Maurice Berrington Sparke, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed Feb. 12, 1963, Ser. No. 257,838
Claims priority, application Great Britain, Mar. 14, 1962, 9,795/62
5 Claims. (Cl. 260—456)

1. A process for the removal of coloured contaminants from a crude ester having the formula $R_1SO_2OR_2$ where R_1 is a C_9 to C_{32} alkyl radical and R_2 is a phenyl

radical, which comprises, treating the crude ester with an aqueous alkali metal hydroxide, and (b) isopropyl alcohol, and thereafter separating from the resulting mixture an upper liquid layer containing the decolourised ester.

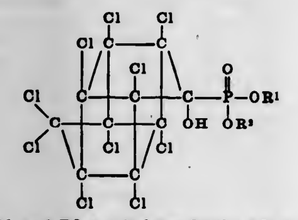
3,202,692

DECACHLORO-3-HYDROXYPENTACYCLO-DECANE-3-PHOSPHONATES

Edward D. Weil, Lewiston, and Keith J. Smith, Lockport, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed July 7, 1961, Ser. No. 122,402
8 Claims. (Cl. 260—461)

1.



wherein R^1 and R^2 are independently selected from the group consisting of hydrogen; alkyl of up to 18 carbon atoms; substituted alkyl of up to 18 carbon atoms, in which the substituents are selected from the group consisting of halogen, alkoxy, aryloxy, nitro, alkylmercapto, arylmercapto and alkenyl; aryl; substituted aryl, in which the substituents are selected from the group consisting of halogen, alkoxy, aryloxy, nitro, alkylmercapto, arylmercapto, substituents are selected from the group consisting of halowherein R^1 and R^2 are conjoined; substituted alkylene of up to 18 carbon atoms, in which the substituents are selected from the group consisting of halogen, alkoxy, aryloxy, nitro, alkylmercapto, arylmercapto, alkyl and alkenyl; phenylene, wherein R^1 and R^2 are conjoined through the phenyl group; and substituted phenylene of 6 to 18 carbon atoms, in which the substituents are selected from the group consisting of halogen, alkoxy, aryloxy, nitro, alkylmercapto, arylmercapto, alkyl and alkenyl, whereinabove aryl is monocarbocyclic.

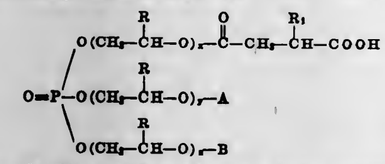
3,202,693

SUCCINATE HALF-ESTERS OF ALKYLENE GLYCOL PHOSPHATE

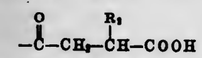
Van R. Gaertner, Ballwin, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 11, 1962, Ser. No. 230,002
6 Claims. (Cl. 260—461)

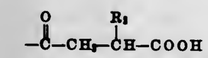
1. A compound of the formula:



where the R's are selected from the group consisting of hydrogen and alkyl; where A is selected from the group consisting of hydrogen and



where B is selected from the group consisting of hydrogen and



where R_1, R_2, and R_3 are selected from the group consisting of alkyl and alkenyl having from 10 to 22 carbon atoms; and where x, y, and z are integers having a total value of from 3 to 9.

3,202,694

OXIDATION PROCESS

Isidor Kirshenbaum, Westfield, and Jeffrey H. Bartlett, New Providence, N.J., and Ralph M. Hill, Mayfair, London, England, assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 28, 1962, Ser. No. 183,015
4 Claims. (Cl. 260—462)

1. A process for preparing a diborate ester which comprises forming a borate ester by reacting a C_2 to C_{20} hydroxy substiuted hydrocarbon reactant with 0.02 to 3.0 moles, per mole of said hydroxy hydrocarbon reactant, of a boron compound which provides boric acid upon contact with water, said compound being selected from the group consisting of boric acid, boric oxide, lower alkyl borate esters, and alkyl boric acid, and reacting said borate ester of said hydroxy hydrocarbon reactant with a molecular oxygen containing gas at a temperature of 100° to 250° C. in the presence of 0.02 to 3.0 moles, per mole of said borate ester, of said boron compound.

3,202,695

ADDUCT OF CYCLO-BUTANE-1,2-DICYANIDE WITH SULFURIC ACID MONOHYDRATE AND METHOD OF MAKING SAME

Janice L. Greene, Warrensville Heights, and James D. Idol, Jr., Shaker Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 3, 1962, Ser. No. 214,532
2 Claims. (Cl. 260—464)

1. The method of preparing an adduct, which comprises the step of reacting 1 mole of cyclo-butane-1,2-dicyanide with 2 moles of the monohydrate of sulphuric acid, said reaction being continued for from 15 minutes to four hours at a temperature of 40 to 125° C., followed by cooling to ambient temperature, and recovering the adduct.

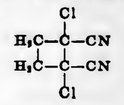
3,202,696

CYCLOBUTANE-1,2-DICHLORO-1,2-DICYANIDE

Janice L. Greene, Warrensville Heights, and James D. Idol, Jr., and Norman W. Standish, Shaker Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 25, 1963, Ser. No. 267,809
3 Claims. (Cl. 260—464)

1. A compound having the formula:



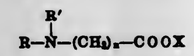
3,202,697

PROCESS FOR MAKING CYCLOBUTANE-1,2-DICYANIDE FROM ACRYLONITRILE

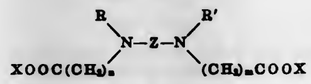
James D. Idol, Jr., Shaker Heights, Janice L. Greene, Warrensville Heights, and Nancy R. Gray, Cleveland Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed June 21, 1963, Ser. No. 289,727
8 Claims. (Cl. 260—464)

1. A process of forming cyclobutane-1,2-dicyanide which comprises heating liquid acrylonitrile to a temperature of 175 to 246° for from about 3 to 9 hours under autogenous pressure in the absence of oxygen and in the presence of from 0.001 to 1% by weight of a chelating agent selected from the group consisting of compounds having the structure



and



wherein Z is a member selected from the group consisting of an alkylene group having from 2 to 4 carbon atoms, a cycloalkyl group having from 3 to 6 carbon atoms, a single carbocyclic aromatic nucleus and a condensed carbocyclic aromatic nucleus; m and n are integers of from 1 to 4; X is a member of the group consisting of hydrogen, ammonium and an alkali metal; and R and R' are radicals selected from the group consisting of hydrogen and alkyl groups having from 1 to 5 carbon atoms and $-(CH_2)_mCOOX$ wherein m and X have the foregoing designations.

3,202,698

THIO AND OXY SUBSTITUTED AROMATIC HYDRAZONES OF CARBONYL CYANIDE

William W. Prichard, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 21, 1962, Ser. No. 204,050
5 Claims. (Cl. 260—465)

1. Aromatic hydrazones of carbonyl cyanide of the formula

$$Ar—X—Ar—NH—N=C(CN)_2$$

wherein each Ar represents an aromatic hydrocarbon group of 6–12 carbon atoms having up to three substituents selected from the class consisting of halogen of atomic number 9–35 inclusive, lower alkoxy, and lower alkyl, and X represents an atom selected from the group consisting of oxygen and sulfur.

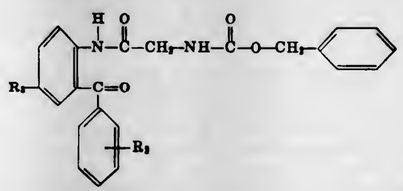
3,202,699

CARBOBENZOXYGLYCYLAMINO-BENZOPHENONES

Arthur Stempel, Teaneck, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed July 11, 1961, Ser. No. 123,964
5 Claims. (Cl. 260—471)

1. A compound of the formula



wherein R_2 and R_3 are selected from the group consisting of hydrogen, halogen, lower alkoxy, trifluoromethyl, and nitro.

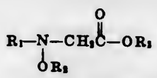
3,202,700

HYDROXYLAMINO ACETIC ACID DERIVATIVES

Edward A. Kaczka, Union, and Eugene L. Dulaney, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 29, 1960, Ser. No. 25,506
10 Claims. (Cl. 260—482)

1. Compounds of the formula



where R_1 is selected from the group consisting of formyl, lower alkanoyl, haloloweralkanoyl, furoyl, homocyclic aroyl, and aralkanoyl, R_2 is selected from the group consisting of hydrogen, an alkali metal, an alkaline earth metal and lower alkanoyl and R_3 is selected from the group consisting of hydrogen, ammonium, an alkali metal, an alkaline earth metal, lower alkyl and aralkyl.

3,202,701

COMPLEX ESTER OF MIXED DICARBOXYLIC ACIDS, NEOPENTYL GLYCOL AND ALIPHATIC ALCOHOLS

David W. Young, Homewood, and Eileen M. Paré, Park Forest, Ill., assignors, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Dec. 17, 1957, Ser. No. 703,275. Divided and this application May 31, 1961, Ser. No. 124,251
7 Claims. (Cl. 260—485)

1. A complex ester of a dicarboxylic acid component, a primary alcohol containing 5 to 13 carbon atoms and selected from the group consisting of primary monohydric alkanols and ether primary monohydric alkanols, and neopentyl glycol, in the approximate molar ratio of 2 to 2 to 1, respectively, wherein said dicarboxylic acid component comprises about 50 to 90 percent sebacic acid, the balance consisting essentially of a straight chain acid other than sebacic acid having a saturated aliphatic hydrocarbon chain of 4 to 10 carbon atoms and two carboxyl groups.

3,202,702

SYNTHESIS OF BETA-OXY SUBSTITUTED ALKANOIC ACIDS

Kenneth L. Olivier, Placentia, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed June 10, 1963, Ser. No. 286,468
6 Claims. (Cl. 260—494)

4. The preparation of a beta acyloxyalkanoic acid that comprises condensing formaldehyde with the heavy metal salt of an alkanoic acid having between 2 and about 5 carbon atoms, said heavy metal being selected from the class consisting of lead, bismuth, antimony and tin, in a reaction medium comprising an alkanoic acid corresponding to the carboxylate anion of said heavy metal salt at a temperature between about 100° and about 300° C., about 1 and about 50 atmospheres pressure, sufficient to maintain said reaction solvent in liquid phase, a period between about 0.5 and about 4 hours, sufficient to complete said condensation and in the presence of a base selected from the class consisting of alkali metal and ammonium carboxylates, and heterocyclic amines selected from the class consisting of pyridine, quinoline and isoquinoline and lower alkyl substituted pyridine, quinoline and isoquinoline.

3,202,703
1,4-BIS(o-CHLOROBENZYLAMINO)-CYCLOHEXANE AND SALT THEREOF
Leslie G. Humber, Montreal, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 4, 1963, Ser. No. 285,204
3 Claims. (Cl. 260—501)

1. A compound selected from the group which consists of 1,4-bis(o-chlorobenzylamino)-cyclohexane and its diacetate salt.

3,202,704
PROCESS FOR THE SILVER OXIDE CATALYZED OXIDATION OF UNSATURATED CYCLIC OZONIDES
Robert H. Perry, Jr., Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
No Drawing. Filed Feb. 23, 1961, Ser. No. 90,921
16 Claims. (Cl. 260—533)

1. A composition of matter, 2-vinyl-1,4-butanedicarboxylic acid.

2. A method of producing an olefinically unsaturated α,ω-dicarboxylic acid from a C_8 to C_{12} monocyclic olefin having from to 2 to 3 non-conjugated olefinic bonds, at least one of which is in the ring, which comprises

ozonizing said olefin in an ozonolysis solvent at a temperature of −78° C. to +30° C. until from 0.2 to 0.5 mol of ozone per mol of olefin has been reacted, whereby an olefinic ozonolysis product is obtained,

contacting said olefinic ozonolysis product in an ozonolysis solvent and in the liquid phase at a temperature of 30° C. to 50° C.

while adding a base chosen from the group consisting of alkali metal hydroxides and alkaline earth metal hydroxides to maintain the pH within the range of pH 10 to pH 12, with a molecular oxygen containing gaseous stream and a catalytically effective amount of silver oxide, to obtain a double salt of the α,ω-dicarboxylic acid, and acidifying said double salt to obtain the olefinically unsaturated α,ω-dicarboxylic acid product.

3,202,705
PROCESS FOR PRODUCING COLOR STABLE LACTIC ACID
Eugene L. Powell and Robert J. Praizler, Chicago, Ill., assignors to American Maize-Products Company, a corporation of Maine
No Drawing. Filed May 26, 1960, Ser. No. 31,821
4 Claims. (Cl. 260—535)

1. A process for increasing the color stability of a fermentation mixture produced by the action of a Lactobacillus microorganism on carbohydrates and containing lactic acid which comprises the steps of treating the fermentation mixture with a cation exchange resin, and separating the treated fermentation mixture from the cation exchange resin without extraction of the acid from the mixture said mixture having the capacity to withstand being heated for thirty minutes at 180° C. without darkening in color.

3,202,706
FLUORINATED ORGANIC ACIDS
Murray Hauptschein, Glenside, and Robert E. Oesterling, Flourtown, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 4, 1961, Ser. No. 129,239
9 Claims. (Cl. 260—535)

1. Compounds selected from the class consisting of fluorinated α-hydroxy acids of the formula

$$RCF_2CH(OH)COOH$$

and salts thereof selected from the class consisting of the alkali metal, calcium, magnesium, copper, iron, aluminum, chromium and ammonium salts, where R is a radical having from 1 to 20 carbon atoms selected from the class consisting of fluorine and perfluoroalkyl, perfluorohydroalkyl, perfluorochloroalkyl and perfluorochlorohydroalkyl radicals.

3,202,707
PREPARATION OF ALPHA CHLORO-ALKANESULFONYL CHLORIDES
Charles M. Starks, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Filed Dec. 30, 1960, Ser. No. 79,913
8 Claims. (Cl. 260—543)

1. A process for the preparation of straight chain alpha-chloro alkanesulfonyl halide which comprises reacting at a temperature between about 50° C. and reflux temperature (a) an aqueous suspension of a member selected from the group consisting of aluminum alkanesulfinate, alkane sulfonyl chloride and alkane sulfonyl bromide, wherein the alkyl group of said member consists of a straight chain having between 2 and about 50 carbon atoms, with (b) chlorine, and recovering as the sole chlorinated product alpha-chlorinated alkanesulfonyl halide.

3,202,708
SEPARATION OF DI-ORTHO SUBSTITUTED POLYCHLOROBENZOYL CHLORIDE FROM A CRUDE ISOMERIC MIXTURE OF POLYCHLOROBENZOYL CHLORIDES
Henry J. Gerjovich and Jean Bradley Harrison, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 1, 1962, Ser. No. 213,869
1 Claim. (Cl. 260—544)

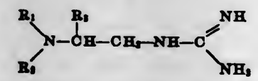
A process for separating 2,6-dichloro substituted benzoyl chloride isomers from a mixture of polychlorinated benzoyl chlorides, the steps comprising vigorous mechanical agitation for up to 30 minutes of the mixture of benzoyl chloride isomers, at a temperature of 5 to 50° C., with about two moles of aqueous alkali per mole of the benzoyl chloride isomers not substituted with chlorine atoms in both the two and six positions and then collecting and drying the product remaining as the insoluble organic phase.

3,202,709
1,4(UNSYMMETRICALLY-SUBSTITUTED-BENZYL-AMINO- AND CYCLOHEXYLAMINO-METHYL)-CYCLOHEXANES
Leslie G. Humber, Montreal, Quebec, Gordon S. Myers, Mount Royal, Quebec, and Thomas Masciah, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 24, 1963, Ser. No. 290,164
8 Claims. (Cl. 260—563)

1. A compound selected from the group which consists of a 1,4-disubstituted cyclohexane wherein one of the substituents is selected from the group consisting of o-chlorobenzylaminomethyl and cyclohexylaminomethyl, and wherein the other substituent is selected from the group which consists of cyclohexylaminomethyl and cyclohexylmethylaminomethyl; and salts thereof with pharmacologically-acceptable acids.

3,202,710
1-(2-CYCLOALKYL-2-DILOWER ALKYLAMINO-ETHYL) GUANIDINES
James W. Bolger, Canoga Park, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Dec. 6, 1962, Ser. No. 242,596
3 Claims. (Cl. 260—564)

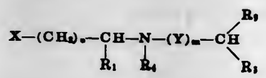
1. A compound of the formula



wherein R_1 and R_2 are lower alkyl and R_3 is cycloalkyl having 4 to 10 carbon atoms.

3,202,711
N-SUBSTITUTED PHENALKYL AMINES
Wolfgang Fruhstorfer, Georg Seitz, and Karl Schulte, Darmstadt, and Heinrich Müller, Pfungstadt, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany
No Drawing. Filed June 19, 1963, Ser. No. 288,874
Claims priority, application Germany, June 19, 1962, M 53,252; June 26, 1962, M 53,338
14 Claims. (Cl. 260—570)

1. A compound selected from the group consisting of an amine of the formula:



and the acid addition salts thereof, wherein

R_1 is selected from the group consisting of hydrogen, methyl and ethyl;

R_2 is selected from the group consisting of hydrogen, phenyl and X;

R_3 is selected from the group consisting of phenoxy, hydrogen, phenyl, and X;

R_4 is selected from the group consisting of hydrogen, alkyl of 1–4 carbon atoms and hydroxyalkyl of 1–4 carbon atoms;

X is a substituted phenyl radical of the formula:



R_5 is a tertiary alkyl group of 4–6 carbon atoms;

R_6 is selected from the group consisting of hydrogen and a tertiary alkyl group of 4–6 carbon atoms;

R_7 and R_8 are each selected from the group consisting of hydrogen and a primary alkyl of 1–4 carbon atoms;

R_9 is selected from the group consisting of hydrogen and hydroxy, with the provision that when R_9 is hydroxy it is in other than the 2- or 6-position, and at least one of R_6, R_7 and R_8 is other than hydrogen;

Y is an alkylene group of 1–3 carbon atoms;

m is an integer from 0 to 1 inclusive; and

n is an integer from 1 to 3 inclusive, with the provision that the group $(CH_2)_n$—CHR_1, contains less than 5 carbon atoms in total.

3,202,712
1-CYCLOHEXENE-4-BIS(O-CHLOROBENZYLAMINOMETHYL) AND DERIVATIVES
Leslie G. Humber, Montreal, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 5, 1963, Ser. No. 256,270
3 Claims. (Cl. 260—570.5)

1. A compound selected from the group which consists of 1 - cyclohexene - 1,4-bis(o-chlorobenzylaminomethyl) and its dihydrochloride salt.

3,202,713
PROCESS FOR THE SEPARATION OF ETHYLENEDIAMINE FROM A CRUDE PRODUCT
Gerlando Marullo, Dino Costabello, Gioacchino Bolla, Eraldo Fornasieri, and Giovanni Maiorana, all of Novara, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy
Filed Sept. 12, 1960, Ser. No. 55,255
Claims priority, application Italy, Sept. 25, 1959, 16,025/59
3 Claims. (Cl. 260—583)

1. In a process of making ethylenediamine by reacting ammonia and ethylene dichloride, to form a crude product containing ammonium hydrochloride and amine hydrochloride, the improvement consisting of reacting the crude product with sodium hydroxide to free the ammonia and amine, and form sodium chloride, water being present, continuously concentrating the resulting mixture by evaporating water, ammonia, and ethylenediamine at a temperature between 70° to 140° C. and pressure substantially not greater than atmospheric to leave sodium chloride crystals in a sodium hydroxide medium, separating sodium chloride from said sodium hydroxide medium, passing the evaporated water, ammonia and amines to a continuous distillation zone in which the water is separated as steam and the amines as tails, and recycling the sodium hydroxide medium to react with additional crude product.

3,202,714
OXY CONTAINING TERTIARY AMINE OXIDES
Roger E. Zimmerer, Springfield Township, Hamilton County, and Howard F. Drew, Wyoming, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 4, 1961, Ser. No. 156,995
6 Claims. (Cl. 260—584)

1. Tertiary amine oxide compounds having the formula $R_1R_2R_3N\rightarrow O$, wherein R_1 is selected from the group consisting of 2-hydroxyalkyl, 3-hydroxyalkyl and 3-alkoxy-2-hydroxypropyl radicals in which the alkyl and alkoxy, respectively, range in chain length from 10 to 18 carbon atoms, R_2 and R_3 are each selected from the group consisting of 2-hydroxyethyl, 2-hydroxypropyl and 3-hydroxypropyl radicals.

3,202,715
METHOD OF OXIDIZING MONO-OLEFINS
Joseph T. Kummer, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Aug. 4, 1960, Ser. No. 47,395
8 Claims. (Cl. 260—586)

1. In a method of oxidizing acyclic mono-olefins having from 2 to 5 carbon atoms in the acyclic portion thereof to the corresponding carbonyl compounds selected from the class consisting of aldehydes and ketones wherein said mono-olefin is admixed and reacted in a stirred aqueous acidic mixture, containing as the acidic material a compound selected from the class consisting of sulfuric acid, sulfurous acid, anhydrides of such acids, alkali metal acid salts of such acids, and mixtures of such acids, anhydrides, and salts, in an amount sufficient to provide be-

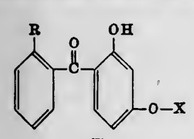
tween about 0.1 and 4.0 gram atomic weights of hydrogen per liter of aqueous acidic mixture, and containing vanadium compounds as the oxidizing agent, which aqueous mixture contains an average of at least 0.1 gram atomic weight of vanadium chemically combined in said vanadium compounds per liter of the aqueous mixture and includes at least 1 percent by weight of said vanadium compounds, of at least a partially dissolved pentavalent vanadium compound, selected from the class consisting of vanadium pentoxide and oxidation products of vanadyl sulfate, at a temperature between about room temperature and about 200° C. and at a pressure between atmospheric and about 500 p.s.i., and at least 1 part, per million parts by weight of the mixture, of palladium provided therein by admixture therewith a palladium source selected from the class consisting of metallic palladium and palladium salts and oxides having sufficient solubility at the reaction temperature of the mixture to yield at least said 1 part per million of palladium ions in solution, the improvement which consists essentially of incorporating in said aqueous mixture at least 0.5% based on the weight of said aqueous mixture of a copper ion-yielding substance.

3,202,716
MONOMERIC DERIVATIVES OF 2,4-DIHYDROXYBENZOPHENONE

Albert I. Goldberg, Berkeley Heights, N.J., and Martin Skoultchi and Joseph Fertig, New York, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

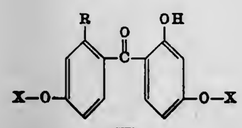
No Drawing. Filed Oct. 22, 1964, Ser. No. 405,864
7 Claims. (Cl. 260—591)

1. An ethylenically unsaturated derivative of 2,4-dihydroxybenzophenone selected from the group consisting of:



(I)

and



(II)

wherein X is an ethylenically unsaturated radical selected from the group consisting of (3-allyloxy-2-hydroxy)propyl and (3-hydroxy)butenyl-1 radicals and wherein R represents a radical selected from the class consisting of hydrogen and hydroxy radicals.

3,202,717
METHOD OF OXIDIZING MONO-OLEFINS

Joseph T. Kummer, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 4, 1960, Ser. No. 47,394
5 Claims. (Cl. 260—597)

1. In a method of oxidizing acyclic mono-olefins containing from 2 to 5 carbon atoms in the acyclic portion thereof to the corresponding carbonyl compounds selected from the class consisting of aldehydes and ketones wherein said mono-olefin is admixed and reacted with a stirred aqueous acidic mixture, containing as the acidic material a compound selected from the class consisting of sulfuric acid, sulfurous acid, anhydrides of such acids, alkali metal acid salts of such acids, and mixtures of such acids, anhydrides, and salts, in an amount sufficient to provide between about 0.1 and 4.0 gram atomic weights of hydrogen per liter of aqueous acidic mixture, and containing vanadium compounds as the oxidizing agent, which aqueous mixture contains an average of at least 0.1 gram atomic weight of vanadium chemically combined in said vanadium compounds per liter of the aqueous mixture and includes at least 1 percent, by weight of said vanadium compounds, of at least a partially dissolved pentavalent vanadium compound, selected from the class consisting of vanadium pentoxide and oxidation products of vanadyl sulfate, at a temperature between about room temperature and about 200° C. and at a pressure between atmospheric and about 500 p.s.i., the improvement which consists essentially of incorporating in said aqueous acidic mixture and having present during the reaction at least 1 part, per million parts by weight of the mixture, of palladium of a form selected from the class consisting of metallic palladium and palladium salts and oxides having sufficient solubility at the reaction temperature of the mixture to yield at least said 1 part per million of palladium ions in solution.

3,202,718
SYNTHESIS OF BIS(TRIFLUOROMETHYL) PEROXIDE

Ellsworth K. Ellingboe and Alan L. McClelland, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

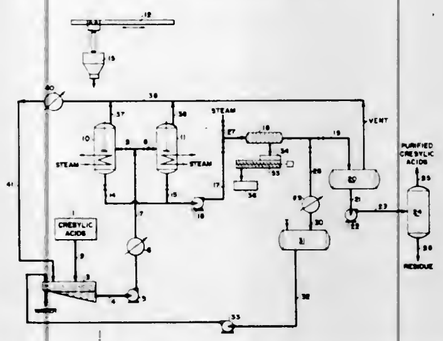
No Drawing. Filed June 20, 1960, Ser. No. 37,080
4 Claims. (Cl. 260—610)

1. The process of preparing bis(trifluoromethyl) peroxide which comprises contacting carbonyl fluoride and chlorine trifluoride at a temperature of about 0–300° C.

3,202,719
REFINING OF PHENOLS

Donald C. Jones, Pittsburgh, Pa., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 3, 1961, Ser. No. 121,403
6 Claims. (Cl. 260—627)



1. A process for refining color-unstable phenols obtained by the thermal treatment of hydrocarbonaceous materials and which are normally unsuitable in the unrefined state for forming color-stable phosphoric acid esters having a color below 60 Hazen, which comprises intimately contacting said phenols with a finely divided acid-activated non-swellable montmorillonitic clay, distilling said phenols, and recovering as a distillate fraction refined color-stable cresylic acids suitable for forming color-stable tricresyl phosphate esters having a color below 60 Hazen.

3,202,720
MANUFACTURE OF SATURATED PERFLUOROCARBONS BY THE CATALYTIC PYROLYSIS OF FLUOROFORM

Murray Hauptschein, Glenside, and Arnold H. Fainberg, Elkins Park, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 28, 1961, Ser. No. 162,944
6 Claims. (Cl. 260—653)

1. A method for preparing predominantly saturated perfluorocarbons having 1 to 4 carbon atoms which comprises pyrolyzing fluoroform in the presence of a catalytic mass consisting of at least predominantly activated carbon at a temperature of from 500° to 1200 C.

3,202,721
CHLORINATION OF ISOPRENE

Keith M. Taylor, Dickinson, Tex., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 2, 1963, Ser. No. 248,868
2 Claims. (Cl. 260—655)

1. A process for the production of 2-chloromethyl-1,3-butadiene which comprises reacting isoprene and chlorine in mole proportions of from about 1:3 to 3:1 in a reaction zone heated to a temperature in the range from about 350° C. to about 750° C., the residence time of the reaction gas mixture in the reaction zone being maintained within the range from about 2.5 to about 100 milliseconds.

3,202,722
PREPARATION OF BERYLLIUM ALKYLS

David H. Campbell and Byron R. Lowrance, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

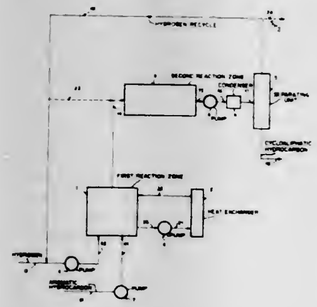
No Drawing. Filed Apr. 27, 1962, Ser. No. 190,832
3 Claims. (Cl. 260—665)

1. In the process for the preparation of a hydrocarbon beryllium compound having from 2 to 18 carbon atoms in each hydrocarbon radical by the reaction of metallic beryllium with the corresponding hydrocarbon mercury compound, the improvement which comprises carrying out the said reaction in contact with a beryllium iodide catalyst.

3,202,723
PROCESS FOR THE CATALYTIC HYDROGENATION OF AROMATIC HYDROCARBONS

Clement Thonon, Seine-et-Oise, France, assignor to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, Seine-et-Oise, France

Filed Sept. 13, 1962, Ser. No. 223,393
Claims priority, application France, Sept. 13, 1961, 873,243
9 Claims. (Cl. 260—667)



1. A process for the catalytic, non-destructive hydrogenation of at least one aromatic hydrocarbon, which process comprises the steps of:

(1) introducing said aromatic hydrocarbon in the liquid state into the corresponding liquid cycloaliphatic hydrocarbon contained in a first reaction zone, passing through said cycloaliphatic hydrocarbon, an amount of gaseous hydrogen at least equal to the stoichiometric ratio with respect to the aromatic hydrocarbon, said liquid cycloaliphatic hydrocarbon having a Group VIII metal hydrogenation catalyst suspended thereinto, the molar ratio between said aromatic hydrocarbon and said cycloaliphatic hydrocarbon in said first reaction zone being maintained within the range of from 0.003:1 to 0.1:1, the pressure being comprised between about 1 and 100 atmospheres and the temperature comprised between 80 and 250° C., provided the temperature is at least 10° C. lower than the initial boiling temperature of said cycloaliphatic hydrocarbon under the prevailing pressure, and

(2) passing as such the whole, unreacted hydrogen—and vaporized hydrocarbons—containing gaseous phase issuing from said first reaction zone through a bed of a Group VIII metal hydrogenation catalyst in a second reaction zone, at a temperature and a pressure in the same range as in the first zone, provided they are convenient to maintain said unreacted hydrogen and vaporized hydrocarbons in the gaseous state, thereby resulting in a highly pure gaseous cycloaliphatic hydrocarbon product substantially devoid of any aromatic hydrocarbon impurities, and further resulting in a process requiring neither external heat nor large equipment normally associated with gas phase reactions.

3,202,724
DEHYDROGENATION OF HYDROCARBONS

Allen H. Keough, Holden, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts

No Drawing. Filed July 17, 1961, Ser. No. 124,371
2 Claims. (Cl. 260—668)

1. A process for dehydrogenating hydrocarbons comprising contacting a saturated hydrocarbon at conversion temperatures with a catalyst formed by firing a mixture of a silicate mineral, alumina, a boron compound selected from the group consisting of boric acid, boric oxide, calcium borate, and sodium tetraborate and a platinum source, leaching the fired product to remove water soluble residue, and reducing said platinum source to elemental platinum on and within said catalyst.

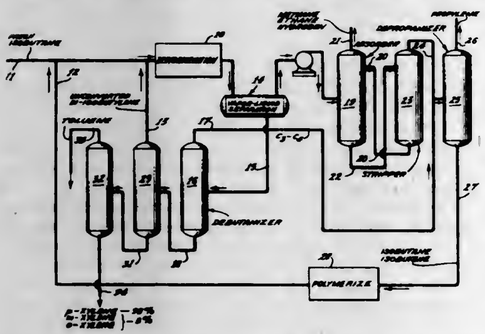
3,202,725
PRODUCTION OF XYLENE

Waldemar Lorz, Yeadon, George Alexander Mills, Swarthmore, and Harold Shalit, Drexel Hill, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware

Filed June 2, 1961, Ser. No. 114,522
3 Claims. (Cl. 260—673.5)

1. The method for production of p-xylene which comprises: feeding to a catalytic dehydrogenation zone mixed hydrocarbon streams, including at least one recycled products stream comprising diisobutylene, and $isoC_4$ hydrocarbons comprising isobutane, the ratio of $isoC_4$ hydrocarbons to diisobutylene being within the range from about 2:1 to about 3:1; contacting said mixed hydrocarbon streams in said dehydrogenation zone with chrome-alumina catalyst comprising 15 to 25% chromium oxide, determined as Cr_2O_3, and alkali metal in an amount equivalent to at least 0.6% by weight Na_2O on alumina carrier, said catalyst having been obtained by dehydrating beta alumina trihydrate to produce sorptive alumina hav-

ing a large surface area, lowering the surface area to within the range from 100 to 300 m.²/g. by treatment with hot steam, impregnating the surface reduced alumina, and heating the impregnated eta alumina, said contacting being effected at a temperature in the range of 1000 to 1100° F. and pressure in the range of 5–30 inches Hg abeolute, and at a space rate correlated therewith to obtain at least 50% conversion of C_3 hydrocarbons in the charge with resulting production of products including



p-xylene and isobutylene; separating from the resulting products hydrogen and hydrocarbons up to C_3; further separating from the reaction products $isoC_4$ hydrocarbons to provide an aromatic residual fraction; subjecting said separated $isoC_4$ hydrocarbons to dimerization in a separate reaction zone to obtain diisobutylene; admixing the obtained diisobutylene with the fresh isobutane charged to said dehydrogenation zone; and recovering from said aromatic residual fraction a xylene cut highly concentrated in p-xylene.

3,202,726

RECOVERY OF DIMETHYLNAPHTHALENES

Earl W. Malmberg, Wilmington, Del., and William M. Robinson, Holmes, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed July 3, 1961, Ser. No. 121,338
11 Claims. (Cl. 260—674)

1. Process for separating a dimethylnaphthalene isomer from at least one lower-melting isomer thereof which comprises cooling a liquid mixture of the first-named isomer and the second-named isomer to precipitate a crystalline mixture of said first-named isomer and said second-named isomer, separating said crystalline mixture from the mother liquor, heating said crystalline mixture to a temperature which is below the melting point of said first-named isomer and is high enough to melt a portion of said crystalline mixture, while maintaining elevated pressure in the range from 25 to 500 p.s.i.g. on the crystals to force from the crystals, enriched in said first-named isomer, the liquid material comprising said second-named isomer resulting from melting a portion of said crystalline mixture by said heating.

3,202,727

PURIFICATION OF BUTADIENE BY OXIDATION TO REMOVE ACETYLENE

Stuart Neil Duncer, Leatherhead, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed Dec. 20, 1962, Ser. No. 245,966
Claims priority, application Great Britain, Jan. 9, 1962, 763/62
7 Claims. (Cl. 260—681.5)

1. A process which comprises passing a gas stream containing butadiene, acetylene, and sufficient oxygen to oxidize the acetylene at a temperature between 120° and 275° C. over a solid copper-containing catalyst comprising copper oxide and selectively oxidizing the acetylene to remove it from the gas stream.

3,202,728

GLUE COMPRISING HYDROXYL CONTAINING POLYESTER, POLYISOCYANATE AND RESORCINOL

Samuel Kohn, Paris, France, assignor to Office National d'Etudes et de Recherches Aerospatiales, Chatillon-sous-Bagneux, France, a corporation of France

No Drawing. Filed Apr. 21, 1960, Ser. No. 23,602
Claims priority, application France, Apr. 24, 1959, 793,077
22 Claims. (Cl. 260—858)

1. A substantially water-free glue comprising a mixture of a polyisocyanate, resorcinol, and a polyester having free hydroxyl groups, said glue producing a polyurethane when cured.

3,202,729

BUTADIENE-STYRENE RUBBER BLENDED WITH AROMATIC HYDROCARBON-FORMALDEHYDE RESIN

Lyman R. Roberts, Concord, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 18, 1961, Ser. No. 160,307
3 Claims. (Cl. 260—887)

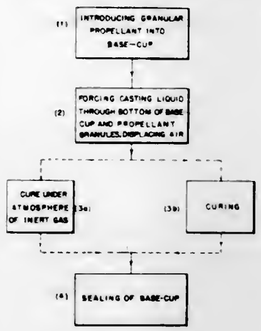
1. As a new composition of matter, a major proportion of styrene-butadiene rubber and a minor proportion of a light colored resinous condensation product of formaldehyde with an aromatic hydrocarbon mixture boiling within the limits from about 460° F. to about 700° F., said mixture being substantially free of olefins and of alpha-alkyl naphthalenes and comprising at least about 70% by weight of beta-alkyl naphthalenes, the condensation product having an average molecular weight of 475–600, a ring and ball softening point of 215–270° F. and an ASTM color of 5–7 in 20% benzene solution.

3,202,730

PROCESS FOR MAKING PROPELLANT CHARGES

Stuart Gordon and Kenneth Gordon Reed, Kidderminster, and John Christopher Nigel Russell, Stourport-on-Severn, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain

Filed Mar. 5, 1962, Ser. No. 177,272
Claims priority, application Great Britain, Mar. 7, 1961, 8,336/61
4 Claims. (Cl. 264—3)



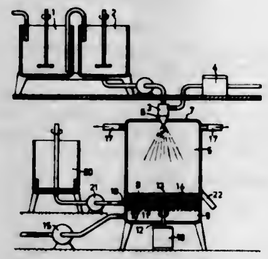
1. A method for the production of a gas-producing double-base propellant charge for use in rocket motors, engine-starters and the like using a cylindrical sheath of combustion inhibiting material consisting at least in part of a base-cup having upstanding walls around its periphery defining a hollow space therein, said sheath being open at one end thereof for igniting said charge and said sheath having an orifice in the other base-cup end thereof, comprising the steps of introducing into the sheath a granular mass comprising one component part of the said propellant, introducing a casting liquid comprising the other component part of said propellant through said orifice beneath the propellant granules and forcing the casting liquid to rise between the propellant granules, thereby displacing the air remaining between the propellant granules as the casting liquid rises, said casting liquid containing a liquid nitric ester, followed by curing the entire mass under positive pressure such that the propellant mass is enclosed in and bonded to the combustion inhibiting material of the base-cup and upstanding walls of the sheath to produce a hard and solid charge adapted to be ignited at said one igniting end and to burn progressively to the other base-cup thereof.

3,202,731

METHOD OF FORMING FREE FLOWING PARTICLES, CONTAINING A BIOLOGICALLY VALUABLE SUBSTANCE

Anton Bernard Grevenstuk and Francois Johannes Jacobus Hoogesteger, both of Van Houtenlaan, Weesp, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 3, 1961, Ser. No. 100,456
Claims priority, application Netherlands, Apr. 7, 1960, 250,291
12 Claims. (Cl. 264—7)



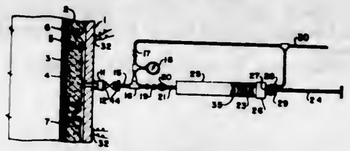
1. A method of manufacturing solid, air-stable free flowing, spherical particles each particle having a center portion containing an air-oxidizable substance and at least one antioxidant and an outer portion containing a film-forming colloid and a carbohydrate, said method comprising the steps, forming in warm water an aqueous emulsion of said above-mentioned ingredients in a concentration such that said mixture slowly hardens at room temperature, atomizing said aqueous emulsion at a temperature between about 50° C. and 100° C. into a gas having a temperature low enough to cause the resultant fluid drops to slowly harden, forcing the resultant drops to impinge upon a fluidized bed consisting initially of a non-water absorbent powdered lubricant solid and then of a mixture of said solid lubricant powder, solidified spherical particles formed from said fluid drops and solidifying drops formed from said fluid drops, said bed kept in the fluidized state by means of an upwardly directed gas, said gas having a temperature sufficiently low to cause the fluid drops to solidify, withdrawing the resultant solid spherical particles from the fluidized bed, removing the lubricant from said particles and drying said particles.

3,202,732

REPAIRING REFRACTORY LINED VESSELS

Steven S. Brunn, Le Roy H. Markway, and Donald O. Clarkson, Houston, and John W. Burks, Pasadena, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed May 14, 1962, Ser. No. 194,366
6 Claims. (Cl. 264—30)



1. The method of patching a hot vessel having an outer steel wall and an inner refractory lining, said vessel being in operation normal in service temperature and pressure, said method comprising

tapping the steel wall of said vessel at a point where the outside surface of the steel wall has developed a hot spot while the vessel is under operating conditions normal as to temperature and pressure,

injecting a cooling gas into the vessel and through the opening made in said vessel wall by said tapping and flowing said gas through the wall and into the voids of the material adjacent the steel wall to substantially reduce the steel wall temperature around the tapped point and the temperature of the material adjacent the steel wall to a temperature at which repairs may be carried out,

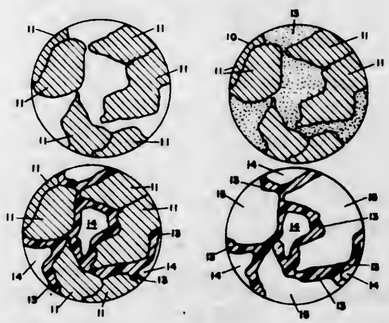
and thereafter injecting by pressure means a flowable aqueous refractory material through said opening and into the voids of said refractory material from the back sides thereof.

3,202,733

METHOD OF MAKING MICROPOROUS PLASTIC

Howard J. Strauss, Elkins Park, Pa., assignor to ESB-Reeves Corporation, a corporation of Delaware

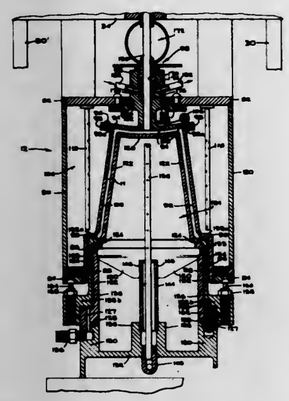
Filed Mar. 6, 1962, Ser. No. 177,795
13 Claims. (Cl. 264—49)



1. A method of making microporous plastic having a functional temperature in excess of 500° F. comprising the steps of impregnating a porous metal form with a fine dispersion of the plastic in water, drying the form to remove the water while leaving a residue of the plastic in the pores of the metal form, heating the plastic impregnated form to a temperature and for a period of time sufficient to fuse the plastic in the pores of the metal form, and removing the metal from the plastic impregnated form by dissolution thereby producing a microporous plastic having a geometric shape corresponding to the original porous metal form and having pore

structure corresponding in volume to the metal in the original metal form plus the volume of the water which was removed by drying.

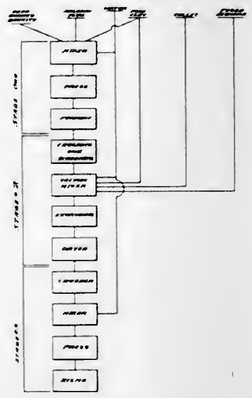
3,202,734
FOAMED PLASTIC MOLDING METHOD AND APPARATUS
James A. Young, San Jose, Calif., assignor to Sani-Gard Plastics Company, Santa Clara, Calif., a corporation of California
Filed Aug. 7, 1961, Ser. No. 129,688
3 Claims. (Cl. 264—53)



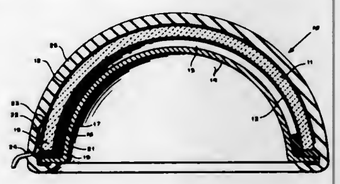
1. A molding method for molding a cup from expansible plastic beads which comprises the steps of intermittently establishing communication between a supply of beads and the interior of a cup-shaped mold cavity, inducing the flow of beads from the supply into the cavity while communication is established by conducting fluid through a venturi orifice to draw beads from the supply, entrain the same, and deliver the fluid and entrained beads into the mold cavity while such cavity is vented, creating a backflow of fluid from the mold cavity to the supply upon filling of the mold cavity with beads to stop the feeding of beads toward the mold cavity, then applying steam under pressure to the mold exterior and to the mold cavity to expand and unite the beads while the mold remains vented to purge all bead-supply fluid therefrom, then closing the mold while the steam is applied to complete uniting and expansion of the beads, thereafter cooling the mold by applying coolant to its exterior, and finally opening the mold and applying fluid pressure to the interior of the formed cup to eject the same from the opened mold.

3,202,735
BAUXITE BRICK AND PROCESS OF MAKING THE SAME
Harlan Dale Smith and William Russell Weiss, Wellsville, Mo., assignors to Wellsville Fire Brick Company, Wellsville, Mo., a corporation of Missouri
Filed Jan. 2, 1962, Ser. No. 163,895
8 Claims. (Cl. 264—56)

1. A process for preparing a dimensionally stable bauxite refractory brick of high alumina content and low porosity, comprising in a first stage, subdividing dead burned bauxite so as to pass a 6 mesh screen of the Tyler standard screen scale, mixing with said bauxite a halide flux and wet refractory clay binder, forming the resulting mixture into shaped masses and firing the shaped masses to produce a material stable against expansion upon reheating; in a second stage subdividing said fired shaped masses so as to pass an 8 mesh screen of the Tyler standard screen scale, mixing the resulting particulate material under a vacuum with fused alumina, a minor amount of cullet and sufficient wet refractory clay binder to provide an extrudable mass in which the clay binder intimately and completely coats said particulate material, extruding said mass and drying the extruded material; and in a third stage, subdividing the extruded dried material so as to pass a 4 mesh screen of the Tyler standard screen scale, tempering the subdivided material with water, power pressing the tempered material into bricks of the desired shape and drying and firing the shaped bricks.

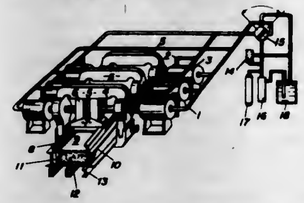


3,202,736
PROCESS FOR REINFORCING OPEN HEMISPHERICAL TRANSDUCERS
John J. Horan, Willow Grove, James R. Brown, Jr., Abington, and Maurice F. Pressler, North Hills, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Original application Nov. 30, 1962, Ser. No. 241,452, now Patent No. 3,158,762. Divided and this application May 19, 1964, Ser. No. 368,724
4 Claims. (Cl. 264—61)
(Granted under Title 35, U.S. Code (1952), sec. 266)



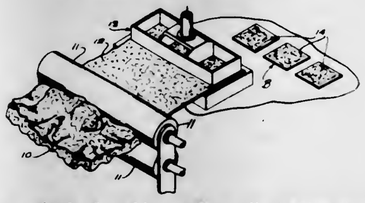
1. A method of increasing the edge strength of an open hemispherical ceramic element comprising the steps of
slip-casting a ceramic element in the form of a hollow hemisphere,
drying said hemisphere,
dipping the rim of said hemisphere in a fresh slip solution until a thin layer adheres to said rim,
drying said hemisphere for a predetermined time interval,
and firing said hemisphere after the termination of the drying operation.

3,202,737
METHOD OF MANUFACTURING PRESSED CONCRETE
Yutaka Tsuda, Setagaya-ku, Tokyo, Japan, assignor to Yawata Iron & Steel Co., Ltd., Tokyo, Japan
Filed Dec. 4, 1961, Ser. No. 156,692
2 Claims. (Cl. 264—71)



1. A method of manufacturing pressed concrete of high strength, comprising the steps of placing a mass of concrete in a mold having at least one part thereof movable into the interior of the mold, vibrating the mass of concrete in the mold for insuring even distribution of the concrete in the mold, mechanically applying pressure to the movable part of the mold for moving it into the mold and thereby applying a pressure of about 10 kg./cm.^{2} to the concrete in the mold, then increasing the mechanical pressure to about 20 kg./cm.^{2} for about 6–8 minutes and reducing the water content of the concrete in the mold to about 23% by squeezing out excess water, and then while still maintaining said mechanical pressure of about 20 kg./cm.^{2} applying steam to the exterior of the mold to heat the concrete within the mold to about 100° C. in order to cure the concrete.

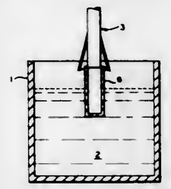
3,202,738
METHOD OF MAKING FLOOR TILE
John B. Reichert, 10035 S. Western Ave., Los Angeles, Calif.
Filed Jan. 9, 1962, Ser. No. 165,096
8 Claims. (Cl. 264—77)



8. The method of making a floor tile having a polychrome wearing surface including, arranging loose heaps of abraded bits of uncured synthetic rubber material of different colors adjacent one surface of a flat sheet of uncured virgin synthetic rubber material and then pressing said heaps of material and sheet of material at predetermined pressures and at predetermined curing temperatures, whereby said heaps of material are urged into and are caused to flow across the surface of said sheet as the materials are being cured.

3,202,739
BLOW MOLDING ARTICLES HAVING BALANCED PROPERTIES
Fredrick J. Zavasnik, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 10, 1963, Ser. No. 250,527
2 Claims. (Cl. 264—98)

1. The method of fabricating a hollow container comprising:
(a) immersing a hollow parison of thermoplastic resin of substantially uniform wall thickness and closed at one end into a liquid heated medium for a predetermined period of time;
(b) partially withdrawing said parison from the medium so that the region of the parison adjacent the closed end thereof remains submerged, and retaining the parison in the thus partially withdrawn position for a second period of time shorter than the first mentioned period of time, the closed end being



heated to a temperature 2 to 10° F. greater than the remainder of the parison;
(c) completely withdrawing the parison from the medium and inserting the thus heated parison into a mold which is of larger cross section than the parison, the parison being inserted so that the closed end thereof engages the end of the mold; and
(d) introducing fluid under pressure into the parison to expand same into engagement with the mold.

3,202,740
METHOD OF STRESSING THE REINFORCING MEMBERS OF REINFORCED CONCRETE
Pierre C. Patin, Paris, France, assignor to Compagnie d'Ingenieurs et Techniciens d'Etudes (C.I.T.E.), Paris, France, a company of France
Filed May 2, 1961, Ser. No. 107,103
Claims priority, application France, May 4, 1960, 826,211; Aug. 3, 1960, 834,839
4 Claims. (Cl. 264—100)

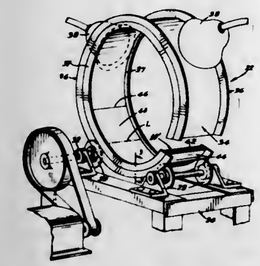


1. A method for tensioning the reinforcing members of reinforced concrete comprising the steps of lubricating the interiors of a plurality of tubes having means immovably attached thereto engaging the concrete for applying compression to the concrete when the fluid pressure is released, substantially filling said tubes with a solid material, then sealing the tubes, then applying a fluid pressure in said tubes upon an end of said solid material longitudinally expanding said tubes, then pouring concrete around and over said tubes and then releasing the pressure after the concrete has hardened about and engaged said tubes whereby said tubes contract and stress the concrete.

3,202,741
METHOD OF MANUFACTURING SHEET MATERIAL WITH TEXTURED PEARLY SURFACE
Edward Gerson, Great Neck, N.Y., assignor, by mesne assignments, to Patrician Plastic Corp., Long Island City, N.Y., a corporation of Maine
Filed Nov. 9, 1961, Ser. No. 152,711
3 Claims. (Cl. 264—108)

1. In the method of making pearly plastic sheet material in which a fluid mixture of a polymeric unsaturated

polyester resin and plate-like particles of pearl essence is centrifugally cast by flowing the fluid mixture slowly into contact with the inner surface of a rotating cylindrical vessel wherein the mixture is polymerized to a flaccid condition, the resulting tube with the pearl essence oriented therein for nacreous appearance is cut longitudinally while in the flaccid condition so as to form a flat sheet from which an article blank can be punched before the chemical cross-linking of the resin is completed with resulting hardening thereof, the improvement which comprises providing the cylindrical vessel with a



patterned interior surface having a multiplicity of shallow depressions and protuberances, the flowing of the aforesaid mixture into contact with the patterned inner surface effecting, by movement of the patterned inner surface relative to the fluid mixture, orientation of the plate-like particles of pearl essence throughout substantially the entire thickness of the flaccid tube in a generally-parallel arrangement with respect to the pattern of said inner surface.

3,202,742

PROCESS FOR PRODUCING PATTERNED PLASTIC ARTICLES

Millard J. Bachelder, Utica, N.Y., Fred E. Satchell, Muskegon, Mich., and William J. Diamond, Lexington, Ky., assignors to Brunswick Corporation, a corporation of Delaware

Filed Oct. 24, 1962, Ser. No. 232,803
15 Claims. (Cl. 264—108)

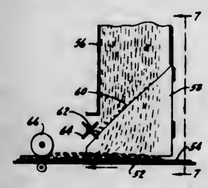
1. In the making of plastic bowling balls by casting thermosetting resin wherein particles of pattern forming material are included in the resin in its fluid state, in combination therewith the improvement which comprises subjecting said resin containing said particles to thermal convection currents sufficient to realign said particles in a pattern generally corresponding to said thermal convection currents and setting said resin to a solid with said particles in their patterned configuration.

3,202,743

METHOD OF FORMING A COMPOSITE PANEL

Armin Elmendorf, Palo Alto, Calif.

Filed Sept. 6, 1961, Ser. No. 136,223
2 Claims. (Cl. 264—109)



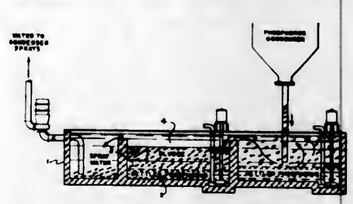
1. A method of forming a composite wood panel of wood strands which have a length substantially greater than the width and a matrix of a binder, including the steps of coating the strands with the binder, orienting the binder coated strands into generally parallel groups by passing them through a plurality of parallel zones, said zones separated from one another by walls, the width of said separated zones being substantially smaller than the length of the strands so that said strands which pass therethrough are oriented in the direction of their length, oscillating the separating walls in the direction of the length of the strands to facilitate the passage of the strands through the separated zones, depositing the strands in a loose assemblage in a layer side by side on a support spaced from the bottom of the walls which separate the zones, moving the support in one direction away from the separated zones so that most of the strands, when they fall, make acute angles with the support in a manner resembling fish scales, moving the deposited layers of strands to a pressing means, and pressing the layer of strands and binder to consolidate the layer and to reduce the angles between the strands and the support.

3,202,744

METHOD OF BRIQUETTING

James C. Barber, George H. Megar, and Thomas S. Sloan, Florence, Ala., assignors to Tennessee Valley Authority, a corporation of the United States

Original application June 19, 1961, Ser. No. 118,204, now Patent No. 3,084,029. Divided and this application Feb. 19, 1962, Ser. No. 174,318
The portion of the term of the patent subsequent to Apr. 2, 1980, has been disclaimed
2 Claims. (Cl. 264—109)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. The method of briquetting a mixture of phosphorus-bearing rock, carbon, and silica, which comprises introducing into a first vessel sludge accumulated from a phosphate rock smelting operation; applying centrifugal forces to said sludge in said first vessel; removing from said first vessel as overflow, containing less than about 7 percent phosphorus by weight, a water slurry containing solids and carbonaceous material; settling said water slurry in a second vessel; removing supernatant water from said second vessel; removing a wet residue from said second vessel; mixing said wet residue as binder with said phosphorus-bearing rock, carbon, and silica; and briquetting the resulting mixture.

3,202,745

METHOD AND APPARATUS FOR SINTER MOLDING OF PLASTICS ARTICLES

Lars Ringdal, Oslo, Norway, assignor to Vasco Industries Corp., New York, N.Y., a corporation of New York

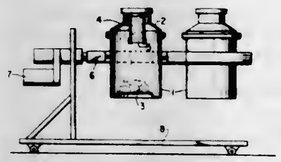
Filed Oct. 10, 1961, Ser. No. 144,171
11 Claims. (Cl. 264—113)

1. The method of producing a shaped hollow article, which comprises

placing a charge of a finely divided thermoplastic material in a hollow mold the inner surface of which has the external configuration of the article to be produced,

by rotating and heating said mold distributing particles of said material over and heating them from said mold surface until the particles of said charge are fused together into a continuous first layer covering said surface,

then, while continuing the rotation and the heating of said mold, distributing the particles of a second charge of a different finely divided thermoplastic material over and heating them from the inner surface of said first layer until they are fused togethef and to



said layer into a continuous second layer covering the inside of and integrated with said first layer.

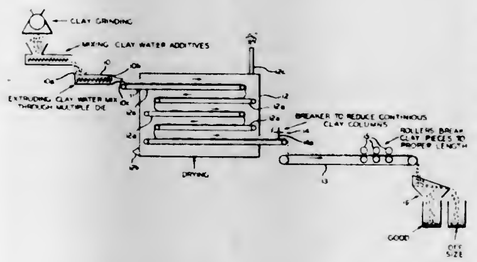
6. In an apparatus for fusion molding of thermoplastic particles, a mold, means for rotating said mold while the mold is subjected to heat, for the distribution and fusion in said mold of a first charge of thermoplastic particles placed therein, and means carried by said mold for depositing a second charge of thermoplastic particles into said mold at a predetermined time for fusion with the fused first charge in said mold.

3,202,746

METHOD AND APPARATUS FOR MANUFACTURING SMALL CLAY CYLINDERS

Robert B. Day and Paul V. Johnson, Geneva, Ill., assignors, by mesne assignments, to Structural Clay Products Institute, Geneva, Ill., a corporation of Delaware

Filed Dec. 8, 1961, Ser. No. 157,930
8 Claims. (Cl. 264—141)



1. The method of making small clay cylinders including the steps of extruding clay in a plastic state into a plurality of thread-like streams, drying the streams, breaking the streams after drying into a number of varying lengths, and then subjecting the broken lengths to yieldable roller compression sufficient to break a substantial portion of said lengths into small cylinders of a substantially uniform size and shape but without crushing the lengths.

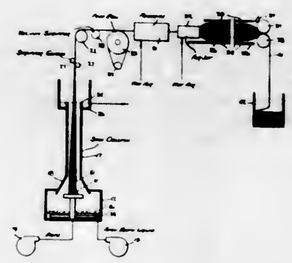
4. Apparatus for making small clay cylinders of generally uniform size including extrusion means for forming moist thread-like streams from a plastic clay mass, conveying means for delivering said streams to a drying tunnel formed and adapted to subject said streams to an elevated temperature and thereby dry the streams, conveying means having a conveying surface for removing the streams away from the tunnel, and a roller associated with said surface located outside of said tunnel for exerting compressive stresses on said streams without crushing said streams and thereby cause breaking said streams into short lengths.

3,202,747

METHOD FOR CRIMPING WET SPUN CELLULOSE TRIACETATE

John W. Soehngen, Berkeley Heights, N.J., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

Filed Apr. 26, 1961, Ser. No. 105,691
10 Claims. (Cl. 264—168)



1. Process for the production of crimped filamentary materials of cellulose triacetate, which comprises extruding a solution of cellulose triacetate, dissolved in an organic solvent therefor comprising principally methylene chloride, into a mixture of methylene chloride and a lower alkanol as liquid coagulant to produce a bundle of parallel filaments swollen by coagulant, separating individual filaments from one another by passing them together with a pressurized gas through a venturi-shaped zone while said filaments are still maintained in substantially parallel relation, and removing the swelling liquid from said filaments while maintaining said filaments in substantially separated and tensionless condition until said filaments are in substantially non-swollen condition, said filaments crimping during said removal of swelling liquid.

3,202,748

SYNTHETIC FIBERS CONTAINING PROTEIN AND PROCESS THEREFOR

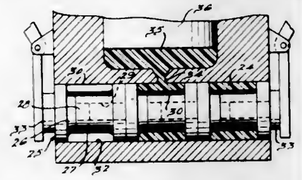
Morio Naka, Urawa-shi, Saitama-ken, Yutaka Umebayashi, Shozo-gun, Ehime-ken, and Minoru Itaya, Tokyo, Japan, assignors to Fuji Spinning Company Ltd., Tokyo, Japan

No Drawing. Filed Feb. 26, 1963, Ser. No. 261,197
Claims priority, application Japan, Mar. 7, 1962, 37/8,269
10 Claims. (Cl. 264—194)

1. A process for the production of synthetic fiber which comprises (a) mixing epichlorohydrin with protein, the epichlorohydrin being in an amount of from 0.5 to 10% by weight based on the protein, (b) mixing the so-obtained protein derivative with viscose, the ratio of cellulose to protein being about 9:1 to 7:3, and (c) spinning the so-obtained viscose in a spinning bath.

3,202,749
METHOD FOR MANUFACTURING BEARINGS
Charles S. White, Rte. 3, Box 454–H, Palmdale, Calif.
Continuation of abandoned application Ser. No. 619,782, Nov. 1, 1956. This application Nov. 27, 1959, Ser. No. 855,936
7 Claims. (Cl. 264—242)

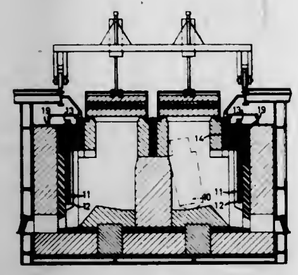
1. The method of making a bushing which includes the steps of applying a layer of low friction fabric material about a multi-piece spool between the radially extending flanges on the ends thereof, said flanges being of the same diameter, sliding said spool into a bore in a mold with the flanges on each end of the spool slidably sealing against the wall of the bore, injecting hardenable material through an aperture in the mold communicating with the bore beween said flanges of the spool so as to completely fill the space between the flanges and accurately conform the fabric material to the spool, re-



moving the spool from the bore after the hardenable material has hardened and separating the pieces of the spool to remove the bushing therefrom.

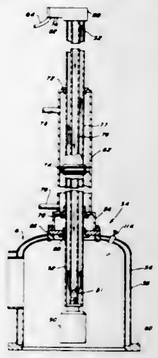
ELECTRICAL

3,202,750
ELECTRIC RESISTANCE FURNACES
Anders Ewert Malm and Rolf Birger Thorselius, Hallstahammar, Sweden, assignors to Aktiebolaget Kanthal, Hallstahammar, Sweden, a corporation of Sweden
Filed May 6, 1963, Ser. No. 278,312
2 Claims. (Cl. 13—25)



1. An electric resistance furnace of the kind intended for industrial purposes, said furnace having an insulated furnace room and being equipped with resistance elements which consist of molybdenum disilicide, $MoSi_2$, said elements being of hairpin shape and each having a glow portion depending freely into said furnace room, each resistance element having two slightly spaced electrodes provided with lead-in parts extending through the furnace insulation, the insulation having a central part through which the lead-in parts of the electrodes extend, said central part consisting of a tube-shaped sleeve preferably composed of a ceramic material, said sleeve surrounding and spaced from the parts of the electrodes which pass through it, insulating plugs located respectively in the uppermost and lowermost ends of the tube and through which parts of the electrodes extend to fixedly secure the electrodes, said tubular central insulation part transmitting heat developed in the lead-in parts of the electrodes to a central layer of the furnace insulation located around the first-mentioned central part of the insulation, the layer being provided near the lead-in ends of the electrodes with at least one cooling channel, said channel extending perpendicularly to the direction in which the lead-in ends pass through the furnace insulation, said cooling channel being of a length to cool the lead-in ends of a plurality of the resistance elements arranged in a row, the insulation of the furnace room including layers located above and below the central layer, said upper and lower layers being composed of an electrically insulating material of low conductivity.

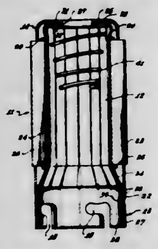
3,202,751
APPARATUS FOR SUPPORTING AND CONDUCTING ELECTRIC CURRENT TO A LOAD
Patrick J. Wooding, Moorestown, N.J., assignor to Consarc Corporation, Rancocas, N.J., a corporation of New Jersey
Filed Apr. 2, 1963, Ser. No. 270,027
10 Claims. (Cl. 13—31)



8. Apparatus comprising a head having an open bottom, a cylinder supported by the head, a hollow ram in said cylinder with a first end of the ram extending out of one end of the cylinder and the second end of the ram extending out of the other end of the cylinder, seal means between said ram and the ends of the cylinder, a piston in said cylinder and connected to said ram, hydraulic conduit means associated with said cylinder for moving said ram, electrode support means mounted on said second end of the ram, an electrical conductor in said ram and electrically coupled to said support means, and a vacuum seal between said head and a portion of said ram between the piston and said second end of the ram.

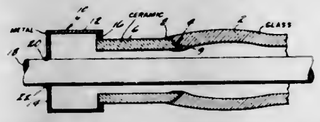
3,202,752
HEAT DISSIPATING ELECTRICAL SHIELD
Everett S. Nance, Rosemead, Calif., assignor to Cool Fin Electronics Corporation, South El Monte, Calif., a corporation of Nevada
Filed July 23, 1962, Ser. No. 211,700
7 Claims. (Cl. 174—35)

1. A heat dissipating, electrical shield for an electronic component having a non-metallic envelope comprising: a substantially continuous sheet metal envelope presenting a substantially continuous internal cylindrical surface formed to closely embrace substantially the entire periphery of a cylindrical non-metallic envelope of the component in good heat conducting contact therewith, and forming a shield against ambient electrical fields; integral flattened folds projecting outwardly from and extending axially of said shield envelope to form longitudinal fins



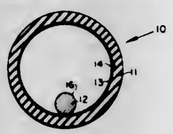
augmenting the heat dissipating surface area of the shield; and spring rings surrounding and engaging said shield envelope above and below said longitudinal fins for increasing the contact pressure between the engaging surfaces of the shield and component envelopes.

3,202,753
GLASS TO CERAMIC TO METAL SEAL
Paul J. Gingras, Vernon, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 13, 1963, Ser. No. 301,767
7 Claims. (Cl. 174—50.58)



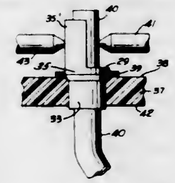
1. A seal system including a glass envelope into which a metal lead is to be introduced, said glass envelope having an opening therein, a ceramic element having a passage therethrough leading into said envelope, said ceramic element being joined at one end to said glass element at the opening therein by a fused glass seal, a metallic end cap connected to said ceramic element at the other end thereof, and a metallic lead hermetically sealed to said end cap and passing through said end cap and the passage in said ceramic element into said glass envelope.

3,202,754
COMBINED DUCT AND ELECTRIC CABLE
James P. Ruch, Orange, Calif., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Mar. 7, 1962, Ser. No. 178,049
12 Claims. (Cl. 174—68)



1. A replaceable-conductor electric power cable comprising:
(A) an elongated conductor
  (a) energized at a selected voltage and frequency
  (b) said frequency being selected from the group consisting of alternating current power frequencies and direct current,
(B) a tubular wall of electrical insulation
  (a) having an inner periphery
  (b) surrounding said conductor and
  (c) adequate to insulate said conductor from ground at said voltage,
(C) an electrically conducting liner covering said inner periphery
(D) said liner being in electrical contact with said conductor and having the same voltage and frequency as said conductor,
(E) said liner defining a sectional area at least twice the sectional area of said conductor, thereby permitting another such conductor to be pulled into said cable, and
(F) air at atmospheric pressure being in contact with said elongated conductor and said liner within said cable.

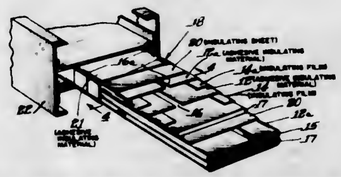
3,202,755
WELDED CIRCUIT ASSEMBLY AND METHOD OF ASSEMBLY
Anton Oswald, Bloomfield, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Aug. 30, 1961, Ser. No. 135,055
6 Claims. (Cl. 174—68.5)



1. A device for connection of a wire conductor to a printed circuit consisting of a generally tubular body of weldable material having three continuous coaxial segments, one end segment being of cylindrical configuration, the intermediate segment having a knurled outer surface of frusto-conical form tapering outwardly from an end of said one segment, the other end segment being cylindrical over a minor portion of its length adjoining said intermediate segment, the remaining length portion of said other end segment being a sector of a hollow cylinder.

2. In combination, a printed circuit board of electrically-insulating material having a conductive layer on a major surface thereof; a device in accordance with claim 1 mounted on said board with its cylindrical segment inserted in an aperture extending through said board and layer and its knurled frusto-conical surface engaging said layer around said aperture; and a wire conductor inserted through the tubular body of said device and welded to said other end segment thereof.

3,202,756
INSULATED BUS BARS AND ASSEMBLY
Harris I. Stanback, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Apr. 2, 1963, Ser. No. 269,970
12 Claims. (Cl. 174—99)

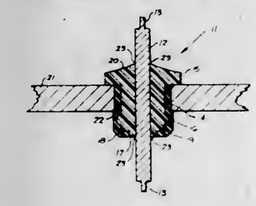


1. An individually wrapped bus bar for use in an assembly of bus bars, comprising
(a) a flat elongated bus bar,
(b) a pair of elongated non-self-conforming strips of

insulating film wrapped respectively over opposite longitudinal edge faces of said bus bar and the portions on opposite sides thereof adjacent said longitudinal edge faces, and

(c) an elongated strip of adhesive insulating material of a width approximately equal to but no greater than the periphery of said bus bar, said strip of adhesive insulating material being wrapped only once substantially around said bus bar and the strips of insulating film thereon and conforming said strips of insulating film to said bus bar.

3,202,757
RESILIENTLY SUPPORTABLE, RIGIDLY HELD TERMINAL
Robert M. Carlson, Gahanna, and Paul M. Estes and Dean E. Feeman, Pataskala, Ohio, assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 12, 1963, Ser. No. 308,507
2 Claims. (Cl. 174—153)



1. A feed-through terminal insertable into and self-supportable in an aperture of a panel, which comprises:

a conductive element,

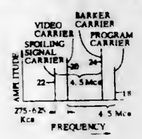
a rigid heat resistant thermosetting plastic support formed about an intermediate portion of the conductive element,

the support formed with a flange at one end thereof and a rib protruding outwardly along an intermediate portion thereof spaced from the flanged end a distance greater than the thickness of the panel, and

a cuplike shell of thermoplastic material having a groove formed within an intermediate portion of the inner wall thereof formed about the portion of the support extending from the flange with the rib of the support anchored within the groove of the shell so that the shell is precluded from moving in either direction relative to the support where, upon insertion of the feed-through terminal into the aperture of the panel, the flange of the support engages one surface of the panel to preclude continued movement of the terminal through the panel and the thermoplastic shell is compressed within the aperture and expands in a plane common with the support rib and adjacent the opposite surface of the panel to lock the terminal within the panel.

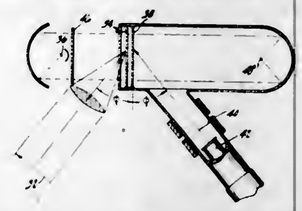
3,202,758
SUBSCRIPTION-TELEVISION PROGRAM-SCRAMBLING SYSTEM
George Brownstein, Pacoima, Los Angeles, Calif., assignor to Paramount Pictures Corporation, New York, N.Y., a corporation of New York
Filed Nov. 9, 1961, Ser. No. 151,311
4 Claims. (Cl. 178—5.1)

4. In a subscription-television system of the type wherein a transmitter includes means for generating program audio signals modulated on a carrier and means for generating video signals including line signals modulated on a carrier, the improvement comprising means for generating spoiling signals having a frequency selected such that when presented to the input of a receiver together with said video signals said receiver will not intelligibly reproduce said video signals, said spoiling-signal frequency further being selected to be an odd multiple of one-half the line-signal frequency, means for generating barker audio signals modulated on a carrier, said barker audio signal carrier having a frequency of 4.5 megacycles above the



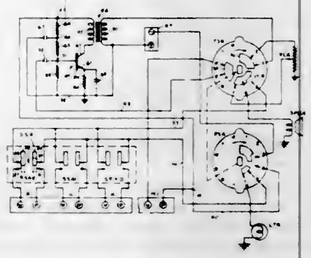
frequency of said spoiling signals, said means for generating said barker audio signals modulated on a carrier including means for establishing the amplitude of said barker-signal carrier relative to the amplitude of said program-signal carrier at a value such that when all said carriers are applied to a receiver only said barker audio signals are reproduced.

3,202,759
IMAGE PICKUP SYSTEM
Stanley V. Forgue, Cranbury, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 16, 1961, Ser. No. 153,779
13 Claims. (Cl. 178—7.2)



12. A radiant energy camera comprising a fixed filter which has a predetermined pass band, a variable filter which normally passes radiant energy substantially only beyond the long wavelength limit of said fixed filter, said variable filter being positioned to receive radiant energy passed by said fixed filter, and means for selectively shifting the pass band of elemental areas of said variable filter towards shorter wavelengths to cause the pass band of said areas to overlap said predetermined pass band.

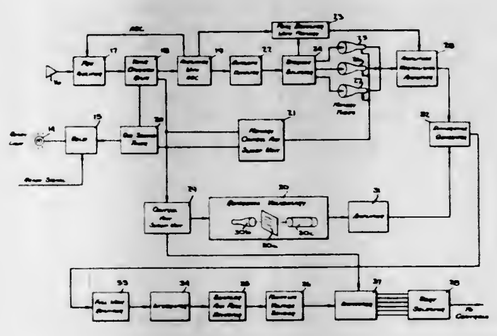
3,202,760
INTERCOMMUNICATION SYSTEM
John Earl Chapman, St. Charles, Ill., assignor to Dukane Corporation, St. Charles, Ill., a corporation of Delaware
Filed Apr. 16, 1962, Ser. No. 187,816
1 Claim. (Cl. 179—1)



In an inter-communication system, a plurality of similarly wired stations, said system having a common power supply for all stations and having wiring inter-connecting all stations, said power supply having a high potential

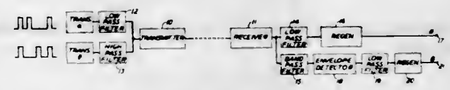
terminal and a ground terminal, each station having: a high potential terminal and a ground terminal, said system wiring including wires connecting all grounds together and wires connecting all high potential terminals together, a transducer, one stage audio frequency transistor amplifier with a signal input and signal output, station selecting switch means and talk-listen switch means, said talk-listen switch means having stand-by, talk and listen positions; circuits including the talk-listen switch means at a calling station when in talking position for completing transistor energizing circuits between the power supply and amplifiers at calling and called stations, a busy signal lamp connected between ground and said talk-listen switch means, said talk-listen switch means providing in the stand-by position only for a connection from the station high potential terminal to one terminal of said lamp, this connection providing for energization of the calling station lamp from the high potential terminal at a called station when the latter is in busy talking condition, and circuits to dispose a calling station amplifier and a called station amplifier in cascade for signals through the calling station talk-listen switch means when in talk position and through the called station talk-listen switch means when in stand-by or listen position, whereby speech input at the calling station transducer will reappear as speech output in the called station transducer for transmission in one direction only.

3,202,761
WAVEFORM IDENTIFICATION SYSTEM
Robert J. Bibbero, Great Neck, N.Y., assignor to Balova Research and Development Laboratories, Inc., Woodside, N.Y., a corporation of New York
Filed Oct. 14, 1960, Ser. No. 62,756
5 Claims. (Cl. 179—1)



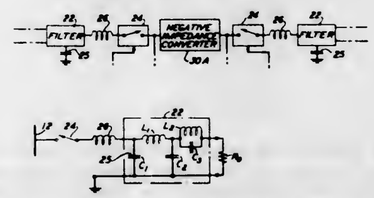
1. A word identification system comprising an input processor responsive to an electrical signal of varying frequency and amplitude equivalent of a word to be identified and having means to convert said electrical signal into a waveform corresponding to the envelope of said signal and suitable for comparison with similar waveforms of known words and having means to store said waveform suitable for comparison and having means to provide said waveform suitable for comparison as a repeated output of said input processor, a reference vocabulary memory device in which waveforms of a set of known words are stored having means to provide said waveforms of a set of known words as an output in a timed relationship with said repeated output of said input processor, and a comparator coupled to said repeated output of said input processor and the output of said reference vocabulary memory device to produce an indication of the closest match between said repeated output and said output of said reference vocabulary memory device.

3,202,762
ASYNCHRONOUS PULSE MULTIPLEXING
Marvin R. Aaron, Whippany, and Hansjoergen H. Henning, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 20, 1961, Ser. No. 160,807
4 Claims. (Cl. 179—15)



1. In a system for asynchronously multiplexing information bearing pulse trains, a plurality of sources of information bearing pulse trains, the frequency spectrums of said pulse trains being coextensive, a transmitting filter connected to receive pulses from each of said sources and having a pass band within said frequency spectrum but including no frequencies in the pass band of any other of said filters, means for directly applying the pulses from each of said pulse transmitters to a respective one of said transmitting filters, transmission means, means for applying the energy selected by said transmitting filters in common to said transmission means, a plurality of receiving filters corresponding to the number of said pulse sources, each of said receiving filters selecting a band of frequencies which corresponds substantially to the band of frequencies selected by a corresponding one of said transmitting filters, means for applying the signals transmitted by said transmission means to said receiving filters, and a pulse regenerator connected to receive the output of each of said receiving filters to reproduce the pulse train from the corresponding pulse transmitter.

3,202,763
RESONANT TRANSFER TIME DIVISION MULTIPLEX SYSTEM UTILIZING NEGATIVE IMPEDANCE AMPLIFICATION MEANS
Wilmer B. Gaunt, Jr., Lincroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 16, 1963, Ser. No. 302,576
1 Claim. (Cl. 179—15)



A communication system comprising a plurality of lines each having a load impedance R_0, first capacitance means

$$C_1=\frac{T}{2R_0}$$

terminating each of said lines, a common link comprising resonant transfer inductance and a negative impedance converter, gating means connecting said lines to said link, means for enabling a pair of said gating means to provide a signal transfer path between the first capacitance means in the corresponding pair of said lines during a time slot interval of duration T in a repetitive cycle of time slots, and filter means in each of said lines for attenuating oscillations produced by said negative impedance converter during signal transfer, said filter means comprising first

$$\left(L_1=\frac{6TR_0}{\pi^2}\right)$$

and second

$$\left(L_2=\frac{mTR_0}{\pi}\right)$$

inductance means, second capacitance means

$$\left[C_2=\frac{T}{R_0}\left(\frac{5}{8}-\frac{1m}{\pi}\right)\right]$$

shunting said signal storage means and third capacitance means

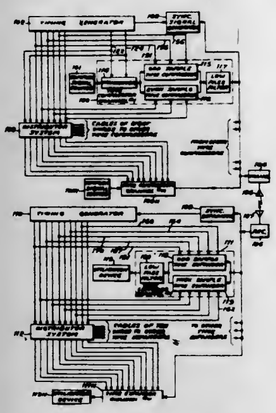
$$\left(C_3=\frac{T}{R_0}\frac{1-m^2}{m^2}\right)$$

shunting said second inductance means wherein

$$m=\sqrt{1-\frac{1}{4T^2f_t^2}}$$

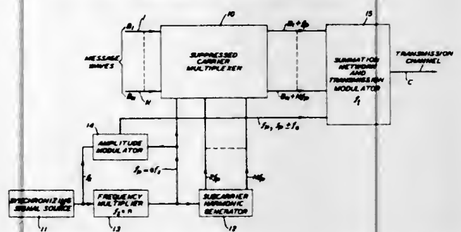
f_t being the frequency of maximum rejection of an m derived terminating section.

3,202,764
TRANSMISSION SYSTEMS
Paul R. Adams, Montclair, and Mortimer Rogoff, Nutley, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Jan. 29, 1960, Ser. No. 5,392
20 Claims. (Cl. 179—15)



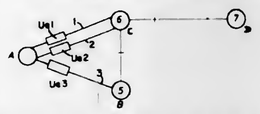
1. A complex signal time compressor comprising a source of complex signals, means coupled to said source to divide said complex signals into a plurality of successive signal segments each having a first time duration, and a translation device coupled to said dividing means sequentially condensing each of said signal segments into a second time duration less than said first time duration, said translation device including means to sequentially convert each of said signal segments into a plurality of pulse signals representative thereof, adjacent ones of said pulse signals being spaced by a given time interval, a delay line storage system coupled to said converting means to translate the pulse signals of each of said plurality of pulse signals into a time adjacent relationship with respect to each other to condense each of said plurality of pulse signals into said second time duration, and means coupled to the output of said storage system to recover the signal represented by each of said plurality of condensed pulse signals to provide condensed complex signal segments spaced from each other by a predetermined time interval.

3,202,765
SYNCHRONIZATION OF FREQUENCY MULTIPLEX SYSTEMS
Charles J. Byrne, Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 23, 1961, Ser. No. 133,465
8 Claims. (Cl. 179—15)



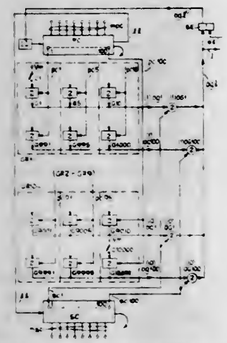
1. A suppressed-carrier frequency multiplex system comprising means for generating a plurality of suppressed-carrier frequency-displaced message-bearing signals, a source of a synchronizing signal of frequency f_s, a source of a pilot signal of frequency f_p, means for modulating said pilot signal by said synchronizing signal to produce a modulated pilot signal having components of frequencies f_p, f_p+f_s and f_p-f_s, a remote receiver station, and means for transmitting said suppressed-carrier signals, along with said modulated pilot signal, to said receiver station over a transmission medium likely to impart an unpredictable frequency shift Δ to the transmitted signals.

3,202,766
ALTERNATE ROUTING IN TELEPHONE SYSTEMS
Johannes Matthieu, Stuttgart-Stammheim, Volker Schmidt, Stuttgart-Wellimdorf, and Horst Woller, Korntal, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 21, 1961, Ser. No. 161,194
Claims priority, application Germany, Dec. 23, 1960, St 17,270
5 Claims. (Cl. 179—18)



1. In a telephone exchange network, a local exchange and first and second remote exchanges, a first group of trunk lines each including repeaters for interconnecting the local exchange with the first remote exchange, a second group of trunk lines each including repeaters for interconnecting the local exchange with the second remote exchange and a third group of trunk lines each including repeaters for interconnecting the said first and second remote exchanges, means in the local exchange responsive to the calling of the first remote exchange for selecting an idle one of said associated first trunks and for operating the associated repeater to extend a connection from the local exchange to the called exchange, testing means operable responsive to all of said first trunk lines being busy for selecting an idle one said second trunk lines as an alternate trunk line for operating the associated repeater to extend a connection from the calling exchange to the second remote exchange, and means in the last-said repeater for automatically controlling the second remote exchange to extend the said connection between the calling exchange and said second remote exchange to said called exchange over an idle one of said third trunk lines.

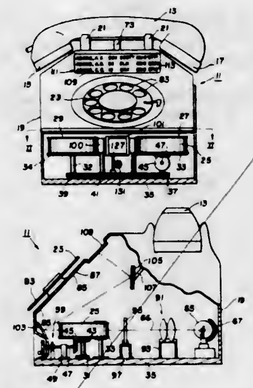
3,202,767
SCANNING CIRCUIT ARRANGEMENTS
Bloomfield James Warman, Charlton, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed July 16, 1962, Ser. No. 209,934
Claims priority, application Great Britain, July 31, 1961, 27,728/61
6 Claims. (Cl. 179—18)



1. A scanning circuit arrangement comprising a plurality of individual coinciding gates each having first and second inputs and an output divided into a number of groups, each said group being further divided into a number of sub-groups, a plurality of groups of output coincidence gates each having first and second inputs and an output corresponding to said plurality of groups of individual gates, the corresponding gates from said sub-groups having their outputs connected in common to a first input of an individual one of said output gates, a first pulse-distributing cyclic counter having for each sub-group of gates an output lead which is connected in common to the first inputs of all the individual gates in that sub-group, a second pulse-distributing counter having a plurality of output leads, the output gates in each group thereof having second inputs respectively connected to said second counter output leads each in common with the second inputs of the corresponding output gates in the other groups thereof, means for driving said first pulse-distributing cyclic counter to provide an output signal on each of its output leads recurrently in turn, said second pulse-distributing counter being connected to said first counter and receiving a stepping pulse once per cycle of the latter to provide output signals successively on its output leads, each of said individual coincidence gates having a second input connected to a circuit to receive a marking signal therefrom, said scanning circuit arrangement being such that the coincidence at one of the individual gates of a marking signal and an output signal from said first counter will cause that gate to pass a signal to the relevant output gate while the coincidence at an output gate of such signal and an output signal from said second counter will cause this output gate to produce a signal on the occurrence of which the combined count reached by said first and second counters will be indicative of the marked gate and thus of the circuit associated with it.

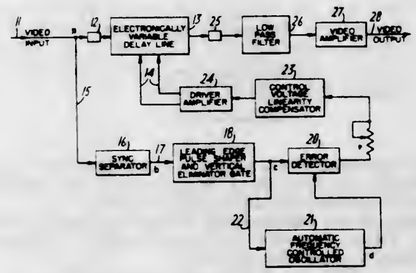
3,202,768
TELEPHONE DIRECTORY DEVICE
Howard M. Atcheson, 76 St. Albans Drive, Memphis, Tenn.
Filed Sept. 18, 1961, Ser. No. 138,665
6 Claims. (Cl. 179—100)

1. In a communication telephone set including a base, a pair of reels rotatably mounted in said base, an elongated film mounted on said reels, said film being provided with information including a plurality of individual telephone numbers and names, said base being provided with an opening therein, a transparent screen mounted on said base across said opening; optical means in said base including a light source, lens and mirrors for transmitting



light rays through said film and onto said screen to establish an image on said screen of at least one telephone number and name; means operably coupled to said reels for the rotation thereof to position at least one selected telephone number and name on said screen.

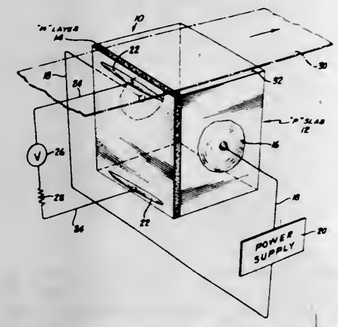
3,202,769
APPARATUS FOR MODIFYING THE TIMING CHARACTERISTIC OF A SIGNAL
Charles H. Coleman, Jr., Belmont, Calif., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Aug. 2, 1960, Ser. No. 46,988
30 Claims. (Cl. 179—100.1)



11. Apparatus for modifying the timing characteristic of periodically varying signals including synchronizing signal components and information carrying components, comprising a transmission channel for said signals, controllable signal gating means connected to receive said periodically varying signals, means responsive to said periodically varying signals for establishing a reference level for signals received by said gating means, bistable trigger means connected to receive the output of said gating means, means responsive to the output of said trigger means for producing pulses, means for producing periodically varying reference signals at the average frequency of said pulses, means responsive to said periodically varying signals for supplying control signals to said gating means to gate the same, adjustable signal time delay means in said transmission channel, detector means jointly responsive to said pulses and to said reference signals for producing a difference signal representative of instantaneous timing differences between said pulses

and said reference signals, and means for supplying said difference signal in push-pull to said time delay means to control the time delay characteristic thereof.

3,202,770
HALL EFFECT READOUT DEVICE
Irving Stein, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed July 26, 1962, Ser. No. 212,635
12 Claims. (Cl. 179—100.2)



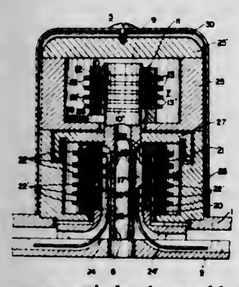
2. A Hall effect reproduce head for playback of an information signal recorded on a magnetic medium comprising:

a P-type semiconductor slab having a relatively high resistivity located substantially perpendicular to the direction of movement of said magnetic medium;

an N-type semiconductor layer on a surface of said slab located perpendicular to the direction of travel of said magnetic medium and, the layer being thin relative to the thickness of the slab and providing a stratum of high electron mobility;

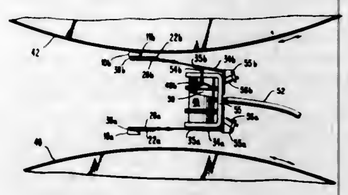
current means for supplying a current to said P-type slab; and Hall voltage sense means coupled to said N-type layer for sensing the voltage difference developed along said layer as a result of the magnetic medium passing in close proximity to said layer and applying a magnetic field thereto.

3,202,771
SLIP CONTACTING DEVICE FOR ROTARY MAGNETIC HEADS IN A MAGNETIC RECORDING AND REPRODUCING EQUIPMENT
Yoshiyo Wada, Kanagawa-ku, Yokohama, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan, a corporation of Japan
Filed Jan. 3, 1962, Ser. No. 164,018
Claims priority, application Japan, Feb. 6, 1961, 36/4,338
2 Claims. (Cl. 179—100.2)



1. In a rotary magnetic head assembly for a television video signal magnetic recording and reproducing apparatus wherein, while a desired television video signal is being recorded with at least one recording rotary magnetic head, the recorded signal is monitored or reproduced by scanning the magnetic medium with at least one monitor reproducing rotary magnetic head fixed to a rotary disk, a slip contacting device comprising a shielding metallic tube fixed to said rotary disk; slip-rings fitted through insulating tubes in the upper and lower parts of said tube; lead wires connecting said monitor reproducing rotary magnetic head and slip rings in one of the parts of said tube; lead wires connecting said recording rotary magnetic head and said slip-rings in the other part of said tube; stationary shielding cases shielding the upper and lower slip-rings from each other and a grounding brush coming into contact with said metallic tube near the central point and also with said stationary shielding cases, said metallic tube being of a multiplex structure and having a plurality of shielding passages so that said lead wires from the respective magnetic heads may pass through the respective shielding passages.

3,202,772
MAGNETIC TRANSDUCER ASSEMBLIES
Walter S. Thomas, Jr., Drexel Hill, and Raymond J. Stankiewicz, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 2, 1962, Ser. No. 170,705
2 Claims. (Cl. 179—100.2)



1. An assembly for maintaining a magnetic recording head in close hydrodynamic bearing relationship to a record surface during relative motion between said head and said record surface comprising

(a) a loading arm having one end attached to a support member and an opposite end free for movement toward and away from said record surface,

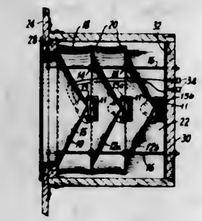
(b) means for applying a force to said loading arm for maintaining said free end of said loading arm biased toward said record surface,

(c) a recording head unit having a hydrodynamic bearing surface facing said record surface and a first pivot bearing surface on said head unit opposite said hydrodynamic bearing surface,

(d) a second pivot bearing surface on said loading arm being oriented to form with said first pivot bearing surface a single universal pivot element operative to transmit said force applied to said loading arm to said head unit while allowing said head unit to pivot with respect to said loading arm as said head unit follows variations in said record surface,

(e) and a flat spring element fixedly attached at one end to said head unit and fixedly attached at the other end to said loading arm, that portion of said flat spring element adjacent the area over which said flat spring element is attached to said head unit lying in a plane substantially parallel to said hydrodynamic bearing surface and intersecting the area of contact between said first and second pivot bearing surfaces to restrain said head unit from rotation about an axis through said single universal pivot element perpendicular to said record surface.

3,202,773
ELECTROMAGNETICALLY DAMPED SPEAKER SYSTEM
Bernard W. Tichy, Westbury, N.Y., assignor of one-third to Leonard H. King, Valley Stream, and one-third to William C. Tichy, Westbury, N.Y.
Filed Jan. 24, 1962, Ser. No. 168,389
10 Claims. (Cl. 179—180)



1. An audio speaker system comprising:

an enclosure open at one side;

an acoustical waveguide of generally cylindrical configuration, open at each end, said waveguide being rigidly mounted within said enclosure, one open end of said waveguide facing the said opening of said enclosure;

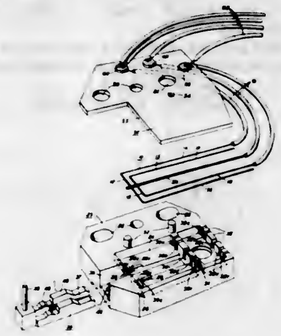
a directly radiating louspeaker provided with a rimmed diaphragm, said loudspeaker being rigidly mounted within said waveguide and proximate to the opening of said enclosure, the rim of said diaphragm disposed in abutting relation to said waveguide, and at least one transducer disposed within said waveguide proximate to and rearwardly of said loudspeaker, said transducer comprising a rimmed diaphragm disposed transversely in said waveguide, the rim of said diaphragm in abutting relation to and rigidly mounted within said waveguide, said diaphragm adapted to be vibrated by soundwaves from the rear of said loudspeaker;

an armature coil rigidly secured to said diaphragm and adapted to be moved axially by said vibration of said diaphragm; and

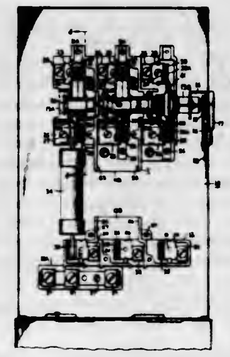
a magnetically polarized member rigidly disposed within said waveguide and electromagnetically proximate to said axial movement of said armature coil; whereby said vibrations of said diaphragm cause said armature to be moved axially to and fro in electromagnetic coupling relation with said polarized member to thereby induce a magnetic field about said coil opposing the magnetic field of said polarized member, to thereby dampen the movement of said coil and said diaphragm secured to said coil.

3,202,774
TRANSFER SWITCH HAVING A MULTIPLE CONTACT ACTUATOR
Albert J. Chase and Harold J. Hershey, both of Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 7, 1961, Ser. No. 150,716
12 Claims. (Cl. 200—5)

2. A transfer switch comprising first and second moving contact members having spaced contact portions, a third contact member overlying and biased toward the contact portions of both the first and the second contact members, an actuator, and means for supporting the actuator for movement between a first and a second position transverse to the direction of movement of the first and second contact members, the actuator in the first position locating the first contact member in engagement with the third contact member and in the second position locating the second contact member in engagement with the third contact member.



3,202,775
ROTOR TYPE ELECTRIC SWITCH WITH RESILIENTLY MOUNTED CONTACT MEMBERS
Robert S. Tillson, Bristol, Conn., assignor to General Electric Company, a corporation of New York
Filed Dec. 4, 1959, Ser. No. 857,384
14 Claims. (Cl. 200—6)

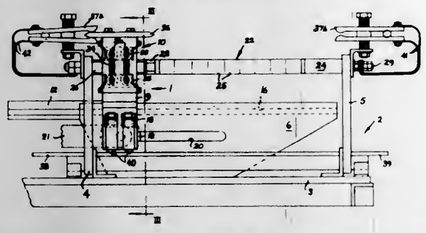


1. An electric switch comprising a base of insulating material, a plurality of pairs of stationary contact members mounted on said base in spaced apart relation, a contact rotor of insulating material mounted on said base, a plurality of movable contact members carried by said rotor in alignment respectively with each of said pairs of stationary contact members, said movable contact members each being movable independently of each of the other of said movable contact members in a first direction parallel to the axis of said rotor, said movable and stationary contacts including interengageable portions for camming said movable contact members in said first direction as said rotor is rotated, and separate biasing means resiliently biasing each of said movable contact members in a direction opposite to said first direction.

3,202,776
DIVERTER SWITCH FOR ON-LOAD TAP-CHANGER WITH CONDUCTIVE RAIL SUPPORT MEANS

Arthur John Haselfoot, Keats Grove, London, and Frank Richard Scrutton, Cayhall, Ilford, England, assignors to Fuller Electric Limited, London, England, a company of Great Britain

Filed July 31, 1963, Ser. No. 298,825
Claims priority, application Great Britain, Aug. 1, 1962, 29,522/62
11 Claims. (Cl. 200—18)

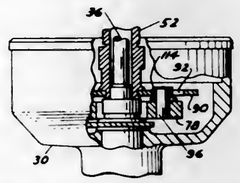


1. An electric load transfer switch, comprising housing means;
a movable contact positioned within said housing means and movable between spaced first and second positions;
moving means coupled to said movable contact for moving said movable contact between first and second positions within said housing means and along intermediate positions between said first and second positions;
a first stationary electrical contact supported by said housing means at a position in said housing means in which said first stationary contact is engaged by said movable contact in said first position and for a portion of said intermediate positions adjacent said first position;
a second stationary electrical contact supported by said housing means at a position in said housing means in which said second contact is engaged by said movable contact in said second position and for a portion of said intermediate positions adjacent said second position, said second stationary contact being spaced from said first stationary contact, said first and second stationary contacts and said intermediate positions and said movable contact being so positioned that said movable contact is disengaged from said first stationary contact and its adjacent intermediate positions when engaged with said second stationary contact and its adjacent intermediate positions and is disengaged from said second stationary contact and its adjacent intermediate positions when engaged with said first stationary contact and its adjacent intermediate positions;
means supported in said housing means continuously maintaining electrical contact with said movable contact throughout the movement of said movable contact; and
means cooperating with said movable contact and said first and second stationary contacts and said intermediate positions for maintaining electrical contact between said movable contact and each of said first and second stationary contacts at said first and second positions and for maintaining electrical contact between said movable contact and both said first and second stationary contacts at a portion of said intermediate positions, at least one of said first and second stationary contacts having an electrical resistance varying in the direction extending between said first and second positions for at least a part of the portion thereof and of the adjacent intermediate positions engaged by said movable contact.

3,202,777
IGNITION DISTRIBUTOR WITH FRICTION PREVENTIVE MEANS IN THE ADVANCE MECHANISM

Ian J. C. Scott, Madison Heights, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed Oct. 4, 1961, Ser. No. 143,277
9 Claims. (Cl. 200—31)

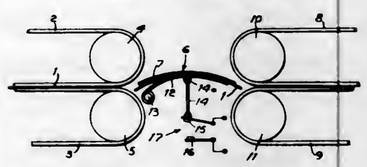


1. An ignition distributor for an internal combustion engine, comprising a housing, a shaft journalled in said housing and adapted to be driven in accordance with engine speed, a distributor cam member mounted on the end of said shaft disposed within said housing in a manner to permit rotation of said cam with respect to said shaft, a support member secured to rotate with said shaft, a pair of centrifugal weights pivotally secured to said support member in a manner to move outwardly under the influence of centrifugal force to the extent dependent upon the rotational speed of said shaft, a pin extending upwardly from each of said weights, an arm member extending from each side of said cam member, said arm members being positioned parallel to said support members and each of said arm members having a suitable angularly disposed slot therein receiving said pins extending from one of said centrifugal weights, the geometry of said pins and said slots being such as to produce the desired cam rotation to weight displacement characteristics when said shaft is rotated, and a sleeve member disposed over each of said pins in a manner so that direct engagement of the edges of the slots by said pins is prevented, said sleeve member being formed to provide area rather than line sliding contact with the edges of the slots.

3,202,778
APPARATUS FOR DETECTING ARTICLES OF MAXIMUM STIFFNESS, THICKNESS, OR LENGTH

Horst Fliegner, Berlin-Zehlendorf, and Horst Brause, Hagen, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 27, 1962, Ser. No. 252,013
Claims priority, application Germany, Jan. 4, 1962, St 18,736
4 Claims. (Cl. 200—61.41)

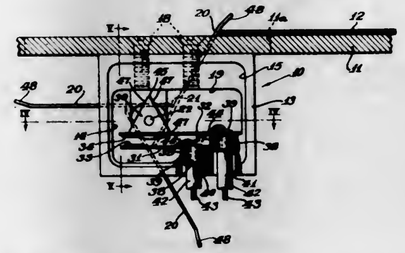


1. Apparatus for testing articles according to length comprising:
input means with fully positive traction for moving said articles into said apparatus at a predetermined rate;
output means for withdrawing said articles from said apparatus at a faster rate than said predetermined rate, and placed a distance from said input means which corresponds to the maximum allowable length of said articles;
guiding means interposed between said input and output means to guide said articles from said input means to said output means;
resilient means cooperating with said guiding means to bend each of said articles in a same prescribed arched disposition; and
sensing means responsive to said resilient means for indicating displacement of said resilient means by articles of excessive length.

3,202,779
SENSING SWITCH

Daniel D. Call, Elk Grove, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed June 15, 1962, Ser. No. 202,741
14 Claims. (Cl. 200—61.42)



1. In a sensing switch construction,
supporting means adapted to be disposed adjacent to the path of movement of successive members to be sensed as they pass thereby and including attachment structure for securing it in operative position relative to said path,
a shaft rotatably supported by said supporting means,
a flipper arm carried by said shaft and of a length to extend beyond said supporting means and to project across said path of movement of the members so as to be engaged thereby to rotate said shaft,
electric signal effecting means carried by said supporting means,
and a member having a periphery opposed to said signal effecting means and rotatably actuated by said shaft to operate said signal-effecting means,
said periphery of said member and said signal-effecting means coacting to maintain said rotatably actuated member and thus said shaft and said flipper arm in a normal disposition wherein said arm projects across said path.

3,202,780
CENTRIFUGAL SPEED GOVERNOR WHICH MINIMIZES THE EFFECT OF CONTACT EROSION

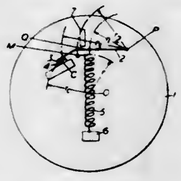
Reginald Dennis Salmon, Croydon, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 17, 1961, Ser. No. 152,993
Claims priority, application Great Britain, Nov. 22, 1960, 40,100/60
6 Claims. (Cl. 200—80)

6. A centrifugal governor for governing the speed of a motor comprising: a pivoted arm; a base plate on which said arm is mounted, said base plate being adapted for rotation by said motor; first and second co-effective contact members for controlling said motor; a spring member coupled to said arm and acting to oppose the centrifugal force which operates on said arm due to rotation of said base plate; and means for positioning said first and second contact members such that the closed position of said contact members is located according to the following relationship:

$$r_e = 1.44\left(\frac{m}{m_e}\right)\left(\frac{r_3}{r_3\omega_0}\right)^{4/3}(ra_3)^{2/3}(g_1^{1/3}-g_0^{1/3})$$

where: r_e represents the distance between the first contact member and the axis of rotation of said base plate, m and m_e represent respectively the effective mass of the said arm together with the load thereon, and the mass which is lost due to erosion in use of the said first contact; r_3, r_3 and r respectively denote the distance between the

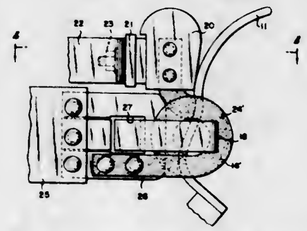


point at which the effective mass m can be considered concentrated and the pivot point of said arm, the distance between the said first contact member and the said pivot point, and the distance between the said point at which said effective mass can be considered concentrated and the axis of rotation of said base plate; a_3 represents the acceleration of said first contact member during movement between fully opened and closed positions thereof; and g_0 and g_1 represent the respective distances moved through by said first contact member before and after undergoing erosion in use.

3,202,781
STATIONARY CONTACT STRUCTURE FOR ELECTRICAL CIRCUIT BREAKERS

André Latour, Grenoble, France, assignor to Ets Merlin & Gerin, S.A., Grenoble, France

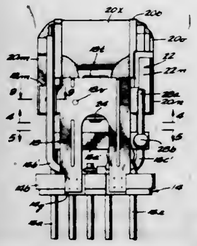
Filed Dec. 15, 1961, Ser. No. 159,614
Claims priority, application France, Dec. 20, 1960, 4,316
3 Claims. (Cl. 200—87)



1. A shock absorbing contact for the movable contact arm of a circuit breaker comprising:
(a) a first fixed support
(b) a contact bearing resiliently mounted on said first fixed support and axially reciprocable on said support
(c) a second fixed supported mounted below said first fixed support
(d) resilient spring conductor means connected at one end to said fixed support and at the other end to said contact bearing and extending from said second fixed support to said contact bearing
(e) said spring conductor means having its said other end reciprocable with said contact bearing and its said one end stationary with respect to said second fixed support
(f) said resilient conductor means including coil means positioned between the connected ends of said spring conductor means

(g) said coil means lying in a plane generally projected in the direction of travel of said movable contact arm.

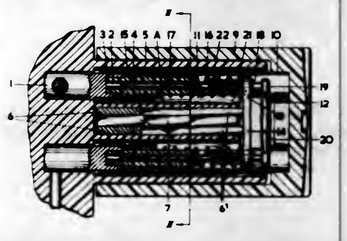
3,202,782
PIVOTED ARMATURE ELECTROMAGNETIC SWITCH
Victor G. Mathison and Wilbur T. Hardison, Riverside, Calif., assignors to Bourns, Inc.
Filed Dec. 26, 1961, Ser. No. 161,959
6 Claims. (Cl. 200—87)



1. A very small electromagnetic switch comprising:
first means, comprising housing means including a base means;
second means, comprising supporting means in the form of a rigid table-like pedestal means having more than two legs each of said legs being fusion-united at its lower end to said base means to form therewith an integral structure;
third means, comprising an electromagent means comprising a one-piece U-shaped magnetic core having first and second dependent legs, said electromagnet means comprising a molded bobbin integrally united with said core and a magnet winding on said bobbin, and the first and second legs of said core being fusion-united adjacent their ends with said pedestal to form an integral structure therewith, and said third means comprising an armature pivot fixed to said pedestal means, and a movable armature means pivotally mounted on said pivot and constructed and arranged for cooperative magnetic interaction with said first and second legs of said magnetic core;
and fourth means, comprising terminal means and fixed and movable contact means, constructed and arranged to provide an electrical circuit through said winding, and said movable contact means being operable by said armature means incident to energization of said electromagnet means for closing a second electrical circuit including said fixed and movable contact means; whereby under the influence of extremely high vibratory accelerations there are no changes in the magnetic-circuit of said core and no changes in the electromagnetic characteristics of the combination comprising said core and the bobbin and coil thereon.

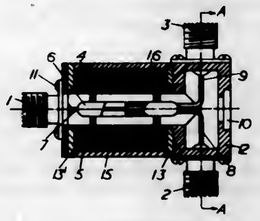
3,202,783
SWITCH WITH POLE PLATES HAVING A SEPARATION OF NON-MAGNETIZABLE MATERIAL
Bertus Grieson, Hengelo, Netherlands, assignor to N.V. Fabriek van Electrische Apparaten voorheen F. Hazemeijer & Co., Hengelo, Netherlands, a corporation of the Netherlands
Filed Feb. 16, 1962, Ser. No. 173,757
Claims priority, application Netherlands, Feb. 27, 1961, 261,717
1 Claim. (Cl. 200—87)

High-voltage on-load disconnecting switch comprising a stationary member of insulating maerial, two fixed contacts provided in the member, a detachable switch cap of insulating material adapted to be pushed on the member, two movable contacts mounted in the cap and connected to form a conductive bridge with said contacts coming into contact with the fixed contacts and interconnecting the latter when the cap is pushed on the member, a permanent magnet system mounted in the member between the fixed contacts and comprising two ferromagnetic pole plates arranged perpendicular to the plane through the fixed contacts and separated by at



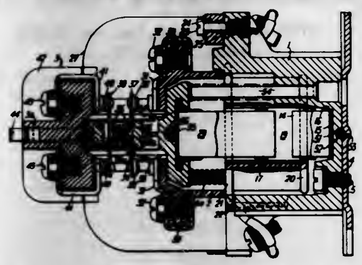
least one permanent magnet, and an armature plate of magnetizable material associated with the conductive bridge in the cap and which contacts with the pole plates when the cap is pushed on the member and is held by magnetism, and a separation of non-magnetizable material is provided in at least one place at least in the part of each of the pole plates which is turned towards the armature plate and lying perpendicular to the plane of the pole plate and in the plane through the fixed contacts.

3,202,784
COAXIAL VACUUM RELAY HAVING PLURAL CONTACTS
Mario Santangeli, Milan, Italy, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 13, 1963, Ser. No. 264,957
Claims priority, application Italy, Mar. 14, 1962, Patent 684,714
5 Claims. (Cl. 200—87)



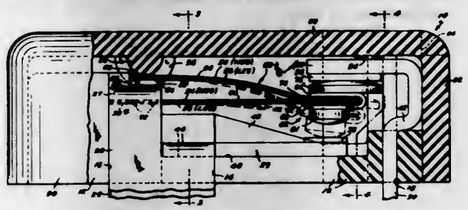
1. A high frequency coaxial relay switching device comprising a sealed glass vessel, a magnetically operable switching contact extending within said vessel at one end, a pair of spaced contacts extending within said vessel from the other end and positioned about each side of said switching contact, each said contact having an externally extending conductor portion forming an inner conductor of a coaxial line, a metal tube of non-magnetic material having a first portion positioned concentrically about said vessel and externally extending conductor at said one end to form the outer conductor of one coaxial line, said metal tube having a second and third portion positioned about the external conductors at the other end to form the outer conductors of the other coaxial lines, said vessel and contacts being positioned entirely within said first metal tube portion and an energizing coil surrounding said first portion of said metal tube and vessel to selectively connect said switching contact to one of said pair of contacts.

3,202,785
ELECTROMAGNETIC RELAY WITH AN INTERCHANGEABLE CONTACT MECHANISM
Gordon Albert Jolley, Walsall, England, assignor to J. A. Crabtree & Co. Limited, Walsall, England, a British company
Filed Mar. 6, 1961, Ser. No. 93,518
Claims priority, application Great Britain, Mar. 10, 1960, 8,429/60
9 Claims. (Cl. 200—104)



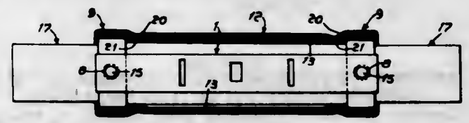
1. An electric relay adaptable to either a combined normally open and a normally closed contact arrangement or a normally open contact arrangement only, said relay comprising a single coil, an arc chamber, a first member adapted to be detachably secured to said chamber, a first set of contacts fixed on said chamber, a seocnd set of contacts fixed on said member, a third set of contacts, a contact carrier for moving said third set of contacts between said first and second sets of contacts, said first member cooperating with said coil to impose a first predetermined load on said carrier in such combined open and closed arrangement between said first, second and third sets of contacts, and a second member detachably secured to said chamber, said second member cooperating with said coil to impose a second predetermined load on said carrier corresponding to said first load in such open contact arrangement only between said first and third sets of contacts when said second member is substituted for said first member on said chamber.

3,202,786
LOW CAPACITY, LOW CURRENT THERMAL TIME DELAY RELAY
Clifford A. Bodge, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed July 29, 1959, Ser. No. 830,220
7 Claims. (Cl. 200—113)



1. A switching device comprising a pair of normally closed contacts; a pair of normally open contacts; thermally responsive electrically conductive means carrying one of said normally closed contacts for movement away from the other of said normally closed contacts in response to movement of said thermally responsive means in one direction at a first predetermined flow of current therethrough and also mounting one of said normally open contacts for movement into engagement with the other of said normally open contacts in response to further movement of said thermally responsive means in said one direction at another predetermined current flow therethrough, to shunt out said entire thermally responsive means upon mutual engagement of said normally open contacts; said thermally responsive means comprising a section of electrically conductive, composite material slotted alternately from opposite sides thereof to provide a plurality of transverse lengths electrically connected in series circuit relation; electrically conductive means at one side of said section overlapping the ends of said lengths at said one of said sides and mounting said one of said normally closed contacts and said one of said normally open contacts thereon in spaced relationship, said electrically conductive means being electrically connected to a portion of one of said lengths to establish an electrically conductive path serially through the successive lengths of said composite section, through said one of said lengths, through said electrically conductive means to said one of said normally closed contacts mounted thereon; and electrical insulating material secured to and between said electrically conductive means and the ends of the remaining lengths on said one side of said section.

3,202,787
CARTRIDGE FUSE ASSEMBLY
Richard W. Vosper, Greenwich, Conn., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Oct. 23, 1962, Ser. No. 232,487
3 Claims. (Cl. 200—131)



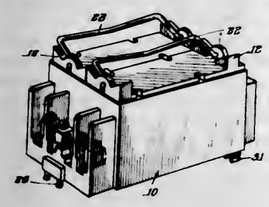
1. A cartridge type electrical fuse comprising:
(a) a fuse link;
(b) knife blades for supporting said fuse link, said blades having laterally disposed flanged portions;
(c) a hollow insulating member, said member being deformable and having at least one longitudinal groove therein parallel with the axis of said member and extending throughout the length of said member, means disposing the edges of said flanged portions within said grooves, the width of each said knife blade between the outer edges of said flanged portions being greater than the inner width of said hollow insulating member including the grooves thereof, whereby the edges of said flanged portions are gripped by the walls of said groove; and,
(d) end caps for enclosing both ends of said hollow member, said end caps being crimped onto said member forcing a portion thereof inwardly in overlapping relation to the inner ends of said flanged portions.

3,202,788
CARTRIDGE FUSE PULL-OUT SWITCH
Melvin J. George, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Mar. 22, 1962, Ser. No. 181,529
8 Claims. (Cl. 200—133)

1. A fusible unit comprising:
(a) a fuse block having an elongated generally rectangular recess therein opening to the front thereof,
(b) an elongated generally rectangular fuse holder selectively received in said recess in either of two relative positions,
(c) said fuse holder having four fuse clips secured to an inner side thereof in a rectangularly spaced arrangement, each fuse clip being adapted to receive an end of a cartridge fuse and being oriented with respect to said fuse holder to accommodate the

mounting of two fuses thereon longitudinally thereof,

(d) each fuse clip having a contact blade extension on an outer jaw thereof adjacent a longitudinal edge of said fuse holder, two of said fuse clips being located a first predetermined distance from one end of said fuse holder and the other two fuse clips being located a second predetermined distance from the other end of said fuse holder, said first and second predetermined distances being substantially



different from each other whereby changing said fuse holder from one of said relative positions in said recess to the other of said relative positions in said recess shifts the fuse clips collectively longitudinally of said recess, and

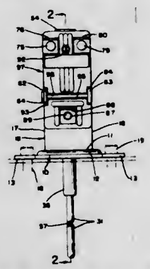
(e) four contact jaws mounted in said fuse block and respectively engageable with the contact blade extensions of said fuse clips in only one of the two relative positions in which said fuse holder may be inserted in said recess.

3,202,789

PROBE TYPE THERMOSTATIC CONTROL HAVING AMPLIFIED SWITCH ACTUATING MEANS

Rexford M. Morris, Mansfield, Ohio, assignor to Therm-O-Disc, Incorporated, Mansfield, Ohio, a corporation of Ohio

Filed Dec. 9, 1960, Ser. No. 74,893
9 Claims. (Cl. 200—137)



1. In a heat sensitive control device, a housing, an electric switch in said housing having a stationary contact and a mobile contact movable into and out of engagement with said stationary contact, a snap-acting movable arm carrying said mobile contact, a probe projecting from said housing and having an elongated tubular member which is movable in response to changes in temperature, a rod secured to said tubular member and projecting into said housing, a bifurcated actuator member in said housing having two legs which are bowed outwardly in opposite directions, the ends of said legs being anchored on said housing, said rod and actuator member being arranged coaxially, means connecting said rod to the central portion of said actuator member between said legs to cause bending of said legs in response to axial movement of said rod to amplify such movement, stop means for holding the central portion of one of said legs against lateral outward movement, and means operably connected between said arm and the central portion of the other of said legs for imparting such amplified movement to the contact-carrying arm to actuate said arm.

3,202,790

BARRIER ARRANGEMENT FOR ARC CHUTE WHICH STRETCHES ARCS IN BOTH VERTICAL AND HORIZONTAL PLANES

Lawrence A. Burton, Oconomowoc, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Aug. 15, 1960, Ser. No. 49,550
7 Claims. (Cl. 200—144)



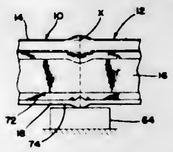
1. An arc chute for a circuit interrupter comprising first and second spaced apart generally planar insulating side walls, two spaced apart arc runners for carrying the ends of an arc into the space between said side walls, and first and second sets of interleaved insulating barriers spaced apart between said arc runners and cooperating with said first side wall and said second side wall, respectively, to define arc receiving openings near said side walls to distort the arc into a series of loops from side to side, the barriers of said first set and said first side wall progressively constricting the arc receiving openings near said first side wall at a different rate with respect to the movement of the arc through the arc chute than the barriers of said second set and said second side wall constrict the openings near said second side wall to incline the arc in the direction of arc movement in the region of said second side wall.

3,202,791

METHOD OF BUTT WELDING

Jack W. Gillock, Cleveland, George H. Ledl, South Russell, and George M. Mucha, Cleveland, Ohio, assignors to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 24, 1962, Ser. No. 232,811
10 Claims. (Cl. 219—9.5)



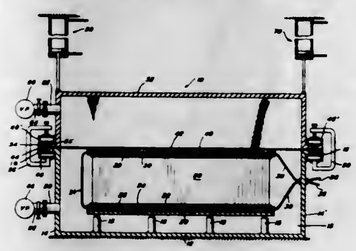
1. A method of butt welding the axially facing ends of two elongated workpieces having substantially identical cross sections, comprising the following steps: trimming the axially facing ends of said workpieces to produce surfaces that are substantially perpendicular to the axes of said workpieces; abutting said surfaces at a joint with said workpieces axially aligned while said surfaces are substantially free from contaminants; supporting said workpieces against movement transverse to the axes of said workpieces at least in the immediate area of said joint; coining said axially facing surfaces by applying an axial coining pressure; releasing said coining pressure; inductively heating said joint by a high frequency current until said joint reaches a temperature sufficient to produce grain growth across said abutting surfaces; maintaining an axial upsetting pressure on said joint in a range having a minimum of approximately 2500 p.s.i. and a maximum below said coining pressure while said joint is being heated; and thereafter applying a higher axial upsetting pressure on said workpieces until the desired upset has been obtained.

3,202,792

BRAZING FURNACE

Stephen Bukata, 7813 Ardleigh St., Philadelphia, Pa.

Filed Sept. 25, 1962, Ser. No. 226,013
13 Claims. (Cl. 219—85)



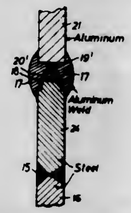
1. A brazing furnace comprising a U-shaped rigid housing, spaced planar electrical heating means within said housing, an impervious flexing envelope sheet juxtaposed to the open end of said housing and defining the closure for said housing, a seal between the open end of said housing and a peripheral portion of said sheet, means electrically insulating said heating means from said sheet and said housing, and means acting through said sheet for applying substantially uniform pressure across the full width and length of a honeycomb panel adapted to be supported within said housing, below said sheet, and between said heating means.

3,202,793

PROCESS AND MEMBER FOR JOINING BY WELDING LIGHT METALS WITH STEEL

Josef Bertels, Sternenstrasse 17, Berzdorf, near Brühl, Germany

Filed May 10, 1962, Ser. No. 193,831
Claims priority, application Germany, May 16, 1961, B 62,492; July 5, 1961, B 63,152
12 Claims. (Cl. 219—118)



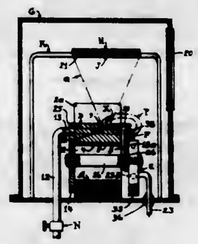
1. Process for joining by welding a steel part with a light-metal part, comprising the steps of zinc-plating said steel part at least in a portion to be joined with a portion of said light-metal part, arc-welding said portions with a welding material substantially similar in composition to that of said light-metal part, while maintainng the arc against said light-metal part without touching said steel part therewith, shaping said portion of the steel part into an edge narrowing toward said light-metal part, and providing recesses in said edge.

3,202,794

PERMANENT MAGNET TRANSVERSE ELECTRON BEAM EVAPORATION SOURCE

Robert L. Shrader, San Leandro, and Everette M. Whitson, Castro Valley, Calif. (both % Thermionics Laboratory, Inc., 22864 Sutro St., Hayward, Calif.)

Filed Feb. 18, 1963, Ser. No. 259,221
6 Claims. (Cl. 219—121)



3. In combination: —

(a) a crucible having a recess in its top for receiving material to be vaporized;

(b) a U-shaped magnet having its pole pieces positioned on diametrically opposed sides of said crucible and projecting above the top thereof for creating a magnetic field over said recess;

(c) an electron gun positioned adjacent to a side of said crucible intermediate said diametrically opposed sides and below said recess;

(d) said gun emitting electrons in a path parallel to said side of said crucible and transverse to said magnetic field;

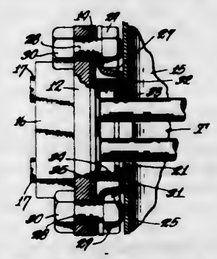
(e) said magnetic field bending said path of electrons so that it will strike the material in said recess.

3,202,795

ELECTRIC HEATERS

Carl F. Kreiser, Export, Pa., assignor to Edwin L. Wiegand, Pittsburgh, Pa.

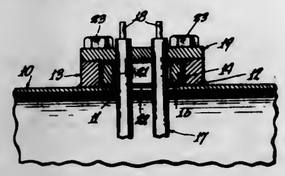
Filed Oct. 13, 1961, Ser. No. 144,889
6 Claims. (Cl. 219—318)



1. The combination of a hot water tank and an electric immersion heater for heating the contents of said tank, said tank having an opening in a defining wall and a supporting flange rigidly secured to said wall and disposed exteriorly thereof, said suporting flange having an opening therethrough which is aligned with but is larger than the tank opening so as to leave exposed a lip provided by the tank wall surface margining said tank opening, and said heater including a sheathed electric heating element extending through said tank opening and into said tank and a mounting flange secured to said sheath and extending crosswise thereof, said mounting flange overlying said supporting flange and having a portion overlying said lip and spaced axially outwardly from the latter, a rigid annular member around said sheath and having opposed end surfaces respectively adjoining said lip and said mounting flange portion, a first sealing gasket secured to said

lip and lying between said lip and the adjoining end surface of said annular member and a second sealing gasket secured to said mounting flange and lying between said mounting flange portion and the adjoining opposite end surface of said annular member, and means drawing said mounting flange toward said supporting flange to compress said first gasket between said lip and the adjoining end surface of said annular member and to compress said second gasket between said supporting flange and the opposite end surface of said annular member to seal the opening in said tank wall against leakage of water.

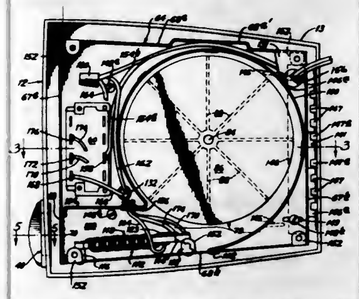
3,202,796
ELECTRIC HEATER ASSEMBLIES
Lester D. Drugmand, Pittsburgh, Pa., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa.
Filed Mar. 26, 1963, Ser. No. 268,125
2 Claims. (Cl. 219—318)



1. The combination of a hot tank and an electric immersion heater for heating the contents of said tank, said tank having an opening in a defining wall and a supporting flange rigidly secured to said wall and disposed exteriorly thereof, said supporting flange having an opening therethrough which is aligned with but is larger than the tank opening so as to leave exposed a lip provided by the tank wall surface margining said tank wall opening, and said heater including a sheathed electric heating element extending through said tank opening and into said tank and a mounting flange secured to said sheath and extending crosswise thereof, said mounting flange having a flat portion overlying said supporting flange and said lip and spaced laterally from the latter, a rigid annular member around said sheath and having opposed end surfaces respectively adjoining said lip and said mounting flange flat portion, said annular member having annular gaskets of resilient material bonded respectively to each end surface thereof, a said gasket at at least one end of said annular member extending across the bore thereof and being apertured to frictionally receive therethrough said heating element sheath, and means drawing said mounting flange toward said supporting flange to seal the gasket at one end of said annular member against said lip and to seal the gasket at the opposite end of said annular member against said mounting flange portion to thereby seal the opening in said tank wall against leakage of water.

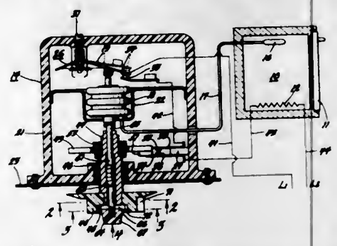
3,202,797
HAIR DRIER WITH FAN AND HEATER
Robert D. Uthoff, Jefferson County, near Fenton, Mo., assignor to Knapp-Monarch Company, St. Louis, Mo., a corporation of Delaware
Filed June 19, 1961, Ser. No. 118,069
4 Claims. (Cl. 219—370)

1. A hair drier comprising, in combination: metallic chassis means including an apertured top wall and depending upright side wall means which substantially define and enclose below said top wall a fan chamber with an extension thereof which serves as an elongated air flow passageway that terminates at an aperture defined in a side wall of said chassis means, a fan mounted on said chassis means in said chamber and arranged to direct air under pressure through said air flow passageway toward said aperture, heating means supported by said chassis means and positioned in said chamber for heating the air directed from said fan, a control switch assembly carried by said chassis means, circuit means supported by said chassis means below said top wall of the chassis means and inwardly of the side wall means and arranged to be selectively controlled by said switch assembly for effecting operations that include energizing selected portions of said heating element to heat the air being discharged through the air flow passageway to selected temperature levels, said switch assembly simultaneously operating said fan to drive air through said passageway, a housing of



non-conductive material surrounding said chassis means in spaced relation from said chassis means to define a thermal and electrically insulating air space between said chassis means and said housing, said housing defining a discharge aperture therein spaced from the side wall of the chassis means at which said air flow passageway terminates and being aligned with said air flow passageway to receive therethrough the stream of air directed by said fan through the air flow passageway, and connector means on said housing adjacent said aperture adapted for releasably receiving an air conduit and being operative to maintain the conduit spaced from said chassis.

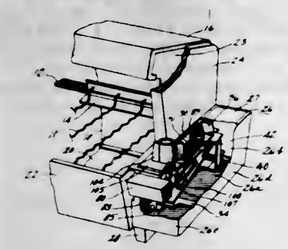
3,202,798
DOMESTIC ELECTRIC APPLIANCE
George W. Schauer, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 9, 1962, Ser. No. 215,945
8 Claims. (Cl. 219—413)



1. A controller for regulating temperature in an oven having a heater located interiorly thereof comprising:
(a) first and second switch means for controlling energy input from a source of power to the heater within the oven,
(b) thermally responsive means including means for sensing the oven temperature operatively associated with one of said switch means for regulating the oven temperature in accordance with temperatures sensed by said said sensing means,
(b') a casing for enclosing said switch means and said thermally responsive means,

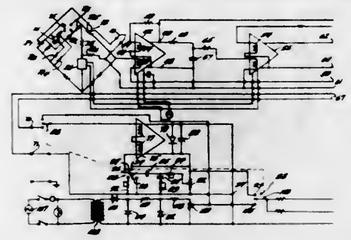
(c) means for regulating said thermally responsive means including indicia means for preselecting a predetermined desired temperature at which the thermally responsive means will control the oven temperature,
(d) calibrating means located interiorly of said casing and factory presettable to calibrate the thermally responsive means with said one of said switch means to control the oven temperature at a value corresponding to a temperature selected by said indicia means, and
(e) auxiliary control means including stop means for varying the regulation of said thermally responsive means through a limited range determined by said stop means without changing a preselected setting of said indicia means, said auxiliary control means including a knob located exteriorly of said housing operable by manual adjustment without tools to produce a desired increased or lowered temperature within the oven on either side of the preselected temperature setting established by said indicia means.

3,202,799
CONTROL MECHANISM FOR A TOASTER OR SIMILAR APPLIANCE
Theodore E. Andrews, Orefield, Pa., assignor to General Electric Company, a corporation of New York
Filed Mar. 29, 1963, Ser. No. 268,894
11 Claims. (Cl. 219—492)



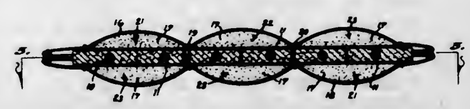
2. A toaster having a mechanism for controlling the duration of the toasting cycle and including a timer of the heat-up, cool-down type, said mechanism comprising: a support, an operating lever pivotally mounted on said support having an "off" and an "on" position, spring means urging said operating lever into the "off" position, manual means for moving said operating lever into the "on" position, latch means for holding said lever in the "on" position, a bimetallic element pivoted at one end to said support, stop means mounted on said support adjacent the other end of said element, means for heating said bimetallic element, means for heating said toaster, a main switch for controlling the energization of said bimetallic heating means and said toaster heating means, said switch including a flexible contact arm mounted in insulated relation on said support and a contact mounted on one end of said contact arm, means formed on said operating lever for controlling said switch and thereby initiating the energization of said bimetallic heating means and said toaster heating means, said bimetallic element when heated bowing into an arc between its pivoted end and said stop means, a shorting switch for de-energizing said bimetallic heating means and including a contact mounted on the opposite end of said contact arm, means responsive to the heating and bowing of said bimetallic element for closing said shorting switch, said stop means being adapted to prevent movement of said other end of said bimetallic element during the cooling thereof, and means responsive to the force developed by the cooling of said bimetallic element to actuate said latching means thereby releasing the operating lever permitting said main switch to open thus terminating the time interval.

3,202,800
GLASS FIBER BUSHING TEMPERATURE CONTROLLER
George E. Phillips, Sr., and Paul E. Straight, Fairmont, W. Va., assignors to Electronic Control Systems, Inc., Fairmont, W. Va., a corporation of West Virginia
Filed June 17, 1963, Ser. No. 288,379
10 Claims. (Cl. 219—497)



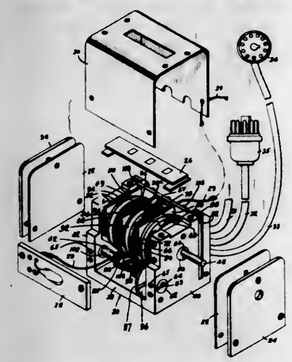
7. In a control system for accurately controlling the temperature of a bushing, the combination comprising a magnetic controller consisting of a single magnetic amplifier having a single input control winding and connected to control the current to said bushing, feedback means consisting of R-C feedback networks connecting the output of said amplifier to the single input winding, said feedback means including means for generating feedback temperature controlling signals composed of the sum of proportional, reset and rate signals with respect to said bushing, silicon control rectifiers connected in a load circuit controllable by said magnetic controller, and a circuit firing said rectifiers from said controller through isolated control windings to eliminate feedback from the load circuit to the controller.

3,202,801
BODY HEATING MEANS
Sam P. Saluri, 1033 16th St., West Des Moines, Iowa
Filed July 11, 1962, Ser. No. 209,126
2 Claims. (Cl. 219—528)



1. In an electrical heating pad, comprising in combination,
a pad base body, said pad base body including an upper layer of flexible material, a lower layer of flexible material, a means for securing said upper and lower layers together adjacent their perimeter, a circuit of resistance wire passing between said upper and lower layers and being adapted to be operatively connected to a source of electrical energy, a layer of insulating material surrounding said resistance wire, a layer of heat conductive material between said upper and lower layers,
a flexible envelope embracing said pad base body,
stitching extending through both sides of said envelope and said pad base body creating thereby a plurality of sealed compartments at each side of the unit,
and a mass of low thermal conductive particles in each of said compartments.

3,202,802
COUNTING AND SWITCHING UNIT
Bernard A. Shoor, Pasadena, Calif., assignor, by mesne assignments, to H. Dudley Wright, Altadena, Calif.
Filed May 20, 1957, Ser. No. 660,285
7 Claims. (Cl. 235—92)



1. In a high speed digital telemetering counter, in combination:

a basic unit comprising a base and two end supports projecting substantially perpendicular thereto;

a plurality of rotatable counter wheels bearing peripherally arranged digital indicia, including a first low-order freely rotating input counter wheel and one or more higher-order succeeding counter wheels, said counter wheels being mechanically interconnected by transfer gear means;

a panel member of insulating material secured to said two end supports at rear edges of said supports;

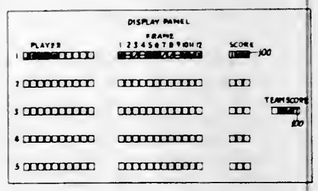
a plurality of circuit board partition members secured to said panel member supported by said end supports, one of each of said circuit boards being interposed between adjacent counter wheels, said circuit boards bearing telemetering contacts and connection means thereon for connecting said contacts to an external circuitry;

shaft means supported by said end supports and said partition members for mounting said counter wheels and said transfer gear means; and

bridging connector brush means carried by each counter wheel for contacting said telemetering contacts in sequence as said counter wheel is rotated, said basic unit including a monolithic structure comprising said circuit boards and said panel member, said panel member having a plurality of slots, said slots being chamfered on one side of said panel member, integral tabs on said circuit boards inserted through said slots from the other side of said panel member, and insulating material inserted in said chamfered slots surrounding said circuit board tabs and cementing said circuit boards to said panel member in fixedly secured relation.

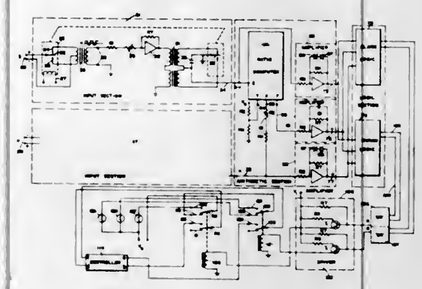
3,202,803
BOWLING SCORING AND DISPLAY DEVICE AND MEANS FOR GATHERING, STORING, PROCESSING AND REPRODUCING INFORMATION THEREFROM
Paul F. Markstrom, Grand Island, N.Y.
(3000 Porter St. NW., Washington, D.C.)
Filed Apr. 13, 1961, Ser. No. 102,836
20 Claims. (Cl. 235—92)

1. A bowling scoring and display device comprising numerical indicia display means for displaying a numerical bowling score, actuator means operable when energized to cause said display means to display a different score, pin count control circuit means arranged in controlling relation to said actuator means, and means for activating said pin count control circuit means in accordance with the number of pins knocked down as each ball is rolled, said pin count control circuit means being operable when activated to complete an energizing circuit to said actuator means for causing said display means to add



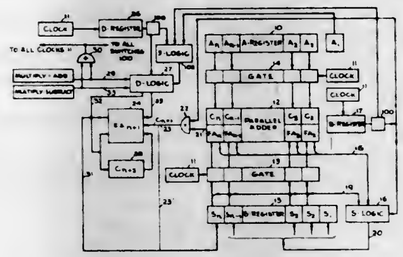
the number of pins for which said pin count control circuit has been activated to the numerical score being displayed, whereby the total number of pins which have been scored by a bowler as of the last ball bowled by him is displayed at all times independently of mark classifications of that bowler and independently of future ball pinfalls.

3,202,804
METHOD AND APPARATUS FOR MONITORING THE OPERATION OF A SYSTEM
Helmar Schlein, Reseda, Calif., assignor to North American Aviation, Inc.
Filed Aug. 31, 1961, Ser. No. 135,344
12 Claims. (Cl. 235—151)



8. A monitoring system comprising first means for providing a plurality of first signals representing the values of pertinent parameters of a system to be monitored; second means responsive to said first means comparing each of said first signals with at least one preselected limit value for generating a plurality of second and third signals, each of said second signals being generated when an associated first signal is within said limit value, each of said third signals being generated when an associated first signal has reached said limit value; third means comparing preselected groups of said second and third signals for generating a plurality of fourth and fifth signals, each of said fourth signals being generated when a preselected group has a predetermined relationship, each of said fifth signals being generated when a preselected group has another predetermined relationship; and fourth means responsive to preselected groups of said fourth and fifth signals for indicating whether or not said monitored system is operating within acceptable boundary conditions, said boundary conditions being defined by said preselected limit values.

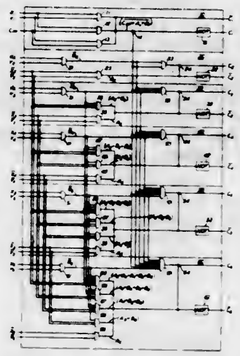
3,202,805
SIMULTANEOUS DIGITAL MULTIPLY-ADD, MULTIPLY-SUBTRACT CIRCUIT
Lowell D. Amdahl, Northridge, Melvin A. Breuer, Los Angeles, and John S. Davis, Glendale, Calif., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Oct. 2, 1961, Ser. No. 142,074
9 Claims. (Cl. 235—164)



5. A computer for developing a quantity which represents the product of a first and second operand increased or decreased by a third operand, said computer comprising: a first register means having $n-1$ stages for storing binary signals representing said first operand; a parallel adder means having $n-1$ stages; parallel circuit means for connecting each stage of said first register to a corresponding stage of said parallel adder; a second register means having n stages; parallel circuit means for connecting the output terminals of each but the least significant stage of said second register to the corresponding stages of said parallel adder; switching means having $n-1$ stages, each stage having a pair of input terminals and an output terminal; circuit means for connecting the pair of input terminals of each stage of said switching means to the output terminals of the stages of said parallel adder and all but the least significant stage of said second register respectively; circuit means for connecting the output terminals of said stages of said switching means to the input terminals of all but the most significant stage of said second register; means for sequentially providing binary signals representing the digits of said second operand, said switching means being responsive to said sequentially applied digits of said second operand and operative to switch one of said pair of input terminals to said output terminal in accordance with the state of said sequentially applied digits of said second operand; means for sequentially providing binary signals representing the digits of said third operand; and means for setting the most significant stage of said second register in accordance with the sequentially applied digits of said third operand.

3,202,806
DIGITAL PARALLEL FUNCTION GENERATOR
Robert S. Mesne, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 12, 1961, Ser. No. 123,591
3 Claims. (Cl. 235—175)

1. In a digital parallel arithmetic function generator, a first source of numbers to be operated upon, a second source of numbers to be operated upon, a first arithmetic function generating stage for developing a desired digital quantity from the least significant denominational order of digits of said numbers, a second arithmetic function generating stage including means for developing a digital quantity representative of B_2 where $B_2=X_2Y_2$, X_2 is the second least significant denominational order digit of said first number and Y_2 is the second least significant denominational order digit of said second number, means for developing a digital quantity representative of A_2 where $A_2=X_2+Y_2$, and means for developing a digital quantity corresponding to the second least significant denominational order from the desired quantity of said first stage, said quantity representative of B_2, and said quantity representative of A_2, and a subsequent arithmetic function generating stage corresponding to each denominational order of said numbers, each of said subsequent carry generating stages including means for developing a digital quantity representative of B_i where $B_i=X_iY_i$ and i represents the order being operated upon, means for developing a digital quantity representative of A_i where $A_i=X_i+Y_i$ and i represents the order being operated

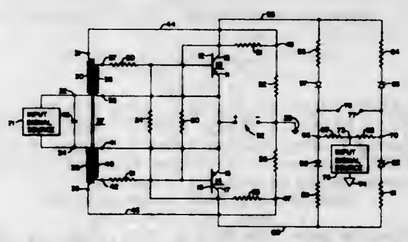


upon, means for developing a plurality of intermediate terms representative of

$$(A_{i-1}+B_i)(A_{i-2}+B_{i-1}+B_i)\ \ldots$$
$$(A_2+B_3+B_4+\ \ldots\ +B_{i-1}+B_i)$$

one corresponding to each less significant order with the exception of the lowest order from the "B" terms corresponding to all the lower order stages with the exception of the lowest order and B_i, and means for developing a digital quantity representative of the desired quantity of the order being operated upon from the quantity representative of B_i, the quantity representative of A_i, the quantities representative of said intermediate terms, the desired quantity from said first stage, and the "B" terms corresponding to all the lower order stages with the exception of the lowest order.

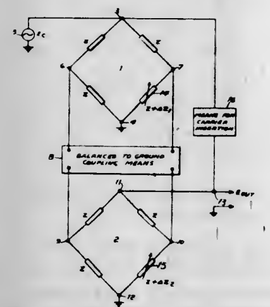
3,202,807
MULTIPLICATION BY VARYING AMPLITUDE AND PERIOD OF OUTPUT PULSE
Daniel J. Sikorra, Champlin, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed June 19, 1961, Ser. No. 118,117
5 Claims. (Cl. 235—194)



1. Apparatus of the class described comprising: a rectangular pulse generator, said pulse generator producing constant magnitude alternating polarity rectangular pulses, the period of said pulses being variable in response to a

first input signal; first and second diodes serially connected across the output of said pulse generator, said first and second diodes both conducting when the output of said generator is of a first polarity; third and fourth diodes also serially connected across the output of said pulse generator, said third and fourth diodes both conducting when the output of said generator is of a second polarity; first and second impedances serially connected from a junction between said first and second diodes to a junction between said third and fourth diodes; output means connected across said first and second impedances; and means for connecting a second source of input signals to a junction between said first and second impedances.

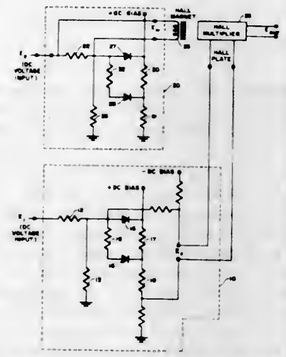
3,202,808
ANALOG SIGNAL MULTIPLIER USING CARRIER INSERTION
Oliver S. Meixell, Caldwell, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Jan. 15, 1962, Ser. No. 166,034
9 Claims. (Cl. 235—194)



1. An analog signal multiplier comprising:
(a) a first normally balanced bridge circuit,
(b) means for applying an alternating current across a first diagonal of said first bridge circuit having a frequency higher than the highest frequency component of the signals to be multiplied,
(c) means for causing a first of said signals to unbalance said first bridge circuit in correspondence with said first signal,
(d) a second normally balanced bridge circuit,
(e) means for coupling the second diagonal of said first bridge circuit to the first diagonal of said second bridge circuit,
(f) means for causing a second of said signals to unbalance said second bridge circuit in correspondence with said second signal,
(g) an output circuit connected across the second diagonal of said second bridge circuit and
(h) means for applying said alternating current across said output circuit.

3,202,809
ANALOG MULTIPLICATION AND DIVISION CIRCUIT USING A HALL EFFECT MULTIPLIER
Raymond L. King, Jr., and Robert L. Conger, Riverside, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 21, 1962, Ser. No. 181,492
1 Claim. (Cl. 235—196)
(Granted under Title 35, U.S. Code (1952), sec. 266)

An electronic analog computer circuit for obtaining as an output function the product of two variables comprising:
(a) a Hall effect multiplier for multiplication of two electrical quantities, including a Hall plate, an electromagnet field winding, a pair of plate terminals and a pair of output terminals;
(b) a function generator having its output connected across the magnetic field winding of said Hall effect multiplier, said function generator driving said magnetic field winding without any amplification and providing a dynamic range greater than ten with acceptable accuracy;
(c) a first variable D.C. input voltage applied across the input of said function generator;
(d) a reciprocal generator having its output connected across the plate terminals of said Hall effect multiplier;
(e) a second variable D.C. input voltage applied across the input of said reciprocal generator;
(f) said function generator comprising a voltage divider having a plurality of diodes biased through a resistance network connected across a greater resistance portion therof and having its output taken from across the smaller resistance portion thereof whereby the greater voltage drop will be across the greater resistance portion of the divider until the diodes commence to conduct thus causing the voltage drop across the smaller resistance portion of the divider to increase in a piecewise linear approximation to a reciprocal curve with said first input voltage;

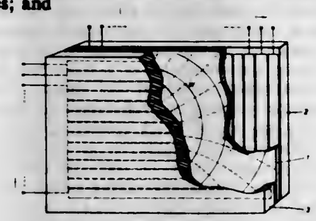


(g) said reciprocal generator consisting of a voltage divider working into a plurality of diodes that are biased through a resistance network whereby the output voltage from the reciprocal generator is a straight line approximation to a reciprocal curve of said second input voltage;
(h) the output of said Hall effect multiplier being a function of the output of said reciprocal generator multiplied by the output of said function generator.

3,202,810
ARITHMETIC UNIT
Fritz Steiner, Pforzheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 17, 1960, Ser. No. 69,912
Claims priority, application Germany, Nov. 25, 1959, St 15,837
8 Claims. (Cl. 235—197)

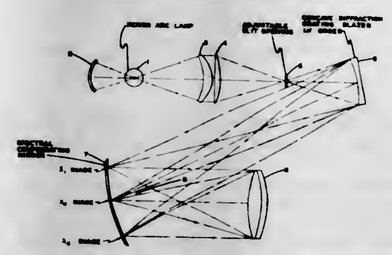
1. A computing device for deriving a function of two independent variables comprising:
a plate of electroluminescent material;
first and second intersecting pluralities of electrically conductive line patterns, comprising graphic representations of said independent variables, disposed adjacent opposite faces of said plate, the points of intersection of said lines in said respective patterns lying within said plate;

said points determining selectively luminescent regions within said plate in association with selective electrical excitation of said intersecting lines;
means for selectively applying electrical signals to said lines; and



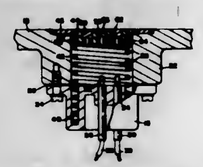
first and second reading plates positioned parallel to and adjacent said electroluminescent plate, said reading plates containing thereon respective first and second relatively orthogonal families of line curves composed of photoconductive material.

3,202,811
LABORATORY SUN SIMULATOR
Joseph F. Hall, Jr., Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed June 23, 1961, Ser. No. 119,204
8 Claims. (Cl. 240—1.1)



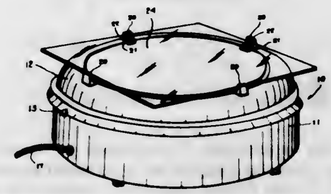
1. A sun simulating device comprising in combination, a source of light radiating a luminous flux, a slit means, lens means focusing the luminous flux to form an image of said source on said slit means, a luminous flux dispersing means dispersing the different wavelengths in the luminous flux and focusing the images of said slit means formed by the different wavelengths, a spectral compensating mirror receiving the images and modifying the intensity of illumination of the different wavelengths in the luminous flux and recombining a corrected luminous flux to simulate spectral characteristics of solar radiation.

3,202,812
DISCONNECT LIGHTING FIXTURE
Richard C. Berry, Camillus, and Francis J. Kelly, Syracuse, N.Y., assignors to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
Filed May 27, 1963, Ser. No. 283,497
3 Claims. (Cl. 240—1.2)



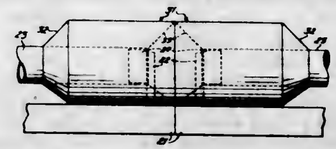
1. A disconnect lighting fixture comprising a base having a receptacle mounted therein, said receptacle including a contact plate having a center contact and a concentrically spaced ring contact normally positioned in the plane of the top surface of the mounting base, yieldable means urging said contact plate upwardly into said position flush with the surface of the mounting base, a contact supporting unit mounted in axially aligned relation with said contact plate and spaced therefrom and having a pair of contacts adapted to engage and make electrical connection with said center contact and ring contact of said contact plate when said plate is moved axially inward into engagement with said contacts, said base being adapted to receive a plug-in lamp unit including a coupling assembly having a pair of contacts positioned complementary to the positioning of the contacts in said contact plate, said coupling and base having means to removably attach said coupling and lamp unit to said base, said coupling being operable upon insertion in said base to first make contact with the contacts of said contact plate and to urge said contact plate into electrical engagement with the contacts carried by said base.

3,202,813
LIGHT TABLE
Alex J. Weinstein, Mount Vernon, N.Y., assignor, by mesne assignments, to The Edna Lite Corporation, Peekskill, N.Y., a corporation of New York
Filed Dec. 20, 1962, Ser. No. 246,075
2 Claims. (Cl. 240—2)



1. In a device of the described character, the combination of a housing having a light transmitting plate at the top thereof, a light source within said housing reflecting means in said housing for effecting substantially uniform illumination of said plate from said light source, and a plurality of support members mounted on said top of the housing at spaced apart locations adjacent the periphery of said light transmitting plate, each of said support members being stepped upwardly in the direction away from said plate to define upwardly facing support surfaces at different levels and at different distances from said periphery of the plate for supporting interchangeable superposed filters and specimen bearing glass stages above said light transmitting plate.

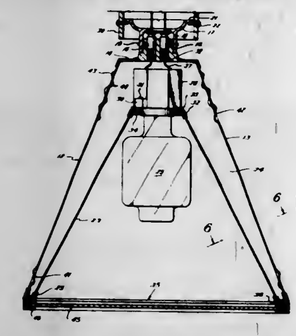
3,202,814
LIGHTING DEVICE FOR DISPELLING SHADOWS
Michael J. Ceglia, 1008 Abington Terrace, Haddonfield, N.J.
Filed July 19, 1962, Ser. No. 210,938
12 Claims. (Cl. 240—9)



1. Lighting device of generally cylindrical configuration having a cylindrical bore therethrough and thereby adapted to receive tubular light-emitting means axially

therein and having a protruding conical face at one end and a coaxial intruding conical face substantially parallel thereto at the other end, each conical face being inclined at essentially forty-five degrees to the axis and adapted to reflect at least some of the light incident on the internal surface thereof, whereupon light transmitted substantially radially from the axis onto the internal surface of the protruding conical face is reflected substantially axially therefrom to the internal surface of the intruding conical face and is reflected substantially axially outward therefrom.

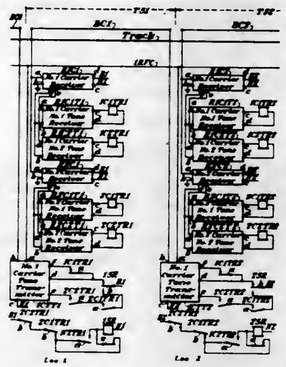
3,202,815
LIGHTING EQUIPMENT
Buell Moore, Houston, Tex., assignor to Esquire, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 8, 1963, Ser. No. 250,073
2 Claims. (Cl. 240—78)



1. Lighting equipment, comprising a transformer mounted in a housing adapted to be suspended in a vertical position, a light fixture suspended beneath and closely adjacent the lower end of the transformer housing, said fixture including a reflector having an open lower end, socket means for mounting a lamp within the reflector and opposite its open lower end, a lens across the open end of the reflector, a case arranged in spaced relation about the reflector, means providing openings in the case opposite the upper and lower ends of the reflector, means for diverting air flowing upwardly within said case out through said openings opposite the upper end of the reflector and for preventing said air from flowing through the transformer housing, and means for electrically connecting the socket means with the transformer.

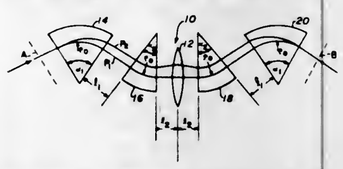
3,202,816
AUTOMATIC TRAIN OPERATION SYSTEM
Charles W. Gregg, Monroeville, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Apr. 10, 1961, Ser. No. 101,881
6 Claims. (Cl. 246—63)

1. An automatic train operation system for a stretch of railway track over which trains travel in a single direction and including a series of locations in the stretch, each location defining the exit and entrance ends of preceding and succeeding signal blocks respectively, said system comprising, a signaling conductor for each said signal block extending the length of and parallel with the track of its respective signal block, signal transmitting means at each location for transmitting a plurality of distinct train control signals to the signaling conductor for the signal block preceding that location when a similar plurality of succeeding blocks are unoccupied by trains, signal receiving means on each train traveling said track stretch for receiving the train control signals transmitted to the signaling conductor for the signal block then occupied by the front end of the train, means on each train controlled by the signal receiving means on that train for controlling the speed of the train to a higher speed range in accordance with each additional train control signal received and for applying the brakes of the train when the receipt of such signals is interrupted, means at each location responsive to the occupancy of the succeeding signal block by the front end of a train for controlling the signal transmitting means at that location to interrupt the transmission of train control signals to the signaling conductor for the signal block preceding such location, means at each location responsive to the occupancy of the succeeding signal block by the rear end of a train for controlling the signal transmitting means at that location to transmit another distinct signal to the signaling conductor for the signal block preceding such location,



signal receiving means at each location for selectively receiving the signals transmitted over the signaling conductor for the succeeding signal block, means at each location responsive to the receipt of said other distinct signal by the signal receiving means at that location for controlling the signal transmitting means at such location to interrupt the transmission of said other distinct signal and to transmit one of said train control signals to the signaling conductor for the signal block preceding such location, and means at each location responsive to the receipt of said one train control signal by the signal receiving means at that location for controlling the signal transmitting means at such location to transmit to the signaling conductor for the preceding signal block another of said train control signals in addition to said one train control signal.

3,202,817
POLYENERGETIC PARTICLE DEFLECTING SYSTEM
Roger L. Belbeoch, Paris, France, assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 18, 1962, Ser. No. 245,955
11 Claims. (Cl. 250—41.9)



1. A method for deflecting a beam of polyenergetic charged particles through equal particle path lengths independent of the particle energies while preserving the bunching characteristics thereof comprising applying a succession of charged particle deflecting forces to said polyenergetic beam; maintaining said succession of deflecting forces with predetermined spacings therebetween and in predetermined orientation with respect to said polyenergetic beam to direct said beam through a predetermined deflection within the region of application of each of said deflecting forces; maintaining the summation of said predetermined deflections within the region of each of said deflecting forces commensurate with said spacings and said orientations to deflect all the monoenergetic particles following initially parallel paths an amount to satisfy the condition that

$$\int_A^B \frac{C(t)}{\rho(t)}dt=0$$

to deflect all the monoenergetic particles following initially divergent paths emanating from a point in a predetermined entrance plane an amount to satisfy the condition that

$$\int_A^B \frac{S(t)}{\rho(t)}dt=0$$

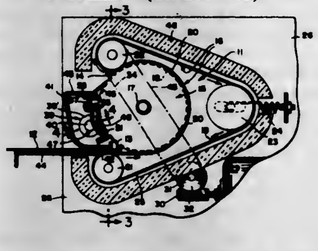
and to deflect all the polyenergetic particles following initially parallel paths emanating from the same point in a predetermined entrance plane an amount to satisfy the condition that

$$\int_A^B \frac{D(t)}{\rho(t)}dt=0$$

where

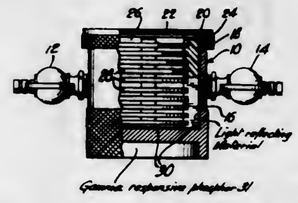
A is the entrance plane,
B is the exit plane,
t is the distance from the entrance plane A as measured along the central particle path,
$C(t)$ is the deviation of an arbitrary particle from the central particle path at a position t (at the entrance plane A the arbitrary particle is parallel to the central path, that is, the slope of $C(t)$ at $t=0$ [plane A] is zero),
$S(t)$ is the deviation of an arbitrary particle from the central particle path at a position t and having the same momentum as the central particle (at an object or image point $S(t)=0$ by definition),
$D(t)$ is the deviation of an arbitrary particle from the central particle path at a position t having a momentum of $p_0+\Delta p$ where p_0 is the momentum of the central path particle and Δp is the difference of momentum between a particle and the central particle,
$\rho(t)=1/h(t)$ where $h(t)$ is the curvature of an arbitrary particle on the central particle path at a position t.

3,202,818
THERMOGRAPHIC REPRODUCTION APPARATUS WITH THERMOSENSITIVE HEAT REGULATOR
Hubert J. Thomiszer, Skokie, Ill., assignor to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware
Filed June 7, 1962, Ser. No. 200,731
5 Claims. (Cl. 250—65)



1. Apparatus for the development of a ray sensitive sheet containing heat activatable developing material, comprising a pair of cooperating sheet transporting members, including a turntable sleeve and a belt having a sleeve embracing bight, operable to carry a sheet to be developed from a sheet receiving to a sheet delivery station, heating means operable to heat one of said transporting members to constitute the same as means to heat a sheet as it is carried, by and between the sleeve and the sleeve embracing bight of the belt, from the receiving to the delivery station, heat sensing means mounted wipingly in heat exchanging relation with respect to a said sheet transporting member forming a body movable relative to the sensing means, and means controlled by said sensing means for regulating the sheet heating means, said sensing means comprising a fiberglass mounting strap impregnated with a tetrafluoroethylene polymer and formed with a facing layer of clear plastic having a smooth body engaging surface adapted for wiping engagement with said body, said strap being formed with a pocket behind said facing layer, a thermistor formed with a flat face, silicon cement securing said thermistor in said pocket in position with its flat face in surface contact with the back of said facing layer, and a resilient sheet metal bracket providing spaced anchoring abutments, said strap being secured on said abutments on opposite sides of said thermistor, to support the same in position to press said body engaging surface upon said body and thereby mount the thermistor in heat exchange relation with the body, through said facing layer.

3,202,819
BETA AND GAMMA MEASURING APPARATUS FOR FLUIDS
Charles Christianson, New York, N.Y., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 8, 1963, Ser. No. 279,687
8 Claims. (Cl. 250—71.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

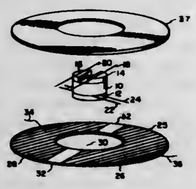


1. Sampler apparatus for use in detecting beta and gamma radiation in a fluid comprising:
(a) a housing confining a chamber and including as part of the housing wall a window transparent to beta radiation and a housing wall portion opaque to beta radiation and energy in the visible spectrum remote from the window,
(b) a gamma responsive phosphor secured to the exterior of the housing wall portion opaque to beta radiation and energy in the visible spectrum, and
(c) means on said housing and in communication with the chamber for use in filling the chamber with a fluid sample.

3,202,820
INFRARED DETECTOR MOUNTING STRUCTURE
Bruce Norton, Westport, and Russell D. De Waard, Old Greenwich, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Jan. 28, 1963, Ser. No. 254,390
5 Claims. (Cl. 250—83)

1. A mounting structure for an unbacked thermal detector which effectively thermally isolates the detector

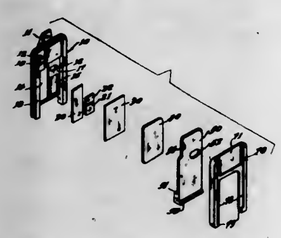
from the mounting while at the same time permitting electrical connection thereto comprising a first thin layer of insulating material having a central opening therein and two separated areas of conductive coating thereon, a thermal detector having two contacts thereon, at least one fiber of insulating material being secured to each contact on said thermal detector and to each area of conductive coating on said layer for mounting said detector in the central opening on said layer, said fiber having a conductive coating on at least a portion of the fiber between the contacts on said detector and the conductive areas on said layer for establishing electrical conductivity between said detector and the conductive areas on said layer.



3,202,821
FILM BADGE SYSTEM AND METHOD OF USING

Leo F. Kocher, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 11, 1963, Ser. No. 264,744
5 Claims. (Cl. 250—83)



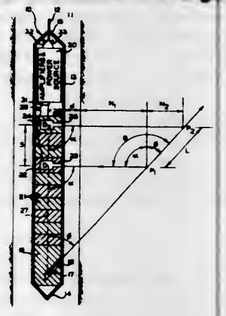
1. A dosimeter filter system comprising: a tantalum filter of sufficient thickness to block X-rays, gamma rays having energies of less than about 35 kev., and beta radiation; an iron filter; a plastic filter; said iron and plastic filters being sufficiently thick to provide equal attenuation of hard beta radiation; and an open window; said iron filter, said plastic filter, and said open window all providing equal attenuation of photon energies in excess of about 50 kev.

3,202,822
METHOD OF DETERMINING DENSITY UTILIZING A GAMMA RAY SOURCE AND A PAIR OF DETECTORS

Paul Kobler, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 13, 1961, Ser. No. 151,952
20 Claims. (Cl. 250—83.3)

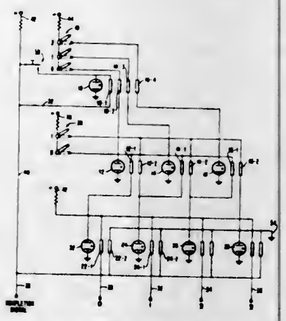
1. A method for determining the density of a material, which method comprises: passing gamma rays from a source into said material along at least one trajectory at an incident angle ϕ with respect to a reference plane in which said source is positioned; receiving respectively from within said material at an angle α with respect to said reference plane on first and second detectors, unequally spaced apart from said source, Compton scattered photons which have been scattered at an angle θ with respect to said trajectory of said gamma rays; and measuring the ratio of the responses of said detectors.



3,202,823
PHOTOSENSITIVE ASYNCHRONOUS INFORMATION HANDLING SYSTEM

Rex Rice, Poughkeepsie, N.Y., and René H. Terlet, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 28, 1962, Ser. No. 248,077
14 Claims. (Cl. 250—209)



7. An asynchronous information handling system comprising

a plurality of stages,

said stages comprising at least two ring circuits,

an individual storage register associated with each of said ring circuits,

each of said storage registers including a plurality of digit storage positions with a plurality of devices in each of said digit positions to represent different digit values,

each of said ring circuits being connected with the associated storage register to initiate a read out of the information in a selected digit position of said storage register,

said system including logical stages responsive to the information read out of said storage registers for generating combined function signals representing combined functions of information read out from said storage registers,

a third register having a register gate circuit stage and a ring circuit stage associated therewith,

said last mentioned ring circuit being operable to control said register gate circuit,

said register gate circuit being connected to receive said combined function signals and to transmit said signals for storage in said third register in a digit position determined by the operation of said third ring circuit,

said third register including devices for energization in response to different numerical values to be stored and operable for latching in the operative condition for the permanent storage of information,

each of said digit positions of said third register including means for providing a completion signal indicative of the completion of the storage of the information,

a pulse generator stage connected for operation in response to said completion signal,

a final stage of said system connected for operation in response to the output of said pulse generator,

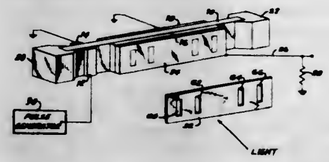
said final stage having devices associated therewith connected to provide turn-off circuits for all of said stages of said system to substantially simultaneously clear said stages for the next cycle of operation,

said final stage also including devices connected to said ring circuits for advancing each of said ring circuits to the next ring position.

3,202,824
PICKUP DEVICE

Stephen Yando, Cold Spring Hills, Huntington, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Feb. 23, 1961, Ser. No. 91,258
4 Claims. (Cl. 250—211)

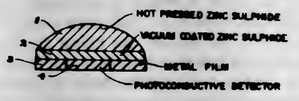


1. A light sensitive pickup device comprising a strip of piezoelectric material having first and second opposite surfaces; a photoconductive layer placed in intimate engagement with the first surface of said strip intermediate the ends thereof; a backing electrode affixed to the second surface of said strip; a contact secured to the first surface of said strip adjacent one end thereof; said contact being spaced from said photoconductive layer, means for applying a voltage between said contact and said backing electrode, said voltage producing an elastic wave and an accompanying electric field propagating from said contact to the other end of said strip; and a transparent conductive layer affixed to the surface of said photoconductive layer, an output voltage pulse being produced between said transparent electrode and said backing electrode when the position of said elastic wave coincides with an illuminated portion of said photoconductive layer.

3,202,825
ARTICLES OF HOT PRESSED ZINC SULPHIDE HAVING A DURABLE METAL FILM COATED THEREON

Frederick C. Brown and Paul B. Mauer, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Jan. 16, 1963, Ser. No. 251,785
4 Claims. (Cl. 250—216)

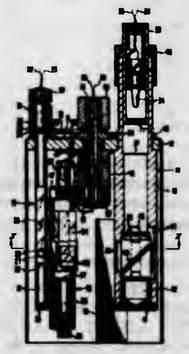


1. An article of manufacture comprising a substratum of a hot pressed polycrystalline zinc sulfide element having vacuum-coated thereon a sublayer of zinc sulfide, and a metal film vacuum coated on said sublayer.

3,202,826
HAZE METER

Arthur B. Greathouse, Scotch Plains, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Sept. 1, 1961, Ser. No. 135,574
7 Claims. (Cl. 250—218)



1. An apparatus adapted for immersion in a fluid to measure haze therein, which comprises in combination:

(a) a vertically extending container substantially closed at its upper end and open at its lower end,

(b) a source of radiant energy carried within said container,

(c) a source housing isolating said radiant energy source from contact with fluid in said container and having a window positioned to direct radiant energy in a path having a generally lateral direction into fluid within said container,

(d) a first detector of radiant energy carried within said container at a position spaced laterally from said radiant energy source,

(e) a first detector housing isolating said first detector from fluid in said container and having a window in alignment with said first detector and the direct energy path,

(f) a second detector of radiant energy carried within said container at a position laterally spaced from said energy source and from said first detector,

(g) a second detector housing isolating said second detector from fluid in said container and having a window aligned with said second detector and defining therewith a scattered energy path which is out of alignment with the direct energy path, and

(h) means responsive to said first and second detectors for comparing the amounts of radiant energy received by said detectors.

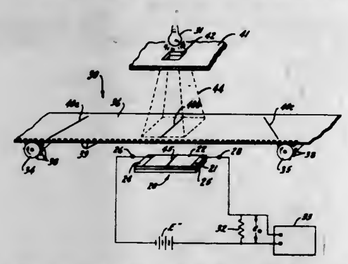
3,202,827
PHOTOCELL FOR DETECTING LIMITED MOVING SHADOW AREAS

Robert J. Robinson, Chicago, Ill., assignor to Cummins-Chicago Corp., Chicago, Ill., a corporation of Illinois

Filed June 29, 1961, Ser. No. 120,565
4 Claims. (Cl. 250—219)

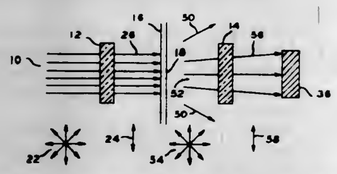
4. Object detecting and signal generating apparatus comprising, in combination, a voltage source, a photocell having a pair of spaced electrodes and a broad exposed inter-electrode area of photosensitive material, said photocell coupled to said voltage source, a light source spaced from said photocell, a utilization device coupled to said photocell and said voltage source, transparent carrier means for supporting said object intermediate said light

source and said photocell, said carrier means being positioned relative to said photocell so as to project a shadow of the object towards said photocell with said shadow cutting entirely across the latter, means for effecting relative movement between said carrier means and said photocell



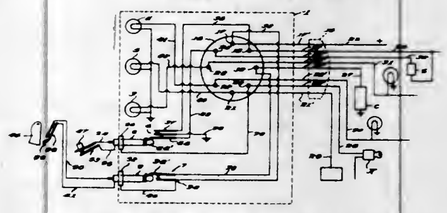
so that said shadow traverses the latter, said photocell and voltage source being operable to generate a signal as the leading edge of said shadow cuts across the former, and means for conducting said signal to said utilization device.

3,202,828
USE OF POLARIZING MATERIALS TO OVERCOME LIGHT LEAKAGE
Wu Chen, Norwalk, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 2, 1962, Ser. No. 206,925
5 Claims. (Cl. 250—225)



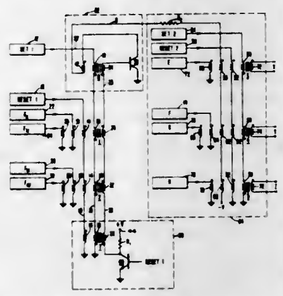
1. An optical record-sensing device comprising:
(a) a radiation source, the radiation from said source being directed along a path;
(b) a record member having perforated and non-perforated areas at a selected location wherein said non-perforated areas are partially transparent, said path of radiation from said source being directed at said selected location of said record member;
(c) a first plane polarizing means interposed between said radiation source and said partially transparent record member, said first plane polarizing means being oriented adjacent said radiation source to receive energy radiation from said source, said first plane polarizing means being further oriented adjacent said record member;
(d) a sensing means to detect the intensity of radiation along said path;
(e) a second plane polarizing means interposed between said record member and said sensing means, said second plane polarizing means being oriented across said path of radiation, the axes of polarization of said first and second plane polarizing means being so arranged that the proportion of the radiation transmitted to said sensing means from said second plane polarizing means depends upon whether such plane polarized radiation has been depolarized by transmission through said partially transparent, non-perforated area at said selected location of said record member, or has retained its plane polarization on passing through said perforation formed in said record member at said selected location.

3,202,829
DUAL CONTROL DEVICE FOR MOTOR VEHICLES
Tom Kawahara, 6320½ Heliotrope Ave., Bell, Calif.
Filed Oct. 31, 1961, Ser. No. 149,079
7 Claims. (Cl. 307—10)



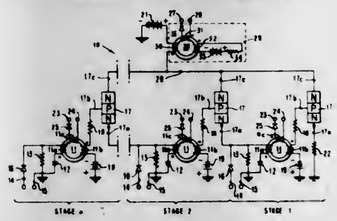
1. An auxiliary control means for starting and stopping the engine of a motor vehicle; said control means comprising
a hand piece adapted to be held in the hand of an occupant of the vehicle other than the driver and having
a normally open switch connected in parallel with the starter switch of the vehicle electrical system,
a normally closed switch connected in series with the ignition coil of the vehicle electrical system
and two independently manually operable devices for closing said normally open switch and for opening said normally closed switch, respectively, and
a plurality of flexible electrical conductors extending between the terminals of said switches to the electrical system of the vehicle.

3,202,830
DUAL FUNCTION CORE LOGIC
Alexander Turczyn, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 25, 1961, Ser. No. 112,732
23 Claims. (Cl. 307—88)



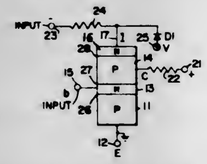
21. A magnetic core logic circuit comprising; a plurality of magnetic cores each settable to a first state or a second state; winding means for each of said cores for setting said cores to said first state and resetting said cores to said second state; means for alternately applying set and reset signals to said winding means, said set or reset signals being applied simultaneously to all said winding means; a plurality of data signal input windings for each of said cores and linked to said cores whereby a data signal input tends to reset the core to which it is linked; means for selectively applying signals to said data signal windings during the time said set signals are being applied to said winding means; a transistor having a collector, emitter and a base; an output winding for each of said magnetic cores, said output windings being connected in series and linked to said cores whereby the voltages induced in said output windings as said cores are reset are added to produce a resultant voltage; means normally biasing said transistor in the off condition at least during the time said set signals are being applied to said cores, said base being connected through said series circuit to said biasing means; and a further magnetic core having a reset winding connected to said collector, a set winding responsive to said set signals, and an output winding connected in said series circuit, said output winding of said further core being connected in said series circuit such that the voltage induced in said output winding as said core is reset tends to turn said transistor on.

3,202,831
MAGNETIC CORE RING CIRCUIT
George E. Olson, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 30, 1959, Ser. No. 824,021
2 Claims. (Cl. 307—88.5)



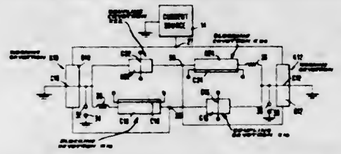
1. A self advancing ring circuit comprising a plurality of stages each of which includes a magnetic element having first and second states of magnetic stability, input circuit means including the series connection of an input winding and a capacitor coupled to said element and responsive to an input pulse applied thereto to cause the element to first assume its first magnetic state and to next assume its second magnetic state, an output winding magnetically coupled to said element wherein voltages are induced upon changes of the element from one state to the other, and a switching device coupled to the output winding of the element and responsive to the voltage induced in said output winding during changes of the element from its first stable state to its second stable state for producing an output pulse, means coupling the switching device in each stage except the last to the input circuit means of the next succeeding stage so that the output pulse from each stage is applied as the input pulse to the next succeeding stage.

3,202,832
CONTROLLABLE SEMICONDUCTOR DEVICE
Nicholas De Wolf, Boston, Mass., assignor to Transitron Electronic Corporation, Wakefield, Mass., a corporation of Delaware
Filed June 17, 1960, Ser. No. 36,769
4 Claims. (Cl. 307—88.5)



1. A semiconductor device comprising,
four contiguous semiconductor regions,
adjacent regions being of opposite conductivity to define three rectifying junctions,
an emitter lead and an injector lead connected to respective extreme ones of said regions functioning as an emitter and as an injector respectively,
a collector lead connected to the intermediate region functioning as a collector which intermediate region separates the injector from the other intermediate region,
said regions being arranged so that a potential applied between said emitter and collector leads establishes a field for biasing the rectifying junction between said intermediate regions,
means including said injector lead and the extreme region to which it is connected for establishing a conduction path for carriers for establishing a negative resistance characteristic between said emitter and collector leads in which an increase in potential therebetween is accompanied by a decrease in current flowing through said collector lead for a prescribed potential range above a breakover potential and for establishing a positive resistance characteristic between said emitter and collector leads in which an increase in potential therebetween is accompanied by an increase in current flowing through said collector lead below a saturation current potential lower than said breakover potential which saturation potential corresponds to the lowest potential where maximum collector current is attained when the only potential changed is that between said emitter and collector leads,
a source of a fixed biasing potential,
means for direct coupling said fixed biasing potential between said emitter lead and said collector lead to normally reverse bias the base-collector rectifying junction,
a source of injector biasing potential,
means for applying said injector biasing potential to said injector lead to establish said breakover potential and reverse bias the injector-collector rectifying junction when said device is in the nonconducting state providing nearly zero current in said collector lead and forward bias the injector-collector rectifying junction when said device conducts sufficiently to draw enough current through said collector lead to establish the potential on said collector lead to a value less than that on said injector lead,
whereby a potential applied between said collector and emitter leads causes a decrease in the current delivered by said collector electrode as said potential increases for a predetermined limited potential range related to the potential on said injector, the magnitude of the collector current delivered by said device being a function of the current in said injector.

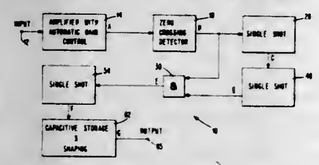
3,202,833
SUPERCONDUCTIVE CIRCUIT
Charles J. Bertuch, Franklin Park, N.J., and Norman H. Meyers and Harold Sobol, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 18, 1961, Ser. No. 83,456
10 Claims. (Cl. 307—88.5)



1. A universal superconductive multivibrator circuit operable at a superconductive temperature comprising; first and second current paths including first and second gate elements, respectively; first and second control elements associated with said first and second gate elements,

respectively, for applying magnetic fields thereto; a current source; means connecting said source in parallel with said first and second paths; feedback means connected between each of said gate elements and both of said control elements; the input of each of said feedback means connected in series with one of said gate elements and the output of each of said feedback means connected in series with both of said control elements in parallel; and programmable means selectively operable to determine further paths through said feedback means, said programmable means operable to convert said circuit to an astable multivibrator, a monostable multivibrator, and a bistable multivibrator.

3,202,834
FREQUENCY DISCRIMINATING CIRCUIT
Carl O. Pingry III and George W. Hobgood, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 13, 1961, Ser. No. 144,864
2 Claims. (Cl. 307—88.5)



2. A circuit for discriminating as to frequency of an applied signal that periodically alternates about a particular reference amplitude level which has characteristic frequencies that may fall within a predetermined reference band of frequencies or outside said predetermined reference band of frequencies, comprising:

a zero crossing circuit for detecting each zero crossing traverse of said applied signal through said reference amplitude level as said signal alternates about said reference amplitude level, said circuit supplying a relatively short output pulse in response to each such traverse and said output pulses thereby occurring in succession at a frequency which directly represents the frequency of said applied signal;

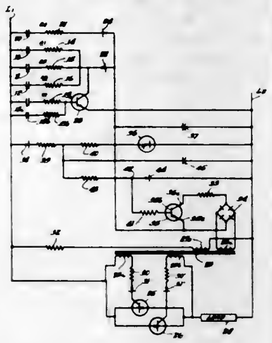
a first multivibrator circuit responsive to each output pulse from said zero crossing circuit to supply a pulse which has a duration that is slightly less than the duration of a half-period of the highest frequency of said applied signal;

a second multivibrator circuit responsive to each pulse from said first multivibrator circuit as it terminates to supply a reference pulse related in such a manner to the pulse from said first multivibrator circuit that the combined duration of a pulse from said first multivibrator circuit and the related reference pulse from said second multivibrator circuit is at least as great as the duration of a half-period of the lowest frequency of said applied signal;

and circuit means responsive to a frequency representing pulse from said zero crossing circuit and a reference pulse from said second multivibrator circuit when they occur concurrently to supply an output which indicates that said applied signal falls within said predetermined reference band of frequencies.

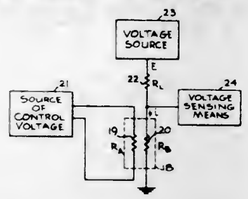
3,202,835
ELECTRICAL LOGIC CONTROL ELEMENT
John N. Barr, Detroit, Mich., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Nov. 6, 1961, Ser. No. 150,224
6 Claims. (Cl. 307—88.5)

1. An electrical logic control element comprising a voltage-controlled negative-resistance device capable of selectively assuming lower and higher stable voltage levels, impedance means, means connecting said device and said impedance means in series with each other and for connecting the series combination thus formed across a source of power, semiconductor switching means capable of assuming conductive and non-conductive states of operation, selectively, and connected in parallel with said device and in series with said impedance means so as to be responsive to the voltage level of said device, said switching means being in one of said states of operation when said device is at said lower voltage level and being in the other of said states of operation when said device is at said higher voltage level, output control means for controlling the flow of current from said source to a load,



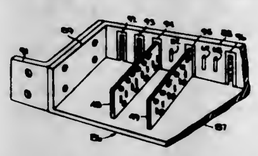
said output control means being coupled to said switching means and being operative to permit current flow to the load when said switching means is in said other of said states of operation and operative to prevent current flow to the load when said switching means is in said one of said states of operation, and input control means for selectively establishing said lower and higher voltage levels of said device, said input control means including a plurality of AND input means and at least one NOT input means connected to said device and operative to cause said higher voltage level to be assumed by said device only when each of said plurality of said AND input means is operated in the absence of operation of said NOT input means.

3,202,836
HEAT-RESPONSIVE SUPERCONDUCTIVE DEVICES
James J. Nyberg, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Continuation of application Ser. No. 736,118, May 19, 1958, now Patent No. 3,056,889, dated Oct. 2, 1962. This application Jan. 22, 1962, Ser. No. 167,826
10 Claims. (Cl. 307—88.5)



1. A logic circuit including the combination of a superconductor which is capable of being switched from a superconductive condition to an electrically resistive condition at a particular transistion temperature, means for maintaining the superconductor normally below the transition temperature thereof, means including an adjacent control element for selectively supplying heat to the superconductor sufficient to raise its temperature above the transition temperature thereof when it is desired to switch the superconductor to the resistive condtion, and means for passing current through the superconductor of a magnitude sufficient to maintain the superconductor in an electrically resistive condition so long as the current of said magnitude continues to flow therethrough.

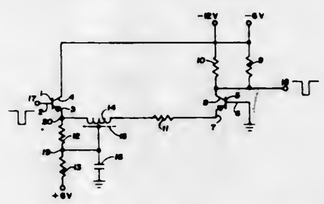
3,202,837
FREQUENCY DIVIDER EMPLOYING RECEPTACLES HAVING PRESET FREQUENCY RATIO CONNECTIONS FOR STANDARD FREQUENCY PLUG-IN UNITS
Albert J. Baracket, Cedar Grove, N.J., assignor to Diamond Power Specialty Corporation, Lancaster, Ohio, a corporation of Ohio
Filed Sept. 5, 1962, Ser. No. 221,539
4 Claims. (Cl. 307—88.5)



1. A frequency divider comprising: a main circuit support structure; a first capacitor having two terminals and being supported by said structure; a second and third capacitor each having two terminals, one terminal of said second capacitor being connected to one terminal of said third capacitor to form a common terminal; a plurality of subchassis, each having substantially identical binary frequency dividing circuits thereon and each chassis mechanically and electrically engaging said support structure, each of said dividing circuits comprising first, second and third binary flip-flop circuits connected in series, a first input terminal connected to said first of said binary circuits to receive a signal to be frequency divided, and a second input terminal connected to said first of said binary circuits, and an output terminal connected to said third binary circuit, a connection on said support structure between the output terminal of one of said chassis and one terminal of said first capacitor, and a second connection between the second input terminal of the same chassis and the other terminal of said first capacitor to feed back an electrical signal to change the frequency dividing ratio of the binary circuit on said one of said chassis to a value different from its normal binary value, a connection between said output terminal of a second one of said chasais and said common terminal, and a connection between the other terminal of said second capacitor and the second input terminal of said second one of said chassis, the other terminal of said third capacitor being connected to the third input terminal of the binary circuit on said second one of said chassis to change the frequency dividing ratio of said last-named dividing circuit to a value different from its normal binary value and differnt from the value of said dividing circuit on said one of said chassis.

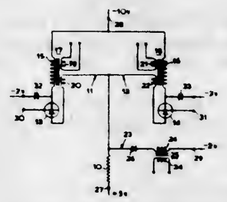
3,202,838
SIGNAL DELAY CIRCUIT
Richard M. Ryan, Jr., and Charles T. Ludwig, Houston, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 9, 1962, Ser. No. 229,326
3 Claims. (Cl. 307—88.5)

1. A current mode signal delay circuit comprising an input emitter-follower transistor switch, said switch including a transistor having emitter, base and collector with a load impedance connected to said emitter, an output grounded-base transistor switch, having emitter, base and collector, a delay line including a reference plane and having one end coupled to said first-mentioned emitter and the other end coupled through a matching impedance to the emitter of said output switch, said matching impedance and said output switch providing a substantially matched termination for said other end of said delay line,



a capacitor having one terminal coupled to said reference plane and to said load impedance and the other terminal coupled to ground, whereby stabilized direct current biasing potentials are provided for said switches and said delay line, the impedance of said one end of said delay line being matched by said load impedance and said capacitor, whereby the output switch senses the condition of the input switch after a predetermined time delay.

3,202,839
ELECTRIC VOLTAGE COMPARISON MEANS
Reginald Hugh Allmark, Stoke-on-Trent, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Oct. 18, 1962, Ser. No. 231,341
Claims priority, application Great Britain, Oct. 20, 1961, 37,791/61
22 Claims. (Cl. 307—88.5)



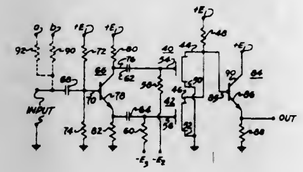
1. An electric voltage comparison means including two similar transistors having their emitter-collector circuits connected in parallel with one another and sharing a common emitter circuit load resistor, each transistor having associated therewith a positive feedback means for feeding back energy from its collector circuit to its emitter circuit in a sense tending to accelerate any change in its collector current, and each of the two feedback means having an output circuit for providing an output signal when the collector circuit current of the associated transistor changes in value, input circuit means for applying two D.C. voltage signals for comparison to the base-emitter circuits respectively of the transistors, and an auxiliary circuit for connecting the junction of the common emitter load resistor and the two emitter circuits of the transistors with a source of bias potential and including a voltage pulse producing means for momentarily varying the potential of this junction in a step-like manner whereby to cause the transistor having a base potential nearer the bias potential of the bias source to change rapidly between its non-conductive and conductive states when energized from an appropriate D.C. voltage supply source.

3,202,840

FREQUENCY DOUBLER EMPLOYING TWO PUSH-PULL PULSED INTERNAL FIELD EFFECT DEVICES

Millard E. Ames, Jr., Collingswood, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 19, 1963, Ser. No. 266,253
5 Claims. (Cl. 307—88.5)



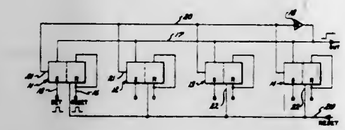
1. In combination,
first and second semiconductor devices each having input, output and common electrodes and exhibiting a square law signal transfer characteristic,
input circuit means coupled to apply input signals to said input electrodes in push-pull relation,
means coupling said common electrodes to a point of reference potential,
biasing circuit means for applying a bias voltage between the input and common electrodes of said first and second devices to operate said first and second devices to exhibit said square law signal transfer characteristic, and
load circuit means coupled to said output electrodes of said first and second devices to derive an output signal which has twice the frequency of said input signal.

3,202,841

SWITCHING NETWORK

Hans J. Kunzke, Glendora, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California

Filed Apr. 1, 1963, Ser. No. 269,324
1 Claim. (Cl. 307—88.5)



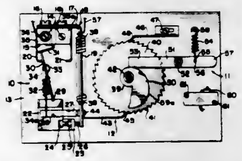
A switching network comprising a plurality of flip-flops, each having a set state and a reset state, each flip-flop also including a set input circuit for applying a set pulse to cause said flip-flop to change from a reset state to a set state; each of said flip-flops being effective to produce an output signal when in a said set state, means responsive to a said output signal from any of said flip-flops for causing all of said input circuits to inhibit a said set pulse when said output signal is being produced, each of said flip-flops also including a reset input circuit for applying a reset pulse to cause the respective said flip-flop when in a said set state to change to a said reset state; reset means for applying a reset pulse in common to all of said reset input circuits, and means for inhibiting a said reset pulse from affecting the circuit conditions of any of said flip-flops which are in said reset condition.

3,202,842

ELECTRO-MECHANICAL POWER UNIT

Henry A. Sherwood, Short Hills, N.J., assignor to U.S. Servicator Corporation, Plainview, N.Y., a corporation of Delaware

Filed Jan. 17, 1961, Ser. No. 83,346
5 Claims. (Cl. 307—141)



1. A power unit including, in combination, a support, a bi-metallic strip mounted with one end fixed to the support and the opposite end free for swinging movement relative to said fixed end, a rachet wheel mounted on said support for rotation about its axis, a pawl means connected to said element near the free end thereof with an end of said pawl means engaging a tooth on said ratchet wheel, an electric circuit, an electric resistance coil connected in said circuit and arranged to surround a major portion of said bi-metallic element for applying heat thereto, a switch arranged in said electric circuit and mounted for movement to open and close the circuit, and a connection between the free end of the bi-metallic element and said switch to effect the movement of the switch in response to the swinging movements of the free end of said element, adjustable means operable to predetermine the minimum degree of heat required to effect initial movement of the bi-metallic element, said support including a bracket, a switch arm pivotally seated on said bracket, an anchor arm connected to and extending from the bi-metallic element toward said bracket in a position below the switch arm, and a vertically disposed spring connected at one end to said switch arm and at its other end to said anchor arm, whereby movement of the bi-metallic arm carries with it the anchor arm and the end of the spring connected thereto and effects an off-center pull on the switch arm to rock it on its pivot.

3,202,843

THERMIONIC CONVERTERS

Harry Hurst, Foxton Hall, Foxton, England

Filed Dec. 8, 1959, Ser. No. 858,097
5 Claims. (Cl. 310—4)



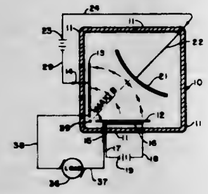
1. A thermionic converter for generating electricity comprising a vacuum-tight vessel of heat resistant material, a tubular cathode mounted within said vessel, a tubular anode within said vessel and surrounding said cathode, a layer of electron emitting material between said cathode and said anode, output electrical conductors connected respectively to said cathode and said anode and extending through the wall of said vessel to the exterior thereof, and a solid energizing heater rod of thermally conducting material having one end disposed within said cathode and having its other end projecting from one end of said vessel for conducting heat to said cathode from an external heat source.

3,202,844

ENERGY CONVERSION APPARATUS

James E. Hatch, deceased, late of Parma Heights, Ohio, by Marguerite L. Hatch, executrix, Parma Heights, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Nov. 8, 1961, Ser. No. 151,598
7 Claims. (Cl. 310—4)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Direct energy conversion apparatus comprising
a housing sealed and evacuated to a high vacuum,
an electron-emissive plate disposed in said housing,
an electron collector plate disposed in said housing at substantially a 90-degree angle from said electron-emissive plate,
an arcuate accelerator grid disposed in said housing, said grid facing the substantially 90-degre angle formed by said emissive plate and said collector plate,
means for heating said electron-emissive plate,
an energy source connected to said grid and said collector plate, and
a magnet secured to said housing, said magnet having poles shaped as a wedge, said wedge having a flat triangle bottom surface, a substantially narrow upper surface, and a substantially narrow front edge, said poles providing for a unidirectional non-uniform magnetic field substantially normal to the electrostatic field, the magnetic field flux having values approaching zero near said electron-emissive plate and said electron collector plate and reaching a maximum in substantially a 45-degree line between said electron-emissive plate and said electron collector plate.

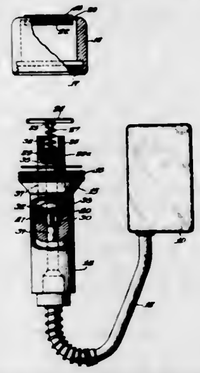
3,202,845

ULTRA-SONIC ELECTRODE APPLICATOR

Joseph Kozinski, Chicago, Ill., assignor to H. G. Fischer & Co., Inc., County of Cook, Ill., a corporation of Illinois

Filed July 2, 1962, Ser. No. 206,716
4 Claims. (Cl. 310—8.3)

1. A transducer electrode structure comprising a quartz crystal cemented to a metal member functioning in the dual capacity of electrode and transducer element, said crystal being cemented to said metal element by a layer of polymerized cyanoacrilate resin, said cemented junction being thin enough to transmit vibratory energy from



said crystal to said metal member without loss in air bubbles or lumps customary with conventional cements.

3,202,846

PIEZOELECTRIC CRYSTAL ELEMENT

Arthur D. Ballato, Long Branch, and Rudolf Bechmann, Shrewsbury, N.J., assignors to the United States of America as represented by the Secretary of the Army

Filed Apr. 3, 1963, Ser. No. 270,477
5 Claims. (Cl. 310—9.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)



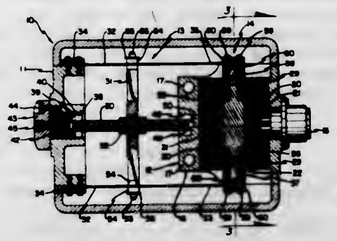
1. A piezoelectric quartz crystal element for exciting the two thickness shear modes, said element being cut from the mother quartz at an angle centered at substantially —23°50′ from the Z axis, the axis of rotation being the X axis and having a range —12° to —34°.

3,202,847

TUNABLE VIBRATION PICK-UP DEVICE

Lowell H. Erickson, Denver, Colo., assignor to Marcellus S. Merrill, Denver, Colo.

Filed July 28, 1960, Ser. No. 45,844
1 Claim. (Cl. 310—14)



A voltage generating pick-up device for measuring amplitudes of vibrations of a vibration source through the

generation of voltages corresponding to said amplitudes, comprising in combination: a housing to be attached to said source whereby said vibrations are transmitted to the housing; means forming a magnetic field circuit mounted in said housing provided with a central opening; an armature extending through said opening and forming an air gap between it and the magnetic circuit means and supported in a position to vibrate in a direction corresponding with the principal direction of vibration of said source; means for sensing voltages induced by vibration of said armature in said direction and transmitting them to a recording means; a pair of flat spring members mounted at one end of said housing at longitudinally spaced apart points and supporting said armature in said position between their free ends; a connecting plate fixed in said housing adjacent said field circuit means between said spring; a slotted member mounted in said one end of said housing; a threaded screw member rotatably mounted between said connecting plate and said slotted member; a slider threadably attached to said screw member for movement therealong as the screw is rotated, said slider having clamping means at either end for clamping each of its ends to a spring member; and resilient means between said slotted member and said housing spring biasing said screw member against longitudinal movement.

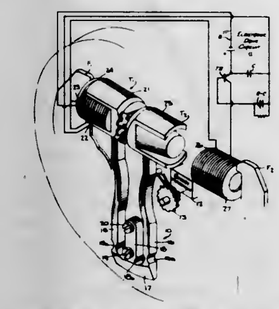
3,202,848

TUNING FORK FREQUENCY ADJUSTER

William O. Bennett, Bayside, N.Y., and William W. Mutter, Paramus, and Egbert Van Haaften, Closter, N.J., assignors to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York

Original application Jan. 19, 1961, Ser. No. 89,896. Divided and this application Aug. 19, 1963, Ser. No. 302,955

2 Claims. (Cl. 310—25)



1. An electromagnetically-actuated vibrator comprising a tuning fork having a pair of tines, and means for actuating said fork including a transducer constituted by a magnetic element attached to one of said tines and formed by a cylindrical cup having a magnetic rod supported coaxially therein, a frequency regulator for said tine constituted by a spring clip having a pair of fingers clamping a rivet attached to the base of said cup and pivotable thereon, said clip having a toothed bridge portion which when angularly displaced effectively shifts the center of gravity of said element.

3,202,849

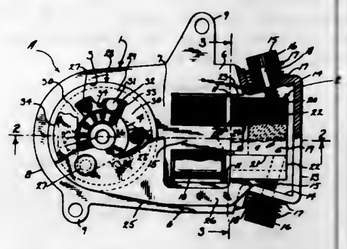
OSCILLATORY MOTOR

James S. Neal, Chicago, Ill., assignor to Enercon, a partnership

Filed May 17, 1962, Ser. No. 195,467

36 Claims. (Cl. 310—37)

1. In an electric motor the combination comprising: a first magnetic member having a source of magnetic flux which leads from one side of such source to branch into a first pair of pole areas and which leads from the other side of such source to branch into a second pair of pole areas; and a second magnetic member relatively movable in a reciprocating motion with respect to said first magnetic member, said second member having a source of magnetic flux and leading from one side of



such source to branch into a third pair of pole areas of which one faces a pole area of said first pair of pole areas and the other faces a pole area of said second pair of pole areas, and said second member leading from the other side of its magnetic flux source to branch into a fourth pair of pole areas of which one faces a pole area of said first pair of pole areas and the other faces a pole area of said second pair of pole areas.

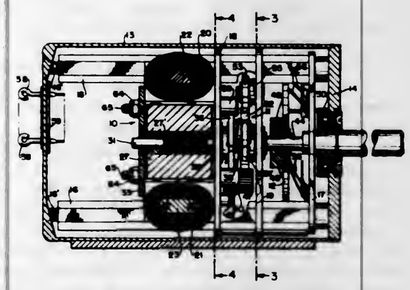
3,202,850

ROTARY SOLENOID

Edwin Ellner, Oxford, Conn., assignor to Consolidated Electronics Industries Corp., Waterbury, Conn., a corporation of Delaware

Filed May 8, 1963, Ser. No. 278,816

12 Claims. (Cl. 310—37)



1. A rotary solenoid, comprising

(a) a pair of spaced pole pieces having concave pole faces and being supported in a fixed relation,

(b) a permanently magnetized, elongate rotor element having a pair of convex pole tips of opposite magnetic polarity,

(c) a rotatable shaft supporting said rotor element for rotation between said concave pole faces,

(d) said convex pole tips and said concave pole faces defining a tapered air gap therebetween,

(e) said air gap being of minimal width opposite the central portions of said concave faces and said air gap being of maximum width opposite the extreme portions of said concave faces, and

(f) a pair of electromagnetic coils disposed in flux linking relation with said pole pieces and adapted to be energized by a source of D.C. to magnetize oppositely said pole pieces.

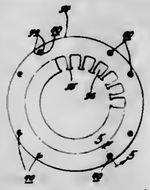
3,202,851

METHOD AND MEANS FOR ALIGNING AND FASTENING LAMINATIONS OF DYNAMOELECTRIC MACHINE

Wilbur J. Zimmerle, Charles E. Strochel, and Robert O. Dehlendorf, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 19, 1961, Ser. No. 125,190

1 Claim. (Cl. 310—259)



In a stator lamination assembly for a dynamoelectric machine provided with a central bore and outwardly extending teeth, interlocking means for securing adjacent laminations together in interlocking relationship progressively throughout the length of the stator assembly, comprising: displaced dovetail lamination segments and complementary lamination openings for receiving said dovetail segments; said displaced dovetail segments being formed in each lamination by a pair of diverging slits radially extending from the peripheral edge of the lamination bore opening and being located so that each dovetail segment is radially aligned with one of the stator teeth and axially aligned with the complementary lamination opening of an adjacent lamination, the opposing edges of said slits defining said complementary lamination opening; said displaced dovetail segments including an angularly stretched portion terminating in a flat portion being offset substantially the thickness of an adjacent lamination, said angularly stretched portion extending through the complementary opening of an adjacent lamination free of engagement with the edges of said opening and said flat portion being displaced so as to be aligned with said complementary opening and substantially coplanar therewith and being secured to said adjacent lamination by a wedging engagement with said opposing edges of the adjacent lamination opening, whereby each lamination is secured to an adjacent lamination through said displaced dovetail lamination segment, and the stator lamination assembly is integrally secured by the interlocking of one lamination with an adjacent lamination.

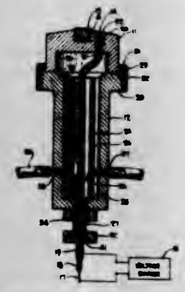
3,202,852

ARC INITIATOR FOR PLASMA GENERATOR

Paul E. Martinson, Cleveland, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Apr. 3, 1961, Ser. No. 100,112

9 Claims. (Cl. 313—32)



1. In a plasmatron, a back electrode, a longitudinally extending electrode holder, a hollow cylindrical baffle within the holder having an end adjacent the back electrode spaced from the electrode so as to provide an opening and having a second end sealed to the electrode holder, the baffle having a reduced diameter sealed end portion and having a coolant outlet opposite the inlet whereby coolant directed into the inlet is caused to pass longitudinally around the open end of the baffle against the electrode and in the opposite longitudinal direction through the outlet, the clearance between the baffle and the inner surface of the electrode holder being substantially greater than the thickness of the baffle, an auxiliary electrode mounted in the back electrode, insulated therefrom, and an auxiliary electrode lead sheath extending from the back electrode through the reduced diameter portion of the baffle whereby a sparking voltage connection may be made at the end of the sheath away from the back electrode where relatively low temperatures are encountered.

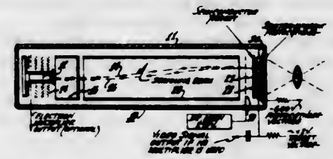
3,202,853

ELECTRON BEAM TUBE WITH LESS THAN THREE HUNDRED MILS SPACING BETWEEN THE TARGET ELECTRODE AND PHOTOCATHODE ELECTRODE

Paul K. Weimer, Paris, France, assignor to Radio Corporation of America, a corporation of Delaware

Filed Aug. 16, 1960, Ser. No. 50,031

3 Claims. (Cl. 313—65)



1. A tube comprising an evacuated envelope, an electron gun in one end of said envelope, a photoemissive photocathode in the other end of said envelope, a target electrode spaced from said photocathode, the spacing between said target electrode and said photocathode being less than thirty mils, and a target mesh screen between said target electrode and said photocathode, said mesh screen having a thickness so as to occupy at least one-twentieth of said spacing.

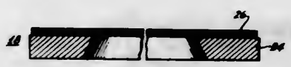
3,202,854

PICKUP TUBE TARGET HAVING AN ADDITIVE THEREIN FOR REDUCED RESISTIVITY

Stefan Albert Ochs, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Feb. 21, 1961, Ser. No. 90,749

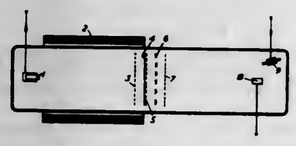
4 Claims. (Cl. 313—65)



1. A pickup tube comprising an evacuated envelope having an electron gun in one end thereof for producing an electron beam directed along a path, a photoemissive cathode in the other end of said envelope, for producing a photoelectron image directed along a path, a target electrode positioned in the path of said electron beam and in the path of said photoelectron image and in said envelope, said target electrode including a first material selected from the group comprising magnesium oxide and aluminum oxide and having a resistivity greater than 10^{11} ohm-centimeters, said target further including a sufficient amount of a second material selected from the group consisting of gold, silver, copper, aluminum, titanium, zinc, tin, lead, gallium, selenium, tellurium,

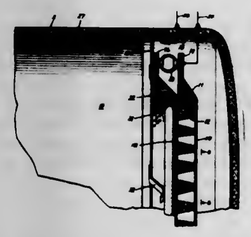
germanium, silicon and carbon so that the resistivity of said target is substantially 10^{11} ohm-cm., and means for scanning said beam at a conventional scanning rate characterized by a relatively high efficiency when said target has a resistivity of approximately 10^{11} ohm-centimeters.

3,202,855
STORAGE TUBE FOR SCAN STANDARDS CONVERSION
Eric Brian Butler Callick and Jervois Campbell Firmin, Chelmsford, England, assignors to English Electric Valve Company Limited, London, England, a British company
Filed June 16, 1961, Ser. No. 117,598
Claims priority, application Great Britain, Aug. 29, 1960, 29,767/60
8 Claims. (Cl. 313—71)



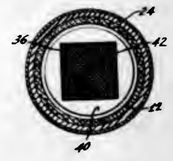
1. A scan conversion cathode ray tube comprising within an evacuated envelope an insulating charge storing target mesh; a "writing" electron gun adapted to scan said target mesh with an electron beam modulated with signals in accordance with a given set of standards to store thereon charges corresponding to said signals; means for projecting a flood beam of electrons towards said target mesh to flood the same over substantially its whole area at substantially uniform electron density; a charge storing target electrode positioned to receive flood beam electrons which have passed through the target mesh; and a reading electron gun adapted to scan said target electrode in accordance with another given set of standards to develop output signals corresponding to the charge image produced on said target electrode by flood beam electrons which having passed through said target mesh.

3,202,856
STORAGE SCREEN ASSEMBLY FOR CHARGE STORAGE TUBES
Dean W. Davis, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation
Filed Nov. 25, 1957, Ser. No. 698,818
12 Claims. (Cl. 313—89)



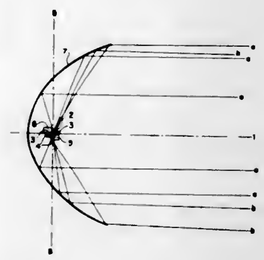
1. In a charge storage tube, a storage screen assembly comprising: a thin integral perforate screen formed of dielectric material; a pair of thin integral metal screens; and means respectively removably clamping said metal screens against the opposite faces of said dielectric screen.

3,202,857
MESH ELECTRODE SUPPORT STRUCTURE
Basil Antoniades, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 30, 1960, Ser. No. 52,938
3 Claims. (Cl. 313—89)



1. A camera tube comprising an envelope having an axis, an electron gun in said envelope and substantially on said axis, for producing an electron beam, a photoconductive target electrode in said envelope and substantially normal to said axis and in the path of said electron beam, a mesh screen electrode extending parallel to said photoconductive target electrode and closing an end of said electron gun, and means for supporting said mesh screen electrode on said end of said electron gun, said means including a pair of electrode support members having an outer periphery substantially congruent to the outer periphery of said end of said electron gun, each of said electrode support members having a different opening therethrough, each of said openings including a plurality of right angle corners, said mesh screen electrode being secured between and directly to each of said support members adjacent to said corners.

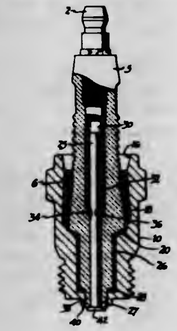
3,202,858
INCANDESCENT HEADLIGHT LAMP
Rolf Mickley, 8/111 Elizabethstrasse, Munich 13, Germany
Filed Aug. 31, 1962, Ser. No. 220,831
Claims priority, application Germany, Sept. 1, 1961, M 51,265
1 Claim. (Cl. 313—111)



In a headlight lamp of the type having a high and a dim beam and a parabolic reflector, the improved illuminating means for the high beam comprising an illuminating element comprising a coiled filament extending longitudinally along the axis of said parabolic reflector and having its windings extending around the focal point with the respective ends thereof in front and behind said focal point, a first shielding means extending below the filament coil from the outer extremity of the latter up to said focal point, a second shielding means extending above and along the remainder of said coiled filament,

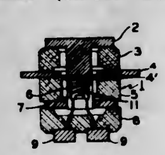
the interior surfaces of said shielding means have mirrored surfaces and the exterior surfaces thereof being frosted.

3,202,859
SPARK PLUG
Benjamin A. Knaggs, Detroit, Mich., assignor to The Mallory Research Company, Detroit, Mich., a corporation of Michigan
Filed Nov. 8, 1961, Ser. No. 151,013
5 Claims. (Cl. 313—130)



1. In a spark plug, a body having an insulator therein; both ends of said body being sealed, the lower firing end of said insulator being considerably smaller than the other parts of the insulator and extending out of said body to project into a combustion chamber, a reduced portion of the body extending into the combustion chamber and extending closely around the small end of the insulator, an electrode in said insulator extending out of the small end of the insulator, the small end of said body acting as an electrical ground whereby the spark crawls over the walls of the insulator from the electrode to the small extension of said plug body causing an electrical flashing, the heat of the firing end radiating from the small end of said plug body and the small end of the insulator back into the insulator portion within the body of said plug, the inside of said body being sealed to prevent overheating of said insulator portion in the plug body, the end of the insulator being small and the extension of the body being small to promote heating of these portions to an elevated temperature during operation of the plug, and an enlarged tip at the firing end of the electrode to reduce the area of the insulator over which the spark must flash.

3,202,860
ELECTRON DISCHARGE DEVICE
Joseph M. Connelly, Owensboro, Ky., assignor to General Electric Company, a corporation of New York
Filed Feb. 13, 1961, Ser. No. 89,021
3 Claims. (Cl. 313—244)



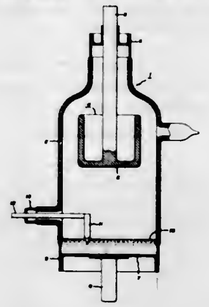
1. The method of evacuating and sealing an electron discharge device having an envelope comprised of two members each having an abutting surface, said members being joined at said abutting surfaces, comprising the steps of providing one of said abutting surfaces with at least one groove therein communicating between the interior and exterior of the envelope, disposing a thermally operative sealing means between said abutting surfaces, and heating said envelope to a predetermined temperature range while being evacuated, wherein said sealing means is rendered effective for joining said members and closing said grooves while permitting evolved gases to be withdrawn from the interior of the device before the predetermined temperature range is reached.

3,202,861
ELECTRODE SUPPORT MEANS
Raymond G. Spangler, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 21, 1961, Ser. No. 90,795
5 Claims. (Cl. 313—268)



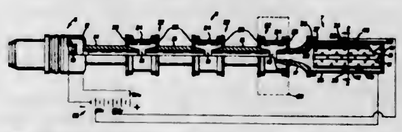
1. A sub-assembly for use in an electron discharge device comprising an annular ceramic member and a pair of metallic members, each of said metallic members being fixed to an opposite surface of said ceramic member one of said metal members comprising an imperforate plate closing the opening in said annular ceramic member, the other of said metallic members having an aperture therethrough in register and substantially coextensive with the opening in said annular ceramic member.

3,202,862
MAKE-ALIVE ELECTRODE FOR AN ARC DISCHARGE DEVICE
James J. Paley, Albany, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 17, 1961, Ser. No. 89,976
5 Claims. (Cl. 313—357)



1. A make-alive electrode comprising a body of resistance material consisting essentially of a refractory metal boride, boron nitride and elemental boron.

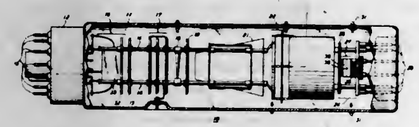
3,202,863
CROSSED FIELD COLLECTOR
Donald A. Dunn, Menlo Park, and Peter A. Sturrock, Los Altos, Calif., assignors to Eitel-McCullough, Inc., San Carlos, Calif., a corporation of California
Filed Sept. 19, 1960, Ser. No. 56,824
19 Claims. (Cl. 315—5.38)



1. An electron tube comprising means for forming an electron beam, means for interacting with said beam, and means for collecting the electrons in the beam, arranged along a common straight axis in the order named,

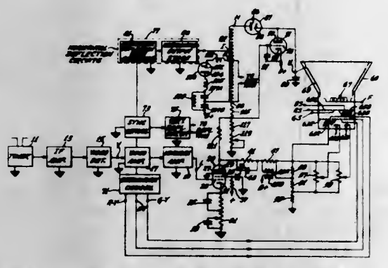
said collecting means comprising a plurality of semicylindrical electrically conductive segments for collecting electrons in the beam, said electrically conductive segments being insulated from each other and spaced on opposite sides of said straight axis, and magnetic pole pieces of opposite polarity positioned on opposite sides of the beam axis at the same region along the beam as said conductive segments and spaced around the beam axis substantially 90 degrees with respect to said conductive segments, and an electrically conductive end member on said straight axis and electrically insulated from said conductive segments.

3,202,864
ELECTRON BEAM DEVICE HAVING DIVERGENT EMISSION ELECTRON GUN
Merton H. Crowell, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 26, 1961, Ser. No. 112,949
9 Claims. (Cl. 315—21)



1. An electron beam device comprising, in combination, a beam target, a divergent emission electron gun for projecting an electron beam toward said target, the electrons of said beam having trajectories which diverge from a virtual source, means between said gun and said target for causing the electron trajectories to converge toward said target, pulse deflection means adjacent said target on the side thereof facing said gun for deflecting said beam away from said target and onto said pulse deflection means in response to signals applied to said pulse deflection means, and means for applying said signals to said pulse deflection means.

3,202,865
REGULATED HIGH VOLTAGE SUPPLIES FOR COLOR TELEVISION TUBE
John Stark, Jr., Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 8, 1963, Ser. No. 263,785
5 Claims. (Cl. 315—22)



1. In a television receiver including a cathode ray tube having a final accelerating electrode and a beam intensity control electrode, said receiver also including a source of video signals coupled to said beam intensity control electrode,

a regulated high voltage supply for delivering an operating voltage to said final accelerating electrode, said supply comprising the combination of;

a high voltage rectifier having an output electrode directly connected to said final accelerating electrode;

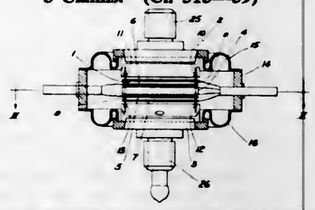
a regulator tube having a space current path connected between said rectifier output electrode and a point of reference potential, said regulator tube also having a control electrode;

a control voltage source responsive to changes in the loading on said high voltage rectifier presented by said cathode ray tube;

means for varying the potential on said control electrode of said regulator tube in accordance with the output of said loading-responsive control voltage source;

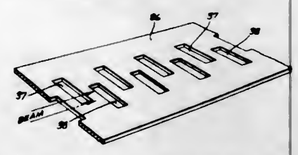
and means for additionally rendering the potential of said control electrode of said regulator tube responsive to the output of said video signal source.

3,202,866
TWIN-TETRODE ELECTRON DISCHARGE DEVICE HAVING TWO-WIRE LECHER LINE INPUT AND U-SHAPED METAL STRIP OUTPUT MEANS
Eduard G. Dorgelo, Huntington, and John Finn, Woodhaven, N.Y., assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 23, 1960, Ser. No. 77,998
8 Claims. (Cl. 315—39)



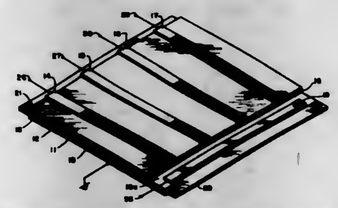
8. A circuit arrangement comprising an electric discharge tube including an envelope constituted by a pair of conductive members separated by an annular insulating member, a cathode, a pair of control electrodes, insulating members within said envelope secured in said conductive members for supporting said electrodes in spaced relationship within said envelope on opposite sides of said cathode, lead-in conductors extending radially in opposite directions through said insulating member and connected to said cathode and control electrodes respectively, an input system comprising a two wire Lecher system connected between said lead-in conductors, a pair of anodes on opposite sides of said cathode each constituted by a portion on one of said conductive members, and an output system comprising a U-shaped conductive strip connected between said anodes, said input and output systems having intersecting planes of symmetry which form an angle therebetween of less than 90°.

3,202,867
HIGH FREQUENCY ENERGY APPARATUS WITH INTERLEAVED LADDER LINE SLOTS
Charles K. Birdsall, Lafayette, Calif., and Richard W. Grow, Salt Lake City, Utah, assignors to General Electric Company, a corporation of New York
Filed May 15, 1961, Ser. No. 110,212
7 Claims. (Cl. 315—39.3)



1. A high frequency energy interchange device including an evacuated envelope, a slow wave transmission line positioned within said envelope, an electron stream producing means positioned at one end of said evacuated envelope for producing a stream of electrons in the axial direction within said evacuated envelope and in close proximity to said slow wave transmission line, input and output fast wave transmission lines connected to said slow wave transmission line to introduce radio frequency energy thereon and abstract radio frequency energy therefrom, respectively, said slow wave transmission line including at least one substantially planar conductive member, said conductive member comprising conductive side pieces extending down its length and conductive rungs joining said side pieces at recurring intervals, the configuration of said rungs and side pieces being defined by a first and second set of slots which are intercalated down the length of said conductive member, said first set of slots being all alike and having their centers in a longitudinal line down said conductive member, and said second set of slots being all alike with their centers in a longitudinal line down said conductive member which line is offset from the center line of said first set of slots by an amount which allows the slots of each set to be interleaved.

3,202,868
ELECTROLUMINESCENT-PIEZOELECTRIC BAR GRAPH DISPLAY SYSTEM
Hans G. Blank, Bronx, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Oct. 24, 1962, Ser. No. 232,726
5 Claims. (Cl. 315—55)



1. A device for displaying a plurality of input signals as illuminated bars comprising

(a) a sheet of piezoelectric material having first and second surfaces and at least one edge,

(b) an electroluminescent layer having first and second surfaces, the second surface of said electroluminescent layer being affixed to the first surface of said sheet,

(c) an elongated driving electrode secured to the first surface of said sheet between said electroluminescent layer and the edge of said sheet,

(d) common electrode means secured to the second surface of said sheet, and

(e) a plurality of spaced transparent input electrodes secured to the first surface of said electroluminescent layer, said input electrodes extending in a direction normal to said driving electrode.

3,202,869
ELECTRICAL APPARATUS WITH INSULATED HEAT CONDUCTING MEMBERS
Charles W. Matson, St. Paul, and Le Roy A. Prohofsky, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 243,532
13 Claims. (Cl. 317—100)

1. Electrical apparatus comprising:

A. A plurality of layers of insulating substrates each substrate having,

(a) a pattern of conductive strips thereon,

(b) a plurality of apertures therethrough arranged in accordance with a predetermined pattern,

(c) a conductive coating on the wall of predetermined ones of the apertures,

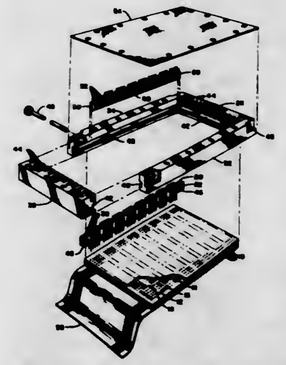
(d) the conductive strips terminating at predetermined ones of said apertures and electrically connected to the conductive coating on the walls of said ones of said apertures;

B. A plurality of electrically insulating, heat conducting members;

C. A plurality of conductive pins affixed to said electrically insulating heat conducting members and extending from at least one edge thereof such that said pins are

(a) spaced apart from one another in accordance with said predetermined pattern of apertures,

(b) adapted to engage the conducting coating on



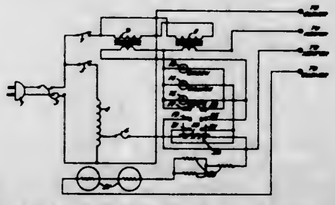
the walls of the apertures when inserted into said apertures;

D. A plurality of encapsulated electrical circuits having,

(a) electrically conducting, heat conducting leads extending from one edge thereof, said leads being, spaced apart from one another in accordance with said predetermined pattern of apertures;

E. And means for connecting said leads to said pins to form an electrically interconnected package of circuits wherein thermal energy is dissipated from said encapsulated electrical circuits.

3,202,870
AUTOMATIC GLOWER SUPPLY
Hugh R. Carlon, Edgewood, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 9, 1962, Ser. No. 172,358
4 Claims. (Cl. 315—116)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a device for starting and maintaining a glower at its operating temperature, the combination comprising:

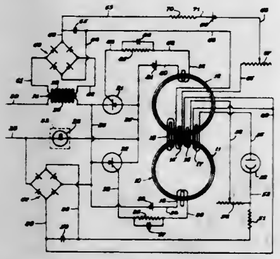
(a) a glower,

(b) a source of electrical energy connected to said glower,

(c) an electric heater located in thermal proximity to and electrically parallel to said glower,

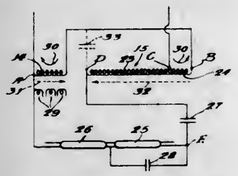
(d) a voltage sensitive relay in parallel to said glower controlling a switch therein serially connected to said heater whereby said heater is turned on when said glower is cold and said heater is turned off when said glower is at its operating temperature.

3,202,871
SOLID STATE PROPORTIONAL POWER MODULATOR
Balakrishna R. Shelar, Oak Park, Ill. (2906 Birch St., Franklin Park, Ill.)
Filed July 22, 1960, Ser. No. 44,615
16 Claims. (Cl. 315—158)



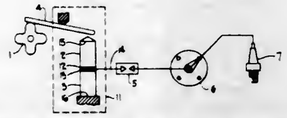
1. Means for controlling the current flow from a source of alternating current through a load, said means comprising: a first controlled rectifier having an anode, a cathode and a gate electrode, said cathode being connected with one side of said source and said anode being connected to said load; a magnetic amplifier including a saturable magnetic core, a gate winding on said core connected between said gate electrode and anode, a control winding on said core, and a tertiary winding on said core having a closed, relatively low resistance path to provide linear relation between control current and load voltage; a second gate winding on said core; a second controlled rectifier having an anode, cathode and a gate electrode; means connecting the second gate winding between the anode and gate electrode of said second rectifier; the cathode of the first rectifier being connected to the anode of the second rectifier and vice versa; and means to apply direct current to one of said control windings.

3,202,872
HIGH REACTANCE TRANSFORMER
Nicholas Ouletta, Melrose Park, Ill., assignor to Jefferson Electric Company, Bellwood, Ill., a corporation of Delaware
Filed Aug. 21, 1961, Ser. No. 132,777
8 Claims. (Cl. 315—177)



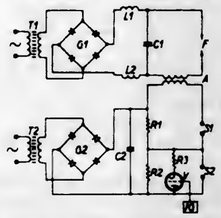
8. A ballast for energizing a fluorescent lamp load including a high reactance transformer and a series connected operating condenser, said high reactance transformer comprising an elongate type core structure having a winding leg and oppositely disposed yokes, primary and secondary coils disposed on said winding leg in side by side relationship, a bridged gap formed in said winding leg at a point wherein it is completely surrounded by said secondary coil, said secondary coil being tapped to provide an auxiliary turns portion which is located at the remote end of said secondary coil, said auxiliary turns portion being additively connected to said primary coil to provide a primary winding, lead means connecting said secondary coil to said primary winding in auto-transformer relationship to provide a secondary winding, a fluorescent lamp load means including said series connected operating condenser for connecting said secondary winding to a fluorescent lamp load to provide a secondary circuit, and a harmonic condenser connected across said secondary coil.

3,202,873
IGNITION TIMING CONTROL FOR PIEZOELECTRIC ENGINE IGNITION SYSTEMS
Daniel W. Feldman, Shaker Heights, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 9, 1962, Ser. No. 178,670
1 Claim. (Cl. 315—209)



An ignition system for an internal combustion engine having cylinders and pistons movable therein designed for combustion at a predetermined position of the piston in the cylinder; said system comprising a spark plug with electrodes; a ceramic piezoelectric voltage generating material; a rotatable cam and compression means actuated thereby for subjecting the ceramic material to periodic compression stress and producing an output voltage pulse; a distributor means comprising a rotatable electrode mechanically connected to said cam for synchronous rotation with said compression means and a plurality of stationary electrodes peripherally spaced around the axis of rotation of said rotatable electrode; means connecting said distributor means, said voltage generator, and said spark plug into an electrical series circuit; and a timing means including a calibrated air spark gap means connected in said series circuit between said voltage generator and said distributor means; said rotatable electrode being operable into circuit connecting cooperation with one of said stationary electrodes during a period of travel from a first to a second position; said compression means compressing said piezoelectric voltage generating material producing a voltage pulse during the period of travel of said rotatable electrode from said first position to said second position and said spark gap means being responsive to said voltage pulse for closing said series circuit during said period of travel of said rotatable electrode.

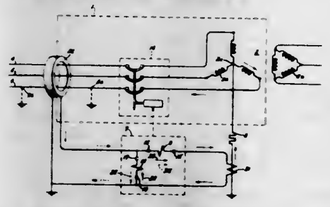
3,202,874
SPECTROSCOPIC LOW VOLTAGE SPARK SOURCE AND INTERRUPTED ARC SOURCE
Arpád Bardócz, 4 Orlay Utca, Budapest XI, Hungary
Filed June 28, 1961, Ser. No. 146,025
8 Claims. (Cl. 315—232)



1. A spectroscopic low voltage spark and arc source comprising, in combination, a source of A.C. potential;

a saturated core transformer having a primary winding connected to said source and a secondary winding and effective to produce in said secondary relatively sharp voltage pulses in one-to-one correspondence with half cycle voltage surges of said source and respectively of short duration in comparison with the duration of a half cycle of said source; rectifying means connected to said secondary; a charging circuit connected to the output of said rectifying means and including a low voltage energy storage means; a power circuit connected across said low voltage storage means and including an analytical spark gap in series therein; said rectifying means charging said low voltage storage means to peak voltage during each pulse and interrupting the charging current at the end of each pulse while maintaining the storage means charged to peak voltage, said peak voltage being insufficient to breakdown said analytical spark gap; a high A.C. potential ignitor circuit operatively coupled with said power circuit and operable, in synchronized relation with such pulse production, to ionize said analytical spark gap for discharge of said low voltage storage means across said analytical spark gap as the voltage of each pulse decays to substantially zero; each charge-discharge cycle of said low voltage storage means being effected during a period not exceeding the duration of a half cycle of said source; each of said charging and power circuits being inactive when the other is active.

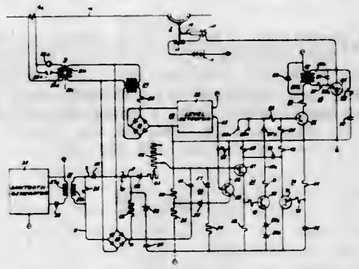
3,202,875
PROTECTIVE RELAY SYSTEM
Amos W. Bateman, Bryn Mawr, Pa., assignor to General Electric Company, a corporation of New York
Filed June 23, 1960, Ser. No. 38,257
6 Claims. (Cl. 317—18)



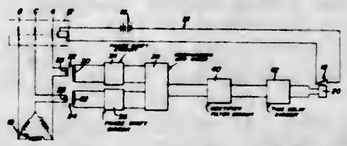
1. In a protective system for a grounded neutral polyphase system having a plurality of phase conductors through which currents enter and leave the system, a first current transformer connected in the neutral to ground connection of said system, said first current transformer having a secondary winding, a product type directional relay having first and second cooperating coils connected in series relationship with each other across the secondary winding of said first current transformer for operation of said relay in a predetermined direction in response to an internal ground fault, and a window type current transformer having a lower turns ratio than said first transformer surrounding all said phase conductors, said window type current transformer having a secondary winding connected across one of said coils to effect energization of said coils in response to an external ground fault in directions to prevent operation of said relay in said predetermined direction.

3,202,876
ELECTRIC SUPERVISING MEANS
Charles A. Mathews, Springfield, and Eugene M. Smith, West Chester, Pa., assignors to General Electric Company, a corporation of New York
Filed Aug. 1, 1961, Ser. No. 128,421
11 Claims. (Cl. 317—36)

1. Means for initiating a predetermined control function in delayed response to the occurrence of an abnormal condition in an electric current circuit, the amount of delay being inversely related to the severity of the abnormal condition, comprising: condition responsive means adapted to be coupled to the circuit for deriving therefrom a D.-C. signal having a magnitude which is dependent upon the value of a characteristic electric quantity of the circuit; a pulsating signal source for supplying a succession of triangular-waveform signal pulses; adding means connected to said condition responsive means and to said pulsating signal source for providing a resultant signal corresponding to the sum of the D.-C. and pulsating signals; means associated with said adding means for introducing, in subtractive relationship with the resultant signal, a unipolarity reference signal level equivalent to the peak magnitude of the pulsating signal; electric energy storing means, including a reactance element, connected in said adding means for energization in accordance with the difference between the resultant signal magnitude and the reference signal level whenever the former exceeds the latter; supervising means associated with said reactance element for normally preventing the accumulation of energy therein, the supervising means including a first resistor, a normally conducting diode and a second resistor serially interconnected in the named order between a pair of D.-C. supply voltage terminals, means connecting said reactance element in parallel circuit relation with the diode, the diode being poled in a blocking disposition relative to the energizing circuit of the reactance element, and normally inactive shunt circuit means connected across the combination of one of said resistors and the diode in series therewith to provide, when active, a relatively low impedance path which renders the diode non-conductive and hence enables the reactance element to accumulate energy; starting means coupled to the electric current circuit and connected to said supervising means for changing said shunt circuit means from its normally inactive state to an active state in response to the occurrence of an abnormal circuit condition; and level detecting means, connected to said reactance elements, adapted to initiate the predetermined control function in response to the accumulation in said element of a predetermined amount of energy.



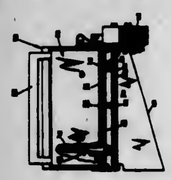
3,202,877
PROTECTIVE RELAY FOR POLYPHASE ELECTRICAL APPARATUS
Roy E. Perrault, 905 Westwood Road, Natchez, Miss.
Filed Jan. 27, 1961, Ser. No. 85,308
7 Claims. (Cl. 317—46)



1. An automatic protective device for a polyphase load having more than two power lines connected thereto com-

prising, transformer means operatively interconnecting different pairs of the power lines for inducing inverted currents representing the same power function associated with the respective power lines, phase shift means operatively connected to the transformer means to shift said induced currents into phase opposition under normal polyphase operation of the load, balance control means operatively connected to the phase shift means for combining said phase shifted induced currents into a resultant current approaching zero under normal operating conditions, rectifier and filter means operatively connected to the balance control means for converting any excessive resultant current into an energizing current, relay means operatively connected to said rectifier and filter means for energization by an energizing current therefrom, control circuit means rendered operative in response to energization of said relay means and circuit breaker means operatively connected to said power lines and controlled by the control circuit means for disconnecting the power lines when the control circuit means is rendered operative.

3,202,878
PLUGBOARD APPARATUS WITH LATERAL MOVEMENT CONNECTING MEANS
Donald L. Ralph, Irvington, and Mel E. Kinney, Hayward, Calif., assignors, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware
Filed Sept. 21, 1961, Ser. No. 139,677
13 Claims. (Cl. 317—99)

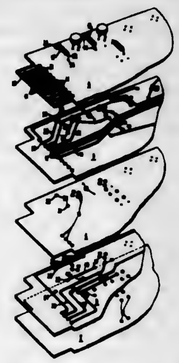


3. A plugboard apparatus comprising two apertured supports of insulating material, a set of spaced ear-equipped terminal contacts supported on one of said apertured supports, a set of spaced nose-equipped terminal contacts supported on the other of said apertured supports, and means for moving one of said apertured supports perpendicularly relative to the other whereby the terminals of said supports lie in the same plane and then moving said one of said apertured supports laterally relative to the other so that nose portions on said nose-equipped terminal contacts will come between and in engagement with the ear portions of said ear-equipped terminal contacts.

ERRATUM
For Class 317—100 see:
Patent No. 3,202,869

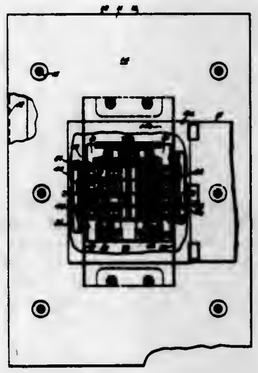
3,202,879
ENCAPSULATED CIRCUIT CARD
John L. Sterling, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original application Dec. 24, 1959, Ser. No. 861,989, now Patent No. 3,107,414, dated Oct. 22, 1963. Divided and this application Sept. 27, 1962, Ser. No. 226,546
3 Claims. (Cl. 317—101)

1. A circuit card comprising a plurality of layers of dielectric material, holes for the leads of components formed in the first of said layers, conductive material forming the leads and lands of a circuit embedded in a second one of said layers and additional lands embedded in the third of said layers in juxtaposition to said lands in said second layer, all of said lands and leads having



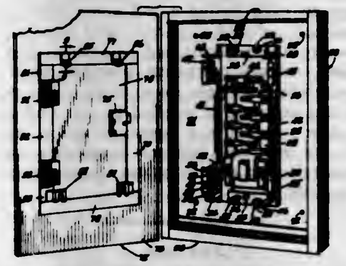
surfaces flush with the front and back surfaces of said layers, holes in said lands axially aligned with the holes in said first layer, and means bonding said layers in a unitary card.

3,202,880
CIRCUIT BREAKER PANELBOARD
Harris I. Stanback, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed July 27, 1960, Ser. No. 45,568
7 Claims. (Cl. 317—119)



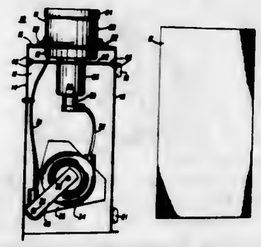
1. An electrical panelboard for circuit breakers comprising an open-front box including a back wall, a mounting panel assembly removably secured to said back wall within said box and having a plurality of mounting spaces for circuit breakers, a circuit breaker of a first casing configuration mounted on said mounting panel assembly in one of said mounting spaces, a circuit breaker of a second casing configuration mounted on said mounting panel assembly in another of said mounting spaces, and a bar member secured to said mounting panel assembly, said circuit breaker of said first casing configuration having a portion disposed between said bar member and said back wall of said box in overlapping relationship with said bar member to effect an interfering relationship with said bar member, all portions of said circuit breaker of said second casing configuration between said bar member and said back wall of said box being disposed laterally of said bar member, and said bar member interfering with removal of said circuit breaker of said first casing configuration from said mounting panel assembly and interfering with the mounting of another circuit breaker of said first casing configuration on said mounting panel assembly in a third of said mounting spaces and accommodating removal of said circuit breaker of said second casing configuration from said mounting panel assembly without interference and accommodating the mounting of another circuit breaker of said second casing configuration on said mounting panel assembly in said third mounting space without intereference.

3,202,881
ELECTRICAL PANELBOARD ENCLOSURE
William C. Carlyle, Toronto, Ontario, Canada, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Aug. 2, 1961, Ser. No. 128,722
2 Claims. (Cl. 317—119)



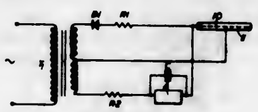
1. An electrical panelboard comprising an open-front box, a pair of threaded studs extending inwardly of said box respectively through upper and lower portions of a back wall portion of said box, a mounting pan assembly loosely mounted in said box on said studs, said mounting pan assembly having means for mounting electrical control devices thereon, a pair of nuts adjustably threaded on said studs to hold said mounting pan assembly thereon, a pair of screws adjustably threaded respectively in upper and lower portions of said mounting pan assembly and bearing against said back wall portion of said box to hold said mounting pan assembly outwardly from said back wall portion and against said nuts, the adjustability of said nuts and screws enabling said mounting pan assembly to be rigidly but adjustably secured in spaced relationship to said back wall portion of said box, a separate interior trim plate mountable on said mounting pan assembly, cooperative means respectively on an upper portion of said mounting pan assembly and on spaced upper portions of said interior trim plate for establishing a fixed axis of pivotal movement therebetween when said interior trim plate is mounted on said mounting pan assembly, an exterior trim and door assembly separate from said interior trim plate but mountable thereon and including an exterior trim panel having a generally rectangular door opening therein and a door hinged to said exterior trim panel adjacent an edge of said door opening, cooperative means respectively on an upper portion of said interior trim plate and on spaced upper portions of said exterior trim panel for establishing a fixed axis of pivotal movement therebetween when said exterior trim and door assembly is mounted on said interior trim plate, and fastening means securing the lower portion of said interior trim plate to said mounting pan assembly, said fastening means also securing the lower portion of said exterior trim panel to said mounting pan assembly and being concealable by said door.

3,202,882
SAFETY DEVICE EMPLOYING MELTABLE TUBE SOCKET
William L. Arrington, Rosslle, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 21, 1963, Ser. No. 260,223
7 Claims. (Cl. 317—120)



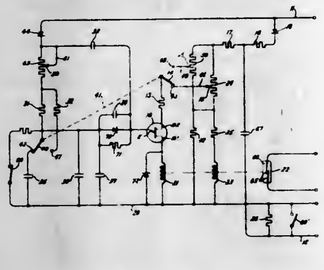
1. In a television receiver, a high voltage cage having an aperture in the top wall thereof; a burnable transformer in said high voltage cage; a tube socket fabricated of a meltable, non-flammable material mounted in said aperture; a platform of non-flammable, non-meltable material; an aperture in said platform for allowing air to circulate through said high voltage cage; said platform mounted in said high voltage cage in a position intermediate said transformer and said tube socket such that said tube socket in melting sags into said high voltage cage and seals said aperture in said platfrom thereby preventing said air from circulating in said high voltage cage, whereby fire resulting from the burning of said transformer is retarded and prevented from escaping from said high voltage cage.

3,202,883
ELECTRICAL CIRCUITS PARTICULARLY FOR USE WITH TEMPERATURE DETECTORS
Ralph W. Wells, Tilehurst, near Reading, and Peter R. Chen, Thorpe Lea, Egham, England, assignors of one-half to Gravimer Manufacturing Company Limited, and one-half to Wilkinson Sword Limited, both of London, England, and both British companies
Filed June 7, 1961, Ser. No. 116,534
10 Claims. (Cl. 317—132)



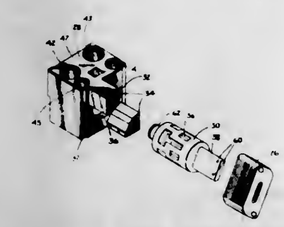
1. In an electrical interrogation circuit for connection to a temperature responsive device adapted to receive a substantial electrical charge only when at elevated temperature, a source of charging potential, cyclically-operable switching means switchable cyclically between a first switching condition and a second switching condition, said switching means in said first switching condition electrically connecting said source of charging potential to said temperature responsive device and current responsive means, said switching means in said second switching condition disconnecting said source of charging potential from said temperature responsive device and electrically connecting said temperature responsive device to said current responsive means.

3,202,884
SEMICONDUCTOR TIME DELAY CIRCUITS
Earl R. Bullock, Normal, Ill., assignor to General Electric Company, a corporation of New York
Filed Sept. 12, 1962, Ser. No. 223,148
6 Claims. (Cl. 317—142)



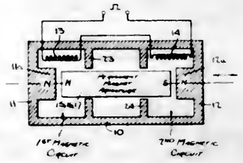
1. In combination, a unijunction transistor having an emitter electrode and a pair of base electrodes, said base electrodes being adapted for connection across a source of electric potential, a timing circuit including in series a substantially linear potentiometer and a capacitor to be connected across the source of potential so that the capacitor is charged through an adjustable portion of the potentiometer from the source, said capacitor being connected across the emitter electrode and one of said base electrodes to apply a potential to said emitter electrode, said capacitor discharging through said emitter electrode and said one base electrode when the capacitor is charged to the peak potential of said emitter electrode at which the transistor fires, a load device responsive to the discharge current of said capacitor, and fixed resistor means in series with said potentiometer and having a value equal to the product of the slope of the potentiometer in ohms per unit of time and the differential of the electrical zero of the potentiometer in time units and the pick up time of said load device.

3,202,885
ROTARY SOLENOID CONTROL DEVICE
Carl B. Sohns, Whitefish Bay, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Original application Oct. 24, 1957, Ser. No. 692,090, now Patent No. 3,023,780, dated Mar. 6, 1962. Divided and this application May 22, 1961, Ser. No. 111,790
6 Claims. (Cl. 317—165)



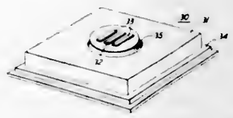
1. A rotary solenoid assembly comprising; a U-shaped laminated core providing a pair of spaced arms, a magnet coil embracing the base of the U-shaped core, substantially flat surfaces on the inner surfaces of the arms of the U-shaped core, an armature having a substantially parallelogram shape and a means for rotatably mounting the armature between the arms of the core, said mounting means being arranged to permit the armature to engage either one of the flat surfaces of the core while being spaced from the other flat surface of the core when the magnet coil is energized by an electric current.

3,202,886
BISTABLE SOLENOID
Nathan R. Kramer, Hartsdale, N.Y., assignor to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 11, 1962, Ser. No. 165,690
8 Claims. (Cl. 317—171)



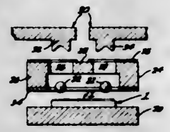
1. A bistable solenoid comprising a polarized armature magnetic means consisting of, first and second fixed electromagnets each having a coil and a pole piece adjacent one pole of said armature, said armature being axially reciprocable between said pole pieces, and means to energize said electromagnets simultaneously in opposition whereby said pole pieces have a like polarization and said armature is repelled by one and attracted by the other to provide a push-pull action, said pole pieces having sufficient residual magnetism such that upon de-energization said armature is maintained in its actuated position.

3,202,887
MESA-TRANSISTOR WITH IMPURITY CONCENTRATION IN THE BASE DECREASING TOWARD COLLECTOR JUNCTION
George C. Dacey, Murray Hill, and Charles A. Lee, New Providence, N.J., and William Shockley, Los Altos, Calif., assignors to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Original application Mar. 23, 1955, Ser. No. 496,202, now Patent No. 3,028,655, dated Apr. 10, 1962. Divided and this application May 15, 1961, Ser. No. 109,934
3 Claims. (Cl. 317—234)



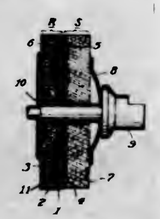
1. A junction transistor comprising a
semiconductive wafer having emitter, base and collector zones, the emitter and base zones being included within a mesa located on the bulk portion of the wafer,
emitter, base and collector electrodes connected to the emitter, base and collector zones, respectively,
the emitter zone having a linear geometry and forming a minor portion of one surface of the mesa and the emitter electrode having a linear geometry and extending along the surface of the emitter zone,
the base electrode having a linear geometry and extending along said surface of the mesa parallel to and substantially coextensive with the emitter electrode, and
the concentration of the predominant impurity in the base zone varying from a relatively high value adjacent the emitter zone to a relatively low value adjacent the collector zone.

3,202,888
MICRO-MINIATURE SEMICONDUCTOR DEVICES
Herbert S. Evander, Santa Ana, and Karl H. Reisenueller, Costa Mesa, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Feb. 9, 1962, Ser. No. 172,338
3 Claims. (Cl. 317—234)



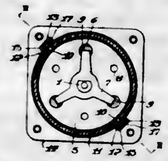
1. A semiconductor device comprising: a semiconductor crystal body having on a first surface thereof small area junction-forming regions and large area contact portions electrically connected respectively to said small area regions and insulated from said semiconductor body said regions and said contact portions being disposed on different areas of said first surface of said body; a container for said semiconductor body having electrically insulated wall portions, an electrically insulating end portion having passageways therethrough, and an electrically conductive end portion hermetically sealed to said wall portions; said semiconductor body being mounted on said electrically conductive end portion with a second surface thereof in electrically conductive relationship therewith; lead means disposed on the exterior of said electrically insulating end portion and having extensions hermetically sealed in said passageways of said electrically insulating end portion electrically conductive connector members disposed between said large area contact portions and said extensions of said lead means, the ends of said extensions having a concave shape whereby said connector members are indexed and positioned in contact therewith.

3,202,889
VARIABLE CAPACITOR
Daijiro Matsui, Ota-ku, Tokyo-to, Japan, assignor to Kabushiki Kaisha Toko Radio Coil Kenkyusho, Ota-ku, Tokyo-to, Japan, a joint-stock company of Japan
Filed Mar. 13, 1962, Ser. No. 179,308
Claims priority, application Japan, Mar. 15, 1961, 36/12,891
3 Claims. (Cl. 317—249)



1. In a variable capacitor of the type consisting of a stator and a rotor, one of which is essentially a flat piece of dielectric material with one surface having an electrode printed thereon and the other surface serving as a sliding surface, and the other of which is an opposite electrode disposed rotatably, with compressive contact pressure, against the said sliding surface, at least one semi-annular groove, narrow with respect to said one surface, in the sliding surface of at least one of said stator and rotor, an electrically non-conductive liquid lubricant placed in said groove, and means for retaining said lubricant in said groove.

3,202,890
VARIABLE CAPACITOR
Daijiro Matsui, Ota-ku, Tokyo-to, Japan, assignor to Kabushiki Kaisha Toko Radio Coil Kenkyusho, Ota-ku, Tokyo-to, Japan, a joint-stock company of Japan
Filed July 13, 1962, Ser. No. 209,585
Claims priority, application Japan, Dec. 20, 1961, 36/46,296
2 Claims. (Cl. 317—249)



2. A variable capacitor comprising two variable capacitor sets in coaxial combination, each set consisting of a rotor electrode and a stator electrode in mutually opposed relation; a common rotor shaft by means of which the two rotor electrodes are rotated simultaneously, at least one of said rotor electrodes being adapted to be fixable to said rotor shaft in an initially adjustable manner in the rotational direction relative thereto; a frame housing the variable capacitor; an intermediate cylinder affixed to said frame and rotatably adjustable with respect thereto; said stator electrodes being affixed to said cylinder in the rotational direction of said rotors; said rotor electrodes being adjustable relative to said cylinder; the double adjustment thus enabling the prevention of tracking errors of both said sets.

3,202,891
VOLTAGE VARIABLE CAPACITOR WITH STRONTIUM TITANATE DIELECTRIC
Daniel R. Frankl, Bayside, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Nov. 30, 1960, Ser. No. 72,790
2 Claims. (Cl. 317—258)



1. A non-linear capacitor comprising first and second electrodes, a germanium wafer, and a layer of strontium titanate having a thickness of 1000 Angstroms interposed between and affixed directly to the surface of said germanium wafer and to the surface of said first electrode, said second electrode being affixed to the other surface of said semiconductor wafer.

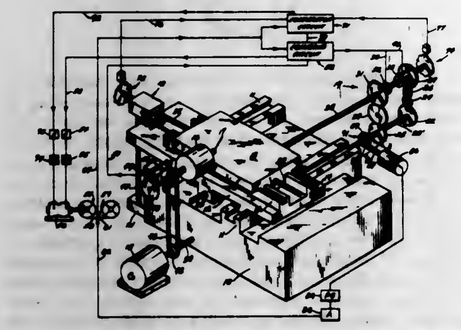
3,202,892
SELF-HEALING CAPACITOR
Paul H. Netherwood, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Feb. 20, 1959, Ser. No. 794,672
5 Claims. (Cl. 317—258)



1. A convolutely wound self-healing capacitor having a non-self-supporting vapor-deposited stratum of metal on a smooth resin film deposited on a porous matrix,

said resin film comprising a cellulose ester containing a hydroxy radical cross-linked with a di-isocyanate, and a dielectric material impregnating said porous matrix, said resin being inert to said dielectric material.

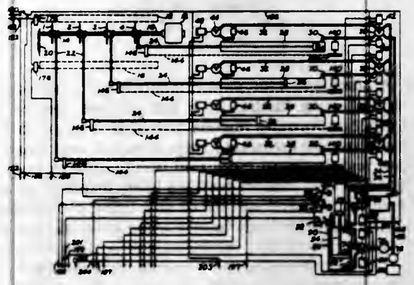
3,202,893
VARIABLE DIFFERENTIAL GEAR DRIVE AUTOMATIC CONTROL APPARATUS FOR MACHINES
Leon J. Arp and John M. Green, Ames, Iowa, assignors to Iowa State University Research Foundation, Inc., Ames, Iowa, an association of Iowa
Filed Apr. 9, 1962, Ser. No. 186,179
4 Claims. (Cl. 318—13)



1. Apparatus for controlling the rate of movement of a movable element, comprising in combination:
(a) a rotatable drive member having an input rate of rotation,
(b) a driven member having an output rate of rotation for moving said movable element,
(c) means for varying the drive imparted by said drive member,
(d) means for transmitting said variable drive to said driven member,
(e) a movable programmed tape,
(f) means for moving said tape,
(g) first means operably connected to said drive member for operating said tape moving means at a rate proportional to said input rate of rotation,
(h) second means operably connected to said driven member for operating said tape moving means at a rate proportional to said output rate of rotation,
(i) control means capable of picking up signals from said tape and selectively rendering either said first means or said second means ineffective whereby only one of said first means and said second means is effective to operate said tape moving means, and
(j) means responsive to signals from said tape and operably connected to said drive varying means to operate said drive varying means in response to said programmed tape.

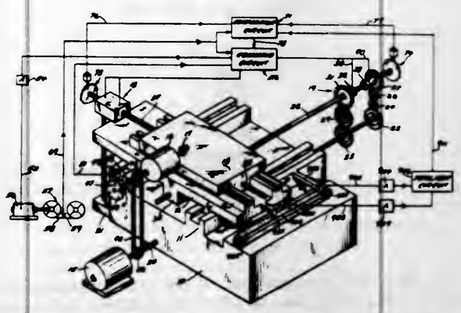
3,202,894
FINE AND COARSE MOTOR CONTROL SYSTEM WITH ANTI-BACKLASH FEATURES
Elmer R. Werth, Sr., 1065 Glen Creek Drive NW., Salem, and George C. Maithouis, Salem, Oreg.; said Maithouis assignor to said Werth, Sr.
Filed Aug. 14, 1961, Ser. No. 131,346
12 Claims. (Cl. 318—28)

1. A set works for moving a member relative to a reference, comprising electrically actuated power means for the movable member, electrical power actuator means having an electric circuit, selector resistance means providing an electric selector signal representing a predetermined distance of the member from the reference, variable detecting resistance means operable by the power means to provide an electric detection signal, control means including electron discharge means having an electric circuit including the selector and detecting resistance means associated with the power actuator means, the control means being operable on the actuator means to activate the power means until, and to stop the same when, the selector and detection signals reach a predetermined relative relationship, error signal producing resistance means in the electric circuit of the electron discharge means and operatively associated with one of the selector and detecting resistance means and providing an



electric error signal which combines with the associated electric selector signal to move the member initially to an error position different from the desired set position, means operable by the control means upon movement of the member to the error position to remove the error signal, whereby to reactivate the power means and move the member until the predetermined relative relationship of the selector and detection signals again is reached, and means for reversing the selector resistance means in the circuit for changing the reference to the other side of the movable member.

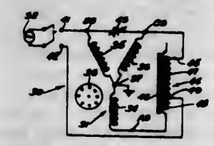
3,202,895
AUTOMATIC TAPED PROGRAM CONTROL APPARATUS FOR A MACHINE TOOL
Leon J. Arp and John M. Green, Ames, Iowa, assignors to Iowa State University Research Foundation, Inc., Ames, Iowa, an association of Iowa
Filed Jan. 31, 1962, Ser. No. 170,197
4 Claims. (Cl. 318—162)



1. Apparatus for the control of the movement of a movable element of a machine tool, relative to a stationary element and having a drive shaft, comprising in combination:
(a) a driven shaft for said movable element,
(b) means operable by signals for transmitting drive from said drive shaft to said driven shaft,
(c) program means for supplying a reference basis for the controlled movement of the movable element,

said program means including a series of readable signals,
(d) means for picking up and transmitting said signals,
(e) control circuit means for receiving said signals and transforming them into operating signals for said transmitting means and into reference pulses of a predetermined number,
(f) means for supplying a reference basis for the movement of the movable element, said means including readable information having a known relationship to said reference pulses,
(g) a first detector mounted on said movable element for coaction with said information means and adapted to produce a plurality of pulses in response to movement of said movable element;
a second detector mounted on said stationary element element for coaction with said information means and adapted to produce a plurality of pulses in response to movement of said information means,
(h) means for totalizing said movement pulses,
(i) means for camparing the number of said movement pulses to the number of reference pulses for producing an output signal when said numbers are in coincidence, and
(j) means responsive to the output signal for modifying said operating signals.

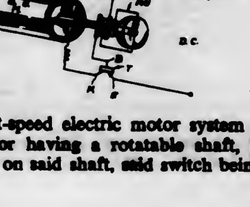
3,202,896
THREE PHASE TO SINGLE PHASE CONVERTER SYSTEMS
Alexander J. Lewus, 1617 S. 47th Court, Cicero, Ill.
Filed June 22, 1964, Ser. No. 379,763
14 Claims. (Cl. 318—218)



1. A converter system for energizing a three-phase load having three input terminals A, B and C from a single-phase power supply having two output terminals, said converter system comprising:
means connecting a first one of said power supply output terminals to load terminal B;
a dephasing capacitor connected across load terminals B and C;
an iron core autotransformer having first and second winding sections connected together at a central terminal, the end terminals of said first and second winding sections being connected, respectively, to load terminals C and A, said first winding section having a substantially higher inductive reactance than said second winding section;
and means connecting said central terminal of said autotransformer to the other power supply output terminal.

3,202,897
CONTROL SYSTEM FOR A CIRCUIT INTERRUPTER OPERATOR
Alexander J. Gallen, Sharon Hill, Del., and Eugene T. McCurry, Newtown Square, and Harold N. Schneider, Springfield, Pa., assignors to General Electric Company, a corporation of New York
Filed Aug. 24, 1962, Ser. No. 219,265
7 Claims. (Cl. 318—267)

7. In combination:
(a) An operator for a circuit interrupter comprising:
(1) a motor having an armature,
(2) a drive connected to said armature, and
(3) a stored energy device connected to said drive to be charged thereby and operable upon discharge to effect opening or closing of said circuit interrupter;
(b) first and second power terminals adapted to be connected to a source of power;
(c) first and second motor control circuits connected to said power terminals for passing current through said armature in first and second directions respectively;
(d) means in each of said circuits responsive to rotation of said drive to open one of said circuits when the charging of said stored energy device is completed;
(e) means having a first plurality of pairs of contacts and a second plurality of pairs of contacts responsive to the interrupter closing-discharge of said stored energy device to open said first plurality of pairs of contacts and close said second plurality of pairs of contacts and responsive to the interrupter-opening discharge of said stored energy device to close said



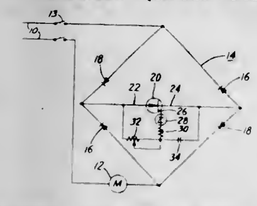
first plurality of pairs of contacts and open said second plurality of pairs of contacts, at least two of said first plurality of pairs of contacts being serially connected in said first circuit, and at least one of said second plurality of pairs of contacts being serially connected in said second circuit and
(f) first and second relay means associated with said first and second motor control circuits respectively, each of said relay means being responsive to the closing of a corresponding one of said control switches to establish a holding circuit for the corresponding one of said motor control circuits to provide for maintaining said drive continuously in rotation from the beginning of the charging of said stored energy device until after the beginning of the discharge thereof, each of said relay means comprising an operating coil in circuit with the contacts of the corresponding control switch and contacts in parallel with the contacts of said corresponding control switch.

3,202,898
CIRCUIT FOR REGULATING THE SPEED OF D.C. MOTORS
Ernst Genning, Heidoweg 93A, Fassberg uber Unterluss, Germany, and Albert Hübler, Im Moore 23, Hannover, Germany
Filed Oct. 15, 1957, Ser. No. 690,330
Claims priority, application Germany, Oct. 17, 1956, P 17,208
11 Claims. (Cl. 318—325)

1. A constant-speed electric motor system comprising an electric motor having a rotatable shaft, a governor switch mounted on said shaft, said switch being normally

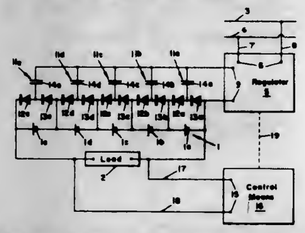
closed and being caused to open when the motor speed exceeds a given value, a voltage source for energizing said motor, a control circuit for connecting said motor to said source, said control circuit including a transistor having base, collector and emitter electrodes, said source being connected in series with said emitter and collector electrodes to said motor, and means including said closed governor switch to apply a bias to said transistor rendering same conductive to provide a current path for said motor, said transistor being rendered non-conductive when said switch is opened.

3,202,899
MOTOR CONTROL SYSTEM
Charles C. Gamhill, Tipp City, and Alfred B. Roby, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 21, 1961, Ser. No. 161,204
2 Claims. (Cl. 318—341)



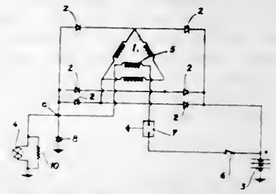
1. In a motor speed control circuit, a source of alternating current power, a motor, means connecting said motor to said power source including a silicon controlled rectifier having a gate, a first pair of diodes connected in series with said rectifier and arranged to conduct current through said rectifier in one direction during one portion of each cycle, a second pair of diodes connected in series with said rectifier and arranged to conduct current through said rectifier in said one direction during another portion of said cycle, said silicon controlled rectifier having an input terminal and an output terminal, a shunt circuit containing a capacitor and a resistance connecting the input terminal and the output terminal of said rectifier, and a four-layer diode connecting the gate of said rectifier with a point on said shunt circuit between said capacitor and said resistance whereby said resistance capacitor shunt circuit is supplied with rectified current to build up a charge upon said capacitor in accordance with the time constant of said shunt sufficient periodically to break down said four-layer diode and allow said capacitor to discharge periodically through said four-layer diode to said gate to periodically fire said silicon controlled rectifier.

3,202,900
STORAGE BATTERY OPERATING CIRCUIT
James F. McGivern, Jr., Philadelphia, Pa., assignor to The Electric Storage Battery Company, a corporation of New Jersey
Filed June 7, 1962, Ser. No. 200,803
8 Claims. (Cl. 320—39)



8. A storage battery operating circuit comprising a plurality of batteries connected in series, a pair of circuit input terminals, and a plurality of voltage doubler networks one for each of said plurality of batteries, each of said voltage doubler networks having an input and an output, the input of each of said voltage doubler circuits being connected in parallel across said circuit input terminals, the output of each of said voltage doubler circuits being connected across a respective one of said plurality of batteries.

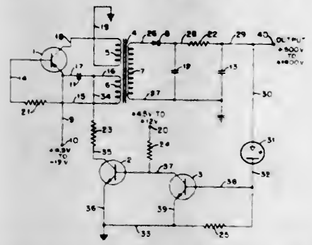
3,202,901
PILOT LAMP MOUNTING IN THE CIRCUIT FOR CHARGING A BATTERY FROM AN ALTERNATOR
Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Sept. 24, 1962, Ser. No. 225,516
Claims priority, application France, Oct. 5, 1961, 875,152, Patent 1,309,402
1 Claim. (Cl. 320—48)



Electrical circuit for charging a battery in an automotive vehicle, comprising an alternator with an excitation circuit, said alternator having a first set of output-terminals a voltage regulator for said alternator having a first terminal and a second terminal, a Graetz bridge consisting of diodes with a second set of output-terminals, said first set of output-terminals connected to said Graetz bridge, one of said second output-terminals of said Graetz bridge being connected to the positive pole of said battery, a pilot lamp, one pole of said pilot lamp being grounded and the other pole of said pilot lamp being connected to the other of said second set of output-terminals of said bridge, a diode shunting said pilot lamp being connected to said other terminal of said second set of output-terminals of said bridge and being gorunded, the said excitation circuit having output-terminals, one of said terminals being connected to the other of said second set of output-terminals of the bridge, and the other of said excitation circuit output-terminals being connected to said first terminal of said regulator, a conductor connecting said second terminal of said regulator to the positive pole of said battery, and a switch in said conductor.

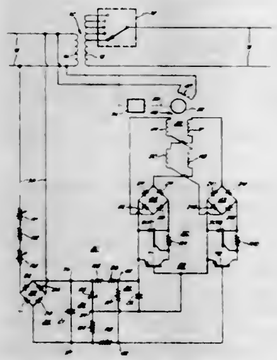
3,202,902
TRANSISTORIZED REGULATED HIGH VOLTAGE SUPPLY
Floyd M. Glass, Norris, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 10, 1962, Ser. No. 165,462
3 Claims. (Cl. 321—2)

1. In a high voltage supply circuit provided with a blocking oscillator, a battery connected to the input of said oscillator, a step-up transformer having a pair of primary windings and a secondary winding, said secondary winding being coupled to said primary windings, said primary windings being connected to the output of said oscillator, and a rectifier and filter circuit connected to said secondary winding, said filter circuit providing a D.C. high voltage output therefrom, the improvement comprising a corona reference tube connected across said high voltage output, transistor means connected to the input of said oscillator for providing forward conduction biasing for said oscillator, said transistor means including a first transistor and a second transistor, said reference tube being connected to the base of said first transistor, means for connecting the emitters of said first and second transistors to ground, means for connecting the collector of said first transistor to the base of said second transistor, a load resistor, means for connecting said battery through said load resistor to the collector of said first transistor and to the base of said second transistor, and means for connecting the collector of said second transistor to said input to said oscillator to provide said forward conduction biasing to said oscillator input, whereby said reference tube controls the output of said first transistor as a



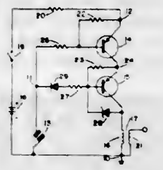
function of the output load connected to said high voltage output, said first transistor in turn controlling the magnitude of said conduction biasing provided by said second transistor, thereby continuously controlling the frequency of oscillation of said oscillator from a low value at no-load conditions to a maximum value at full-load conditions, thus minimizing battery drain of said battery during said no-load conditions, said transistor means in cooperation with said reference tube automatically adjusting the duty cycle oscillation of said oscillator as a function of said output load to thereby maintain said output voltage from said filter circuit at a substantially constant value.

3,202,903
TAP CHANGING VOLTAGE REGULATOR
Richard E. Riebe, Hales Corners, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Nov. 1, 1961, Ser. No. 149,422
4 Claims. (Cl. 323—43.5)



1. A device for controlling the voltage in an electrical system, having a transformer and a tap changer, said device including sensing means connected to said system for sensing the voltage therein, first circuit means connected to said sensing means for passing an electric current when said system voltage falls below a predetermined range of values, second circuit means connected to said sensing means for passing an electric current when said system voltage rises above said range of values, a first silicon controlled rectifier having its gate electrode connected to said first circuit means, a second silicon controlled rectifier having its gate electrode connected to said second circuit means, and reversible motor means having a pair of oppositely oriented windings for actuating said tap changer to restore said quantity to said range of values, the anode and cathode of each of said silicon controlled rectifiers normally open circuiting one of said windings.

3,202,904
ELECTRONIC SWITCHING CIRCUIT
Glen R. Madland, Phoenix, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed July 17, 1961, Ser. No. 124,585
9 Claims. (Cl. 323—58)



6. A multiple transistor switching circuit for use in a spark-ignition system which includes an ignition coil, switching means, and energizing current supply means, said multiple transistor switching circuit including in combination, first and second transistor means, each having emitter, base and collector portions, output circuit means forming a first current path including said emitter and collector portions of said transistor means for connecting the energizing current supply means to the ignition coil, first and second resistors connected respectively between said emitter and base portions of said first and second transistor means, means forming a second current path adapted for connection to the energizing current supply means for forward biasing said first and second transistor means, said second current path having first and second branch portions therein, said first branch portion including said first resistor and a third resistor in series therewith, said second branch portion including said emitter and collector portions of said first transistor means and said second resistor and further including a first Zener diode and a fourth resistor in series therewith, a second Zener diode connected across said collector and base portions of said second transistor means, and means coupling the switching means to said second current path causing intermittent energization of said second current path to thereby produce intermittent forward biasing of said first and second transistor means and intermittent energization of said first current path, said first and second Zener diodes being poled to prevent conduction from said second current path to said first current path.

3,202,905
REMOTELY CONTROLLED ATTENUATOR DEVICES
Aidan D. Gomez, San Diego, Calif., assignor to Straza Industries, El Cajon, Calif., a corporation of California
Filed Jan. 2, 1962, Ser. No. 163,776
4 Claims. (Cl. 323—74)

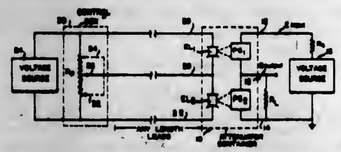
1. A remotely controlled variable attenuator for use in a circuit between a voltage source and a load circuit to control the voltage applied to the load circuit, said attenuator comprising:

(a) a hermetically sealed housing having two terminal groups each consisting of three terminals;

(b) a pair of photoconductive elements in said housing connected in series circuit arrangement between two of one group of three terminals with the third termi-

sal of said one group connected to a common point between said photoconductive elements;

(c) a pair of electroluminescent light sources arranged and positioned so that each illuminates only one photoconductive element;



(d) means connecting one terminal of said other group to both of said light sources and connecting the other two terminals of said other group to respective ones of said light sources whereby said light sources may be energized by a voltage applied between said one terminal and said other two terminals of said other group;

(e) a source of energizing voltage for said light sources including a potentiometer having a movable tap, positioned at a remote distance from said housing; and

(f) conductor means connected from the movable tap of the potentiometer to the light sources for selectively varying the energizing voltage applied to said light sources by movement of the potentiometer tap so that the light intensity of both light sources is maximum at the same time to thus provide varying resistance between said one group terminals.

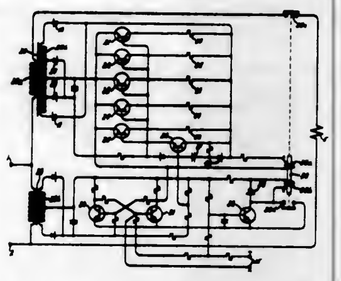
3,202,906
ELECTRIC CIRCUIT HAVING DISTRIBUTED CONSTANTS
Hisao Maeda, 13 Shiba-koen, Minato-ku, Tokyo-to, Japan
Filed May 24, 1960, Ser. No. 31,315
Claims priority, application Japan, May 25, 1959, 34/16,746
2 Claims. (Cl. 323—76)



1. An electric circuit having distributed constants which comprises, in combination, a hollow tube of insulating material; an uninsulated coil wound on said tube in longitudinal direction substantially across the entire length of said tube; evenly spaced capacitive ground electrode strips fixed to the inner surface of said tube, parallel to each other and traversing the entire length of said tube; a plurality of ferrite rings coaxially fitting the outer surface of said coil in parallel to each other and at suitably spaced intervals, said rings having a width to obtain a predetermined inductance for the portion of the coil thus covered, the magnetic flux of said coil thus being focused according to the number of ferrite rings and minimizing the influence of the input side of said coil on its output side; and a ferrite core inserted in the interior of said tube.

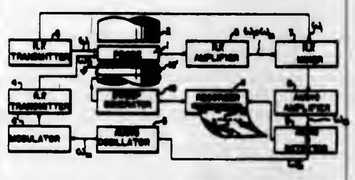
3,202,907
POWER AMPLIFIER
Gerald F. Frank, Bloomington, Ill., assignor to General Electric Company, a corporation of New York
Filed May 28, 1961, Ser. No. 112,868
5 Claims. (Cl. 323—89)

1. A power amplifier comprising, in combination, a pair of input terminals for receiving an alternating voltage, a pair of output terminals for supplying a load, a transformer having a primary winding connected in series relationship between one of said input terminals and one of said output terminals and having a secondary winding with a center tap connection, a first transistor connected to be supplied from said secondary winding having a control circuit and a main current conducting path controlled thereby, first rectifier means for rectifying the output of said secondary winding and supplying a rectified current to said first transistor, second rectifying means supplied from said secondary winding for supplying a



reverse bias current to said first transistor, a second transistor having its main conducting path included in the control circuit of said first transistor, resistance means included in said main conducting path of said first transistor for providing a forward self bias for said first transistor through the main conducting path of said second transistor, and circuit means connecting the main current conducting path of the first transistor between said center tap connection and end terminals of said secondary winding.

3,202,908
QUANTUM RESONANCE METHOD AND APPARATUS
Weston A. Anderson, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Mar. 9, 1962, Ser. No. 178,694
13 Claims. (Cl. 324—.5)



1. A method for selectively obtaining quantum resonance signals from a first group of particles in a sample containing at least said first group of particles and a second group of particles, said first and second groups being mutually spin coupled and capable of undergoing gyromagnetic resonance quantum transitions in a magnetic field, said method comprising the steps of:

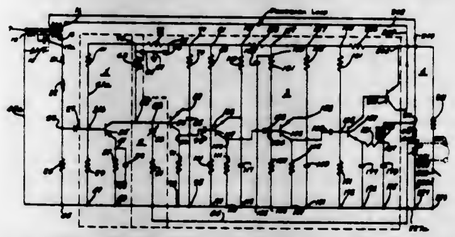
disposing said groups in a magnetic field to define different characteristic transition frequencies for each group;

irradiating each group with an alternating magnetic field of a frequency substantially close to at least one of said characteristic transition frequencies;

cyclically modulating one of said alternating magnetic fields, for providing modulation for the excitation of resonance in one of said groups; and

detecting any resultant modulation thereby effected in the resonance of the other of said groups.

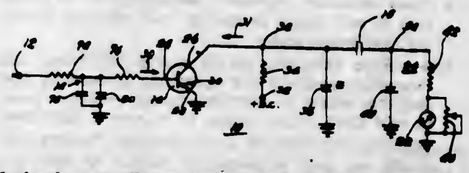
3,202,909
VARIABLE FREQUENCY OSCILLATOR TYPE OF METAL DETECTOR SENSITIVE TO MUTUAL RESISTANCE CHANGES
Chandler Stewart, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 22, 1964, Ser. No. 339,564
1 Claim. (Cl. 324—3)
(Granted under Title 35, U.S. Code (1952), sec. 266)



In a variable frequency oscillator type of metal detector: a search head means having a transmitter coil means and a pair of balanced receiver coil means, said transmitter coil means being spaced from said pair of balanced receiver coil means to provide a volume of magnetic flux lines and to avoid direct coupling between said coils; an input signal circuit including said pair of balanced coil means, feedback coupling means, an output means, and a neutralizing circuit means for minimizing inductive and capacitive reactances extraneously and inherently present in said search head to optimize metal to magnetic material discrimination; means serially connecting said neutralizing circuit, said feedback coupling means, said pair of balanced coil means, and said input signal circuit output means; a single stage amplifier having an input and an output, the input of said single stage amplifier capacitively coupled to said input signal circuit output means; a phase compensating circuit having an input and an output, said phase compensating circuit augmenting phase shifts to maintain a total detector circuit phase shift of substantially three hundred sixty degrees over a wide frequency range in the absence of mutual resistance coupling between said transmitter coil and said balanced coils, the input of said phase compensating circuit connected to the output of said single stage amplifier; a multistage amplifier having an input and an output, the input of said multistage amplifier connected to the output of said phase compensating circuit; feedback circuit means magnetically coupled to said feedback coupling means and said neutralizing circuit in said input signal circuit; and frequency indicating means; said feedback circuit, said transmitter coil means and said frequency indicating means connected in series with the output of the multistage amplifier; power supply means for energizing said transmitter coil means; said metal detector being responsive to mutual resistance component changes in said volume of magnetic flux lines in the presence of a metallic object and said metal detector being insensitive to mutual inductance component changes in said volume of magnetic flux lines in the presence of a magnetic material.

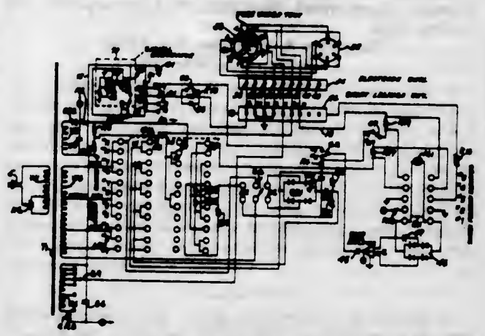
3,202,910
AUTOMOTIVE TACHOMETER USING A SWITCHED TRANSISTOR
David F. Fathauer, Macon, Ill., assignor to Radcon Engineering Corporation, Macon, Ill., a corporation of Illinois
Filed May 13, 1958, Ser. No. 734,868
6 Claims. (Cl. 324—70)

1. An engine tachometer for providing an indication of the speed of an internal combustion engine having an ignition system which generates periodic electrical impulses, said tachometer comprising meter means indicating the magnitude of a unidirectional electric current flowing therethrough, storage capacitance means and resistance means connected in series between said meter means and a source of known potential, a semiconductive device having an athermal constant voltage breakdown characteristic connected to the common terminal of said storage capacitor and said resistance means and connected to the other terminal of said meter means, the polarity of said semiconductive device with respect to said source of known potential being such that the semiconductive



device is normally conducting in the breakdown region, a transistor having at least base, emitter, and collector connections, and an input low pass filter connected between said emitter connection and said base connection and having an input conductor adapted for connection to said ignition system, substantially unidirectionally conductive means in said input means whereby the voltage appearing between said emitter and base connections is of one polarity only, said transistor having said collector connection and one of the other of said connections operatively connected to the two terminals of said semiconductive device.

3,202,911
PORTABLE APPARATUS FOR TESTING VACUUM TUBES
O. James Merelock, Box 248, Millington, N.J.
Filed Sept. 16, 1959, Ser. No. 840,414
9 Claims. (Cl. 324—23)



1. Apparatus for measuring the mutual conductance of a thermionic tube having at least an anode, a control grid and a cathode, said apparatus comprising:

a measurement resistor which is connected directly to the anode of said tube during mutual conductance measurement, the resistance of said measurement resistor having a low value with respect to the anode-cathode impedance of said tube;

first circuit means for applying a standard predetermined direct current anode potential to said anode through said measurement resistor, said anode potential being positive with respect to ground;

means for grounding said cathode;

second circuit means for supplying a standard predetermined direct current biasing potential to said grid;

third circuit means including a signal source having a predetermined signal frequency for applying a signal potential to said grid along with said biasing potential;

manually operable adjustment means included in said third circuit means for varying the magnitude of said signal potential;

a plurality of resistors included in said third circuit means for simultaneously obtaining a plurality of proportionally related potentials from said signal source for the same adjustment of said adjustment means;

a tuned indicator responsive predominantly to potentials of said signal frequency, said indicator including a calibrated scale;

two-position switching means having calibrating and measuring positions for selectively connecting said indicator either to a predetermined reference point in said third circuit means to receive a calibrating potential therefrom or to the junction between said anode and said measurement resistor to receive a current of signal frequency amplified by said tube; and

range selecting switching means connected to said resistors for supplying a selected one of said proportionally related potentials to said grid whereby, when said adjustment means is manipulated to provide a predetermined reference reading on said scale with said two position switching means in its calibrating position, said two position switching means may be operated to its measuring position and the mutual conductance of said tube read from said scale using a constant of proportionality, said constant of proportionality being determined by the positioning of said range selecting switching means.

3,202,912

METHOD OF UTILIZING TUNNEL DIODES TO DETECT CHANGES IN MAGNETIC FIELDS

Alan G. Chynoweth, Summit, and Ralph A. Logan, Morristown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 5, 1960, Ser. No. 27,207
1 Claim. (Cl. 324—43)



A method of measuring magnetic field strengths which consists essentially of electrically biasing in the forward direction a diode in which the predominant current generating mechanism is by internal field emission, subjecting said diode to a varying magnetic field to be measured whereby the current in the diode is altered and measuring the resultant current flow.

3,202,913

HIGH SENSITIVITY HALL EFFECT PROBE

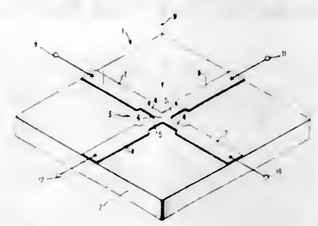
John C. Marinace, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 29, 1961, Ser. No. 113,444
4 Claims. (Cl. 324—45)

4. A high sensitivity Hall effect probe for use in sensing magnetic fields comprising

a monocrystalline substrate of semiconductor material having a relatively high resistivity serving as an insulative support,

a thin monocrystalline conductive layer of semiconductor material having a relatively low resistivity on said substrate,



said thin layer having an epitaxial relationship with said substrate,

said layer having configuration with arm portions lying in the plane of said thin layer whose axes intersect, and

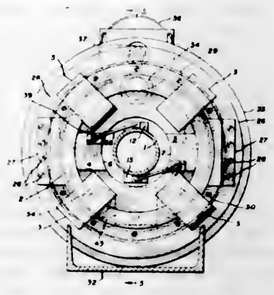
said configuration having an area of intersection which provides a Hall voltage when subjected to the effect of electrical and magnetic forces.

3,202,914

APPARATUS FOR INSPECTION OF TUBULAR FERROMAGNETIC MEMBERS USING PLURAL MOVABLE SEARCH SHOES FOR IDENTIFYING AREA DEPTH AND LOCATION OF DISCONTINUITIES

Hubert A. Deem, Bethany, Okla., and William T. Walters and Fenton M. Wood, Houston, Tex., assignors, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey

Filed June 29, 1960, Ser. No. 39,687
4 Claims. (Cl. 324—37)



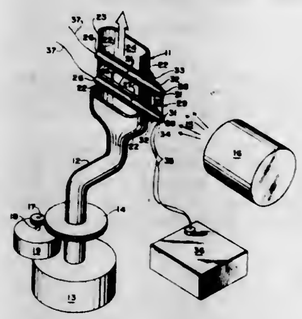
1. In a multi-purpose apparatus for non-destructive inspection of oil well production tubing to accomplish (1) detection and measurement of the depth of rod wear and (2) detection of longitudinal seams and like discontinuities, the combination of an assembly constructed to surround the tubing to be inspected, said assembly comprising magnetic means for establishing a magnetic field extending transversely through the wall of the tubing, rod wear causing relatively broad areas of leakage flux to appear at the outer surface of the tubing, seams and like discontinuities causing relatively narrow areas of leakage flux to appear at the outer surface of the tubing, said broad and narrow areas subtending approximately the same angles subtended by said rod wear and said seams and like discontinuities, said assembly further comprising a pair of search shoes each carrying a rod wear search coil and a seam search coil, said shoes being mounted on said assembly in such fashion as to be disposed in opposition transversely across the tubing when said assembly surrounds the tubing; a first electrical circuit including said rod wear search coils, said first circuit comprising electrical integrating means operative to convert signals induced in said rod wear search coils, by passage through such broad areas of leakage flux, into output signals indicative of total flux rather than rate of change of flux, said integrating means having a time constant at least sufficiently long to equal the time of said passage; a second electrical circuit including said seam search coils, said second electrical circuit being operative to provide output signals in response to signals induced in said seam search coils by passage through such narrow areas of leakage flux; electro-responsive means connected to said circuits to respond to said output signals, and means for effecting relative rotation, between said assembly and the tubing, about the axis of the tubing.

3,202,915

PARTICLE BEAM MEASUREMENT APPARATUS USING BEAM KINETIC ENERGY TO CHANGE THE HEAT SENSITIVE RESISTANCE OF THE DETECTION PROBE

Lionel V. Baldwin, Berea, and Virgil A. Sandborn, North Olmsted, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed June 19, 1961, Ser. No. 118,203
3 Claims. (Cl. 324—106)
(Granted under Title 35, U.S. Code (1952), sec. 266)



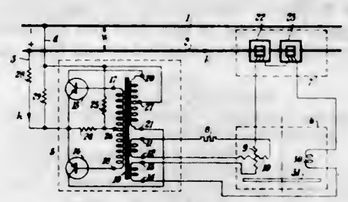
1. A particle beam power density measuring system comprising, a probe immersible in a particle beam, said probe being formed of a pair of spaced rods of electrical and thermal conductivity having the outer ends thereof exposed to said particle beam detecting means having the extremities thereof securely fastened to said outer ends for converting the kinetic energy of said particle beam into heat, tubular means for supporting said probe within said particle beam, means for dissipating heat conducted into said outer ends of said rods from said detecting means, thereby maintaining the extremities of said detecting means at a substantially constant temperature and preventing destruction of the detecting means, and means connected to said probe responsive to the electrical resistance variations of said detecting means for developing an electrical signal indicative of the local power density of said particle beam.

3,202,916

D.C. WATT-HOUR METERING DEVICE INCLUDING A SATURABLE REACTOR MEANS AND A MULTIVIBRATOR

Giorgio Savastano, Via Belvedere 20, Naples, Italy

Filed Mar. 4, 1964, Ser. No. 349,411
Claims priority, application Italy, Feb. 13, 1959, 2,142/59
4 Claims. (Cl. 324—142)



1. A D.C. watt-hour metering device for D.C. networks fed by a D.C. line consisting of a negative wire and a positive wire, comprising a saturable reactor having two cores each with one output winding, said saturable cores surrounding one of the D.C. wires acting as control windings, said two output windings being connected in series to one another and oppositely wound to cause said reactor to work as a D.C. transformer, a single phase induction watt-hour meter having a current coil, a voltage coil and a rotary disc, a compensating resistor connected in series with the current coil of said watt-hour meter, an auxiliary induction means having a main coil and a shading coil and acting on said disc of said watt-hour meter, said main coil being connected in series with the output windings of said saturable reactor and said voltage coil of said single phase induction watt-hour meter, a magnetically-coupled mutivibrator generating square wave voltage with amplitude proportional to the voltage of the D.C. line, said magnetically coupled multivibrator including two transistors, a resistive voltage divider connected across the D.C. line and biasing bases of said transistors and a transformer having a primary winding, a first, a second and a third secondary winding, said two transistors having emitters connected to one another and to the positive wire of the D.C. line, said primary winding having terminals connected with bases of said transistors and a central tap connected with an intermediate point of said resistive voltage divider, said first secondary winding having terminals connected with collectors of said transistors and a central tap connected to the negative wire of the D.C. line, said second secondary winding supplying in series the output winding of said saturable reactor and the voltage coil of said watt-hour meter and auxiliary induction means, said third secondary winding supplying in series the current coil of said watt-hour meter and said compensating resistor.

3,202,917

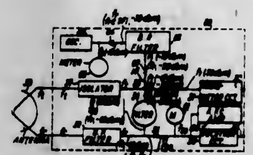
MONO-OSCILLATOR U.H.F. TRANSMITTER-RECEIVER

Takeshi Kawahashi and Takaji Kuroda, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Dec. 11, 1962, Ser. No. 243,831
Claims priority, application Japan, Jan. 18, 1962, 37/1,209
6 Claims. (Cl. 325—20)

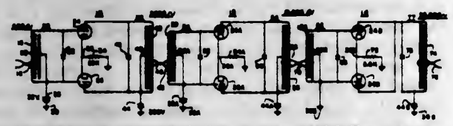
1. A simplified U.H.F. transmitter-receiver in which antenna means radiate a first modulated carrier signal and receive a different second modulated carrier signal, comprising: a four arm directional coupler for tranferring signals, without substantial attenuation between the first and second arms and between the third and fourth arms thereof, and for transferring a first portion of signals enter-

ing said first arm to said third arm and for transferring a second portion, smaller than said first portion of signals, entering said first arm to said fourth arm; a transmitter circuit for generating said first modulated carrier signal connected to supply said first modulated carrier signals to said first arm; means for supplying the first modulated carrier signal appearing at said second arm to said antenna means for radiation therefrom; a local oscillator frequency filter having a resonant frequency corresponding to the carrier frequency contained in said first modulated carrier signal, connected to said third arm for deriving from said first signal portion supplied to said third arm a local



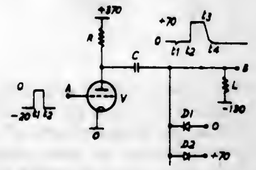
oscillator power signal; frequency conversion means connected to receive both said second modulated carrier signal from said antenna means and said local oscillator power signal from said filter for deriving a modulated intermediate frequency signal therefrom; detector-monitor means connected to the fourth arm of said coupler for detecting and monitoring said second signal portion and the signals reflected by said filter when the carrier signal contained in the first modulated carrier signal differs from said resonant frequency; and a receiver circuit connected to said frequency conversion means for demodulating said modulated intermediate frequency signal.

3,202,918
FREQUENCY MULTIPLIER
Armand P. Lescher, 74 Boerum Ave., Jersey City, N.J., and Jefferson B. Turner, 2328 Wildwood Drive, Huntsville, Ala.
Filed Oct. 3, 1962, Ser. No. 228,205
1 Claim. (Cl. 328—15)
(Granted under Title 35, U.S. Code (1952), sec. 266)



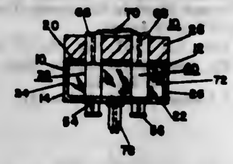
A broad-band cascaded frequency multiplier system comprising:
(a) at least a first and second multiplier stage each of said stages including,
(1) a first and second high mu vacuum tube electrically connected together to form a push-pull amplifier, each of said tubes having an anode, cathode and control grid;
(2) an unbypassed cathode resistor connected in series from a common cathode connection of said push-pull amplifier to a common potential point;
(3) a balanced tuned input circuit having a center tapped inductor with a circuit Q greater than fifty connected to said grids of said push-pull amplifier for increasing the bandwidth of said broad-band frequency multiplier system;
(4) a direct current source of bias potential connected between said center tap of said high Q inductor and said common potential point so that said center tap is biased positive with respect to said common potential point;
(5) a balanced tuned output circuit having a circuit Q greater than fifty connected to said anodes of said amplifier for increasing the bandwidth of said broad-band frequency multiplier system, said balanced tuned output circuit of each of said multiplier stages being tuned to an odd multiple of the frequency to which said balanced tuned input circuit of each of said multiple stage is tuned;
(6) an anode voltage source connected between said common potential point and said anodes of said push-pull amplifier through said tuned output circuits so as to supply a positive potential to said anodes;
(7) the operating parameters of each of said multiplier stages of said broad-band frequency multiplier system being selected so that each stage of said multiplier system operates to provide a signal at a level sufficiently high to produce limiting in a succeeding stage of said multiplier system when each said multiplier stage providing said signal is driven to a point of limiting;
(b) link-coupling means connected between said balanced tuned output circuit of said first multiplier stage and said balanced tuned input circuit of said second multiplier stage for coupling the output signal from said first multiplier stage to said second multiplier stage;
(c) signal producing means link-coupled through said balanced tuned input circuit to said first multiplier stage of said cascaded frequency multiplier system, said signal producing means acting to supply an input signal of sufficient amplitude to said first multiplier stage to produce limiting at the output circuit thereof; and
(d) output means connected to said balanced tuned output circuit of said second multiplier stage from which an output signal of said broad-band frequency multiplier system can be taken.

3,202,919
ELECTRIC CIRCUIT FOR PRODUCING AN OUTPUT PULSE OF LEADING EDGE SUBSTANTIALLY COINCIDENT WITH THE TRAILING EDGE OF AN INPUT PULSE
Norbert Kitz, John George Lloyd, and James John Drage, London, England, assignors to Bell Punch Company Limited, London, England, a British company
Filed Feb. 12, 1963, Ser. No. 258,640
Claims priority, application Great Britain Feb. 27, 1962
5 Claims. (Cl. 328—67)



1. A pulse-shaping circuit arrangement including a first resistive element, a capacitor and a second resistive element connected in series across a source of electric current, first and second asymmetrically conducting devices defining respectively the maximum and the minimum potentials of the junction between the capacitor and the second resistive element, and control means for reducing the potential of the junction between the first resistive element and the capacitor in response to an input pulse.

3,202,920
MEANS FOR CONVERTING SIGNALS
Leon Richman, Huntingdon Valley, Pa., assignor to American Electronic Laboratories, Inc., Colmar, Pa., a corporation of Pennsylvania
Filed Dec. 13, 1961, Ser. No. 159,040
10 Claims. (Cl. 329—161)

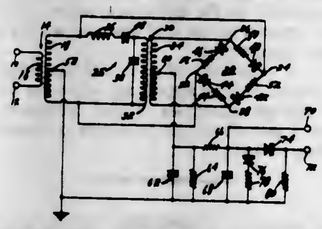


1. Signal converting means comprising:
(a) a signal transmission means for transmitting an R.F. signal,
(b) a plurality of signal detecting units connected in series for converting the R.F. signals transmitted by said transmission means in which each unit provides a D.C. output voltage signal E_{dc} according to the following equation

$$E_{dc}=AP^m$$

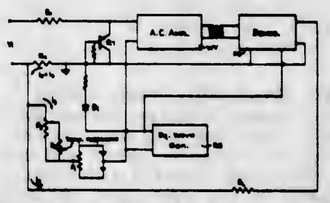
where P is the power of the R.F. signal which is converted by a respective one of said units, m is an exponent having a value of less than 1, and A is a proportionality factor,
(c) said signal detecting units being positioned with respect to said transmission means so that each of said units simultaneously shares the power of the R.F. signal to be converted,
(d) and output means connected with said detecting units for deriving a D.C. output voltage signal E'_{dc} from more than one of said series connected detecting units.

3,202,921
FREQUENCY SENSITIVE DEMODULATOR
Francis A. Wissel, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 174,501
17 Claims. (Cl. 329—166)



12. In a frequency-sensitive demodulator system, the combination comprising:
a phase-sensitive demodulator;
an input circuit for said demodulator and an output circuit for said demodulator, said demodulator having characteristics such that a maximum voltage is produced across said output circuit when first and second in-phase signals are applied across said input circuit;
a source of amplitude-modulated alternating currents for generating said first signals;
means connecting said source directly across said input circuit;
a frequency-sensitive phase-shifting network having characteristics such that the phase shift of a signal applied thereto is zero degrees when the applied signal is at a pre-determined frequency, but automatically increases as the frequency of said applied signal is varied from said predetermined frequency;
means also connecting said source to said frequency-sensitive phase-shifting network for generating said second signal; and
means for applying said second signal across said input circuit of said phase-sensitive demodulator, whereby a maximum voltage is developed across said output circuit when the frequency of said source is at said predetermined frequency.

3,202,922
TRANSISTOR CHOPPER
Lucien Amedé De Schampheleire, Edegem-Antwerp, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
Filed Apr. 3, 1961, Ser. No. 100,203
Claims priority, application Netherlands, Apr. 6, 1960, 250,239
3 Claims. (Cl. 330—9)



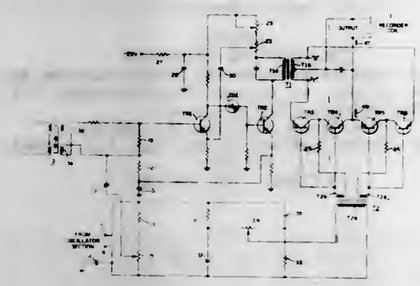
1. A transistor chopper direct current amplifier of the feedback compensation type for amplifying small input voltages, comprising:
(a) a chopper transistor having its emitter-collector path connected in series with a compensation resistor and the source of signals to be amplified,
(b) an alternating current amplifier having its input terminals connected across the emitter-collector path of said transistor for periodic short-circuiting thereby,
(c) a phase-sensitive demodulator having its signal input connected to the output of said amplifier, and having its output connected serially through a load impedance and said compensation resistor, to develop across the latter a feedback voltage, in series with the signals to be amplified, for difference comparison therewith,
(d) a square-wave generator connected to supply a reference signal to said demodulator, and
(e) means for applying the output voltage of said square-wave generator between the base electrode of said chopper transistor and one other electrode thereof, said means comprising a diode characterized by forward conductivity only for applied voltages greater than the lowest potential difference between said generator and said other electrode of the transistor; whereby the base voltage of said transistor is driven to a zero value during alternate half-cycles of said generator.

3,202,923
BIDIRECTIONAL CURRENT AMPLIFIER AND DEMODULATOR
Grover K. Houpt, Lansdale, Pa., assignor to Automatic Timing & Controls, Inc., King of Prussia, Pa., a corporation of Pennsylvania
Filed Sept. 5, 1961, Ser. No. 136,024
8 Claims. (Cl. 330—10)

1. In combination:
(a) A.C. amplifying means having an input to which an input signal of a predetermined frequency and varying phase is to be applied,

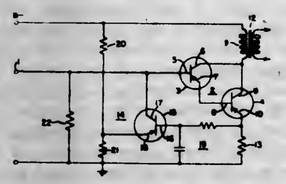
(b) a transformer coupled to said amplifying means, said transformer having a primary winding which is arranged to be traversed by the output current of said A.C. amplifying means,

(c) means coupled between the input of said amplifying means and said primary winding for developing an A.C. voltage proportional to said output current and for applying said A.C. voltage as a negative feedback signal to said input, and



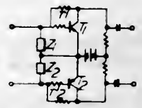
(d) A.C. demodulating means coupled to the secondary winding of said transformer, said secondary winding being coupled to output terminals for connection to a utilization circuit, said demodulating means including a source of a signal having the same frequency as said input signal but having a fixed reference phase, said demodulating means also being coupled to said output terminals, said combination operating such that changes in the current received by said utilization circuit cause corresponding changes in the currents traversing said secondary winding and said primary winding whereupon said (c) means develops and applies to said input a negative feedback voltage tending to oppose said changes.

3,202,924
SELF ADJUSTING TRANSISTOR BIASING CIRCUIT
Richard T. Myers and Richard T. Buesing, Lynchburg, Va., assignors to General Electric Company, a corporation of New York
Filed Jan. 3, 1961, Ser. No. 80,166
9 Claims. (Cl. 330—22)



1. In a transistor power amplifier, the combination including at least a transistor having an input, an output, and a common electrode, an input terminal coupled to said input electrode and having a D.C. input current impressed thereon, means for applying operating potential to the electrodes of said transistor to establish the quiescent biasing conditions for said transistor, a conductive path connected to said input terminal to divert a portion of said D.C. input current, means for sensing the magnitude of the transistor D.C. emitter-collector current in the common electrode circuit of said transistor to produce a control signal, and means coupling said control signal to said path for controlling the conductivity thereof to maintain the D.C. current flow in said common electrode circuit and the bias conditions of said transistor amplifier at a predetermined level.

3,202,925
FILTER AMPLIFIER
Takeo Matsuzaki and Hitoshi Watanabe, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Mar. 22, 1961, Ser. No. 97,484
Claims priority, application Japan, Mar. 25, 1960, 35/10,084
3 Claims. (Cl. 330—31)

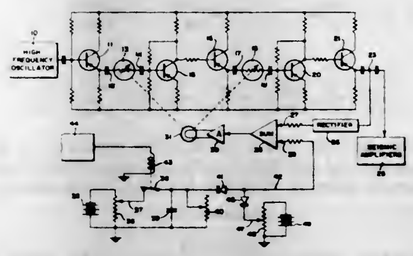


1. A four terminal filter amplifier comprising:
(A) a pair of input terminals;
(B) first and second networks connected in series to said input terminals, at least one of the networks including a transistor,
(1) said first network comprising first impedance and resistance means connected in a first parallel circuit,
(2) said second network comprising second impedance and resistance means connected in a second parallel circuit,
(3) said parallel circuit being connected to each other in series across said input terminals,
(4) the impedances and resistances of said first and second impedance and resistance means satisfying the relation in the pass-band of said filter amplifier that the product of resistances is substantially equal to the product of impedances, and in the attenuation band of said filter amplifier that the impedances of the impedances means are substantially equal,
(5) at least one of said resistance means comprising the input resistance appearing between the base and emitter electrodes of said transistor,
(C) means for deriving an output voltage substantially proportional to the difference between the voltage which appears across said first and second resistance means respectively,
(1) at least one of said voltages including the output voltage appearing across the emitter and collector electrodes of said transistor;
(D) and a pair of output terminals connected to said deriving means.

3,202,926
GAIN CONTROL SIGNAL GENERATOR
Walter B. Ford, Irving, and Gerald R. Schlechte and Markwick K. Smith, Jr., Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 16, 1961, Ser. No. 117,961
4 Claims. (Cl. 330—59)

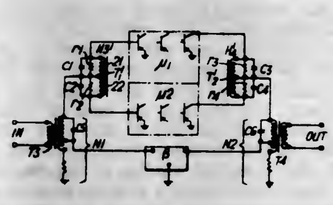
1. In apparatus for providing a high frequency gain control signal to a seismic amplifier:
(a) a source of high frequency signals,
(b) variable-attenuation coupling means connecting the source to the gain controlled seismic amplifier, the coupling means being variable in attenuation in response to a control voltage,
(c) means having an input connected to receive the high frequency signals applied to the seismic amplifier effective to produce a first voltage variable according to the magnitude of such signals,

(d) resistance-capacitance network for generating a second voltage which varies according to an exponential function of time between first and second voltage levels, said network including means to vary said first and second voltage levels and the rate of change of said exponential function,
(e) means for initiating the operation of the resistance-capacitance network in response to a condition,



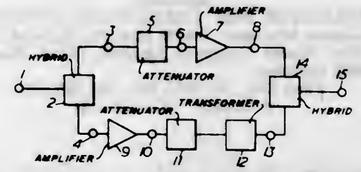
(f) comparator means connected to receive said first and second voltages effective to produce an output voltage related to the difference between the first and second voltages,
(g) and means for applying the output voltage produced by the comparator means to the coupling means to vary the attenuation thereof according to the difference between the first and second voltages.

3,202,927
CONTINUOUS OPERABLE NEGATIVE FEEDBACK AMPLIFIER
Kunio Ishimoto, Hitoshi Watanabe, and Toshio Sato, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 24, 1961, Ser. No. 147,278
Claims priority, application Japan, Oct. 26, 1960, 35/43,344
17 Claims. (Cl. 330—84)



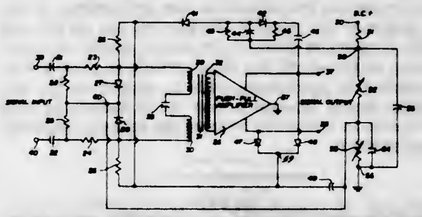
1. A highly reliable amplifier of the negative feedback type in which the same information is amplified in each of a plurality of parallel amplifying paths, each having an input and output side, comprising: a signal information input circuit; a hybrid input isolating circuit connected to said signal input circuit and to the input side of each of said amplifying paths for supplying the same information signal to each amplifying path and for isolating said input sides from each other; a hybrid output isolating circuit connected to the output side of each amplifying path for combining the signals from said amplifying paths and for isolating said output sides from each other; an output circuit connected to receive the thus combined signals from said hybrid output circuit; and a single feedback path connected between said output circuit and said information input circuit for negatively feeding back a component of said combined signal to said information input circuit.

3,202,928
SIGNAL TRANSMISSION APPARATUS WITH MEANS FOR SUPPRESSING HARMONICS AND INTERMODULATING PRODUCTS
Hector Thomas Prior, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 5, 1962, Ser. No. 177,516
Claims priority, application Great Britain, Mar. 14, 1961, 9,305/61
4 Claims. (Cl. 330—124)



1. Signal transmission apparatus for minimizing the level of harmonics and intermodulation products in transmitted incoming signals comprising, input means for deriving a plurality of in-phase signal components from said incoming signals, substantially identical means for amplifying respective ones of said signal components, means for attenuating at least one of said amplified signal components, means for thereafter reversing the phase of at least one of the said amplified and attenuated signal components, and means for combining the amplified phase-reversed and attenuated signal components with the amplified non-phase-shifted signal components to cancel the intermodulation and harmonic voltages of said signal components and to pass the fundamental signal voltages of said incoming signals.

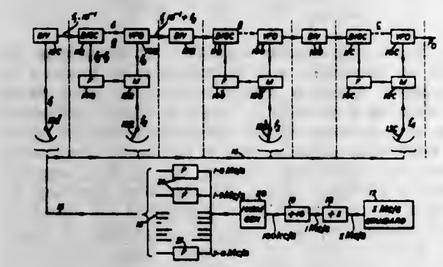
3,202,929
SEMICONDUCTOR VARIO-LOSSER CIRCUIT
Walter C. Benger, Ottawa, Ontario, John L. Hanna, Belleville, Ontario, and David G. Vice, Ottawa, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Oct. 30, 1961, Ser. No. 148,654
17 Claims. (Cl. 330—138)



1. An electric circuit having an input and an output, said circuit including an amplifier having an input and an output, said amplifier and said electric circuit having a common output; a vario-losser network connected between said amplifier input and the input of said electric circuit; a source of direct current; an expansion circuit interconnecting said D.-C. source and said vario-losser for normally passing a direct current through said vario-losser from said source, said expansion circuit including means connected to said common output for reducing such normal flow of direct current to said vario-losser upon the occurrence of output signals as said common output in excess of a first predetermined signal level and for blocking the flow of direct current through said vario-losser upon the occurrence of output signals at said common output in excess of a second predetermined signal level; and a compression circuit interconnecting said common output and said vario-losser nor-

mally biased to block the flow of direct current therethrough from said common output to said vario-losser but responsive to output signals at said common output in excess of a third predetermined signal level to cause a direct current to flow from said common output to said vario-losser, the loss of signal amplitude in said vario-losser varying as a function of the direct current flowing therethrough.

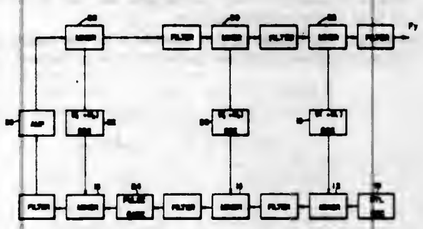
3,202,930
APPARATUS FOR FREQUENCY SYNTHESIS
Jan Tadeusz Murzanko, North Harrow, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed Dec. 10, 1963, Ser. No. 329,600
3 Claims. (Cl. 331—2)



1. An electrical oscillation generator including a plurality of identical stages each consisting of a variable-frequency oscillator, a mixer device and a frequency discriminator device; a source for a series of standard frequencies any one of which can be selected for feeding to the mixer device of any stage; the stages being arranged in a predetermined sequence whereby a first input to the discriminator device of each stage except the first stage is obtained through one of a series of identical frequency dividers from the variable-frequency oscillator of the next preceding stage in the sequence, a second input to the discriminator consisting of the difference frequency resulting from the comparison in the mixer device of the stage of the selected one of the said standard frequencies with the frequency of the variable-frequency oscillator of the stage, which is arranged to be controlled in accordance with an output of the discriminator device in such a way as to reduce to zero the difference in frequency between the said two inputs to the discriminator.

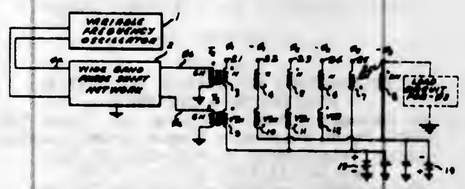
3,202,931
COHERENT FREQUENCY CONVERTER FOR TESTING MICROWAVE DEVICES WITH AUDIO SPECTRUM ANALYZER
Roland F. Koontz, Jr., Moorestown, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Mar. 6, 1963, Ser. No. 263,685
1 Claim. (Cl. 331—39)

A coherent frequency conversion system for use with an audio spectrum analyzer comprising a low frequency oscillator, a first mixer connected to the output of said oscillator, a first transfer oscillator connected to said mixer for converting the output signal of said low frequency oscillator to a high frequency signal relative to said low frequency signal, a gate circuit connected to said mixer for pulsing said high frequency signal, a second mixer connected to the output of said gate circuit, a second transfer oscillator connected to said second mixer for converting said pulsed high frequency signal to a microwave frequency signal, a microwave device connected to said second mixer, a third mixer connected to the output of said microwave device and to said second



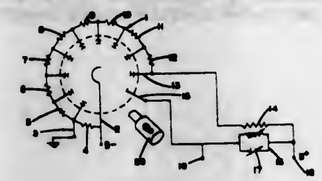
transfer oscillator, and a fourth mixer connected to said third mixer and said first transfer oscillator, whereby said microwave signal is reconverted to said low frequency.

3,202,932
VARIABLE FREQUENCY MULTI-PHASE SIGNAL GENERATOR WITH PHASE DIFFERENCE CONSTANT OVER FREQUENCY BAND
Glenn W. Benee, Bloomington, and Wilfred R. Eriksson, St. Paul, Minn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 29, 1963, Ser. No. 276,676
2 Claims. (Cl. 331—45)



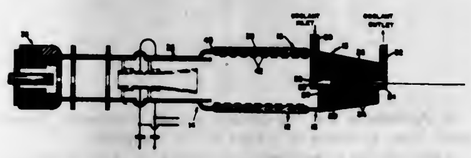
1. A variable frequency multi-phase clock comprising: an oscillator variable in frequency over a predetermined range; a wideband phase shift network coupled to said oscillator and operating to derive from the oscillator output two signals having equal amplitudes and a constant 90° phase separation over said frequency range; a first transformer having a primary winding and three secondary windings two of which are of the same polarity as the primary winding and the third of which is of opposite polarity, the primary to secondary turns ratio being 6 for the two secondary windings of like polarity and 3 for the secondary winding of opposite polarity; a second transformer having a primary winding and two secondary windings one of like and the other of opposite polarity relative to the primary winding, the primary to secondary turns ratio being $6/\sqrt{3}$ for each secondary winding; couplings between said phase shift network and the primaries of said transformers for applying one of said 90° signals to the primary of said first transformer and the other of said 90° signals to the primary of said second transformer; three output terminals; means connecting a first transformer secondary of polarity like the primary and a second transformer secondary of polarity like the primary in series between one of said output terminals and a point of reference potential; means connecting the other first transformer secondary of polarity like the primary and the second transformer secondary of polarity opposite the primary in series between another of said output terminals and said point of reference potentials; and means connecting said first transformer secondary of polarity opposite the primary between the remaining output terminal and said point of reference potential.

3,202,933
NEGATIVE RESISTANCE PHOTOMULTIPLIER OSCILLATOR
Narasappa K. Shankar, Rochester, and Alexander E. Martens, Greece, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Aug. 10, 1961, Ser. No. 130,891
9 Claims. (Cl. 331—66)



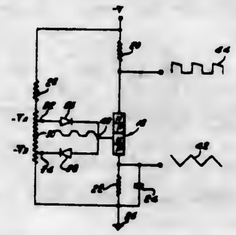
1. An oscillator circuit comprising, a photomultiplier tube operating within its negative resistance characteristic, resistance means connected between the cathode and the first dynode of said photomultiplier tube, a source of negative potential connected to said cathode, a plurality of serially connected resistance elements each successive one connected between successive dynodes of said photomultiplier tube, a resistance element connected to the last dynode of said photomultiplier tube and adapted for connection with a positive potential, a tank circuit connected to the anode of said photomultiplier tube and adapted for connection to the positive potential, a band pass filter connected between the last dynode and the anode providing regenerative feedback to the tank circuit in said anode circuit thereby providing oscillatory output.

3,202,934
CATHODE-RAY EXCITED LASER GENERATOR
Thomas A. Collins, 745 Del Monte, Las Cruces, N. Mex.
Filed Dec. 29, 1961, Ser. No. 163,364
11 Claims. (Cl. 331—94.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



10. A device for generation, amplification, modulation and propagation of a concentrated beam of substantially coherent light comprising:
(a) a cathode ray tube disposed for producing a stream of electrons;
(b) a housing secured to the forward end of said cathode ray tube, said housing provided with a conical cavity disposed in communication with said cathode ray tube, said conical cavity having its axis coincident with the longitudinal axis of said cathode ray tube;
(c) a phosphor pumping means disposed on the inner wall of said cavity for bombardment by said electrons for producing a light output;
(d) a medium mounted in said housing in coaxial alignment with the axis of said cavity, said medium disposed for excitation by said pumping means and consequent energization at multiple levels for emission of coherent light responsive to the differences in said levels,
(e) means disposed in communication with said medium to carry away heat generated therein as a result of the energization of said medium.

3,202,935
ASTABLE MULTIVIBRATOR HAVING MEANS TO ADJUST THE OUTPUT MAGNITUDE AND FREQUENCY
Stephen Mahala, Clifton, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed Jan. 23, 1962, Ser. No. 168,082
1 Claim. (Cl. 331—109)

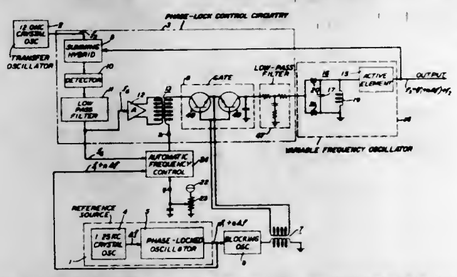


An astable multivibrator comprising a gated four zone semiconductor device having a gating terminal and emitter and collector terminals, a source of direct current energy having two terminals, a first resistor and capacitor connected in parallel between one terminal of said source of direct current energy and said emitter terminal of said four zone semiconductor device, a second resistor connected in series between said other terminal of said source of direct current energy and the collector of the four zone semiconductor device, a voltage dividing means connected across said two terminals of the source of direct current energy in parallel with the first and second resistors, the capacitor, and the emitter-collector path of the four zone device and having a point intermediate the ends thereof coupled to the gating terminal of the four zone semiconductor device to bias the gate with respect to the emitter so as to turn on the four zone semiconductor device when the potential at the emitter is at the potential of said one terminal of the source but insufficient to maintain conduction of the device when the potential at the emitter is changed from that of said one terminal of said source by charging of the capacitor to some other level of potential thereby causing the capacitor to alternately charge and discharge, producing saw-tooth waves across the capacitor and square waves across the second resistor, wherein said voltage dividing means comprising a resistor connected between the two terminals of said source, two diodes connected front to back in series between two electrically conductive points on said resistor and connected at their common point to the gating terminal of said four zone semiconductor device so as to provide two different levels of bias to the gating terminal.

3,202,936
MULTIFREQUENCY GENERATOR HAVING PHASE LOCK AND AUTOMATIC FREQUENCY CONTROL
William Kaminski, West Portal, and Herbert A. Schneider, Millington, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 29, 1961, Ser. No. 163,346
3 Claims. (Cl. 331—11)

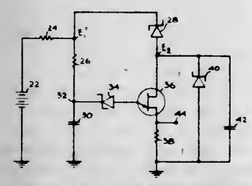
1. In combination, a multifrequency generator capable of selectively producing a plurality of frequencies, an oscillator the frequency of operation of which is responsive to applied voltages, and means for establishing and maintaining a predetermined relationship between the phase of the output of said oscillator and the selected signal of said multifrequency generator comprising a phase detector to which a signal representative of the selected signal of said multifrequency generator and a signal representative of the output of said oscillator are applied, said phase detector producing a voltage related to the phase

difference between the applied signals, a frequency detector to which a signal representative of the selected signal of said multifrequency generator and a signal representative of the output of said oscillator are applied, said frequency detector producing an output voltage related to



the frequency difference between the applied signals for all frequencies within the range of said multifrequency generator, and means for applying the voltage produced by said phase detector and the voltage produced by said frequency detector to said oscillator to establish and maintain said predetermined relationship.

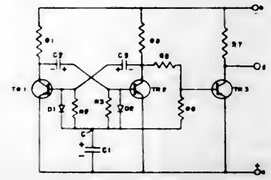
3,202,937
UNIJUNCTION TRANSISTOR OSCILLATOR CIRCUIT
John R. Anderson, 26279 Taaffe, Los Altos, Calif.
Filed Mar. 25, 1963, Ser. No. 267,406
2 Claims. (Cl. 331—111)



1. An improved relaxation oscillator circuit of the type wherein a unijunction transistor having an emitter and a first and second base electrode is connected to the junction between a first resistor and capacitor across which the voltage for charging said capacitor is applied, said improvement comprising first, second and third means, each having a relatively high resistance to reverse current flow therethrough until a predetermined voltage is exceeded when the resistance is relatively low, means connecting said first means between the emitter of said unijunction transistor and the junction between said first resistor and capacitor, means connecting said second means between the second base of said unijunction transistor and the end of said first resistor which is connected to said voltage for charging said capacitor, a second resistor connected between said first base and the end of said capacitor which is not connected to said first resistor and means connecting said third means between said second base and the end of said capacitor which is not connected to said first resistor.

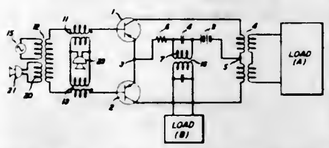
3,202,938
SELF-BLOCKING MULTIVIBRATOR
David Ehlév, Alvsjo, Sweden, assignor to Svenska Reinfabriken A.B.N. Aktiebolag, Tyreso, Sweden, a joint-stock company of Sweden
Filed May 12, 1961, Ser. No. 109,733
4 Claims. (Cl. 331—113)

1. A device for generating repeated trains of pulses comprising a self-blocking multivibrator circuit having two amplifier elements operating in phase opposition, and a direct current source for supplying the necessary operating power to the multivibrator circuit, each of said amplifier elements having at least three electrodes including a first electrode, a second electrode serving as control electrode and a third electrode, said first electrodes being connected through a resistance means to a first pole of said direct current source, said third electrodes being connected to a second pole of said direct current source, said control electrode of each amplifier element



being connected via capacitive means with the first electrode of the other amplifier element, said control electrodes of both amplifier elements being also connected to a common point via circuits each comprising a resistor and an asymmetric conducting element connected in parallel with the resistor, said asymmetric conducting elements being so poled as to provide a low resistance path for discharge current from said capacitive means, and a further capacitor connected between said common point and said second pole of the direct current source.

3,202,939
BALANCED TRANSISTOR TRANSLATING NETWORK
Paul A. Reiling, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 29, 1961, Ser. No. 163,220
14 Claims. (Cl. 332—43)



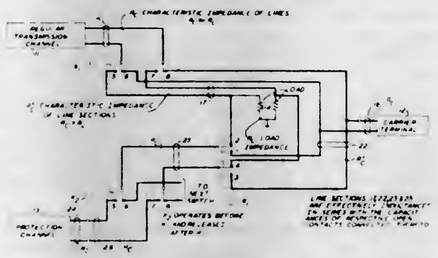
1. Apparatus for translating a high frequency signal wave from a source to a load which comprises
a pair of like transistors each having an input electrode, an output electrode and a common electrode,
said common electrodes being directly connected together and to a first common point,
said output electrodes being connected to a second common point,
a path, including a potential source, extending from said first common point to said second common point,
a load coupled to said output electrodes,
an input transformer having a primary winding supplied with said signal wave and a secondary winding of which the end terminals are connected to said input electrodes, respectively, for applying signal voltages developed from said wave to said input electrodes in push-pull,
whereby minority carriers are injected into said transistors in alternation and on alternate half cycles of said signal wave, thus to drive them into their working states,
each of said transistors being so proportioned that the reverse-current drain of said minority carriers from its input electrode in its nonworking state endures for at least one-half period of said signal wave.

3,202,940
SEMICONDUCTOR AMPLITUDE MODULATION CIRCUIT
Bernhard Dietrich, Freiburt, Breisgau, Germany, assignor to Clevite Corporation, a corporation of Ohio
Filed June 26, 1961, Ser. No. 119,684
Claims priority, application Germany, June 25, 1960, J 18,336
3 Claims. (Cl. 332—43)



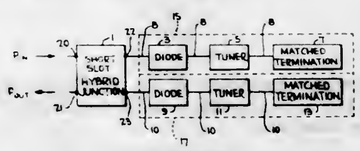
1. An amplitude modulation circuit comprising: a transistor oscillator; a pair of semiconductor devices having rectifying junctions, coupled in push-pull relation to the output of said oscillator; a tuned LC oscillatory circuit coupled to said semiconductor devices; means coupled to said oscillatory circuit for deriving an output signal therefrom; and variable resistive impedance means responsive to a modulating signal for varying the Q of said LC oscillatory circuit to effect amplitude modulation of the output signal.

3,202,941
HIGH FREQUENCY CHANNEL SWITCHING UNIT, EMPLOYING ELECTROMECHANICAL CONTACT MEANS
Adolf J. Giger, Springfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 23, 1960, Ser. No. 78,036
3 Claims. (Cl. 333—7)



1. A balanced electromechanical unit for selectively switching a common channel between first and second transmission channels, comprising first and second input transmission lines connected to said transmission channels, respectively, said first and second transmission lines having a particular characteristic impedance, a plurality of relays capable of being switched between a first and a second state and having a plurality of sets of operative contacts which exhibit capacitive reactance shunting said contacts whenever open at high frequencies, a load having said particular characteristic impedance, first means for connecting said first transmission line to a first and a second set of said contacts, second means for connecting said second transmission line to a third and fourth set of said contacts, third means for connecting said common channel in series with said first connecting means through said second set of contacts and in series with the second connecting means through said third set of said contacts, and fourth means for connecting said load in series with the first connecting means through the first set of contacts and in series with the second connecting means through the fourth set of said contacts, said relays maintaining said second and said fourth sets of contacts closed when in the first state, said relays maintaining said first and said third sets of contacts closed when in the second state, said second, third and fourth connecting means comprising short transmission lines having a greater characteristic impedance than said particular characteristic impedance to form with said capacitive reactance of said connected sets of contacts whenever open a low pass filter between said common channel and one of said first and second channels.

3,202,942
MICROWAVE POWER AMPLITUDE LIMITER
Robert V. Garver, Rockville, Md., and David Y. Tseng, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Army
Filed Feb. 28, 1962, Ser. No. 176,460
8 Claims. (Cl. 333—9)
(Granted under Title 35, U.S. Code (1952), sec. 266)

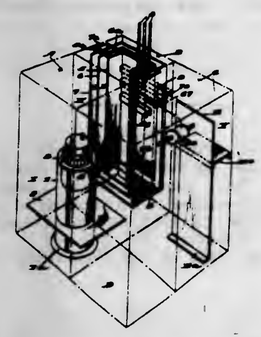


5. A microwave power amplitude limiter comprising:
(a) passive reflecting means having a reflection coefficient which varies inversely with the amplitude of incident microwave power for reflecting a portion of the incident microwave energy to be limited, the reflected microwave energy having a relatively constant power level, said passive reflecting means including:
(1) a waveguide section having one end terminated by the characteristic impedance of said waveguide section, and
(2) a semiconductor limiter diode electrically and passively connected across said waveguide section in parallel orientation to the direction of the electric vector of the dominant transverse electric mode of said waveguide section; and
(b) junction means connected to said waveguide section of said passive reflecting means for isolating microwave energy supplied to said passive reflecting means to be limited from microwave energy reflected by said passive reflecting means.

3,202,943
BAND-PASS FILTER UTILIZING NESTED DISTRIBUTED-PARAMETER RESONATORS
Vladimir Milliquet, Baden, Switzerland, assignor to Patelhold Patentverwertungs-u. Elektro-Holding AG., Glarus, Switzerland
Filed Jan. 29, 1963, Ser. No. 254,638
Claims priority, application Switzerland, Jan. 31, 1962, 1,222/62
1 Claim. (Cl. 333—73)

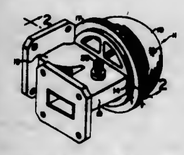
In a band-pass filter structure for television transmitters having wavelengths below 10 meters, said filter structure having five tuned circuits at the output end of a power stage of the transmitter, the combination comprising first, second and third metallic casings each having a parallelepiped configuration arranged adjacent each other, said first casing containing the tuned anode circuit of the power stage, said second casing containing three tunable circuits constituted by three nested tunable box-like resonators and contact means slidable along and interconnecting adjacent walls of adjacent resonators for tuning said resonators, the outermost of said resonators being connected to an output conductor which passes through said third casing, and said third casing including a further

tuned circuit constituted by a resonator and a variable capacitor, said output conductor being connected to last said resonator through said capacitor with a spacing of



substantially one-fourth of the wavelength within the band-pass corresponding to the picture carrier frequency of the transmitter.

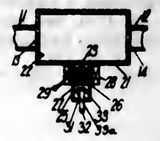
3,202,944
CAVITY RESONATOR APPARATUS
Vincent J. Grande, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Apr. 9, 1962, Ser. No. 185,998
14 Claims. (Cl. 333—83)



1. A high frequency high Q cavity resonator apparatus including, means forming a hollow resonator chamber, said chamber means having a hemispherical end wall portion defining one end wall of said chamber and a second end wall portion diametrically opposed to said hemispherical end wall portion and defining a second end of said chamber means, means for exciting and coupling predominantly to a circular electric mode in said chamber, said hemispherical end wall portion having an annular lip portion securely mating with a similar annular lip portion on a remaining portion of said chamber means to form a unitary rigid resonant chamber which is relatively immune to microphonics.

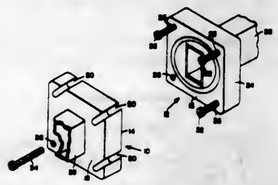
3,202,945
CAVITY RESONATOR TUNED BY MEANS OF MAGNETICALLY CONTROLLED COAXIAL FERRITE MATERIAL LOCATED IN AN AUXILIARY CAVITY
Hiroshi Tachikawa and Susumu Kitazume, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 19, 1963, Ser. No. 274,261
Claims priority, application Japan, Apr. 25, 1962, 37/16,941
4 Claims. (Cl. 333—83)

1. A cavity resonator of variable resonant frequency comprising a main resonant cavity, an input and output circuit for said main cavity, a coupling window formed in one wall of said main cavity, an auxiliary cavity terminated at one end thereof with a conductor plate and directly coupled at its other end to said main cavity through said coupling window, a rod-shaped body of ferromagnetic material coaxially disposed within said auxiliary cavity, and an exciting coil disposed about said auxiliary cavity



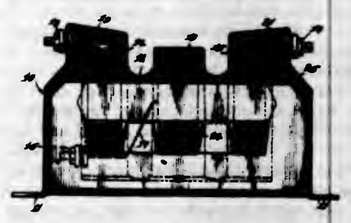
for producing a coaxial field therein and varying the magnetic permeability of said body when said coil is energized.

3,202,946
WAVE GUIDE CONNECTOR
Donald J. Newman, Needham, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Oct. 21, 1963, Ser. No. 317,852
1 Claim. (Cl. 333—98)



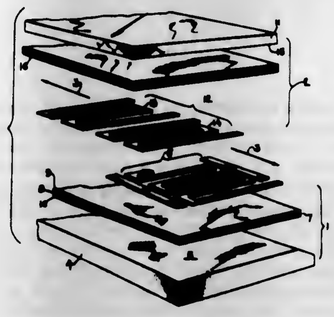
A connector for two highly conductive waveguide sections, each section having a central longitudinal axis: said connector including a first highly conductive end flange on one of said sections and a second highly conductive end flange on the other section; a plurality of studs on said first flange, each stud being parallel to the section axis; a plurality of open ended slots in said second flange, said slots being equal in number to said studs, with all of the slots being parallel and transverse to the section axis; a threaded perforation in said first flange parallel to the section axis; a perforation in said second flange parallel to the section axis; and a threaded connector insertable through the second perforation and engaging said first perforation, upon traversing engagement of said slots and studs.

3,202,947
EPOXY INSULATED TRANSFORMER HAVING TRIS-B-CHLOROETHYLPHOSPHATE AND HYDRATED ALUMINA IN THE INSULATION
Joseph E. Budovec, Berkeley, Ill., assignor to Jefferson Electric Company, Bellwood, Ill., a corporation of Delaware
Filed Feb. 16, 1961, Ser. No. 89,780
2 Claims. (Cl. 336—96)



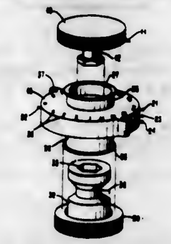
1. An electrical transformer comprising a magnetic core, electrical windings disposed about the magnetic core, and a cured body of resinous insulation comprising a mixture of 20–50 percent of the reaction product having more than one epoxy group per molecule of epichlorohydrin and diphenylol propane, 25–80 percent of a filler consisting essentially of hydrated alumina, and a flame retardant comprising 2–10 percent tris-B-chlorethyl phosphate, 5–12 percent of hexahydrophthalic anhydride, 0.005–1.0 percent of a tertiary amine from the group consisting of 2,4,6-tri(diethylaminomethyl)-phenol and dimethylaminomethyl phenol; and 0–25 percent chlorendic anhydride said core and windings being embeded in said cured body of resinous insulation.

3,202,948
PRECISION TRANSDUCER
Clair L. Farrand, Bronxville, N.Y., assignor to Inductosyn Corporation, Carson City, Nev., a corporation of Nevada
Filed Nov. 10, 1959, Ser. No. 852,028
6 Claims. (Cl. 336—115)



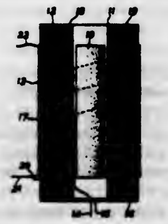
1. Precision electrical position measuring transformer apparatus comprising
(a) two relatively movable rigid position measuring transformer members each having
(b) a base of metal having,
(c) a film-like layer of bonding and insulating material adhesively affixed to one surface thereof,
(d) said layer of bonding and insulating material having a thickness of the order of .001 to .010 inch,
(e) an electrical winding of a plurality of metallic conductors disposed side-by-side, extending transversely of the direction of relative motion of said members and connected in series for opposite directions of current flow in adjacent conductors, and having
(f) a thickness of the order of .0005 to .005 inch, and
(g) adhesively affixed to the surface of said bonding and insulating layer of each of said metal bases,
(h) said thin bonding and insulating layer on each of said metal bases being adapted to maintain the said winding conductors and the said metal base in electrically insulated relation as a unit,
(i) said windings being inductively coupled and having an inductive coupling characteristic of substantially sinusoidal form,
(j) said electrical windings being secured to their respective metal bases in close and intimate relation therewith, thereby minimizing interference with the form of coupling wave between said windings,
(k) the adhesive characteristics and the thinness of the film-like bonding and insulating layer and the metal and thinness of the conductor windings all being such that the position of the conductor windings changes in accordance with the changes in the surface length of the metal base produced by variations in ambient temperature,
(l) said metal bases of said relatively movable members having substantially identical coefficients of expansion.

3,202,949
LOW COST AUTOTRANSFORMER
John L. Anderson, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 19, 1962, Ser. No. 245,759
9 Claims. (Cl. 336—149)



1. A variable transformer comprising:
a toroidal magnetic core having an open center and a coil wound thereon and insulated therefrom,
a casing molded about said core exclusive of said center,
a pair of knobs having shafts thereon extending into said coil in interlocking relation,
lips on said casing engaging and locking said knobs in rotatable relation therewith,
contact means comprising one of said lips engaging a second contact on one of said knobs, and
a resilient contact on the shaft of said last mentioned knob making contact with the center of said coil, said resilient contact being connected to said second contact, whereby rotation of either of said knobs will vary the potential output of the transformer.

3,202,950
STEP-UP VOLTAGE TRANSFORMER HAVING HIGH TENSION LEAD
Reginald Penn, Blotchley, England, assignor to Wipac Development Limited, London, England, a British company
Filed Dec. 28, 1959, Ser. No. 862,380
Claims priority, application Great Britain, May 22, 1959, 17,607/59
2 Claims. (Cl. 336—192)



1. A transformer suitable for use as a voltage step-up transformer in an ignition system of the type specified, comprising a low-loss, ferro-magnetic core mounted in a former of electrically-insulating material, the former being longer than the core and being arranged with its ends projecting beyond the ends of the core, a multi-layer secondary winding being wound on the former, and over the secondary winding a single-layer primary winding having one end connected with the end of the secondary winding at the outermost layer of the latter, the axial lengths of the

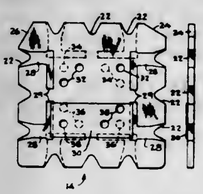
primary and secondary windings being substantially equal to one another and at most equal to the length of the core and the windings being disposed with the centres of the windings and the centres of the core substantially coincident whereby the ends of the former project beyond the ends of the windings, and a high-tension connection to the secondary winding passing between the core and the former and through an aperture in the former substantially equidistant from the ends of the former to the innermost layer of the secondary winding.

3,202,951
ALLOYS AND ELECTRICAL TRANSDUCERS
Albert Krinsky, Bethesda, Md., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 16, 1961, Ser. No. 131,944
8 Claims. (Cl. 338—2)



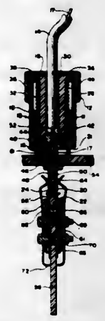
1. An alloy for use as a heat generating electric current conducting element and as a protective coating subjected to heat consisting essentially of 25 to 30 atomic percent iron, 35 to 50 atomic percent aluminum, and 20 to 40 atomic percent titanium, characterized by resistance to oxidation on exposure to air and subjection to concurrent temperatures up to about 400° C.

3,202,952
WAFER MOUNTED COMPONENT CAPABLE OF ELECTRICAL ADJUSTMENT
Charles C. Rayburn, Alexandria, Va., assignor to Illinois Tool Works Inc., a corporation of Delaware
Filed May 23, 1961, Ser. No. 111,950
4 Claims. (Cl. 338—195)



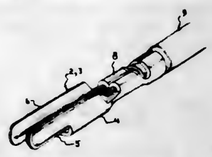
1. A wafer made of insulating material and having at least one electronic component mounted thereon of the type having at least a portion thereof capable of being removed for adjusting the characteristics thereof, said wafer comprising a polygonally shaped relatively thin body having planar surfaces bounded by a periodically interrupted margin, a plurality of depressions extending partially through the wafer on at least one of said planar surfaces and occupying only a small portion of the total surface area thereof, said electronic component being fixedly mounted on said wafer with at least the removable portion thereof disposed in overlying, spaced relationship to the bottom surface of at least one of said depressions whereby mechanical means may be aligned with at least said one depression for separating the removable portion from said electronic component for changing the electrical characteristics thereof, and conductive means extending from said component to the periodically interrupted margin of said wafer.

3,202,953
ELECTRICAL CONNECTOR
Seymour Bosworth, Plainview, and Jerome Zanderer, Brooklyn, N.Y., assignors to Abbey Electronics Corp., Long Island, N.Y., a corporation of New York
Filed Jan. 7, 1963, Ser. No. 249,630
3 Claims. (Cl. 339—42)



2. A plug for connecting an electric wire to an electric circuit having spaced pairs of spring contacts, comprising a generally cylindrical body, a pin supported in said body axially thereof, said pin having a non-conductive tip and a conductive portion adjoining said tip axially of the pin, a cylindrical shell supported by said body in axial alignment therewith, said pin extending axially out of one end of said body, said shell being axially movable in said body and having a portion extending outwardly of said body, said portion surrounding at least part of said pin in all positions of said shell, spring means biasing said shell outwardly of said body so that said conductive portion of the pin is wholly concealed and shielded by said shell when the shell is fully extended from said body, said conductive portion of the pin being exposed when the shell is fully retracted into said body, a head at the other end of said body, an insulation fitting in said body, said fitting having a tubular portion carrying said spring means and detachably engaged with said conductive portion of the pin, said fitting having a passage therethrough for receiving said electric wire, said conductive portion of the pin having an end exposed in said tubular portion of the fitting for connection of said wire thereto, said fitting having a flange at one end, and threaded means detachably holding said flange and head together, whereby said fitting and pin are held rigidly in axial alignment within said body.

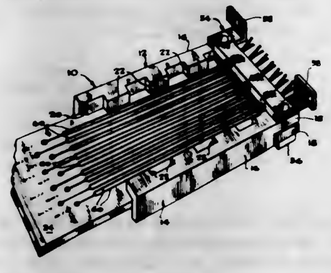
3,202,954
ELECTRICAL CONNECTOR AND ASSEMBLY THEREOF
Robert J. Kinkaid, New Cumberland, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 26, 1963, Ser. No. 311,700
13 Claims. (Cl. 339—47)



3. A contact member comprising a pair of elongated, substantially parallel, spaced contact arms resiliently joined at their sides only by an integral base member bridging the space between said arms and extending along a portion of the length of said arms adjacent one end thereof, said arms, for substantially their entire length,

including the portion along which said base member extends, being of uniform configuration and free for engaging the corresponding arms of a like mating contact member.

3,202,955
ELECTRICAL CONNECTOR
William H. McKee, West Covina, Calif., assignor to United-Carr Incorporated, a corporation of Delaware
Filed Mar. 1, 1963, Ser. No. 261,967
13 Claims. (Cl. 339—59)



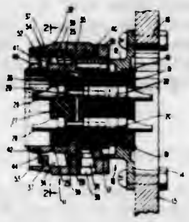
1. An electrical connector adapted to electrically connect a printed circuit component to associated circuitry whereby sliding action upon the printed circuit strips of the component is minimized, said connector comprising:

a pair of insulating bodies each of said bodies defining a side leg and a base leg, the base leg of each body adapted to be assembled in mating face-to-face relation with respect to each other, the mating face of each of said base legs having a recess therein, each of said recesses having a body of resilient material therein, said side legs each defining a groove extending therealong, said grooves adapted to receive the edges of the circuit component, said base legs each having electrical contacts therein, at least one portion of each of the contacts adapted to extend over the mating face of the body of resilient material; and

clamping means operatively associated with said mating base legs to clamp said base legs together, whereby said circuit component is inserted into said connector by slidably urging it along the grooves until said component extends into the area between said base legs, said base legs then being moved into clamping relation with said component by said clamping means, said bodies of resilient material deflecting to accommodate the board circuit strips and urging said one portion of the contacts into electrical engagement with the strips on said component.

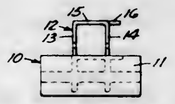
3,202,956
ELECTRICAL CONNECTOR
Walter F. Hennessey, Jr., Sidney, N.Y., assignor to The Bendix Corporation, Sidney, N.Y., a corporation of Delaware
Filed Aug. 12, 1963, Ser. No. 301,278
11 Claims. (Cl. 339—90)

4. A connector comprising an annular shell having an external shoulder, an annular coupling member surrounding said shell and having an internal flange, resilient means interposed under compression between said shoulder and flange, and an element fixedly mounted on and projecting radially from said shell for limiting relative axial movement of said coupling member and shell by said resilient means, said element including means cooperable with said flange for limiting relative angular movement of said shell and member, and said element and flange having cooperating interengageable parts urged into mating rela-



tion by said resilient means to yieldably retain said member in a predetermined angular position on the shell.

3,202,957
WIRE-CUTTING SOLDERLESS CONNECTOR
Edward E. Leach, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 30, 1962, Ser. No. 191,068
4 Claims. (Cl. 339—98)

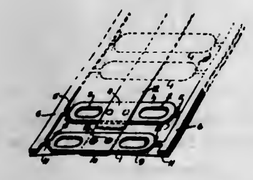


1. A wire-connector comprising: a base having open-ended wire-receiving passages defining parallel wire-supporting surfaces, said base being doubly grooved to provide a pair of parallel grooves extending across said surfaces, each of said grooves being defined by a pair of parallel closely-spaced side walls perpendicular to said supporting surfaces and a pair of inwardly divergent end walls; and a generally U-shaped resilient conductive connector member having a first leg, a second leg, and a connecting base, each said leg being outwardly tapering from said base and indented at both edges at a common distance from said base and at an area of greatest leg width, said connector member being in position for said legs to be pressed into said grooves and said legs being of appropriate dimensions essentially to provide sliding contact with the side walls and spaced relationship with the bottom and end walls thereof, and said member being releasably retained in said position by contact between the indent surfaces of said legs and the exposed corners of said end walls; at least one of said legs being slotted to receive and make resilient permanent contact with a wire supported on a corresponding wire-supporting surface, and the other of said legs having a corresponding cutting edge for severing a wire supported on the same wire-supporting surface.

3,202,958
ELECTRICAL TERMINAL STRIP
Frank F. Hines, Arlington, Mass., assignor to Baldwin-Lima-Hamilton Corporation, a corporation of Pennsylvania
Filed Feb. 27, 1961, Ser. No. 92,029
1 Claim. (Cl. 339—198)

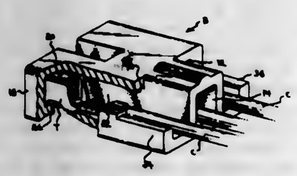
Electrical wiring terminals comprising an elongated lower strip of flexible electrically-insulating sheet material, a plurality of flexible elongated metal terminal

bodies disposed on said lower strip and each extending transversely thereof in spaced relation to one another in direction of elongation of said strip, each of said transversely-extending metal bodies having a flat central portion which abuts said lower strip and is perforated and having its opposite outer ends bent upwardly away from said lower strip, the transversely extending length of each of said metal bodies being less than the width of said lower strip, and an upper elon-



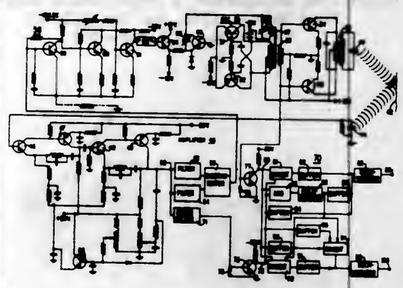
gated flexible strip of electrically-insulating sheet material which is of width less than the length of said transversely-extending metal bodies and not greater than the length of said central portions of said metal bodies, said upper strip extending lengthwise of said lower strip and over the perforated central portions of said metal bodies, and means adhesively bonding the confronting surfaces of said upper strip and said lower strip through the perforated central portions of said metal bodies and also in the spaces between said spaced metal bodies.

3,202,959
ELECTRICAL CONNECTOR AND HOUSING
Joseph R. Keller, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 10, 1962, Ser. No. 222,604
1 Claim. (Cl. 339—217)



An electrical assembly engageable with a contact pin comprising an insulating housing, at least one longitudinal passageway extending through one end and terminating at an end wall at the other end of the housing, said passageway being bounded by top, bottom and opposed sidewalls, an aperture in the bottom wall intersecting said passageway for admitting a contact pin laterally into the passageway, an internal recess in the bottom wall extending from said aperture along the passageway away from said end wall and terminating in a transverse shoulder facing said end wall, a clip member in said passageway and including a socket portion having a pin-receiving axis disposed laterally of said passageway in alignment with said aperture, a forward end of said clip member being engageable with said end wall to stop its forward movement in the passageway, and a resilient prong extending rearwardly from said forward end and across the mouth of the socket portion and terminating in a probe engaging said shoulder to retain the clip member in the passageway, said prong having an opening in alignment with said axis and providing guiding edges for passing a pin into said socket portion.

3,202,960
ULTRASONIC DOPPLER SPEED MEASUREMENT DEVICE
Hugh J. Galbraith, Riverside, Calif., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 28, 1962, Ser. No. 183,244
8 Claims. (Cl. 340—1)

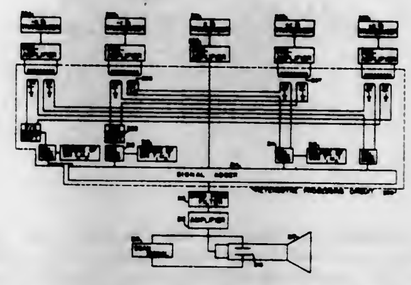


1. A system for producing an output pulse wave which indicates the difference in frequency between first and second waves including in combination, first and second pulse squarer means, means for applying said first and second waves to said first and pulse squarer means respectively for producing first and second output pulse waves, first and second inhibit gate means, means for applying said first and second pulse waves to said first and second gate means respectively, means applying said first pulse wave to said second gate means to inhibit action thereof, coincidence gate means producing a pulse when pulses of said first and second pulse waves occur simultaneously, delay means coupled to said coincidence gate means for producing a delayed pulse in response to a pulse from said coincidence gate means, means applying said second pulse wave and said delayed pulses to said first gate means to inhibit action thereof, and multivibrator means coupled to said first and second gate means for producing an output pulse in response to pulses from said first and second gate means.

7. A navigation system including in combination, generator means for producing a first electrical wave, transducer means for converting an electrical wave to a compressional wave and for propagating such compressional wave and for receiving a compressional wave and converting the same into an electrical wave, said transducer means including an input terminal for receiving an electrical wave for conversion to a compressional wave and an output terminal at which appears an electrical wave derived from the received compressional wave, means coupling said generator means to said input terminal of said transducer means whereby said transducer means converts said first electrical wave into a compressional wave and propagates such compressional wave, said transducer means receiving said compressional wave after reflection and converting the same into a second electrical wave which appears at said output terminal, amplifier means coupled to said output terminal of said transducer means for amplifying said second electrical ing said control signal, means coupling said integrator the frequency of said second electrical wave, integrator means for producing a control signal which varies with means coupled to said discriminator means for smoothwave, discriminator means coupled to said amplifier means to said generator means for controlling the frequency of said first electrical wave to minimize said control signal, a band pass filter coupled to said amplifier means for sharply selecting said second electrical wave, pulse squarer means coupled to said band pass filter and to said generator means for converting the electrical

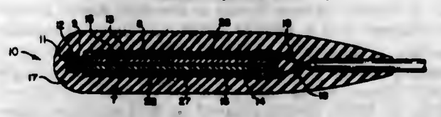
waves therefrom into rectangular waves, and means coupled to said pulse squarer means for processing said rectangular waves.

3,202,961
OBJECT DETECTING AND LOCATING APPARATUS
Gregory Michael Voglis, Teddington, and Hector Ford Wills, St. James' Park, London, England, assignors to The Commissioners for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland
Original application May 31, 1957, Ser. No. 662,942, now Patent No. 3,161,851, dated Dec. 15, 1964. Divided and this application Apr. 23, 1963, Ser. No. 275,802
4 Claims. (Cl. 340—6)



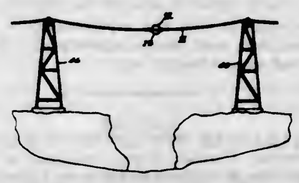
1. Apparatus for controlling the directional reception of wave energy propagated in a fluid medium at a selected frequency by an array of transducers disposed about a central point, comprising:
- divider means dividing the signals received from the transducers to either side of the central point of said array into two components;
- modulating means symmetrically located on each side of said central point, each to receive one signal component from a transducer on one side of the array and one from the transducer symmetrically located on the other side of said array;
- said modulating means modulating the component signals received from said transducers at a fixed frequency;
- signal adder means coupled to said modulating means to combine the modulated signals;
- and band-pass filter means for filtering the output from said adder means.

3,202,962
TRANSDUCER
Alvin W. Elston, Seattle, Wash., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 3, 1959, Ser. No. 837,919
4 Claims. (Cl. 340—10)



3. A hydrophone comprising:
- a pair of carrier plates;
- mounting means;
- a pair of piezoelectric elements; and
- means for making electrical connections to said piezoelectric elements, said carrier plates having rounded edges and flat surfaced central portions, the edges adapted to coact with said mounting means to minimize any restriction on the freedom of motion of the central portions of said carrier plates in a direction normal to the surface of the central portion, said mounting means adapted to hold said carrier plates in back to back relationship, said piezoelectric elements respectively adherent to said carrier plates, said carrier plates, mounting means, piezoelectric elements and electrical connecting means being electrically isolated from a surrounding medium by encapsulation with a suitable material.

3,202,963
APPARATUS FOR ILLUMINATING POWER LINES
Howard A. Flynn, E. 812 Nora, and George W. Shoemaker, E. 735 23rd, both of Spokane, Wash.
Filed Dec. 13, 1960, Ser. No. 75,522
4 Claims. (Cl. 340—28)

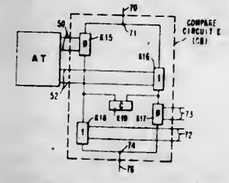


1. An apparatus for illuminating power lines comprising an insulating tube adapted to slidably receive a power line;
- a current transformer having a diametrically split circular core mounted coaxially about the axis of said insulating tube and having a secondary winding;
- a diametrically split spherical cover having a reflective outer surface and mounted coaxially about the axis of said insulating tube;
- a gaseous conduction lamp mounted exteriorly of said cover and electrically connected to said secondary winding by circuit means adapted to produce intermittent conduction of current by said gaseous conduction lamp;
- and a plastic globe mounted concentrically over said cover and exteriorly of said gaseous conduction lamp, said plastic globe being formed of two hemispherical elements having diametric mating flanges;
- means to secure said flanges to one another;
- and insulating spacer means mounted between said tube and said secondary winding, between said secondary winding and said cover, and between said cover and said globe, said insulating means being adapted to secure said tube, said secondary winding, said cover and said globe as a rigid concentric unit.

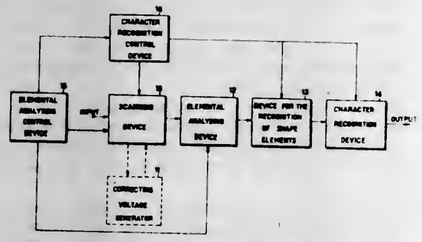
3,202,964
CRYOGENIC MEMORY SYSTEM
Harold F. Heath, Jr., Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original application June 24, 1958, Ser. No. 744,157, now Patent No. 3,134,895, dated May 19, 1964. Divided and this application Oct. 25, 1960, Ser. No. 73,470
13 Claims. (Cl. 340—146.2)

1. A compare circuit comprising a current source; first and second superconductor paths connected in parallel circuit relationship with respect to said current source; first, second, third and fourth superconductor gate conductors maintained at a temperature at which each is normally superconductive, said first and second gate conductors being series connected in said first path; said third and fourth gate conductors being series connected in said second path; superconductive means connecting a terminal between said first and second series connected gate conductors to a terminal between said third and fourth series

connected gate conductors and remaining superconductive throughout the operation of said compare circuit; means for selectively driving one or the other of said first and third gate conductors resistive in accordance with the value of a first binary input to said circuit; and means for selectively driving one or the other of said second and fourth gate conductors resistive in accordance with the value of a second binary input for said circuit whereby said circuit always provides at least one superconductive circuit path for current from said source regardless of the values of said first and second binary inputs.



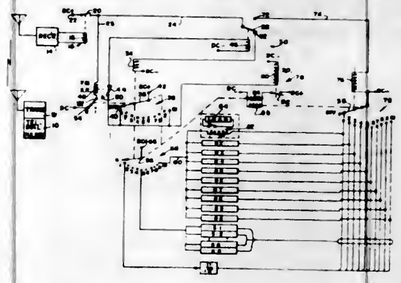
3,202,965
CHARACTER RECOGNITION SYSTEM
Morton Nadler, Fresnes, France, assignor to Compagnie des Machines Bull (Societe Anonyme), Paris, France
Filed May 31, 1962, Ser. No. 198,843
Claims priority, application France, June 21, 1961, 865,595
10 Claims. (Cl. 340—146.3)



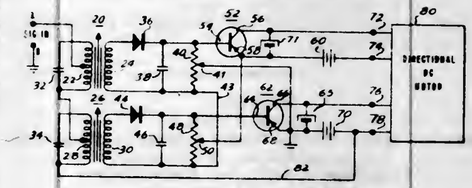
1. A device for determining the distribution of shades on a graphical data bearing medium, in a zone thereof having a perimeter with a centre of symmetry, said device comprising a plurality of means, each for evaluating the difference between the average shades of two portions of said zone which are symmetrical about said centre of symmetry, the portions for which such difference is evaluated by one of said means being different from the portions for which such difference is evaluated by any other one of said means.

3,202,966
STEPPING SWITCH WARNING SYSTEM
Kenneth Monroy, Morristown, N.Y., and Lawrence E. Cotter, 232 Washington St., Ogdensburg, N.Y.
Filed May 23, 1962, Ser. No. 197,079
3 Claims. (Cl. 340—164)

1. A warning system for selectively operating any one of a multiplicity of different devices for effecting warning signals, comprising first and second stepping switches each having its own group of stationary contacts and contactable therewith a respective movable arm, each of said multiplicity of devices being connected between a said first switch stationary contact and a said second switch stationary contact so as to link a different set of first and second stationary contacts than any other of said devices, said arms being coupled to a source of energy for activating any one of said devices when said arms are moved into contact with the said set of stationary contacts between which that device is connected, means for producing a first pulse train having a variable number of pulses up to a given maximum pulse number and thereafter a second pulse train having a variable number of pulses for effectively designating any one of said contact sets to which a said device is connected by the number of pulses in each said train, first and second means responsive to said first and second pulse trains for causing the said arms of said first and second stepping switches respectively to step to the respective stationary contacts in the set thereof effectively designated by the pulse trains, a transfer relay having a set of transfer contacts respectively coupled to said first and second step causing means, and delay means coupled to said transfer relay and operative in response to the first pulse of the first pulse train to cause the first pulse train to be directed via the one of said transfer contacts that is connected to the said first step causing means and after a predetermined time delay, including the passage of time required for the said given maximum number of pulses in the first pulse train to expire, for causing said relay to direct the second pulse train via the other transfer contact that is connected to the said second step causing means.



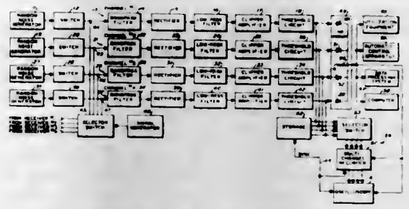
3,202,967
REMOTE CONTROL SYSTEM
Robert A. Wolff, La Grange Park, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed May 7, 1962, Ser. No. 192,871
8 Claims. (Cl. 340—171)



1. A control system having a common signal translation channel and a pair of individual signal translation channels selectively energizable responsive to receipt of a corresponding pair of control signals; a discriminator in said system comprising a pair of electron valves each having an input circuit coupled to said common signal translation channel and an output circuit coupled to a corresponding one of said individual signal translation channels; an impedance array, for applying bias potentials to said electron valves, coupled across said input circuits such that potential appearing across any of said input circuits biases its corresponding electron valve in a conductive direction and biases said other electron valve in a non-conductive direction; said impedance array being arranged such that all or only a portion of an impedance value may be used in applying bias potential

to said electron valves, whereby the bias potentials are proportioned such that simultaneously appearing potentials at said input circuits must bear at least a ratio of magnitude substantially larger than unity before conduction occurs in either of said electron valves.

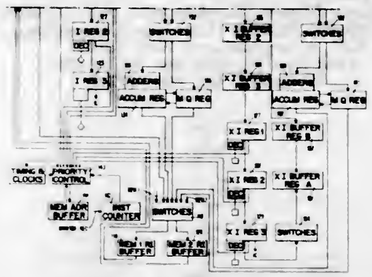
3,202,968
SIGNAL MONITORING INSTRUMENT
Herman R. Eady, Jr., La Mesa, Robert D. Strait, San Diego, and Paul I. Atkinson, Los Altos, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 25, 1961, Ser. No. 134,058
6 Claims. (Cl. 340—172)
(Granted under Title 35, U.S. Code (1952), sec. 266)



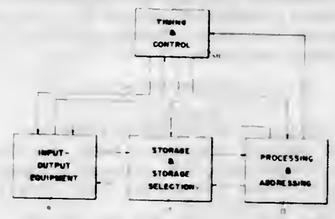
1. An instrument for combining and monitoring a plurality of electrical input signals and transforming same into a unitary electrical signal having an amplitude substantially equal to that of the one thereof having the largest amplitude comprising in combination, a plurality of diodes equal in number to the number of input signals to be monitored, said diodes each having an anode and a cathode, means respectively connected to the anodes of said diodes for shaping each of said plurality of input signals in accordance with a predetermined program, means interconnecting each of the cathodes of said diodes for combining the electrical signals therefrom, a ground means, a reactance means coupled between the interconnected cathodes of said diodes and said ground means, means coupled to the outputs of said signal shaping means and said electrical signal combining means for recording and displaying the output signals therefrom simultaneously, means for calibrating said input signal shaping means and said output signal recording and displaying means, means for receiving said plurality of input electrical signals from associated electrical equipment, means connected to said signal shaping means, said calibration means, and said input signal receiving means for selectively applying the received input signals and the output calibration signals therefrom thereto either individually or collectively, and utilization equipment electrically coupled to the aforesaid signal combining means for response to said unitary electrical signal.

3,202,969
ELECTRONIC CALCULATOR
Stephen W. Dunwell and Clarence Ernest Stephens, Poughkeepsie, William R. Stringfellow, Wappingers Falls, and Vaughn D. Winkler, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1959, Ser. No. 862,967
18 Claims. (Cl. 340—172.5)

3. A calculator comprising a memory for storing data and instruction words for use by said calculator, an arithmetic unit for receiving data words withdrawn from said memory and performing arithmetic operations thereon, a plurality of instruction registers for storing instruction words withdrawn from said memory, means connecting said registers in series, means for withdrawing said instruction words from said memory and storing said instruction words in said registers, means to decode said instruction words, means responsive to said decoding means to select in accordance with a predetermined priority one of said instruction words in said registers for execution, means responsive to said execution for gating said selected instruction word through said registers.

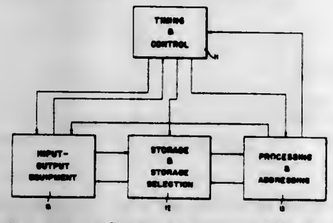


3,202,970
SCATTER READ/WRITE OPERATION USING PLURAL CONTROL WORDS
Rex Rice, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1960, Ser. No. 81,628
16 Claims. (Cl. 340—172.5)



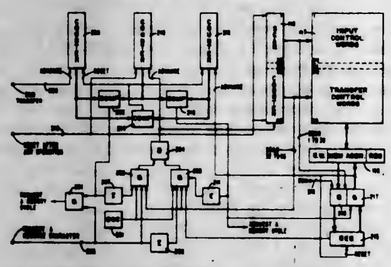
1. A data processing system comprising: means for storing data and program instructions at selectable storage locations; each said program instruction having the capacity to specify storage locations from which data is to be received for processing, storage locations in which processed data is to be stored, a storage address indexing operation, a data processing shift operation, and any of a plurality of data processing operations; data processing means having data storage components for receiving from said storage means data to be processed and from which processed data is supplied to said storage means and including data processing components; a plurality of timer stages adapted to be activated sequentially, means controlled by activated timer stages for controlling in sequential steps preselected dynamic connections and interconnections of the components of said processing means with each other and with said storage means to accomplish the storage-location addressing specified by each program instruction and the execution of any operations specified thereby; means for selecting individual ones of said program instructions; and means responsive to each of the individual operations and storage locations specified by each selected program instruction for effecting in conformity therewith preselection and sequential activation of the minimum complement of said timer stages required for the execution of said specified operations and for causing the last active one of the selected stages to control said selecting means to select a further program instruction for execution.

3,202,971
DATA PROCESSING SYSTEM PROGRAMMED BY INSTRUCTION AND ASSOCIATED CONTROL WORDS INCLUDING WORD ADDRESS MODIFICATION
Gerrit Anne Blaauw, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1960, Ser. No. 81,629
27 Claims. (Cl. 340—172.5)



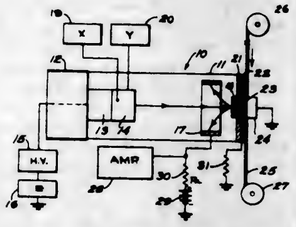
1. A data processing system comprising means for storing plural words including data and program instruction and control words at individual address-selectable word storage locations, means for selecting from said storage means individual ones of said instruction words, means responsive to each selection of an instruction word for automatically selecting for concurrent use therewith and independently of any operation specified thereby a further word selected from a storage location particularly specified by said each selected instruction word, means responsive to the selected instruction word for performing word processing operations specified thereby, and means for selecting from said storage means for use in said processing operation at least one data word selected from a storage location specified jointly by address portions of both of said words.

3,202,972
MESSAGE HANDLING SYSTEM
Thomas S. Stafford, Wappingers Falls, and Gerry D. Granito, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 17, 1962, Ser. No. 210,512
7 Claims. (Cl. 340—172.5)



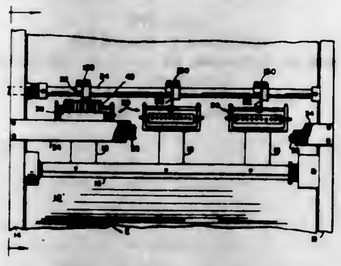
1. In a message handling system wherein messages and end of message characters are randomly received on a plurality of input lines each associated with a stored input control word containing the address of a main memory area in which a message from the respective input line is being stored and wherein a scanning means is provided for utilizing the input control words in a given sequence to control the sampling of messages received from the respective input lines and the storing of such messages in the appropriate main memory areas, an apparatus for enabling completed messages to be transferred from the main memory to a utilization device in the same order as the messages are completed, said apparatus comprising:
first storage means having a plurality of addressable storage positions therein for respectively storing a plurality of transfer control words adapted to be utilized in a given sequence for controlling the transfer of information sequentially from designated main memory areas to the utilization device,
addressing means associated with said first storage means and operable in the interval between successive input scanning operations for addressing in sequence the respective storage positions wherein the transfer control words are stored;
temporary storage means for temporarily storing a memory address respectively associated with any of the input lines;
first control means responsive to an end of message character received on any of the input lines for causing the memory address portion of the input control word associated with that line to be stored in said temporary storage means;
counting means for maintaining a count representing the number of end of message characters received, each number in said count also indicating an order of transfer priority to be assigned to the corresponding one of the completed messages;
and second control means responsive to said addressing means and to said counting means, in the intervals between input scanning operations, for causing the memory address stored in said temporary storage means to be transferred into the storage position of a selected one of the transfer control words according to the count number than registered by said counting means, thereby conditioning the system for transferring stored messages from the main memory to the utilization device in the same order as the messages are completed.

3,202,973
ELECTROSTATIC REPRODUCING APPARATUS
James J. Brophy, Western Springs, Ill., assignor to IIT Research Institute, a corporation of Illinois
Filed Apr. 18, 1963, Ser. No. 273,907
10 Claims. (Cl. 340—173)



10. An electrostatic reproducer for playback of electrostatic records comprising in combination:
a cathode ray tube including an electron beam current generator;
scanning means for deflecting said electron beam;
a beam impinging portion of said tube having a multiplicity of conductive electrodes passing therethrough;
means electrically connected to said conductive electrodes to effectively maintain the D.C. level at ground potential during operation;
a backing electrode opposite said conductive electrodes arranged to pass said records therebetween;
insulating secondary electron emitting means interposed between said electrodes and said beam with said insulating secondary electron emitting means having a D.C. ratio of secondary emission beam current to electron beam current of about unity and varied as a result of the electrostatically induced charge on said electrodes by said record in contact therewith;
secondary electron collecting means within said tube;
means connected to said collecting means responsive to the magnitude of secondary electrons collected to generate a signal proportional thereto; and
an ion generator disposed between said electrodes and a record medium take-up device to emit ions of both polarities onto the surfaces of said medium.

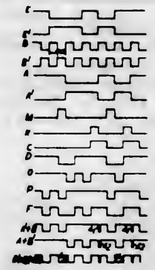
3,202,974
FLUID SUPPORTED MEMBERS
Allen K. Bailey, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 9, 1960, Ser. No. 48,527
8 Claims. (Cl. 340—174.1)



2. In apparatus for boundary fluid support of members from a relatively moving surface:
(A) a relatively moving surface;
(B) a plurality of members to be supported by boundary fluid from the relatively moving surface;
(C) an elongated support member;
(D) an arm means for each boundary supported member connected at one end thereof to said support member;
(E) cradle means connected to the other end of said arm means; said cradle means including,
(F) means for pivotally supporting said boundary supported member, said pivotally supporting means being adjustable for laterally adjusting said boundary supporting member relative to said arm means;
(G) means for guiding said surface in a path of travel;
(H) means fixed with respect to said guiding means for movably mounting said support member; said mounting means including,
(I) means for adjusting the longitudinal position of said support member relative to said mounting means to alter in unison the positions of said boundary supported members in a direction at an angle to the direction of relative movement of the surface thereto without tending to alter the separation of the boundary supported members from the surface or the angle thereof to the direction of record movement under any operating condition.

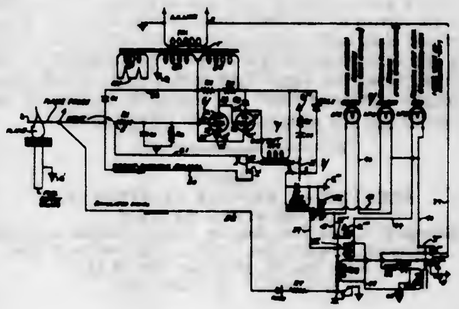
3,202,975
PHASE MODULATED PULSE RECORDING AND READING SYSTEMS
Désiré Camille Joseph Magnetteaux, Antwerp, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 19, 1962, Ser. No. 180,795
Claims priority, application Netherlands, Mar. 24, 1961, 262,775
6 Claims. (Cl. 340—174.1)

1. A circuit for converting a pulse code modulated signal into a phase modulated signal comprising:
(a) a source of pulse code modulated signals E,
(b) a source of periodic reference timing signals B,
(c) means coupled to said sources for producing a pulse code signal A identical in form to the said signal E but delayed therefrom by one period (T) of the said periodic signal B,
(d) means coupled to said sources for producing signals representative of the application of the Boolean function $AB+A'B'$ to the said signals A and B, where A' and B' are the respective inverses of the said signals A and B,



(e) means coupled to said sources and to said first-named means for performing a predetermined logic operation on the said signals A, B, and E to produce correction gating signals the durations of which overlap the level transitions of said signal A, and
(f) means for gating the said signals representative of the function $AB+A'B'$ under the control of said correction gating signals.

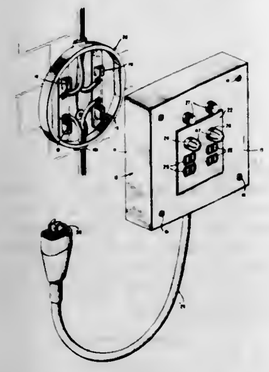
3,202,976
SUPERVISORY SYSTEM WITH FAILURE DISCRIMINATION
William G. Rowell, Quincy, Mass., assignor to Scully Signal Company, Melrose, Mass., a corporation of Massachusetts
Filed Dec. 3, 1959, Ser. No. 857,080
21 Claims. (Cl. 340—213)



1. In combination with a system in which a signal is to be transmitted between the input and output of the system, means for applying to the input a repetitively modified signal, means connected to the output for responding to the recovery therein of the repetitively modified signal and for producing a predetermined output signal condition when said modified signal is absent from said output upon a failure in the system or a loss of the signal, means responsive to the predetermined output signal condition for injecting into the input a simulation

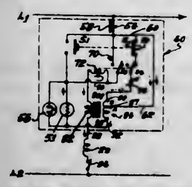
of the said signal, means operable in the event of failure of said responding means to respond to the simulated signal for indicating a failure in the system, and means operable in the event of response of the responding means to the simulated signal for indicating loss of the first-mentioned signal.

3,202,977
EMERGENCY ELECTRICAL POWER OUTLET UNIT
Jesse R. Sims, 426 Manor Circle, Florence, S.C.
Filed May 9, 1962, Ser. No. 193,561
2 Claims. (Cl. 340—252)



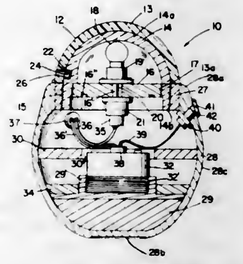
1. A portable emergency electrical power outlet unit for enabling firefighters to power electrical firefighting appliances at the scene of a fire from the exterior of a burning building and without entering the building by utilizing the base of a socket-type meter on the outside of said building, said unit comprising a socket type meter base receptacle, a plug-in having electrical contact prongs adapted to be plugged directly into the socket elements of said socket-type meter base after removal of the meter from the base, plural electrical outlets on said body to receive the plugs of plural electrical appliances and electrically connected with said contact prongs, a grounding cable carried by said body and extending exteriorly thereof and electrically connected with said outlets and having a clip at its free end for temporary attachment to said meter base, and signal light means on said body electrically connected with said outlets to indicate to the user of said unit when said outlets are energized.

3,202,978
ELECTRICAL REMOTE CONTROL AND INDICATING SYSTEM
George E. Lewis, Los Angeles, Calif., assignor to Hydril Company, Los Angeles, Calif., a corporation of Ohio
Filed Jan. 31, 1961, Ser. No. 86,137
15 Claims. (Cl. 340—286)



11. Control means adapted to be connected in a circuit between a source of electrical power and an electrically actuable device; said control means comprising in combination a main switch, circuit means for connecting the switch in said circuit for actuation of the device in response to switch closure, a shunt circuit connected across the switch to be energized when the switch is open, indicator means energized by current in the shunt circuit, transformer means for energizing the indicator means when the switch is closed, variable impedance means, circuit means connecting said impedance means in a control circuit for adjustably varying the indicator energization when the main switch is open, and means responsive to closure of the main switch for disabling said variable impedance means to render the indicator energization independent of said impedance means when the main switch is closed.

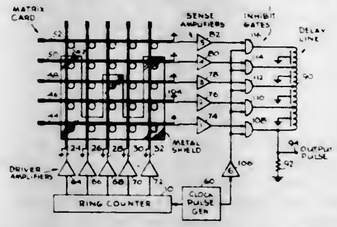
3,202,979
HIGHWAY MARKER
Jerome H. Lemelson, 8B Garfield Park Homes, Metuchen, N.J.
Filed June 28, 1960, Ser. No. 39,401
2 Claims. (Cl. 340—321)



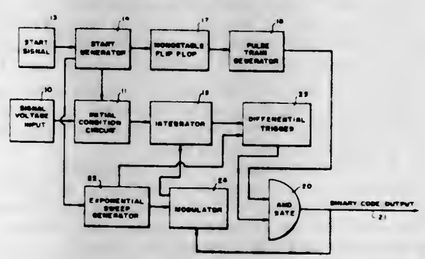
1. An illuminated highway marker comprising in combination:
(a) an assembly including a hollow, rigid walled housing having upper and lower housing assemblies and being of substantially bulbous external shape,
(b) ballast means provided in said lower housing assembly,
(c) an opening in the top of said housing,
(d) said housing having a battery compartment,
(e) internal reinforcing plate means disposed so as to form a partition to separate the upper portion from the lower portion of said assembly,
(f) said upper portion of said housing having a lens member with a transparent dome-shaped upper wall,
(g) a light source secured within said dome-shaped upper wall portion and operative for projecting light through the transparent portion thereof extending upwardly from said housing,
(h) a battery located within said battery compartment in the lower portion of said housing to define at least part of said ballast and help maintain the assembly erect on a surface, and
(i) means for hermetically sealing the inside of said housing and said lens member upon assembly of the two.

3,202,980
CATHODE RAY TUBE CONTROL MATRIX EMPLOYING MAGNETIC SHIELDS
Joseph J. Stone, Glenview, and Roman A. Adams, Skokie, Ill., assignors to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 28, 1963, Ser. No. 254,137
8 Claims. (Cl. 340—324)

1. A character signal generator comprising a plurality of transformers each of which has a primary winding and a secondary winding, said transformers being disposed in an array of columns and rows, means connecting all the primary windings in each separate column of transformers in series, means connecting all the secondary windings of said transformers in each separate row in series, means for magnetically shielding the secondary windings of predetermined ones of said transformers from the primary windings of said predetermined ones of said transformers for preventing a voltage from being induced in said secondary windings in response to current in said primary winding, means for sequentially applying a current pulse to each one of the columns of a series connected primary winding, delay means to which each one of said rows of series connected secondary windings are connected for sequentially arranging output from the secondary windings of transformers which are disposed in a single column of transformers, and means for displaying in successive lines after each energization of a different column of series connected primary windings the output of said delay means.

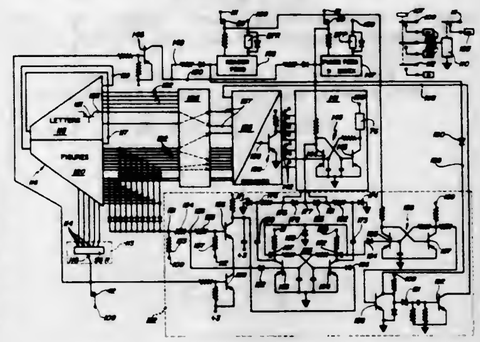


3,202,981
ANALOGUE-TO-BINARY CODE CONVERTER
Ditmar H. Bock, Buffalo, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 16, 1960, Ser. No. 9,142
8 Claims. (Cl. 340—347)



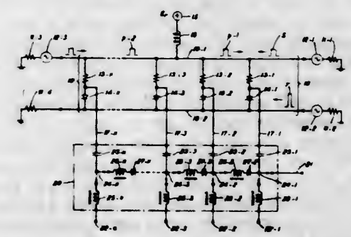
8. Apparatus for converting an analogue input signal into a binary code output signal comprising a source of periodic clock pulses, pulse train generating means connected to said source for producing a train of pulses between said clock pulses, an exponential waveform generator connected to said source for producing a voltage waveform whose amplitude decreases one-half with each successive pulse of said pulse train, an integrator for storing the input signal voltage for discharge in stepwave form, trigger means coupled to said integrator and to said exponential waveform generator for producing output voltages whenever the output voltage of said waveform generator is equal to or less than the output voltage of said integrator, said output voltages thereby occurring at times corresponding to a binary representation of the portion of the input signal integrated, gating means for producing output pulses only when the output pulses of said trigger means and of said pulse train generator are substantially in coincidence to thereby produce a binary coded pulse train, and modulator means for modulating pulses passed by said gating means with the output of said exponential waveform generator to provide said integrator with pulses of steadily decaying amplitude to reduce the stored signal voltage on said integrator by a predetermined amount of the times when the gating pulses are passed.

3,202,982
CODE CONVERSION APPARATUS
Charles A. Whitney, Canton, Conn., assignor to Royal McBee Corporation, Port Chester, N.Y., a corporation of New York
Filed July 12, 1960, Ser. No. 42,324
7 Claims. (Cl. 340—347)



1. Apparatus for converting codes of a first system into codes of a second system comprising, means for reading a record containing codes in said first system, means for translating codes read by said reading means into discrete signals, means for moving said record after each code read, means for encoding said discrete signals into codes of said second system, means for recording said second system codes, and means responsive to the initial one of dicrete signals representative of information whose case in said second system differs from that of information last encoded for inhibiting said record moving means and for controlling said encoding and said recording means to produce a precedence code prior to the conversion of the last read information.

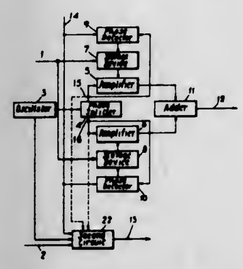
3,202,983
MULTIDIODE COINCIDENCE DETECTOR
Dennis B. James, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 8, 1960, Ser. No. 74,714
12 Claims. (Cl. 340—347)



1. Apparatus for detecting the coincidences of diverse pulse signals, which comprises a transmission path having two opposite extermities and capable of propagating pulse signals from either extremity to the opposite extremity, means for applying a first group of the pulse signals to one extremity of said path, means for applying a second group of the pulse signals to the other

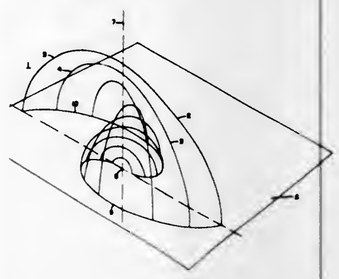
extremity of said path, a plurality of bistate diode means, each characterized by a first signal state and a second signal state and each being affixed to said path at a distinct one of various positions therealong, and means coupled to said path for biasing all of said bistate means to their fist signal states and so proportioned that simultaneous concurrences of pulse signals from said first and second groups at said various positions cause the bistate means there positioned to adopt their second signal states.

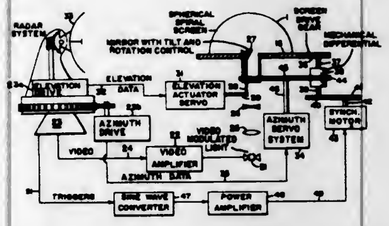
3,202,984
COHERENT SYSTEMS FOR TWO-PULSE M.T.I. DEVICES
Guy Le Parquier, Paris, France, assignor to C.S.F.-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Nov. 15, 1962, Ser. No. 237,845
Claims priority, application France, Apr. 19, 1957, 736,855
3 Claims. (Cl. 343—5)



1. A circuit, for radar systems in which first and second pulses of recurrent pairs of pulses are transmitted and associated respectively with first and second synchronizing pulses and which comprise a single stable oscillator, said circuit comprising: means for deriving from said single oscillator a first and a second wave respectively coherent with said first and second pulses of said recurrent pairs of radar pulses, said means comprising two portions respectively associated with said first and second radar pulses for respectively delivering said first and second coherent waves; each of said portions comprising: a phase splitter having an input coupled to said oscillator, and a first and a second output for respectively delivering a sine wave and a cosine wave; a first phase detector having a first input coupled to said first output of said phase splitter, a second input, and an output; a second phase detector having a first input coupled to said second output of said phase splitter, a second input and an output; means for applying at least said radar pulses associated with said portion to said second inputs of said first and second phase detectors; first and second storage means having respective signal inputs respectively connected to said outputs of said first and second phase detectors, respective control inputs, and respective outputs; means for applying only those of said synchronizing pulses which are associated with said radar pulses associated with said portion to said control inputs of said first and second storage means; first and second variable gain amplifiers having respective signal inputs respectively connected to said first and second outputs of said phase splitter, respective control inputs respectively connected to said outputs of said first and second storage means, and respective outputs; and an adding circuit having a first and a second input respectively connected to said outputs of said first and second amplifiers, and an output for delivering said coherent wave associated with said radar pulses.

3,202,985
TRUE THREE-DIMENSIONAL DISPLAY SYSTEM
Donald W. Perkins, De Witt, and Joseph A. Wainright, Baldwinsville, N.Y., assignors to General Electric Company, a corporation of New York
Filed Sept. 26, 1961, Ser. No. 140,790
11 Claims. (Cl. 343—7.9)

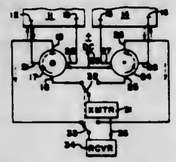




1. A display screen having a surface generated by a plurality of quarter ellipses of uniform ellipticity having a common major axis and a plurality of minor axes, said minor axes of said ellipses lying in a single plane, and said surface having as an outer boundary at least one section of a spiral formed by the locus of the intersection of the quarter ellipses with said plane.

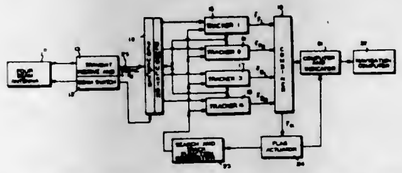
8. A three-dimensional display comprising, an information system for obtaining a first signal indicative of the presence of objects to be displayed, said information system including an antenna to gather the information and means to vary the azimuth and elevation angle of said antenna in a predetermined manner, a light sensitive screen having a surface generated by a plurality of quarter circles located between a plane and a line perpendicular to said plane, said quarter circles having a center point located at the point of intersection of said line with said plane, said surface having as an outer boundary at least one section of a spiral formed by the locus of intersections of said quarter circles with said plane, a light source, first means to modulate said light source in response to said first signal from said information system to produce a light beam, a rotatable and tiltable mirror to project said light beam on to said screen, a lens system positioned between said light source and said mirror to focus said light beam on said mirror, second means responsive to the elevation angle of said antenna to tilt said mirror in synchronism with said antenna, third means responsive to the azimuth angle of said antenna to rotate said mirror in synchronism with said antenna, and means to rotate said screen at a rate responsive to the rate at which positional data is impressed on said screen to form apparently persisting images within a volume swept through by said screen during rotation.

3,202,986
ANTENNA SWITCHING SYSTEM
Burton L. Cordry, Glen Arm, Md., assignor to The Bendix Corporation, Towson, Md., a corporation of Delaware
Filed June 26, 1961, Ser. No. 119,600
8 Claims. (Cl. 343—9)



4. A Doppler navigation system for a vehicle comprising an antenna array fixed relative to said vehicle, four waveguide couplings for individually energizing said array to produce four distinct beam positions extending at predetermined angles from said vehicle, a microwave transmitter, a pair of four-port circulators each having an isolated input and output switchable between the remaining pair of terminals of the four-port, a first microwave switch operable alternately to couple said transmitter to said inputs of said pair of circulators, a microwave receiver, a second microwave switch operable alternately to couple said receiver to said outputs of said pair of circulators, coupling connections between the remaining pairs of terminals of both of said circulators and said four waveguide couplings respectively, means for switching said first and second switches in unison to connect said transmitter and said receiver to the same circulator, and means for switching said circulators.

3,202,987
RAPID SLEW INITIATION CIRCUIT
Ray Lester Brandao, Baltimore, Md., assignor to The Bendix Corporation, Baltimore, Md., a corporation of Delaware
Filed May 24, 1962, Ser. No. 197,431
3 Claims. (Cl. 343—9)



1. In a Doppler radar system including a variable frequency tracking oscillator for generating a frequency related to the Doppler spectrum of the radar return signals. the frequency of said oscillator being controlled by a direct voltage input signal; slewing means for varying said direct voltage signal to cause said oscillator to sweep through a range of frequencies thereby to search for the Doppler return signal, comprising:

means for generating a periodic voltage,

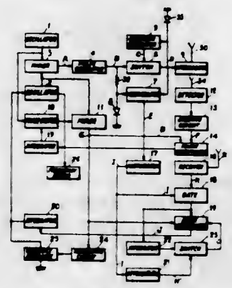
first integrating means for converting said periodic voltage to a voltage varying linearly from an initial level, the output of said first integrating means being supplied to said tracking oscillator to vary the frequency thereof,

a trigger circuit connected to return the output of said first integrating means to said initial level upon actuation,

second integrating means also receiving said periodic voltage and accumulating the same to develop a voltage of fixed magnitude for actuating said trigger circuit, and

means responsive to the presence of a Doppler return signal for maintaining the output of said second integrating means at a constant magnitude less than that required to actuate said trigger circuit.

3,202,988
PULSE TYPE DISTANCE MEASURING SYSTEM
Paul Fombonne, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed July 17, 1963, Ser. No. 295,633
Claims priority, application France, July 19, 1962, 904,448
10 Claims. (Cl. 343—13)



1. An apparatus for measuring the distance between a point and an object comprising at said point: means for transmitting pulses; means for receiving response pulses from said object; means for generating a variable frequency wave; means for synchronizing the transmission of said transmitted pulses with first points, having a first predetermined phase, of first predetermined cycles of said wave; and means for varying the frequency of said wave to bring second points, having a second predetermined phase, of second predetermined cycles of said wave into time coincidence with said received pulses, said second cycles being respectively offset with respect to said first cycles by a number N of cycles, wherein N is any integer including 0.

3,202,989
PULSE COMPRESSION RADAR RECEIVER FOR RANGING MOVING TARGETS
Yoichi Kagawa and Yasutoshi Ishizaki, both of Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed July 6, 1961, Ser. No. 123,382
Claims priority, application Japan, July 7, 1960, 35/30,754
4 Claims. (Cl. 343—17.2)

1. In a radar system wherein the transmitted signal comprises a relatively wide pulse having at least n different frequency components in a predetermined phase relationship and in which said signal is subject to Doppler frequency shifting; a radar receiver comprising:

(A) an input circuit for receiving and supplying echos of said transmitted signals;

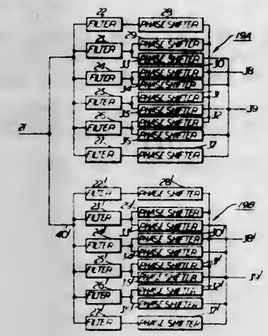
(B) a decoding circuit including at least one decoding unit connected to receive the echo signals from said input circuit, each of said decoding units having:

(1) $n+m$ filters each having a preselected pass characteristic, connected in parallel to receive said echo signals, where m is an integer determined by the anticipated Doppler frequency deviation,

(2) $m+1$ separate groups of phase shift means connected to receive the outputs of said filters, each of said groups having n individual phase

shift means with at most one of said individual phase shift means of said group being connected to one of said filters;

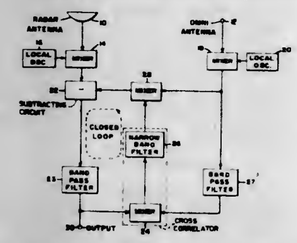
(C) a separate output terminal for each of said groups, each of said output terminals being connected to com-



bine the outputs of all the individual phase shifting means in the group connected thereto;

whereby said n different frequency components are all derived in phase at a given instant from at least one of said output terminals.

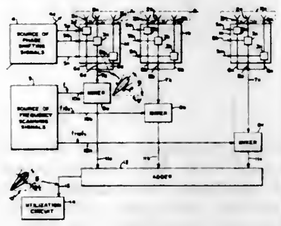
3,202,990
INTERMEDIATE FREQUENCY SIDE-LOBE CANCELLER
Paul W. Howells, Morrisville, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 4, 1959, Ser. No. 810,961
9 Claims. (Cl. 343—100)



1. In a noise canceller, a main signal transmission channel having an output terminal, an auxiliary signal transmission channel having an output terminal, said channels having cross coupling therebetween, means for detecting the relative amplitude and phase of each of the cross coupled signals, a compensating cross feed network capable of adjustment for minimizing cross coupling at at least one output terminal, means responsive to said relative amplitude and phase for automatically adjusting said cross feed network in order to minimize cross coupling.

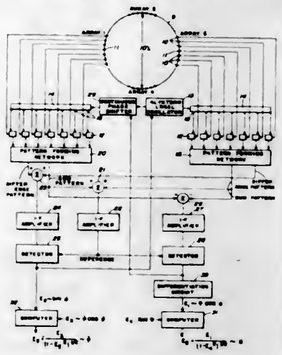
3,202,991
ELECTRONIC SCANNING OF LARGE ARRAYS
Paul W. Howells, Morrisville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 30, 1959, Ser. No. 851,189
4 Claims. (Cl. 343—100)

1. A system for selecting a desired sector of space and for scanning said desired sector with a narrow wave directivity pattern comprising a plurality of equally spaced wave receptors each exhibiting a relatively broad wave directivity pattern, said receptors being grouped into a lesser plurality of identical blocks of wave receptors wherein each block exhibits a relatively narrow wave directivity pattern, means for directing said relatively narrow pattern to said desired sector comprising means for shifting the phases of the waves received by each receptor in accordance with the relative physical spacing of the receptors and the direction of said desired sector to produce respective phase shifted waves, means for vectorially adding said phase shifted waves of each block to produce



a first resultant wave for each block, said groups of receptors being further arranged into an array exhibting a still narrower wave directivity pattern, means for scanning said narrower pattern at a desired rate comprising means for frequency shifting each of said first resultant waves in accordance with the relative physical spacing of said blocks to produce respective frequency shifted waves, and means for vectorially adding said frequency shifted waves to produce a second resultant wave.

3,202,992
INTERFEROMETER SEEKER
Robert L. Kent, Andover, and Joseph C. Nowell, Cambridge, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 28, 1962, Ser. No. 199,229
7 Claims. (Cl. 343—100)



5. An interferometer seeker for establishing signals for controlling a missile to a target comprising,

(a) linear antenna array means positioned on the periphery of the outer shell of the forward part of a missile having equally spaced apart antenna elements for receiving target signals,

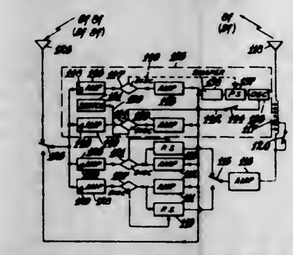
(b) mixing means connected to each of said elements,

(c) variable local oscillator means connected to said mixing means for supplying a series of local oscillator signals to said mixing means of each of said elements respectively, said mixing means having intermediate frequency output signals being the difference between said receiving signals and said local oscillator signals,

(d) electronic network and summing means connected to said mixing means for forming from said intermediate frequency output signals a reference signal, an additive difference signal, and a difference sum signal,

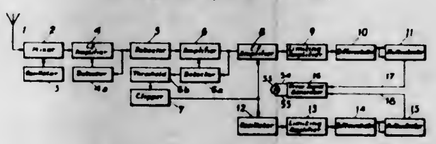
(e) synchronous detecting means connected to said network and summing means for comparing said additive difference signal with said reference signal and said difference sum signal with said reference signal for establishing direct current output signals proportional to the coordinates of the lead angle from the missile to a target for effecting control of the missile to a target.

3,202,993
RADIO NAVIGATION SYSTEMS
William Joseph O'Brien, London, England, assignor to Decca Limited, a British company
Filed Jan. 30, 1961, Ser. No. 85,640
Claims priority, application Great Britain, Feb. 15, 1960, 5,375/60
16 Claims. (Cl. 343—105)



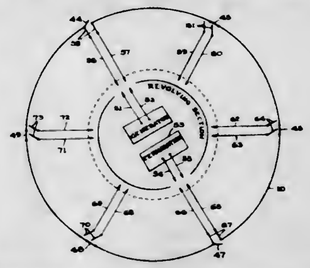
15. A transmitting system for a radio navigation system comprising at least three spaced transmitters, each arranged to radiate all the time but only one signal being transmitted from any transmitter at any time wherein each transmitter radiates one of four different frequencies which are all harmonics of a common fundamental frequency with all the stations radiating different frequencies which are all locked in phase and each transmitter radiating alternately on two different frequencies which differ in frequency by said fundamental frequency but which are locked in phase.

3,202,994
SYSTEMS FOR DETERMINING THE ELEVATION ANGLE AND AZIMUTH OF A BODY
Paul Fombonne, Paris, France, assignor to C.S.F.-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed July 26, 1962, Ser. No. 212,554
Claims priority, application France, Aug. 11, 1961, 870,661
4 Claims. (Cl. 343—106)



1. A receiver for receiving, during time intervals occurring with a substantially constant repetition frequency, a carrier wave which is amplitude modulated by a frequency modulated wave and transmitted as a moving beam the reception level of said carrier wave being modulated in the course of each of said time intervals by the motion of the beam and being maximum at the intermediate instant of said time intervals, said receiver comprising: means for receiving said carrier-wave; means for demodulating said carrier wave to obtain a frequency modulated signal constituted by said frequency modulated wave, additionally amplitude modulated by said motion of said beam; automatic gain control means for maintaining substantially constant the maximum amplitude of said frequency modulated signal for each of said time intervals; means for amplitude detecting said frequency modulated signal; means for deriving from said amplitude detected signal a gating signal, the duration of which corresponds to the interval of time during which said amplitude detected signal is above a predetermined level; a normally blocked oscillation source having the same frequency variation range as the possible various instantaneous frequencies of said frequency modulated wave; a normally blocked low frequency amplifier; means for applying said frequency modulated signal to said low frequency amplifier; means for applying said gating signal to said low frequency amplifier and to said source to unblock them during the duration of said gating signal; means for deriving from the output signal of said low frequency amplifier a first series of pulses whose number is a predetermined function of the number of cycles contained in said output signal of said low frequency amplifier; means for deriving from the output signal of said oscillation source a second series of pulses whose number is said predetermined function of the number of cycles contained in the output signal of said source an integrating and subtracting device having two inputs and an output, forming the difference between the integrated quantities of electricity respectively applied to its two inputs; and means for applying said first and second pulsed signals respectively to said two inputs to obtain on said output an error signal between the central instantaneous frequency of the output signal of said low amplifier and the operating frequency of said oscillation source.

3,202,995
STEERABLE CIRCULAR TRAVELING-WAVE ANTENNA
Floyd V. Schultz, Knoxville, Tenn., assignor to The University of Tennessee Research Corporation, Knoxville, Tenn., a corporation of Tennessee
Filed Mar. 3, 1961, Ser. No. 93,273
2 Claims. (Cl. 343—732)



2. A traveling-wave antenna comprising a horizontal circular loop having a circumference of from approximately three to seven wave lengths, a plurality of diametrically opposed breaks equally spaced in the circumference of said loop, switches normally closing said breaks, a rotary switching station centrally disposed within said loop, a generator at said station, a termination impedance at said station, a pair of generator leads from said generator parallel to a radius of said loop, a pair of termination impedance leads from said termination impedance in the same diameter as and oppositely disposed to said generator leads, a pair of leads for and connected across each of said breaks and extending to said station for selective engagement by said generator and said impedance leads upon rotation of said station, said switches being open at

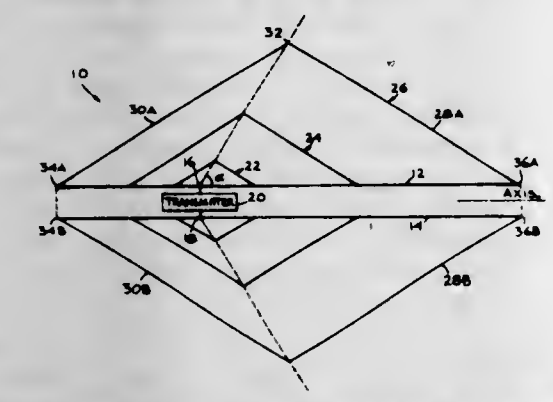
said breaks connected by said pairs of leads engaged by said generator and said impedance leads whereby the main beam of radiation of said loop is directed away from that pair of leads engaged by said generator leads.

3,202,996

LOG-PERIODIC RHOMBIC ANTENNA ARRAY

Robert L. Tanner, Menlo Park, Calif., assignor, by mesne assignments, to Control Data Corporation, South Minneapolis, Minn., a corporation of Minnesota

Filed Dec. 26, 1962, Ser. No. 247,012
12 Claims. (Cl. 343—733)



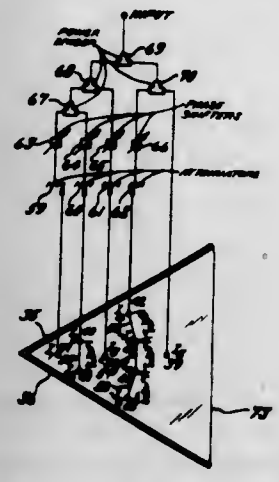
1. An antenna array comprising first and second feed lines of finite length, first and second input terminals on said first and second feed lines disposed intermediate their ends, generator means connected between said input terminals, a plurality of rhombic elements each respectively including first and second identical rhombic halves each comprised of a pair of wires of equal length, each of said plurality of rhombic elements being of identical shape but of a different size, and means concentrically connecting said first rhombic halves to said first feed line and said second rhombic halves to said second feed line.

3,202,997

SCANNING CORNER ARRAY ANTENNA

Allan C. Schell, Medford, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Oct. 16, 1961, Ser. No. 145,519
8 Claims. (Cl. 343—814)
(Granted under Title 35, U.S. Code (1952), sec. 266)



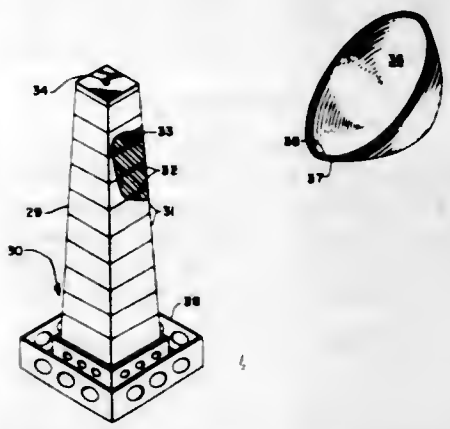
1. A scanning antenna comprising two intersecting plane surfaces of highly conductive material, said plane surfaces being positioned on mounting means located at the vertex of the angle formed thereby, a plurality of feed elements disposed in parallelism with said vertex, and with each other, in a series of planes diverging from and including said vertex as a common access of intersection of all said planes, all of said parallel feed elements being located at discrete points along said several diverging planes and means for varying the currents applied to each of said feed elements.

3,202,998

FLEXIBLE FOAM ERECTABLE SPACE STRUCTURES

Edward L. Hoffman, Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed May 16, 1962, Ser. No. 195,347
11 Claims. (Cl. 343—833)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In combination with an antenna, a director assembly, said director assembly comprising a housing, an elongated structure attached to said housing and capable of being compressed at a ratio of at least 12:1 for storage in said housing, said elongated structure having the inherent physical property characteristic of immediate self-erection to substantially its original size upon being relieved from compression, said elongated structure including a plurality of metallic disk elements, each disk element being adhesively bonded on opposite surfaces thereof to individual plastic foam spacer elements to form a unitary column, said column having as each of its end portions one of said plastic foam spacer elements, said metallic disk elements functioning electrically as director elements for said antenna.

11. A self-erectable space vehicle comprising:

a paraboloidal reflector for electromagnetic waves, said reflector including

(1) a paraboloidal layer of plastics foam and

(2) a reflective metallic surface coating on said foam,

said reflector also having the inherent physical property characteristics of

(a) being readily foldable and compressed at substantially a 12:1 ratio for packaging within a low volume internal compartment of a suitable carrier vehicle and

(b) of becoming self-erected into paraboloidal state upon being released from the packaged compressed state.

3,202,999

ELECTRONIC CONVERTER AND PRINTER

George J. Moss, Jr., Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

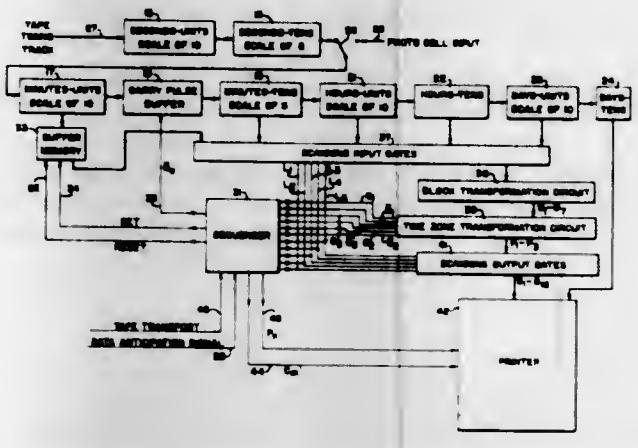
Filed July 30, 1963, Ser. No. 298,801
16 Claims. (Cl. 346—33)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A recorder for electrically printing the occurrence of a random pulse event comprising in combination,

(1) a series-connected cascaded counting chain for counting digits by binary bits having an input for receiving a serial input pulse sequence applied to the input of said counting chain wherein each pulse supplied is indicative of an event and having a plurality of outputs,

(2) a plurality of parallel readout means connected to the outputs of said counting chain,

(3) channelizer means connected to said readout means for channelizing the binary bits stored by said counting chain to corresponding output stages representative of segments of an Arabic digit,



(4) gating means connected to the output stages of said channelizer means for gating to a plurality of outputs in a time-based sequence predetermined stages of the said channelizer means,

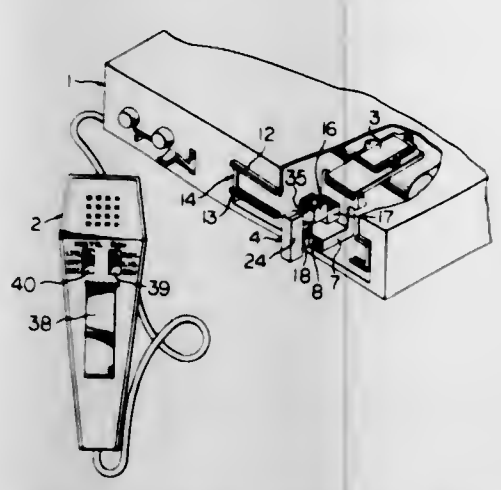
(5) and a printing means connected to the outputs of said gating means for electrically printing on a chart in spaced relationship the Arabic digit representative of the binary digit stored in said counting chain.

3,203,000

MARKING DEVICE FOR DICTATING MACHINE

William L. Dollenmayer, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 20, 1963, Ser. No. 332,178
5 Claims. (Cl. 346—50)



1. In a dictating machine having an index strip supported thereon and a recording head; an apparatus for marking the index strip, said apparatus including:

a bracket attached to said recording head for movement therewith;

said bracket having a first portion disposed on one side of the index strip and a second portion disposed on the other side of the index strip;

a housing mounted on said first portion;

said housing having at least one opening in one wall thereof;

an ink member disposed within said housing and having a portion exposed to the exterior of said housing by said opening;

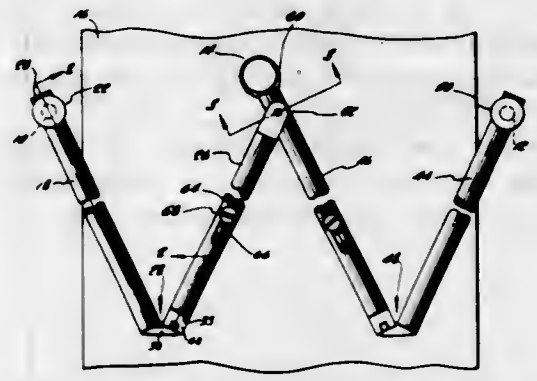
and means to move the index strip into contact with the portion of said ink member exposed by said opening to mark the index strip, said means being mounted on said second portion of said bracket.

3,203,001

PEN DRIVE FOR TELESCRIBING APPARATUS

Arthur J. Sparling, Manhattan Beach, Calif., assignor to Telautograph Corporation, Los Angeles, Calif., a corporation of Virginia

Filed Oct. 23, 1961, Ser. No. 146,900
6 Claims. (Cl. 346—111)



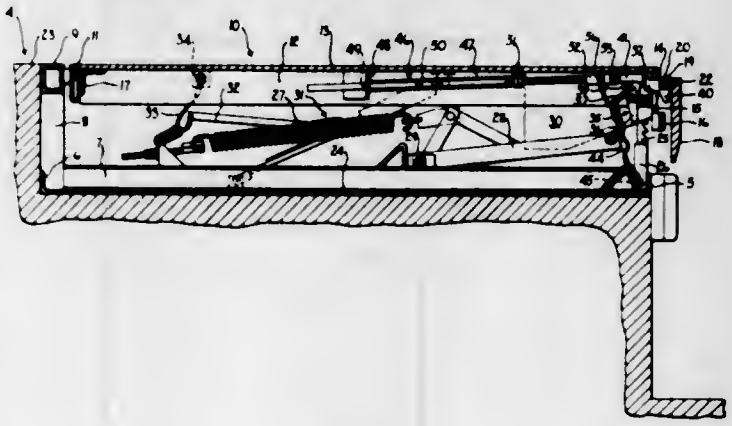
1. In a telescriber in which a visual record is traced on a recording strip, the combination comprising first and second rotatable shafts positioned on either side of the strip, first and second drive arms of rigid tubular shape secured rigidly at one end respectively to the first and second drive shafts, each drive arm being supported at one end in cantilever fashion and projecting across a portion of the strip perpendicularly to the rotational axis of the associated drive shaft, whereby the free ends of the arms are movable in an arc parallel to and above the surface of the recording strip but in rigidly spaced relation thereto, first and second rigid tubular pen support arms, the pen support arms being pivotally joined to each other with the pivotal axis extending at right angles to the surface of the record strip, first and second universal joints respectively connecting one of the ends of the first and second support arms to the free ends of the first and second drive arms, each universal joint providing relative movement between the pen support arm and the associated drive arm about two perpendicular axes, one axis being horizontal to the recording strip and the other axis being perpendicular to the recording strip, and first and second coil springs having a low spring rate positioned inside the tubular pen support arms, one end of each spring being anchored to the pen support arm and the other end being anchored to the associated drive arm at the vertical pivot axis but below the horizontal pivot axis of the universal joint.

3,203,002

ADJUSTABLE DOCKBOARD WITH COUNTER-BALANCING EXTENSION LIP

George McGuire, Thiensville, Wis., assignor to Kelley Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Dec. 7, 1964, Ser. No. 416,254
32 Claims. (Cl. 14—71)



1. In an adjustable dockboard of the type wherein a ramp having front and rear edges has its rear edge hing-

edly supported so that the ramp may swing up and down about its rear edge, and has an extension lip hingedly connected to its front edge for movement between a pendent position with respect to the ramp and an elevated position forming substantially an extension of the ramp, the improvement which comprises:

(A) energy storing means to counterbalance a portion of the gravity-produced moment of the extension lip about its hinge connection with the ramp;

(B) means operatively connecting the energy storing means with the ramp; and

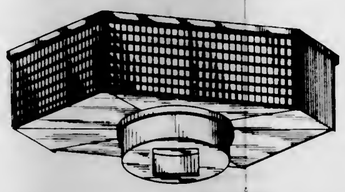
(C) means operatively connecting the energy storing means with the extension lip, whereby the energy storing means reacts between the ramp and the extension lip to impart lifting torque to the extension lip, said last named means including

structure having a moment arm through which the energy storing means exerts its counterbalancing force upon the extension lip, movement of the extension lip to its pendent position moving said moment arm into substantially its dead center position to thereby substantially nullify the effect of the energy storing means upon the extension lip, and said moment arm being operative to render the counterbalancing effect of the energy storing means upon the extension lip increasingly effective as the extension lip moves from said pendent position towards its elevated position.

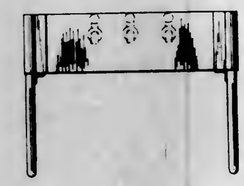
DESIGNS

AUGUST 24, 1965

202,021
ROTATABLE SIGN
Howard T. Hutchens, deceased, late of Indianapolis, Ind., by Gilbert Weesner, executor, 101 W. Canal St., Wabash, Ind.
Continuation of design applications Ser. Nos. 76,455 and 76,458, Sept. 3, 1963. This application Apr. 23, 1965, Ser. No. 85,127
Term of patent 14 years
(Cl. D1—12)



202,022
BEVERAGE COOLER
Walter L. Pieschel, Ladlow, Ky., assignor to The Coca-Cola Bottling Works Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 26, 1963, Ser. No. 77,566
Term of patent 14 years
(Cl. D2—3)



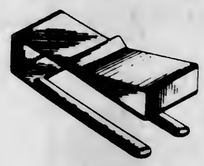
202,023
BEVERAGE DISPENSER
Julian D. Gordon, Peabody, Mass., assignor to Jet Spray Cooler, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Nov. 9, 1964, Ser. No. 82,563
Term of patent 14 years
(Cl. D2—3)



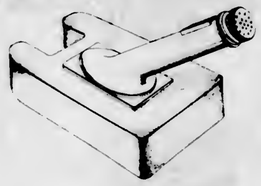
202,024
BOUDOIR CAP
Lillian Gettinger, 2509 Shelley Dale Drive, Baltimore, Md.
Filed Oct. 7, 1963, Ser. No. 76,882
Term of patent 7 years
(Cl. D3—13)



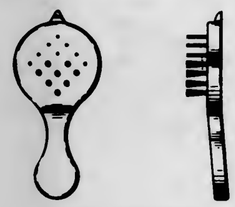
202,025
HOLDER FOR A COLLAPSIBLE TUBE
Victor J. Bardon, 313 N. Kenton Ave., Los Angeles, Calif.
Filed Feb. 17, 1964, Ser. No. 78,650
Term of patent 14 years
(Cl. D4—3)



202,026
COMBINED MAGNET, DISPENSER AND SPONGE FOR CLEANING WINDOWS OR THE LIKE
Orlando A. Gandino, R.D. 4, Butler, Pa.
Filed Sept. 9, 1964, Ser. No. 81,660
Term of patent 14 years
(Cl. D9—2)



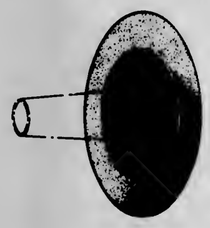
202,027
GOLF SHOE AND SPIKE CLEANER
Harry L. Styron, 1034 Lynn Way, Sunnyvale, Calif.
Filed Nov. 9, 1964, Ser. No. 82,516
Term of patent 3½ years
(Cl. D9—2)



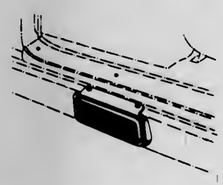
202,028
COLLAPSIBLE SHELTER
William G. Hall, North Miami Beach, Fla., assignor to Jones Shutter Products, Inc., Miami, Fla., a corporation of Florida
Filed Oct. 26, 1964, Ser. No. 82,320
Term of patent 14 years
(Cl. D13—1)



202,029
WALL PLATE
Louis Blum and William J. Horgan, Jr., Pittsburgh, Pa., assignors to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm consisting of Hyman Blum, Louis Blum, Max Blum, and Harry P. Blum
Filed Dec. 13, 1963, Ser. No. 77,781
Term of patent 14 years
(Cl. D13—7)



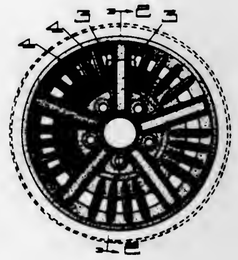
202,030
AUTO KICK PLATE
Ray F. Doyle, Alliance, Ohio, assignor to Everhard Products Inc., Canton, Ohio, a corporation of Ohio
Filed Aug. 28, 1964, Ser. No. 81,496
Term of patent 14 years
(Cl. D14—6)



202,031
ORNAMENT FOR FENDERS AND HOODS OF MINIATURE AUTOMOBILES
Harry Golden, New York, N.Y., assignor to Ideas for Auto & Bike Specialties, Inc., New York, N.Y., a corporation of New York
Original design application Feb. 20, 1964, Ser. No. 78,723. Divided and this application July 27, 1964, Ser. No. 81,590
Term of patent 7 years
(Cl. D14—18)



202,032
WHEEL
Donald J. Reid, Pleasant Ridge, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 79,706
Term of patent 14 years
(Cl. D14—30)



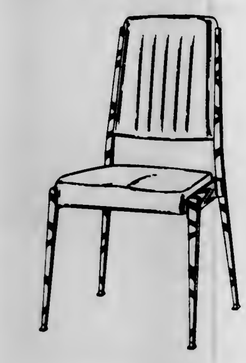
202,033
WHEEL
Thomas L. Hibbard, Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed July 17, 1964, Ser. No. 80,907
Term of patent 14 years
(Cl. D14—30)



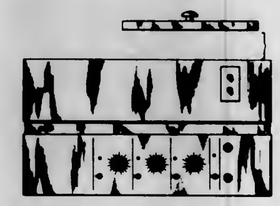
202,034
WHEEL COVER
Henry G. Hage, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 2, 1964, Ser. No. 81,561
Term of patent 7 years
(Cl. D14—30)



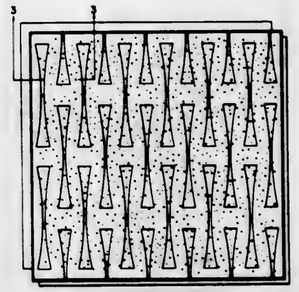
202,035
CHAIR
Austin E. Cox, Wadsworth, and Samuel Scherr and Bernard A. McDermott, Akron, Ohio, assignors to Scherr & McDermott, Inc., Akron, Ohio, a corporation of Ohio
Filed Sept. 8, 1964, Ser. No. 81,643
Term of patent 14 years
(Cl. D15—1)



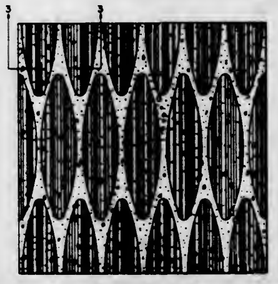
202,036
CABINET FOR A GAS CHROMATOGRAPH OR SIMILAR ARTICLE
Edmund R. Nichols, Media, Pa., assignor to F & M Scientific Corporation, a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 76,786
Term of patent 3½ years
(Cl. D16—2)



202,037
ACOUSTICAL CORRECTION TILE
James R. Radcliffe, Williamsville, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed July 27, 1964, Ser. No. 81,624
Term of patent 14 years
(Cl. D18—2)



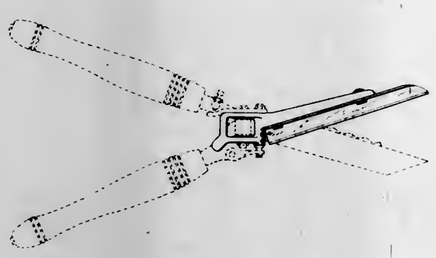
202,038
ACOUSTICAL CORRECTION TILE
James R. Radcliffe, Williamsville, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed July 27, 1964, Ser. No. 81,635
Term of patent 14 years
(Cl. D18—2)



202,039
BURIAL VAULT COVER
Wesley M. Chandler and Paul F. Hesser, both of St. Paul, Minn., assignors to Wilbert W. Haase Co., Broadview, Ill., a corporation of Illinois
Filed Sept. 24, 1964, Ser. No. 81,965
Term of patent 14 years
(Cl. D19—1)

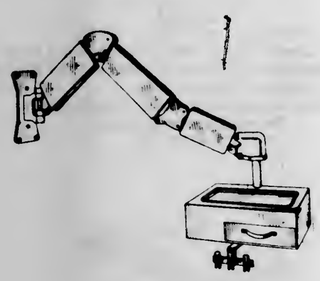


202,040
HEDGE SHEARS OR THE LIKE
David H. Kaiser, Jr., 53 Park Road, Wyomissing Hills, West Lawn, Pa.
Filed Sept. 8, 1964, Ser. No. 81,616
Term of patent 14 years
(Cl. D22—4)

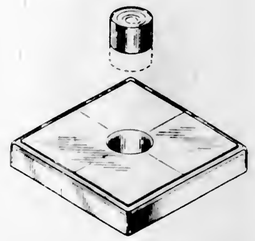


202,041
DENTAL SYRINGE
Karl H. Burzlaff, Fairport, N.Y., assignor to Ritter Company, Inc., Rochester, N.Y., a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 82,034
Term of patent 14 years
(Cl. D24—1)

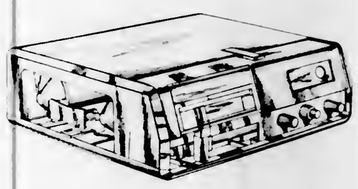
202,042
DENTAL UNIT
William Walters, 250 N. Dee Road, Park Ridge, Ill.
Filed Nov. 2, 1964, Ser. No. 82,426
Term of patent 14 years
(Cl. D24—1)



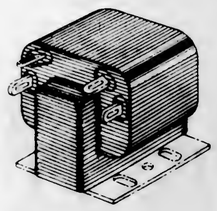
202,043
COMBINED ACTUATOR BUTTON AND INDICATOR PLATE OR SIMILAR ARTICLE
John A. Cox, Jr., Freeport, Ill., assignor to Honeywell Inc., a corporation of Delaware
Continuation of design applications Ser. Nos. 73,765, 73,766, and 73,767, Mar. 1, 1963. This application Mar. 23, 1964, Ser. No. 79,113
Term of patent 14 years
(Cl. D26—13)



202,044
COMBINED RECORDING AND REPRODUCING MACHINE OR SIMILAR ARTICLE
Peter Quay Yang, New York, N.Y., assignor to The Gray Manufacturing Company, a corporation of Connecticut
Filed Mar. 8, 1965, Ser. No. 84,130
Term of patent 14 years
(Cl. D26—14)



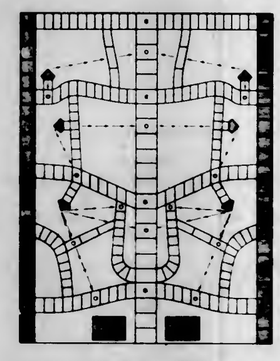
202,045
ELECTRICAL TRANSFORMER OR SIMILAR ARTICLE
Rex A. Oberlin, Allen County, Ind., assignor to General Electric Company, a corporation of New York
Filed Nov. 1, 1963, Ser. No. 77,249
Term of patent 14 years
(Cl. D26—15)



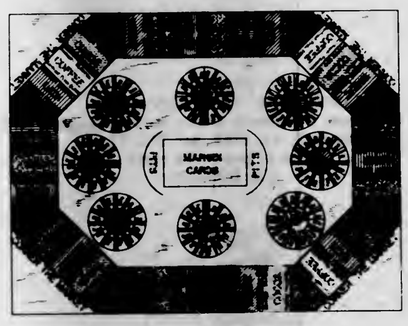
202,046
TRAY TABLE
Clarence D. Zischut, Granada Hills, Calif., assignor to The Cal-Dak Company, Los Angeles, Calif., a corporation of California
Filed Feb. 27, 1964, Ser. No. 78,807
Term of patent 14 years
(Cl. D33—14)



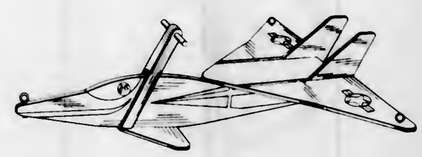
202,047
GAME BOARD
William B. MacLea, 223B Rodgers Ford Road, Baltimore, Md.
Filed June 22, 1964, Ser. No. 80,511
Term of patent 3½ years
(Cl. D34—5)



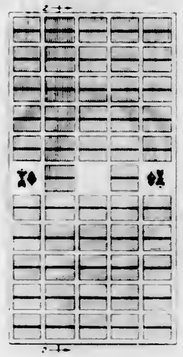
202,048
GAME BOARD
Merle L. Cables, P.O. Box 246, Cutten, Calif.
Filed Aug. 26, 1964, Ser. No. 81,440
Term of patent 3½ years
(Cl. D34—5)



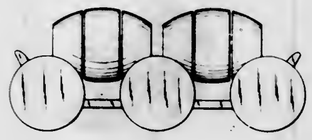
202,049
CHILD'S SWING
Adrian Gil Spear, Jr., 17095 Dorset Ave., Livonia, Mich.
Filed Nov. 4, 1964, Ser. No. 82,470
Term of patent 3½ years
(Cl. D34—5)



202,050
GAME BOARD
Donald Hickman, Chicago, Ill., assignor to Hifar Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 12, 1964, Ser. No. 82,552
Term of patent 14 years
(Cl. D34—5)



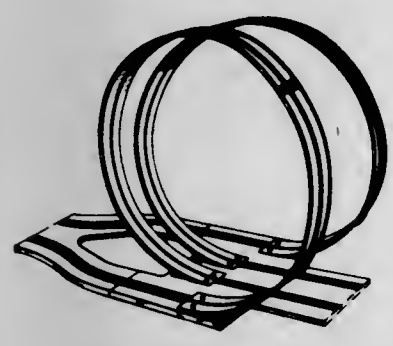
202,051
TUMBLER PULL TOY UNIT
James A. Brown, 10712 Lockridge Drive, Silver Spring, Md.
Filed Oct. 9, 1962, Ser. No. 72,054
Term of patent 3½ years
(Cl. D34—15)



202,052
COMBINED TOY TOP AND LAUNCHER
James Nolen Holcombach, 365 150th Ave., Madeira Beach, Fla.
Filed Apr. 6, 1964, Ser. No. 79,353
Term of patent 3½ years
(Cl. D34—15)



202,053
LOOP TRACK FOR TOY AUTOMOBILES OR THE LIKE
Charles T. Montagna, Clark, N.J., assignor to The Lionel Corporation, New York, N.Y., a corporation of New York
Filed Oct. 23, 1964, Ser. No. 82,291
Term of patent 14 years
(Cl. D34—15)



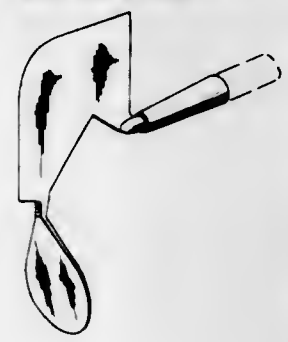
202,054
DOLL STROLLER TOY
Jesse D. Horowitz, New York, N.Y., assignor to De Luxe Reading Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed Jan. 26, 1965, Ser. No. 83,581
Term of patent 3½ years
(Cl. D34—15)



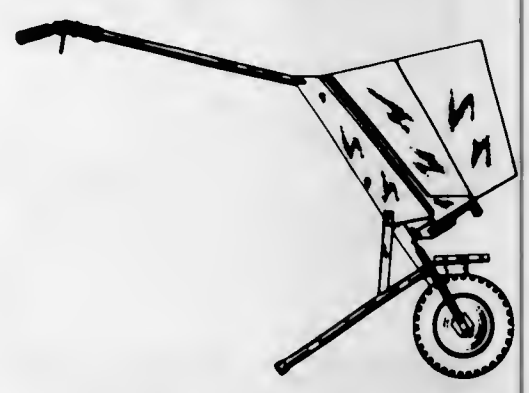
202,055
SINGLE RUNNER SLED
Edgar L. Kaup, 643 Panama Drive, Littleton, Colo.
Filed Feb. 1, 1965, Ser. No. 83,640
Term of patent 3½ years
(Cl. D34—15)



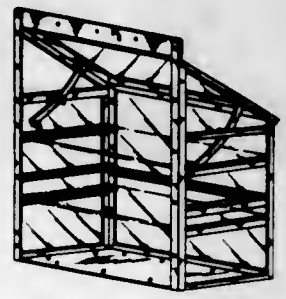
202,056
GARDENING HOE
William M. Davidson, 648 Auburn, Tulare, Calif.
Filed Sept. 23, 1964, Ser. No. 81,856
Term of patent 14 years
(Cl. D35—2)



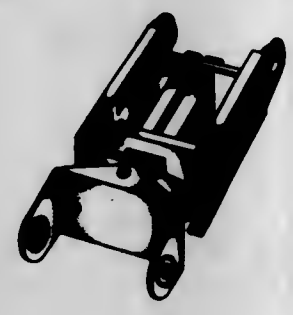
202,057
LAWN SPREADER FOR FERTILIZER, SEED OR THE LIKE
Simon Bylsma and Emil A. Madison, Sac City, Iowa, assignors to Remcor Inc., Sac City, Iowa, a corporation of Iowa
Filed Oct. 1, 1964, Ser. No. 81,981
Term of patent 14 years
(Cl. D35—2)



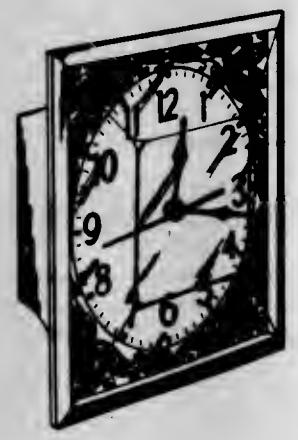
202,058
WINDOW GREENHOUSE
Cyrus D'Amato, 8 Parkway Drive, Roslyn Heights, N.Y.
Filed Sept. 12, 1962, Ser. No. 71,657
Term of patent 14 years
(Cl. D35—3)



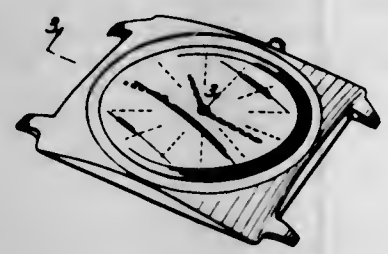
202,059
FRAME FOR A BELT SANDER
William Palmer Igguldea, Balcomb Park Lane, Beaumaris, Victoria, Australia
Filed Feb. 3, 1964, Ser. No. 78,482
Claims priority, application Australia Aug. 16, 1962
Term of patent 14 years
(Cl. D37—1)



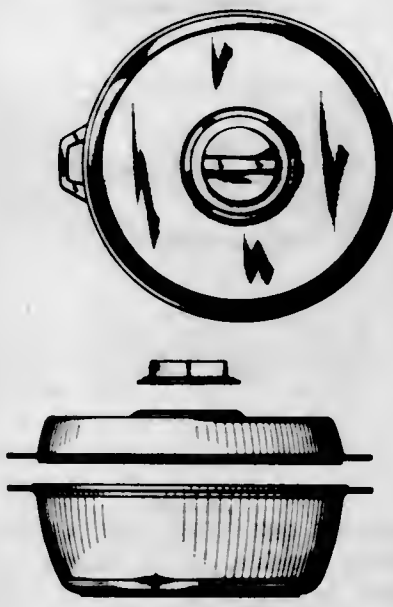
202,060
CLOCK OR SIMILAR ARTICLE
Walter C. Anderson, Southport, Conn., assignor to General Electric Company, a corporation of New York
Filed Mar. 13, 1964, Ser. No. 78,986
Term of patent 3½ years
(Cl. D42—7)



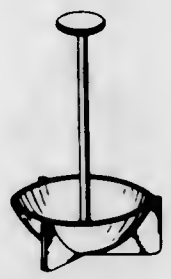
202,061
WATCH CASE
Giuseppe Montese-Caruso, Viale Blanca Maria 22, Milan, Italy
Filed Nov. 27, 1962, Ser. No. 72,630
Term of patent 14 years
(Cl. D42—8)



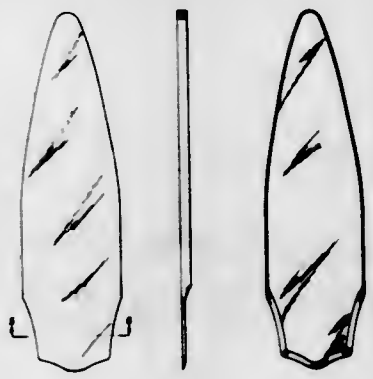
202,062
COVERED COOKING POT
Masaru Yamazaki, 188 Ozu-machi, Hiroshima, Japan
Filed Nov. 30, 1964, Ser. No. 82,838
Term of patent 14 years
(Cl. D44—1)



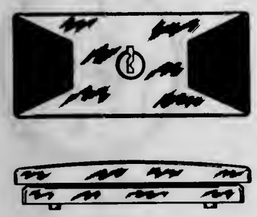
202,063
GREASE SKIMMER
Andre Merz, 6 Bryant Crescent, White Plains, N.Y.
Filed June 5, 1964, Ser. No. 80,304
Term of patent 3½ years
(Cl. D44—29)



202,064
IRONING BOARD
Alfred J. Freitas, San Lorenzo, Calif., assignor of forty one-hundredths percent to Pauline Pollard, Lodi, Calif.
Filed July 7, 1964, Ser. No. 80,731
Term of patent 3½ years
(Cl. D49—1)



202,065
LUGGAGE LOCK OR SIMILAR ARTICLE
Charles S. Gabris, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Filed Mar. 25, 1964, Ser. No. 79,169
Term of patent 14 years
(Cl. D50—7)



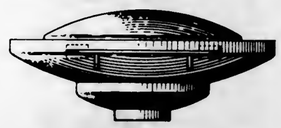
202,066
SPOON OR SIMILAR ARTICLE
Frank R. Perry, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Sept. 17, 1963, Ser. No. 76,616
Term of patent 14 years
(Cl. D54—12)



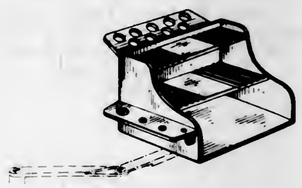
202,067
SPOON OR SIMILAR ARTICLE
Frank R. Perry, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Aug. 27, 1964, Ser. No. 81,472
Term of patent 3½ years
(Cl. D54—12)



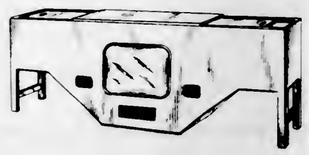
202,068
STORAGE BIN FLOW PROMOTER
Eugene A. Wahl, 294 Forest Ave., Glen Ridge, N.J.
Filed Nov. 27, 1963, Ser. No. 77,588
Term of patent 14 years
(Cl. D55—1)



202,069
TOOL TRAY FOR MACHINE TOOLS
Herbert W. Westberg, 2459 Huntington Turnpike, Trumbull, Conn.
Filed May 14, 1964, Ser. No. 79,985
Term of patent 7 years
(Cl. D55—1)



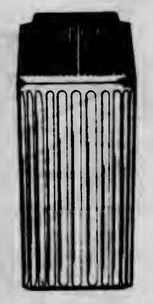
202,070
COMBINED RADIO AND TELEVISION CABINET
Freddie Nelson, 1940 Clairmount Ave., Detroit, Mich.
Filed Sept. 4, 1964, Ser. No. 81,602
Term of patent 3½ years
(Cl. D56—4)



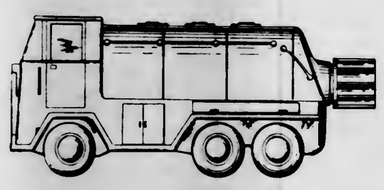
202,071
PAIR OF SUNGLASSES
Jack N. Simpson, Reading, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa.
Filed May 18, 1964, Ser. No. 80,019
Term of patent 14 years
(Cl. D57—1)



202,072
INSULATED BOTTLE
Joseph W. Hunter, Fort Lauderdale, Fla. (1010 Atlantic Blvd., Pompano Beach, Fla.)
Filed Oct. 7, 1963, Ser. No. 76,877
Term of patent 3½ years
(Cl. D58—3)



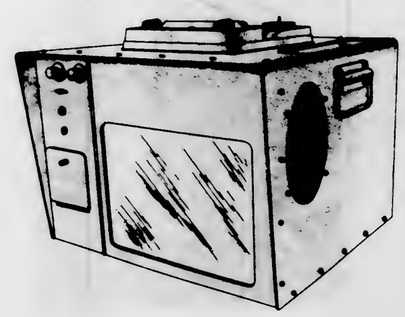
202,073
BOTTLE OR SIMILAR ARTICLE
Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Sept. 26, 1963, Ser. No. 76,739
Term of patent 14 years
(Cl. D58—9)



202,074
CONTAINER FOR SIPPABLE LIQUIDS OR THE LIKE
Mary E. Cammack, 350 E. Rustic Road, Santa Monica, Calif.
Filed Apr. 2, 1964, Ser. No. 79,322
Term of patent 14 years
(Cl. D58—9)



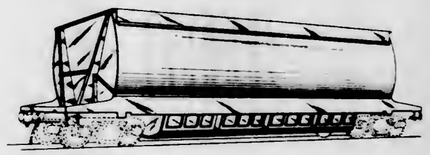
202,075
AUDIO-VISUAL APPARATUS
Henry C. La Pare, Parsippany, and Bernard Burkhalf, Clark, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Jan. 3, 1964, Ser. No. 78,064
Term of patent 14 years
(Cl. D61—1)



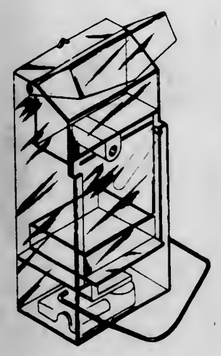
202,076
ADDING MACHINE
Chester J. Abend, Camillus, and Thomas E. Hanson, Syracuse, N.Y., assignors to SCM Corporation, a corporation of New York
Filed Apr. 20, 1964, Ser. No. 79,605
Term of patent 14 years
(Cl. D64—11)



202,077
RAILWAY CAR
Asa Franklin Charles, St. Louis County, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Apr. 13, 1964, Ser. No. 79,460
Term of patent 14 years
(Cl. D66—1)



202,078
COMBINED TELEPHONE SUPPORT AND MEMO PAD HOLDER OR THE LIKE
Michael Marder, 277 E. 207th St., Bronx, N.Y.
Filed Feb. 8, 1963, Ser. No. 73,490
Term of patent 14 years
(Cl. D74—1)



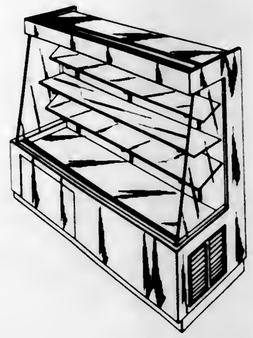
202,079
PAPER CLIP, OR SIMILAR ARTICLE
Emil S. Polk, 6 North St., Westchester County, N.Y.
Filed Feb. 25, 1964, Ser. No. 78,780
Term of patent 14 years
(Cl. D74—2)



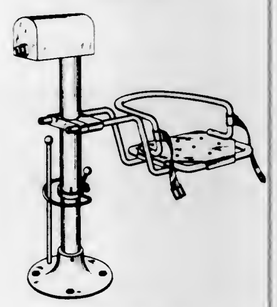
202,080
TRAY FOR DESK ARTICLES
Henry E. Knaust, St. Louis, Mo.
Filed Oct. 9, 1964, Ser. No. 82,115
Term of patent 14 years
(Cl. D74—5)



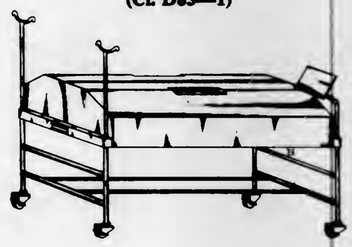
202,081
REFRIGERATED DISPLAY CABINET
Herman Zaslovsky, Massepequa, and Harry Rosenfeld, Long Beach, N.Y., assignors to Brook Koolair Corp., Huntington, N.Y.
Filed Oct. 17, 1963, Ser. No. 77,012
Term of patent 14 years
(Cl. D60—11)



202,082
BATHLIFT FOR INVALIDS AND CONVALESCENTS
Viola J. Reimold and Ward J. Blunt, Saginaw, Mich., assignors to National Sales Co., Saginaw, Mich.
Filed May 21, 1964, Ser. No. 80,098
Term of patent 7 years
(Cl. D83—1)



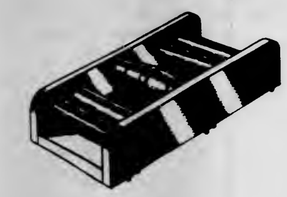
202,083
DISSECTING TABLE OR THE LIKE
Vernon R. Berlin, Greece, N.Y., assignor to Holderle Brothers, Inc., Rochester, N.Y., a corporation of New York
Filed June 22, 1964, Ser. No. 80,495
Term of patent 14 years
(Cl. D83—1)



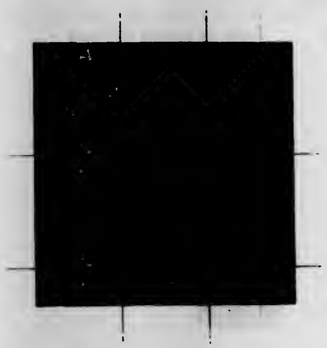
202,084
VAPORIZER
Adolph D. Starch, New York, N.Y., assignor to Practical Electric Products Corporation, Elizabeth, N.J., a corporation of New York
Filed July 27, 1964, Ser. No. 81,031
Term of patent 7 years
(Cl. D63—1)



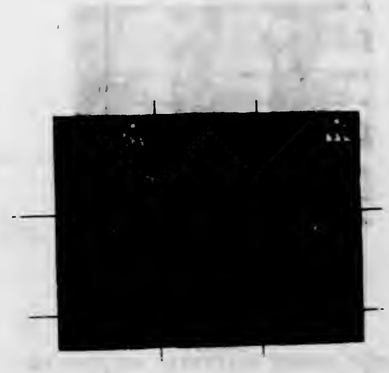
202,085
FOOT MASSAGER
Litha M. Tasker, 1314 N. 26th St., Boise, Idaho
Filed Sept. 16, 1964, Ser. No. 81,751
Term of patent 14 years
(Cl. D83—1)



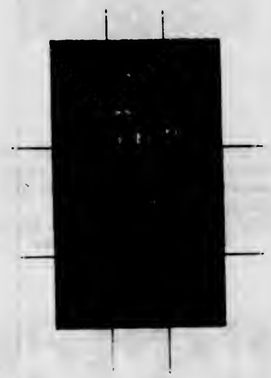
202,086
PLASTIC SHEET MATERIAL OR THE LIKE
Virginia Broderick, Wauwatosa, Wis., assignor to Consoweld Corporation, Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Sept. 1, 1964, Ser. No. 81,536
Term of patent 14 years
(Cl. D87—3)



202,087
PLASTIC SHEET MATERIAL OR THE LIKE
Virginia Broderick, Wauwatosa, Wis., assignor to Consoweld Corporation, Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Sept. 1, 1964, Ser. No. 81,537
Term of patent 14 years
(Cl. D87—3)



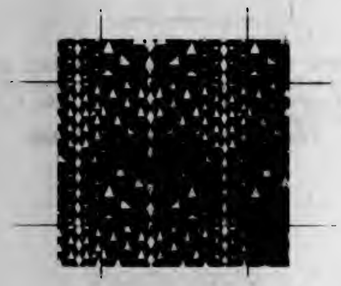
202,088
PLASTIC SHEET MATERIAL OR THE LIKE
Virginia Broderick, Wauwatosa, Wis., assignor to Consoweld Corporation, Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Sept. 1, 1964, Ser. No. 81,538
Term of patent 14 years
(Cl. D87—3)



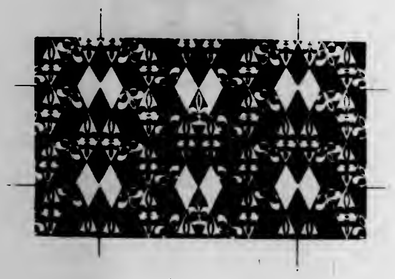
202,089
PLASTIC SHEET MATERIAL OR THE LIKE
Virginia Broderick, Wauwatosa, Wis., assignor to Consowold Corporation, Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Sept. 1, 1964, Ser. No. 81,539
Term of patent 14 years
(Cl. D87—3)



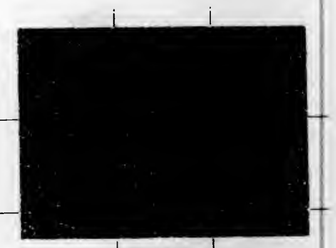
202,090
PLASTIC SHEET MATERIAL OR THE LIKE
Virginia Broderick, Wauwatosa, Wis., assignor to Consowold Corporation, Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Sept. 1, 1964, Ser. No. 81,540
Term of patent 14 years
(Cl. D87—3)



202,091
PLASTIC SHEET MATERIAL OR THE LIKE
Virginia Broderick, Wauwatosa, Wis., assignor to Consowold Corporation, Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Sept. 1, 1964, Ser. No. 81,542
Term of patent 14 years
(Cl. D87—3)



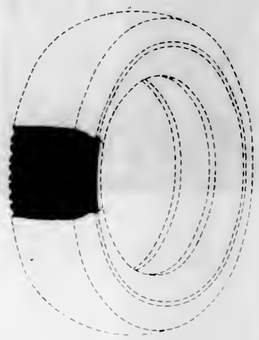
202,092
PLASTIC SHEET MATERIAL OR THE LIKE
Virginia Broderick, Wauwatosa, Wis., assignor to Consowold Corporation, Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Sept. 1, 1964, Ser. No. 81,543
Term of patent 14 years
(Cl. D87—3)



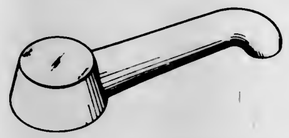
202,093
CARRYING BAG FOR A BOWLING BALL OR SIMILAR ARTICLE
Milton Glantz, Lincolnwood, Ill., assignor of one-half to Samuel N. Glantz, Lincolnwood, Ill.
Filed Sept. 30, 1963, Ser. No. 76,793
Term of patent 14 years
(Cl. D87—5)



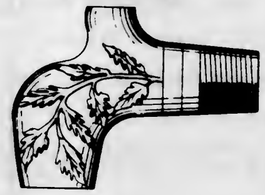
202,094
TIRE
James F. Newman, St. Clair Shores, Mich., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed May 22, 1964, Ser. No. 80,110
Term of patent 14 years
(Cl. D90—20)



202,095
BASIN SPOUT
William Mortimer Kelly, 7 Primrose Ave., San Souci, New South Wales, Australia
Filed Sept. 16, 1963, Ser. No. 76,607
Term of patent 14 years
(Cl. D91—3)



202,096
CATCH BASIN TRAP
James A. Parks, 2152 Leland Ave., Chicago, Ill.
Filed Mar. 9, 1964, Ser. No. 78,912
Term of patent 14 years
(Cl. D91—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24TH DAY OF AUGUST, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Burnell, Floyd E.: *See*—
Keane, Peter J., Burnell, and Jones. Re. 25,842.

Harris, Richard V.: *See*—
Nissen, George P., and Harris. Re. 25,843.

Jones, Griffith, Jr.: *See*—
Keane, Peter J., Burnell, and Jones. Re. 25,842.

Keane, Peter J., F. E. Burnell, and G. Jones, Jr., to Kelsey-Hayes Co. Power plier. Re. 25,842, 8-24-65, Cl. 30—180.

Kelsey-Hayes Co.: *See*—
Keane, Peter J., Burnell, and Jones. Re. 25,842.

Nissen Corp.: *See*—
Nissen, George P., and Harris. Re. 25,843.

Nissen, George P., and R. V. Harris, to Nissen Corp. Teaching aid for tumbling. Re. 25,843, 8-24-65, Cl. 272—60.

LIST OF PLANT PATENTEES

Anderson, Frederic W., to A. Bright. Almond tree. 2,548, 8-24-65, Cl. 30.

Bright, Arthur: *See*—
Anderson, Frederic W. 2,548.

LIST OF DESIGN PATENTEES

ACF Industries, Inc.: *See*—
Charles, Asa F. 202,077.

Abend, Chester J., and T. E. Hanson, to SCM Corp. Adding machine. 202,076, 8-24-65, Cl. D64—11.

Anderson, Walter C., to General Electric Co. Clock or similar article. 202,060, 8-24-65, Cl. D42—7.

Bardon, Victor J. Holder for a collapsible tube. 202,025, 8-24-65, Cl. D4—3.

Berlin, Vernon R., to Holderle Brothers, Inc. Dissecting table or the like. 202,082, 8-24-65, Cl. D38—1.

Blum, Louis, and W. J. Horgan, Jr., to Blumcraft of Pittsburgh. Wall plate. 202,029, 8-24-65, Cl. D13—7.

Blumcraft of Pittsburgh: *See*—
Blum, Louis, and Horgan. 202,029.

Blunt, Ward J.: *See*—
Reimold, Viola J., and Blunt. 202,082.

Broderick, Virginia, to Consoweld Corp. Plastic sheet material or the like. 202,086, 8-24-65, Cl. D67—8.

Broderick, Virginia, to Consoweld Corp. Plastic sheet material or the like. 202,087, 8-24-65, Cl. D67—8.

Broderick, Virginia, to Consoweld Corp. Plastic sheet material or the like. 202,088, 8-24-65, Cl. D67—8.

Broderick, Virginia, to Consoweld Corp. Plastic sheet material or the like. 202,089, 8-24-65, Cl. D67—8.

Broderick, Virginia, to Consoweld Corp. Plastic sheet material or the like. 202,090, 8-24-65, Cl. D67—8.

Broderick, Virginia, to Consoweld Corp. Plastic sheet material or the like. 202,091, 8-24-65, Cl. D67—8.

Broderick, Virginia, to Consoweld Corp. Plastic sheet material or the like. 202,092, 8-24-65, Cl. D67—8.

Brook Koolair Corp.: *See*—
Zaslovsky, Herman, and Rosenfeld. 202,061.

Brown, James A. Tumbler pull toy unit. 202,051, 8-24-65, Cl. D34—15.

Burkhoff, Bernard: *See*—
La Paro, Henry C., and Burkhoff. 202,075.

Burslaff, Karl H., to Ritter Co., Inc. Dental syringe. 202,041, 8-24-65, Cl. D24—1.

Bylsma, Simon, and E. A. Madison, to Remcor Inc. Lawn spreader for fertilizer, seed or the like. 202,057, 8-24-65, Cl. D35—3.

Cables, Merle L. Game board. 202,048, 8-24-65, Cl. D34—5.

Cal-Dak Co., The: *See*—
Zierhut, Clarence D. 202,046.

Cammack, Mary E. Container for sippable liquids, or the like. 202,074, 8-24-65, Cl. D58—9.

Chandler, Wesley M., and P. F. Heuser, to Wilbert W. Haase Co. Burial vault cover. 202,039, 8-24-65, Cl. D19—1.

Charles, Asa F., to ACF Industries, Inc. Railway car. 202,077, 8-24-65, Cl. D66—1.

Coca-Cola Bottling Works Co., The: *See*—
Pieschel, Walter L. 202,023.

Colgate-Palmolive Co.: *See*—
Douglas, Livingston C. 202,073.

Consoweld Corp.: *See*—
Broderick, Virginia. 202,086-92.

Cox, Austin E., S. Scherr, and B. A. McDermott, to Scherr & McDermott, Inc. Chair. 202,035, 8-24-65, Cl. D15—1.

Cox, John A., Jr., to Honeywell Inc. Combined actuator button and indicator plate or similar article. 202,043, 8-24-65, Cl. D26—13.

D'Amato, Cyrus. Window greenhouse. 202,058, 8-24-65, Cl. D35—3.

Davidson, William M. Gardening hoe. 202,056, 8-24-65, Cl. D35—2.

De Luxe Reading Corp.: *See*—
Horowitz, Jesse D. 202,054.

Douglas, Livingston C., to Colgate-Palmolive Co. Bottle or similar article. 202,073, 8-24-65, Cl. D58—9.

Doyle, Ray F., to Everhard Products Inc. Auto kick plate. 202,030, 8-24-65, Cl. D14—6.

Electric Storage Battery Co., The: *See*—
Simpson, Jack N. 202,071.

Everhard Products Inc.: *See*—
Doyle, Ray F. 202,030.

F & M Scientific Corp.: *See*—
Nichols, Edmund R. 202,036.

Freitas, Alfred J., [illegible] to P. Pollard. Ironing board. 202,064, 8-24-65, Cl. D49—1.

Gaudino, Orlando A. Combined magnet, dispenser and sponge for cleaning windows or the like. 202,026, 8-24-65, Cl. D9—2.

Gehrie, Charles S., to Presto Lock Co., Inc. Luggage lock or similar article. 202,065, 8-24-65, Cl. D50—7.

General Electric Co.: *See*—
Anderson, Walter C. 202,060.
Oberlin, Rex A. 202,045.

General Motors Corp.: *See*—
Haga, Henry G. 202,034.

Gettinger, Lillian. Boudoir cap. 202,024, 8-24-65, Cl. D8—13.

Glants, Milton, ½ to S. N. Glants. Carrying bag for a bowling ball or similar article. 202,096, 8-24-65, Cl. D67—8.

Glants, Samuel N.: *See*—
Glants, Milton. 202,096.

Golden, Harry, to Ideas for Auto & Bike Specialties, Inc. Ornament for fenders and hoods of miniature automobiles. 202,031, 8-24-65, Cl. D14—18.

Gordon, Julian D., to Jet Spray Cooler, Inc. Beverage dispenser. 202,022, 8-24-65, Cl. D2—3.

Gray Mfg. Co., The: *See*—
Yang, Peter Q. 202,044.

Haase, Wilbert W., Co.: *See*—
Chandler, Wesley M., and Heuser. 202,039.

Haga, Henry G., to General Motors Corp. Wheel cover. 202,034, 8-24-65, Cl. D14—30.

Hall, William G., to Jones Shutter Products, Inc. Collapsible shelter. 202,028, 8-24-65, Cl. D12—1.

Hanson, Thomas E.: *See*—
Abend, Chester J., and Hanson. 202,076.

Heuser, Paul F.: *See*—
Chandler, Wesley M., and Heuser. 202,039.

Hibbard, Thomas L., to Kelsey-Hayes Co. Wheel. 202,033, 8-24-65, Cl. D14—30.

Hickman, Donald, to Hifar Industries, Inc. Game board. 202,050, 8-24-65, Cl. D34—5.

Hifar Industries, Inc.: *See*—
Hickman, Donald. 202,050.

Holderle Brothers, Inc.: *See*—
Berlin, Vernon R. 202,082.

Holsombach, James N. Combined toy top and launcher. 202,052, 8-24-65, Cl. D34—15.

Honeywell Inc.: *See*—
Cox, John A., Jr. 202,043.

Horgan, William J., Jr.: *See*—
Blum, Louis, and Horgan. 202,029.

Horowitz, Jesse D., to De Luxe Reading Corp. Doll stroller toy. 202,054, 8-24-65, Cl. D34—15.

Hunter, Joseph W. Insulated bottle. 202,072, 8-24-65, Cl. D58—6.

Hutchens, Howard T. (deceased, by G. Weesner, executor). Rotatable sign. 202,021, 8-24-65, Cl. D1—12.

Ideas for Auto & Bike Specialties, Inc.: *See*—
Golden, Harry. 202,031.

Igguldon, William P. Frame for a belt sander. 202,059, 8-24-65, Cl. D37—1.

Jet Spray Cooler, Inc.: *See*—
Gordon, Julian D. 202,023.

International Telephone and Telegraph Corp.: *See*—
La Paro, Henry C., and Burkhoff. 202,075.

Kaup, Edgar L. Single runner sled. 202,056, 8-24-65, Cl. D34—15.

Keiser, David H., Jr. Hedge shears or the like. 202,040, 8-24-65, Cl. D22—4.

Kelly, William M. Basin spout. 202,095, 8-24-65, Cl. D91—3.

Kelsey-Hayes Co.: *See*—
Hibbard, Thomas L. 202,033.
Reid, Donald J. 202,032.

Knaust, Henry E. Tray for desk articles. 202,080, 8-24-65, Cl. D74—5.

La Paro, Henry C., and B. Burkhoff, to International Telephone and Telegraph Corp. Audio-visual apparatus. 202,075, 8-24-65, Cl. D61—1.

Lionel Corp., The: *See*—
Montagna, Charles T. 202,053.

MacLea, William B. Game board. 202,047, 8-24-65, Cl. D34—5.

Marder, Michael. Combined telephone support and memo pad holder or the like. 202,078, 8-24-65, Cl. D74—1.

McDermott, Bernard A.: *See*—
Cox, Austin E., Scherr, and McDermott. 202,035.

Mers, Andre. Grease skimmer. 202,063, 8-24-65, Cl. D44—29.

Montagna, Charles T., to The Lionel Corp. Loop track for toy automobiles or the like. 202,053, 8-24-65, Cl. D34—15.

Montese-Caruso, Giuseppe. Watch case. 202,061, 8-24-65, Cl. D42—8.

National Gypsum Co.: *See*—
Radcliffe, James R. 202,037.
Radcliffe, James R. 202,038.

National Sales Co.: *See*—
Reimold, Viola J., and Blunt. 202,082.

Nelson, Freddie. Combined radio and television cabinet. 202,070, 8-24-65, Cl. D56—4.

Newman, James F., to United States Rubber Co. Tire. 202,094, 8-24-65, Cl. D90—20.

Nichols, Edmund R., to F & M Scientific Corp. Cabinet for a gas chromatograph or similar article. 202,036, 8-24-65, Cl. D16—2.

Oberlin, Rex A., to General Electric Co. Electrical transformer or similar article. 202,045, 8-24-65, Cl. D26—15.

Oneida Ltd.: *See*—
Perry, Frank R. 202,066.
Perry, Frank R. 202,067.

Parks, James A. Catch basin trap. 202,096, 8-24-65, Cl. D91—3.

Perry, Frank R., to Oneida Ltd. Spoon or similar article. 202,066, 8-24-65, Cl. D54—12.

Perry, Frank R., to Oneida Ltd. Spoon or similar article. 202,067, 8-24-65, Cl. D54—12.

Pieschel, Walter L., to The Coca-Cola Bottling Works Co. Beverage cooler. 202,022, 8-24-65, Cl. D2—8.

Polk, Emil S. Paper clip, or similar article. 202,079, 8-24-65, Cl. D74—2.

Pollard, Pauline: *See*—
Freitas, Alfred J. 202,064.

Practical Electric Products Corp.: *See*—
Storch, Adolph D. 202,084.

Presto Lock Co., Inc.: *See*—
Gelirie, Charles S. 202,065.

Radcliffe, James R., to National Gypsum Co. Acoustical correction tile. 202,037, 8-24-65, Cl. D18—2.

Radcliffe, James R., to National Gypsum Co. Acoustical correction tile. 202,038, 8-24-65, Cl. D18—2.

Reid, Donald J., to Kelsey-Hayes Co. Wheel. 202,032, 8-24-65, Cl. D14—30.

Reimold, Viola J., and W. J. Blunt, to National Sales Co. Bathlift for invalids and convalescents. 202,082, 8-24-65, Cl. D83—1.

Remcor Inc.: *See*—
Bylsma, Simon, and Madison. 202,057.

Ritter Co., Inc.: *See*—
Burzlaff, Karl H. 202,041.

Rosenfeld, Harry: *See*—
Zaslovsky, Herman, and Rosenfeld. 202,081.

SCM Corp.: *See*—
Abend, Chaster J., and Hanson. 202,076.

Scherr & McDermott, Inc.: *See*—
Cox, Austin E., Scherr, and McDermott. 202,035.

Scherr, Samuel: *See*—
Cox, Austin E., Scherr, and McDermott. 202,035.

Shutter, Jones, Products, Inc.: *See*—
Hall, William G. 202,028.

Simpson, Jack N., to The Electric Storage Battery Co. Pair of sunglasses. 202,071, 8-24-65, Cl. D57—1.

Spear, Adrian G., Jr. Child's swing. 202,049, 8-24-65, Cl. D34—5.

Storch, Adolph D., to Practical Electric Products Corp. Vaporizer. 202,084, 8-24-65, Cl. D83—1.

Styron, Harry L. Golf shoe and spike cleaner. 202,027, 8-24-65, Cl. D9—2.

Tasker, Litha M. Foot massager. 202,085, 8-24-65, Cl. D83—1.

United States Rubber Co.: *See*—
Newman, James F. 202,094.

Wahl, Eugene A. Storage bin flow promoter. 202,068, 8-24-65, Cl. D55—1.

Walters, William. Dental unit. 202,042, 8-24-65, Cl. D24—1.

Weesner, Gilbert: *See*—
Hutchens, Howard T. 202,021.

Westberg, Herbert W. Tool tray for machine tools. 202,069, 8-24-65, Cl. D55—1.

Yamasaki, Masaru. Covered cooking pot. 202,062, 8-24-65, Cl. D44—1.

Yang, Peter Q., to The Gray Mfg. Co. Combined recording and reproducing machine or similar article. 202,044, 8-24-65, Cl. D26—14.

Zaslovsky, Herman, and H. Rosenfeld, to Brook Koolair Corp. Refrigerated display cabinet. 202,081, 8-24-65, Cl. D60—11.

Zierhut, Clarence D., to The Cal-Dak Co. Tray table. 202,046, 8-24-65, Cl. D33—14.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24TH DAY OF AUGUST, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries, Inc.: *See*—
Szwarguiski, Jesse L. 3,202,173.
Szwarguiski, Alex N., and Niemeyer. 3,202,287.

AMF American Iron, Inc.: *See*—
Wolfe, Duane M. 3,202,178.

AMP Inc.: *See*—
Keller, Joseph R. 3,202,959.
Kinkaid, Robert J. 3,202,954.

AMT Corp.: *See*—
Toteff, George A., and Bacsanyi. 3,201,899.

APF Industries, Inc.: *See*—
Kegel, Francis C. 3,202,468.

Aaron, Marvin R. and H. H. Henning, to Bell Telephone Laboratories, Inc. Asynchronous pulse multiplexing. 3,202,762, 8-24-65, Cl. 179—15.

Abbey Electronics Corp.: *See*—
Bosworth, Seymour, and Zauderer. 3,202,953.

Abbey, John C., and T. E. Hawkins, to Aeroquip Corp. Coupling. 3,202,442, 8-24-65, Cl. 285—3.

Abraham, Edward P., G. G. F. Newton, and J. d'A. Jeffery, to National Research Development Corp. Derivatives of cephalosporin C. 3,202,656, 8-24-65, Cl. 260—243.

Ackerman, Arthur C. Mass flow meter. 3,201,987, 8-24-65, Cl. 73—231.

Adams, Charles H.: *See*—
Starrett, Delbert, and Adams. 3,201,976.

Adams, Clarence W., to Beckman Instruments, Inc. Fluid sampling device. 3,201,994, 8-24-65, Cl. 73—421.5.

Adams, Paul R., and M. Rogoff, to International Telephone and Telegraph Corp. Transmission systems. 3,202,764, 8-24-65, Cl. 179—15.

Adams, Roman A.: *See*—
Stone, Joseph J., and Adams. 3,202,980.

Admiral Corp.: *See*—
Arrington, William L. 3,202,882.
Wolff, Robert A. 3,202,967.

Advance Mfg. Co. Inc.: *See*—
Desrosiers, Raymond. 3,201,820.

Aeroquip Corp.: *See*—
Abbey, John C. and Hawkins. 3,202,442.

Airasian, John. Reversible coat. 3,201,801, 8-24-65, Cl. 2—93.

Air Products and Chemicals, Inc.: *See*—
Lorz, Waldemar, Mills, and Shalit. 3,202,725.

Aksens, Ola: *See*—
Pettersen, Johan B., Aksens, Jacobsen, and Hammer. 3,202,501.

Albertson, Noel F., to Sterling Drug Inc. 1-benzyl-2,5-bis(chloromethyl)pyrrolidine and acid-addition salts thereof. 3,202,675, 8-24-65, Cl. 260—313.

Albright, Jay D., and L. Goldman, to American Cyanamid Co. Novel derivatives of ring E keto Yobimbe alkaloids and intermediates therefor. 3,202,662, 8-24-65, Cl. 260—288.

Albright, Jay D., and L. Goldman, to American Cyanamid Co. Ring E substituted yohimbanes. 3,202,663, 8-24-65, Cl. 260—288.

Aldhart, Otto T., and H. R. Knapp, to United States of America, Army. Reserve type electrochemical battery. 3,202,548, 8-24-65, Cl. 136—90.

Alenius, Nils R. Apparatus for continuous pressing. 3,202,090, 8-24-65, Cl. 100—224.

Alford, Carl C., and E. O. Bear. Telephone number set-up device. 3,201,882, 8-24-65, Cl. 40—96.

Allen, Norman C.: *See*—
Fitzgerald, John E., and Allen. 3,201,973.

Allgemeine Elektricitats-Gesellschaft: *See*—
Schlerholt, Hans. 3,202,599.

Allied Chemical Corp.: *See*—
Dien, Chi K., and Douty. 3,202,682.
Hardy, George F. 3,202,642.

Allington, Robert W., to Instrumentation Specialties Co. Apparatus for making chemical separations. 3,202,188, 8-24-65, Cl. 141—130.

Allis-Chalmers Mfg. Co.: *See*—
Burton, Lawrence A. 3,202,790.

Allison, William D., to Ford Motor Co. Linkage type vehicle suspension. 3,202,236, 8-24-65, Cl. 180—73.

Allmanna Svenska Elektriska Aktiebolaget: *See*—
Fryklund, Per A. 3,201,828.

Allmark, Reginald H., to The English Electric Co. Ltd. Electric voltage comparison means. 3,202,839, 8-24-65, Cl. 307—88.5.

Alside Inc.: *See*—
Steeg, Ronald P. 3,202,523.

Aluminum Co. of America: *See*—
Howarth, Elbert S., and Ramser. 3,201,853.

Amdahl, Lowell D., M. A. Breuer, and J. S. Davis, to The Bunker-Ramo Corp. Simultaneous digital multiply-add, multiply-subtract circuit. 3,202,805, 8-24-65, Cl. 235—164.

American Bosch Arma Corp.: *See*—
Silvia, Everett R. 3,201,996.

American Brake Shoe Co.: *See*—
Tinker, Walter H., Neff, and Hedge. 3,202,101.

American Cyanamid Co.: *See*—
Albright, Jay D., and Goldman. 3,202,662.
Albright, Jay D., and Goldman. 3,202,663.
Riall, Charles T. 3,202,273.
Sullivan, Frank A. V. 3,202,630.

American Electronic Laboratories, Inc.: *See*—
Riebman, Leon. 3,202,920.

American Home Products Corp.: *See*—
Humber, Leslie G. 3,202,703.
Humber, Leslie G. 3,202,712.
Humber, Leslie G., Myers, and Massiah. 3,202,684.
Humber, Leslie G., Myers, and Massiah. 3,202,709.
Langis, Andre L., and Stegen. 3,202,674.
Rice, Leonard M., Freed, and Hertz. 3,202,676.

American Hydrotherm Corp.: *See*—
Geiringer, Paul L. 3,202,208.

American Machine & Foundry Co.: *See*—
Buhl, Walter T. 3,202,026.
Deem, Hubert A., Walters, and Wood. 3,202,914.
Liu, Chien. 3,202,283.

American Maize-Products Co.: *See*—
Powell, Eugene L., and Pralzler. 3,202,705.

American-Saint Gobain Corp.: *See*—
Insolio, Thomas A. 3,202,302.

Ames, Millard E., Jr., to Radio Corp. of America. Frequency doubler employing two push-pull pulsed internal field effect devices. 3,202,840, 8-24-65, Cl. 307—88.5.

Ametek, Inc.: *See*—
Hoff, Harry W., Jr. 3,201,992.

Ampex Corp.: *See*—
Stein, Irving. 3,202,770.

Amsco Industries, Inc.: *See*—
Becker, James R. 3,202,423.
Leumi, Dubi. 3,201,876.

Anaconda Wire and Cable Co.: *See*—
Ling, Ting H. 3,202,629.
Reynolds, Maurice V., and Perrone. 3,201,827.
Ruch, James P. 3,202,754.

Anders, Walter G., to Sperry Rand Corp. Conveyor assembly for conveyor driven equipment. 3,202,265, 8-24-65, Cl. 198—158.

Anderson, Eugene J.: *See*—
Stuller, Frank G., Gums, and Anderson. 3,202,263.

Anderson John L., to International Business Machines Corp. Low cost autotransformer. 3,202,949, 8-24-65, Cl. 336—149.

Anderson, John R. Unijunction transistor oscillator circuit. 3,202,937, 8-24-65, Cl. 331—111.

Anderson, Robert G.: *See*—
Stuart, Frank A., Anderson, and Drummond. 3,202,678.

Anderson, Weston A., to Varian Associates. Quantum resonance method and apparatus. 3,202,908, 8-24-65, Cl. 324—.5.

Andren, Karl H., to Artos Engineering Co. Apparatus for production of electrical conductors. 3,201,848, 8-24-65, Cl. 29—33.

Andrews, Bethlehem K., and J. G. Frick, Jr., to United States of America, Agriculture. Process of creaseproofing cellulosic fabrics with tetrakis (N-methylolcarbamoylethyl) ethylenediamine. 3,202,473, 8-24-65, Cl. 8—116.3.

Andrews, Donald E., F. L. Hooper, and C. W. Whaples, to Cambridge Wire Cloth Co. Woven wire conveyor belt. 3,202,387, 8-24-65, Cl. 245—6.

Andrews, Theodore E., to General Electric Co. Control mechanism for a toaster or similar appliance. 3,202,799, 8-24-65, Cl. 219—492.

Andrewsen, Harry W., and C. D. Gordon, to California Research Corp. Preparation of alkenyl succinic anhydrides. 3,202,679, 8-24-65, Cl. 260—346.8.

Antonaides, Basil, to Radio Corp. of America. Mesh electrode support structure. 3,202,857, 8-24-65, Cl. 313—89.

Apgar, John N., Sr. Load apportioning tandem suspension structure for vehicles. 3,202,440, 8-24-65, Cl. 280—104.5.

Aquatron Engineering Corp.: *See*—
Green, William G. 3,202,601.

Archambeau, Ernest R.: *See*—
Haynie, Thomas H., Jr. 3,202,327.

Armco Steel Corp.: *See*—
Long, Spencer W. 3,202,446.

Armington, Alton F., and J. R. Weiner, to United States of America, Air Force. Sublimation apparatus. 3,202,485, 8-24-65, Cl. 23—264.

Armistead, Charles S. Magnetic fastener. 3,201,842, 8-24-65, Cl. 24—248.

Armstrong, Robert G., to The Ohio Crankshaft Co. Apparatus and method of inductively hardening a shaft-like member. 3,202,555, 8-24-65, Cl. 148—131.

Arnold, Alfred F. Corner screed bead. 3,201,908, 8-24-65, Cl. 52—255.

Arnold, Bruce C., J. I. Case Co. Tractor improvements. 3,202,016, 8-24-65, Cl. 74—710.5.

Aro Corp., The: *See*—
Kautz, Wilbert G., German, and Dominique. 3,202,368.

Arp, Leon J., and J. M. Green, to Iowa State University Research Foundation, Inc. Variable differential gear drive automatic control apparatus for machines. 3,202,893, 8–24–65, Cl. 318—13.

Arp, Leon J., and J. M. Green, to Iowa State University Research Foundation, Inc. Automatic taped program control apparatus for a machine tool. 3,202,895, 8–24–65, Cl. 318—162.

Arrington, William L., to Admiral Corp. Safety device employing meltable tube socket. 3,202,882, 8–24–65, Cl. 317—120.

Arsenault, William R., J. F. Cameron, and J. S. Thompson, to FMA, Inc. Apparatus for simultaneously recording spaced data and code on a single frame of photographic film. 3,202,045, 8–24–65, Cl. 88—24.

Artos Engineering Co.: *See*—
Andren, Karl H. 3,201,848.

Associated Electrical Industries Ltd.: *See*—
Warman, Bloomfield J. 3,202,767.

Atcheson, Howard M. Telephone directory device. 3,202,768, 8–24–65, Cl. 179—100.

Atchley, Raymond D., to Techform Laboratories, Inc. Eraser. 3,201,817, 8–24–65, Cl. 15—231.

Ateliers et Forges de la Loire St-Chamond-Firminy-St-Etienne-Jacob Holtzer, Compagnie des: *See*—
Davese, Jean-Baptiste. 3,202,301.

Atkinson, Paul I.: *See*—
Eady, Herman R., Jr., Strait, and Atkinson. 3,202,968.

Atkinson, William G., to Somerville Industries Ltd. Carton construction. 3,202,312, 8–24–65, Cl. 220—105.

Atlas Bolt and Screw Co., The: *See*—
Weidner, Harry C., Jr. 3,202,033.

Auger, Edgar, and H. L. Browne, to Ford Motor Co. Vehicle underbody structure. 3,202,451, 8–24–65, Cl. 296—28.

Aughey, John L. Perpetual calendar. 3,201,884, 8–24–65, Cl. 40—109.

Auguste, Emile B.: *See*—
Jouard, Pierre M. L. 3,202,204.

Aumüller, Walter: *See*—
Korger, Gerhard, and Aumüller. 3,202,680.

Automatic Timing & Controls, Inc.: *See*—
Houpt, Grover K. 3,202,923.

Avco Corp.: *See*—
Wissel, Francis A. 3,202,921.

Avery, Donald H.: *See*—
Ehrreich, John E., and Avery. 3,202,488.

Ayer, Elmore C.: *See*—
Carmichael, Thomas F., and Ayer. 3,202,592.

Babcock & Wilcox Co., The: *See*—
Godshalk, Russell L. 3,202,184.
Marshall, David M., and Steever. 3,202,200.
Rackley, John M., Musat, and Kidwell. 3,202,196.

Bachelder, Millard J., F. E. Satchell, and W. J. Diamond; said Satchell assor. to Brunswick Corp. Process for producing patterned plastic articles. 3,202,742, 8–24–65, Cl. 264—108.

Bacsanyi, Thomas J.: *See*—
Toteff, George A., and Bacsanyi. 3,201,899.

Baden, Thomas A., to Donaldson Co., Inc. Afterburner system. 3,201,933, 8–24–65, Cl. 60—30.

Badenoch, Benjamin W., E. I. Brown, and C. E. Liles, to Sperry Rand Corp. Power transmission. 3,202,105, 8–24–65, Cl. 103—162.

Badger, Alfred E.: *See*—
Woods, John A., Sharp, and Badger. 3,202,494.

Badger Co., Inc., The: *See*—
Redcay, Aaron K. 3,202,605.

Bahbout, Abraham: *See*—
Kling, Harry P., Sama, Priceman, Nijs, and Bahbout. 3,202,585.

Baier, Edwin, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing even dyeings on cellulose materials in a long bath. 3,202,472, 8–24–65, Cl. 8—54.2.

Baillif, Allen K., to Sperry Rand Corp. Fluid supported members. 3,202,974, 8–24–65, Cl. 340—174.1.

Baisel, Edwin C.: *See*—
Delany, John J., and Baisel. 3,202,896.

Baittinger, Jack R., ½ to J. J. Dougherty. Timber pile connector. 3,201,834, 8–24–65, Cl. 20—92.

Baker Perkins Inc.: *See*—
Jones, Morris C., Jr. 3,201,115.
Jones, Morris C., Jr. 3,202,262.

Balamuth, Lewis, and A. Kuris, to Cavitron Ultrasonics, Inc. Metal forming. 3,201,967, 8–24–65, Cl. 72—359.

Baldine, Joseph J. Motor vehicle litter disposal. 3,202,118, 8—24–65, Cl. 110—18.

Baldwin, Lionel V., and V. A. Sandborn, to United States of America, National Aeronautics and Space Administration. Particle beam measurement apparatus using beam kinetic energy to change the heat sensitive resistance of the detection probe. 3,202,915, 8–24–65, Cl. 324—106.

Baldwin-Lima-Hamilton Corp.: *See*—
Hammon, Otto, Colbert, and Gambrell. 3,202,088.
Hines, Frank F. 3,202,958.

Balfour, Ronald C.: *See*—
Todd, David B., Keeler, and Balfour. 3,202,647.

Ball, Thomas M., to Chrysler Corp. Return flow carburetor. 3,202,403, 8–24–65, Cl. 261—36.

Ballato, Arthur D., and R. Bechmann, to United States of America, Army. Piezoelectric crystal element. 3,202,846, 8–24–65, Cl. 310—9.7.

Ballmer, James E., and D. M. Redden, to Bausch & Lomb Inc. Optical instrument with microscope unit and nested tubes for viewing objects in closed chamber. 3,202,048, 8–24–65, Cl. 88—39.

Balthasor, Bernard E., to Buddy L Corp. Simulated flat tired vehicle. 3,201,897, 8–24–65, Cl. 46—202.

Bancelin, Robert V. Charge for solid propellant rocket. 3,201,936, 8–24–65, Cl. 60—35.6.

Bar, Rudolf. Multiple-stage steam turbine. 3,202,399, 8–24–65, Cl. 253—86.

Baracket, Albert J., Diamond Power Specialty Corp. Frequency divider employing receptacles having preset frequency ratio connections for standard frequency plug-in units. 3,202,837, 8–24–65, Cl. 307—88.5.

Baranyi, Sandor J. Combined writing implement and slide rule. 3,202,351, 8–24–65, Cl. 235—79.5.

Barbee, Clyde T. Minnow tongs. 3,201,888, 8–24–65, Cl. 43—4.

Barber, James C., G. H. Megar, and T. S. Sloan, to Tennessee Valley Authority. Method of briquetting. 3,202,744, 8–24–65, Cl. 264—109.

Bardocz, Arpad. Spectroscopic low voltage spark source and interrupted arc source. 3,202,874, 8–24–65, Cl. 315—232.

Barger, J. P., to Dynatech Corp. Method and apparatus for orienting fluids in zero gravity fields. 3,202,160, 8–24–65, Cl. 137—1.

Barlow, David C., and C. W. Hughes. Bricklaying reference device. 3,201,870, 8–24–65, Cl. 33—85.

Barnard, Theodore P., to Miniature Precision Bearings, Inc. Bearing torque test instrument. 3,201,981, 8–24–65, Cl. 73—133.

Barnes Engineering Co.: *See*—
Norton, Bruce, and De Waard. 3,202,820.

Barr, Harold N., to D. Peterson, to Martin-Marietta Corp. Liquid fluidized bed nuclear reactor and method for reducing particle abrasion therein. 3,202,581, 8–24–65, Cl. 176—46.

Barr, James A., Jr., C. H. Greene, and C. G. Olsen, to Chemical Cleaning, Inc. Phosphate recovery apparatus. 3,202,365, 8–24–65, Cl. 241—42.

Barr, John N., to Square D Co. Electrical logic control element. 3,202,835, 8–24–65, Cl. 307—88.5.

Barreca, Henry J. Ski poles. 3,202,436, 8–24–65, Cl. 280—11.37.

Bartlett, Jeffrey H.: *See*—
Kirshenbaum, Isidor, Bartlett, and Hill. 3,202,694.

Bass Bros. Enterprises, Inc.: *See*—
Long, Alfred B. 3,201,919.

Bass, Henry J. Push-type blind fastener, removable, reusable, provided with self-locking, self-retaining, self-securing means. 3,202,038, 8–24–65, Cl. 85—83.

Bastia, Paul. Balustrade. 3,202,401, 8–24–65, Cl. 256—21.

Bateman, Amos W., to General Electric Co. Protective relay system. 3,202,875, 8–24–65, Cl. 317—18.

Bausch & Lomb Inc.: *See*—
Ballmer, James E., and Redden. 3,202,048.
Bond, Selah J. 3,202,049.
Hall, Joseph F., Jr. 3,202,811.
Lawler, William F. 3,202,047.
Lawler, William F. 3,202,053.
Seidenberg, Richard L. 3,202,050.
Shankar, Naranappa K., and Martens. 3,202,933.

Baxter, John R.: *See*—
Cumming, Ronald W., and Baxter. 3,202,128.

Baxter Laboratories, Inc.: *See*—
Stone, Irwin M. 3,202,515.

Bear, Earl O.: *See*—
Alford, Carl C., and Bear. 3,201,882.

Beattie, Walter R., to Oglebay Norton Co. Hot top with rotating hanger means. 3,202,395, 8–24–65, Cl. 249—202.

Beaugh, John B., and R. C. Halter, to Esso Research and Engineering Co. Pour point determination. 3,201,970, 8–24–65, Cl. 73—17.

Beaugh, John B., L. M. Johnson, and L. W. Pohler, to Esso Research and Engineering Co. Automatic operation and process control. 3,202,602, 8–24–65, Cl. 208—33.

Bechmann, Rudolf: *See*—
Ballato, Arthur D., and Bechmann. 3,202,846.

Bechtold, Edwin W., to The Ednalite Corp. Symmetrical three element lens system. 3,202,051, 8–24–65, Cl. 88—57.

Beck, Henry C., to United States of America, Navy. Differential pressure transducer. 3,201,989, 8–24–65, Cl. 73—300.

Becker, James R., to Amsco Industries, Inc. Toy simulated feeding dish. 3,202,423, 8–24–65, Cl. 272—8.

Beckman Instruments, Inc.: *See*—
Adams, Clarence W. 3,201,994.
Villalobos, Richard. 3,201,922.
Villalobos, Richard. 3,201,971.

Bedford, William A., Jr. Method of making precision formed metal parts. 3,201,122, 8–24–65, Cl. 113—119.

Belbeoch, Roger L., to United States of America, Atomic Energy Commission. Polyenergetic particle deflecting system. 3,202,817, 8–24–65, Cl. 250—41.9.

Bell, Francis R.: *See*—
Fortescue, Peter, and Bell. 3,202,580.

Bell & Howell Co.: *See*—
Call, Daniel D. 3,202,779.
Rather, Eugene, and Stocker. 3,202,095.

Bell, James C., and G. H. Horstmann. Gage block. 3,201,873, 8–24–65, Cl. 33—168.

Bell Punch Co. Ltd.: *See*—
Kitz, Norbert, Lloyd, and Drage. 3,202,919.

Bell Telephone Laboratories, Inc.: *See*—
Aaron, Marvin R., and Henning. 3,202,762.
Byrne, Charles J. 3,202,765.
Chase, Albert J., and Hershey. 3,202,774.
Chynoweth, Alan G., and Logan. 3,202,912.
Crowell, Merton H. 3,202,864.
Dacey, George C., Lee, and Shockley. 3,202,887.
Gaunt, Wilmer B., Jr. 3,202,768.
Giger, Adolf J. 3,202,941.
James, Dennis B. 3,202,983.
Kaminski, William, and Schneider. 3,202,936.
Menne, Robert S. 3,202,806.
Reiling, Paul A. 3,202,939.
Voss, Robert G. 3,201,849.

Beloit Corp.: *See*—
Bresinki, Jerome P. 3,202,536.

Bender, Bob G., and L. Bernstein, to Hughes Aircraft Co. Gold-aluminum alloy bond electrode attachment. 3,202,489, 8–24–65, Cl. 29—195.

Bendix Corp., The: *See*—
Brandao, Roy L. 3,202,987.
Cordry, Barton L. 3,202,986.
Hennessey, Walter F., Jr. 3,202,956.
Hinnah, Howard D., and Newell. 3,201,984.

Benger, Walter C., J. L. Hanna, and D. G. Vice, to Northern Electric Co. Ltd. Semiconductor vario-losser circuit. 3,202,929, 8–24–65, Cl. 330—138.

Bennett, William O., W. W. Mutter, and E. Van Haaften, to Bulova Watch Co., Inc. Tuning fork frequency adjuster. 3,202,848, 8–24–65, Cl. 310—25.

Benson, Donald H., and W. R. Pratt, to Vanguard Abrasive Corp. Diamond abrasive saw blade. 3,201,902, 8–24–65, Cl. 51—206.

Benteler, Helmut, and W. Vogel, to Benteler-Werke Aktiengesellschaft. Apparatus for the extrusion pressing of tubes, specially steel tubes. 3,201,966, 8–24–65, Cl. 72—264.

Benteler-Werke Aktiengesellschaft: *See*—
Benteler, Helmut, and Vogel. 3,201,966.

Bergeron, James A., and J. S. Stinnett. Power unit for wheel-supported field conduit. 3,202,172, 8–24–65, Cl. 137—344.

Bergeson, Richard F., and P. S. Decatur, to The Maytag Co. Venting structure for a combination washer-drier. 3,202,443, 8–24–65, Cl. 285—20.

Berkenblit, Melvin: *See*—
Reisman, Arnold, Berkenblit, Cheroff, and Hochberg. 3,202,609.

Berkolde, Velta K.: *See*—
Karkligis, Roman J., and Berkolde. 3,202,587.

Berkowitz, Irving L., to Kason Hardware Corp. Combination magnetic and mechanical latch. 3,201,960, 8–24–65, Cl. 70—150.

Berliner, Julius F. T., to Moser Paper Co. Guar seed-boric acid or -borax embalming composition and method. 3,202,574, 8–24–65, Cl. 167—49.5.

Bernard, Casimir M.: *See*—
Snyder, John Y. 3,201,905.

Bernhardt, Eugen, to C. Zeiss. Optical device for orienting monocrystals along the axis of the crystal. 3,202,041, 8–24–65, Cl. 88—14.

Bernstein, Leonard: *See*—
Bender, Bob G., and Bernstein. 3,202,489.

Berns O Matic Corp.: *See*—
Webster, Milo E. 3,202,205.

Berry, Richard C., and F. J. Kelly, to Crouse-Hinds Co. Disconnect lighting fixture. 3,202,812, 8–24–65, Cl. 240—1.2.

Bertels, Josef. Process and member for joining by welding light metals with steel. 3,202,793, 8–24–65, Cl. 219—118.

Berth, Peter, and G. Reese, to Therachemie Chemisch Therapeutische Gesellschaft m.b.H. Phosphinic acid derivatives for protection of hair from damage in bleaching and dyeing the same. 3,202,579, 8–24–65, Cl. 167—88.

Bertuch, Charles J., N. H. Meyers, and H. Sobol, to International Business Machines Corp. Superconductive circuit. 3,202,833, 8–24–65, Cl. 307—88.5.

Beynon, John C., to The Bunker-Ramo Corp. Magnetic recording device and method for producing same by electroless plating. 3,202,538, 8–24–65, Cl. 117—119.2.

Bibbero, Robert J., to Bulova Research and Development Laboratories, Inc. Waveform identification system. 3,202,761, 8–24–65, Cl. 179—1.

Bienaime, Jacques, to Yumbo. Grab bucket. 3,202,306, 8–24–65, Cl. 214—656.

Birdsall, Charles K., and R. W. Grow, to General Electric Co. High frequency energy apparatus with interleaved ladder line slots. 3,202,867, 8–24–65, Cl. 315—39.3.

Birtcher Corp., The: *See*—
Emmons, Donald L. V. 3,202,149.

Bishop, J., & Co., Platinum Works: *See*—
Steele, Raymond. 3,202,504.

Bissell, Robert D., and E. J. Ingham, to Dresser Industries, Inc. Guard device for pressure-responsive instruments. 3,202,063, 8–24–65, Cl. 92—91.

Blaauw, Gerrit A., to International Business Machines Corp. Data processing system programmed by instruction and associated control words including word address modification. 3,202,971, 8–24–65, Cl. 340—172.5.

Black, Henry. Toy water pistol. 3,202,318, 8–24–65, Cl. 222—89.

Black-Clawson Co., The: *See*—
Phelps, Richard W. 3,202,374.

Blank, Hans G., to General Telephone and Electronics Laboratories, Inc. Electroluminescent-piezoelectric bar graph display system. 3,202,868, 8–24–65, Cl. 315—55.

Blanke, Egbert: *See*—
Krieger, Bernhard, Blanke, and Kaspar. 3,202,683.

Bock, Ditmar H., to United States of America, Navy. Analogue-to-binary code converter. 3,202,981, 8–24–65, Cl. 340—347.

Bodge, Clifford A., to Texas Instruments Inc. Low capacity, low current thermal time delay relay. 3,202,786, 8–24–65, Cl. 200—113.

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Morway, Arnold J., and Bodner. 3,202,606.

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Mory, Rudolf, and Boehl. 3,202,511.

Boehringer Ingelheim G.m.b.H.: *See*—
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Metivier, Jean, and Boesch. 3,202,673.

Boffa, Gioacchino: *See*—
Marullo, Gerlando, Costabello, and Boffa. 3,202,713.

Boguardt, Maarten, W. G. Bonsel, M. Muysken, B. Brodwin, and A. Eiss, to Reactor Centrum Nederland. Pressurised water reactor plant with improved jet pump arrangement. 3,202,584, 8–24–65, Cl. 176—61.

Bolcato, John B., to Continental Can Co., Inc. Method and apparatus for outside caulking of bottom of paper cup. 3,202,065, 8–24–65, Cl. 93—36.

Bolger, James W., to Rexall Drug and Chemical Co. 1-(2-cycloalky-2-dilower alkylaminoethyl) guanidines. 3,202,710, 8–24–65, Cl. 260—564.

Bolick, Ernest L.: *See*—
Loeffler, John E., Jr., Springer, and Bolick. 3,202,477.

Bolster, Ronald H.: *See*—
Merritt, Howard V., and Bolster. 3,202,258.

Bolton, Douglas H. H., and M. C. Potts, to Dowty Mining Equipment Ltd. Roof support assembly. 3,202,066, 8–24–65, Cl. 91—169.

Bond, Joseph M.: *See*—
Hordis, Victor A., and Bond. 3,201,832.

Bond, Selah J., to Bausch & Lomb Inc. Liquid dispenser for microscope objective. 3,202,049, 8–24–65, Cl. 88—40.

Bones, Glenn W., and W. R. Raisanen, to United States of America, Air Force. Variable frequency multi-phase signal generator with phase difference constant over frequency band. 3,202,932, 8–24–65, Cl. 331—45.

Bonsel, Wouter G.: *See*—
Boguardt, Maarten, Bonsel, Muysken, Brodwin, and Eiss. 3,202,584.

Bord, Max. Carton pouring spout. 3,202,336, 8–24–65, Cl. 229—17.

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Sherrie, Robert M., and Borger. 3,202,890.

Born, John W.: *See*—
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Borser, Henri E. A., to Manufacture de Bethune. Device for measuring and printing an angular or linear displacement. 3,202,229, 8–24–65, Cl. 177—2.

Bosworth, Seymour, and J. Zanderer, to Abbey Electronics Corp. Electrical connector. 3,202,953, 8–24–65, Cl. 339—42.

Botkin, Albert L. Closure liners. 3,202,306, 8–24–65, Cl. 215—40.

Boulanger, Eugene P. Means for adjusting standard window shade to window opening. 3,202,206, 8–24–65, Cl. 160—263.

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Bouwhuis, Gijsbertus: *See*—
De Lang, Hendrik, and Bouwhuis. 3,202,039.

Bosos, Christ P.: *See*—
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Bradley, Howard B., and R. G. Pankhurst, to Union Carbide Corp. Purification of nitric acid. 3,202,481, 8–24–65, Cl. 23—159.

Braendel, Helmuth G., to Wilkening Mfg. Co. Piston ring assembly. 3,202,430, 8–24–65, Cl. 277—79.

Brandao, Roy L., to The Bendix Corp. Rapid slew initiation circuit. 3,202,987, 8–24–65, Cl. 343—9.

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Brandwood, Joseph and G. Flow control devices in a carburetor. 3,202,404, 8–24–65, Cl. 261—39.

Brauer, Karl: *See*—
Wilkenloh, Wilhelm, and Brauer. 3,201,943.

Braun, Gunther: *See*—
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Braun, Steven S., L. H. Markway, D. O. Chrismer, and J. W. Burks, to Shell Oil Co. Repairing refractory lined vessels. 3,202,752, 8–24–65, Cl. 264—30.

Brause, Horst: *See*—
Fliegner, Horst, and Brause. 3,202,778.

Bregi, Benjamin F., to National Broach & Machine Co. Gear finishing machine with work transfer mechanism. 3,202,057, 8–24–65, Cl. 90—1.6.

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Amdahl, Lowell D., Breuer, and Davis. 3,202,805.

Bresinki, Jerome P., to Beloit Corp. Method and apparatus for coating paper. 3,202,536, 8–24–65, Cl. 117—63.

Brichard, Edgard, to Glaverbel. Method of and balance for the periodically repeated weighing of a predetermined quantity of material. 3,202,230, 8–24–65, Cl. 177—64.

Bride, John E., to Diamond Alkali Co. Electroplating. 3,202,589, 8–24–65, Cl. 204—32.

Bristol-Meyers Co.: *See*—
Cheney, Lee C., and Godfrey. 3,202,653.
Perron, Yvon G. 3,202,654.

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British Cellophane Ltd.: *See*—
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British Drug Houses Ltd., The: *See*—
Barn, Derek, Feather, and Petrow. 3,202,664.

British Petroleum Co. Ltd., The: *See*—
Wenham, Alan J. M., and Sparke. 3,202,691.

Brodwin, Bernard: *See*—
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Broken Hill Proprietary Co., Ltd., The: *See*—
Lean, John B., and Worner. 3,202,602.

Brooks, James D., and R. J. Harrison, to Commonwealth Scientific and Industrial Research Organization. Method and apparatus for dealkylating and hydrogenation of organic compounds. 3,202,664, 8–24–65, Cl. 260—290.

Brophy, James J., to IIT Research Institute. Electrostatic reproducing apparatus. 3,202,973, 8–24–65, Cl. 340—173.

Brown, Edward I.: *See*—
Badenoch, Benjamin W., Brown, and Liles. 3,202,105.

Brown, Frederick C., and P. B. Mauer, to Eastman Kodak Co. Articles of hot pressed zinc sulphide having a durable metal film coated thereon. 3,202,825, 8-24-65, Cl. 250—216.

Brown, James R., Jr.: *See*—
Horan, John J., Brown, and Pressler. 3,202,736.

Brown, John S., to United States of America, Army. Rope coupling. 3,201,836, 8-24-65, Cl. 24—125.

Brown, Raymond D., to Royal Business Forms Inc. Machine for and method of accounting. 3,202,349, 8-24-65, Cl. 234—45.

Brown-Bridge Mills, Inc., The: *See*—
Holt, Frederick W., Jr., Byrne, and Reif. 3,202,539.

Browne, Horace L.: *See*—
Auger, Edgar, and Browne. 3,202,451.

Brownstein, George, to Paramount Pictures Corp. Subscription-television program-scrambling system. 3,202,768, 8-24-65, Cl. 178—5.1.

Brubaker, Lee B. Ham rack assembly. 3,202,086, 8-24-65, Cl. 99—351.

Bruckner, Gernot. Apparatus for stretching strips of plastic material. 3,201,826, 8-24-65, Cl. 18—1.

Brumbaugh, Robert T.: *See*—
Hebert, Gerald A., and Brumbaugh. 3,201,983.

Bruner Corp.: *See*—
Rudelick, John. 3,202,174.

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Bachelder, Millard J., Satchell, and Diamond. 3,202,742.

Brust, Bernard, R. I. Fryer, and L. H. Sternbach, to Hoffmann-La Roche Inc. Substituted 3-amino 4-phenyl quinolones. 3,202,661, 8-24-65, Cl. 260—288.

Bryce, Peter C. Storm window washing device. 3,201,816, 8-24-65, Cl. 15—220.

Bryson, James G., and R. J. Creech, to Carrier Corp. Sealing arrangement. 3,201,833, 8-24-65, Cl. 20—69.

Budd, Larry J., to Pallet Devices, Inc. Cushioned packing insert. 3,202,335, 8-24-65, Cl. 229—14.

Buddy L Corp.: *See*—
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Budovec, Joseph E., to Jefferson Electric Co. Epoxy insulated transformer having tris-B-chloroethylphosphate and hydrated alumina in the insulation. 3,202,947, 8-24-65, Cl. 336—96.

Buesing, Richard T.: *See*—
Myers, Richard T., and Buesing. 3,202,924.

Buhl, Walter T., to American Machine & Foundry Co. Apparatus and methods for separating successive lengths of tubular material. 3,202,026, 8-24-65, Cl. 83—161.

Bukata, Stephen. Brazing furnace. 3,202,792, 8-24-65, Cl. 219—85.

Bullock, Earl R., to General Electric Co. Semiconductor time delay circuits. 3,202,884, 8-24-65, Cl. 317—142.

Bulova Research and Development Laboratories, Inc.: *See*—
Bibbero, Robert J. 3,202,761.

Bulova Watch Co., Inc.: *See*—
Bennett, William O., Mutter, and Van Haaften. 3,202,848.
Kramer, Nathan R. 3,202,886.

Bunker-Ramo Corp., The: *See*—
Amdahl, Lowell D., Breuer, and Davis. 3,202,805.
Beynon, John C. 3,202,538.
Nyberg, James J. 3,202,836.

Burd, Richard H., to E. I. du Pont de Nemours and Co. Chlorinated polyethylene-acrylate coating for chlorosulfonated polyethylene. 3,202,628, 8-24-65 Cl. 260—32.8.

Burden, Robert W., to Ling-Temco-Vought, Inc. Actuator. 3,202,062, 8-24-65, Cl. 92—85.

Burditt, Frederic M. Stand for bicycles and the like. 3,202,289, 8-24-65, Cl. 211—22.

Bured, Inc.: *See*—
Parker, Robert B. 3,202,371.

Burford, Earl E. Method and apparatus for tying bales. 3,202,087, 8-24-65, Cl. 100—3.

Burg Mfg. Co.: *See*—
Nansel, Harold K. 3,202,419.

Burgess, Hovey M., and R. W. Mellentin, to General Foods Corp. Animal food and method of making the same. 3,202,514, 8-24-65, Cl. 99—2.

Burke, Oliver W., Jr., and C. B. Jackson; said Jackson assor. to said Burke. Addition of sea water during precipitation of silica pigment. 3,202,525, 8-24-65, Cl. 106—306.

Burkhart, Wade, to Kollsman Instrument Corp. Submarine positioner system. 3,202,040, 8-24-65, Cl. 88—1.

Burks, John W.: *See*—
Braun, Steven S., Markway, Chrismer, and Burks. 3,202,732.

Born, Derek, P. Feather, and V. Petrow, to The British Drug Houses Ltd. 17a-chlorethynyl steroids and process for their preparation. 3,202,684, 8-24-65, Cl. 260—397.5.

Burrell, James H. Means of displaying articles of clothing and the like. 3,202,328, 8-24-65, Cl. 223—67.

Burt Mfg. Co.: *See*—
Steiner, George M. 3,202,079.

Burt, Robert V., and A. R. Harm, to The Procter & Gamble Co. Package for cylindrical articles or objects. 3,202,276, 8-24-65, Cl. 206—65.

Burton, Lawrence A., to Allis-Chalmers Mfg. Co. Barrier arrangement for arc chute which stretches arcs in both vertical and horisontal planes. 3,202,790, 8-24-65, Cl. 200—144.

Butler, David F., and G. R. Dixon, to Olin Mathieson Chemical Corp. Valve system for compression ignition device. 3,202,055, 8-24-65, Cl. 89—7.

Butler Mfg. Co.: *See*—
Carleton, Richard L. 3,201,841.

Butler, Vincent A., to Parker-Hannifin Corp. Shut-off valve assembly having a removable plug. 3,202,166, 8-24-65, Cl. 137—115.

Butterworth, Archibald J. Parking apparatus for motor vehicles. 3,202,231, 8-24-65, Cl. 180—1.

Byrd, Joe L., to United States of America, Army. Fluid accelerometer. 3,201,999, 8-24-65, Cl. 73—515.

Byrne, Charles J., to Bell Telephone Laboratories, Inc. Synchronization of frequency multiplex systems. 3,202,765, 8-24-65, Cl. 179—15.

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CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
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Fombonne, Paul. 3,202,994.
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Velte, Andre. 3,202,490.

Cabot Corp.: *See*—
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Yancey, Joel A. 3,202,645.

Cadillac Wire Corp.: *See*—
Russo, Andelfo J., and Henschel. 3,202,192.

Cadotte, Phil. Bodies for compaction trucks and the like. 3,202,456, 8-24-65, Cl. 296—101.

Caines, James F., R. F. Dyer, and J. K. Pannill, Jr., to Eastman Kodak Co. Light weight cigarette filter. 3,202,155, 8-24-65, Cl. 131—10.

Calafat Mas, Pierre O. Navigational vehicles. 3,201,124, 8-24-65, Cl. 115—1.

California Research Corp.: *See*—
Andrewsen, Harry W., and Gordon. 3,202,679.
Stuart, Frank A., Anderson, and Drummond. 3,202,678.

Call, Daniel D., to Bell & Howell Co. Sensing switch. 3,202,779, 8-24-65, Cl. 200—61.42.

Callick, Eric B. B., and J. C. Firmin, to English Electric Valve Co. Ltd. Storage tube for scan standards conversion. 3,202,855, 8-24-65, Cl. 313—71.

Cambridge Wire Cloth Co.: *See*—
Andrews, Donald E., Hooper, and Whaples. 3,202,387.

Cameron, Dugald, to Chrysler Corp. Speedometer-odometer drive adapter. 3,202,010, 8-24-65, Cl. 74—438.

Cameron, Gordon N. Hydraulically actuated arbor and chuck construction. 3,202,432, 8-24-65, Cl. 279—4.

Cameron, James K., and P. C. Welch, to Continental Baking Co. Method and apparatus for the production of crumb shells. 3,202,114, 8-24-65, Cl. 107—54.

Cameron, John F.: *See*—
Arsenault, William R., Cameron, and Thompson. 3,202,045.

Campbell, David H., and B. R. Lowrance, to Ethyl Corp. Preparation of beryllium alkyls. 3,202,722, 8-24-65, Cl. 260—665.

Canevari, Gerard P., to Esso Research and Engineering Co. Sacrificial anode bonded with epoxy resin. 3,202,596, 8-24-65, Cl. 204—148.

Canty, Roy A., and R. G. Griffin, to International Telephone and Telegraph Corp. Capacitor electrolyte. 3,202,611, 8-24-65, Cl. 252—62.2.

Carleton, Richard L., to Butler Mfg. Co. Signboard engaging means. 3,201,841, 8-24-65, Cl. 24—243.

Carlon, Hugh R., to United States of America, Army. Automatic glower supply. 3,202,870, 8-24-65, Cl. 315—116.

Carlsen, Chesley F. Mask. 3,202,071, 8-24-65, Cl. 95—79.

Carlson, Gilbert F., to International Telephone and Telegraph Corp. Hot water heating system having auxiliary pressurizing means. 3,202,355, 8-24-65, Cl. 237—8.

Carlson, Gilbert F., to International Telephone and Telegraph Corp. Pressurized hot water heating system having auxiliary pressurizing vessel. 3,202,357, 8-24-65, Cl. 237—8.

Carlson, John W., to Speed-O-Print Business Machines Corp. Trays. 3,202,074, 8-24-65, Cl. 95—95.

Carlson, Lorien A., and J. J. Kozacik, to Wood Conversion Co. Tool for producing fissures in mineral felt. 3,202,025, 8-24-65, Cl. 83—2.

Carlson, Robert M., F. M. Estes, and D. E. Feeman, to Western Electric Co., Inc. Resiliently supportable, rigidly held terminal. 3,202,757, 8-24-65, Cl. 174—153.

Carlyle, William C., to Square D Co. Electrical panelboard enclosure. 3,202,881, 8-24-65, Cl. 317—119.

Carmichael, Thomas F., and E. C. Ayer, to Synchro Corp. Inductance-capacitance device and method of manufacture. 3,202,592, 8-24-65, Cl. 204—58.

Carowelli, Remus F., and R. K. Gagnon, to Owens-Corning Fiberglas Corp. Dyed glass fiber yarn. 3,201,931, 8-24-65, Cl. 57—153.

Carper, Royce E. Whirling ball runway. 3,202,426, 8-24-65, Cl. 273—110.

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Carson, Cyril W. Replaceable cutting edge for a blade assembly. 3,202,226, 8-24-65, Cl. 172—719.

Carter, Davis I.: *See*—
Moody, Oliver C., and Carter. 3,201,993.

Carter, Sidney T., to Geo. J. Meyer Mfg. Co. Means for positioning a label relatively to a picker. 3,202,564, 8-24-65, Cl. 156—569.

Case, Grover. Holder for injector type razor blades to scrape with. 3,201,867, 8-24-65, Cl. 30—169.

Case, J. I., Co.: *See*—
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Catalucci, Herman J.: *See*—
Whaley, Robert E., and Catalucci. 3,202,447.

Cavitron Ultrasonics, Inc.: *See*—
Balamuth, Lewis, and Kuris. 3,201,967.

Ceglia, Michael J. Lighting device for dispelling shadows. 3,202,814, 8-24-65, Cl. 240—9.

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Koch, John E., Jr. 3,202,607.
Loftin, Billy. 3,202,565.
Soehngen, John W. 3,202,747.

Cementfabrik Holderbank-Wildegg A.-G.: *See*—
Wieland, Walter. 3,202,364.

Cesta, Frank, 35% to A. W. Fisher, 37½% to P. P. Huffard, III, 5% to J. Mucciarelli, and 2½% to M. L. Pagliughi. Replaceable heels for shoes. 3,201,877, 8-24-65, Cl. 36—36.

Chaboseau, Jacques P., and C. Mech, to Societe Rateau. Automatic load control. 3,202,464, 8-24-65, Cl. 308—73.

Chaplin, Hubert O., to United Shoe Machinery Corp. Leather conditioning. 3,201,812, 8-24-65, Cl. 12—146.

Chapman, Harvey W., and H. L. Dunlap, deceased (by M. E. Dunlap, special administratrix), to Evans Products Co Freight bracing apparatus. 3,202,111, 8-24-65, Cl. 105—369.

Chapman, John E., to Dukane Corp. Intercommunication system. 3,202,760, 8-24-65, Cl. 179—1.

Charvet, Joseph, to Societe a responsabilite Limitee; Tuyaux Flexibles Rudolph. Apparatus for making reinforced flexible tubing. 3,202,563, 8-24-65, Cl. 156—466.

Chasar, Anthony R., to The Trinx Co. Reversing load stop. 3,202,308, 8-24-65, Cl. 214—16.4.

Chase, Albert J., and H. J. Hershey, to Bell Telephone Laboratories, Inc. Transfer switch having a multiple contact actuator. 3,202,774, 8-24-65, Cl. 200—5.

Chase Brass & Copper Co., Inc.: *See*—
Huhtala, Olavi A., and Stockus. 3,202,408.

Chemetron Corp.: *See*—
Masella, Anthony J., and Matuschkovits. 3,202,201.

Chemical Cleaning, Inc.: *See*—
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Chen, Peter R.: *See*—
Wells, Ralph W., and Chen. 3,202,883.

Chen, Wu, to Sperry Rand Corp. Use of polarising materials to overcome light leakage. 3,202,828, 8-24-65, Cl. 250—225.

Cheney, Lee C.: *See*—
Perron, Yvon G., and Cheney. 3,202,655.

Cheney, Lee C., and J. C. Godfrey, to Bristol-Meyers Co. 6-[α-hydroxy- and α-amino-α-pyridylacetamido] penicillanic acids and salts thereof. 3,202,653, 8-24-65, Cl. 260—239.1.

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Childress, Clyde O., to Electrostatic Printing Corp. of America. Electrostatic printing system. 3,202,092, 8-24-65, Cl. 101—114.

Childress, Clyde O., to Electrostatic Printing Corp. of America. Electrostatic printing. 3,202,093, 8-24-65, Cl. 101—114.

Chomerics, Inc.: *See*—
Ehrreich, John E., and Avery. 3,202,488.

Chrismer, Donald O.: *See*—
Braun, Steven S., Markway, Chrismer, and Burks. 3,202,732.

Chrisp, Joseph D., to E. I. du Pont de Nemours and Co. Method for gelling water-bearing explosive compositions containing galactomannan gums. 3,202,556, 8-24-65, Cl. 149—20.

Christ, Martin: *See*—
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Christensen, Peter N. Pipe and cable laying machine. 3,201,944, 8-24-65, Cl. 61—72.5.

Christianson, Charles, to United States of America, Navy. Beta and gamma measuring apparatus for fluids. 3,202,819, 8-24-65, Cl. 250—71.5.

Christy, Donald F. Self-positioning stud spacing gauge. 3,201,874, 8-24-65, Cl. 33—180.

Chrysler Corp.: *See*—
Ball, Thomas M. 3,202,403.
Cameron, Dugald. 3,202,010.
Chute, Richard. 3,202,207.

Chubb, Talbot A., to United States of America, Navy. Rocket yaw cone reduction device. 3,202,882, 8-24-65, Cl. 244—14.

Chudzik, Anthony: *See*—
Doyle, Frank J., and Chudzik. 3,202,097.

Chute, Richard, to Chrysler Corp. Rotary regenerator sealing structure. 3,202,207, 8-24-65, Cl. 165—9.

Chynoweth, Alan G., and E. A. Logan, to Bell Telephone Laboratories, Inc. Method of utilizing tunnel diodes to detect changes in magnetic fields. 3,202,912, 8-24-65, Cl. 324—48.

Ciba Ltd.: *See*—
Mory, Rudolf, and Boehl. 3,202,511.

Claas, Helmut. Row crop attachment for a harvester combine. 3,201,928, 8-24-65, Cl. 56—98.

Clarage Fan Co.: *See*—
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Clark Equipment Co.: *See*—
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Clarke, Ronald A. W. Acoustic shield for a tool powered by a gas-operated motor. 3,202,289, 8-24-65, Cl. 181—66.

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Clausen, Mads, to Danfoss ved Ing. M. Clausen. Piston compressor, especially for refrigeration. 3,202,344, 8-24-65, Cl. 230—232.

Cleary, Robert D., and J. A. Kelly, to The Dow Chemical Co. Floating dispensing device. 3,202,322, 8-24-65, Cl. 222—173.

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Tack, William L. 3,202,406.

Coffee, Thomas A. Cathode-ray excited laser generator. 3,202,924, 8-24-65, Cl. 331—94.5.

Coggan, William G., and G. Godin, to Johns-Manville Corp. Cold caustic fiberboard manufacture. 3,202,569, 8-24-65, Cl. 162—18.

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Coleman, Charles H., Jr., to Columbia Broadcasting System, Inc. Apparatus for modifying the timing characteristic of a signal. 3,202,769, 8-24-65, Cl. 179—100.1.

Colgate-Palmolive Co.: *See*—
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Colmerauer, Paul J., to Hoesch AG. Fluid-pressure devices for vehicle suspensions or the like. 3,202,418, 8-24-65, Cl. 267—34.

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Continental Baking Co.: *See*—
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Continental Can Co., Inc.: *See*—
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Gans, Henry. 3,202,421.

Continental Oil Co.: *See*—
Starks, Charles M. 3,202,707.

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Cook, Loren. 3,202,081.

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Covington, Loren C., and R. L. Powell, to Titanium Metals Corp. of America. Electrolytic polishing tool. 3,202,595, 8-24-65, Cl. 204—224.

Cox, Alvon R., and A. B. Hosier, deceased (by E. Hosier, executrix), to The Faultless Rubber Co. Method of and apparatus for making hollow articles. 3,201,829, 8–24–65, Cl. 18—26.

Cox, Jay A., to Gulton Industries, Inc. Method of making a shielded transformer. 3,201,854, 8–24–65, Cl. 29—155.57.

Coyne & Delany Co.: *See*—
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Crowell, Morton H., to Bell Telephone Laboratories, Inc. Electron beam device having divergent emission electron gun. 3,202,864, 8–24–65, Cl. 315—21.

Crown Cork & Seal Co., Inc.: *See*—
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Cumming, Ronald W., and J. R. Baxter, to Commonwealth of Australia. Digital indicating device. 3,202,128, 8–24–65, Cl. 116—129.

Cummins, James B., and T. R. Kolter, said Cummins assor. to Photogrammetry, Inc. Sequence camera. 3,202,069, 8–24–65, Cl. 95—36.

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Curran, Robert A., to Electrolab Printed Electronics Corp. Method of making an electric circuit structure. 3,202,591, 8–24–65, Cl. 204—38.

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Csorkics, John E., and E. C. Peck, to General Electric Co. Package construction and method. 3,202,279, 8–24–65, Cl. 206—80.

Dacey, George C., C. A. Lee, and W. Shockley, to Bell Telephone Laboratories, Inc. Mesa-transistor with impurity concentration in the base increasing toward collector junction. 3,202,887, 8–24–65, Cl. 317—234.

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Dale Electronics, Inc.: *See*—
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Root, Raymond C. 3,202,291.

Dalhart, Austin T. Spinning top. 3,201,896, 8–24–65, Cl. 46—65.

Damani, Hasmukhrai G.: *See*—
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Damani, Kantilal G.: *See*—
Hindle, Arthur, Raval, and S. D., H. G. and K. G. Damani. 3,202,478.

Damani, Sharda D.: *See*—
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Danfoss ved Ing. M. Clausen: *See*—
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Dare, Eddie A. Saw guide and gauge tool. 3,202,418, 8–24–65, Cl. 269—290.

Davese, Jean-Baptiste, to Compagnie des Ateliers et Forges de la Loire St-Chamond-Firminy-St-Etienne-Jacob Holtzer. Equipment for handling drums. 3,202,301, 8–24–65, Cl. 214—1.

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Davis, Arthur G. Adapter with adjustment for setting cutters. 3,202,433, 8–24–65, Cl. 279—9.

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Davis, John S.: *See*—
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Day, Robert B., and P. V. Johnson, to Structural Clay Products Institute. Method and apparatus for manufacturing small clay cylinders. 3,202,746, 8–24–65, Cl. 264—141.

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Dechar Corp.: *See*—
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Dechar, Edouard, to Dechard Corp. Advertising devices. 3,201,881, 8–24–65, Cl. 40—77.

Decuir, Mitchell A., to T. S. Decuir. Mobile guy derrick and counter balancing crane. 3,202,299, 8–24–65, Cl. 212—59.

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Deem, Hubert A., W. T. Walters, and F. M. Wood, to American Machine & Foundry Co. Apparatus for inspection of tubular ferromagnetic members using plural movable search shoes for identifying area depth and location of discontinuities. 3,202,914, 8–24–65, Cl. 324—37.

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De Lang, Hendrik, and G. Bouwhuis, to North American Philips Co., Inc. Optical system for a color television camera. 3,202,089, 8–24–65, Cl. 88—1.

Delany, John J., and E. C. Baisel, to Coyne & Delany Co. Pilot operated diaphragm flush valve. 3,202,396, 8–24–65, Cl. 251—30.

Delise, John J. Adjustable rack of the apertured panel type. 3,202,292, 8–24–65, Cl. 211—67.

Delta-T Inc.: *See*—
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Denison, Robert B.: *See*—
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Dempster Brothers, Inc.: *See*—
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Dempster, George R.; (deceased), Ohio Trust Co. of Georgia, executor, and W. A. Herpich; said Herpich assor. to Dempster Brothers, Inc. Material handling apparatus. 3,202,305, 8–24–65, Cl. 214—302.

Denton, Bryce A., to General Electric Co. Automatic spray, steam, and dry iron. 3,201,880, 8–24–65, Cl. 38—77.

DePaolo, John. Crankcase fume eliminator. 3,202,145, 8–24–65 Cl. 123—119.

Desalination Plants (Developers of Zarchin Process) Ltd.: *See*—
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De Schamphelaere, Lucien A., to Gevaert Photo-Producten N.V. Transistor chopper. 3,202,922, 8–24–65, Cl. 330—9.

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De Wolf, Nicholas, to Transitron Electronic Corp. Controllable semiconductor device. 3,202,832, 8–24–65, Cl. 307—88.5.

Dexter, Martin, M. Knell, and E. A. Roskin, to Geigy Chemical Corp. Method of stabilization with a substituted triazine and compositions stabilized thereby. 3,202,681, 8–24–65, 260—249.5.

De Young, Charles E., and I. E. Gandee, to National Tank Co. Liquid distribution system. 3,202,167, 8–24–65, Cl. 137—173.

Diack, Arthur G. Post assembly. 3,202,296, 8–24–65, Cl. 211—134.

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Diamond Alkali Co.: *See*—
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Dien, Chi K., and C. F. Douty, to Allied Chemical Corp. Synthetic pigments of the anthraquinone type. 3,202,682, 8–24–65, Cl. 260—371.

Dietrich, Bernhard, to Clevite Corp. Semiconductor amplitude modulation circuit. 3,202,940, 8–24–65, Cl. 332—43.

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Dollenmayer, William L., to International Business Machines Corp. Marking device for dictating machine. 3,203,000, 8–24–65, Cl. 346—50.

Dolphin, John R. V., to Lansing Bagnall Ltd. Industrial truck with an elevatable operator platform that is movable with and relative to the load handling means. 3,202,242, 8–24–65, Cl. 187—9.

Dolphin, John R. V., and C. Goodacre, to Lansing Bagnall Ltd. Pallet or stillage trucks. 3,202 233, 8–24–65, Cl. 180—13.

Domes, E. A., to International Harvester Co. Resilient snubbing connection between the tilting body and the hoist cylinder. 3,202,458, 8–24–65, Cl. 298—22.

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Dopner, Horst, to Telefunken Patentverwertungs-G.m.b.H. Electromagnetic clutch and brake with means to energize both windings during transition. 3,202,248, 8–24–65, Cl. 192—18.

Dorgelo, Eduard G., and J. Finn, to North American Phillips Co., Inc. Twin-tetrode electron discharge device having two-wire Lecher line imput and U-shaped metal strip output means. 3,202,866, 8–24–65, Cl. 315—39.

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Doyle, Frank J., and A. Chudzik, to Miehle-Goss-Dexter, Inc. Actuating mechanism for tension lockup printing plate cylinders. 3,202,097, 8–24–65, Cl. 101—378.

Drader, Clarence. Side opening carrier. 3,202,295, 8–24–65, Cl. 211—126.

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Kits, Norbert, Lloyd, and Drage. 3,202,919.

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Drake, Cyril F., and R. H. Hutchins, to International Standard Electric Corp. Color photoengraving techniques for producing conductor devices. 3,202,509, 8–24–65, Cl. 96—36.

Dreisziger, Jossef L., to Ford Motor Co. Motor vehicle suspension system of the independent type. 3,202,287, 8–24–65, Cl. 180—73.

Dresser Industries, Inc.: *See*—
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Dumm, Robert P., to Pacific Valves, Inc. Nipple attachment to a valve body. 3,202,175, 8–24–65, Cl. 137—454.2.

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Dunlap, William N., Jr., E. W. Jones, and J. V. Wright, to Sperry Rand Corp. Disposition of nickel-cobalt alloy on aluminum substrates. 3,202,529, 8–24–65, Cl. 117—50.

Dunn, Donald A., and P. A. Sturrock, to Eitel-McCullough, Inc. Crossed field collector. 3,202,863, 8–24–65, Cl. 315—5.38.

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Crisp, Joseph D. 3,202,556.
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Dunwell, Stephen W., C. E. Stephens, W. R. Stringfellow, and V. D. Winkler, to International Business Machines Corp. Electronic calculator. 3,202,969, 8–24–65, Cl. 340—172.5.

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ESB-Reeves Corp.: *See*—
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Eady, Herman R., Jr., R. D. Strait, and P. I. Atkinson, to United States of America, Navy. Signal monitoring instrument. 3,202,968, 8–24–65, Cl. 340—172.

Eastman Kodak Co.: *See*—
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Eckstein, Karl-Albert, to Industriewerk Schaeffer Ohr. Thin-walled cages for cylindrical rollers. 3,202,467, 8–24–65, Cl. 308—217.

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Eichhorn, Charles W. One way flow ventilator damper. 3,202,083, 8–24–65, Cl. 98—116.

Einsmann, William G. Right angle stud clamp. 3,202,417, 8–24–65, Cl. 269—97.

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Eklöv, David, to Svenska Relafabriken A.B.N. Aktiebolag. Self-blocking multivibrator. 3,202,938, 8–24–65, Cl. 331—113.

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Electronic Control Systems, Inc.: *See*—
Phillips, George E., Sr., and Straight. 3,202,800.

Electro-Nite Inc.: *See*—
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Electrostatic Printing Corp. of America: *See*—
Childress, Clyde O. 3,202,092.
Childress, Clyde O. 3,202,093.

Ellengerger, Francis E., to General Electric Co. System for controlling the maximum torque developed by fluid turbines. 3,202,397, 8–24–65, Cl. 253—59.

Ellingboe, Ellsworth K., and A. L. McClelland, to E. I. du Pont de Nemours and Co. Synthesis of bis(trifluoromethyl) peroxide. 3,202,716, 8–24–65, Cl. 260—610.

Elmer, Edwin, to Consolidated Electronics Industries Corp. Rotary solenoid. 3,202,850, 8–24–65, Cl. 310—37.

Elmendorf, Armin. Method of forming a composite panel. 3,202,743, 8–24–65, Cl. 264—109.

Elston, Alvin W., to Honeywell Inc. Transducer. 3,202,962, 8–24–65, Cl. 340—10.

Emeriat, Raymond, to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme). Electrodes for storage batteries, fuel cells and the like, and method of manufacturing same. 3,202,545, 8–24–65, Cl. 136—36.

Emmermann, Dieter K., J. H. Davids, and W. E. Johnson, to Desalination Plants (Developers of Zarchin Process) Ltd. Compressor arrangement. 3,202,343, 8–24–65, Cl. 230—127.

Emmons, Donald L., to The Birtcher Corp. Cardiotachometer. 3,202,149, 8–24–65, Cl. 128—2.05.

Endres, Herbert A., H. B. Puller, and P. W. Gilkeson, Jr., to The Goodyear Tire & Rubber Co. Process of preparing rubberized compositions. 3,202,623, 8–24–65, Cl. 260—28.5.

Enercon: *See*—
Neal, James S. 3,202,849.

Engard, Robert O.: *See*—
Senter, Willis P., and Engard. 3,201,830.

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Yager, Boyd H. 3,201,959.

English Electric Co. Ltd., The: *See*—
Allmark, Reginald H. 3,202,839.

English Electric Valve Co. Ltd.: *See*—
Callick, Eric B. B., and Firmin. 3,202,855.

Enk, Eduard, G. Piekarski, H. Puchala, and R. Kloss (deceased, by Erika, M., and Emil Kloss, legal representatives), to Wacker-Chemie G.m.b.H. Process for producing a hydrosilicon polymer based catalyst. 3,202,617, 8–24–65, Cl. 252—429.

Enoch, Charles R., to Resco Products, Inc. Concrete cement composition. 3,202,520, 8–24–65, Cl. 106—65.

Epton, Sidney R., J. Hughes, and J. M. Soesan, to Shell Oil Co. Oil additives and lube oils containing them. 3,202,-637, 8–24–65, Cl. 260—77.5.

Erickson, Lowell H., to M. S. Merrill. Tunable vibration pick-up device. 3,202,847, 8–24–65, Cl. 310—14.

Eriksson, John E. Air conditioning device for vehicles with air-cooled engines. 3,202,075, 8–24–65, Cl. 98—2.

Esquire, Inc.: *See*—
Moore, Buell. 3,202,615.

Essex Wire Corp.: *See*—
Hosbein, Hugh W. 3,202,380.

Esso Research and Engineering Co.: *See*—
Beaugh, John B., and Halter. 3,201,970.
Beaugh, John B., Johnson, and Pohler. 3,202,602.
Canevari, Gerard P. 3,202,596.
Greathouse, Arthur B. 3,202,826.
Kirshenbaum, Isidor, Bartlett, and Hill. 3,202,694.
Kune, John F. 3,202,140.
Massa, Victor F., Talen, and Heigl. 3,201,979.
Morway, Arnold J., and Bodner. 3,202,606.
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Campbell, David H., and Lowrance. 3,202,722.
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Norman, Vello, and Prestridge. 3,202,537.

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Ets. NEB, S.A.R.L.: *See*—
Laguerre, Leon K. 3,202,559.

Evander, Herbert S., and K. H. Reissmueller, to Hughes Aircraft Co. Micro-miniature semiconductor devices. 3,202,-888, 8–24–65, Cl. 317—234.

Evans, Herbert C., and P. Kirby, to Shell Oil Co. Lubricants containing polymeric extreme pressure agents. 3,202,610, 8–24–65, Cl. 252—56.

Evans, James W., and K. E. Schwarz, to Corning Glass Works. Apparatus for finishing glass surface. 3,201,904, 8–24–65, Cl. 51—358.

Evans Products Co.: *See*—
Chapman, Harvey W., and Dunlap. 3,202,111.

Excel Corp.: *See*—
Wiley, John R. 3,202,457.

Exran, Maurice, to Societe de Prospection Electrique, Procedes Schlumberger. Switch control systems. 3,202,227, 8–24–65, Cl. 175—4.

FMA, Inc.: *See*—
Arsenault, William R., Cameron, and Thompson. 3,202,-045.

FMC Corp.: *See*—
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Fabriek Van Chemische Producten Vondelingenplaat, N.V.: *See*—
Van den Boogaart, Krijn. 3,202,571.

Fabriek van Electrische Apparaten voorheen F. Hasemeijer & Co., N.V.: *See*—
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Fainberg, Arnold H.: *See*—
Hauptschein, Murray, and Fainberg. 3,202,720.

Fante, Harry H.: *See*—
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Farbenfabriken Bayer Aktiengesellschaft: *See*—
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Merten, Rudolf, Müller, and Braun. 3,202,620.
Suchfull, Fritz, Dittmer, and Messmer. 3,202,651.
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Duch, Eduard, Herbst, Rochlitz, Scherer, and Vilcsek. 3,202,534.
Gerischer, Heinz, Herbst, Ludwig, Schaefer, and Wagner. 3,202,551.
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Farrar, Sydney, to The Bryan Donkin Co. Ltd. Apparatus for degassing molten metals. 3,202,409, 8–24–65, Cl. 266—34.

Fath, Douglas W., F. J. Kleewein, and G. C. Lutsch, to Cutler-Hammer, Inc. Detection and control system. 3,202,317. 8–24–65, Cl. 222—14.

Fathauer, David F., to Radson Engineering Corp. Automatic tachometer using a switched transistor. 3,202,910, 8–24–65, Cl. 324—70.

Fatt, Howard D., to Ford Motor Co. Bearing cap, block and oil pan seal. 3,202,468, 8–24–65, Cl. 308—23.

Faultless Rubber Co., The: *See*—
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Fauser, Ernest E., to The Goodyear Tire & Rubber Co. Stabilising polyurethanes with tetra alkyl guanidines. 3,202,-631, 8–24–65, Cl. 260—45.9.

Faxen, Per T., to Svenska Aeroplan Aktiebolaget. Variable speed ratio transmission. 3,202,019, 8–24–65, Cl. 74—796.

Fay, Philip S.: *See*—
Rightmire, Robert A., and Fay. 3,202,546.
Rightmire, Robert A., Fay, and Mazurowski. 3,202,547.

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Fekete, Frank, to Union Carbide Corp. Organosilicon compounds containing phosphorus and nitrogen. 3,202,633, 8–24–65, Cl. 260—46.5.

Feldman, Cyril: *See*—
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Feldman, Daniel W., to The Standard Oil Co. Ignition timing control for piezoelectric engine ignition systems. 3,202,873, 8–24–65, Cl. 315—209.

Fertig, Joseph: *See*—
Goldberg, Albert I., Skoultschi, and Fertig. 3,202,716.

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Field, Frank H., to Magna American Corp. Reverse for worm drive, direct drive tiller. 3,202,004, 8–24–65, Cl. 74—220.

Fienl, Walter, to Francaise du Ferodo, Societe Anonyme. Means for extracting air from the body of a vehicle. 3,202,-076, 8–24–65, Cl. 98—2.

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Finn, John: *See*—
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Findley, Howard J., to Textron Inc. Pattern controlled tool. 3,202,024, 8–24–65, Cl. 82—14.

Findley, Samuel A., and F. C. Rieger, to Kingston Products Corp. Selector assembly floor shift with clutch control. 3,202,246, 8–24–65, Cl. 192—3.5.

Finkle, Lewis C., and K. V. Stewart, to Wedgelock Corp. Releasable fastener. 3,202,037, 8–24–65, Cl. 85—81.

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Firth, Donald, R. H. Y. Hancock, and C. P. J. Meade, to Council for Scientific and Industrial Research. Hydraulic positive displacement rotary machines. 3,202,106, 8–24–65, Cl. 103—162.

Fischer, H. G., & Co., Inc.: *See*—
Kozinski, Joseph. 3,202,845.

Fischer, Raymond C., to International Harvester Co. Slewing mechanism. 3,202,000, 8–24–65, Cl. 74—95.

Fisher, Alfred W.: *See*—
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Fitzgerald, John E., and N. C. Allen, to United States of America, Navy. Solid propellant burning rate detector. 3,201,973, 8–24–65, Cl. 73—35.

FitzSimmons, Vincent G., and W. A. Zisman, to United States of America, Navy. Modified polytetrafluoroethylene dispersions and solid products. 3,202,626, 8–24–65, Cl. 260—29.6.

Flexicore Co., Inc., The: *See*—
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Hale, Douglas, Vasilakes, and Flier. 3,202,084.

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Fly, Anderson B., and W. D. McDearman, Jr., to Hydro-Torq Pump Co., Inc. Pumping method and apparatuses. 3,202,-108, 8–24–65, Cl. 103—249.

Flynn, Howard A., and G. W. Shoemaker. Apparatus for illuminating power lines. 3,202,963, 8–24–65, Cl. 340—28.

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Fombonne, Paul, to CSF-Compagnie Generale de Telegraphie Sans Fil. Systems for determining the elevation angle and azimuth of a body. 3,202,994, 8–24–65, Cl. 343—106.

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Auger, Edgar, and Browne. 3,202,451.
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Heints, Walter K. 3,202,003.
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Kaptur, Robert E. 3,202,466.
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Schell, Herbert P. 3,202,410.
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Ford, Walter B., G. R. Schlechte, and M. K. Smith, Jr., to Texas Instruments Inc. Gain control signal generator. 3,202,926, 8–24–65, Cl. 330—59.

Forgue, Stanley V., to Radio Corp. of America. Image pick-up system. 3,202,759, 8–24–65, Cl. 178—7.2.

Fortescue, Peter, and F. R. Bell, to General Dynamics Corp. Reel-type control rod drive and brake and braking mechanism. 3,202,580, 8–24–65, Cl. 176—36.

Fowler, Robert W.: *See*—
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Fox, William C.: *See*—
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Fram Corp.: *See*—
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Francaise du Ferodo, Societe Anonyme: *See*—
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Frank, Gerald F., to General Electric Co. Power amplifier. 3,202,907, 8–24–65, Cl. 323—89.

Frankl, Daniel R., to General Telephone and Electronics Laboratories, Inc. Voltage variable capacitor with strontium titanate dielectric. 3,202,891, 8–24–65, Cl. 317—258.

Franklin, Granvel. Apparel support rack. 3,202,293, 8–24–65, Cl. 211—66.

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Freudling, Erwin. Apparatus for tying a knot. 3,202,445, 8–24–65, Cl. 289—4.

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Frisch, Eldon E., and O. W. Steward; said Steward assor. to Dow Corning Corp. 3,4,5,5,5-pentafluoropentadiene and a homopolymer thereof. 3,202,643, 8–24–65, Cl. 260—92.1.

Fromson, Howard A.: *See*—
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Fromson, Howard A. Method of making decorative metal sheet. 3,202,588, 8–24–65, Cl. 204—18.

Fromson, Howard A., and W. B. Ryan, to H. A. Fromson. Method of making a double-walled tube. 3,201,861, 8–24–65, Cl. 29—455.

Fruhstorfer, Wolfgang, G. Seitz, K. Schulte, and H. Muller, to E. Merck Aktiengeeellschaft. N-substituted phenalkyl amines. 3,202,711, 8–24–65, Cl. 260—570.

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Frykiund, Per A., to Allmanna Svenska Elektriska Aktiebolaget. High pressure apparatus. 3,201,828, 8–24–65, Cl. 18—16.5.

Fuelling, C. W., Inc.: *See*—
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Fulton, Bertram A., to Arthur D. Little, Inc. One-way clutch with speed responsive means. 3,202,251, 8–24–65, Cl. 192—45.1.

Fulton, Ronald T., to International Harvester Co. Cushion plow trip. 3,202,223, 8–24–65, Cl. 172—264.

Gacki, Leonard W., and W. A. Winfield, to Medical Metals Inc. Pass tank for processing film and improved interlock therefor. 3,202,073, 8–24–65, Cl. 95—90.

Gaertner, Van R., to Monsanto Co. Succinate half-esters of alkylene glycol phosphate. 3,202,693, 8–24–65, Cl. 260—461.

Gagnon, Roland K.: *See*—
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Galbraith, Hugh J., to Motorola, Inc. Ultrasonic doppler speed measurement device. 3,202,960, 8–24–65, Cl. 340—1.

Galey, William F., H. E. Shaw, Jr., and G. E. Sleighter, to Pittsburgh Plate Glass Co. Method and apparatus for photoelectrically inspecting glass. 3,202,048, 8–24–65, Cl. 88—14.

Galinke, Joachim, to Henkel & Cie. G.m.b.H. Modified melamine resins. 3,202,635, 8–24–65, Cl. 260—67.6.

Gallen, Alexander J., E. T. McCurry, and H. N. Schneider, to General Electric Co. Control system for a circuit interrupter operator. 3,202,897, 8–24–65, Cl. 318—267.

Gambill, Charles C., and A. B. Roby, to General Motors Corp. Motor control system. 3,202,899, 8–24–65, Cl. 318—341.

Gambino, Victor. Knife with detachable blade. 3,201,869, 8–24–65, Cl. 30—342.

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Gardner, Donald B., and F. E. Dameron, to International Telephone and Telegraph Corp. Hot water heating systems having auxiliary pressurising means. 3,202,356, 8–24–65, Cl. 237—8.

Garver, Robert V., and D. Y. Tseng, to United States of America, Army. Microwave power amplitude limiter. 3,202,942, 8–24–65, Cl. 333—9.

Gaunt, Wilmer B., Jr., to Bell Telephone Laboratories, Inc. Resonant transfer time division multiplex system utilising negative impedance amplification means. 3,202,763, 8–24–65, Cl. 179—15.

Gauthron, Maurice: *See*—
Salesse, Marc, Stohr, and Gauthron. 3,202,563.

Gauvrean, Alphonse P., to R. B. Denison. Limit switch. 3,202,001, 8–24–65, Cl. 74—97.

Gaynes, Raymond A., to Mystik Tape, Inc. Thermally stable pressure-sensitive adhesive tape and method for making same with plural silicone coatings. 3,202,535, 8–24–65, Cl. 117—75.

Gearhart, William M.: *See*—
Maxwell, Donald A., and Gearhart. 3,202,491.

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Geigy, J. R., A.-G.: *See*—
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Geiringer, Paul L., to American Hydrotherm Corp. Heat exchange system with automatic pump control. 3,202,206, 8–24–65, Cl. 165—22.

Gelbert, Chester H., to E. I. du Pont de Nemours and Co. Chloroprene polymer in the form of elongated particles. 3,202,624, 8–24–65, Cl. 260—29.7.

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Andrews, Theodore E. 3,202,799.
Bateman, Amos W. 3,202,875.
Birdsall, Charles K., and Grow. 3,202,867.
Bullock, Earl R. 3,202,884.
Connelly, Joseph M. 3,202,860.
Cuerkiea, John R., and Peck. 3,202,279.
Denton, Bryce A. 3,201,880.
Ellengerger, Francis R. 3,202,397.
Frank, Gerald F. 3,202,907.
Gallen, Alexander J., McCurry, and Schneider. 3,202,897.
Gesmar, Jorgen. 3,201,893.
Gottung, William H., Kelch, and Stevens. 3,202,558.
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Howells, Paul W. 3,202,991.
Mathews, Charles A., and Smith. 3,202,876.
Myers, Richard T., and Buesing. 3,202,924.
Paley, James J. 3,202,862.
Perkins, Donald W., and Wainwright. 3,202,985.
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General Motors Corp.: *See*—
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Geyer, Howard M. 3,202,008.
Geyer, Howard M. 3,202,009.
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Schauer, George W., Jr. 3,202,798.
Short, Brooks H., and Kirk. 3,202,146.
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Stare, Donald E., Strack, and Reindl. 3,202,540.
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Genning, Ernst, and A. Hohler. Circuit for regulating the speed of D.C. motors. 3,202,898, 8–24–65, Cl. 318—325.

Gens, Theodore A., to United States of America, Atomic Energy Commission. Method for collecting zirconium tetrachloride. 3,202,475, 8–24–65, Cl. 23—14.5.

George, Melvin J., to Square D Co. Cartridge fuse pull-out switch. 3,202,788, 8–24–65, Cl. 200—123.

Gerischer, Heinz, W. Herbst, H. Ludwig, H. Schaefer, and E. Wagner, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Method for producing adherent coatings on iron and steel parts. 3,202,551, 8–24–65, Cl. 148—6.2.

Gerjovich, Henry J., and J. B. Harrison, to E. I. du Pont de Nemours and Co. Separation of di-ortho substituted polychlorobensoyl chloride from a crude isomeric mixture of polychlorobensoyl chlorides. 3,202,708, 8–24–65, Cl. 260—544.

Germak, Joseph G.: *See*—
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Gesmar, Jorgen, to General Electric Co. Insect trap. 3,201,-893, 8–24–65, Cl. 43—139.

Gettinger, Lillian L. Reversible head scarf. 3,201,803, 8–24–65, Cl. 2—207.

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Geyer, Howard M., to General Motors Corp. Actuator system. 3,202,009, 8–24–65, Cl. 74—424.8.

Giardina, Salvatore V., ½ to P. Fichera. Load suspension apparatus and related methods. 3,201,906, 8–24–65, Cl. 52—34.

Gierts-Hedstrom Stig, to Vibro-Verken Solna, Aktiebolaget. Rotary vibrator. 3,202,402, 8–24–65, Cl. 259—1.

Giger, Adolf J., to Bell Telephone Laboratories, Inc. High frequency channel switching unit employing electromechanical contact means. 3,202,941, 8–24–65, Cl. 333—7.

Gilkeson, Paul W., Jr.: *See*—
Endres, Herbert A., Pullar, and Gilkeson. 3,202,623.

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Gill, John B. Adjustable pipe machining tool. 3,202,190, 8–24–65, Cl. 144—205.

Gillock, Jack W., G. H. Ledl, and G. M. Macha, to The Ohio Crankshaft Co. Method of butt welding. 3,202,791, 8–24–65, Cl. 219—9.5.

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Girard, Theodore A.: *See*—
Scullin, James P., and Girard. 3,202,622.

Glass, Floyd M., to United States of America, Atomic Energy Commission. Transistorized regulated high voltage supply. 3,202,902, 8–24–65, Cl. 321—2.

Glass, Muriel H., to Marksway Enterprise A.G. Buoyant undergarment. 3,201,808, 8–24–65, Cl. 9—334.

Glauser, James E.: *See*—
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Glidden, Ernest W., and L. C. Frederickson, to Wakefield Seafoods, Inc. Removal of meat from separated sections of the legs of king crab. 3,201,822, 8–24–65, Cl. 17—2.

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Goldberg, Albert I., M. Skoultchi, and J. Fertig, to National Starch and Chemical Corp. Monomeric derivatives of 2,4-dihydroxybenzophenone. 3,202,716, 8–24–65, Cl. 260—591.

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Albright, Jay D., and Goldman. 3,202,663.

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Golightly, James S., and H. E. McKelvey, to Pittsburgh Plate Glass Co. Apparatus for bending glass sheets with heat absorbers. 3,202,496, 8–24–65, Cl. 65—288.

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Gonle, August T., H. H. Fante, and M. J. Shepard, to Rockwell-Standard Corp. Method for bending sinuous strips. 3,202,185, 8–24–65, Cl. 140—71.

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Goodman, Robert J., to Sekur-All Corp. Molded plastic skates. 3,202,435, 8–24–65, Cl. 280—11.26.

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Greathouse, Arthur B., to Esso Research and Engineering Co. Hose meter. 3,202,826, 8–24–65, Cl. 250—218.

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Greene, Janice L., and J. D. Idol, Jr., to The Standard Oil Co. Adduct of cyclo-butane-1,2-dicyanide with sulfuric acid monohydrate and method of making same. 3,202,695, 8–24–65, Cl. 260—464.

Greene, Janice L., J. D. Idol, Jr., and N. W. Standish, to The Standard Oil Co. Cyclobutane-1,2-dichloro-1,2-dicyanide. 3,202,696, 8–24–65, Cl. 260—464.

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Hall, Joseph F., Jr., to Bausch & Lomb Inc. Laboratory sun simulator. 3,202,811, 8–24–65, Cl. 240—1.1.

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Harrington, Frederick G., to Industrial Air Filters, Ltd. Air filtering blanket for an air filtering system. 3,201,926, 8–24–65, Cl. 55—486.

Harris, Arthur O. Picture projecting system with remote portable control. 3,202,044, 8–24–65, Cl. 88—24.

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Hatch, James E., deceased (by M. L. Hatch), to United States of America, National Aeronautics and Space Administration. Energy conversion apparatus. 3,202,844, 8–24–65, Cl. 310—4.

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Hauptschein, Murray, and A. H. Fainberg, to Pennsalt Chemicals Corp. Manufacture of saturated perfluorocarbons by the catalytic pyrolysis of fluoroform. 3,202,720, 8–24–65, Cl. 260—653.

Hauptschein, Murray, and R. E. Oesterling, to Pennsalt Chemicals Corp. Fluorinated organic acids. 3,202,706, 8–24–65, Cl. 260—535.

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Hawkins, Ray. Garment contour attachment for wire hangers. 3,202,330, 8–24–65, Cl. 223—98.

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Heath, Harold F., Jr., to International Business Machines Corp. Cryogenic memory system. 3,202,964, 8–24–65, Cl. 340—146.2.

Hebert, Gerald A., and R. T. Brumbaugh, to Goodman Mfg. Co. Dynamically compensated force measuring apparatus. 3,201,983, 8–24–65, Cl. 73—141.

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Heyes, Josef, to Dr. W. Kampschulte & Cie. Process and apparatus for treatment of fluids with adsorptive materials. 3,201,921, 8–24–65, Cl. 55—56.

Hickman, Albert F. Tandem axle spring suspension. 3,202,-439, 8–24–65, Cl. 280—104.5.

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Hoffman, Edward J. Clothes presses. 3,201,879, 8–24–65, Cl. 38—40.

Hoffman, Edward L., to United States of America, National Aeronautics and Space Administration. Flexible foam erectable space structures. 3,202,998, 8–24–65, Cl. 343—833.

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Holbrow, Richard F. Wheel cover for road vehicles. 3,202,-460, 8–24–65, Cl. 301—37.

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Holm, Donald R., and W. D. Wallace, to W. H. Miner, Inc. Draft gear. 3,202,300, 8–24–65, Cl. 213—22.

Holt, Frederick W., Jr., J. F. Byrne, and R. B. Reif, to The Brown-Bridge Mills, Inc. Non-curling gummed paper. 3,202,539, 8–24–65, Cl. 117—122.

Homer, Ronald F., to Imperial Chemical Industries Ltd. 1 : 1-ethylene-2 : 2-dipyridylium quaternary salts. 3,202,500, 8–24–65, Cl. 71—2.5.

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Horberg, Charles, Jr., to Paramount Textile Machinery Co. Methods and apparatus for handling, transporting and assembling multi-component articles. 3,201,860, 8–24–65, Cl. 29—431.

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Howard, George C., to Pan American Petroleum Corp. Method and apparatus for cementing large diameter casings. 3,202,213, 8–24–65, Cl. 166—21.

Howard, Roy. Pressure indicating dispenser container. 3,202,319, 8–24–65, Cl. 222—41.

Howarth, Elbert S., and R. A. Ramser, to Aluminum Co. of America. Method of making an electrical aluminum-copper connection. 3,201,853, 8–24–65, Cl. 29—155.55.

Howells, Paul W., to General Electric Co. Intermediate frequency side-lobe canceller. 3,202,990, 8–24–65, Cl. 343—100.

Howells, Paul W., to General Electric Co. Electronic scanning of large arrays. 3,202,991, 8–24–65, Cl. 343—100.

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Huhtala, Olavi A., and R. L. Stockus, to Chase Brass & Copper Co., Inc. Apparatus for melting brass chip scrap. 3,202,408, 8–24–65, Cl. 266—33.

Humber, Leslie G., to American Home Products Corp. 1,4-bis(O-chlorobenzylamino)-cyclohexane and salt thereof. 3,202,708, 8–24–65, Cl. 260—501.

Humber, Leslie G., to American Home Products Corp. 1-cyclohexene-4-bis(O-chlorobensylaminomethyl) and derivatives. 3,202,712, 8–24–65, Cl. 260—570.5.

Humber, Leslie G., G. S. Myers, and T. Massiah, to American Home Products Corp. 1,4-(unsymmetrically-benzylamino- and cyclohexylaminomethyl)-cyclohexanes. 3,202,709, 8–24–65, Cl. 260—563.

Hurst, Harry. Thermionic converters. 3,202,843, 8–24–65, Cl. 310—4.

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Idol, James D., Jr., J. L. Greene, and N. R. Gray, to The Standard Oil Co. Process for making cyclobutane-1,2-dicyanide from acrylonitrile. 3,202,697, 8–24–65, Cl. 260—464.

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Inoue, Kiyoshi. Electro-chemical machining process. 3,202,595, 8–24–65, Cl. 204—143.

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Institut Francais du Petrole des Carburants et Lubrifiants: *See*—
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International Basic Economy Corp.: *See*—
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Jamieson, Ballard, and R. Kee, to United States of America, Commerce. System for measuring separately background and average line luminance or density. 3,202,042, 8–24–65, Cl. 88—14.

Jania, Zbigniew J., to Ford Motor Co. Infinitely variable power transmission control system. 3,202,012, 8–24–65, Cl. 74—472.

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Jones, James B., and N. Maropis, to Sonobond Corp. Method and apparatus for ultrasonic welding. 3,201,864, 8–24–65, Cl. 29—487.

Jones, Morris C., Jr., to Baker Perkins Inc. Pusher type transfer apparatus for baking ovens and the like. 3,202,115, 8–24–65, Cl. 107—57.

Jones, Morris C., Jr., to Baker Perkins Inc. Reciprocating pusher transfer apparatus. 3,202,262, 8–24–65, Cl. 198—24.

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Jones, Wardwell. Anchored animal feeding bowl. 3,202,131, 8–24–65, Cl. 119—61.

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Kane, David. Mobile irrigation device. 3,202,861, 8–24–65, Cl. 239—212.

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Kaplan, Louis. Compartmented bag. 3,202,191, 8–24–65, Cl. 150—30.

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Kaptur, Robert E., to Ford Motor Co. Mounting arrangement with self-compensating roller bearings. 3,202,466, 8–24–65, Cl. 308—207.

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Keeler, Jack D., to Norfin, Inc. Plate-gripping mechanism for offset printing cylinder. 3,202,098, 8–24–65, Cl. 101—415.1.

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Keith, Percival C., E. S. Johanson, and S. C. Schuman, to Hydrocarbon Research, Inc. Hydrocracking of high boiling hydrocarbon oils to produce aromatics and fuel gases. 3,202,603, 8–24–65, Cl. 208—107.

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Kent, Robert L., and J. C. Nowell, to United States of America, Navy. Interferometer seeker. 3,202,992, 8–24–65, Cl. 343—100.

Keough, Allen H., to Norton Co. Dehydrogenation of hydrocarbons. 3,202,724, 8–24–65, Cl. 260—666.

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King, James M., 40% to L. M. Sheridan, 5% to J. N. Newland, 5% to P. L. MacDonald, and 1¼% to J. A. Poore. Florists' accessory. 3,201,900, 8–24–65, Cl. 47—41.12.

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King, Raymond L., Jr., and R. L. Conger, to United States of America, Navy. Analog multiplication and division circuit using a Hall effect multiplier. 3,202,809, 8–24–65, Cl. 235—196.

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Kirkpatrick, Willard H., and V. L. Seale, to Nalco Chemical Co. Processes for breaking petroleum emulsions. 3,202,-615, 8–24–65, Cl. 252—342.

Kirshenbaum, Isidor, J. H. Bartlett, and R. M. Hill, to Esso Research and Engineering Co. Oxidation process. 3,202,-694, 8–24–65, Cl. 260—462.

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Klinefelter, Glenn B., to Gorton Heating Corp. Air valve for heating systems. 3,202,168, 8–24–65, Cl. 137—202.

Kling, Harry P., L. Sama, S. Priceman, W. W. Nijs, and A. Babbout, to United States of America, Atomic Energy Commission. High temperature niobium-UO_2 nuclear fuel sheet. 3,202,585, 8–24–65, Cl. 176—69.

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Knobloch, George H. Furnace including refractory sealing sleeve for the nozzle of an oil burner. 3,202,197, 8–24–65, Cl. 158—4.

Knuuti, Enrico, to J. R. Geigy, A.-G. Herbicidal compositions and method for inhibiting the growth of plants therewith. 3,202,499, 8–24–65, Cl. 71—2.5.

Kobelt, Jack R. Marine control apparatus. 3,202,011, 8–24–65, Cl. 74—472.

Koch, John E., Jr., to Celanese Corp. of America. Metal working fluids. 3,202,607, 8–24–65, Cl. 252—49.5.

Kocher, Erich J., to Vilter Mfg. Corp. Refrigerating apparatus with oil separator means. 3,201,949, 8–24–65, Cl. 62—192.

Kocher, Leo F., to United States of America, Atomic Energy Commission. Film badge system and method of using. 3,202,821, 8–24–65, Cl. 250—83.

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Kohn, Samuel, to Office National d'Etudes et de Recherches Aero-spatial. Glue comprising hydroxyl containing polyester, polyisocyanate and resorcinol. 3,202,728, 8–24–65, Cl. 260—858.

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Koontz, Roland F., Jr., to United States of America, Army. Coherent frequency converter for testing microwave devices with audio spectrum analyzer. 3,202,931, 8–24–65, Cl. 331—39.

Kopp, Georg (also known as Jörg Kopp), to Schweizerische Industrie-Gesellschaft. Apparatus for folding and sealing filled packaging hose or the like. 3,201,913, 8–24–65, Cl. 53—182.

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Korenchan, John J., to John J. Korenchan, trustee. Bolt anchorage with loosening preventing means. 3,202,034, 8–24–65, Cl. 85—67.

Koreska, Rudolf J. Book-end. 3,202,298, 8–24–65, Cl. 211—184.

Koretzky, Herman, to International Business Machines Corp. Electrodeposition of cobalt-phosphorus alloys. 3,202,590, 8–24–65, Cl. 204—43.

Korger, Gerhard, and W. Aumüller, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. New benzenesulfonyl ureas and process for their manufacture. 3,202,680, 8–24–65, Cl. 260—347.2.

Kozacik, John J.: *See*—
Carlson, Lorien A., and Kozacik. 3,202 025.

Kozinski, Joseph, to H. G. Fischer & Co., Inc. Ultra-sonic electrode applicator. 3,202,845, 8–24–65, Cl. 310—8.3.

Kramer, Nathan R. to Bulova Watch Co., Inc. Bistable solenoid. 3 202,886, 8–24–65, Cl. 317—171.

Krause, Warren H., to The Standard Oil Co. Knock detection instrument. 3,201,972, 8–24–65, Cl. 73—35.

Kreiser, Carl F., to Edwin L. Wiegand. Electric heaters. 3 202,795, 8–24–65, Cl. 219—318.

Krieger, Bernhard E. Blanke, and E. Kaspar, to Schering A.G. Halogenated and olefinically unsaturated 3-keto-steroids and method for making the same from the corresponding 3-keto-steroid carboxylic acids. 3,202,683, 8–24–65, Cl. 260—397.3.

Krinsky, Albert, to United States of America, Atomic Energy Commission. Alloys and electrical transducers. 3,202,951, 8–24–65, Cl. 338—2.

Kritzer, Richard W. to Peerless of America Inc. Heat transfer element. 3,202,212. 8–24–65, Cl. 165—179.

Kruyt, Willem, S. van der Meer, and H. Pouwels, to Nederlandsche Combinatie voor Chemische Industrie, N.V. Composition for treating fasciollasis and methods of treatment. 3,202,575 8–24–65, Cl. 167—53.

Kuehl, Earl J., and L. M. R. Apparatus for tabulating and collecting purchase payments. 3,202,345, 8–24–65, Cl. 232—1.

Kuehl, La May R.: *See*—
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Kuhn, William J., and P. E. Maurice, to Heatbath Mfg. Co., Inc. Pilot burner shields. 3,202,202, 8–24–65, Cl. 158—115.

Kuhne, Rudolf, F. Meininger, and R. W. Pfirrmann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius Bruning. N-aralkyl-and N-aryl derivatives of tetrahydro-oxathiazine-(1,4,5)-dioxide-(4,4) and process for preparing them. 3,202,657 8–24–65, Cl. 260—243.

Kummer, Joseph T., to The Dow Chemical Co. Method of oxidizing mono-olefins. 3,202,715. 8–24–65, Cl. 260—586.

Kummer, Joseph T., to The Dow Chemical Co. Method of oxidizing mono-olefins. 3,202,717, 8–24–65, Cl. 260—597.

Kunz, John F., to Esso Research and Engineering Co. Process and apparatus for preventing knock in gas operated engines. 3,202,140, 8–24–65, Cl. 123—1.

Kunzke, Hans J., to Clary Corp. Switching network. 3,202,-841, 8–24–65, Cl. 307—88.5.

Kuris, Arthur: *See*—
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Kuroda, Takaji: *See*—
Kawahashi, Takeshi, and Kuroda. 3,202,917.

Kutsay, Ali U. Strain gauge. 3,201,977, 8–24–65, Cl. 73—88.5.

Labombarde, Raymond A. Glossy coating machine and method. 3,202,532, 824–65, Cl. 117—64.

Laffer, Robert C. Fertilizer distributing tool with replaceable cartridge. 3,202,120, 8–24–65, Cl. 111—96.

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La Fleur, James K. 3,202,341.

La Fleur, James K., to The La Fleur Corp. Assembly of turbomachines. 3,201,941, 8–24–65, Cl. 60—59.

La Fleur, James K., to The La Fleur Corp. Turbomachines assembly. 3,202,341, 8–24–65, Cl. 230—116.

Lage, Ruby M. Portable vanity cabinet for women. 3,202,-470, 8–24–65, Cl. 312—227.

Laguerre, Leon K., to Ets. NEB, S.A.R.L. Method of forming plastic bags with slide fastener tape assemblies welded thereto. 3,202,559, 8–24–65, Cl. 156—66.

Lahr, Robert G., and O. L. Kuehn. Reversing toy vehicle with indicating means. 3,201,898, 8–24–65, Cl. 46—244.

Lally, Robert E., F. J. Ihde, Jr., and L. J. Pulver, to Nopco Chemical Co. Stabilization of vinyl resins with an alkaline earth metal phenolate-carbon dioxide reaction product. 3,202,632, 8–24–65, Cl. 260—45.95.

Lambert, Inc.: *See*—
Wilgus, Barton M. 3,201,819.

Lang, Harold M., E. R. Jennings, G. C. Howard, and L. B. Wilder, to Pan American Petroleum Corp. Method of installing a liner in a couple-jointed conduit. 3,202,562, 8–24–65, Cl. 156—294.

Langis, Andre L., and M.-G. P. Stegen, to American Home Products Corp. Phenethylamine derivatives. 3,202,674, 8–24–65, Cl. 260—309.6.

Lannen, Hugh C. Camper support. 3,202,304, 8–24–65, Cl. 214—38.

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Larsen, Bernard J.: *See*—
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Larsen, Burnham L. and B. J., to Curbmaster of America, Inc. Slab finishing and curb building machine. 3,202,068, 8–24–65, Cl. 94—46.

Larson, Robert L., to Parker Metal Goods Co. Card mounted display package of merchandise. 3,202,280, 8–24–65, Cl. 206—80.

Lashua, Sherman C., to The Dow Chemical Co. Process for separating copper values from cobalt and nickel values. 3,202,689, 8–24–65, Cl. 260—438.

Latour, André, to Ets Merlin & Gerin, S.A. Stationary contact structure for electrical circuit breakers. 3,202,781, 8–24–65, Cl. 200—87.

Latourette, Harold K., and E. R. Gilmont, to FMC Corp. Scorch-resistant polyethylene compositions and method. 3,202,648, 8–24–65, Cl. 260—94.9.

Lawe, Joseph, to The Setwell Co. Portable multiple-section display cases. 3,202,469, 8–24–65, Cl. 312—200.

Lawler, William F., to Bausch & Lomb Inc. Inverted microscope with U-shaped optical path and tubular mounts for objective and relay lens systems. 3,202,047, 8–24–65, Cl. 88—39.

Lawler, William F., to Bausch & Lomb Inc. Polarising filter holders for inverted microscopes. 3,202,053, 8–24–65, Cl. 88—65.

Leach, Edward E., to Minnesota Mining and Mfg. Co. Wire-cutting solderless connector. 3,202,957, 8–24–65, Cl. 339—96.

Lean, John B., and H. K. Worner, to The Broken Hill Proprietary Co., Ltd. Process for the comminution of silliceous iron ores. 3,202,502, 8–24–65, Cl. 75—1.

Le Baron, Robert, to Great Lakes Carbon Corp. Graphitic neutron reflector containing beryllium and method of making same. 3,202,619, 8–24–65, Cl. 252—478.

Le Bel, John P., and H. E. Nichols. Aircraft. 3,202,383, 8–24–65, Cl. 244—42.

Le Clear, Robert L., to T & S Equipment Co. Hydraulically actuated dock board with hinged lip. 3,201,813, 8–24–65, Cl. 14—71.

Le Clear, Robert L., to T & S Equipment Co. Hydraulically actuated dock board with hinged lip. 3,201,814, 8–24–65, Cl. 14—71.

Ledl, George H.: *See*—
Gillock, Jack W., Ledl, and Mucha. 3,202,791.

Lee, Charles A.: *See*—
Dacey, George C., Lee, and Shockley. 3,202,867.

Lee, Jon W., to Owens-Corning Fiberglas Corp. Expansion channel. 3,202,077, 8–24–65, Cl. 98—40.

Leek, Wayne E.: *See*—
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Leinbach, William H. Apparatus for rolling tubing into a convoluted contour. 3,201,953, 8–24–65, Cl. 72—77.

Lemelson, Jerome H. Article manipulation device. 3,202,-449, 8–24–65, Cl. 294—88.

Lemelson, Jerome H. Highway marker. 3,202,979, 8–24–65, Cl. 340—321.

Lentz, Carl A. and J. A. Livestock oiling device. 3,202,132, 8–24–65, Cl. 119—157.

Lentz, Jacob A.: *See*—
Lentz, Carl A. and J. A. 3,202,132.

Le Parquier, Guy, to C.S.F.-Compagnie Generale de Telegraphie Sans Fil. Coherent systems for two-pulse M.T.I. devices. 3,202 984, 8–24–65, Cl. 343—5.

Le Tarte Enterprises: *See*—
Le Tarte, Frank. 3,202,245.

Le Tarte, Frank, to Le Tarte Enterprises. Window and door frame construction. 3,202,245, 8–24–65, Cl. 189—36.

Leumi, Dubi, to Amsco Industries, Inc. Combined toy boots and stilts. 3,201,876, 8–24–65, Cl. 36—7.5.

Levin, Nathan. Yarn finger operating means. 3,201,957, 8–24–65, Cl. 66—138.

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Lewellen, Wendell G., Jr., to Imperial Industries, Inc. Rotating mechanism for plating barrel or the like. 3,202,006, 8–24–65, Cl. 74—406.

Lewi, William. Dual seal package. 3,202,277, 8–24–65, Cl. 206—78.

Lewis, George E., to Hydril Co. Electrical remote control and indicating system. 3,202,978, 8–24–65, Cl. 340—286.

Lewis, Herbert, and M. Levy, to Cuckson Textiles Proprietary Ltd. Container for textile tapes, ribbons and the like. 3,202,269, 8–24–65, Cl. 206—52.

Lewus, Alexander J. Three phase to single phase converter systems. 3,202,896, 8–24–65, Cl. 318—220.

Liao, Chien-Wei, to The Standard Oil Co. Boron compounds and fuels containing the same. 3,202,492, 8–24–65, Cl. 44—69.

Libbey-Owens-Ford Glass Co.: *See*—
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Liebrandt, Gunnar, Zwingenberger, and Mueller. 3,201,-956.

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Badenoch, Benjamin W., Brown, and Liles. 3,202,105.

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Limberger, Walter, to Lumoprint Zindler KG. Apparatus for treating sheets of film base. 3,202,072, 8–24–65, Cl. 95—89.

Ling, Ting H., to Anaconda Wire and Cable Co. Cross-linked composition of polyethylene with pigments of the group consisting of lithopone and antimony oxide. 3,202,-629, 8–24–65, Cl. 260—41.

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Fulton, Bertram A. 3,202,251.
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Liu, Chien, to American Machine & Foundry Co. Process and apparatus for separating an ice-liquid mixture. 3,202,288, 8–24–65, Cl. 210—71.

Liu, Frederick F., to Quantum Dynamics, Inc. Perforated disc type turbine flowmeter. 3,201,988, 8–24–65, Cl. 73—231.

Livermont, Lawrence H., to Reed Roller Bit Co. Torque release wrench. 3,202,021, 8–24–65, Cl. 81—52.4.

Livingston, William L., M. P. Stengel, and L. D. McNair, to Combustion Engineering, Inc. Method and apparatus for operating furnace. 3,202,139, 8–24–65, Cl. 122—504.

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Lodge, Edward E. Automatic door operator. 3,202,415, 8–24–65, Cl. 268—59.

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Loftin, Billy, to Celanese Corp. of America. Molded brassieres. 3,202,565, 8–24–65, Cl. 161—73.

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Lohman, Mrs. L. C.: *See*—
Snyder, John Y. 3,201,905.

Lohse, Paul, and M. Nussbaum, to Fr. Hesser Maschinenfabrik-Aktiengesellschaft. Bag filling and closing machine. 3,201,914, 8–24–65, Cl. 53—187.

London, Seymour B. Blood pressure monitor. 3,202,148, 8–24–65, Cl. 128—2.05.

Long, Alfred B., to Bass Bros. Enterprises, Inc. Drilling mud degasser. 3,201,919, 8–24–65, Cl. 55—46.

Long, Spencer W., to Armco Steel Corp. Hook positioner. 3,202,446, 8–24–65, Cl. 294—82.

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Lorens, Walter, and G. Schrader, to Farbenfabriken Bayer Aktiengesellschaft. Thionophosphonic acid esters and a process for their production. 3,202,658, 8–24–65, Cl. 260—248.

Lorenzen, Edwin N., to Protex Industries Inc. Cement compositions and the method of controlling the air content thereof. 3,202,521, 8–24–65, Cl. 106—90.

Lors, Waldemar, G. A. Mills, and H. Shalit, to Air Products and Chemicals, Inc. Production of xylene. 3,202,725, 8–24–65, Cl. 260—673.5.

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Madland, Glen R., to Motorola, Inc. Electronic switching circuit. 3,202,904, 8–24–65, Cl. 323—58.

Maeda, Hisao. Electric circuit having distributed constants. 3,202,906, 8–24–65, Cl. 323—76.

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Mallory Research Co., The: *See*—
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Malm, Anders E., and E. B. Thorsellus, to Kanthal, Aktiebolaget. Electric resistance furnaces. 3,202,750, 8–24–65, Cl. 13—25.

Malmberg, Earl W., and W. M. Robinson, to Sun Oil Co. Recovery of dimethylnaphthalenes. 3,202,726, 8–24–65, Cl. 260—674.

Maluda, Stephen, to Tung-Sol Electric Inc. Astable multivibrator having means to adjust the output magnitude and frequency. 3,202,935, 8–24–65, Cl. 331—109.

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Marinace, John C., to International Business Machines Corp. High sensitivity Hall effect probe. 3,202,913, 8–24–65, Cl. 324—45.

Markstrom, Paul F. Bowling scoring and display device and means for gathering, storing, processing and reproducing information therefrom. 3,202,803, 8–24–65, Cl. 235—92.

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Matson, Charles W., and L. R. A. Prohofsky, to Sperry Rand Corp. Electrical apparatus with insulated heat conducting members. 3,202,860, 8–24–65, Cl. 317—100.

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Matsui, Daijiro, to Kabushiki Kaisha Toko Radio Coil Kenkyusho. Variable capacitor. 3,202,890, 8–24–65, Cl. 317—249.

Matsuzaki, Takeo, and H. Watanabe, to Nippon Electric Co., Ltd. Filter amplifier. 3,202,925, 8–24–65, Cl. 330—31.

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McHugh, Warren P. Symmetrical garments. 3,201,800, 8–24–65, Cl. 2—83.

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Kirkpatrick, Willard H., and Seale. 3,202,615.

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Patelhold Patentverwertungs- u. Elektro-Holding AG: *See*—
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Patterson, Merrill S. Balancing game apparatus. 3,202,424, 8–24–65, Cl. 273—1.
Patton, Roy C. Apparatus for dispensing dry granular material by means of an air current. 3,202,320, 8–24–65, Cl. 222—57.
Paull, Alfred M. Abrasive blasting equipment. 3,201,901, 8–24–65, Cl. 51—12.
Pauliukonis, Richard S., to Ryan Industries, Inc. Cryogenic container support and fluid conduit structure. 3,201,946, 8–24–65, Cl. 62—45.
Pearson, Harry C., to Portland Iron Works. Saw apparatus. 3,202,189, 8–24–65, Cl. 143—37.
Pechmann, Wilhelm, to H. Strunck & Co., Maschinenfabrik, Firma. Means for cleaning and filling ampoules, bottles and similar containers. 3,202,187, 8–24–65, Cl. 141—93.
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Peerless Gear & Engineering, Inc.: *See*—
Markwardt, Anton H. 3,201,878.
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Pendleton Tool Industries, Inc.: *See*—
Harrison Roy D., and Sharp. 3,201,969.
Penguin Associates, Inc.: *See*—
Wortley, Austin M., Jr., and Rothman. 3,202,099.
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Penn, Reginald, to Wipac Development Ltd. Step-up voltage transformer having high tension lead. 3,202,950, 8–24–65, Cl. 336—192.
Pennsalt Chemicals Corp.: *See*—
Hauptschein, Murray, and Fainberg. 3,202,720.
Hauptschein, Murray, and Oesterling. 3,202,706.
Pepper, Paul M. Slide rule. 3,202,352, 8–24–65, Cl. 235—83.
Peras, Lucien, to Regie Nationale des Usines Renault. Pilot lamp mounting in the circuit for charging a battery from an alternator. 3,202,901, 8–24–65, Cl. 320—48.
Perkins, Donald W., and J. A. Wainwright, to General Electric Co. True three-dimension display system. 3,202,965, 8–24–65, Cl. 343—7.9.
Perrault, Roy F. Protective relay for polyphase electrical apparatus. 3,202,877, 8–24–65, Cl. 317—46.
Perron, Yvon G., and L. C. Cheney. 6-[a-substituted-a(2- or 3-heterocyclic)acetamido]penicillanic acid and nontoxic salts thereof. 3,202,655, 8–24–65, Cl. 260—239.1.
Perron, Yvon G., to Bristol-Myers Co. 6-[a-hydroxy- and a-amino-a-pyrrolylacetamido]penicillanic acids and salts thereof. 3,202,654, 8–24–65, Cl. 260—239.1.
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Servis, James F. 3,202,450.
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Servis, James F. 3,202,450.
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Peterson, Donald: *See*—
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Petrow, Vladimir: *See*—
Burn, Derek, Feather, and Petrow. 3,202,684.
Pettersson, Johan B., O. Aksens, T. N. Jacobsen, and L. Hammer, to Stockholms Superfosfat Fabriks Aktiebolag. Anticaking agents. 3,202,501, 8–24–65, Cl. 71—28.
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Orth, Hans, and Wenz. 3,202,121.
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Phillips Petroleum Co.: *See*—
Kehler, Paul. 3,202,822.
Naylor, Floyd E. 3,202,646.
Parker, Harry W. 3,202,219.
Phillips, George E. Sr., and P. E. Straight, to Electronic Control Systems, Inc. Glass fiber bushing temperature controller. 3,202,800, 8–24–65, Cl. 219—497.
Phillips Petroleum Co.: *See*—
Zavasnik, Fredrick J. 3,202,739.
Phinney, Damon D., to Sundstrand Corp. Piston rod assembly for fluid translating devices. 3,202,107, 8–24–65, Cl. 103—162.
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Cummins, James B., and Kolter. 3,202,069.
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Enk, Eduard, Piekarski, Puchala, and Kloss. 3,202,617.
Pierce, Comer C. Wheel balancer. 3,202,459, 8–24–65, Cl. 301—5.
Pinard, Roger P. J., to Societe de Mecanographie Japy, Digital printing system. 3,202,350, 8–24–65, Cl. 235—59.
Pingry, Carl O., III, and G. W. Hobgood, to International Business Machines Corp. Frequency discriminating circuit. 3,202,834, 8–24–65, Cl. 307—88.5.
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Golightly, James S. 3,202,497.
Golightly, James S., and McKelvey. 3,202,496.
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Pneumatic-Hydraulic Development Co., Inc.: *See*—
Grotness, Gunnar. 3,202,060.
Pohler, Leland W.: *See*—
Beaugh, John B., Johnson, and Pohler. 3,202,602.
Poitras, George. Pipe header for forming gasket grooves in concrete pipe tongues. 3,201,844, 8–24–65, Cl. 25—39.
Poje, John A., to Peninsular Silicones, Inc. Release coating containing a polyorganosiloxane resin and either a polyorganosiloxane gum or a high viscosity polyorganosiloxane oil. 3,202,542, 8–24–65, Cl. 117—161.
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Hordis, Victor A., and Bond. 3,201,832.
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Polisi, William C. Bassoon. 3,202,031, 8–24–65, Cl. 84—380.
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Pontoni, Berton L., and M. P. Hayden. Diameter and roundness gaging instrument. 3,201,872, 8–24–65, Cl. 33—147.
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King, James M. 3,201,900.
Porter, Allan W. H., to Hobourn-F.N.F. Ltd. Feed means for flat warp knitting machines. 3,201,955, 8–24–65, Cl. 66—86.
Porteus, Stanley D., and A. L. Diamond, to PHD, Inc. Educational device. 3,201,875, 8–24–65, Cl. 35—6.
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Post, Arthur H., Jr., and M. H. Streeter, to Arthur D. Little, Inc. Cryogenic transport tube incorporating liquefaction apparatus. 3,201,947, 8–24–65, Cl. 62—55.
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Bolton, Douglas H. H., and Potts. 3,202,058.
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Kruyt, Willem, van der Meer, and Pouwels. 3,202,575.
Powell, Emmit E. Remotely controlled change speed feed control for agricultural machines. 3,202,323, 8–24–65, Cl. 222—177.
Powell, Eugene L., and R. J. Praisler, to American Maize-Products Co. Process for producing color stable lactic acid. 3,202,705, 8–24–65, Cl. 260—535.
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Covington, Loren C., and Powell. 3,202,598.
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Osweiler, Paul L. 3,201,843.

Priceman, Seymour: *See*—
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Prichard, William W., to E. I. de Pont de Nemours and Co. Thio and oxy substituted aromatic hydrazones of carbonyl cyanide. 3,202,698, 8–24–65, Cl. 260—465.

Prior, Hector T., to International Standard Electric Corp. Signal transmission apparatus with means for suppressing harmonics and intermodulating products. 3,202,928, 8–24–65, Cl. 330—124.

Procter & Gamble Co., The: *See*—
Burt, Robert V., and Harm. 3,202,276.
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Esran, Maurice. 3,202,227.

Protex Industries Inc.: *See*—
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Puchala, Hellmuth: *See*—
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Raayen, Hendrik, to Van Rielschoten & Houwens' Technische Maatschappij Pneumatiek N.V. Apparatus for pipeline transport of liquid, particularly milk. 3,202,169, 8–24–65, Cl. 137—268.

Rabelow, Harold H., and R. Wood, to Diagraph Bradley Industries, Inc. Tape dispenser. 3,202,028, 8–24–65, Cl. 83—241.

Rackley, John M., G. Musat, and J. H. Kidwell, to The Babcock & Wilcox Co. Method and apparatus for burning fuel. 3,202,196, 8–24–65, Cl. 158—1.5.

Radio Corp. of America: *See*—
Ames, Millard E., Jr. 3,202,840.
Antonaides, Basil. 3,202,857.
Forgue, Stanley V. 3,202,759.
Ochs, Stefan A. 3,202,854.
Spangler, Raymond G. 3,202,861.
Sperber, Edward J. 3,202,002.

Radio Corp. of America: *See*—
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Radio Frequency Laboratories, Inc.: *See*—
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Ragan, Robert O., and M. A. Snyder, to Waldorf Paper Products Co. Apparatus for measuring the hygroexpansivity of paper and paperboard. 3,201,871 8–24–65, Cl. 33—125.

Rainer, William C., J. G. Germak, J. P. Hamilton, A. W. Sloan, W. D. Stewart, and K. A. Schellenberg, to Crown Cork & Seal Co., Inc. Plastic liners. 3,202,307, 8–24–65, Cl. 215—39.

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Bones, Glenn W., and Raisanen. 3,202,932.

Ralston Purina Co.: *See*—
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Rambauske, Werner R., and H. R. Mestwerdt, to United States of America, Air Force. Interferometer used with piezoelectric crystal to form light valve. 3,202,052, 8–24–65, Cl. 88—61.

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Howarth Elbert S., and Ramser. 3,201,853.

Ranger, Arthur W. Flat-bed letterpress printing machines. 3,202,096, 8–24–65, Cl. 101—250.

Ransley, Charles E., to The British Aluminium Co. Ltd. Current conducting element for aluminum reduction cells. 3,202,600, 8–24–65, Cl. 204—279.

Rapier, Barre & Rapier: *See*—
Snyder, John Y. 3,201,905.

Rappold, Hermann, J. Uerlichs, and R. Müller, to Hermann. Rappold & Co. G.m.b.H. Welded slide valve casing with sealing face supporting means. 3,202,171, 8–24–65, Cl. 137—340.

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Rappold, Hermann, Uerlichs, and Müller. 3,202,171.

Rasmussen, Gustav. Device for helical edgewise winding of a strip onto a rotating tube. 3,201,847, 8–24–65, Cl. 29—33.

Rasmussen, Per H.: *See*—
Habicht, Lojo, Kluge, Rasmussen, and Glossop. 3,202,613.

Raval, Sharda M.: *See*—
Hindle, Arthur, Raval, and S. D., H. G., and K. G. Damani. 3,202,478.

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Reactor Centrum Nederland: *See*—
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Reader, Trevor D., to Sperry Rand Corp. Tape transport with non-linear buffer loop boxes. 3,202,373, 8–24–65, Cl. 242—55.12.

Redcay, Aaron K., to The Badger Co., Inc. Propane deasphalting process. 3,202,605, 8–24–65, Cl. 208—337.

Redden, David M.: *See*—
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Reed, Robert D., to John Zink Co. Burner for gaseous fuels. 3,202,203 8–24–65, Cl. 158—116.

Reed, Robert J. Car-top tent structure. 3,202,159, 8–24–65, Cl. 135—1.

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Rees, Vernon C., to Owens-Corning Fiberglas Corp. Constant tensioning packaging system. 3,202,377, 8–24–65, Cl. 242—75.5.

Reese, Günter: *See*—
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Regie Nationale des Usines Renault: *See*—
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Rehm, Gustav A., to Cleaver-Brooks Co. Steam generating unit. 3,202,137. 8–24–65. Cl. 122—473.

Reichert, John B. Method of making floor tile. 3,202,738, 8–24–65 Cl. 264—77.

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Street, Sidney W. 3,202,621.

Reif, Robert B.: *See*—
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Reifsteck Donald A., R. L., and D. E. Zipper operator. 3,201,839. 8–24–65. Cl. 24—205.15.

Reifsteck, Richard L.: *See*—
Reifsteck, Donald A., R. L., and D. E. 3,201,839.

Reiling, Paul A., to Bell Telephone Laboratories Inc. Balanced transistor translating network. 3,202,939, 8–24–65, Cl. 332—43.

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Stare Donald E., Strack, and Reindl. 3,202,540.

Reis, Arthur B., Jr.: *See*—
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Reisman, Arnold, M. Berkenblit, G. Cheroff, and F. Hochberg, to International Business Machines Corp. High mobility photoconductor sintered shapes and process for their preparation. 3,202,609, 8–24–65, Cl. 252—501.

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Remington Arms Co., Inc.: *See*—
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Resch Ronald D. Geometrical device having articulated relatively movable sections. 3,201,894, 8–24–65, Cl. 46—1.

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Rex Chainbelt Inc.: *See*—
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Rexall Drug and Chemical Co.: *See*—
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Reynolds, Maurice V., and R. J. Perrone, to Anaconda Wire and Cable Co. Tube-stretching mandrel. 3,201,827, 8–24–65 Cl. 18—1.

Reynolds, Otto V. Gravity powered casing pump with double-valved piston. 3,202,104 8–24–65, Cl. 103—158.

Rheinstahl Wanheim G m.b.H.: *See*—
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Rice, Leonard M., M. E. Freed, and E. Hertz, to American Home Products Corp. Substituted N-aminoalkyl 1'-keto-hexamethylene indoles. 3,202,676, 8–24–65, Cl. 260—319.

Rice, Rex, to International Business Machines Corp. Scatter read/write operation using plural control words. 3,202,970, 8–24–65, Cl. 340—172.5.

Rice, Rex, and R. H. Terlet, to International Business Machines Corp. Photosensitive asynchronous information handling system. 3,202,823, 8–24–65, Cl. 250—209.

Richards, Grahame P., to Wagner Electric Corp. Engine safety control device and system. 3,202,161, 8–24–65, Cl. 137—18.

Richards, Jesse W., to Ford Motor Co. Retractable seat. 3,202,453, 8–24–65, Cl. 296—66.

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Richman, Albert S. Golf chipping and putting target including ball return means. 3,202,429, 8–24–65, Cl. 273—182.

Richmond, James T., to Laporte Titanium Ltd. Manufacture of titanium dioxide. 3,202,524, 8–24–65, Cl. 106—300.

Riebman, Leon, to American Electronic Laboratories, Inc. Means for converting signals. 3,202,920, 8–24–65, Cl. 329—161.

Riebs, Richard E., to McGraw-Edison Co. Tap changing voltage regulator. 3,202,903, 8–24–65, Cl. 323—43.5.

Rieger, Frank C.: *See*—
Findley, Samuel A., and Rieger. 3,202,246.

Riegler, Ernst, to Kalle Aktiengesellschaft. Method of shirring sausage casings. 3,201,825, 8–24–65, Cl. 17—45.

Rightmire, Robert A., and P. S. Fay, to The Standard Oil Co. Electrochemical reaction apparatus. 3,202,546, 8–24–65, Cl. 136—86.

Rightmire, Robert A., P. S. Fay, and M. J. Mazurowski, to The Standard Oil Co. Electrochemical reaction apparatus. 3,202,547, 8–24–65, Cl. 136—86.

Ribn, Karl, to Olympia Werke A.G. Bold face type characters having recessed faces. 3,202,257, 8–24–65, Cl. 197—36.

Ringdal, Lars, to Vasco Industries Corp. Method and apparatus for sinter molding of plastic articles. 3,202,745, 8–24–65, Cl. 264—113.

Roberts, John A.: *See*—
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Roberts, Lyman R., to Shell Oil Co. Butadiene-styrene rubber blended with aromatic hydrocarbon-formaldehyde resin. 3,202,729, 8–24–65, Cl. 260—887.

Robinson, Bert N., to W. E. Stone & Co., Inc. Updraft continuous freezer. 3,201,951, 8–24–65, Cl. 62—272.

Robinson, Charles F., to Consolidated Electrodynamics Corp. Mass flowmeter. 3,201,986, 8–24–65, Cl. 73—194.

Robinson, Robert J., to Cummins-Chicago Corp. Photocell for detecting limited moving shadow areas. 3,202,827, 8–24–65, Cl. 250—219.

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Rochilts, Fritz: *See*—
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Rock Island Oil & Refining Co., Inc.: *See*—
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Rockwell-Standard Corp.: *See*—
Gonia, August T., Fante, and Shepard. 3,202,185.

Rogers, Cyril B., to Clark Equipment Co. Air film vehicle. 3,202,232, 8–24–65, Cl. 180—7.

Rogers, Edward F., and R. L. Clark, to Merck & Co., Inc. Anticoccidial compositions and methods of using same. 3,202,576, 8–24–65, Cl. 167—53.1.

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Adams, Paul R., and Rogoff. 3,202,764.

Rogus, Joseph A., to Mid-West Metallic Products, Inc. Shift type nesting and stacking receptacle. 3,202,294, 8–24–65, Cl. 211—126.

Rolph, Donald L., and M. E. Kinney, to Friden, Inc. Plugboard apparatus with lateral movement connecting means. 3,202,878, 8–24–65, Cl. 317—99.

Rom, Frank E., to United States of America, National Aeronautics and Space Administration. Gaseous nuclear rocket. 3,202,582, 8–24–65, Cl. 176—52.

Roos, Siegfried, to Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek ten Behotve van. Method for making girdles. 3,202,147, 8–24–65, Cl. 125—30.

Roos, Wolfgang, to Carl Zeiss. Telescopic spectacles. 3,202,046, 8–24–65, Cl. 88—34.

Root, Raymond C., to Dale Electronics, Inc. Mounting bracket for trimmer potentiometers. 3,202,291, 8–24–65, Cl. 211—49.

Roozemond, Robert C., to Koninklijke Pharmaceutische Farbrieken v/h Brocades Stheeman en Pharmacia, N.V. Ethers of indolyl-benzyl alcohols. 3,202,677, 8–24–65, Cl. 260—319.

Rosenblum, Lester A. Apparatus for balancing wheel assemblies. 3,201,997, 8–24–65, Cl. 73—480.

Roskin, Eric A.: *See*—
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Rosselet, Claude, to Sarmi S.A., Societe d'Applications de Recherches Minieres et Industrielles. Self-boring wall-plugs. 3,202,035, 8–24–65, Cl. 85—68.

Rothman, Barry: *See*—
Wortley, Austin M., Jr., and Rothman. 3,202,099.

Rowell, William G., to Scully Signal Co. Supervisory system with failure discrimination. 3,202,976, 8–24–65, Cl. 340—213.

Rowlett, Willard A. Ball joint suspension kit. 3,202,444, 8–24–65, Cl. 287—87.

Roy, Milton, Co.: *See*—
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Royal Business Forms Inc.: *See*—
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Royal McBee Corp.: *See*—
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Ruch, James P., to Anaconda Wire and Cable Co. Combined duct and electric cable. 3,202,754, 8–24–65, Cl. 174—68.

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Rudelick, John, to Bruner Corp. Float actuated fill valve. 3,202,174, 8–24–65, Cl. 137—432.

Rudner, Bernard, and M. J. Walch, to W. R. Grace & Co. N-aminophenindaminium salts. 3,202,668, 8–24–65, Cl. 260—296.

Rudow, Henry and M. Mounting brackets for tubular furniture legs. 3,202,391, 8–24–65, Cl. 248—188.

Rudow, Maurice: *See*—
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Rushing, Frank C., to United States of America, Atomic Energy Commission. Thrust bearings. 3,202,465, 8–24–65, Cl. 308—160.

Russell, John C. N.: *See*—
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Russo, Andelfo J., and C. N. Henschel, to Cadillac Wire Corp., and Henschel-Steinau. Portable knock down display rack. 3,202,192, 8–24–65, Cl. 150—51.

Rusicka, Jaroslav. Vibrating screen. 3,202,282, 8–24–65, Cl. 209—365.

Ryan Industries, Inc.: *See*—
Pauliukonis, Richard S. 3,201,946.

Ryan, William B.: *See*—
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Ryon, Richard M., Jr., and C. T. Ludwig, to Texas Instruments Inc. Signal delay circuit. 3,202,838, 8–24–65, Cl. 307—88.5.

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Salesse, Marc, J. A. Stohr, and M. Gauthron, to Commissariat a L'Energie Atomique. Method of maintaining sheathing contact in hollow fuel elements during nuclear reactor operation. 3,202,583, 8–24–65, Cl. 176—59.

Salmon, Reginald D., to International Standard Electric Corp. Centrifugal speed governors which minimizes the effect of contact erosion. 3,202,780, 8–24–65, Cl. 200—80.

Saluri, Sam P. Body heating means. 3,202,801, 8–24–65, Cl. 219—528.

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Steinemann, Willy. 3,202,650.

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Sarmi S.A., Societe d'Applications de Recherches Minieres et Industrielles: *See*—
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Savastano, Giorgio. D.C. watt-hour metering device including a saturable reactor means and a multivibrator. 3,202,916, 8–24–65, Cl. 324—142.

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Taniyama, Masakazu, Kawakatsu, Sawa, Iwasaki, and Yoshida. 3,202,640.

Sayre, Edwin D., to United States of America, Air Force. Method of making molybdenum and high temperature oxidation resistant alloy laminated composite material. 3,201,863, 8–24–65, Cl. 29—472.3.

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Schauer, George W., Jr., to General Motors Corp. Domestic electric appliance. 3,202,798. 8–24–65, Cl. 219—413.

Schell, Allan C., to United States of America, Air Force. Scanning corner array antenna. 3,202,997, 8–24–65, Cl. 343—814.

Schell, Herbert P., to Ford Motor Co. Resilient bushing. 3,202,410, 8–24–65, Cl. 267—1.

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Schilling, Hugh K., to Horton Mfg. Co., Inc. Fluid pressure operated clutch. 3,202,252, 8–24–65, Cl. 192—85.

Schlabs, Charles. Earthworking process. 3,202,220, 8–24–65, Cl. 172—1.

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Schlein, Helmar, to North American Aviation, Inc. Method and apparatus for monitoring the operation of a system. 3,202,804, 8–24–65, Cl. 235—151.

Schleisner-Meyer, Steen L. X-ray viewer. 3,201,883, 8–24–65, Cl. 40—106.1.

Schmermund, Alfred. Conveyor belts. 3,202,266, 8–24–65, Cl. 198—195.

Schmidt, Frederick C., and D. L. Moore, to Lipe-Rollway Corp. Self-adjusting clutch brake. 3,202,247, 8–24–65, Cl. 192—13.

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Schrader, Gerhard: *See*—
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Schramm, Arthur G. Trenching and cable laying machine. 3,201,948, 8–24–65, Cl. 61—72.6.

Schroedter, Willburt W., to Combustion Engineering, Inc. Vapor temperature control method. 3,202,135, 8–24–65, Cl. 122—406.

Schroedter, Willburt W., to Combustion Engineering, Inc. Vapor temperature control method. 3,202,138, 8–24–65, Cl. 122—479.

Schubert, Karl P., to The National Acme Co. Clutch and brake unit. 3,202,249, 8–24–65, Cl. 192—18.

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Schults, Floyd V., to University of Tennessee Research Corp. Steerable circular traveling-wave antenna. 3,202,995, 8–24–65, Cl. 343—732.

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Schuster, Allan C. Drill apparatus and drill bit for enlarging apertures. 3,202,228, 8–24–65, Cl. 175—53.

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Scott, Carleton B., to Union Oil Co. of California. Carbon-mineral refractory. 3,202,519, 8–24–65, Cl. 106—56.

Scott, Ian J. C., to Holley Carburetor Co. Ignition distributor with friction preventive means in the advance mechanism. 3,202,777, 8–24–65, Cl. 200—31.

Scrutton, Frank R.: *See*—
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Kirkpatrick, Willard H., and Seale. 3,202,615.

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Sedelow, Herve L., to United States of America, Army. Folding stock for shoulder arms. 3,201,887, 8–24–65, Cl. 42—72.

Seeberger, Kurt, to Verwaltungsgesellschaft der Werkzeugmaschinen- fabrik Oerlikon. Fire arm mussle brake. 3,202,056, 8–24–65, Cl. 89—14.

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Goodman, Robert J. 3,202,435.

Selby, Harold E. Lint remover. 3,201,815, 8–24–65, Cl. 15—104.

Sennewald, Kurt, W. Vogt, and J. Kandler, to Knapsack-Griesheim Aktiengesellschaft. Process for separating acrylonitrile and ammonia from gaseous mixtures. 3,201,-918, 8–24–65, Cl. 55—38.

Senter, Willis P., and R. O. Engard. Bulk grain door support frame. 3,201,830, 8–24–65, Cl. 20—27.

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Servis, James F., ½ to G. A. M. Petersen, and ½ to A. E. Petersen. Insulator lifter. 3,202,450, 8–24–65, Cl. 294—91.

Setwell Co., The: *See*—
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Seward, Edgar C. Elevator for ships. 3,202,243, 8–24–65, Cl. 187—9.

Shada, Joseph J., to International Basic Economy Corp. Variable flow separator. 3,201,925, 8–24–65, Cl. 55—391.

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Sharp, Donald E.: *See*—
Woods, John A., Sharp, Ohio Citizens Trust Co., executor, and Badger. 3,202,494.

Sharp, Floyd A.: *See*—
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Epton, Sidney R., Hughes, and Soesan. 3,202,637.
Evans, Herbert C., and Kirby. 3,202,610.
Roberts, Lyman R. 3,202,729.
Tess, Roy W., and Van Ess. 3,202,625.
Todd, David B., Keeler, and Balfour. 3,202,647.
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Sherwood, Henry A., to U. S. Servicator Corp. Service indicator. 3,202,315, 8–24–65, Cl. 221—15.

Sherwood, Henry A., to U. S. Servicator Corp. Electromechanical power unit. 3,202,842, 8–24–65, Cl. 307—141.

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Shoor, Bernard A., to D. H. Wright. Counting and switching unit. 3,202 802, 8–24–65, Cl. 235—92.

Short, Brooks H., and T. E. Kirk, to General Motors Corp. Static transistorized ignition system. 3,202,148, 8–24–65, Cl. 123—148.

Shrader, Raymond M., to Larkin Coils, Inc. Refrigeration apparatus including liquid injection desuperheater. 3,201,-950, 8–24–65, Cl. 62—197.

Shrader, Robert L., and E. M. Whitson. Permanent magnet transverse electron beam evaporation source. 3,202,794, 8–24–65, Cl. 219—121.

Sikorra, Daniel J., to Honeywell Inc. Multiplication by varying amplitude and period of output pulse. 3,202,807, 8–24–65, Cl. 235—194.

Silver, Bernard, deceased (by P. R. Silver, executrix), to Electro-Nite Inc. Biased stack facial tissue dispenser. 3,202 316, 8–24–65, Cl. 221—59.

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Silver, Bernard. 3,202,316.

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Simpson, Darwin L. Vehicle speed control and braking apparatus. 3,202,014. 8–24–65, Cl. 74—664.

Simpson, Walter M. Carrying device. 3,202,309, 8–24–65, Cl. 215—100.

Sims, Edward H., L. Sneesby, and W. S. Soutar, to The National Cash Register Co. Reciprocable-handle-actuated full cycle driving mechanism. 3,202,020, 8–24–65, Cl. 74—812.

Sims, Jesse B. Emergency electrical power outlet unit. 3,202,977, 8–24–65, Cl. 340—252.

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Skil Corp.: *See*—
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Smith, Harlan D., and W. R. Weiss, to Wellsville Fire Brick Co. Bauxite brick and process of making the same. 3,202,785, 8–24–65, Cl. 264—56.

Smith, Harold W. Exhaust-liquid heat exchanger for internal combustion engines. 3,201,934, 8–24–65, Cl. 60—31.

Smith, Herchel: *See*—
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Smith, Robert D. Combined seat, hassock and convertible bed. 3 201,805, 8–24–65, Cl. 5—18.

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Societe des Accumulateurs Fixes et de Traction (Societe Anonyme): *See*—
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Societe Francaise des Laboratories Labaz, Societe Anonyme: *See*—
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Societe Rateau: *See*—
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Spangler, Raymond G., to Radio Corp. of America. Electrode support means. 3,202,861, 8–24–65, Cl. 313—268.

Sparing, Klaus, and W. Tilse, to The United States Time Corp. Vibratory frequency standard for a timekeeping device. 3,201,932, 8–24–65, Cl. 58—23.

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Sperry Rand Corp.: *See*—
Anders, Walter G. 3,202,265.
Badenoch, Benjamin W., Brown, and Liles. 3,202,105.
Baillif, Allen K. 3,202,974.
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Dunlap, William N., Jr., Jones, and Wright. 3,202,529.
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Matson, Charles W., and Prohofsky. 3,202,869.
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Sprague, Robert H., and J. A. Stewart, to Horisons Inc. Photographic method using a light sensitive visible image-bearing masking layer which includes an anti-halation layer. 3,202,507, 8–24–65, Cl. 96—27.

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Springer, Robert A.: *See*—
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Square D Co.: *See*—
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George, Melvin J. 3,202,786.
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Stanback, Harris I. 3,202,880.

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Stafford, Thomas S., and G. D. Granito, to International Business Machines Corp. Message handling system. 3,202,-972, 8–24–65, Cl. 340—172.5.

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Stanback, Harris I., to Square D Co. Circuit breaker panelboard. 3,202,880, 8–24–65, Cl. 317—119.

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Standard Oil Co. (Ohio), The: *See*—
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Greene, Janice L., and Idol. 3,202,695.
Greene, Janice L., Idol, and Standish. 3,202,696.
Griffith, Ray E., and Kessler. 3,201,995.
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Liao, Chien-Wei. 3,202,492.
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Rightmire, Robert A., Fay, and Masurowski. 3,202,547.

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Stanonis, Alphonso F. Method of controlling fluid flow. 3,202,215. 8–24–65, Cl. 166—42.

Stare, Donald E., D. R. Strack, and H. J. Reindl, to General Motors Corp. Sealing strip comprising rubber bases coated with rubbery cement containing silicone gum. 3,202,540, 8–24–65, Cl. 117—138.8.

Stark, John, Jr., to Radio Corp. of America. Regulated high voltage supplies for color television tube. 3,202,865, 8–24–65, Cl. 315—22.

Starks, Charles M., to Continental Oil Co. Preparation of alpha chloro-alkanesulfonyl chlorides. 3,202,707, 8–24–65, Cl. 260—543.

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Steinemann, Willy, to Sandoz Ltd. Metal-containing reactive azo dyes. 3,202,650, 8–24–65, Cl. 260—146.

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Szmuszkovics, Jacob, and G. A. Youngdale, to The Upjohn Co. 6 - methoxy - 1 methyl - 9H-pyrido[3-4b]indole-3-carboxylic acid, esters and its acid addition salts. 3,202,667, 8–24–65, Cl. 260—295.

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Szmuszkovics, Jacob, to The Upjohn Co. 2,9-dimethyl-4-hydroxy-1,2,3,4-tetrahydro-9H-pyrido[3,4-b]indole and its acid addition salts. 3,202,671, 8–24–65, Cl. 260—296.

Szmuszkovics, Jacob, to The Upjohn Co. 4-amino-2,9-dimethyl - 1,2,3,4-tetrahydro-9H-pyrido[3,4-b]indole and its acid addition salts. 3,202,672, 8–24–65, Cl. 260—296.

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Urry, Lewis F., to Union Carbide Corp. Leak-resistant dry cells. 3,202,549, 8–24–65, Cl. 136—132.
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Vance, Russell G. Roller belt and differential pulley transmission. 3,202,017, 8–24–65, Cl. 74—722.
Van den Berg, Pieter, T. A. C. Jacobs, and A. W. J. Verheijen, to North American Philips Co., Inc. Method of manufacturing tungsten from ammonium paratungstate. 3,202,505, 8–24–65, Cl. 75—84.
Van den Boogaart, Krijn, to Fabriek Van Chemische Producten Vondelingenplaat N.V. New fungicidal compounds. 3,202,571, 8–24–65, Cl. 167—22.
Van der Meer, Samuel: *See*—
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Van Ess, Paul R., to Shell Oil Co. Freeze-thaw mechanically stable latex of a terpolymer of styrene, alkyl acrylate and an alpha-beta vinylidene carboxylic acid. 3,202,638, 8–24–65, Cl. 260—78.5.
Van Ess, Paul R., and R. W. Tess, to Shell Oil Co. Process for preparing a graft of diene-styrene-acrylate interpolymer with a vinyl carboxylic acid. 3,202,627, 8–24–65, Cl. 260—29.7.
Van Haaften, Egbert: *See*—
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Van Hennik, Burtis W. Bombing game apparatus with light beam projecting simulated antiaircraft gun. 3,202,425, 8–24–65, Cl. 273—101.1.
Van Rielschoten & Houwens' Technische Maatschappij Pneumatiek N.V.: *See*—
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Videen, Otis R., to Wood Conversion Co. Method of forming a fiberboard containing a fire-retardant hydrated borate and product thereof. 3,202,570, 8–24–65, Cl. 162—159.
Viebrock, Carl H. Grain saving attachment for combine. 3,202,154, 8–24–65, Cl. 130—27.
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Vosper, Richard W., to International Telephone and Telegraph Corp. Cartridge fuse assembly. 3,202,787, 8–24–65, Cl. 200—131.
Voss, Robert G., to Bell Telephone Laboratories, Inc. Method of winding helices. 3,201,849, 8–24–65, Cl. 29—155.5.
Wachter, Karl-August, to Otto H. Drager. Closure for filter container. 3,201,927, 8–24–65, Cl. 55—504.
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Webb, James E. (administrator of the National Aeronautics and Space Administration, with respect to an invention of S. Hansen). Thrust dynamometer. 3,201,980, 8–24–65, Cl. 73—116.
Webb, James E. (administrator of the National Aeronautics and Space Administration, with respect to an invention of J. A. Goodrich and K. T. Ingham). Locking device for turbine rotor blades. 3,202,398, 8–24–65, Cl. 253—77.
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Williams, Kenneth S., to British Cellophane Ltd. Web tension measuring devices. 3,201,985, 8–24–65, Cl. 73—148.
Williams, Leslie A., to Eastman Kodak Co. Photographic silver halide emulsions stabilised with tetrasaindene compounds. 3,202,512, 8–24–65, Cl. 96—109.
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Witte, Josef, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of polymers containing C-H acid groups. 3,202,639, 8–24–65, Cl. 260—79.3.
Wolf, Robert S., to Philadelphia Belting Co. Conveyor. 3,202,260, 8–24–65, Cl. 198—20.
Wolfe, Duane M., to AMF American Iron, Inc. Valves. 3,202,178, 8–24–65, Cl. 137—516.29.
Wolfe, Wade, Jr., and J. F. Murphy, to Olin Mathieson Chemical Corp. Method of forming a composite metal article. 3,202,530, 8–24–65, Cl. 117—50.
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Woller, Horst: *See*—
Matthieu, Johannes, Schmidt, and Woller. 3,202,766.
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Woods, John A., D. E. Sharp, deceased (by Ohio Citizens Trust Co., executor), and A. E. Badger, to Libbey-Owens-Ford Glass Co. Method and apparatus for producing multiple sheet glazing units. 3,202,494, 8–24–65, Cl. 65—58.
Woolslayer, Homer J., J. W. Born, and C. F. Cleveland, to Lee C. Moore Corp. Oil well drilling substructure with elevated exterior flooring. 3,202,241, 8–24–65, Cl. 182—82.
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Wortley, Austin M., Jr., and B. Rothman, to Penguin Associates, Inc. Flare cartridge. 3,202,099, 8-24-65, Cl. 102—37.6.

Wosniak, Mitchell S., to The Mead Corp. Case packing machine. 3,201,912, 8-24-65, Cl. 53—61.

Wright, Charles D., to Minnesota Mining and Mfg. Co. 2,5,8-trihydrazino-tri-s-triazine and process therefor. 3,202,659, 8-24-65, Cl. 260—249.6.

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Wuenscher, Hans F., to United States of America, National Aeronautics and Space Administration. Recoverable rocket vehicle. 3,202,381, 8-24-65, Cl. 244—1.

Wurton Machine Co.: *See*—
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Yager, Boyd H., to The Engineered Products Co. Safety lock. 3,201,969, 8-24-65, Cl. 70—134.

Yamamoto, Hiroji. Closed surge tank. 3,201,942, 8-24-65, Cl. 61—19.

Yancey, Joel A., to Cabot Corp. Surface treated carbon black as polymerization catalyst and method of polymerization therewith. 3,202,644, 8-24-65, Cl. 260—96.7.

Yancey, Joel A., to Cabot Corp. Surface treated inorganic solid polymerization catalyst and method of polymerization therewith. 3,202,645, 8-24-65, Cl. 260—93.7.

Yando, Stephen, to General Telephone and Electronics Laboratories, Inc. Pickup device. 3,202,824, 8-24-65, Cl. 250—211.

Yang, Julie C.-S., and E. F. Osborn, to Johns-Manville Corp. Cementitious product. 3,202,522, 8-24-65, Cl. 106—99.

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Yarrow and Co. Ltd.: *See*—
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Yonkers, William A., to Radio Frequency Laboratories, Inc. Method of soldering. 3,201,852, 8-24-65, Cl. 29—155.5.

Yoshida, Masatoshi: *See*—
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Young, Albert L., to United States of America, Air Force. Liquid expulsion system. 3,202,326, 8-24-65, Cl. 222—386.5.

Young, David W., and E. M. Pare, to Sinclair Research, Inc. Complex ester of mixed dicarboxylic acids, neopentyl glycol and aliphatic alcohols. 3,202,701, 8-24-65, Cl. 260—485.

Young, James A., to Sani-Gard Plastics Co. Foamed plastic molding method and apparatus. 3,202,734, 8-24-65, Cl. 264—53.

Youngdale, Gilbert A.: *See*—
Szmuszkovicz, Jacob, and Youngdale. 3,202,667.

Yumbo: *See*—
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Zauderer, Jerome: *See*—
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Zauner, Otto, to Owens-Illinois Glass Co. Apparatus for forming mouth portions of small glass containers. 3,202,495, 8-24-65, Cl. 65—277.

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Zelle, Karl, K.-H. Hauptmann, and H. Stable, to Boehringer Ingelheim G.m.b.H. Process for the preparation of 3-arylamino-1,3-diazacycloalkenes. 3,202,660, 8-24-65, Cl. 260—254.

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Zimmerer, Roger E., and H. F. Drew, to The Procter & Gamble Co. Oxy containing tertiary amine oxides. 3,202,714, 8-24-65, Cl. 260—584.

Zimmerle, Wilbur J., C. E. Stroebel, and R. O. Dehlendorf, to General Motors Corp. Method and means for aligning and fastening laminations of dynamoelectric machine. 3,202,851, 8-24-65, Cl. 310—259.

Zimmerman, Raymond W. Table leaf alignment device. 3,202,117, 8-24-65, Cl. 108—89.

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Zwingenberger, Arno: *See*—
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CLASSIFICATION OF PATENTS

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NOTE.—First number, class; second number, subclass; third number, patent number

2— 83	3,201,800	30—180	Re.25,842	65— 58	3,202,494	84—380	3,202,031	105—369	3,202,111	137—202	3,202,168
93	3,201,801	289	3,201,868	277	3,202,495	383	3,202,032		3,202,112	268	3,202,169
187	3,201,802	342	3,201,869	288	3,202,496	85— 1	3,202,033	106— 14	3,202,517	269	3,202,170
207	3,201,803	33— 85	3,201,870		3,202,497	67	3,202,034	40	3,202,518	340	3,202,171
4— 1	3,201,804	125	3,201,871	362	3,202,498	68	3,202,035	56	3,202,519	344	3,202,172
5— 18	3,201,805	147	3,201,872	66— 9	3,201,954	77	3,202,036	85	3,202,520	426	3,202,173
62	3,201,806	168	3,201,873	86	3,201,955	81	3,202,037	90	3,202,521	432	3,202,174
8— 54.2	3,202,472	180	3,201,874	125	3,201,956	83	3,202,038	99	3,202,522	454.2	3,202,175
116.3	3,202,473	35— 6	3,201,875	138	3,201,957	88— 1	3,202,039	271	3,202,523	464	3,202,176
120	3,202,474	36— 7.5	3,201,876	68— 58	3,201,958		3,202,040	300	3,202,524	514.7	3,202,177
9—310	3,201,807	36	3,201,877	70—134	3,201,959	14	3,202,041	306	3,202,525	516.29	3,202,178
334	3,201,808	37— 42	3,201,878	150	3,201,960		3,202,042	107— 14	3,202,113	624.14	3,202,179
10— 10	3,201,809	38— 40	3,201,879	277	3,201,961		3,202,043	54	3,202,114	625.15	3,202,180
11— 3	3,201,810	77	3,201,880	71— 2.5	3,202,499	24	3,202,044	57	3,202,115	625.17	3,202,181
12— 33	3,201,811	40— 77	3,201,881		3,202,500		3,202,045	108— 46	3,202,116	625.27	3,202,182
146	3,201,812	96	3,201,882	28	3,202,501	34	3,202,046	89	3,202,117	637.4	3,202,183
13— 25	3,202,750	106.1	3,201,883	72— 9	3,201,962	39	3,202,047	110— 18	3,202,118	138—172	3,202,184
31	3,202,751	109	3,201,884	77	3,201,963		3,202,048	111— 85	3,202,119	140— 71	3,202,185
14— 71	3,201,813	330	3,201,885	108	3,201,964	40	3,202,049	96	3,202,120	109	3,202,186
	3,201,814	42— 17	3,201,886	163	3,201,965	57	3,202,050	112—209	3,202,121	141— 93	3,202,187
	3,203,002	72	3,201,887	264	3,201,966		3,202,051	113—119	3,202,122	130	3,202,188
15—104	3,201,815	43— 4	3,201,888	359	3,201,967	61	3,202,052	115— .5	3,202,123	143— 37	3,202,189
220	3,201,816	9	3,201,889	392	3,201,968	65	3,202,053	1	3,202,124	144—205	3,202,190
231	3,201,817	27.4	3,201,890	402	3,201,969	106	3,202,054	35	3,202,125	148— 6.1	3,202,550
250.06	3,201,818	34	3,201,891	73— 17	3,201,970	89— 7	3,202,055	41	3,202,126	6.2	3,202,551
349	3,201,819	43.11	3,201,892	23.1	3,201,971	14	3,202,056	116—115	3,202,127	13	3,202,552
16—159	3,201,820	139	3,201,893	35	3,201,972	90— 1.6	3,202,057	129	3,202,128	20.3	3,202,553
163	3,201,821	44— 63	3,202,491		3,201,973	91—189	3,202,058	135	3,202,129	22	3,202,554
17— 2	3,201,822	69	3,202,492	37.9	3,201,974	392	3,202,059	117— 37	3,202,526	131	3,202,555
11	3,201,823	46— 1	3,201,894	40.5	3,201,975	443	3,202,060	45	3,202,527	149— 20	3,202,556
	3,201,824	61	3,201,895	81	3,201,976	92— 37	3,202,061	47	3,202,528	109	3,202,557
45	3,201,825	65	3,201,896	88.5	3,201,977	85	3,202,062	50	3,202,529	150— 30	3,202,191
18— 1	3,201,826	202	3,201,897	114	3,201,978	91	3,202,063		3,202,530	51	3,202,192
	3,201,827	244	3,201,898	116	3,201,979	93— 8	3,202,064	62	3,202,531	52	3,202,193
16.5	3,201,828		3,201,899		3,201,980	36	3,202,065	64	3,202,532	151— 7	3,202,194
26	3,201,829	47— 41.12	3,201,900	133	3,201,981	49	3,202,066	72	3,202,533	21	3,202,195
20— 27	3,201,830	51— 12	3,201,901	136	3,201,982	94— 4	3,202,067	75	3,202,534	156— 56	3,202,558
56.4	3,201,831	206	3,201,902	141	3,201,983	46	3,202,068		3,202,535	66	3,202,559
56.5	3,201,832	288	3,201,903		3,201,984	95— 36	3,202,069	83	3,202,536	162	3,202,560
69	3,201,833	358	3,201,904	143	3,201,985	73	3,202,070	100	3,202,537	216	3,202,561
92	3,201,834		3,201,905	194	3,201,986	79	3,202,071	119.2	3,202,538	294	3,202,562
22— 68	3,201,835	52— 39	3,201,906	231	3,201,987	89	3,202,072	122	3,202,539	466	3,202,563
	3,201,836	73	3,201,907		3,201,988	90	3,202,073	138.8	3,202,540	569	3,202,564
69	3,201,837	255	3,201,908	300	3,201,989	95	3,202,074	140	3,202,541	158— 1.5	3,202,196
23— 14.5	3,202,475	287	3,201,909	342	3,201,990	96— 27	3,202,507	161	3,202,542	4	3,202,197
	3,202,476	716	3,201,910		3,201,991	28	3,202,508	210	3,202,543		3,202,198
63	3,202,477	53— 36	3,201,911	416	3,201,992	36	3,202,509	119— 51.11	3,202,130	42.1	3,202,199
97	3,202,478	61	3,201,912	421.5	3,201,993	75	3,202,510	61	3,202,131	109	3,202,200
140	3,202,479	182	3,201,913		3,201,994	99	3,202,511	157	3,202,132		3,202,201
143	3,202,480	187	3,201,914	422	3,201,995	109	3,202,512	120— 8	3,202,133	115	3,202,202
159	3,202,481	374	3,201,915	432	3,201,996	115	3,202,513	122— 1	3,202,134	116	3,202,203
209	3,202,482	382	3,201,916	480	3,201,997	98— 2	3,202,075	406	3,202,135		3,202,204
230	3,202,483	55— 35	3,201,917	505	3,201,998		3,202,076	448	3,202,136	118	3,202,205
259	3,202,484	38	3,201,918	515	3,201,999	40	3,202,077	473	3,202,137	160—263	3,202,206
264	3,202,485	46	3,201,919	74— 95	3,202,000		3,202,078	479	3,202,138	161— 73	3,202,565
284	3,202,486	48	3,201,920	97	3,202,001	42	3,202,079	504	3,202,139	102	3,202,566
295	3,202,487	56	3,201,921	157	3,202,002	43	3,202,080	123— 1	3,202,140	162	3,202,567
24—125	3,201,838	67	3,201,922	199	3,202,003		3,202,081		3,202,141	193	3,202,568
205.15	3,201,839	112	3,201,923	220	3,202,004	88	3,202,082	16	3,202,142	162— 13	3,202,569
230	3,201,840	324	3,201,924	333	3,202,005	116	3,202,083	41.15	3,202,143	159	3,202,570
243	3,201,841	391	3,201,925	406	3,202,006	99— 2	3,202,514	41.49	3,202,144	165— 9	3,202,207
248	3,201,842	486	3,201,926	413	3,202,007	48	3,202,515	119	3,202,145	22	3,202,208
25— 30	3,201,843	504	3,201,927	424.8	3,202,008	138	3,202,516	148	3,202,146	32	3,202,209
39	3,201,844	56— 98	3,201,928		3,202,009	235	3,202,084	125— 30	3,202,147	154	3,202,210
41	3,201,845	57— 15	3,201,929	438	3,202,010	350	3,202,085	128— 2.05	3,202,148	179	3,202,211
118	3,201,846	144	3,201,930	472	3,202,011	351	3,202,086		3,202,149		3,202,212
29— 33	3,201,847	153	3,201,931		3,202,012	100— 3	3,202,087	142	3,202,150	166— 21	3,202,213
	3,201,848	58— 23	3,201,932	483	3,202,013	53	3,202,088	173	3,202,151	30	3,202,214
155.5	3,201,849	60— 30	3,201,933	664	3,202,014	214	3,202,089	361	3,202,152	42	3,202,215
	3,201,850	31	3,201,934	665	3,202,015	224	3,202,090	483	3,202,153	46	3,202,216
	3,201,851	35.4	3,201,935	710.5	3,202,016	101— 90	3,202,091	130— 27	3,202,154		3,202,217
	3,201,852	35.54	3,201,937	722	3,202,017	114	3,202,092	131— 10	3,202,155		3,202,218
155.55	3,201,853	35.6	3,201,936	732	3,202,018		3,202,093	70	3,202,156	53	3,202,219
155.57	3,201,854	39.51	3,201,938	796	3,202,019	128.2	3,202,094	134	3,202,157	167— 22	3,202,571
155.63	3,201,855	52	3,201,939	812	3,202,020	233	3,202,095	132— 45	3,202,158	30	3,202,572
156.8	3,201,856	54	3,201,940	75— 1	3,202,502	250	3,202,096	135— 1	3,202,159		3,202,573
	3,201,857	59	3,201,941	38	3,202,503	378	3,202,097	136— 6	3,202,544	49.5	3,202,574
157.3	3,201,858	61— 19	3,201,942	53	3,202,504	415.1	3,202,098	38	3,202,545	53	3,202,575
192	3,202,488	45	3,201,943	84	3,202,505	102— 37.6	3,202,099	86	3,202,546	53.1	3,202,576
195	3,202,489	46.5	3,201,945	171	3,202,506	70.2	3,202,100		3,202,547	55	3,202,577
	3,202,490	72.5	3,201,944	81— 52.4	3,202,021	103— 5	3,202,101	90	3,202,548	56	3,202,578
282	3,201,859	72.6	3,201,948	357	3,202,022	7	3,202,102	132	3,202,549	88	3,202,579
431	3,201,860	62— 45	3,201,946	421	3,202,023	117	3,202,103	137— 1	3,202,160	172— 1	3,202,220
455	3,201,861	55	3,201,947	82— 14	3,202,024	158	3,202,104	18	3,202,161	63	3,202,221
470.1	3,201,862	192	3,201,949	83— 2	3,202,025	162	3,202,105	68	3,202,162	177	3,202,222
472.3	3,201,863	197	3,201,950	161	3,202,026		3,202,106	98	3,202,163	264	3,202,223
487	3,201,864	272	3,201,951	206	3,202,027		3,202,107	101.11	3,202,164	305	3,202,224
493	3,201,865	63— 2	3,201,952	241	3,202,028	249	3,202,108	107	3,202,165	328	3,202,225
30— 43.92	3,201,866	64— 30	3,201,953	304	3,202,029	104— 60	3,202,109	115	3,202,166	719	3,202,226
169	3,201,867	65— 43	3,202,493	84—380	3,202,030	196	3,202,110	173	3,202,167	174— 35	3,202,752

174– 50.58: 3,202,753	206– .81: 3,202,268	235– 92 : 3,202,803
68 : 3,202,754	52 : 3,202,269	95 : 3,202,353
68.5 : 3,202,755	56 : 3,202,270	132 : 3,202,354
99 : 3,202,756	3,202,271	151 : 3,202,804
153 : 3,202,757	3,202,272	164 : 3,202,805
175– 4 : 3,202,227	63.3 : 3,202,273	175 : 3,202,806
53 : 3,202,228	65 : 3,202,274	194 : 3,202,807
176– 36 : 3,202,580	3,202,275	3,202,808
46 : 3,202,581	3,202,276	196 : 3,202,809
52 : 3,202,582	78 : 3,202,277	197 : 3,202,810
59 : 3,202,583	80 : 3,202,278	237– 8 : 3,202,355
61 : 3,202,584	3,202,279	3,202,356
69 : 3,202,585	3,202,280	3,202,357
70 : 3,202,586	208– 33 : 3,202,602	238– 14 : 3,202,358
177– 2 : 3,202,229	107 : 3,202,603	239– 1 : 3,202,359
64 : 3,202,230	204 : 3,202,604	119 : 3,202,360
178– 5.1 : 3,202,758	337 : 3,202,605	212 : 3,202,361
7.2 : 3,202,759	209– 166 : 3,202,281	287 : 3,202,362
179– 1 : 3,202,760	365 : 3,202,282	413 : 3,202,363
3,202,761	210– 71 : 3,202,283	240– 1.1 : 3,202,811
15 : 3,202,762	75 : 3,202,284	1.2 : 3,202,812
3,202,763	195 : 3,202,285	2 : 3,202,813
3,202,764	286 : 3,202,286	9 : 3,202,814
3,202,765	306 : 3,202,287	78 : 3,202,815
18 : 3,202,766	211– 13 : 3,202,288	241– 30 : 3,202,364
3,202,767	22 : 3,202,289	42 : 3,202,365
100 : 3,202,768	43 : 3,202,290	99 : 3,202,366
100.1 : 3,202,769	49 : 3,202,291	186 : 3,202,367
100.2 : 3,202,770	87 : 3,202,292	189 : 3,202,368
3,202,771	96 : 3,202,293	190 : 3,202,369
3,202,772	126 : 3,202,294	242– 43.2 : 3,202,370
180 : 3,202,773	3,202,295	47.01: 3,202,371
180– 1 : 3,202,231	134 : 3,202,296	54 : 3,202,372
7 : 3,202,232	163 : 3,202,297	55.12: 3,202,373
13 : 3,202,233	184 : 3,202,298	65 : 3,202,374
65 : 3,202,234	212– 59 : 3,202,299	74 : 3,202,375
73 : 3,202,235	213– 22 : 3,202,300	75.1 : 3,202,376
3,202,236	214– 1 : 3,202,301	75.5 : 3,202,377
3,202,237	3,202,302	84.1 : 3,202,378
79.2 : 3,202,238	16.4 : 3,202,303	107.4 : 3,202,379
181– 36 : 3,202,239	38 : 3,202,304	128 : 3,202,380
51 : 3,202,240	302 : 3,202,305	244– 1 : 3,202,381
182– 82 : 3,202,241	656 : 3,202,306	14 : 3,202,382
187– 9 : 3,202,242	215– 39 : 3,202,307	42 : 3,202,383
3,202,243	40 : 3,202,308	122 : 3,202,384
188–171 : 3,202,244	100 : 3,202,309	3,202,385
189– 36 : 3,202,245	219– 9.5 : 3,202,791	138 : 3,202,386
192– 3.5 : 3,202,246	85 : 3,202,792	245– 6 : 3,202,387
13 : 3,202,247	118 : 3,202,793	246– 63 : 3,202,816
18 : 3,202,248	121 : 3,202,794	248– 8 : 3,202,388
3,202,249	318 : 3,202,795	117.4 : 3,202,389
45.1 : 3,202,250	3,202,796	119 : 3,202,390
3,202,251	370 : 3,202,797	188 : 3,202,391
85 : 3,202,252	413 : 3,202,798	455 : 3,202,392
113 : 3,202,253	492 : 3,202,799	249– 2 : 3,202,393
193– 15 : 3,202,254	497 : 3,202,800	94 : 3,202,394
194– 1 : 3,202,255	528 : 3,202,801	202 : 3,202,395
15 : 3,202,256	220– 30 : 3,202,310	250– 41.9 : 3,202,817
195– 36 : 3,202,587	91 : 3,202,311	65 : 3,202,818
197– 36 : 3,202,257	105 : 3,202,312	71.5 : 3,202,819
198– 1 : 3,202,258	113 : 3,202,313	83 : 3,202,820
3,202,259	221– 2 : 3,202,314	3,202,821
20 : 3,202,260	15 : 3,202,315	83.3 : 3,202,822
3,202,261	59 : 3,202,316	209 : 3,202,823
24 : 3,202,262	222– 14 : 3,202,317	211 : 3,202,824
34 : 3,202,263	39 : 3,202,318	216 : 3,202,825
127 : 3,202,264	41 : 3,202,319	218 : 3,202,826
158 : 3,202,265	57 : 3,202,320	219 : 3,202,827
195 : 3,202,266	108 : 3,202,321	225 : 3,202,828
200 : 3,202,267	173 : 3,202,322	251– 30 : 3,202,396
200– 5 : 3,202,774	177 : 3,202,323	252– 17 : 3,202,606
6 : 3,202,775	181 : 3,202,324	49.5 : 3,202,607
18 : 3,202,776	3,202,325	49.9 : 3,202,608
31 : 3,202,777	386.5 : 3,202,326	58 : 3,202,610
61.41: 3,202,778	455 : 3,202,327	62.2 : 3,202,611
61.42: 3,202,779	223– 67 : 3,202,328	79.2 : 3,202,612
80 : 3,202,780	85 : 3,202,329	121 : 3,202,613
87 : 3,202,781	98 : 3,202,330	342 : 3,202,614
3,202,782	224– 28 : 3,202,331	3,202,615
3,202,783	42.03: 3,202,332	408 : 3,202,616
3,202,784	226–189 : 3,202,333	429 : 3,202,617
104 : 3,202,785	229– 4.5 : 3,202,334	469 : 3,202,618
113 : 3,202,786	14 : 3,202,335	478 : 3,202,619
131 : 3,202,787	17 : 3,202,336	501 : 3,202,609
133 : 3,202,788	32 : 3,202,337	253– 59 : 3,202,397
137 : 3,202,789	39 : 3,202,338	77 : 3,202,398
144 : 3,202,790	3,202,339	86 : 3,202,399
204– 18 : 3,202,588	52 : 3,202,340	254– 2 : 3,202,400
32 : 3,202,589	230–116 : 3,202,341	256– 21 : 3,202,401
38 : 3,202,591	117 : 3,202,342	259– 1 : 3,202,402
43 : 3,202,590	127 : 3,202,343	260– 2.5 : 3,202,620
58 : 3,202,592	232 : 3,202,344	18 : 3,202,621
106 : 3,202,593	232– 1 : 3,202,345	23 : 3,202,622
140 : 3,202,594	43.3 : 3,202,346	28.5 : 3,202,623
143 : 3,202,595	233– 15 : 3,202,347	29.6 : 3,202,625
148 : 3,202,596	26 : 3,202,348	3,202,626
154 : 3,202,597	234– 45 : 3,202,349	29.7 : 3,202,624
224 : 3,202,598	235– 59 : 3,202,350	3,202,627
3,202,599	79.5 : 3,202,351	32.8 : 3,202,628
279 : 3,202,600	83 : 3,202,352	41 : 3,202,629
302 : 3,202,601	92 : 3,202,802	45.9 : 3,202,630

260– 45.9 : 3,202,631	263– 29 : 3,202,405	310– 9.7 : 3,202,846
45.95: 3,202,632	264– 3 : 3,202,730	14 : 3,202,847
46.5 : 3,202,633	7 : 3,202,731	25 : 3,202,848
3,202,634	30 : 3,202,732	37 : 3,202,849
67.6 : 3,202,635	49 : 3,202,733	3,202,850
75 : 3,202,636	53 : 3,202,734	259 : 3,202,851
77.5 : 3,202,637	56 : 3,202,735	312–140.1 : 3,202,468
78.5 : 3,202,638	61 : 3,202,736	200 : 3,202,469
79.3 : 3,202,639	71 : 3,202,737	227 : 3,202,470
3,202,640	77 : 3,202,738	231 : 3,202,471
3,202,641	98 : 3,202,739	313– 32 : 3,202,852
85.5 : 3,202,642	100 : 3,202,740	65 : 3,202,853
92.1 : 3,202,643	108 : 3,202,741	3,202,854
93.7 : 3,202,644	3,202,742	71 : 3,202,855
3,202,645	109 : 3,202,743	89 : 3,202,856
94.3 : 3,202,646	3,202,744	3,202,857
94.7 : 3,202,647	113 : 3,202,745	111 : 3,202,858
94.9 : 3,202,648	141 : 3,202,746	130 : 3,202,859
146 : 3,202,649	168 : 3,202,747	244 : 3,202,860
3,202,650	194 : 3,202,748	268 : 3,202,861
194 : 3,202,651	242 : 3,202,749	357 : 3,202,862
200 : 3,202,652	266– 5 : 3,202,406	315– 5.38: 3,202,863
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36 : 3,202,152 3,202,189 3,202,275 3,202,504 3,202,894

37 : 3,201,824 3,201,853 3,201,864 3,201,865 3,201,876 3,201,907 3,201,954 3,201,977 3,201,992 3,202,007 3,202,043 3,202,099 3,202,157 3,202,180 3,202,210 3,202,260 3,202,272 3,202,302 3,202,316 3,202,373 3,202,392 3,202,429

37 : 3,202,430 3,202,465 3,202,484 3,202,496 3,202,497 3,202,520 3,202,529 3,202,594 3,202,633 3,202,634 3,202,642 3,202,668 3,202,686 3,202,706 3,202,719 3,202,720 3,202,725 3,202,733 3,202,736 3,202,772 3,202,792 3,202,795 3,202,796 3,202,799 3,202,816 3,202,830 3,202,857 3,202,861 3,202,875 3,202,876 3,202,900 3,202,920 3,202,923 3,202,954 3,202,959

38 : 3,201,924 3,201,931 3,201,952 3,202,061 3,202,158 3,202,370 3,202,371

39 : Re.25,842 3,202,170 3,202,334 3,202,977

41 : 3,201,890 3,201,925 3,202,155 3,202,305 3,202,416 3,202,475 3,202,491 3,202,768 3,202,902 3,202,995

42 : 3,201,821 3,201,833 3,201,888 3,201,919 3,201,945 3,201,970 3,202,062 3,202,108 3,202,130 3,202,131 3,202,167 3,202,216 3,202,217 3,202,218 3,202,220 3,202,299 3,202,310 3,202,327 3,202,361 3,202,400 3,202,531 3,202,602 3,202,614 3,202,615 3,202,704 3,202,721 3,202,732 3,202,815 3,202,838 3,202,926

43 : 3,202,378

45 : 3,202,114 3,202,240 3,202,243 3,202,382 3,202,626 3,202,909 3,202,924 3,202,952 3,202,998

46 : 3,201,806 3,201,822 3,201,863 3,201,951 3,202,098

46 : 3,202,110	46 : 3,202,962	48 : 3,201,848	48 : 3,202,119	48 : 3,202,343	48 : 3,202,885
3,202,154	3,202,963	3,201,878	3,202,137	3,202,345	3,202,903
3,202,172	47 : 3,201,842	3,201,885	3,202,174	3,202,369	3,203,002
3,202,304	3,202,401	3,201,898	3,202,263	3,202,536	49 : 3,202,455
3,202,461	3,202,800	3,201,949	3,202,317	3,202,790	50 : 3,201,875
3,202,821					

DESIGN PATENTS

4 : 202,025	9 : 202,072	19 : 202,047	24 : 202,080	31 : 202,058	37 : 202,026
202,027	11 : 202,085	202,051	29 : 202,053	202,063	202,029
202,046	12 : 202,042	20 : 202,023	202,065	202,066	202,036
202,048	202,043	21 : 202,032	202,068	202,067	202,040
202,056	202,050	202,033	202,073	202,076	202,071
202,064	202,093	202,034	202,075	202,078	48 : 202,086
202,074	202,096	202,049	31 : 202,031	202,079	202,087
5 : 202,055	13 : 202,021	202,070	202,037	202,081	202,088
6 : 202,060	202,045	202,082	202,038	202,083	202,089
202,069	14 : 202,057	202,094	202,041	202,084	202,090
9 : 202,028	16 : 202,022	22 : 202,039	202,044	34 : 202,030	202,091
202,052	19 : 202,024	24 : 202,077	202,054	202,035	202,092

PLANT PATENTS

4 : 2,548					

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

August 24, 1965 Volume 817 Number 4

TRADEMARKS

NOTICES

International Convention for the Protection of Industrial Property

Adherence of Uganda to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence of the Government of Uganda to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect June 14, 1965.

EDWARD J. BRENNER,
July 20, 1965. *Commissioner of Patents.*

International Convention for the Protection of Industrial Property

Adherence of Kenya to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland, of the adherence of the Republic of Kenya to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect June 14, 1965.

EDWARD J. BRENNER,
July 20, 1965. *Commissioner of Patents.*

CONDITION OF TRADEMARK APPLICATIONS AS OF JUNE 30, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	16,698
Date of oldest new application	Jan. 2, 1965
Date of oldest amended application	Jan. 4, 1965

J. H. MERCHANT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	1-2-65	1-4-65
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-4-65	1-4-65
Renewals (All Classes)	6-8-65	6-28-65
Sec. 12 (c) Publications (All Classes)	6-16-65	.....

Applications filed during the month of June 1965—2,486

Registrations Issued ..... 353—No. 794,609 to No. 794,961
Renewals Issued 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 60,196 (WEDGWOOD), Josiah Wedgwood & Sons, Ltd., Porcelain, stoneware, and earthenware, including jasper, **filed** Apr. 9, 1965, D.C., S.D.N.Y., Doc. 65/1077, *Josiah Wedgwood & Sons, Ltd. et ano.* v. *Sperling & Schwartz, Inc. et al.*

Reg. No. 88,745 (THE FLORSHEIM SHOE), The Florsheim Shoe Company, Cloth and leather boots and shoes; **Reg. No. 146,787** (THE FLORSHEIM SHOE AND DESIGN), same, Boots and shoes made of leather; **Reg. No. 203,292** (FLORSHEIM FEETURE ARCH AND DESIGN), same, Men's leather shoes; **Reg. No. 240,767** (FOR THE MAN WHO CARES THE FLORSHEIM SHOE AND DESIGN), same, Shoes made of leather; **Reg. No. 392,748** (THE FLORSHEIM SHOE AND DESIGN), same, Shoes made of leather and/or cloth; **Reg. No. 520,165** (THE FLORSHEIM SHOE), same, Cloth and leather boots and shoes; **Reg. No. 535,811** (THE FLORSHEIM SHOE AND DESIGN), same, Men's and women's shoes, sport shoes, and boots; **Reg. No. 559,429** (FLORSHEIM in script), same, Men's and women's shoes and boots; **Reg. No. 650,959**, same, International Shoe Company, Shoes, **filed** Apr. 8, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c546, *International Shoe company* v. *L. & A. Shoes et al.*

Reg. No. 146,787. (See Reg. No. 88,745.)

Reg. No. 157,669 (DRANO), P. W. Drackett & Sons Company (now by change of name The Drackett Chemical Company), Chemical for cleansing drains, sinks, washbowls, etc.; **Reg. No. 399,245**, same, The Drackett Company, same, **filed** Mar. 15, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c385, *The Drackett Company* v. *Irving Products Co., Inc. et al.*

Reg. No. 203,292. (See Reg. No. 88,745.)

Reg. No. 240,767. (See Reg. No. 88,745.)

Reg. No. 318,243 (THERMOPANE), Charles D. Haven, Flat glass—namely, window glass, plate glass, safety glass, transparent glass, translucent glass, and opaque glass; **Reg. No. 396,704** (THERMOPANE in script), Libbey-Owens-Ford Glass Company, Multiple glass sheet glazing units for buildings, display windows, display cases, and the like, **filed** Apr. 9, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c549, *Libbey-Owens-Ford Glass Co.* v. *Di Mucci Home Builders.* Final consent judgment; trademarks held valid and infringed; defendant enjoined May 3, 1965.

Reg. No. 337,664 (PERSONNA), Personna Blade Co., Inc., Razor blades; **Reg. No. 436,340**, same, Razor blades, slicers, butcher knives, utility knives, carving knives, and pocket knives, **filed** Nov. 2, 1964, D.C. Md. (Baltimore), Doc. 15934, *Philip Morris, Incorporated* v. *Stieff Co., Inc.* Order of dismissal without prejudice Apr. 15, 1965.

Reg. No. 396,704. (See Reg. No. 318,243.)

Reg. No. 392,748. (See Reg. No. 88,745.)

Reg. No. 399,245. (See Reg. No. 157,669.)

Reg. No. 436,340. (See Reg. No. 337,664.)

Reg. No. 436,540 (SUN CHEMICAL CORPORATION AND DESIGN), Sun Chemical Corporation, Printing inks; **Reg. No. 516,886** (SUNTONE), same, Clear, and pigmented resin-base emulsions for use in printing and decorating fabrics; **Reg. No. 550,560** (SUNBO AND DESIGN), same, Pigment-resin dispersions in chip and paste form; **Reg. No. 621,578** (SUNBRITE), same, Printing ink; **Reg. No. 733,237** (SUN AND DESIGN), same, Inks, flexographic inks, letterpress inks, offset inks, etc.; **Reg. No. 739,875**, same, Chemicals and chemical compositions for use in the textile industries, including textile delustrants, softeners, dyeing assistants, etc.; **Reg. No. 753,172** (SUNGLO), same, Fluorescent inks including letterpress inks, offset inks, flexographic inks and gravure inks; **Reg. No. 757,993** (SUNBOW), same, Water-in-oil base pigments, **filed** Mar. 22, 1965, D.C., N.D. Calif. (San Francisco), Doc. 43429, *Sun Chemical Corp.* v. *The Sun Ink Co.*

Reg. No. 502,657 (AVON), Avon Products, Inc., Toothbrushes; **Reg. No. 633,318**, same, Cosmestics and toiletries—namely, perfume, toilet water, powder compacts, lipstick, etc.; **Reg. No. 663,255**, same, Shampoo preparations, toilet soaps, antiseptic soaps, and white shoe dressing; **Reg. No. 674,387**, same, Mothproofing and mothkilling preparations and room deodorizing preparations; **Reg. No. 679,421** (AVON PINK LACE), same, Lipsticks; **Reg. No. 692,928** (AVON), same, Perfumery, cosmetics, and dentifirices; **Reg. No. 724,313** (AVON HERE'S MY HEART), same, Cologne, perfume, toilet water, body powder, face powder, sachet, bath salts, and bath oil, **filed** Jan. 2, 1964, D.C., S.D.N.Y., Doc. 64/4, *Avon Products, Inc.* v. *Avon International Corp. et ano.* Stipulation and order of dismissal with prejudice Mar. 12, 1965.

Reg. No. 516,886. (See Reg. No. 436,540.)

Reg. No. 520,165. (See Reg. No. 88,745.)

Reg. No. 535,811. (See Reg. No. 88,745.)

Reg. No. 543,116 (PHISOHEX), Winthrop-Stearns, Inc., Antibacterial and disinfectant preparation for treatment of and use on the skin and mucous membranes; **Reg. No. 562,187**, same, Emollient, sudsing, antibacterial detergent containing hexachlorophene and put up in cream form for use on the skin and mucous membranes, **filed** Aug. 5, 1964, D.C.N.J. (Newark), Doc. 724–64, *Sterling Drug Inc.* v. *E. J. Korvette, Inc.* Case dismissed Mar. 16, 1965. **Same, filed** June 4, 1965, D.C., S.D.N.Y., Doc. 65/1715, *Sterling Drug Inc.* v. *Henry Schein.*

Reg. No. 550,560. (See Reg. No. 436,540.)

Reg. No. 556,576 ("21" BRANDS), "21" Brands Distillers Corporation, Whiskey; **Reg. No. 670,725** ("21" BRANDS CLUB SPECIAL), "21" Brands, Inc., Blended whiskey; **Reg. No. 662,656** (TWENTY-ONE BRANDS, INC. AND DESIGN), same, **filed** Nov. 14, 1962, D.C., W.D. Wash. (Seattle), Doc. 5725, *"21" Brands, Inc.* v. *K & L Beverage Company et al.* Order of dismissal Oct. 30, 1963.

Reg. No. 559,429. (See Reg. No. 88,745.)

Reg. No. 562,187. (See Reg. No. 543,116.)

Reg. No. 621,578. (See Reg. No. 436,540.)

Reg. No. 633,318. (See Reg. No. 502,657.)

Reg. No. 650,959. (See Reg. No. 88,745.)

Reg. No. 652,078 (JUNIOR ACCENT), Junior Accent, Inc., Women's dresses and women's ensembles, comprising combinations of dress with coat or dress with jacket, **filed** Apr. 9, 1965, D.C., S.D.N.Y., Doc. 65/1060, *Jonathan Logan, Inc. et ano.* v. *Parade Dress Co., Inc. et ano.* Consent judgment; defendants enjoined June 23, 1965.

Reg. No. 659,989 (FABROID), Weatherguard Products Corp., Synthetic rubberized impermeable roll sheeting for use as a waterproofing barrier, **filed** June 1, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–569, *Weatherguard Products Corp.* v. *Structural Specialties Corp.* Order discontinuing and dismissing action Apr. 9, 1965.

Reg. No. 663,255. (See Reg. No. 502,657.)

Reg. No. 670,725. (See Reg. No. 556,576.)

Reg. No. 674,387. (See Reg. No. 502,657.)

Reg. No. 679,421. (See Reg. No. 502,657.)

Reg. No. 682,656. (See Reg. No. 556,576.)

Reg. No. 692,928. (See Reg. No. 502,657.)

Reg. No. 704,772(a) (SERVICEMASTER AND DESIGN), Wade, Wenger & Associates, Inc., General household, office, and institutional cleaning and renovating services, such as wall and window washing, window shades, blind and drapery cleaning, etc., **filed** Mar. 18, 1964, D.C., N.D. Ohio (Cleveland), Doc. C–64–43, *Wade, Wenger Servicemaster Company* v. *Gene O. Cleary et al.* Consent judgment; defendants enjoined July 15, 1965.

Reg. No. 704,772(b); **Reg. No. 782,584** (SERVICEMASTER), Wade, Wenger Servicemaster Co., Maintenance services for cleaning interiors of commercial buildings and private homes and furnishings thereof, **filed** Mar. 30, 1965, D.C., N.D.N.Y. (Utica), Doc. 65/131, *Wade, Wenger Servicemaster Co.* v. *Service Matic Co. and/or Service Magic Klean et al.*

Reg. No. 721,257 (SOFTIQUE), Miahati, Inc., Bath oil, **filed** Apr. 1, 1965, D.C., S.D.N.Y., Doc. 65/980, *Bristol-Myers Co.* v. *Hazel Bishop, Inc.*

Reg. No. 724,313. (See Reg. No. 502,657.)

Reg. No. 730,298 (TIPARILLO), General Cigar Co., Inc., Cigars provided with tipped ends, **filed** Apr. 7, 1965, D.C., M.D. Fla. (Tampa), Doc. 65–90–T, *General Cigar Co., Inc.* v. *The Antonio Co., Inc. et al.*

Reg. No. 733,237. (See Reg. No. 436,540.)

Reg. No. 739,875. (See Reg. No. 436,540.)

Reg. No. 753,172. (See Reg. No. 436,540.)

Reg. No. 757,993 (BACK MAGIC), Lady Lynne Lingerie, Inc., Slips, nightgowns, brassieres, and girdles for women, **filed** Oct. 29, 1964, D.C., S.D.N.Y., Doc. 64/3315, *Lady Lynne Lingerie, Inc.* v. *Youthcraft Creations, Inc.* Stipulation and order of dismissal without prejudice Apr. 21, 1965.

Reg. No. 757,993. (See Reg. No. 436,540.)

Reg. No. 782,584. (See Reg. No. 704,772(b).)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 195,844. Celestron Associates, Inc., Valhalla, N.Y. Filed June 17, 1964.

FORTRAN INFOGRAPH

The word "Fortran" is disclaimed apart from the mark as shown.

Class 26—Measuring and Scientific Appliances

For Automatic Mechanical Retrieval Device of the Type That Displays a Pre-Selected Data Sheet From a Stack of Data Sheets.

Class 38—Prints and Publications

For Data Sheets Contained Therein.

First use Nov. 16, 1963.

SN 199,417. Toyo Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Aug. 6, 1964.

ELASFIT

Owner of Japanese Reg. Nos. 618,400 and 618,678, dated June 24, 1963, and June 26, 1963, respectively.

Class 39—Clothing

For Articles of Clothing—Namely, Men's, Women's, and Children's Ski Pants, Short Pants, Trousers, Slacks, Anoraks, Jackets, Jumpers, Sweaters, Suits, Skirts, Dresses, and Swimming Suits Excluding Special Athletic Use Apparel.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Piece Goods To Be Used in Making Trousers, Slacks, Ski Pants, Anoraks, Jackets, and Swimming Suits.

SN 199,426. Markel Service, Inc., Richmond, Va. Filed Mar. 31, 1964.



The drawing is lined for yellow.

Class 101—Advertising and Business

For Insurance Agency Services.

Class 105—Transportation and Storage

For Investigation Services for Transportation Businesses—Namely, Checking and Reporting Road Behavior of Transportation Companies' Employees.

First use April 1951.

SN 204,844. Schottel-Werft Josef Becker K.G., Oberspay (Rhine), Germany. Filed Oct. 26, 1964.

SCHOTTEL

Owner of German Reg. No. 779,886, dated Aug. 9, 1963; and U.S. Reg. No. 755,858.

Class 19—Vehicles

For Watercraft.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Marine Engines and Marine Drives and Transmissions.

SN 209,978. American Velcro, Inc., Manchester, N.H. Filed Jan. 15, 1965.

VELSTRAP

Class 7—Cordage

For Strapping of Man-Made Fibers Used Separately and/or in Conjunction With a Plastic or Metal Ring for Bale, Package, Machinery and Other Packing.

Class 39—Clothing

For Strapping of Man-Made Fibers Used Separately and/or in Conjunction With a Plastic or Metal Ring Used as Belts, Clothing Straps and for Decorative Apparel Purposes.

Class 44—Dental, Medical, and Surgical Appliances

For Strapping of Man-Made Fibers Used Separately and/or in Conjunction With a Plastic or Metal Ring for Restraint of Limbs and/or Body in Connection With Operating Tables, Stretchers, Wheel Chairs, Braces, Splints and Crutches; Adjustable Cinching Straps for Restriction of Blood and/or Fluids.

First use prior to Sept. 15, 1964.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 209,790. Keystone Plastics, Inc., Newark, N.J. Filed Jan. 12, 1965.

KEYSTRAND TC

Owner of Reg. No. 768,552.
For Synthetic Filaments for Use as Broom Bristles.
First use in or about January 1963.

SN 212,282. Ray Black, Midland, Tex. Filed Feb. 18, 1965.

OLD DAN'S

For Plain, Raw Mesquite Wood for Barbecuing and Grilling Meat, etc.
First use May 1964.

Class 2—Receptacles

SN 192,805. Diamond National Corporation, New York, N.Y. Filed May 6, 1964.

DIAMOND

For Produce Packaging Pulp Trays.
First use Apr. 9, 1964.

SN 201,551. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Sept. 9, 1964.

TUPPER!

Owner of Reg. No. 600,830.
For Plastic Household Containers and Covers Therefor.
First use Apr. 1, 1949.

SN 203,033. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Sept. 30, 1964.



Owner of Reg. No. 762,921.
For Plastic Household Containers and Covers Therefor.
First use in the year 1949.

SN 204,503. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Oct. 21, 1964.

SEALWARE

For Plastic Household Containers and Covers Therefor.
First use Oct. 13, 1964.

SN 208,648. Vision Wrap Industries, Inc., Schiller Park, Ill. Filed Dec. 21, 1964.

WIDE-SEAL

For Polyethylene Bags for Handling of Milk Samples.
First use at least as early as November 1964.

SN 209,218. Aacon Contracting Co., Inc., Brooklyn, N.Y. Filed Dec. 8, 1964.

BOXED BY AACON NEW YORK

Owner of Reg. Nos. 417,817, 660,653, and 662,869.
For Manufactured Wooden Cases Used for Packing and Boxing Autos, Machinery, etc. for Export Shipments.
First use Oct. 1, 1948.

Class 4—Abrasives and Polishing Materials

SN 206,630. Lestoil Products Inc., Holyoke, Mass. Filed Nov. 20, 1964.

DUST 'N WAX

Owner of Reg. Nos. 754,832, 754,833, and 743,164.
For Furniture Polish.
First use June 17, 1959.

Class 5—Adhesives

SN 207,911. L. H. Shingle Company, Camden, N.J. Filed Dec. 10, 1964.

DISTIC

Owner of Reg. No. 196,427.
For Disc Cement.
First use as early as June 1, 1924.

Class 6—Chemicals and Chemical Compositions

SN 150,476. United Shoe Machinery Corporation, Boston, Mass. Filed Aug. 3, 1962.

USM

For Solvents, Chemical Preparations for Use in Forming Plastic Compositions and for Treating Leather.
First use Apr. 25, 1962.

SN 192,774. Wickman Pharmaceuticals, Los Angeles, Calif. Filed May 5, 1964.

P.F.6

For Preparation Having Antiseptic and Deodorant Properties for Addition to Dental Pumice as an Aid to Keeping It Soft and Workable.
First use Feb. 28, 1964.

SN 201,395. The Dow Chemical Company, Midland, Mich. Filed Sept. 8, 1964.

DURSBAN

For Insecticides.
First use Oct. 4, 1962.

SN 203,683. Nutrilite Products, Inc., Buena Park, Calif. Filed Oct. 9, 1964.

NPI

Owner of Reg. No. 664,571.
For Aerosol Spray, Air Freshener, and Deodoriser Products in Hand-Held Containers.
First use Aug. 10, 1964.

SN 204,578. Indelco Incorporated, Beverly, Mass. Filed Oct. 22, 1964.

INDELON

For Aluminum Oxide for Use in Coating Electronic Tube Parts.
First use Oct. 7, 1964.

SN 206,665. Sylvan Pools, Inc., Doylestown, Pa. Filed Nov. 20, 1964.

Sylvan pool treat

The words "Pool Treat" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 616,657, 622,461, and 788,020.
For Chlorine Liberating Preparation for Use in Swimming Pool Water.
First use on or about Oct. 4, 1962.

Class 12—Construction Materials

SN 175,287. Jones-Blair Paint Company, Inc., Dallas, Tex. Filed Aug. 19, 1963.

AUTO-GARD

For Fluid Applied Elastomeric Membranes Providing Waterproofing, Traction and Protective Covering for Garage Floors, Parking Station Floors, Driveways and Other Heavy Traffic Bearing Areas.
First use on or about June 1, 1962.

SN 194,198. Magnotti & Gaudelli, Pittsburgh, Pa. Filed May 25, 1964.

WALLCRETE

For Building Blocks for Use in Constructing Retaining Walls and Other Structures.
First use on or about Sept. 1, 1962.

SN 197,330. Rockaway Metal Products Corp., Inwood, N.Y. Filed July 7, 1964.

SpaceStyler

For Office Partitions, Desk Top Partitions, and Room Dividers.
First use Apr. 6, 1964.

SN 211,922. Potlatch Forests, Inc., Lewiston, Idaho. Filed Feb. 12, 1965.

TREND TEX

For Wooden Siding.
First use July 14, 1964.

SN 213,407. The Ceilcoate Company, Inc., Cleveland, Ohio. Filed Mar. 5, 1965.

TELLERETTE

For Tower and Scrubber Packing.
First use July 17, 1963.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 187,889. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Mar. 3, 1964.

JEL-N-SERVE

For Plastic Gelatine Molds.
First use Feb. 17, 1964.

SN 198,714. C.S.C. Corporation, Wort Wayne, Ind. Filed July 29, 1964.

CONTINENTAL

For Tail Pipe Hangers, Muffler Hangers, and U-Type Clamps for General Use.
First use Apr. 1, 1964.

SN 205,358. Robert B. Sala, San Francisco, Calif. Filed Nov. 2, 1964.

TC

For Threaded Bolts With Tool Engagement on Leading Edge.
First use Dec. 5, 1963.

SN 208,608. Owens-Illinois Glass Company, Toledo, Ohio. Filed Dec. 21, 1964.

LIBBEY

Owner of Reg. No. 54,172.
For Cookware Trivets, Warmers and Detachable Handles Made of Metal and Combinations of Metal and Plastic.
First use July 30, 1964.

SN 208,662. Owens-Illinois Glass Company, Toledo, Ohio. Filed Dec. 21, 1964.

L

Owner of Reg. No. 651,483.
For Cookware Trivets, Warmers and Detachable Handles Made of Metal and Combinations of Metal and Plastic.
First use July 30, 1964.

SN 211,984. The Bishop and Babcock Corporation, Toledo, Ohio, by change of name and assignment from The Bishop and Babcock Corporation, Toledo, Ohio. Filed Feb. 15, 1965.

PRESTOLE PLUS

Owner of Reg. No. 762,170.
For Sheet Metal Screw Receiving Fasteners.
First use December 1964.

SN 211,985. The Bishop and Babcock Corporation, Toledo, Ohio, by change of name and assignment from The Bishop and Babcock Corporation, Toledo, Ohio. Filed Feb. 15, 1965.

PRESS-IN-SERT

Owner of Reg. No. 762,170.
For Sheet Metal Screw Receiving Fasteners.
First use December 1964.

Class 14—Metals and Metal Castings and Forgings

SN 197,167. Olin Mathieson Chemical Corporation, New York, N.Y. Filed July 6, 1964.

POROBOND

For Semi-Finished Metallic Component Material Used To Manufacture Heat Exchangers, Gas Burners, Condenser Tubes, and Chemical Processing Apparatus.
First use Feb. 19, 1964.

Class 16—Protective and Decorative Coatings

SN 156,628. The Lord Baltimore Press, Incorporated, New York, N.Y. Filed Nov. 5, 1962.

PATTERN-GLOW

For Pattern Wax Coatings Forming Component Parts of Paper and Paperboard Folding Cartons for Use in Packaging Other Goods.
First use Mar. 22, 1962.

SN 182,962. Olo Paint, Incorporated, Cleveland, Ohio. Filed Dec. 13, 1963.

DENSO

For Protective and Decorative Coatings—viz, Interior and Exterior Paints, Enamels, Primers, and Thinners.
First use 1930.

Class 17—Tobacco Products

SN 208,564. General Cigar Co., Inc., d.b.a. Gradiaz, Annis Division of General Cigar Co., Inc., New York, N.Y. Filed Dec. 21, 1964.

SHAKESPEARE

Owner of Reg. No. 187,714.
For Cigars.
First use 1872.

SN 212,669. Wally Frank, Ltd., New York, N.Y. Filed Feb. 24, 1965.

LANCER

For Cigars.
First use on or about Feb. 1, 1963.

Class 18—Medicines and Pharmaceutical Preparations

SN 156,344. Travenol Laboratories, Inc., Morton Grove, Ill. Filed Oct. 31, 1962.

SIGMAFORM

For Disposable Diagnostic Unit Containing Silicone Polymer Formula and Catalyst.
First use Sept. 18, 1962.

SN 188,040. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Mar. 5, 1964.

SYNALATE

For Steroid Hormone Preparation for Topical Use.
First use Jan. 24, 1964.

SN 188,845. Empire Laboratories Limited, Toronto, Ontario, Canada. Filed Mar. 10, 1964.

E

Owner of Canadian Reg. No. 133,139, dated Oct. 18, 1963.
For Pharmaceutical Preparations, Excepting Vitamin Tablets.

SN 189,058. Delta Drug Corporation, Jacksonville, Fla. Filed Mar. 19, 1964.

EVIRON

For Pharmaceutical Preparation Used in the Treatment of Iron Deficiency Anemia.
First use Feb. 28, 1964.

SN 195,862. Harich Chemical Company, Casselberry, Fla. Filed June 17, 1964.

VETANICON

For Analgesic Preparation for Treating Animals.
First use on or about Feb. 15, 1964.

SN 196,006. Anderson, Clayton & Co., Houston, Tex. Filed June 19, 1964.

FLY-GON

For Medicated Livestock Feed.
First use June 8, 1964.

SN 198,589. Julius Schmid, Inc., New York, N.Y. Filed July 27, 1964.

VAGITENE

Owner of Reg. No. 617,117.
For Douche Powder.
First use on or about June 26, 1964.

SN 206,810. Aquarium Products, Baltimore, Md. Filed Nov. 24, 1964.

AQUARI-SOL

For Combined Preventative and Cure for Ichthyophthirius and Anti-Fungicide Preparation for Treating Fish.

SN 209,662. Bristol-Myers Company, New York, N.Y. Filed Jan. 11, 1965.

BUFATRAN

Owner of Reg. No. 566,190.
For Analgesic-Antacid Tablet.
First use Aug. 3, 1961.

SN 210,277. Colgate-Palmolive Company, New York, N.Y. Filed Jan. 21, 1965.

HELP

Owner of Reg. No. 650,240.
For Therapeutic Hand Cream.
First use Nov. 30, 1964.

SN 211,670. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Feb. 9, 1965.

NEO-TERRAMYCIN

Owner of Reg. No. 577,504.
For Antibiotic Preparation for Veterinary Use.
First use July 17, 1964.

SN 211,865. Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y. Filed Feb. 12, 1965.

AEROFED

For Preparation for Temporary Relief of Nasal Congestion.
First use Feb. 2, 1965.

SN 213,272. American Home Products Corporation, New York, N.Y. Filed Mar. 4, 1965.

COLPRO

Owner of Reg. No. 601,557.
For Progestational Preparation.
First use Feb. 19, 1965.

SN 213,399. Bristol-Myers Company, New York, N.Y. Filed Mar. 5, 1965.

BENURON

For Diuretic.
First use Feb. 5, 1965.

SN 213,940. Bryant Pharmaceutical Corp., Mount Vernon, N.Y. Filed Mar. 12, 1965.

SPRAE-SEPTIC

For Medicinal Spray for Minor Cuts, Scrapes, Burns, Scratches, etc.
First use Feb. 25, 1965.

SN 214,427. E. D. Bullard Company, Sausalito, Calif. Filed Mar. 18, 1965.

ABT

For Medicine for Treatment of Burns.
First use about August 1958.

SN 214,762. Hudson National, Inc., d.b.a. Hudson Vitamin Products, New York, N.Y. Filed Mar. 23, 1965.

ALASOR

For Medicated Skin Cream and Lotion for the Relief of Itching and Scaling of Psoriasis.
First use Mar. 15, 1965.

Class 19—Vehicles

SN 190,094. Alexander W. McClay, Jr., Petersburg, Va. Filed Apr. 1, 1964.



For Oar Holding Attachment for Mounting on Boats.
First use July 1962.

SN 209,566. E. J. Wright Central Limited, Strathroy, Ontario, Canada. Filed Jan. 7, 1965.

VIDEO-MATIC

Owner of Canadian Reg. No. 137,690, dated Oct. 9, 1964.
For Shopping Carts.

SN 210,432. General Motors Corporation, Detroit, Mich. Filed Jan. 22, 1965.

442

For Automobiles.
First use Apr. 3, 1964.

Class 22—Games, Toys, and Sporting Goods

SN 168,605. Great Southern Corporation, Memphis, Tenn. Filed May 10, 1963.



The drawing is lined for the color blue.
For Packaged Inexpensive Game Equipment for Playing Various Indoor or Parlor Games.
First use May 16, 1962.

SN 182,588. T. Cohn, Inc., Brooklyn, N.Y. Filed Dec. 9, 1963.

TEE CEE

Owner of Reg. No. 726,932.
For Target Games, Toy Farm Sets, Doll Houses, Toy Carriages, Hobby Horses, Toy Typewriters, Toy Vehicles, Toy Bats and Balls, Toy Motors; Apparatus Sold as Units for Playing Hockey, Bowling, Target, and Similar Type Games.
First use Oct. 8, 1963.

SN 185,621. Draper Shade and Screen Co., Spiceland, Ind. Filed Jan. 29, 1964.

DIAGRAMA

For Charts Simulating a Basketball Court for Use in Illustrating Plays.
First use Jan. 28, 1963.

SN 189,351. Old Pal, Inc., Lititz, Pa. Filed Mar. 23, 1964. Owner of Reg. No. 613,544.

OLD PAL

For Fishing Equipment—Namely, Minnow Buckets, Bait Boxes, Fly and Leader Boxes, Minnow Traps, Wade Cans, Fishing Rods, and Reels Therefor.
First use Mar. 1, 1934.

SN 189,495. Old Pal, Inc., Lititz, Pa. Filed Mar. 24, 1964. Owner of Reg. No. 613,544.



For Fishing Equipment—Namely, Minnow Buckets, Bait Boxes, Fly and Leader Boxes, Minnow Traps, Wade Cans, Fishing Rods and Reels Therefor.
First use at least as early as August 1963; Mar. 1, 1934, as to the words "Old Pal."

SN 203,279. George Nicoll O'Leven Limited, Leven, Fife, Scotland. Filed Oct. 5, 1964.

PINSPLITTER

For Golf Balls and Golf Clubs.
First use in the year 1934; in commerce 1934.

SN 207,663. Ruco Corp., Los Angeles, Calif. Filed Dec. 7, 1964.



For Plastic Playing Cards.
First use Feb. 1, 1962.

SN 208,546. C. L. Cleek, Pacific Palisades, Calif. Filed Dec. 21, 1964.

WHATS IT

For Decorative Animal Toy Characters.
First use Aug. 1, 1964.

SN 208,803. Arkon Products Inc., Paterson, N.J. Filed Dec. 24, 1964.

ARK

For Plastic Fish Net Floats.
First use Sept. 15, 1955.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 195,662. Guenther & Co., Frankfurt am Main, Germany. Filed June 15, 1964.

TITAN

Owner of German Reg. Nos. 48,396 and 389,959, dated Feb. 13, 1901, and Feb. 4, 1928, respectively.

For Manual and Machine Tools, Particularly Twist Drills, Reaming Tools, Taps, Threading Tools, Milling Tools, and Broaching Tools.

SN 199,293. Link-Belt Company, Chicago, Ill. Filed Aug. 5, 1964.

PULL-PAK

For Power Operated Capstans, Winches or Windlasses Including a Rotatable Drum and Drive Therefor Mounted on a Common Base, and Parts Thereof.

First use July 24, 1964.

SN 202,159. Lee Saw & Manufacturing Co., Chicago, Ill. Filed Sept. 18, 1964.



For Band Saw Blades.

First use on or about June 19, 1964.

SN 204,172. Samuel M. Langston Company, Camden, N.J. Filed Oct. 16, 1964.

GLU-PRINT

For Machines for Applying Adhesive for Bonding of Bottom Liners to Medium in Manufacture of Corrugated Boards.

First use Aug. 29, 1964.

SN 209,889. Wild & Stevens, Incorporated, Newton Highlands, Mass. Filed Jan. 13, 1965.

SOL

For Lithographic Rollers.

First use Oct. 8, 1964.

SN 209,915. Conco Engineering Works, Inc., Mendota, Ill. Filed Jan. 14, 1965.

ELECTRO-ROD

For Sewer Cleaning Machines, Parts Thereof, and Accessories Therefor.

First use 1946.

SN 212,717. Van Dorn Company, d.b.a. Van Dorn Co., Cleveland, Ohio. Filed Feb. 24, 1965.

SCREW-TECTOR

For Plastic Injection Molding Machines.

First use Nov. 27, 1964.

Class 25—Locks and Safes

SN 209,617. Master Lock Company, Milwaukee, Wis. Filed Jan. 8, 1965.



Owner of Reg. No. 230,311.

For Padlocks.

First use Sept. 14, 1964.

Class 26—Measuring and Scientific Appliances

SN 155,273. Frede Duelund Nielsen, d.b.a. Linex, Copenhagen, Denmark. Filed Oct. 16, 1962.

LINEX

Owner of Danish Reg. Nos. 161/51, dated Feb. 10, 1951, and 304/44, dated Apr. 15, 1944.

For Drawing and Drafting Instruments Such as Triangles, Protractors, Parallel Rulers, Rulers, Scale Rulers, T-Squares, Templates, Curves, and Cross Hatching Machines.

First use in or about April 1944; in commerce Apr. 24, 1957.

SN 179,535. Howe Richardson Scale Company, Clifton, N.J. Filed Oct. 22, 1963.

MICRO-WEIGH

For Weighing Apparatus.

First use Sept. 27, 1963.

SN 198,981. Sekonic Co., Ltd., Nerima-ku, Tokyo, Japan. Filed July 31, 1964.

SEKONIC

Owner of U.S. Reg. Nos. 755,965 and 765,051.

For Photographic Equipment—Namely, Light Meters, Cameras, and Projectors.

First use June 1, 1951; in commerce Dec. 10, 1954.

SN 202,341. AGM Allgemeiner Maschinenbau Gesellschaft m.b.H. & Co., Micheldorf, Upper Austria, Austria. Filed Sept. 21, 1964.



Priority claimed under Sec. 44(d) on Austrian application filed Apr. 23, 1964; Reg. No. 53,428, dated Oct. 13, 1964.

For Spectacles of All Kinds, Particularly Reading and Protective Spectacles; Nose Pieces, Spectacle Lenses, Spectacle Frames; Sun Glasses, Eye Glasses, Lenses, Magnifying Glasses, Objective, Field Glasses, Telescopes, Microscopes, Goggles, Optical Mirrors, and Optical Filters.

SN 203,676. McGraw-Edison Company, West Orange, N.J. Filed Oct. 9, 1964.

Carbonaire

Owner of Reg. No. 540,151.

For Battery Testmeters.

First use Apr. 14, 1964.

SN 204,510. Saphira Creations, Inc., New York, N.Y. Filed Oct. 21, 1964.

Saphira

For Eyeglass Frames.

First use Oct. 8, 1964.

SN 204,874. Anken Chemical & Film Corporation, Newton, N.J. Filed Oct. 27, 1964.

ANKEN-DRY

Owner of Reg. No. 415,206.

For Sensitized Photographic Papers and Unsensitized, Coated Photocopy Papers.

First use Sept. 3, 1964.

SN 206,284. Parade Publications, Inc., New York, N.Y. Filed Nov. 16, 1964.



The name "Pauline" is fanciful. The word "Patterns" is disclaimed apart from the mark as shown.

For Dress Patterns.

First use Sept. 8, 1964; August 1954 as to the words "Parade" and "Patterns by Pauline."

SN 206,342. The Bendix Corporation, Detroit, Mich. Filed Nov. 17, 1964.

PROFILOMETER

For Instruments for Measuring Surface Roughness.

First use Feb. 15, 1937.

SN 207,845. Viewlex, Inc., Holbrook, N.Y. Filed Dec. 9, 1964.

MULTIFAX

For Thermal Copy Materials for Copying Machines, Including Laminating Sheets, Spirit Master Sheets, Transparency Sheets, Offset Master Sheets, and Thermal Copy Sheets.

First use May 27, 1964.

SN 208,501. Technical Operations, Incorporated, Burlington, Mass. Filed Dec. 18, 1964.

ISODENSITRACER

For Two-Dimensional Direct Recording Isophotometers, Microdensitometers and Stepping Attachments, and Parts and Accessories for the Same—Namely, Automatic Programmers, Specimen Table Drives, Recording Table Attachments, Recording Pen Assemblies, Pen Holders and Actuators, Pulse Counters, Aperture Adjustors, Vignetting Controls and Optical Wedges, and Recording Media Adapted for Graphic Marking for Use With Same.

First use on or about June 8, 1964.

SN 209,294. National Welding Equipment Co., Richmond, Calif. Filed Jan. 4, 1965.



Owner of Reg. No. 767,150.

For Flow Controllers, Regulators, and Micrometering Valves.

First use Sept. 12, 1963.

SN 209,349. T. F. Hudgins & Associates, Inc., Houston, Tex. Filed Jan. 5, 1965.

AUTOCATOR

For Logic and Sequencing Control Systems for Industrial Application.

First use Jan. 31, 1959.

SN 209,441. Kay Electric Company, Pine Brook, N.J. Filed Jan. 6, 1965.

MEGA-RULE

Owner of Reg. Nos. 532,401, 717,491, and others.

For Indicating Chart for Standing Wave Parameters Providing a Means for Comparing and Evaluating Commonly Used Functions Which Specify Transmission and Reflection Characteristics of Electromagnetic Waves on Waveguides.

First use Dec. 15, 1964.

SN 209,819. Tektronix, Inc., Beaverton, Oreg. Filed Jan. 12, 1965.

spectrΦpulse

For Electronic Instruments for Spectrum Analysers.

First use February 1964.

SN 210,225. Precision Scientific Company, Chicago, Ill. Filed Jan. 19, 1965.

THERM-O-SWIRL JACK

Owner of Reg. No. 785,986.

For Laboratory Apparatus, Particularly Hot Plates for Heating and Mixing Liquids.

First use July 6, 1964.

SN 210,310. Industrial Instruments, Inc., Cedar Grove, N.J. Filed Jan. 21, 1965.

GROUNDOMETER

For Electrical Instruments for Measuring Earth Resistance.
First use 1927.

SN 211,479. Textron Inc., Rochester, N.Y. Filed Feb. 5, 1965.

SHURAY

For Sunglasses.
First use Dec. 30, 1964.

SN 211,641. Fisher Scientific Company, Pittsburgh, Pa. Filed Feb. 9, 1965.

ACCUMET

For pH Meter.
First use Dec. 24, 1963.

SN 212,960. Braincon Corporation, Marion, Mass. Filed Mar. 1, 1965.

HCM

For Instruments for Measuring Ocean Currents.
First use Feb. 4, 1965.

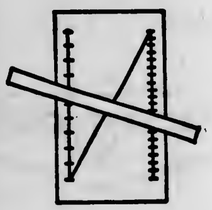
SN 213,098. Data Systems Incorporated, Detroit, Mich. Filed Mar. 2, 1965.

DSI

For Data Processing Apparatus and Component Parts Thereof.
First use on or about Mar. 13, 1963.

SN 213,150. Master Products, Inc., South Miami, Fla. Filed Mar. 2, 1965.

BUDGET-MASTER



For Calculating Device, Specifically for Computing the Unit Cost, Given the Weight and Price of an Item.
First use Oct. 20, 1964.

SN 218,192. Aktiebolaget Bonnierföretagen, Stockholm, Sweden. Filed Mar. 3, 1965.

WEB-O-CHECKER

Owner of Swedish Reg. No. 111,699, dated Jan. 15, 1965.
For Web Testing Equipment.

SN 213,348. Nuclear Data, Inc., Palatine, Ill. Filed Mar. 4, 1965.

PLANCHETMASTER

For Radiation Sample Measuring Apparatus.
First use May 21, 1963.

SN 213,481. Sawyer's, Inc., Portland, Oreg. Filed Mar. 5, 1965.

ROTODISC

For Slide Projectors and Slide Trays.
First use Feb. 12, 1965.

Class 27 — Horological Instruments

SN 193,541. Erismann-Schins S.A., La Neuveville, Switzerland. Filed May 15, 1964.

STABYLFIX

Priority claimed under Sec. 44(d) on Swiss Reg. No. 201,303, dated Nov. 29, 1963.
For Industrial Bearing Blocks, Combined Settings and Shock Absorbers for Horological Instruments, and Parts Therefor.

Class 28 — Jewelry and Precious-Metal Ware

SN 174,242. Henry Rubin, d.b.a. Fine-Gold Jewelry Mfg. Co., New York, N.Y. Filed Aug. 1, 1963.



The term "14K" is disclaimed.
For Gold Jewelry.
First use April 1963.

SN 215,663. Swank, Inc., Attleboro, Mass. Filed Apr. 2, 1965.

LADY SWANK

Owner of Reg. Nos. 259,457 and 511,654.
For Costume Jewelry for Women and Young Women for Personal Wear or Adornment.
First use Mar. 29, 1965.

Class 29 — Brooms, Brushes, and Dusters

SN 203,965. Wilhelm Grueneberg, d.b.a. Buerstenfabrik, Tamsweg, Austria. Filed Oct. 14, 1964.

KOH-I-NOOR

Owner of Austrian Reg. No. 39,908, dated Dec. 4, 1922.
For Hand, Clothes, Hair, Shaving, and Tooth Brushes (Except Artists' Brushes).

Class 31 — Filters and Refrigerators

SN 168,909. Diamond Alkali Company, Cleveland, Ohio. Filed May 15, 1963.

SPLASH

Owner of Reg. No. 710,117.
For Portable Unit for Dissolving Chemicals in Water Treatment of Swimming Pools.
First use Apr. 19, 1963.

SN 219,000. Johnson & Johnson, New Brunswick, N.J. Filed May 17, 1965.



For Dairy Filters.
First use Oct. 26, 1964.

Class 32 — Furniture and Upholstery

SN 201,268. Barrows Industries, Inc., Providence, R.I. Filed Sept. 4, 1964.

SLIM-LINE CONVERTIBLE

Applicant disclaims the word "Convertible" separate and apart from the mark as shown.
For Display Cases for Displaying Jewelry and the Like.
First use on or about July 30, 1964.

SN 207,180. Drexel Enterprises, Inc., Drexel, N.C. Filed Nov. 27, 1964.

VIEWPOINT '70

For Bedroom, Dining Room, and Living Room Furniture.
First use Sept. 29, 1964.

SN 209,308. Royal Furniture Company, Memphis, Tenn. Filed Jan. 4, 1965.



The drawing is lined for red, but no claim is made to color.
For Bedroom Furniture, Comprising Beds, Chests of Drawers, Dressers, Mirrors, Bunk Beds, Corner Desks, Bookcases, Desks, Chairs and Night Stands Made of Wood, Metal and Plastic; Living Room Furniture, Comprising Upholstered and Wood Couches, Lounges, Day-Beds, Dual Sleep Couches, Chairs, Tables and Screens, Said Chairs Including Reclining Chairs, Rockers, Straight Chairs and Swivel Chairs; Dining Room Furniture Comprising Wood and Metal Tables, Storage Buffets, Storage Chinas, Chairs, Buffet-Servers, Hutches and Tea Carts; and Bedding Products, Comprising Innerspring, Foam and/or Cotton Mattresses, Boxsprings, Foundations and Steel Flat and Coil Springs.
First use Sept. 2, 1964.

Class 33 — Glassware

SN 207,613. Libbey-Owens-Ford Glass Company, Toledo, Ohio. Filed Dec. 7, 1964.

SURF

For Glass for Glazing Windows, Doors, Partitions and the Like.
First use Oct. 16, 1964.

SN 207,614. Libbey-Owens-Ford Glass Company, Toledo, Ohio. Filed Dec. 7, 1964.

BAMBOO

For Glass for Glazing Windows, Doors, Partitions and the Like.
First use Oct. 16, 1964.

SN 207,615. Libbey-Owens-Ford Glass Company, Toledo, Ohio. Filed Dec. 7, 1964.

CROSSWELD

For Wired Glass.
First use Oct. 16, 1964.

SN 207,616. Libbey-Owens-Ford Glass Company, Toledo, Ohio. Filed Dec. 7, 1964.

BRILLIANT

For Glass for Glazing Windows, Doors, Partitions and the Like.
First use Oct. 28, 1960.

SN 207,617. Libbey-Owens-Ford Glass Company, Toledo, Ohio. Filed Dec. 7, 1964.

GRASSWEAVE

For Glass for Glazing Windows, Doors, Partitions and the Like.
First use Oct. 16, 1964.

SN 208,594. Libbey-Owens-Ford Glass Company, Toledo, Ohio. Filed Dec. 21, 1964.

DORIC

For Glass for Glazing Windows, Doors, Partitions and the Like.
First use Nov. 10, 1964.

SN 208,607. Owens-Illinois Glass Company, Toledo, Ohio. Filed Dec. 21, 1964.

LIBBEY

Owner of Reg. No. 54,172.
For Kitchenware, Ovenware, Tableware, and Glass Covers Therefor; Said Ware Being Formed of Crystalline Material Produced From Glass by Heat Treatment Thereof.
First use Dec. 5, 1963.

SN 208,661. Owens-Illinois Glass Company, Toledo, Ohio. Filed Dec. 21, 1964.



Owner of Reg. No. 651,486.
For Kitchenware, Ovenware, Tableware, and Glass Covers Therefor; Said Ware Being Formed of Crystalline Material Produced From Glass by Heat Treatment Thereof.
First use Dec. 5, 1963.

SN 208,920. Glaverbel, Societe Anonyme, Brussels, Belgium. Filed Dec. 28, 1964.

mat-o-bel

Owner of Belgian Reg. No. 4,119, dated Mar. 11, 1960.
For Ground or Plate Glass, One Face of Which at Least Has Been Treated in Order To Spread the Light Without Creating Asperities.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 204,047. Certain-Teed Products Corporation, Ardmore, Pa. Filed Oct. 15, 1964.

CERTA-SPACER

For Pipe Positioning Bands—Namely, Bands Used To Provide Positive Separation of Pipe Ends in Pipe or Conduit Assemblies in Which Lengths of Pipe Are Connected by a Coupling Member Adapted To Internally Receive the Pipe Ends.
First use at least as early as Aug. 20, 1964.

Class 36—Musical Instruments and Supplies

SN 192,382. Telcan Limited, East Bridgford, Nottingham, England. Filed June 7, 1965.

TELCAN

Owner of British Reg. No. 850,287, dated June 18, 1963.
For Video Tape, and Video Tape Recording and Reproducing Instruments and Apparatus.

SN 200,506. Ancil A. Swagerty, d.b.a. Swagerty Specialties Company, San Clemente, Calif. Filed Aug. 24, 1964.

Trēhōlipee

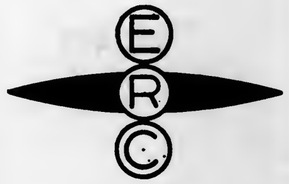
For Ukuleles.
First use on or about July 20, 1964.

SN 200,507. Ancil A. Swagerty, d.b.a. Swagerty Specialties Company, San Clemente, Calif. Filed Aug. 24, 1964.

KOOK-A-LĀ-LEE

For Ukuleles.
First use July 20, 1964.

SN 203,026. Popular Science Publishing Company, Inc., New York, N.Y. Filed Sept. 30, 1964.



For Phonograph Records.
First use Dec. 5, 1963.

SN 207,597. Armen Halburian, d.b.a. Armen Key Co., New York, N.Y. Filed Dec. 7, 1964.

STA-SET

For Tool for Tightening and Adjusting Drums and Musical Instruments.
First use Dec. 1, 1964.

SN 207,680. United Artists Records, Inc., New York, N.Y. Filed Dec. 7, 1964.

VEEP

For Phonograph Records.
First use Sept. 28, 1964.

Class 37—Paper and Stationery

SN 210,304. Graham Paper Company, St. Louis, Mo. Filed Jan. 21, 1965.

KRAFT-SORB

For Paper Towels.
First use 1948.

SN 210,335. The Northwest Paper Company, Cloquet, Minn. Filed Jan. 21, 1965.

NOR-BAN

For Paper—Namely, Fine Printing, Writing, and Converting Papers.
First use Aug. 15, 1964.

SN 210,469. Moore Business Forms, Inc., Niagara Falls, N.Y. Filed Jan. 22, 1965.

KOLOR K/K KEY

For Paper Business Forms, File Folders, and Binders To Hold Business Forms.
First use June 3, 1964.

SN 210,693. Norcross, Inc., New York, N.Y. Filed Jan. 26, 1965.

SHAGGY DOGS

Owner of Reg. No. 771,158.
For Wrapping Paper and Writing Paper.
First use Oct. 28, 1964.

SN 211,070. International Paper Company, New York, N.Y. Filed Feb. 1, 1965.

PAKBAR

For Waterproof Treated Paper and Paperboard.
First use Dec. 17, 1964.

Class 38—Prints and Publications

SN 206,052. B. J. Martin Company, Inc., Chicago, Ill. Filed Nov. 12, 1964.

TODAY'S BUSINESS

Owner of Reg. No. 420,334.
For Illustrated Bimonthly Magazine.
First use Jan. 19, 1945.

SN 206,054. B. J. Martin Company, Inc., Chicago, Ill. Filed Nov. 12, 1964.

ELECTRIFIED INDUSTRY

Owner of Reg. No. 411,649.
For Illustrated Monthly Magazine.
First use June 24, 1937.

SN 209,383. American Book Company, New York, N.Y. Filed Jan. 6, 1965.

LABTEXT

For Educational Textbooks.
First use Dec. 11, 1964.

Class 39—Clothing

SN 170,741. The Glemby Company, Inc., New York, N.Y. Filed June 11, 1963.



Owner of Reg. No. 562,196.
For Hair Nets, Wave Nets, Boudoir Caps, and Hair Scarves.
First use Mar. 1, 1962.

SN 186,803. Rhodia Inc., New York, N.Y., assignee of Moulinage et Retorderie de Chavanos, Societe Anonyme, Chavanos, Isere, France. Filed Jan. 16, 1964.

CHAVASOL

Owner of Reg. Nos. 767,633, 767,637, and 769,214.
For Neckwear, Pullovers, Dresses, Sweaters, Suits, Hosiery, Ties, Blouses, Headwear, Lingerie, Boots, Shoes, Slippers, and Swim Suits.
First use Apr. 17, 1963; in commerce Apr. 17, 1963.

SN 195,278. Bristol Manufacturing Corporation, Bristol, R.I. Filed June 10, 1964.

SUPERB

For Men's, Women's, and Children's Sneakers.
First use 1946.

SN 196,886. Rhodia Inc., New York, N.Y., assignee of Moulinage et Retorderie de Chavanos, Societe Anonyme, Chavanos, Isere, France. Filed July 1, 1964.

CHAVADENE

Owner of Reg. Nos. 767,633, 767,637, and 769,214.
For Neckwear, Pullovers, Dresses, Sweaters, Suits, Hosiery, Ties, Blouses, Headwear, Lingerie Boots, Shoes, Slippers, and Swim Suits.
First use Sept. 10, 1963; in commerce Sept. 10, 1963.

SN 202,520. Thomson Company, Thomson, Ga. Filed Sept. 23, 1964.

"Mr. Thomson *in*...*please!*"

Owner of Reg. No. 756,117.
For Misses' Clothing—Namely, Slacks and Walking Shorts.
First use June 8, 1964.

SN 207,664. Henry I. Siegel Co., Inc., New York, N.Y. Filed Dec. 7, 1964.

h.i.s

Owner of Reg. Nos. 549,951, 775,444, and others.
For Men's and Boys' Clothing—Namely, Shirts, Slacks, Pants, Trousers, Walking Shorts, Coats and Suits; and Women's and Misses' Clothing—Namely, Shirts, Skirts, Slacks, Walking Shorts, Leotards, Tights, Sweaters, Jackets, and Coats.
First use January 1957 on Men's and Boys' Clothing.

SN 207,723. House of Worsted-Tex, Inc., Philadelphia, Pa. Filed Dec. 8, 1964.

CRITICS CHOICE

For Men's and Boys' Suits, Topcoats, and Overcoats.
First use in or about August 1964.

SN 207,932. Aimcee Wholesale Corporation, New York, N.Y. Filed Dec. 11, 1964.

BARBARA LEE JR.

The name "Barbara Lee, Jr." is fanciful and is not the name of an individual. Owner of Reg. No. 425,092.
For Juniors' and Girls' Dresses, Coats, Suits, Jackets, Outer Skirts, Hats, Sweaters, Blouses, Slacks, Negligees, Housecoats, Nightgowns, Robes, Lounging and Sleeping Pajamas, Slips, Petticoats, Panties, Underdrawers, Bloomers, Vests, Bandeaux, Brassieres, Girdles, and Garter Belts, and Combinations of the Same.
First use Jan. 2, 1942.

SN 207,939. Badger Outerwear Mfg. Co., Fort Washington, Wis. Filed Dec. 11, 1964.

Land O'Sports

For Men's, Women's, Boys', and Girls' Outerwear Garments Comprising Jackets, Stretch Pants, Ski Pants, Car Coats, Suburban Coats, and Leisure Coats.
First use Nov. 14, 1947.

SN 208,665. Barouch Bros., Inc., New York, N.Y. Filed Dec. 22, 1964.

Anrasons

For Men's, Boys', Women's, Girls', and Children's Robes and Beachwear Jackets.
First use Mar. 25, 1964.

SN 211,269. M. Flaishman Company, Inc., Philadelphia, Pa. Filed Feb. 3, 1965.

LADY BARBARA

Owner of Reg. No. 409,160.
For Ladies' Hosiery.
First use in or about August 1938.

SN 211,458. Niver Western Wear, Inc., Fort Worth, Tex. Filed Feb. 5, 1965.

YEARLING

For Western Pants, Jackets and Suits for Men, Ladies, and Children.
First use Sept. 1, 1964.

SN 213,430. Genesco Inc., Nashville, Tenn. Filed Mar. 5, 1965.

BULLY WEAR

The word "Wear" is disclaimed apart from the mark as shown.
For Men's Underwear.
First use Feb. 17, 1965.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 186,804. Rhodia Inc., New York, N.Y., assignee of Moulinage et Retorderie de Chavanos, Societe Anonyme, Chavanos, Isere, France. Filed Jan. 16, 1964.

CHAVASOL

Owner of Reg. Nos. 767,633, 767,637, and 769,214.
For Knitted and Woven Fabrics for Making Into Dresses, Blouses, Lingerie, Suits, Household Furnishings, and the Like; Bed Spreads and Tablecloths.
First use Apr. 17, 1963; in commerce Apr. 17, 1963.

SN 196,637. Deering Milliken, Inc., New York, N.Y. Filed June 29, 1964.

DOE-SUEDE

The word "Suede" is disclaimed apart from the mark as shown. Owner of Reg. No. 416,192.
For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use June 22, 1943.

SN 196,889. Rhodia Inc., New York, N.Y., assignee of Moulinage et Retorderie de Chavanos, Societe Anonyme, Chavanos, Isere, France. Filed July 1, 1964.

CHAVADENE

Owner of Reg. Nos. 767,633, 767,637, and 769,214.
For Knitted and Woven Fabrics for Making Into Dresses, Blouses, Lingerie, Suits, Household Furnishings and the Like; Bed Spreads and Tablecloths.
First use Sept. 10, 1963; in commerce Sept. 10, 1963.

SN 197,560. Henry Glass & Co., New York, N.Y. Filed July 10, 1964.

BRAVADE

For Goods in the Piece Made of Cotton, Synthetic Fibers, and Combinations Thereof.
First use June 10, 1964.

SN 198,781. J. P. Stevens & Co., Inc., New York, N.Y. Filed July 29, 1964.

LADY TWIST TWILL

Owner of Reg. Nos. 98,616, 665,448, and others.
For Piece Goods of One or More Natural Fibers Including Wool and Cotton and of Synthetic Fibers, or of Blends of the Foregoing.
First use July 27, 1964.

SN 205,389. Carl Freudenberg Kommanditgesellschaft, Weinheim/Bergstrasse, Germany. Filed Nov. 3, 1964.

SHAPELON

Priority claimed under Sec. 44(d) on German application filed July 14, 1964; Reg. No. 793,570, dated Aug. 28, 1964.
For Non-Woven Fabrics, i.e., Fleeces, the Fibres of Which Are Bonded Together at Their Crossing Points.

SN 207,283. Shuler and Benninghofen, Hamilton, Ohio. Filed Dec. 1, 1964.

PERMAFLO

For Papermakers' Felts.
First use Nov. 20, 1964.

SN 207,441. J. P. Stevens & Co., Inc., New York, N.Y. Filed Dec. 3, 1964.

CHAMPIONSHIP BLENDS

Applicant does not claim exclusive right to the use of "Blends" apart from the mark presented herein.
For Piece Goods of Synthetic Fibers.
First use Nov. 27, 1964.

Class 43—Thread and Yarn

SN 180,109. Rhodia Inc., New York, N.Y., assignee of Moulinage et Retorderie de Chavanos, Societe Anonyme, Chavanos, Isere, France. Filed Oct. 30, 1963.

CHAVASOL

Owner of Reg. Nos. 767,633, 767,637, and 769,214.
For Yarns.
First use Apr. 17, 1963; in commerce Apr. 17, 1963.

SN 196,890. Rhodia Inc., New York, N.Y., assignee of Moulinage et Retorderie de Chavanos, Societe Anonyme, Chavanos, Isere, France. Filed July 1, 1964.

CHAVADENE

Owner of Reg. Nos. 767,633, 767,637, and 769,214.
For Threads and Yarns of Synthetic Fibers.
First use Sept. 10, 1963; in commerce Sept. 10, 1963.

SN 211,019. Bear Brand Hosiery Co., Chicago, Ill. Filed Feb. 1, 1965.

RESILYARN

Owner of Reg. No. 775,050.
For Yarn.
First use Sept. 29, 1964.

Class 44—Dental, Medical, and Surgical Appliances

SN 205,696. Industrial Electronic Rubber Company, Twinsburg, Ohio. Filed Nov. 6, 1964.

MASTI-CLEAN

For Oral Sponge-Like Appliance for Cleaning, Massaging, and Applying Medication.
First use Oct. 22, 1964.

SN 207,283. William Eidus, Spring Valley, N.Y. Filed Dec. 2, 1964.

THERMO-TEST

For Thermoelectric Appliance With Simultaneous Hot and Cold Adjustable Application by the Doctor or Dentist by Means of Thermally Conductive Plates or Probes Applied to Portions of the Body or Neural System.
First use July 1, 1964.

SN 209,237. Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y. Filed Jan. 4, 1965.

BLOCK-AID

For Electronic Device for Attachment to an Element of the Human Body To Monitor or Control the Administration of Muscle Relaxant Drug Preparations and for Diagnostic Purposes.
First use Dec. 14, 1964.

SN 209,477. Becton, Dickinson and Company, East Rutherford, N.J. Filed Jan. 7, 1965.

PITKIN

For Hypodermic Syringes and Needles.
First use in or about the year 1927.

SN 210,326. Matthews Research, Inc., Alexandria, Va. Filed Jan. 21, 1965.

BUBBLE BED

Applicant disclaims any exclusive rights in the word "Bed" apart from the mark as shown.
For Plastic Bed Enclosures.
First use Apr. 4, 1964.

SN 211,916. Nuclear Consultants Corporation, St. Louis, Mo. Filed Feb. 12, 1965.

TECHNEKOW

For Generator of Radioactive Technetium for Clinical Use.
First use Jan. 28, 1965.

SN 212,851. Beltone Electronics Corporation, Chicago, Ill. Filed Feb. 26, 1965.

TOCCATA

For Hearing Aids and Accessories.
First use Feb. 12, 1965.

SN 212,852. Beltone Electronics Corporation, Chicago, Ill. Filed Feb. 26, 1965.

CANTATA

For Hearing Aids and Accessories.
First use Feb. 3, 1965.

SN 212,853. Beltone Electronics Corporation, Chicago, Ill. Filed Feb. 26, 1965.

MADRIGAL

For Hearing Aids and Accessories.
First use Feb. 5, 1965.

SN 212,854. Beltone Electronics Corporation, Chicago, Ill. Filed Feb. 26, 1965.

SCHERZO

For Hearing Aids and Accessories.
First use Feb. 10, 1965.

SN 212,855. Beltone Electronics Corporation, Chicago, Ill. Filed Feb. 26, 1965.

GAVOTTE

For Hearings Aids and Accessories.
First use Feb. 12, 1965.

Class 46 — Foods and Ingredients of Foods

SN 173,868. Bel Paese Sales Co., Inc., d.b.a. Bel Paese Co., Roma, New York, N.Y. Filed July 29, 1963.

ROMOLO

The English translation of "Romolo" is "Romulus."
For Cheese.
First use May 22, 1940.

SN 177,897. John W. Leavitt Company, Everett, Mass. Filed Sept. 27, 1963.

Lift
Low Inventory Fast Turnover

For Shelled and Unshelled Nuts, and Mixtures of Nuts, in Sealed Containers.
First use in or about November 1960.

SN 185,715. Pure Milk Association, Chicago, Ill. Filed Jan. 30, 1964.

PURE MILK ASSN

Owner of Reg. No. 306,985.
For Non-Fat Dry Milk Animal Food for Livestock and Calf Milk Replacer Animal Food for Livestock.
First use prior to Jan. 1, 1946.

SN 190,992. 3-Tops Company A/S, Copenhagen, Denmark. Filed Apr. 13, 1964.

3-TOPS

Priority claimed under Sec. 44(d) on Danish application filed Nov. 8, 1963; Reg. No. 1931, dated May 16, 1964.
For Bread, Cakes, Pastry, Biscuits, Wafers, Chocolate Goods and Candy.

SN 195,884. Nebraska Consolidated Mills Company, Omaha, Nebr. Filed June 17, 1964.

MOTHER'S BEST

Owner of Reg. Nos. 678,544 and 697,877.
For Wheat Flour, Corn Meal, Fresh and Frozen Poultry, and Table Syrup.
First use June 12, 1911.

SN 199,942. American Syrup and Preserving Co., Nashville, Tenn. Filed Aug. 17, 1964.

JAMBO



For Fruit Jams, Jellies, Preserves, and Non-Carbonated Orange Food Beverages Sealed in Jars.
First use June 1956.

SN 206,758. The Procter & Gamble Company, Cincinnati, Ohio. Filed Nov. 23, 1964.

QUALITY HOUSE

Owner of Reg. Nos. 763,630 and 781,822.
For Pancake Mix.
First use May 6, 1964.

Class 47 — Wines

SN 209,257. Fransia Brothers Winery, d.b.a. Old Chateau Wine Co., Ripon, Calif. Filed Jan. 4, 1965.

Sol 7

For Wines.
First use Dec. 18, 1964.

Class 50 — Merchandise Not Otherwise Classified

SN 216,188. Pacific Coast Commercial Inc., Los Angeles, Calif. Filed Apr. 9, 1965.

PACORIMI

For Artificial Fruit.
First use February 1962.

SN 218,826. Yankee Plastics, Inc., New York, N.Y. Filed May 13, 1965.

YANKEE

For Garment Hangers.
First use Dec. 30, 1964.

SN 218,863. W. G. Grant & Company Limited, Dundee, Scotland. Filed May 14, 1965.

ROOTAINERS

Owner of British Reg. No. 851,651, dated July 16, 1963.
For Wrappers Made of Natural or Synthetic Textile Material or Mixtures Thereof for Protecting the Roots of Plants.

Class 51 — Cosmetics and Toilet Preparations

SN 209,031. Parfumerie "Mont Saint Michel"-Paul Andre Serre, Societe Anonyme, Saint-Quen (Seine), France. Filed Dec. 20, 1964.

EAU GAMMA

For Perfume and Cologne.
First use May 5, 1964; in commerce May 5, 1964.

SN 209,061. Germaine Monteil Cosmetiques Corp., New York, N.Y. Filed Dec. 30, 1964.

PINK FLUTTER

For Lipstick, Face Powder, and Face Lotion.
First use Dec. 4, 1964.

SN 210,853. Colgate-Palmolive Company, New York, N.Y. Filed Jan. 28, 1965.

TACKLE

Owner of Reg. No. 732,088.
For Medicated Shave Cream.
First use Nov. 12, 1964.

SERVICE MARKS

Class 100 — Miscellaneous

SN 181,141. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Nov. 14, 1963.

CHEMAGINATION

For Technical Advisory and Consultation Services Rendered Relative to Various Manufacturing Uses, Processes, and Problems—Namely, Those Connected With the Fields of Chemistry, Chemical Products, Agriculture, Construction, Protective Coating, Plastics and Plastic Products.
First use January 1958.

SN 194,588. Facilities Design Associates, Inc., New London, Conn. Filed June 1, 1964.



For Service of Designing and Planning the Layout of Furnishings, Fixtures, and Equipment for Hotels, Restaurants, Institutions, and Stores.
First use Oct. 6, 1962.

Class 101 — Advertising and Business

SN 184,212. A & A Coins, Inc., Iowa City, Iowa. Filed Jan. 8, 1964.

A&A COINS

No claim is made to the word "Coins."
For Trading of Rare and Unusual Coins.
First use on or about July 1, 1962.

SN 191,865. Donald MacDonald (Antartex) Limited, Renton, England. Filed Apr. 23, 1964.

ANTARTEX

For Retail Store Services.
First use Oct. 1, 1963; in commerce Oct. 1, 1963.

Class 102 — Insurance and Financial

SN 200,065. Farm Credit Administration, Washington, D.C. Filed Aug. 18, 1964. COLLECTIVE MARK.



For Financial Services—Namely, Farm Mortgage Loans Made by a Federal Land Bank as Authorized Under the Federal Farm Loan Act, as Amended.
First use March 1964.

SN 200,066. Farm Credit Administration, Washington, D.C. Filed Aug. 18, 1964. COLLECTIVE MARK.



For Financial Services—Namely, Loans to Farmers and Ranchers Made by a Production Credit Association as Authorized Under the Farm Credit Act of 1933, as Amended.
First use March 1964.

SN 200,087. Farm Credit Administration, Washington, D.C. Filed Aug. 18, 1964. COLLECTIVE MARK.



For Financial Services—Namely, Loans to Farmer Cooperative Associations Made by a Bank for Cooperatives as Authorized Under the Farm Credit Act of 1933, as Amended.
First use March 1964.

Class 105 — Transportation and Storage

SN 189,830. Zero Mountain, Inc., Johnson, Ark. Filed Mar. 27, 1964.

ZERO MOUNTAIN

For Warehousing, in Transit Storage, and Trucking of Frozen Foods.
First use September 1956.

SN 192,546. Arrow Transportation Company Sheffield, Ala. Filed May 4, 1964.



The phrase "Ship by Barge" is disclaimed apart from the mark as shown.
For Transportation Service—Namely, Transporting the Commodities of Others by Water.
First use on or about Mar. 1, 1957.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

794,609. ANGELWOOL ETC. AND DESIGN. Angelo & Son. SN 176,704. Pub. 6–8–65. Filed 9–11–63.

794,610. ADD THE TOUCH TERSON AND DESIGN. Plymouth Cordage Industries, Inc. SN 181,275. Pub. 4–13–65. Filed 11–15–63.

794,611. ECOVIN. Kalfiex Inc. SN 182,950. Pub. 9–8–64. Filed 12–13–63.

794,612. AIRLIGHT. Hysol Corporation. SN 183,411. Pub. 6–8–65. Filed 12–23–63.

794,613. S AND DESIGN. Scholven-Chemie Aktiengesellschaft. MULTIPLE CLASS (Classes 1, 4, 6, 10, and 15). SN 186,398. Pub. 6–8–65. Filed 2–10–64.

794,614. THERMACOMB. Minnesota Mining and Manufacturing Company. SN 188,898. Pub. 6–8–65. Filed 3–17–64.

794,615. PROFIL. Fiberfil, Inc. SN 190,169. Pub. 6–8–65. Filed 4–2–64.

794,616. GANTRON. General Aniline & Film Corporation. SN 190,255. Pub. 4–27–65. Filed 4–3–64.

794,617. CELANE. Celanese Corporation of America. SN 190,498. Pub. 6–8–65. Filed 4–7–64.

794,618. CELLANE. Celanese Corporation of America. SN 190,499. Pub. 6–8–65. Filed 4–7–64.

794,619. K KOPLON ETC. AND DESIGN. Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A. SN 197,436. Pub. 6–8–65. Filed 7–8–64.

794,620. 819. Northrup, King & Co. SN 200,857. Pub. 6–8–65. Filed 8–28–64.

794,621. GARDEN STAR AND DESIGN. Geo. J. Ball, Inc. SN 204,041. Pub. 6–8–65. Filed 10–15–64.

794,622. BRIEFCASE (DESIGN). Hooker Chemical Corporation. SN 204,166. Pub. 6–8–65. Filed 10–16–64.

794,623. COLORANDOM. Celanese Corporation of America. SN 204,551. Pub. 6–8–65. Filed 10–22–64.

794,624. AN OGEE CURVE (DESIGN). Synthane Corporation. SN 204,615. Pub. 6–8–65. Filed 10–22–64.

794,625. CYCLOFIN. Shell Oil Company. SN 205,106. Pub. 6–8–65. Filed 10–29–64.

794,626. WB. American-Canadian Beaver Company, Inc. SN 205,987. Pub. 6–8–65. Filed 11–12–64.

794,627. AMERICAN MAG-COKE. American Cast Iron Pipe Company. SN 206,907. Pub. 6–8–65. Filed 11–24–64.

Class 2 — Receptacles

794,628. TAB TOP. Anheuser-Busch, Incorporated. SN 182,563. Pub. 6–8–65. Filed 12–9–63.

794,629. TAHIJI. Ross Products, Inc. SN 200,978. Pub. 6–8–65. Filed 8–31–64.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

794,630. AMFILE. Amberg File and Index Company. MULTIPLE CLASS (Classes 3, 32, 36, and 37). SN 206,396. Pub. 6–8–65. Filed 11–18–64.

Class 4 — Abrasives and Polishing Materials

794,613. (See Class 1 for this trademark.)

794,631. VELVA-SHEEN. Majestic Wax Company. SN 176,205. Pub. 6–8–65. Filed 9–3–63.

794,632. "LET IT RAIN." Harri Hoffmann Co., Inc. SN 205,405. Pub. 6–8–65. Filed 11–3–64.

794,633. SOLPREME. United States Borax & Chemical Corporation. SN 205,743. Pub. 6–8–65. Filed 11–6–64.

794,634. COL-GLO. United States Borax & Chemical Corporation. SN 205,887. Pub. 6–8–65. Filed 11–9–64.

Class 6 — Chemicals and Chemical Compositions

794,613. (See Class 1 for this trademark.)

794,635. VARONIC. Varney Chemical Co. SN 148,442. Pub. 6–8–65. Filed 7–6–62.

794,636. FLAMINUL. Etablissements Kuhlmann, Société Anonyme. SN 180,003. Pub. 6–8–65. Filed 10–29–63.

794,637. QUAL-TROL. Dade Reagents, Inc. SN 191,913. Pub. 6–8–65. Filed 4–24–64.

794,638. KEM AND DESIGN. Kem Manufacturing Corporation. SN 193,794. Pub. 6–8–65. Filed 5–19–64.

794,639. MALABATE. Albert Verley & Company. SN 194,543. Pub. 6–8–65. Filed 5–28–64.

794,640. WOOD FIX WITHIN TRIANGULAR DESIGN. Wood Treating Chemicals Co. SN 196,490. Pub. 6–8–65. Filed 6–25–64.

794,641. AIR-AID. Lord, Clark and Co., Inc. SN 196,871. Pub. 6–8–65. Filed 7–1–64.

794,642. SUPERSPERSE. Geigy Chemical Corporation. SN 197,282. Pub. 1–5–65. Filed 7–7–64.

794,643. PLUMB MAGIC PM AND DESIGN. Premax Laboratories, Inc. SN 197,984. Pub. 6–8–65. Filed 7–16–64.

794,644. AHCOLINE. The Hubbard-Hall Chemical Company. SN 198,555. Pub. 6–8–65. Filed 7–27–64.

794,645. ARGEL. Armour Pharmaceutical Company. SN 201,077. Pub. 4–20–65. Filed 9–3–64.

794,646. PRE-LOC P.L 1964 AND DESIGN. Preston Lee Lockawy, d.b.a. Pre-Loc Company. SN 203,406. Pub. 6–8–65. Filed 10–6–64.

794,647. PANTHER (DESIGN). Coahoma Chemical Co., Inc. SN 205,490. Pub. 6–8–65. Filed 11–4–64.

Class 7 — Cordage

794,648. ACCOLINE. American Chain & Cable Company, Inc. SN 205,557. Pub. 6–8–65. Filed 11–5–64.

Class 8 — Smokers' Articles, Not Including Tobacco Products

794,649. HOKEY POKEY. Hokey Pokey, Inc. SN 207,720. Pub. 6–8–65. Filed 12–8–64.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

794,650. VARMINTMASTER. Weatherby, Inc. SN 171,732. Pub. 6-8-65. Filed 6-24-63.

Class 10 — Fertilizers

794,613. (See Class 1 for this trademark.)

794,651. GOLDTHWAITE'S TURF SPECIAL AND DESIGN. Goldthwaite's Texas Toro Co. SN 182,876. Pub. 6-8-65. Filed 12-12-63.

794,652. HOOKER. Hooker Chemical Corporation. SN 206,546. Pub. 6-8-65. Filed 11-19-64.

Class 12 — Construction Materials

794,653. BUTLER SYSTEMS BUILDING AND DESIGN. Butler Manufacturing Company. SN 176,156. Pub. 6-8-65. Filed 9-3-63.

794,654. SURCO. Surface Coatings, Inc. MULTIPLE CLASS (Classes 12 and 16). SN 188,293. Pub. 6-8-65. Filed 12-19-63.

794,655. ACME. Acme Brick Company. SN 186,218. Pub. 6-8-65. Filed 2-7-64.

794,656. FIXALLATEX. Dowman Products, Inc. SN 191,521. Pub. 6-8-65. Filed 4-20-64.

794,657. BM AND DESIGN. Raymar, Inc. SN 191,598. Pub. 6-8-65. Filed 4-20-64.

794,658. FLAME BAR. Johns-Manville Corporation. SN 193,361. Pub. 6-8-65. Filed 5-13-64.

794,659. BUCA. Bird & Son, Inc. SN 198,930. Pub. 6-8-65. Filed 7-31-64.

794,660. VIROPAN. Bruynseel Suriname Houtmaatschappij N.V. SN 202,675. Pub. 6-8-65. Filed 9-25-64.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

794,661. MARBLEMOLD. Summit Industries. SN 194,077. Pub. 6-8-65. Filed 6-22-64.

794,662. HEADATROL. Acme Industries, Inc. SN 196,332. Pub. 6-8-65. Filed 6-24-64.

794,663. VELVET ARMOR. The Bondo Corporation. MULTIPLE CLASS (Classes 13 and 14). SN 201,084. Pub. 6-8-65. Filed 9-2-64.

794,664. SPRING-A-ROUND. Sidney S. Kassler, d.b.a. Kassler Mfg. & Distr. Co. SN 204,908. Pub. 6-8-65. Filed 10-27-64.

794,665. DOUBL-BITE. American Chain & Cable Company, Inc. SN 207,692. Pub. 6-8-65. Filed 12-8-64.

794,666. ANGLE-TITE. Republic Steel Corporation. SN 207,734. Pub. 6-8-65. Filed 12-8-64.

794,667. SPANSET. Aktiebolaget Textilkonst. SN 208,708. Pub. 6-8-65. Filed 4-6-64.

794,668. DRAIN SURGEON. Robert A. Krenn, d.b.a. Corona Manufacturing Company. SN 208,816. Pub. 6-8-65. Filed 12-24-64.

Class 14 — Metals and Metal Castings and Forgings

794,663. (See Class 13 for this trademark.)

794,669. WSC AND CALIPER-WING DESIGN. Worthington Steel Company. SN 181,565. Pub. 6-8-65. Filed 12-26-63.

794,670. PEARLCHROME. Union Carbide Corporation. SN 208,413. Pub. 6-8-65. Filed 12-17-64.

794,671. PLASMALLOY. Giannini Scientific Corporation. SN 212,107. Pub. 6-8-65. Filed 2-16-65.

Class 15 — Oils and Greases

794,613. (See Class 1 for this trademark.)

794,672. HISTORIC NEWPORT. The Preservation Society of Newport County. SN 181,676. Pub. 6-8-65. Filed 11-21-63.

794,673. OIL DROP (DESIGN). Monsanto Company. SN 193,027. Pub. 6-8-65. Filed 5-8-64.

794,674. THE DOLLAR MAN. Pat Griffin. SN 198,732. Pub. 6-8-65. Filed 7-29-64.

794,675. GROTESQUE MAN. Pat Griffin. SN 198,733. Pub. 6-8-65. Filed 7-29-64.

794,676. EAGLE OK BRAND. Carl S. Zekaria, d.b.a. National American Products Co. SN 207,770. Pub. 6-8-65. Filed 12-8-64.

794,677. EVEN-GLOW. Pride Service, Inc. SN 209,371. Pub. 6-8-65. Filed 1-5-65.

794,678. NORDIC AND DESIGN. Halo Sales Corporation. SN 210,951. Pub. 6-8-65. Filed 1-29-65.

Class 16 — Protective and Decorative Coatings

794,654. (See Class 12 for this trademark.)

794,679. NARMCOAT. Whittaker Corporation, by change of name from Telecomputing Corporation. SN 178,501. Pub. 6-8-65. Filed 10-7-63.

794,680. AROLIN. Archer-Daniels-Midland Company. SN 188,701. Pub. 2-23-65. Filed 3-16-64.

794,681. CHAMPTONE. Associated Hardware Supply Co. SN 196,936. Pub. 6-8-65. Filed 7-2-64.

794,682. FOUR SEASONS. Marshall Manufacturing Corporation. SN 205,435. Pub. 6-8-65. Filed 11-3-64.

Class 17 — Tobacco Products

794,683. OPTIMO. Universal Cigar Corporation. SN 194,841. Pub. 6-8-65. Filed 6-3-64.

794,684. BASTOS. Societe de Financement Industriel, Commercial et Agricole—S.O.F.I.C.A.L. SN 197,785. Pub. 6-8-65. Filed 7-13-64.

794,685. CLOUD 9. Sanford S. Wendel, d.b.a. Sanford S. Wendel Co. MULTIPLE CLASS (Classes 17 and 29). SN 199,145. Pub. 6-8-65. Filed 8-3-64.

794,686. GREVE GILBERT HAMILTON'S BLANDNING AND DESIGN. Svenska Tobaks Aktiebolaget (Swedish Tobacco Company). SN 200,057. Pub. 6-8-65. Filed 8-14-64.

794,687. DEVOTION. Lane Limited. SN 207,135. Pub. 6-8-65. Filed 11-30-64.

794,688. PIMLICO. The American Tobacco Company. SN 208,316. Pub. 6-8-65. Filed 12-17-64.

794,689. SHERWOOD. The American Tobacco Company. SN 208,320. Pub. 6-8-65. Filed 12-17-64.

794,690. LONGMEADOW. The American Tobacco Company. SN 208,322. Pub. 6-8-65. Filed 12-17-64.

Class 18 — Medicines and Pharmaceutical Preparations

794,691. F99. Diva Laboratorien A.G., by change of name from Diva Laboratorium Aktiengesellschaft. SN 44,445. Pub. 6-8-65. Filed 2-11-58.

794,692. UDDER-TONE. Chas. Pfizer & Co., Inc. SN 154,997. Pub. 6-8-65. Filed 10-11-62.

794,693. DI-BETA. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, assignee of Lloyd Brothers Incorporated. SN 174,394. Pub. 6-8-65. Filed 8-5-63.

794,694. DEMEL. White Laboratories, Inc. SN 175,230. Pub. 6-8-65. Filed 8-16-63.

794,695. COLE. Cole Chemical Company (Oklahoma corporation), assignee of Cole Chemical Company (Delaware corporation). SN 190,155. Pub. 6-8-65. Filed 4-2-64.

794,696. TEGOPEN. Bristol-Myers Company. SN 196,422. Pub. 6-8-65. Filed 6-25-64.

794,697. V.M.E. V.M.E. Corp. SN 205,636. Pub. 6-8-65. Filed 11-5-64.

794,698. SOHIPET. The Standard Oil Company. SN 208,137. Pub. 6-8-65. Filed 12-14-64.

Class 19 — Vehicles

794,699. "CARBRELLA." Holiday Industries, Inc. SN 193,010. Pub. 6-8-65. Filed 5-8-64.

794,700. MIRACLE. Fred W. Kieffer, d.b.a. Miracle Spring Lift Co. SN 196,530. Pub. 6-8-65. Filed 6-26-64.

794,701. MS ETC. AND DESIGN. Metal Spinners, Inc. SN 202,293. Pub. 6-8-65. Filed 9-21-64.

794,702. TAYPA-WATE AND DESIGN. Three G Corporation. SN 203,544. Pub. 6-8-65. Filed 10-7-64.

794,703. RED DOT. The Anderson Company. SN 205,467. Pub. 6-8-65. Filed 11-4-64.

794,704. ADJUST-A-BRACE. Fleet Engineers, Inc. SN 205,581. Pub. 6-8-65. Filed 11-5-64.

794,705. HI-LO VISA MATIC. Union Steel Products Company. SN 205,747. Pub. 6-8-65. Filed 11-6-64.

794,706. HYDROCAT. Joseph J. Szakacs, d.b.a. Hydrocraft. SN 205,871. Pub. 6-8-65. Filed 11-9-64.

794,707. MGM. MGM Brakes, Inc. SN 206,278. Pub. 6-8-65. Filed 11-16-64.

Class 20 — Linoleum and Oiled Cloth

794,708. PATRIOT. Congoleum-Nairn Inc. SN 207,114. Pub. 6-8-65. Filed 11-30-64.

Class 21 — Electrical Apparatus, Machines, and Supplies

794,709. BUTELCO AND DESIGN. Buckeye Telephone and Supply Co. SN 175,629. Pub. 6-8-65. Filed 8-23-63.

794,710. CLICKODEX. Bata Shoe Company of Canada Ltd. SN 181,606. Pub. 6-8-65. Filed 11-21-63.

794,711. HISTORIC NEWPORT. The Preservation Society of Newport County. MULTIPLE CLASS (Classes 21 and 34). SN 181,678. Pub. 6-8-65. Filed 11-21-63.

794,712. NORDAC. Nordac Electronics, Incorporated. MULTIPLE CLASS (Classes 21, 26, and 44). SN 183,919. Pub. 6-8-65. Filed 1-2-64.

794,713. PANA. Matsushita Electric Industrial Co., Ltd. SN 185,798. Pub. 6-8-65. Filed 1-31-64.

794,714. GLASS-TITE INDUSTRIES, INC. AND DESIGN. Glass-Tite Industries, Inc. SN 188,281. Pub. 6-8-65. Filed 3-9-64.

794,715. VARIAXIAL. Sony Corporation. SN 190,209. Pub. 6-8-65. Filed 4-2-64.

794,716. TPI AND DESIGN. Holley Carburetor Company. SN 190,377. Pub. 6-8-65. Filed 4-6-64.

794,717. S AND DESIGN. Fritz Sennheiser, d.b.a. Sennheiser Electronic Dr.-Ing. Fritz Sennheiser. SN 191,616. Pub. 6-8-65. Filed 4-20-64.

794,718. GA. Gotham Audio Corporation. MULTIPLE CLASS (Classes 21, 26, and 36). SN 195,781. Pub. 6-8-65. Filed 6-16-64.

794,719. RILS. Rils Industries Inc. SN 195,895. Pub. 6-8-65. Filed 6-17-64.

794,720. O AND DESIGN. Columbia Broadcasting System, Inc. MULTIPLE CLASS (Classes 21 and 36). SN 196,356. Pub. 6-8-65. Filed 6-24-64.

794,721. P & B. American Machine & Foundry Company. SN 197,240. Pub. 6-8-65. Filed 7-7-64.

794,722. WEEGAL. Ermanno Fabbri. MULTIPLE CLASS (Classes 21 and 37). SN 197,481. Pub. 6-8-65. Filed 7-9-64.

794,723. COBRA. Telefonaktiebolaget L M Ericsson. SN 198,625. Pub. 6-8-65. Filed 7-2-64.

794,724. ACZENER. Telonic Industries, Inc. SN 198,966. Pub. 6-8-65. Filed 7-31-64.

794,725. STEAK CHARMER AND DESIGN. Ervin O. Rogers, d.b.a. Mutual Inventors Guild. SN 206,880. Pub. 6-8-65. Filed 11-24-64.

Class 22 — Games, Toys, and Sporting Goods

794,726. OSWALD RABBIT. Walter Lantz Productions, Inc. SN 185,002. Pub. 6-8-65. Filed 1-2-62.

794,727. PUTT-WELL AND DESIGN. Indoor Golf Corporation. SN 162,554. Pub. 6-8-65. Filed 2-12-63.

794,728. STAKE A HOMESTEAD AND DESIGN. Alice C. Woster. SN 191,736. Pub. 6-8-65. Filed 4-21-64.

794,729. PLASTIFLETCH AND DESIGN. Max Hamilton. SN 196,660. Pub. 6-8-65. Filed 6-29-64.

794,730. BONNIE BRIDE. De Luxe Reading Corporation. SN 197,029. Pub. 6-8-65. Filed 7-3-64.

794,731. BO-YO. Donald F. Duncan, Inc. SN 197,664. Pub. 6-8-65. Filed 7-13-64.

794,732. FROSTY SNO-MAN. Hassenfeld Bros., Inc. SN 201,287. Pub. 6-8-65. Filed 9-4-64.

794,733. AMERICAN CAPTAIN. American Hardware Supply Company. SN 201,353. Pub. 6-8-65. Filed 9-8-64.

794,734. OCEAN CITY AND DESIGN. True Temper Corporation. SN 201,765. Pub. 6-8-65. Filed 9-11-64.

794,735. PAY-ME. Louis Kessler, d.b.a. Novelty Games Co. SN 201,946. Pub. 6-8-65. Filed 9-15-64.

794,736. "ALEXANDER RAGLINE DOLLS." Alexander Doll Company, Inc., d.b.a. Madame Alexander. SN 202,345. Pub. 6-8-65. Filed 9-22-64.

794,737. POLY-DYNE ETC. AND DESIGN. Campbell Manufacturing Company Limited. SN 202,413. Pub. 6-8-65. Filed 9-23-64.

794,738. ARE YOU ON THE BALL? Milton Bradley Company. SN 202,544. Pub. 6-8-65. Filed 9-24-64.

794,739. WOW. Milton Bradley Company. SN 202,545. Pub. 6-8-65. Filed 9-24-64.

794,740. TUSSLE. Milton Bradley Company. SN 202,546. Pub. 6-8-65. Filed 9-24-64.

794,741. KOOKIE CHICKS. Milton Bradley Company. SN 202,547. Pub. 6-8-65. Filed 9-24-64.

794,742. MISSING LINKS. Milton Bradley Company. SN 202,548. Pub. 6-8-65. Filed 9-24-64.

794,743. GET THE MESSAGE. Milton Bradley Company. SN 202,549. Pub. 6-8-65. Filed 9-24-64.

794,744. SHENANIGANS. Milton Bradley Company. SN 202,561. Pub. 6–8–65. Filed 9–24–64.

794,745. BOBBIN NOGGIN. Milton Bradley Company. SN 202,751. Pub. 6–8–65. Filed 9–28–64.

794,746. POW. Milton Bradley Company. SN 202,752. Pub. 6–8–65. Filed 9–28–64.

794,747. WORLD ON A STRING. Milton Bradley Company. SN 202,754. Pub. 6–8–65. Filed 9–28–64.

794,748. GOLD DOT. Stowe-Woodward, Inc. SN 206,187. Pub. 6–8–65. Filed 11–13–64.

794,749. EXPLOSIVE POWER AND DESIGN. Lowville-American, Inc. SN 207,402. Pub. 6–8–65. Filed 12–3–64.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

794,750. TAIT WATER TOWER AND DESIGN. The Tait Manufacturing Company. SN 177,569. Pub. 6–8–65. Filed 9–28–63.

794,751. LITTER BUGGY. Purex Corporation, Ltd., assignee of Pullman Vacuum Cleaner Corporation. SN 179,355. Pub. 6–8–65. Filed 10–18–63.

794,752. PAGE. Dura Corporation, d.b.a. Page & Page Co. SN 195,025. Pub. 6–8–65. Filed 1–21–64.

794,753. RUCK ZUCK. Paul Hammelmann, d.b.a. Paul Hammelmann Maschinenfabrik. SN 189,291. Pub. 6–8–65. Filed 3–23–64.

794,754. LADY SCHICK. Schick Electric Inc., by change of name from Schick Incorporated. SN 190,438. Pub. 6–8–65. Filed 4–6–64.

794,755. ROCKET. B & J Manufacturing Company. SN 194,118. Pub. 6–8–65. Filed 5–25–64.

794,756. FLEX LIP. Johnson Mfg. Company, Inc. SN 194,188. Pub. 6–8–65. Filed 5–25–64.

794,757. POGO TRIMMER. Pogo Trimmer Company. SN 195,146. Pub. 6–8–65. Filed 6–8–64.

794,758. FLUO/VEYOR. The Ducon Company, Inc. SN 197,096. Pub. 6–8–65. Filed 7–6–64.

794,759. THE DENMARKER. Carl E. Carlsen. SN 200,819. Pub. 6–8–65. Filed 8–28–64.

794,760. VILLAGE PARK. American Hardware Supply Company. SN 201,349. Pub. 6–8–65. Filed 9–8–64.

794,761. PIPELINER. Ingersoll-Rand Company. SN 202,692. Pub. 6–8–65. Filed 9–25–64.

794,762. A AND DESIGN. American Roller Company. SN 202,977. Pub. 6–8–65. Filed 9–30–64.

794,763. ALLEGHENY. American Hardware Supply Company. SN 203,147. Pub. 6–8–65. Filed 10–2–64.

794,764. CODEMATIC. Sargent & Greenleaf, Inc. SN 203,669. Pub. 6–8–65. Filed 10–9–64.

794,765. SPEED-CYCLE. Cap-Roc, Inc. SN 203,835. Pub. 6–8–65. Filed 10–12–64.

794,766. MS ETC. AND DESIGN. Metal Spinners, Inc. SN 204,272. Pub. 6–8–65. Filed 10–19–64.

794,767. TIE-MATIC. Royal Industries, Inc. SN 204,294. Pub. 6–8–65. Filed 10–19–64.

794,768. MORDEN PRESSURIZED FIBERIZER AND DESIGN. Morden Machines Company. SN 204,813. Pub. 6–8–65. Filed 10–26–64.

794,769. FLEXIGARD. TRW Inc., by change of name from Thompson Ramo Wooldridge Inc. SN 204,934. Pub. 6–8–65. Filed 10–27–64.

794,770. EQUA-LOAD. The Cincinnati Gear Company. SN 205,268. Pub. 6–8–65. Filed 11–2–64.

794,771. HOP-A-FLOW. Link-Belt Company. SN 206,162. Pub. 6–8–65. Filed 11–13–64.

794,772. FOUR-LEAF CLOVER (DESIGN). Club Aluminum Products Company. SN 206,239. Pub. 6–8–65. Filed 12–16–64.

794,773. PANEL-RITE. Burner-Hollomon Manufacturing Corp. SN 206,666. Pub. 6–8–65. Filed 12–22–64.

794,774. FLEX-O-JET. Dempster Mill Mfg. Co. SN 208,673. Pub. 6–8–65. Filed 12–22–64.

794,775. PERM-O-PRIME. Dempster Mill Mfg. Co. SN 208,674. Pub. 6–8–65. Filed 12–22–64.

794,776. SUBKING. Dempster Mill Mfg. Co. SN 208,675. Pub. 6–8–65. Filed 12–22–64.

794,777. VERT-O-JET. Dempster Mill Mfg. Co. SN 208,676. Pub. 6–8–65. Filed 12–22–64.

794,778. ROLOG. R. Mueller & Associates. SN 208,761. Pub. 6–8–65. Filed 12–23–64.

794,779. AAA (DESIGN). Borg-Warner Corporation. SN 210,641. Pub. 6–8–65. Filed 1–26–65.

Class 26 — Measuring and Scientific Appliances

794,712. (See Class 21 for this trademark.)

794,713. (See Class 21 for this trademark.)

794,780. AIM AND DESIGN. Leesona Corporation, assignee of Electro Devices Inc. SN 149,274. Pub. 6–8–65. Filed 7–18–62.

794,781. UW UNDERWATER AND DESIGN. Jordan Marine Inc. SN 176,198. Pub. 6–8–65. Filed 9–3–63.

794,782. OMEGA. Simmon Omega, Inc. SN 195,557. Pub. 6–8–65. Filed 6–12–64.

Class 27 — Horological Instruments

794,783. THE SCANDIA. Sunbeam Corporation. SN 201,058. Pub. 6–8–65. Filed 9–1–64.

794,784. ADRIATICA WORLD-CHAMPION. A. H. Guggenheim S.A. SN 202,263. Pub. 6–8–65. Filed 9–21–64.

794,785. LADORA. Alanjack, Inc. SN 210, 509. Pub. 6–8–65. Filed 1–25–65.

Class 28 — Jewelry and Precious-Metal Ware

794,786. LEGLACE AND DESIGN. Barth F. Dillon. SN 207,870. Pub. 6–8–65. Filed 12–10–64.

Class 29 — Brooms, Brushes, and Dusters

794,685. (See Class 17 for this trademark.)

794,787. QUIK-STIK. Aquariums Incorporated. SN 175,093. Pub. 6–8–65. Filed 8–15–63.

794,788. AQUA-FLO. Star Brush Manufacturing Co., Inc. SN 208,779. Pub. 6–8–65. Filed 12–23–64.

794,789. BASEBRITE AND DESIGN. Anaplex Industrial Products Corporation. SN 210,403. Pub. 6–8–65. Filed 1–22–65.

794,790. ACME GOLD LINE AND DESIGN. Acme Markets, Inc. SN 210,720. Pub. 6–8–65. Filed 1–27–65.

Class 30 — Crockery, Earthenware, and Porcelain

794,791. ACCENT. American Commercial Incorporated. SN 195,999. Pub. 4–6–65. Filed 6–19–64.

Class 32 — Furniture and Upholstery

794,630. (See Class 3 for this trademark.)

794,792. REPRESENTATION OF A PINEAPPLE. The Preservation Society of Newport County. SN 181,661. Pub. 6–8–65. Filed 11–21–63.

794,793. CHIROPRACTIC. The Land-O-Nod Company. SN 193,679. Pub. 6–8–65. Filed 5–18–64.

794,794. PRESENT INDICATIVE. Drexel Enterprises, Inc. SN 207,280. Pub. 6–8–65. Filed 12–2–64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

794,711. (See Class 21 for this trademark.)

794,795. GOURMET BY INTERNATIONAL AND DESIGN. International Oil Burner Co. SN 203,968. Pub. 6–8–65. Filed 10–14–64.

794,796. JOLIP. John H. Phillips. SN 210,981. Pub. 6–8–65. Filed 1–29–65.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

794,797. PERMACORD. The Goodyear Tire & Rubber Company. SN 203,004. Pub. 6–8–65. Filed 9–30–64.

Class 36 — Musical Instruments and Supplies

794,630. (See Class 3 for this trademark.)

794,718. (See Class 21 for this trademark.)

794,720. (See Class 21 for this trademark.)

794,798. STARTIME. Startime Music Corp., by change of name from Starline Music Corporation. MULTIPLE CLASS (Classes 36 and 38). SN 198,230. Pub. 6–8–65. Filed 5–11–64.

794,799. BETSY LYNN. Grand Piano Company, Inc. SN 199,668. Pub. 6–8–65. Filed 8–11–64.

794,800. NANCY HART. Grand Piano Company, Inc. SN 199,669. Pub. 6–8–65. Filed 8–11–64.

Class 37 — Paper and Stationery

794,630. (See Class 3 for this trademark.)

794,722. (See Class 21 for this trademark.)

794,801. M MAYFAIR. Arden-Mayfair, Inc., by merger and change of name from Mayfair Markets. SN 190,015. Pub. 5–25–65. Filed 3–31–64.

794,802. MULTI-VISION. The C. R. Gibson Company. SN 192,131. Pub. 6–8–65. Filed 4–24–64.

794,803. NIKKO. Nikko Pen Kabushiki Kaisha, by change of name from Toyo Seiko Kabushiki Kaisha. SN 198,384. Pub. 6–8–65. Filed 7–22–64.

794,804. GREEN TREATEX. International Paper Company. SN 199,573. Pub. 6–8–65. Filed 8–10–64.

794,805. SUPERSETTE. Hammermill Paper Company. SN 206,101. Pub. 6–8–65. Filed 11–12–64.

Class 38 — Prints and Publications

794,798. (See Class 36 for this trademark.)

794,806. CASH BANK. Bankers & Merchants Savings System, Inc. SN 161,649. Pub. 6–8–65. Filed 1–29–63.

794,807. NATIONAL FOOTBALL HIGHLIGHTS. W. Wallace Orr, Inc. SN 173,860. Pub. 6–8–65. Filed 7–26–63.

794,808. THE CRICKETEER AND DESIGN. Texaco Experiment Incorporated. SN 189,741. Pub. 6–8–65. Filed 3–26–64.

794,809. LABORATORY REPORTER. Fisher Scientific Company. SN 190,604. Pub. 6–8–65. Filed 4–8–64.

794,810. CLINICAL REPORTER. Fisher Scientific Company. SN 190,709. Pub. 6–8–65. Filed 4–9–64.

794,811. LEISURE. Pyramid Publishing Company. SN 191,714. Pub. 6–8–65. Filed 4–21–64.

794,812. WORLD BOOK. Field Enterprises Educational Corporation. SN 195,392. Pub. 6–8–65. Filed 6–11–64.

794,813. TDS AND DESIGN. Travelers Directory Service, Inc. SN 195,742. Pub. 6–8–65. Filed 6–15–64.

794,814. TABTEXT. Educational Research Associates, Inc. SN 199,460. Pub. 4–27–65. Filed 8–7–64.

794,815. COLOR-FACTOR. McGraw-Hill, Inc. SN 200,949. Pub. 6–8–65. Filed 8–31–64.

794,816. C-F. McGraw-Hill, Inc. SN 200,950. Pub. 6–8–65. Filed 8–31–64.

794,817. UPTALK IN VERSE. Frederick A. Everaberg, Sr. SN 201,326. Pub. 6–8–65. Filed 9–1–64.

794,818. THE PARKERIZER. Hooker Chemical Corporation. SN 202,081. Pub. 6–8–65. Filed 9–17–64.

794,819. E AND DESIGN. Eothen Films Limited. SN 202,123. Pub. 6–8–65. Filed 9–16–64.

794,820. HOLLANDER. Hollander Publishing Company, Inc. SN 202,269. Pub. 6–8–65. Filed 9–21–64.

794,821. SMI WORLD. Success Motivation Institute, Inc. SN 202,864. Pub. 6–8–65. Filed 9–26–64.

794,822. EL HERALDO DE LA CIENCIA CRISTIANA. The Christian Science Publishing Society. SN 206,233. Pub. 6–8–65. Filed 11–16–64.

794,823. FOOD PROCESSING AND DESIGN. Putman Publishing Company. SN 207,526. Pub. 6–8–65. Filed 12–4–64.

794,824. CLIFF'S NOTES AND DESIGN. Cliff's Notes, Inc. SN 207,791. Pub. 6–8–65. Filed 12–9–64.

794,825. GEOTIMES. American Geological Institute. SN 207,935. Pub. 6–8–65. Filed 12–11–64.

794,826. COURIER EXPRESS AND DESIGN. Buffalo Courier-Express, Inc. SN 207,942. Pub. 6–8–65. Filed 12–11–64.

794,827. CASPER THE FRIENDLY GHOST. Harvey Famous Cartoons. SN 207,962. Pub. 6–8–65. Filed 12–11–64.

794,828. HEY SWINGY. General Features Corporation. SN 208,068. Pub. 6–8–65. Filed 12–14–64.

794,829. PORK-OTEL. Southern States Cooperative Incorporated. SN 208,403. Pub. 6–8–65. Filed 12–17–64.

Class 39 — Clothing

794,830. TRAVERSE BAY. Traverse Bay Woolen Company. SN 172,786. Pub. 6–8–65. Filed 7–10–63.

794,831. ENGLISH FASHIONS AND DESIGN. Western Fashions, Inc. SN 179,285. Pub. 6–8–65. Filed 10–17–63.

794,832. DOE'S-TOE'S AND DESIGN. Principle Business Enterprises, Incorporated. SN 190,541. Pub. 6–8–65. Filed 4–7–64.

794,833. PINE STREETER. H & K Fashions, Inc. SN 191,549. Pub. 6–8–65. Filed 4–20–64.

794,834. JALOU ORIGINALS. Del Monte Sportswear of California. SN 197,371. Pub. 6–8–65. Filed 7–8–64.

794,835. DAISY SORENE. Daisy Jéhiel, née De Botton. SN 197,834. Pub. 6–8–65. Filed 7–14–64.

794,836. LIGHT-FILL. Delightform Foundations, Inc. SN 198,641. Pub. 6–8–65. Filed 7–28–64.

794,837. BEN'S BEN DAVIS ETC. AND DESIGN. Ben Davis, d.b.a. Ben F. Davis Manufacturing Co. SN 199,035. Pub. 6-8-65. Filed 8-3-64.

794,838. LORD-A-LENE AND DESIGN. Atlantic Thrift Centers, Inc. SN 199,344. Pub. 6-8-65. Filed 8-6-64.

794,839. BECKY THATCHER. Kamp Togs, Inc. SN 200,264. Pub. 6-8-65. Filed 8-20-64.

794,840. SIR MICHAEL AND DESIGN. Heideman Mfg. Co., Inc. SN 200,934. Pub. 6-8-65. Filed 8-31-64.

794,841. FISCHEL. Johnston, Inc. SN 202,805. Pub. 6-8-65. Filed 9-28-64.

794,842. LOUISVILLE. Louisville Manufacturing Co., Inc. SN 204,800. Pub. 6-8-65. Filed 10-26-64.

794,843. BEFORE SIX. S. Rudofker's Sons, Inc. SN 205,202. Pub. 6-8-65. Filed 10-30-64.

794,844. FLIPSY-SLIP. Munsingwear, Inc. SN 205,321. Pub. 6-8-65. Filed 11-2-64.

794,845. U PLUS. Delightform Foundations, Inc. SN 208,895. Pub. 6-8-65. Filed 12-28-64.

Class 40—Fancy Goods, Furnishings, and Notions

794,846. WAVE DIP. Amerace Corporation. SN 202,730. Pub. 6-8-65. Filed 9-28-64.

794,847. BRUSH "N" MUG. George R. Sturino, d.b.a. Brush N' Mug. SN 203,348. Pub. 6-8-65. Filed 10-5-64.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

794,848. TRAVERSE BAY. Traverse Bay Woolen Company. SN 161,428. Pub. 6-8-65. Filed 11-18-63.

794,849. LORESS. Johnson & Johnson. SN 197,033. Pub. 6-8-65. Filed 7-3-64.

794,850. FAIR WIND. Burlington Industries, Inc. SN 198,828. Pub. 6-8-65. Filed 7-30-64.

794,851. VERSA TWILL. Burlington Industries, Inc. SN 199,169. Pub. 6-8-65. Filed 8-4-64.

794,852. RIVERLIN. Dan River Mills, Incorporated. SN 199,723. Pub. 6-8-65. Filed 8-12-64.

794,853. STUART TWILL. Crompton Company. SN 204,364. Pub. 6-8-65. Filed 10-20-64.

794,854. MADRALEIGH. Piedmont Southern Co., Inc. SN 204,920. Pub. 6-8-65. Filed 10-27-64.

794,855. ULTIMA. United Merchants and Manufacturers, Inc. SN 206,863. Pub. 6-8-65. Filed 12-24-64.

794,856. PORTAGE BALANCED. L. J. Schott Company. SN 208,967. Pub. 6-8-65. Filed 12-28-64.

794,857. BOOSTER. Klopman Mills, Inc. SN 209,179. Pub. 6-8-65. Filed 12-31-64.

794,858. INSIGHT. Klopman Mills, Inc. SN 209,182. Pub. 6-8-65. Filed 12-31-64.

794,859. CRUISER. Klopman Mills, Inc. SN 209,183. Pub. 6-8-65. Filed 12-31-64.

794,860. VOLTAGE. Klopman Mills, Inc. SN 209,184. Pub. 6-8-65. Filed 12-31-64.

Class 43—Thread and Yarn

794,861. TRAVERSE BAY. Traverse Bay Woolen Company. SN 172,795. Pub. 6-8-65. Filed 7-10-63.

794,862. FORTE. Forté-Fairbairn Inc. SN 208,907. Pub. 6-8-65. Filed 12-28-64.

794,863. FILAN. Fedelon Throwing Corp. SN 209,005. Pub. 6-8-65. Filed 12-29-64.

Class 44—Dental, Medical, and Surgical Appliances

794,712. (See Class 21 for this trademark.)

794,864. ACME ETC. AND DESIGN. Acme Protection Equipment Co., by change of name and assignment from Acme Protection Equipment Company. SN 180,987. Pub. 6-8-65. Filed 11-13-63.

794,865. STAT. Baxter Laboratories, Inc. SN 190,684. Pub. 4-20-65. Filed 3-27-64.

794,866. STIKEMS. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories. SN 201,390. Pub. 6-8-65. Filed 9-8-64.

794,867. LUMBARTRAK. La Berne Manufacturing Company, Inc. SN 207,062. Pub. 6-8-65. Filed 11-27-64.

794,868. PMR. Puritan Compressed Gas Corporation. SN 207,524. Pub. 6-8-65. Filed 12-4-64.

Class 45—Soft Drinks and Carbonated Waters

794,869. QT. American Beverage Corporation, d.b.a. Calso Water Co. SN 170,267. Pub. 4-6-65. Filed 6-4-63.

794,870. COCKTAIL HOST. Holland House Brands, Inc. SN 200,646. Pub. 6-8-65. Filed 8-26-64.

Class 46—Foods and Ingredients of Foods

794,871. TEXAS GOLD. Bordo Products Company. SN 150,153. Pub. 8-6-63. Filed 7-31-62.

794,872. CAP MINTIS AND DESIGN. Cap Aktiebolag. SN 172,289. Pub. 6-8-65. Filed 7-2-63.

794,873. TAFFY POPS. Waconia Sorghum Company. SN 175,532. Pub. 4-13-65. Filed 8-21-63.

794,874. FRUIT-TELLA. VAN MELLE N.V. SN 177,717. Pub. 6-8-65. Filed 9-25-63.

794,875. PROGRESS. Graffigna Fruit Co., d.b.a. John Graffigna. SN 182,174. Pub. 12-22-64. Filed 12-2-63.

794,876. CAROL KAY. Jancik & Hartness Produce Company, Inc., d.b.a. John Jancik Produce. SN 189,176. Pub. 6-8-65. Filed 3-20-64.

794,877. SPUDNICKS. J. R. Simplot Company. SN 191,620. Pub. 6-8-65. Filed 4-20-64.

794,878. RETARDO. Federal Bakers' Supplies Corp. SN 192,695. Pub. 6-8-65. Filed 5-5-64.

794,879. KELBET. Kelco Company. SN 193,179. Pub. 6-8-65. Filed 5-11-64.

794,880. EGG-VANTAGE. Schneider Bros., Inc. SN 197,333. Pub. 6-8-65. Filed 7-7-64.

794,881. SALTY SEA. Saltesea Packing Company. SN 198,064. Pub. 6-8-65. Filed 7-17-64.

794,882. TIDEPOINT. Wiegardt Brothers, Inc., d.b.a. Wiegardt Bros., Inc. SN 198,245. Pub. 6-8-65. Filed 7-20-64.

794,883. MIXINSOFT #1. Alvin C. Haakenson, d.b.a. Haakenson Company. SN 200,438. Pub. 6-8-65. Filed 8-24-64.

794,884. VEEBO AND DESIGN. Fort Dodge Creamery Company, d.b.a. Ice Cream Specialties Co. SN 201,676. Pub. 6-8-65. Filed 9-11-64.

794,885. KEENTEX. Safeway Stores, Incorporated, d.b.a. Conway Oil Co. SN 201,879. Pub. 6-8-65. Filed 9-14-64.

794,886. PLUME DE VEAU. Berliner & Marx. SN 202,221. Pub. 6-8-65. Filed 9-21-64.

794,887. BRIMFULL. Red Owl Stores, Inc. SN 203,532. Pub. 6-8-65. Filed 10-7-64.

794,888. DERFIE'S. Derf Mfg. Co., Inc. SN 203,946. Pub. 6-8-65. Filed 10-14-64.

794,889. KITCHEN MAID. G. C. Murphy Company. SN 204,276. Pub. 6-8-65. Filed 10-19-64.

794,890. CRAZY CUKE. Glaser, Crandell Co. SN 212,806. Pub. 6-8-65. Filed 2-16-65.

Class 47—Wines

794,891. RHYTHM. United Vintners, Inc., d.b.a. Italian Swiss Colony. SN 202,968. Pub. 6-8-65. Filed 9-29-64.

794,892. VINTONN. United Vintners, Inc., d.b.a. Italian Swiss Colony. SN 202,969. Pub. 6-8-65. Filed 9-29-64.

Class 50—Merchandise Not Otherwise Classified

794,893. CARA-SELL. Berg Company, Inc. SN 166,885. Pub. 6-8-65. Filed 4-17-63.

794,894. WATCH-KADDY. Floyd M. Burdick, d.b.a. Watch-Kaddy Company. SN 174,076. Pub. 6-8-65. Filed 7-31-63.

794,895. ALLENITE. Allen Marking Products, Inc. SN 192,249. Pub. 6-8-65. Filed 4-29-64.

794,896. SPACE KITE. David S. Tanner, d.b.a. Uni-Search Engineering Corporation. SN 193,998. Pub. 6-8-65. Filed 5-21-64.

794,897. PCP AND DESIGN. Donald A. Peterson, d.b.a. Peterson Canvas Products Company. SN 200,969. Pub. 6-8-65. Filed 8-31-64.

Class 51—Cosmetics and Toilet Preparations

794,898. REHEIS ETC. AND DESIGN. Armour Pharmaceutical Company, assignee, by mesne assignment, of Reheis Company, Inc. SN 160,326. Pub. 6-8-65. Filed 1-7-63.

794,899. FLUORACTON. Colgate-Palmolive Company. SN 179,319. Pub. 6-8-65. Filed 10-18-63.

794,900. MOISTURE PLUS. Aloe Creme Laboratories, Inc. SN 190,773. Pub. 6-8-65. Filed 4-10-64.

794,901. OUTSHINE AND DESIGN. American Cosmetics Corporation. SN 192,250. Pub. 6-8-65. Filed 4-29-64.

794,902. LAN-LAY. Lan-Lay, Inc. SN 197,725. Pub. 6-8-65. Filed 7-13-64.

794,903. LAN-LAY AND DESIGN. Lan-Lay, Inc. SN 197,726. Pub. 6-8-65. Filed 7-13-64.

794,904. SUE MICHAELS. New York Pencil Co., Inc., d.b.a. Sue Michaels. SN 199,910. Pub. 6-8-65. Filed 8-14-64.

794,905. THELANE "4." R. H. Laird Manufacturing Company, Inc. SN 200,359. Pub. 6-8-65. Filed 8-21-64.

794,906. FOAMWAY. Edwin L. Drill, d.b.a. Drill Products Co. SN 200,707. Pub. 6-8-65. Filed 8-27-64.

794,907. GLACIAL GEL. Invenex Pharmaceuticals. SN 201,594. Pub. 6-8-65. Filed 9-10-64.

794,908. SOFT-PETAL. Yardley of London, Inc. SN 205,217. Pub. 6-8-65. Filed 10-30-64.

Class 52—Detergents and Soaps

794,909. AMA-CLEAN. East Coast Soap Corp. SN 166,179. Pub. 4-13-65. Filed 4-5-63.

794,910. COMBAT. Suffolk Chemical Corporation. SN 166,589. Pub. 5-5-64. Filed 4-11-63.

794,911. BORA-SOLV. Sanitary Soap Company, Inc. SN 185,159. Pub. 6-26-64. Filed 1-22-64.

794,912. REDDI CLEAN. Simonis Company. SN 188,671. Pub. 12-29-64. Filed 3-13-64.

794,913. RUSTANOL. Philadelphia Quarts Company. SN 191,712. Pub. 6-8-65. Filed 4-21-64.

794,914. GREAT ZEETH'S MIGHTY GOOD. Alberto-Culver Company. SN 192,244. Pub. 6-8-65. Filed 4-29-64.

794,915. GREAT ZEETH'S MIGHTY SUDSY. Alberto-Culver Company. SN 192,245. Pub. 6-8-65. Filed 4-29-64.

794,916. GREAT ZEETH'S MIGHTY BUBBLES. Alberto-Culver Company. SN 192,246. Pub. 6-8-65. Filed 4-29-64.

794,917. GREAT ZEETH'S MIGHTY CLEAN. Alberto-Culver Company. SN 192,248. Pub. 6-8-65. Filed 4-29-64.

794,918. MONT-KAR. Jaime Monraba. SN 194,494. Pub. 6-8-65. Filed 5-28-64.

794,919. P.D.Q. St. Louis Janitor Supply Co., d.b.a. Navy Brand Manufacturing Company. SN 199,320. Pub. 6-8-65. Filed 8-5-64.

794,920. PENTRON. Apollo Chemical Corp. SN 200,892. Pub. 6-8-65. Filed 8-31-64.

794,921. LIQUID ZIT. O. C. Hoffman, d.b.a. The Vapor-X Company. SN 201,433. Pub. 6-8-65. Filed 9-8-64.

794,922. MAHARANI ETC. AND DESIGN. Indexport Limited. SN 205,695. Pub. 6-8-65. Filed 11-6-64.

Service Marks

Class 100—Miscellaneous

794,923. TOSCO. The Oil Shale Corporation. SN 143,562. Pub. 6-8-65. Filed 5-1-62.

794,924. MISCELLANEOUS DESIGN. Atlantic Research Corporation. SN 193,318. Pub. 6-8-65. Filed 5-13-64.

794,925. FLARE-NORTHERN. Atlantic Research Corporation. SN 193,319. Pub. 6-8-65. Filed 5-13-64.

794,926. LL AND DESIGN. Lexington Laboratories, Inc. SN 194,892. Pub. 3-16-65. Filed 6-4-64.

794,927. METRONICS. Metronics Associates, Inc. SN 199,211. Pub. 6-8-65. Filed 8-4-64.

Class 101—Advertising and Business

794,928. SME ETC. AND DESIGN. American Associates, Inc. SN 165,729. Pub. 6-8-65. Filed 4-1-63.

794,929. TELE-SHOPPER. Time-Life Broadcast, Inc., d.b.a. Television Station KOGO. SN 177,926. Pub. 6-8-65. Filed 9-27-63.

794,930. RUCKER SHARE OF PRODUCTION PLAN. The Eddy-Rucker-Nickels Company. SN 179,214. Pub. 6-8-65. Filed 10-17-63.

794,931. AF AND DESIGN. Associated Franchisors. SN 187,550. Pub. 6-8-65. Filed 2-27-64.

794,932. S & H ETC. AND DESIGN. The Sperry and Hutchinson Company. SN 200,789. Pub. 6-8-65. Filed 8-27-64.

794,933. S & H 10 STAMPS ETC. AND DESIGN. The Sperry and Hutchinson Company. SN 200,790. Pub. 6-8-65. Filed 8-27-64.

794,934. S & H 50 STAMPS ETC. AND DESIGN. The Sperry and Hutchinson Company. SN 200,791. Pub. 6-8-65. Filed 8-27-64.

Class 102 — Insurance and Financial

794,935. ALLFARM AND DESIGN. Allfarm Sales, Inc. SN 163,457. Pub. 6–8–65. Filed 2–26–63.

794,936. GENERAL REINSURANCE AND DESIGN. General Reinsurance Corporation. SN 170,531. Pub. 6–8–65. Filed 6–7–63.

794,937. THE AMERICAN COLLEGE PLAN AND DESIGN. Academic Underwriter's of America, Inc., d.b.a. The American College Plan. SN 174,557. Pub. 6–8–65. Filed 8–7–63.

794,938. LIFEGUARDED PROTECTION AND DESIGN. American Republic Insurance Company. SN 183,548. Pub. 6–8–65. Filed 12–26–63.

794,939. SIR GREENBACK. City National Bank & Trust Co. of Rockford. SN 193,936. Pub. 6–8–65. Filed 5–21–64.

794,940. MISCELLANEOUS DESIGN. Mercantile Bank & Trust Company. SN 200,371. Pub. 6–8–65. Filed 8–21–64.

794,941. SPIRAL WITH CHECK MARK (DESIGN). The Central Bank and Trust Company. SN 200,909. Pub. 6–8–65. Filed 8–31–64.

794,942. THE ATLANTIC COMPANIES. The Atlantic Mutual Insurance Company. SN 201,000. Pub. 6–8–65. Filed 9–1–64.

Class 103 — Construction and Repair

794,948. BUST OF MAN (DESIGN). Wade, Wenger Servicemaster Co. SN 164,408. Pub. 6–8–65. Filed 3–11–63.

794,944. FANTASTIC HOMES AND DESIGN. Ron Mitchell Corporation. SN 175,200. Pub. 6–8–65. Filed 8–16–63.

794,945. MIE AND DESIGN. Marine Industrial Electronics, Inc. SN 195,423. Pub. 6–8–65. Filed 6–11–64.

794,946. AJAX NEVER SLEEPS AND DESIGN. Ajax Sewer Cleaning Corp. SN 197,238. Pub. 6–8–65. Filed 7–7–64.

794,947. TEXACO. Texaco Inc. SN 197,441. Pub. 6–8–65. Filed 7–8–64.

794,948. TEXACO AND DESIGN. Texaco Inc. SN 197,442. Pub. 6–8–65. Filed 7–8–64.

794,949. HOBART. The Hobart Manufacturing Company. SN 199,827. Pub. 6–8–65. Filed 8–13–64.

Class 105 — Transportation and Storage

794,950. WESTERN AIRLINES THE O-N-L-Y WAY TO FLY. Western Airlines, Inc. SN 158,587. Pub. 6–8–65. Filed 12–5–62.

794,951. REPRESENTATION OF A WINGED WHEEL. Wings and Wheels Express, Inc. SN 169,588. Pub. 6–8–65. Filed 5–23–63.

794,952. SHALOM. Compass Travel Bureau, Inc. SN 176,163. Pub. 6–8–65. Filed 9–3–63.

794,953. LUCKY 21 TOUR. Nevada Fun Tours, Inc., assignee of Garry Enterprises, Inc. SN 192,171. Pub. 6–8–65. Filed 4–28–64.

Class 106 — Material Treatment

794,954. K-KOTE. The Kenyon Piece Dyeworks, Inc. SN 161,182. Pub. 6–8–65. Filed 1–22–63.

Class 107 — Education and Entertainment

794,955. PREMIERE SHOWCASE. United Artists Corporation. SN 151,448. Pub. 6–8–65. Filed 8–17–62.

794,956. THAT'S THE STORY. C. Kenneth Meeker. SN 188,056. Pub. 6–8–65. Filed 3–2–64.

794,957. A LETTER TO ADAM. Unity by the Sea. SN 196,573. Pub. 6–8–65. Filed 6–26–64.

794,958. A.D.T American District Telegraph Company. SN 200,400. Pub. 6–8–65. Filed 8–24–64.

Collective Membership Mark

Class 200

794,959. NIRC ETC. AND DESIGN. The National Institute of Rug Cleaning, Inc. SN 192,842. Pub. 6–8–65. Filed 5–6–64.

Certification Mark

Class A — Goods

794,960. E.G.A. CERTIFIED MEMORIALS. Elberton Granite Association, Inc. SN 201,401. Pub. 6–8–65. Filed 9–8–64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 37 — Paper and Stationery

794,961. Hammermill Paper Company, Erie, Pa., assignee of The Beckett Paper Company, Hamilton, Ohio. SN 155,774. Filed P.R. 10–24–62; Am. S.R. 5–27–65.

Custom-Cut

For Book and Paper Covers.
First use Oct. 9, 1962.

TRADEMARK REGISTRATIONS RENEWED

27,165. PUTNAM FADELESS DYES AND DESIGN. Cl. 6. 10–29–1895.
44,595. IVORY AND DESIGN. Cl. 42. 8–18–05.
44,905. BABCOCK & WILCOX. Cl. 34. 7–25–05.
45,831. PRESERVO. Cl. 6. 8–29–05.
46,038. BANQUET. Cl. 46. 9–5–05.
46,196. JENKINS. Cl. 13. 9–12–05.
46,602. DUNLAP. Cl. 39. 9–26–05.
46,848. MATCHLESS. Cl. 46. 10–10–05.
47,772. SNOW BALL. Cl. 46. 11–21–05.
480,069. AUTOCRAT. Cl. 46. 12–5–05.
199,150. KARRANA. Cl. 42. 6–2–25.
199,236. HOT SHOT AND DESIGN. Cl. 52. 6–2–25.
199,896. CASCADE. Cl. 24. 6–23–25.
199,961. PANELYTE. Cl. 12. 6–23–25.
200,026. "CELATON." Cl. 42. 6–23–25.
200,137. DESIGN REPRESENTATION OF A FLOWER (FOUR-LEAVED TREFOIL). Cl. 14. 6–23–25.
200,442. PALMOL HANDROPS. Cl. 51. 6–30–25.
200,666. GLACIER. Cl. 52. 7–7–25.
200,914. CONTI. Cl. 52. 7–14–25.
201,595. THROMBOL. Cl. 18. 8–4–25.
201,728. R-S AND DESIGN. Cl. 1. 8–4–25.
201,729. A-S AND DESIGN. Cl. 1. 8–4–25.
201,784. USG. Cls. 12 and 44. 8–4–25.
201,959. HOLLY. Cl. 16. 8–11–25.
204,829. ROYAL DERBY AND DESIGN. Cl. 39. 10–27–25.
204,830. ROYAL IMPERIAL. Cl. 39. 10–27–25.
205,238. COLORANTES DE PUTNAM "EL CABALLO" AND DESIGN. Cl. 6. 11–3–25.
205,467. ACTODECTOR. Cl. 21. 11–10–25.
205,754. QUEEN BEE. Cl. 46. 11–17–25.
206,067. CLOTHCRAFT. Cl. 39. 11–24–25.
206,136. WINTER-TEX AND DESIGN. Cl. 39. 11–24–25.
206,248. VELOC. Cl. 34. 11–24–25.
206,381. NUVO. Cl. 46. 12–1–25.
206,585. OLD HICKORY. Cl. 46. 12–8–25.
206,833. REDWOOD. Cl. 39. 12–8–25.
207,222. SELMA. Cl. 39. 12–22–25.
411,026. CROCHERE. Cl. 42. 1–2–45.
412,023. AQUAKAY. Cl. 18. 2–13–45.
412,846. METEOR. Cl. 37. 3–27–45.
413,165. SUNMERE. Cl. 42. 4–10–45.
414,793. NIT-RO-SOL. Cl. 52. 6–26–45.
414,796. MANIPAL. Cl. 18. 6–26–45.
414,996. MARKOMATIC. Cl. 23. 7–10–45.
415,131. SONOMEND. Cl. 12. 7–10–45.
415,177. B & W AND DESIGN. Cl. 28. 7–31–45.
415,617. AMPCOLOY. Cl. 14. 8–14–45.
415,636. VELVAMINE K–90. Cl. 6. 8–14–45.
415,757. MAJOR. Cl. 46. 8–14–45.
415,996. REUNION. Cl. 28. 8–21–45.
416,240. "GUILD EDGE." Cl. 39. 9–4–45.
416,405. TONI. Cl. 51. 9–11–45.
416,423. TRIMIX. Cl. 12. 9–11–45.
416,469. ATOMITE. Cl. 1. 9–18–45.
416,539. TEEN. Cl. 27. 9–18–45.
416,713. SONOSHEEN. Cl. 4. 9–25–45.
416,893. GOOD BET. Cl. 46. 10–2–45.
416,967. LIGNOPHOL. Cl. 16. 10–9–45.
416,974. SONOLASTIC. Cl. 16. 10–9–45.
417,000. "QUADS." Cl. 43. 10–9–45.
417,003. CRESCENDOE AND DESIGN. Cl. 1. 10–9–45.
417,185. GOLD-O-MINT. Cl. 49. 10–16–45.
417,232. PASTEURAY. Cl. 21. 11–16–45.
417,487. CANNON BALL. Cl. 13. 10–30–45.
417,909. NYLANA. Cl. 43. 11–20–45.
418,005. AIRCHIEF AND DESIGN. Cl. 46. 11–27–45.
418,014. RANCHO. Cl. 46. 11–27–45.
418,083. AERO-SEAL. Cl. 13. 12–4–45.
418,195. ELGYN. Cl. 18. 12–11–45.
418,209. AKOM PEP-SHIRT. Cl. 39. 12–11–45.
418,493. TOLEX. Cl. 42. 12–25–45.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

695,177. TLA. Cl. 15. 3–29–60.
717,850. MP AND DESIGN. Cl. 23. 7–4–61.
754,590. FISKE. Cl. 26. 8–13–63.
779,257. PENNY PAK. Cl. 4. 11–3–64.

Section 8

364,772. WAVE-O-MATIC. Cl. 40. 2–14–39.
364,872. PHANTOM. Cl. 19. 2–14–39.
364,873. WRAITH. Cl. 19. 2–14–39.
364,982. ZWACK. Cl. 49. 2–21–39.
365,166. BANK ACCOUNTS. Cl. 46. 2–28–39.
367,226. SPUNDURIZED. Cl. 42. 5–9–39.
367,779. REPRESENTATION OF A BOY ON STILE. Cl. 46. 5–30–39.
367,780. HEAD AND SHOULDER (DESIGN). Cl. 46. 5–30–39.
369,056. SHAWNEE ETC. Cl. 46. 7–11–39.

369,616. MY-LEN. Cl. 39. 8–1–39.
369,823. CASSCO. Cl. 35. 8–1–39.
369,960. DURA-BOND. Cl. 23. 8–8–39.
416,548. SILVALOCK PLYWOOD SHEATHING AND DESIGN. Cl. 12. 9–18–45.

The following registrations issued July 7, 1959

681,301. FANCIFUL LETTER "A." Cl. 1.
681,302. ELKHART. Cl. 1.
681,309. STA-KLEEN. Cl. 1.
681,311. SNACK-O-MAT. Cl. 2.
681,312. SURLOK. Cl. 2.
681,313. SAYFORD. Cl. 2.
681,315. SAN-EQUIP. Cl. 2.
681,324. CRUSADER. Cl. 3.
681,325. OUTDOORSMAN. Cl. 3.
681,326. SOF-HYDE. Cl. 3.
681,330. AQUAGENE. Cl. 6.
681,339. SUCARYL ACID. Cl. 6.
681,342. EPTAM. Cl. 6.
681,348. OLD CORRAL. Cl. 10.
681,367. HIDDENFLO. Cl. 13.
681,374. MOTOR-ZOOM AND DESIGN. Cl. 15.
681,382. TONSIL POPS. Cl. 18.
681,385. QUIST AND DESIGN. Cl. 18.
681,386. NEBU-PHENEPHRIN. Cl. 18.
681,390. HEPTAMIDE. Cl. 18.
681,391. ABMINTHIC. Cl. 18.
681,393. ANATHROMBIN. Cl. 18.
681,395. NARTATE. Cl. 18.
681,396. HARVAMINE. Cl. 18.
681,401. CLARIN. Cl. 18.
681,406. TARP-ON. Cl. 19.
681,411. NEWPORT. Cl. 19.
681,414. VELVETEX. Cl. 20.
681,415. LA-OVER. Cl. 21.
681,420. PORTA MARINE. Cl. 21.
681,425. CAPITAL AIR RACE. Cl. 22.
681,427. CONOLOCK. Cl. 22.
681,428. P WITH CONCENTRIC CIRCLES. Cl. 22.
681,429. SHOR-BET. Cl. 22.
681,433. ESKIMO-YO. Cl. 22.
681,434. DR. JIG. Cl. 22.
681,435. SALTY JIG. Cl. 22.
681,436. BRINY JIG. Cl. 22.
681,452. GAMMATRON. Cl. 26.
681,453. SAMASTRONIC. Cl. 26.
681,458. MARKLIN. Cl. 27.
681,465. SUNSET AND DESIGN. Cl. 31.
681,466. TURBO-FILTARATOR. Cl. 31.
681,468. STRATO LOUNGER IMPERIAL. Cl. 32.
681,471. BULMAN ETC. AND DESIGN. Cl. 32.
681,473. SUN COAST. Cl. 32.
681,478. PHONO-MOVIE. Cl. 36.
681,479. HI FI AND DESIGN. Cl. 36.
681,494. ETCETERA. Cl. 38.
681,495. CAKE LORE AND DESIGN. Cl. 38.
681,499. MUSICALLY YOURS. Cl. 38.
681,500. THE SALEMAKER ETC. AND DESIGN. Cl. 38.
681,501. THE HUNTER GUARDIAN. Cl. 38.
681,502. FONOSCOPE AND DESIGN. Cl. 38.
681,504. SCIENCE AND SECURITIES. Cl. 38.
681,505. PAW PRINTS AND REPRESENTATION OF DOG FOOTPRINTS AND DOG HOUSES. Cl. 38.
681,506. THE AMERICAN NATURALIST. Cl. 38.
681,507. SPACE SPEAKS THROUGH SPUTNIK. Cl. 38.
681,509. POPULAR HOMECRAFT. Cl. 38.
681,514. EDWARD ABBOTT. Cl. 39.
681,516. JAN JURI. Cl. 39.
681,517. JUNE POWER. Cl. 39.
681,518. SELECTIOR. Cl. 39.
681,519. IMPERIAL CAMELDOWN. Cl. 39.
681,523. STERNALOX. Cl. 39.
681,524. GOODI-MADE 400. Cl. 39.
681,529. SUN-DANA. Cl. 39.
681,538. YOUNG ACCENT. Cl. 39.
681,543. RAINBOW. Cl. 41.
681,545. DESIGN OF FAIRY. Cl. 42.
681,549. LES BEAR. Cl. 42.
681,550. SQUARE BEAR. Cl. 42.
681,551. ACRI-CORD. Cl. 42.
681,555. PREVIEW. Cl. 42.
681,566. EPOXOLON. Cl. 44.
681,569. H AND D AND DESIGN. Cl. 45.
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681,607. BOARD OF EDUCATION. Cl. 50.
681,615. ONE DER AND DESIGN. Cl. 52.
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681,625. AMERICAN INSTITUTE OF ULTRASONICS IN MEDICINE. Cl. 200.
681,627. GOLDTHWAITE'S GARDENERS SPECIAL. Cl. 10.
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681,630. HEAL 'N' SEAL. Cl. 18.
681,631. CATALINA. Cl. 30.
681,633. HIGH FIDELITY TRADE NEWS. Cl. 38.
681,635. CHEF'S COGNAC ETC. AND DESIGN. Cl. 49.

Section 18

707,117. NELSON NAVY CUT AND DESIGN. Cl. 17. 11–15–60.
769,251. FESTIVAL. Cl. 46. 5–5–64.

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AUGUST 24, 1965

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Abbott Laboratories, North Chicago, Ill. 681,339, canc. Cl. 6.
Abshire, Harold W., to Pasteuray Corp., St. Louis, Mo. 417,232, ren. 8–24–65. Cl. 21.
Academic Underwriter's of America, Inc., d.b.a. The American College Plan, Annapolis, Md. 794,937, pub. 6–8–65. Cl. 102.
Acme Brick Co., Fort Worth, Tex. 794,655, pub. 6–8–65. Cl. 12.
Acme Industries, Inc., Jackson, Mich. 794,662, pub. 6–8–65. Cl. 13.
Acme Markets, Inc., Philadelphia, Pa. 794,790, pub. 6–8–65. Cl. 29.
Acme Protection Equipment Co., from Acme Protection Equipment Co., South Haven, Mich. 794,864, pub. 6–8–65. Cl. 44.
Aerosonic Marine, Inc., Clearwater, Fla. 681,420, canc. Cl. 21.
Aircraft Standard Parts Co., Rockford, Ill., to Breese Corps., Inc., Union, N.J. 418,083, ren. 8–24–65. Cl. 13.
Ajax Sewer Cleaning Corp., Glendale, N.Y. 794,946, pub. 6–8–65. Cl. 103.
Akom Knitwear, Inc.: *See*—
Associated Knitted Outerwear Mills, Inc.
Aktiebolaget Textilkonst, Malmo, Sweden. 794,667, pub. 6–8–65. Cl. 13.
Alanjack, Inc., New York, N.Y. 794,785, pub. 6–8–65. Cl. 27.
Alberto-Culver Co., Melrose Park, Ill. 794,914–17, pub. 6–8–65. Cl. 52.
Alexander Doll Co., Inc., d.b.a. Madame Alexander, New York, N.Y. 794,736, pub. 6–6–65. Cl. 22.
Allen Marking Products, Inc., Kansas City, Mo. 794,895, pub. 6–8–65. Cl. 50.
Allfarm Sales, Inc., Gray, Ga. 794,935, pub. 6–8–65. Cl. 102.
Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. 794,900, pub. 6–8–65. Cl. 51.
Amberg File and Index Co., Kankakee, Ill. 794,630, pub. 6–8–65. Multiple Class (Classes 3, 32, 36, and 37).
Amerace Corp., New York, N.Y. 794,846, pub. 6–8–65. Cl. 40.
American Associates, Inc., Minneapolis, Minn. 794,926, pub. 6–8–65. Cl. 101.
American Beverage Corp., Menlo Park, Calif. 794,869, pub. 4–6–65. Cl. 45.
American-Canadian Beaver Co., Inc., Salt Lake City, Utah. 794,626, pub. 6–8–65. Cl. 1.
American Cast Iron Pipe Co., Birmingham, Ala. 794,627, pub. 6–8–65. Cl. 1.
American Cellulose & Chemical Mfg. Co. Ltd., The, to Celanese Corp. of America, New York, N.Y. 200,026, ren. 8–24–65. Cl. 42.
American Chain & Cable Co., Inc., Bridgeport, Conn. 794,648, pub. 6–8–65. Cl. 7.
American Chain & Cable Co., Inc., Bridgeport, Conn. 794,665, pub. 6–8–65. Cl. 13.
American College Plan: *See*—
Academic Underwriter's of America, Inc.
American Commercial, Inc., Los Angeles, Calif. 794,791, pub. 4–6–65. Cl. 30.
American Cosmetics Corp., Melrose Park, Ill. 794,901, pub. 6–8–65. Cl. 51.
American District Telegraph Co., New York, N.Y. 794,958, pub. 6–8–65. Cl. 107.
American Geological Institute, Washington, D.C. 794,625, pub. 6–8–65. Cl. 38.
American Hardware Supply Co., East Butler, Pa. 794,733, pub. 6–8–65. Cl. 22.
American Hardware Supply Co., East Butler, Pa. 794,760, pub. 6–8–65. Cl. 23.
American Hardware Supply Co., East Butler, Pa. 794,763, pub. 6–8–65. Cl. 23.
American Institute of Ultrasonics in Medicine, Los Angeles, Calif. 681,625, canc. Cl. 200.
American Laundry Machinery Co., The, Cincinnati, Ohio, to McGraw-Edison Co., Elgin, Ill. 199,896, ren. 8–24–65. Cl. 24.
American Machine & Foundry Co., New York, N.Y. 794,721, pub. 6–8–65. Cl. 21.
American Republic Insurance Co., Des Moines, Iowa. 794,938. pub. 6–8–65. Cl. 102.
American Roller Co., Chicago, Ill. 794,762, pub. 6–8–65. Cl. 23.
American Tobacco Co., The, New York, N.Y. 794,688–90, pub. 6–8–65. Cl. 17.
Amity Leather Products Co., West Bend, Wis. 681,324–5, canc. Cl. 3.
Ampco Metal, Inc., Milwaukee, Wis. 415,617, ren. 8–24–65. Cl. 14.
Anaplex Industrial Products Corp., Glastonbury, Conn. 794,789, pub. 6–8–65. Cl. 29.
Anderson Co., The, Gary, Ind. 794,703, pub. 6–8–65. Cl. 19.
Angelo & Son, San Francisco, Calif. 794,609, pub. 6–8–65. Cl. 1.
Anheuser-Busch, Inc., St. Louis, Mo. 794,628, pub. 6–8–65. Cl. 2.
Apollo Chemical Corp., Clifton, N.J. 794,920, pub. 6–8–65. Cl. 52.
Aquagene, Inc., Sherman Oaks, Calif. 681,330, canc. Cl. 6.
Aquariums, Inc., Maywood, N.J. 794,787, pub. 6–8–65. Cl. 29.
Archer-Daniels-Midland Co., Minneapolis, Minn. 794,680, pub. 2–23–65. Cl. 16.
Arden-Mayfair, Inc., from Mayfair Markets, Los Angeles, Calif. 794,801, pub. 5–25–65. Cl. 37.
Armour and Co., d.b.a. Armour Leather Co., Chicago, Ill. 681,301–2, canc. Cl. 1.
Armour Leather Co.: *See*—
Armour and Co.
Armour Pharmaceutical Co., Chicago, Ill. 794,645, pub. 4–20–65. Cl. 6.
Armour Pharmaceutical Co., Chicago, Ill., from Rebeis Co., Inc., Berkeley Heights, N.J. 794,898, pub. 6–8–65. Cl. 51.
Associated Franchisors, Minneapolis, Minn. 794,931, pub. 6–8–65. Cl. 101.
Associated Hardware Supply Co., Pittsburgh, Pa. 794,681, pub. 6–8–65. Cl. 16.
Associated Knitted Outerwear Mills, Inc., to Akom Knitwear, Inc., New York, N.Y. 418,209, ren. 8–24–65. Cl. 39.
Associated Lerner Shops of America, Inc., New York, N.Y. 681,326, canc. Cl. 3.
Atlantic Marine Industries, Inc., Pemberton, N.J. 681,411, canc. Cl. 19.
Atlantic Mutual Insurance Co., The, New York, N.Y. 794,942, pub. 6–8–65. Cl. 102.
Atlantic Research Corp., Alexandria, Va. 794,924–5, pub. 6–8–65. Cl. 100.
Atlantic Thrift Centers, Inc., New York, N.Y. 794,838, pub. 6–8–65. Cl. 39.
B.D. & Mfg. Co.: *See*—
Dammeyer, Edwin H.
B & J Mfg. Co., Glenwood, Ill. 794,755, pub. 6–8–65. Cl. 23.
Babcock & Wilcox Co., The, New York, N.Y. 44,905, ren. 8–24–65. Cl. 34.
Babcock & Wilcox Co., The, New York, N.Y. 415,177, ren. 8–24–65. Cl. 23.
Ball, Geo. J., Inc., West Chicago, Ill. 794,621, pub. 6–8–65. Cl. 1.
Bancroft, Joseph, & Sons Co., Wilmington, Del. 681,545, canc. Cl. 42.
Bankers & Merchants Savings System, Inc., Chicago, Ill. 794,806, pub. 6–8–65. Cl. 38.
Bassett, Geo., & Co., Ltd., Sheffield, England. 681,578, canc. Cl. 46.
Bata Shoe Co. of Canada Ltd., Batawa, Ontario, Canada. 794,710, pub. 6–8–65. Cl. 21.
Baxter Laboratories, Inc., Morton Grove, Ill. 794,865, pub. 4–20–65. Cl. 44.
Beckett Paper Co., The: *See*—
Hammermill Paper Co.
Berg Co., Inc., Madison, Wis. 794,893, pub. 6–8–65. Cl. 50.
Berliner & Marx, New York, N.Y. 794,886, pub. 6–8–65. Cl. 46.
Bird & Son, Inc., East Walpole, Mass. 794,659, pub. 6–8–65. Cl. 12.
Bischoff, Ernst, Co., Inc., Ivoryton, Conn., to Miles Laboratories, Inc., Elkhart, Ind. 412,023, ren. 8–24–65. Cl. 18.
Black, Avis C., d.b.a. Old Corral Cattle Co., Douglaston, N.Y. 681,346, canc. Cl. 10.
Bondo Corp., The, Northford, Conn. 794,663, pub. 6–8–65. Multiple Class (Classes 13 and 14).
Bordo Products Co., Chicago, Ill. 794,871, pub. 8–6–65. Cl. 46.
Borg-Warner Corp., Chicago, Ill. 794,779, pub. 6–8–65. Cl. 23.
Bradley, Milton, Co., Springfield, Mass. 794,738–47, pub. 6–8–65. Cl. 22.
Breeze Corps., Inc.: *See*—
Aircraft Standard Parts Co.
Bristol-Myers Co., New York, N.Y. 794,696, pub. 6–8–65. Cl. 18.
Brownell & Field Co., Providence, R.I. 480,069, ren. 8–24–65. Cl. 46.
Brush N' Mug: *See*—
Sturino, George R.
Bruynzeel Surinaame Houtmaatschappij N.V., Zaandam, Netherlands. 794,660, pub. 6–8–65. Cl. 12.
Buckeye Telephone and Supply Co., Columbus, Ohio. 794,709, pub. 6–8–65. Cl. 21.
Buffalo Courier-Express, Inc., Buffalo, N.Y. 794,826, pub. 6–8–65. Cl. 38.
Bulman Corp., The, Grand Rapids, Mich. 681,471, canc. Cl. 32.
Burdick, Floyd M., d.b.a. Watch-Kaddy Co., Elmhurst, Ill. 794,894, pub. 6–8–65. Cl. 50.
Burlington Industries, Inc., New York, N.Y. 794,850–1, pub. 6–8–65. Cl. 42.
Burner-Hollomon Mfg. Corp., Hyattsville, Md. 794,773, pub. 6–8–65. Cl. 23.
Burnham Corp.: *See*—
Lord and Burnham Co.

Butler Mfg. Co., Kansas City, Mo. 794,653, pub. 6-8-65. Cl. 12.
C. & P. Phonoproducts, Inc., from Close and Patenaude, Philadelphia, Pa. 681,478, canc. Cl. 36.
Cake Craft Publications, Inc., Portland, Oreg. 681,495, canc. Cl. 38.
California Canners and Growers: *See*— Schuckl & Co.
Campbell Mfg. Co., Ltd., Willowsale, Ontario, Canada. 794,737, pub. 6-8-65. Cl. 22.
Candle-Lite, Inc.: *See*— Standard Oil Co.
Cap Aktiebolag, Gothenburg, Sweden. 794,872, pub. 6-8-65. Cl. 46.
Cap-Roc, Inc., Rochester, N.Y. 794,765, pub. 6-8-65. Cl. 23.
Carlsen, Carl E., New York, N.Y. 794,759, pub. 6-8-65. Cl. 28.
Carsello Chemical Products, Chicago, to Madison Chemical Corp., Maywood, Ill. 414,793, ren. 8-24-65. Cl. 52.
Cattell, Jacques, New York, N.Y. 681,506, canc. Cl. 38.
Celanese Corp.: *See*— American Cellulose & Chemical Mfg. Co. Ltd.
Celanese Corp. of America, New York, N.Y. 794,617-18, pub. 6-8-65. Cl. 1.
Celanese Corp. of America, New York, N.Y. 794,623, pub. 6-8-65. Cl. 1.
Central Bank and Trust Co., The, Denver, Colo. 794,941, pub. 6-8-65. Cl. 102.
Century Electric Co.: *See*— Roth Brothers & Co.
Christian Science Publishing Society, The, Boston, Mass. 794,822, pub. 6-8-65. Cl. 38.
Cincinnati Gear Co., The, Cincinnati, Ohio. 794,770, pub. 6-8-65. Cl. 23.
City National Bank & Trust Co. of Rockford, Rockford, Ill. 794 939, pub. 6-8-65. Cl. 102.
Cliff's Notes, Inc., Lincoln, Nebr. 794,824, pub. 6-8-65. Cl. 38.
Close and Patenaude: *See*— C. & P. Phonoproducts, Inc.
Club Aluminum Products Co., La Grange Park, Ill. 794,772, pub. 6-8 65. Cl. 23
Coahoma Chemical Co., Inc., Clarksdale, Miss. 794,647, pub. 6-8-65. Cl. 6.
Cohen, Goldman & Co., Inc., New York, N.Y., to House of Worsted-Tex, Inc., Philadelphia, Pa. 206,136, ren. 8-24-65. Cl. 39.
Cold Spring Bleachery, Yardley, Pa. 367,226, canc. Cl. 42.
Colgate-Palmolive Co.: *See*— Palmolive Co., The.
Colgate-Palmolive Co., New York, N.Y. 794,899, pub. 6-8-65. Cl. 51.
Cole Chemical Co., from Cole Chemical Co., St. Louis, Mo. 794,695, pub. 6-8-65. Cl. 18.
Colon Umbrella-Parasol Co., Brooklyn, N.Y. 681,543, canc. Cl. 41.
Columbia Broadcasting System, Inc., New York, N.Y. 794,720, pub. 6-8-65. Multiple Class (Classes 21 and 36).
Comet Rice Mills, Houston, Tex. 681,595, canc. Cl. 46.
Commonwealth Industries: *See*— Wilco Co.
Compass Travel Bureau, Inc., New York, N.Y. 794,952, pub. 6-8-65. Cl. 105.
Congoleum-Nairn, Inc., Kearny, N.Y. 794,708, pub. 6-8-65. Cl. 20.
Continental Air Lines, Inc., Denver, Colo. 681,621, canc. Cl. 105.
Conway Oil Co.: *See*— Safeway Stores, Inc.
Corona Citrus Association, Corona, Calif., to Corona-College Heights Orange and Lemon Association, Claremont, Calif. 205,754, ren. 8-24-65. Cl. 46.
Corona-College Heights Orange and Lemon Association: *See*— Corona Citrus Association.
Corona Mfg. Co.: *See*— Krenn, Robert A.
Creative Capers Mfg. Co.: *See*— Jamieson, James B.
Crescendoe Gloves, Inc.: *See*— Superb Glove Co., The.
Crompton Co., New York, N.Y. 794,853, pub. 6-8-65. Cl. 42.
Crosfield, J. F., Ltd., London, England. 681,452, canc. Cl. 26.
Cudahy Brothers Co., to Patrick Cudahy, Inc., Cudahy, Wis. 47,772, ren. 8-24-65. Cl. 46.
Cudahy, Patrick, Inc.: *See*— Cudahy Brothers Co.
Dade Reagents, Inc., Miami, Fla. 794,637, pub. 6-8-65. Cl. 6.
Dammeyer, Edwin H., d.b.a. B.D. & Mfg. Co., Fort Wayne, Ind. 681,606, canc. Cl. 50.
Dan River Mills, Inc., Danville, Va. 794,852, pub. 6-8-65. Cl. 42.
Davis, A., & Sons, Inc., New York, N.Y. 681,519, canc. Cl. 39.
Davis & Catterall, New York, N.Y. 681,529, canc. Cl. 39.
Davis, Ben, d.b.a. Ben F. Davis Mfg. Co., San Francisco, Calif. 794,837, pub. 6-8-65. Cl. 39.
Davis, Ben F., Mfg. Co.: *See*— Davis, Ben.
Davis, George W., Chicago, Ill. 681,523, canc. Cl. 39.
Decca Records, Inc., New York, N.Y. 681,479, canc. Cl. 36.
Delightform Foundations, Inc., Easton, Pa. 794,836, pub. 6-8-65. Cl. 39.
Delightform Foundations, Inc., Easton, Pa. 794,845, pub. 6-8-65. Cl. 39.
Del Monte Sportswear of California, Los Angeles, Calif. 794,834, pub. 6-8-65. Cl. 39.
Delphi Products Co., Inc., Delphi, Ind. 681,605, canc. Cl. 50.
De Luxe Reading Corp., Elizabeth, N.J. 794,730, pub. 6-8-65. Cl. 22.
Dempster Mill Mfg. Co., Beatrice, Nebr. 794,774-7, pub. 6-8-65. Cl. 23.
Denver Chemical Mfg. Co., The, Stamford, Conn. 794,866, pub. 6-8-65. Cl. 44.
Derf Mfg. Co., Inc., Columbus, Ohio. 794,888, pub. 6-8-65. Cl. 46.
Dillon, Barth F., Phoenix, Ariz. 794,786, pub. 6-8-65. Cl. 28.
Diva Laboratorien A.G., from Diva Laboratorium Aktiengesellschaft, Zurich, Switzerland. 794,691, pub. 6-8-65. Cl. 18.
Diva Laboratorium Aktiengesellschaft: *See*— Diva Laboratorien A.G.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 412,846, ren. 8-24-65. Cl. 37.
Douglas Fir Plywood Association, Tacoma, Wash. 416,548, canc. Cl. 12.
Dowman Products, Inc., Long Beach, Calif. 794,656, pub. 6-8-65. Cl. 12.
Drexel Enterprises, Inc., High Point, N.C. 794,794, pub. 6-8-65. Cl. 32.
Drexel Furniture Co., Drexel, N.C. 681,473, canc. Cl. 32.
Drill, Edwin L., d.b.a. Drill Products Co., Cincinnati, Ohio. 794,906, pub. 6-8-65. Cl. 51.
Drill Products Co.: *See*— Drill, Edwin L.
Dublin, R. V., Co., The, Laredo, Tex. 416,893, ren. 8-24-65. Cl. 46.
Ducon Co., Inc., The, Mineola, N.Y. 794,758, pub. 6-8-65. Cl. 23.
Duff, Thomas S., El Paso, Tex. 681,607, canc. Cl. 50.
Duncan, Donald F., Inc., Evanston, Ill. 794,731, pub. 6-8-65. Cl. 22.
Dunlap & Co., to Hat Corp. of America, New York, N.Y. 46,602, ren. 8-24-65. Cl. 39.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 681,414, canc. Cl. 20.
Dura Corp., d.b.a. Page & Page Co., Oak Park, Mich. 794,752, pub. 6-8-65. Cl. 23.
Dyersburg Cotton Products, Inc., Dyersburg, Tenn. 681,551, canc. Cl. 42.
Dynacrafts, Inc., Glendale, Calif. 681,466, canc. Cl. 31.
East Coast Soap Corp., Brooklyn, N.Y. 794,909, pub. 4-13-65. Cl. 52.
Eddy-Rucker-Nickels Co., The, Cambridge, Mass. 794,930, pub. 6-8-65. Cl. 101.
Educational Research Associates, Inc., Albuquerque, N. Mex. 794,814, pub. 4-27-65. Cl. 38.
Elars Products, Inc., Richmond, Va. 418,195, ren. 8-24-65. Cl. 18.
Elberton Granite Association, Inc., Elberton, Ga. 794,960, pub. 6-8-65. Cl. A.
Electric Storage Battery Co., The, Philadelphia, Pa. 681,603, canc. Cl. 50.
Electro Devices, Inc.: *See*— Leesona Corp.
Electro Tec Corp., South Hackensack, N.J. 681,494, canc. Cl. 38.
Elting Bros., to Elting Bros., Inc., New York, N.Y. 206,833, ren. 8-24-65. Cl. 39.
Elting Bros., Inc.: *See*— Elting Bros.
Esthen Films Ltd., Boreham Wood, England. 794,819, pub. 6-8-65. Cl. 38.
Ermanno Fabbri, Vignola Modena, Italy. 794,722, pub. 6-8-65. Multiple Class (Classes 21 and 37).
Etablissements Kuhlmann, Societe Anonyme, Paris, France. 794,636, pub. 6-8-65. Cl. 6.
Etablissements P. Chaumont, Paris, France. 681,518, canc. Cl. 39
Everfast Fabrics, Inc., New York, N.Y. 411,026, ren. 8-24-65. Cl. 42.
Everfast Fabrics, Inc., New York, N.Y. 413,165, ren. 8-24-65. Cl. 42.
Eversberg, Frederick A., Sr., Chicago, Ill. 794,817, pub. 6-8-65. Cl. 38.
Exeter Orchards Association, Exeter, Calif. 418,005, ren. 8-24-65. Cl. 46.
Fagersta Bruks Aktiebolag, Fagersta, Sweden. 200,137, ren. 8-24-65. Cl. 14.
Farbwerke Hoechst Aktiengesellschaft, Frankfurt am Main, Germany, from Lloyd Bros., Inc., Cincinnati, Ohio. 794,693, pub. 6-8-65. Cl. 18.
Fashion Park, Inc.: *See*— Rosenberg Bros. & Co.
Fay, Leslie, Corp., New York, N.Y. 681,516, canc. Cl. 39.
Fedelon Throwing Corp., Goldsboro, N.C. 794,863, pub. 6-8-65. Cl. 43.
Federal Bakers' Supplies Corp., Garfield, N.J. 794,878, pub. 6-8-65. Cl. 46.
Fiberfil, Inc., Evansville, Ind. 794,615, pub. 6-8-65. Cl. 1.
Field Enterprises Educational Corp., Chicago, Ill. 794,812, pub. 6-8-65. Cl. 38.
Fisher Scientific Co., Pittsburgh, Pa. 794,809-10, pub. 6-8-65. Cl. 38.
Fiske Associates, Inc., Bethel, Conn. 754,590, canc. Cl. 26.
Fleet Engineers, Inc., Muskegon Heights, Mich. 794,704, pub. 6-8-65. Cl. 19.
Fonoscope Ltd., Bristol, England. 681,502, canc. Cl. 38.
Fort Dodge Creamery Co., d.b.a. Ice Cream Specialties Co., Fort Dodge, Iowa. 794,884, pub. 6-8-65. Cl. 46.
Forte-Fairbairn, Inc., Needham Heights, Mass. 794,862, pub. 6-8-65. Cl. 43.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 199,150, ren. 8-24-65. Cl. 42.
Futorian-Stratford Furniture Co., Chicago, Ill. 681,468, canc. Cl. 32.
Gaylord Products, Inc.: *See*— Merrin Wave Clip Co.
Gelgy Chemical Corp., Ardsley, N.Y. 794,642, pub. 1-5-65. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 794,616, pub. 4-27-65. Cl. 1.
General Features Corp., New York, N.Y. 794,828, pub. 6-8-65. Cl. 38.
General Publishing Co., Inc., Chicago, Ill. 681,509, canc. Cl. 38.
General Reinsurance Corp., New York, N.Y. 794,936, pub. 6-8-65. Cl. 102.
General Tire & Rubber Co., The: *See*— Textileather Corp.
Giannini Scientific Corp., Amityville, N.Y. 794,671, pub. 6-8-65. Cl. 14.
Gibson, C. R., Co., The, Norwalk, Conn. 794,802, pub. 6-8-65. Cl. 37.
Gillette Co., The: *See*— Toni, Inc.
Glaser, Crandell Co., Chicago, Ill. 794,890, pub. 6-8-65. Cl. 46.
Glass-Tite Industries, Inc., Providence, R.I. 794,714, pub. 6-8-65. Cl. 21.
Goldthwaite, Frank, d.b.a. Goldthwaite's Texas Toro Co., Fort Worth, Tex. 681,627, canc. Cl. 10.
Goldthwaite's Texas Toro Co.: *See*— Goldthwaite, Frank.
Goldthwaite's Texas Toro Co., Fort Worth, Tex. 794,651, pub. 6-8-65. Cl. 10.
Goodheim Glove Co., Inc., Gloversville, N.Y. 681,524, canc. Cl. 39.
Goodrich, B. F., Co., The, Akron, Ohio. 681,312, canc. Cl. 2.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 794,797, pub. 6-8-65. Cl. 35.
Gotham Audio Corp., New York, N.Y. 794,718, pub. 6-8-65. Multiple Class (Classes 21, 26, and 36).
Gottscho, Adolph, Inc., Hillside, N.J. 414,996, ren. 8-24-65. Cl. 23.
Graffigna Fruit Co., d.b.a. John Graffigna, Lodi, Calif. 794,875, pub. 12-22-64. Cl. 46.
Grand Piano Co., Inc., Morganton, N.C. 794,799-800, pub. 6-8-65. Cl. 36.
Greenwood Labs, Inc., Red Bank, N.J. 681,382, canc. Cl. 18.
Griffin, Pat, Fort Collins, Colo. 794,674-5, pub. 6-8-65. Cl. 15.
Guggenheim, A. H., S.A., Basel, Switzerland. 794,784, pub. 6-8-65. Cl. 27.
H & K Fashions, Inc., Biscoe, N.C. 794,833, pub. 6-8-65. Cl. 39.
Haakenson, Alvin C., d.b.a. Haakenson Co., Ardmore, Pa. 794,883, pub. 6-8-65. Cl. 46.
Haakenson Co.: *See*— Haakenson, Alvin C.
Halo Sales Corp., San Francisco, Calif. 794,678, pub. 6-8-65. Cl. 15.
Hamilton, Max, Flagstaff, Ariz. 794,729, pub. 6-8-65. Cl. 22.
Hammelmann, Paul, d.b.a. Paul Hammelmann Maschinenfabrik, Oelde, Westphalia, Germany. 794,753, pub. 6-8-65. Cl. 23.
Hammermill Paper Co., Erie, Pa. 794,805, pub. 6-8-65. Cl. 37.
Hammermill Paper Co., Erie, Pa., from The Beckett Paper Co., Hamilton, Ohio. 794,961. Cl. 37.
Harvey Famous Cartoons, New York, N.Y. 794,827, pub. 6-8-65. Cl. 38.
Harvey, G. F., Co., Inc., The, Saratoga Springs, N.Y. 681,393, canc. Cl. 18.
Harvey, G. F., Co., Inc., The, Saratoga Springs, N.Y. 681,395-6, canc. Cl. 18.
Hassenfeld Bros., Inc., Pawtucket, R.I. 794,732, pub. 6-8-65. Cl. 22.
Hat Corp. of America: *See*— Dunlap & Co.
Hat Corp. of America, New York, N.Y. 416,240, ren. 8-24-65. Cl. 39.
Heideman Mfg. Co., Inc., Portland, Oreg. 794,840, pub. 6-8-65. Cl. 39.
Hercules Powder Co., Wilmington, Del. 201,728-9, ren. 8-24-65. Cl. 1.
Hewitt-Robins, Inc.: *See*— Hewitt Rubber Corp.
Hewitt Rubber Corp., Buffalo, N.Y., to Hewitt-Robins, Inc., New York, N.Y. 369,980, canc. Cl. 23.
Hilton, Harold S., d.b.a. Hilton Products Co., Seattle, Wash. 681,629, canc. Cl. 18.
Hilton Products Co.: *See*— Hilton, Harold S.
Hobart Mfg. Co., The, Troy, Ohio. 794,949, pub. 6-8-65. Cl. 108.
Hoffman, O. C., d.b.a. The Vapor-X Co., Tatamy, Pa. 794,921, pub. 6-8-65. Cl. 52.
Hoffmann, Harri, Co., Inc., Milwaukee, Wis. 794,632, pub. 6-8-65. Cl. 4.
Hokey Pokey, Inc., New York, N.Y. 794,649, pub. 6-8-65. Cl. 8.
Holiday Industries, Inc., Pittsburgh, Pa. 794,699, pub. 6-8-65. Cl. 19.
Holland House Brands, Inc., Woodside, N.Y. 794,870, pub. 6-8-65. Cl. 45.
Hollander Publishing Co., Inc., Minnetonka, Minn. 794,820, pub. 6-8-65. Cl. 38.
Holley Carburetor Co., Warren, Mich. 794,716, pub. 6-8-65. Cl. 21.
Hooker Chemical Corp., Niagara Falls, N.Y. 794,682, pub. 6-8-65. Cl. 1.
Hooker Chemical Corp., Niagara Falls, N.Y. 794,652, pub. 6-8-65. Cl. 10.
Hooker Chemical Corp., Niagara Falls, N.Y. 794,818, pub. 6-8-65. Cl. 38.
Hope Chest Co., Inc., The, Minneapolis, Minn. 681,631, canc. Cl. 30.
Horner, George W., and Co., Ltd., Chester-le-Street, England. 367,779-80, canc. Cl. 46.
House of Worsted-Tex, Inc.: *See*— Cohen, Goldman & Co., Inc.
Hubbard-Hall Chemical Co., The, Waterbury, Conn. 794,644, pub. 6-8-65. Cl. 6.
Huntington Creek Corp.: *See*— Leroux & Co., Inc.
Hydrocraft: *See*— Szakacs, Joseph J.
Hysol Corp., Olean, N.Y. 794,612, pub. 6-8-65. Cl. 1.
Ice Cream Specialties Co.: *See*— Fort Dodge Creamery Co.
Indexport Ltd., Bombay, India. 794,922, pub. 6-8-65. Cl. 52.
Indoor Golf Corp., Virginia Beach, Va. 794,727, pub. 6-8-65. Cl. 22.
Ingersoll-Rand Co., New York, N.Y. 794,761, pub. 6-8-65. Cl. 23.
International Metallic Packing Corp., Chicago, Ill. 369,823, canc. Cl. 35.
International Oil Burner Co., St. Louis, Mo. 794,795, pub. 6-8-65. Cl. 34.
International Paper Co., New York, N.Y. 794,804, pub. 6-8-65. Cl. 37.
International Tobacco (Overseas) Ltd., London, England. 707,117, canc. Cl. 17.
Invenex Pharmaceuticals, San Francisco, Calif. 794,907, pub. 6-8-65. Cl. 51.
Italian Swiss Colony: *See*— United Vintners, Inc.
Jamieson, James B., d.b.a. Creative Capers Mfg. Co., Claremont, Calif. 681,433, canc. Cl. 22.
Jancik & Hartness Produce Co., Inc., d.b.a. John Jancik Produce, Pharr, Tex. 794,876, pub. 6-8-65. Cl. 46.
Jayco Products, Lovington, Ill. 681,415, canc. Cl. 21.
Jehifi, Daisy, nee De Botton, Paris, France. 794,835, pub. 6-8-65. Cl. 39.
Jenkins, Alfred B., to Jenkins Bros., New York, N.Y. 46,196, ren. 8-24-65. Cl. 13.
Jenkins Bros.: *See*— Jenkins, Alfred B.
Johns-Manville Corp., New York, N.Y. 794,658, pub. 6-8-65. Cl. 12.
Johnson & Johnson, New Brunswick, N.J. 794,849, pub. 6-8-65. Cl. 42.
Johnson Mfg. Co., Inc., Chippewa Falls, Wis. 794,756, pub. 6-8-65. Cl. 23.
Johnston, Inc., Dallas, Tex. 794,841, pub. 6-8-65. Cl. 39.
Jordan Marine, Inc., Miami, Fla. 794,781, pub. 6-8-65. Cl. 26.
Joseph & Feiss Co., The, Cleveland, Ohio. 206,067, ren. 8-24-65. Cl. 39.
Kalifex, Inc., New York, N.Y. 794,611, pub. 9-8-64. Cl. 1.
Kamp Togs, Inc., St. Louis, Mo. 794,889, pub. 6-8-65. Cl. 39.
Kann, S., Sons Co., The, Washington, D.C. 207,222, ren. 8-24-65. Cl. 39.
Kassler Mfg. & Distr. Co.: *See*— Kassler, Sidney S.
Kassler, Sidney S., d.b.a. Kassler Mfg. & Distr. Co., Covina, Calif. 794,664, pub. 6-8-65. Cl. 13.
Keeker, C. Kenneth, Louisville, Ky. 794,956, pub. 6-8-65. Cl. 107.
Kelco Co., San Diego, Calif. 794,879, pub. 6-8-65. Cl. 46.
Kem Mfg. Corp., Atlanta, Ga. 794,638 pub. 6-8-65. Cl. 6.
Kenyon Piece Dyeworks, Inc., The, Kenyon, R.I. 794,954, pub. 6-8-65. Cl. 106.
Kessler, Louis, d.b.a. Novelty Games Co., Brooklyn, N.Y. 794,735, pub. 6-8-65. Cl. 22.
Kieffer, Fred W., d.b.a. Miracle Spring Lift Co., Memphis, Tenn. 794,700, pub. 6-8-65. Cl. 19.
Klopman Mills, Inc., Rockeigh, N.J. 794,857-60, pub. 6-8-65. Cl. 42.
Knaub, Al, and Clara Knaub: *See*— Wescott, W. A.
Kraus Bros. & Co., Inc., to V. Zwack, executrix of the estate of J. Zwack, deceased, New York, N.Y. 364,982, canc. Cl. 49.
Krenn, Robert A., d.b.a. Corona Mfg. Co., Phoenix, Ariz. 794,668, pub. 6-8-65. Cl. 13.
La Berne Mfg. Co., Inc., Columbia, S.C. 794,867, pub. 6-8-65. Cl. 44.
Laird, R. H., Mfg. Co., Inc., New York, N.Y. 794,905, pub. 6-8-65. Cl. 51.
Land-O-Nod Co., The, Minneapolis, Minn. 794,793, pub. 6-8-65. Cl. 32.
Lane Ltd., New York, N.Y. 794,687, pub. 6-8-65. Cl. 17.
Lanier, O. H., San Antonio, Tex. 681,579, canc. Cl. 46.
Lan-Lay, Inc., San Francisco, Calif. 794,902-3, pub. 6-8-65. Cl. 51.
Lantz, Walter, Productions, Inc., Hollywood, Calif. 794,726, pub. 6-8-65. Cl. 22.
Leeming, Thos., & Co., Inc., New York, N.Y. 681,401, canc. Cl. 18.
Leesona Corp., Warwick, R.I., from Electro Devices, Inc., Newton, Mass. 794,780, pub. 6-8-65. Cl. 26.
Leroux & Co., Inc., Philadelphia, Pa., to The Huntington Creek Corp., New York, N.Y. 417,185, ren. 8-24-65. Cl. 49.
Leslie Salt Co.: *See*— Smoked Products Co.

Lexington Laboratories, Inc., Cambridge, Mass. 794,926, pub. 3-16-65. Cl. 100.
Link-Belt Co., Chicago, Ill. 794,771, pub. 6-8-65. Cl. 23.
Lloyd Bros., Inc.: *See*—
Farbwerke Hoechst Aktiengesellschaft.
Lockawy, Preston L., d.b.a. Pre-Loc Co., Charlotte, N.C. 794,646, pub. 6-8-65. Cl. 6.
Lord and Burnham Co., to Burnham Corp., Irvington-On-Hudson, N.Y. 206,248, ren. 8-24-65. Cl. 34.
Lord, Clark and Co., Inc., Boston, Mass. 794,641, pub. 6-8-65. Cl. 6.
Louisville Mfg. Co., Inc., Louisville, Ky. 794,842, pub. 6-8-65. Cl. 39.
Lowville-American, Inc., Lowville, N.Y. 794,749, pub. 6-8-65. Cl. 22.
MGM Brakes, Inc., Cloverdale, Calif. 794,707, pub. 6-8-65. Cl. 19.
Madame Alexander: *See*—
Alexander Doll Co., Inc.
Madison Chemical Corp.: *See*—
Carsello Chemical Products.
Mahon, Thomas J., Inc., Englewood Cliffs, N.J. 681,386, canc. Cl. 18.
Majestic Wax Co., Denver, Colo. 794,631, pub. 6-8-65. Cl. 4.
Major Distributing Co., to Major Farms, Inc., Salinas, Calif. 415,757, ren. 8-24-65. Cl. 46.
Major Farms, Inc.: *See*—
Major Distributing Co.
Marine Industrial Electronics, Inc., Savannah, Ga. 794,945, pub. 6-8-65. Cl. 103.
Marshall Mfg. Corp., Roanoke, Va. 794,682, pub. 6-8-65. Cl. 16.
Master Power Corp., Solon, Ohio. 717,850, canc. Cl. 23.
Matsushita Electric Industrial Co., Ltd., Kitakawachi-gun, Osaka, Japan. 794,713, pub. 6-8-65. Cl. 21.
Maurer, Arthur B., from Maurer-Neuer Meat Packers, Kansas City, Kans. 681,580, canc. Cl. 46.
Maurer-Neuer Meat Packers: *See*—
Maurer, Arthur B.
Mayfair Markets: *See*—
Arden-Mayfair Markets.
Mercantile Bank & Trust Co., Kansas City, Mo. 794,940, pub. 6-8-65. Cl. 102.
Merck & Co., Inc.: *See*—
Mulford, H. K., Co.
Mervin Wave Clip Co., Inc., New York, N.Y., to Gaylord Products, Inc., Chicago, Ill. 364,772, canc. Cl. 40.
Metal Spinners, Inc., Milwaukee, Wis. 794,701, pub. 6-8-65. Cl. 19.
Metal Spinners, Inc., Milwaukee, Wis. 794,766, pub. 6-8-65. Cl. 28.
Metronics Associates, Inc., Palo Alto, Calif. 794,927, pub. 6-8-65. Cl. 100.
Michaels, Sue: *See*—
New York Pencil Co., Inc.
Miles Laboratories, Inc.: *See*—
Takamine Laboratory, Inc.
Bischoff, Ernst, Co., Inc.
Millmaster Onyx Corp.: *See*—
Refined Products Co.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 794,614, pub. 6-8-65. Cl. 1.
Miracle Spring Lift Co.: *See*—
Kieffer, Fred W.
Miss America Corp., New York, N.Y. 681,514, canc. Cl. 39.
Monarch Rug Mills, Inc., Dalton, Ga. 681,555, canc. Cl. 42.
Monraba, Jaime, Barcelona, Spain. 794,918, pub. 6-8-65. Cl. 52.
Monroe Chemical Co.: *See*—
Monroe Drug Co.
Monroe Drug Co., Unionville, Mo., to Monroe Chemical Co., Quincy, Ill. 27,165, ren. 8-24-65. Cl. 6.
Monroe Drug Co., Unionville, Mo., to Monroe Chemical Co., Quincy, Ill. 205,238, ren. 8-24-65. Cl. 6.
Monsanto Co., St. Louis, Mo. 794,673, pub. 6-8-65. Cl. 15.
Moody, Charles E., & Co., to Webster Thomas Co., Boston, Mass. 46,848, ren. 8-24-65. Cl. 46.
Morden Machines Co., Portland, Oreg. 794,768, pub. 6-8-65. Cl. 23.
Mueller, R., & Associates, Santa Barbara, Calif. 794,778, pub. 6-8-65. Cl. 23.
Mulford, H. K., Co., Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 201,595, ren. 8-24-65. Cl. 18.
Munsingwear, Inc., Minneapolis, Minn. 794,844, pub. 6-8-65. Cl. 39.
Mureau, Charles A., Calabasas, Calif. 681,549-50, canc. Cl. 42.
Murphy, G. C., Co., McKeesport, Pa. 794,889, pub. 6-8-65. Cl. 46.
Mutual Inventors Guild: *See*—
Rogers, Ervin O.
Myers, Herbert G., d.b.a. My-Len Sales Co., to My Len Wholesale Distributors, Inc., Chicago, Ill. 369,618, canc. Cl. 39.
McCormick & Co., Inc.: *See*—
McCormick & Co.
McCormick & Co., to McCormick & Co., Inc., Baltimore, Md. 46,036, ren. 8-24-65. Cl. 46.
McGraw-Edison Co.: *See*—
American Laundry Machinery Co., The.
McGraw-Hill, Inc., New York, N.Y. 794,815-16, pub. 6-8-65. Cl. 38.
Mitchell, Ron, Corp., Tacoma, Wash. 794,944, pub. 6-8-65. Cl. 103.
My Len Wholesale Distributors, Inc.: *See*—
Myers, Herbert G.
Narmco Conolon Co., Costa Mesa, Calif. 681,427, canc. Cl. 22.
National American Products Co.: *See*—
Zekaria, Carl S.
National Institute of Rug Cleaning, Inc., The, Arlington, Va. 794,959, pub. 6-8-65. Cl. 200.
Naumkeag Steam Cotton Co., Salem, Mass., to The Springs Cotton Mills, Lancaster, S.C. 44,595, ren. 8-24-65. Cl. 42.
Navy Brand Mfg. Co.: *See*—
St. Louis Janitor Supply Co.
Nevada Fun Tours, Inc., from Garry Enterprises, Inc., San Francisco, Calif. 794,953, pub. 6-8-65. Cl. 105.
New York Pencil Co., Inc., d.b.a. Sue Michaels, New York, N.Y. 794,904, pub. 6-8-65. Cl. 51.
Nikko Pen Kabushiki Kaisha, from Toyo Seiko Kabushiki Kaisha, Chofu City, Tokyo, Japan. 794,803, pub. 6-8-65. Cl. 37.
Nordac Electronics, Inc., Oklahoma City, Okla. 794,712, pub. 6-8-65. Multiple Class (Classes 21, 26, and 44).
Northrup, King & Co., Minneapolis, Minn. 794,620, pub. 6-8-65. Cl. 1.
Novelty Games Co.: *See*—
Kessler, Louis.
Oil Shale Corp., The, New York, N.Y. 794,923, pub. 6-8-65. Cl. 100.
Old Corral Cattle Co.: *See*—
Black, Avis C.
Omega, Simmon, Inc., New York, N.Y. 794,782, pub. 6-8-65. Cl. 26.
Oneida Ltd., Oneida, N.Y. 415,996, ren. 8-24-65. Cl. 28.
Orr, W. Wallace, Inc., Philadelphia, Pa. 794,807, pub. 6-8-65. Cl. 38.
Page & Page Co.: *See*—
Dura Corp.
Pajumar, Inc., Braintree, Mass. 681,585, canc. Cl. 46.
Palmolive Co., The, Chicago, Ill., to Colgate-Palmolive Co., New York, N.Y. 200,666, ren. 8-24-65. Cl. 52.
Panelyte Board Co., The, Trenton, N.J., to Reliance Panelyte, Inc., Kalamazoo, Mich. 199,961, ren. 8-24-65. Cl. 12.
Pasteuray Corp.: *See*—
Abshire, Harold W.
Pataskala Tackle Co., Pataskala, Ohio. 681,429, canc. Cl. 22.
Penny-Pak, Inc., Danville, Ill. 779,257, canc. Cl. 4.
Peterson Canvas Products Co.: *See*—
Peterson, Donald A.
Peterson, Donald A., d.b.a. Peterson Canvas Products Co., Pittsburgh, Pa. 794,897, pub. 6-8-65. Cl. 50.
Pfizer, Chas., & Co., Brooklyn, N.Y. 681,391, canc. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 794,692, pub. 6-8-65. Cl. 18.
Pharmaceutical Industries, Inc., Erlton, N.J. 681,390, canc. Cl. 18.
Philadelphia Quartz Co., Philadelphia, Pa. 794,913, pub. 6-8-65. Cl. 52.
Phillips, John H., Santa Rosa, Calif. 794,796, pub. 6-8-65. Cl. 34.
Piedmont Southern Co., Inc., New York, N.Y. 794,854, pub. 6-8-65. Cl. 42.
Plymouth Cordage Industries, Inc., Boston, Mass. 794,610, pub. 4-13-65. Cl. 1.
Pogo Trimmer Co., Dallas, Tex. 794,757, pub. 6-8-65. Cl. 23.
Polar Ice Cream and Creamery Co., Inc., Pensacola, Fla. 365,166, canc. Cl. 46.
Porter Chemical Co., The, Hagerstown, Md. 681,428, canc. Cl. 22.
Power Sportswear Co., Inc., New York, N.Y. 681,517, canc. Cl. 39.
Powers-Samas Accounting Machines, Ltd., London, England. 681,453, canc. Cl. 26.
Precision Time Corp., New York, N.Y. 681,458, canc. Cl. 27.
Pre-Loc Co.: *See*—
Lockawy, Preston L.
Premax Laboratories, Inc., Oakland, Calif. 794,648, pub. 6-8-65. Cl. 6.
Preservation Society of Newport County, The, Newport, R.I. 794,672, pub. 6-8-65. Cl. 15.
Preservation Society of Newport County, The, Newport, R.I. 794,711, pub. 6-8-65. Multiple Class (Classes 21 and 34).
Preservation Society of Newport County, The, Newport, R.I. 794,792, pub. 6-8-65. Cl. 32.
Pride Service, Inc., Glen Rock, N.J. 794,677, pub. 6-8-65. Cl. 15.
Principle Business Enterprises, Inc., Waterville, Ohio. 794,832, pub. 6-8-65. Cl. 39.
Pullman Vacuum Cleaner Corp.: *See*—
Purex Corp., Ltd.
Pure Spring (Canada) Ltd., Ottawa, Ontario, Canada, from Stock Products, Inc., Brooklyn, N.Y. 681,570, canc. Cl. 45.
Purex Corp., Ltd., Lakewood, Calif., from Pullman Vacuum Cleaner Corp., Boston, Mass. 794,751, pub. 6-8-65. Cl. 28.
Puritan Compressed Gas Corp., Kansas City, Mo. 794,868, pub. 6-8-65. Cl. 44.
Putman Publishing Co., Chicago, Ill. 794,823, pub. 6-8-65. Cl. 38.
Pyles, Howard W., Silver Spring, Md. 681,425, canc. Cl. 22.
Pyramid Publishing Co., Cleveland, Ohio. 794,811, pub. 6-8-65. Cl. 38.
Raeford Turkey Farms, Inc., Raeford, N.C. 769,251, canc. Cl. 46.
Raymar, Inc., Dallas, Tex. 794,657, pub. 6-8-65. Cl. 12.
Red Owl Stores, Inc., Minneapolis, Minn. 794,887, pub. 6-8-65. Cl. 46.
Red Rock Corp., The, Atlanta, Ga. 681,569, canc. Cl. 45.
Refined Products Co., Lyndhurst, N.J., to Millmaster Onyx Corp., New York, N.Y. 415,636, ren. 8-24-65. Cl. 6.

Rehels Co., Inc.: *See*—
Armour Pharmaceutical Co.
Reliance Panelyte, Inc.: *See*—
Panelyte Board Co., The.
Republic Steel Corp., Cleveland, Ohio. 794,666, pub. 6-8-65. Cl. 13.
Richter, Ben, Co., Inc., New York, N.Y. 681,505, canc. Cl. 38.
Rils Industries, Inc., Berkeley Heights, N.J. 794,719, pub. 6-8-65. Cl. 21.
Robertson & Woodcock Ltd., Ilford, Essex, England. 681,581, canc. Cl. 46.
Robeson Preservo Co.: *See*—
Robeson, William B.
Robeson, William B., to Robeson Preservo Co., Port Huron, Mich. 45,831, ren. 8-24-65. Cl. 6.
Rogers, Ervin O., d.b.a. Mutual Inventors Guild, Pecos, Tex. 794,725, pub. 6-8-65. Cl. 21.
Rolls-Royce Ltd., Derby, England. 364,872-3, canc. Cl. 19.
Rosenberg Bros. & Co., Rochester, to Fashion Park, Inc., New York, N.Y. 204,829-30, ren. 8-24-65. Cl. 39.
Ross Products, Inc., New York, N.Y. 794,629, pub. 6-8-65. Cl. 2.
Roth Bros. & Co., Chicago, Ill., to Century Electric Co., St. Louis, Mo. 205,467, ren. 8-24-65. Cl. 21.
Royal Industries, Inc., Pasadena, Calif. 794,767, pub. 6-8-65. Cl. 23.
Rudofker's, S., Sons, Inc., Philadelphia, Pa. 794,843, pub. 6-8-65. Cl. 39.
Ryette Co., St. Louis, Mo. 681,572, canc. Cl. 46.
Safeway Stores, Inc., d.b.a. Conway Oil Co., Oakland, Calif. 794,885, pub. 6-8-65. Cl. 46.
St. Louis Janitor Supply Co., d.b.a. Navy Brand Mfg. Co., St. Louis, Mo. 794,919, pub. 6-8-65. Cl. 52.
St. Regis Publications, Inc., New York, N.Y. 681,633, canc. Cl. 38.
Salemaker Press, The, Marshfield, Mass. 681,500, canc. Cl. 38.
Saltesea Packing Co., Providence, R.I. 794,881, pub. 6-8-65. Cl. 46.
Sanitary Soap Co., Inc., Paterson, N.J. 794,911, pub. 8-25-65. Cl. 52.
Sargeant Acnold Pharmaceutical Co., Inc.: *See*—
Sargeant, Mortimer W.
Sargeant, Mortimer W., East Orange, N.J., to Sargeant Acnold Pharmaceutical Co., Inc., Highland Mills, N.Y. 200,442, ren. 8-24-65. Cl. 51.
Sargent & Greenleaf, Inc., Rochester, N.Y. 794,764, pub. 6-8-65. Cl. 23.
Savannah News-Press, Inc., Savannah, Ga. 681,501, canc. Cl. 38.
Savford, Frank M., Co., Brooklyn, N.Y. 681,313, canc. Cl. 2.
Schick Electric, Inc., from Schick, Inc., Lancaster, Pa. 794,754, pub. 6-8-65. Cl. 23.
Schick, Inc.: *See*—
Schick Electric, Inc.
Schneider Bros., Inc., Chicago, Ill. 794,880, pub. 6-8-65. Cl. 46.
Scholven-Chemie Aktiengesellschaft, Gelsenkirchen, Germany. 794,613, pub. 6-8-65. Multiple Class (Classes 1, 4, 6, 10, and 15).
Schott, L. J. Co., Akron, Ohio. 794,856, pub. 6-8-65. Cl. 42.
Schuckl & Co., d.b.a. Sunnyvale Packing Co., Sunnyvale, to California Canners and Growers, San Francisco, Calif. 418,014, ren. 8-24-65. Cl. 46.
Sears, Roebuck and Co., Chicago, Ill. 681,367, canc. Cl. 13.
Sennheiser Electronic Dr.-Ing Fritz Sennheiser: *See*—
Sennheiser, Fritz.
Sennheiser, Fritz, d.b.a. Sennheiser Electronic Dr.-Ing Fritz Sennheiser, Hannover, Germany. 794,717, pub. 6-8-65. Cl. 21.
Shawnee Milling Co., Shawnee, Okla. 369,056, canc. Cl. 46.
Shell Oil Co., New York, N.Y. 794,625, pub. 6-8-65. Cl. 1.
Simoniz Co., Chicago, Ill. 794,912, pub. 12-29-64. Cl. 52.
Simplot, J. R., Co., Boise, Idaho. 794,877, pub. 6-8-65. Cl. 46.
Smoked Products Co., Cincinnati, Ohio, to Leslie Salt Co., d.b.a. Spice Islands Co., San Francisco, Calif. 206,585, ren. 8-24-65. Cl. 46.
Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy. 794,619, pub. 6-8-65. Cl. 1.
Soap Distributors, Inc., Brooklyn, to The J. B. Williams Co., Inc., New York, N.Y. 200,914, ren. 8-24-65. Cl. 52.
Societe Anonyme; Etablissements Barnett & Elichagaray, Cognac, Charente, France. 681,635, canc. Cl. 49.
Societe de Finacement Industriel, Commercial et Agricole-S.O.F.I.C.A.L., Paris, France. 794,684, pub. 6-8-65. Cl. 17.
Sonneborn, L., Sons, Inc., New York, N.Y., to Sonneborn Building Products, Inc., Des Plaines, Ill. 415,131, ren. 8-24-65. Cl. 12.
Sonneborn, L., Sons, Inc., New York, N.Y., to Sonneborn Building Products, Inc., Des Plaines, Ill. 416,423, ren. 8-24-65. Cl. 12.
Sonneborn, L., Sons, Inc., New York, N.Y., to Sonneborn Building Products, Inc., Des Plaines, Ill. 416,713, ren. 8-24-65. Cl. 4.
Sonneborn, L., Sons, Inc., New York, N.Y., to Sonneborn Building Products, Inc., Des Plaines, Ill. 416,967, ren. 8-24-65. Cl. 16.
Sonneborn, L., Sons, Inc., New York, N.Y., to Sonneborn Building Products, Inc., Des Plaines, Ill. 416,974, ren. 8-24-65. Cl. 16.
Sonneborn Building Products, Inc.: *See*—
Sonneborn, L., Sons, Inc.
Sony Corp., Shinagawa-ku, Tokyo, Japan. 794,715, pub. 6-8-65. Cl. 21.
South Bend Tackle Co., Inc., South Bend, Ind. 681,484-6, canc. Cl. 22.
Southern States Cooperative, Inc., Richmond, Va. 794,839, pub. 6-8-65. Cl. 38.
Sperry and Hutchinson Co., The, New York, N.Y. 794,982-4, pub. 6-8-65. Cl. 101.
Spice Islands Co.: *See*—
Smoked Products Co.
Spinnerin Yarn Co., Inc., to Spinnerin Yarn Co., Inc., New York, N.Y. 417,000, ren. 8-24-65. Cl. 48.
Spinnerin Yarn Co., Inc., to Spinnerin Yarn Co., Inc., New York, N.Y. 417,900, ren. 8-24-65. Cl. 48.
Springs Cotton Mills, The: *See*—
Naumkeag Steam Cotton Co.
Standard Oil Co., Whiting, Ind., and Chicago, Ill., to Candle-Lite, Inc., Cincinnati, Ohio. 201,959, ren. 8-24-65. Cl. 15.
Standard Oil Co., The, Cleveland, Ohio. 794,698, pub. 6-8-65. Cl. 18.
Star Brush Mfg. Co., Inc., Boston, Mass. 794,788, pub. 6-8-65. Cl. 29.
Starline, Inc., Harvard, Ill. 417,487, ren. 8-24-65. Cl. 13.
Starline Music Corp.: *See*—
Startime Music Corp.
Startime Music Corp., from Starline Music Corp., Dallas, Tex. 794,798, pub. 6-8-65. Multiple Class (Classes 36 and 38).
Stauffer Chemical Co., San Francisco, Calif. 681,342, canc. Cl. 6.
Sterling Drug, Inc.: *See*—
Winthrop Products, Inc.
Stevens, J. P., & Co., Inc.: *See*—
Forstmann & Hauffmann Co.
Stock Products, Inc.: *See*—
Pure Spring (Canada) Ltd.
Stone Mountain Grit Co., Inc., Lithonia, Ga. 681,309, canc. Cl. 1.
Stowe-Woodward, Inc., Newton Upper Falls, Mass. 794,748, pub. 6-8-65. Cl. 22.
Sturino, George R., d.b.a. Brush N' Mug, Wilmette, Ill. 794,847, pub. 6-8-65. Cl. 40.
Success Motivation Institute, Inc., Waco, Tex. 794,821, pub. 6-8-65. Cl. 38.
Suffolk Chemical Corp., Boston, Mass. 794,910, pub. 5-5-64. Cl. 52.
Summit Industries, Compton, Calif. 794,661, pub. 6-8-65. Cl. 18.
Sunbeam Corp., Chicago, Ill. 794,783, pub. 6-8-65. Cl. 27.
Sunnyvale Packing Co.: *See*—
Schuckl & Co.
Sunset Equipment Co., St. Paul, Minn. 681,465, canc. Cl. 31.
Superb Glove Co., The, to Crescendoe Gloves, Inc., Johnstown, N.Y. 417,003, ren. 8-24-65. Cl. 1.
Surf Chemical Corp., Burbank, Calif. 681,615, canc. Cl. 52.
Surface Coatings, Inc., Atlanta, Ga. 794,654, pub. 6-8-65. Multiple Class (Classes 12 and 16).
Surgident, Ltd., West Los Angeles, Calif. 681,566, canc. Cl. 44.
Sussy's Frozen Italian and Exotic Foods, Inc., Oklahoma City, Okla. 681,571, canc. Cl. 46.
Svenska Tobaks Aktiebolaget, Stockholm, Sweden. 794,686, pub. 6-8-65. Cl. 17.
Synathane Corp., Oaks, Pa. 794,624, pub. 6-8-65. Cl. 1.
Szakacs, Joseph J., d.b.a. Hydrocraft, San Diego, Calif. 794,706, pub. 6-8-65. Cl. 19.
TRW, Inc., from Thompson Ramo Wooldridge, Inc., Euclid, Ohio. 794,769, pub. 6-8-65. Cl. 23.
Tait Mfg. Co., The, Dayton, Ohio. 794,750, pub. 6-8-65. Cl. 23.
Takamine Laboratory, Inc., Clifton, N.J., to Miles Laboratories, Inc., Elkhart, Ind. 206,381, ren. 8-24-65. Cl. 46.
Tanner, David S., d.b.a. Uni-Search Engineering Corp., Los Angeles, Calif. 794,896, pub. 6-8-65. Cl. 50.
Tarp-On of California, Redondo Beach, Calif. 681,406, canc. Cl. 19.
Tarrson, Sidney A., Co., Chicago, Ill. 681,811, canc. Cl. 2.
Telefonaktiebolaget L. M. Ericsson, Stockholm, Sweden. 794,723, pub. 6-8-65. Cl. 21.
Telonic Industries, Inc., Beech Grove, Ind. 794,724, pub. 6-8-65. Cl. 21.
Texaco Experiment, Inc., New York, N.Y. 794,808, pub. 6-8-65. Cl. 38.
Texaco, Inc., New York, N.Y. 695,177, canc. Cl. 15.
Texaco, Inc., New York, N.Y. 794,947-8, pub. 6-8-65. Cl. 103.
Textileather Corp., Toledo, Ohio, to The General Tire & Rubber Co., Akron, Ohio. 418,493, ren. 8-24-65. Cl. 42.
Thomas, Webster, Co.: *See*—
Moody, Charles E., & Co.
Thompson Ramo Wooldridge, Inc.: *See*—
TRW, Inc.
Thompson-Weinman & Co., Inc., Cartersville, Ga. 416,469, ren. 8-24-65. Cl. 1.
Three G Corp., Akron, Ohio. 794,702, pub. 6-8-65. Cl. 19.
Time-Lie Broadcast, Inc., San Diego, Calif. 794,929, pub. 6-8-65. Cl. 101.
Toni Co., The: *See*—
Toni, Inc.
Toni, Inc., St. Paul, Minn., to The Gillette Co., d.b.a. The Toni Co., Boston, Mass. 416,405, ren. 8-24-65. Cl. 51.
Toyo Seiko Kabushiki Kaisha: *See*—
Nikko Pen Kabushiki Kaisha.
Travelers Directory Service, Inc., Winston-Salem, N.C. 794,813, pub. 6-8-65. Cl. 38.
Traverse Bay Woolen Co., Traverse City, Mich. 794,830, pub. 6-8-65. Cl. 39.
Traverse Bay Woolen Co., Traverse City, Mich. 794,846, pub. 6-8-65. Cl. 42.
Traverse Bay Woolen Co., Traverse City, Mich. 794,861, pub. 6-8-65. Cl. 43.

True Temper Corp., Cleveland, Ohio. 794,734, pub. 6–8–65. Cl. 22.
Union Carbide Corp., New York, N.Y. 794,670, pub. 6–8–65. Cl. 14.
Union Steel Products Co., Albion, Mich. 794,705, pub. 6–8–65. Cl. 19.
Uni-Search Engineering Corp.: *See*—
Tanner, David S.
United Artist Corp., New York, N.Y. 794,955, pub. 6–8–65. Cl. 107.
United Merchants and Manufacturers, Inc., New York, N.Y. 794,855, pub. 6–8–65. Cl. 42.
United States Borax & Chemical Corp., Los Angeles, Calif. 794,633–4, pub. 6–8–65. Cl. 4.
United States Gypsum Co., Chicago, Ill. 201,784, ren. 8–24–65. Multiple Class (Classes 12 and 44).
United Vintners, Inc., d.b.a. Italian Swiss Colony, San Francisco, Calif. 794,891–2, pub. 6–8–65. Cl. 47.
Unity By The Sea, Santa Monica, Calif. 794,957, pub. 6–8–65. Cl. 107.
Universal Cigar Corp., New York, N.Y. 794,683, pub. 6–8–65. Cl. 17.
Upham, Harris, & Co., New York, N.Y. 681,504, canc. Cl. 38.
Ussery, Joseph G., Auburn, Wash. 681,507, canc. Cl. 38.
V.M.E. Corp., Saginaw, Tex. 794,697, pub. 6–8–65. Cl. 18.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 681,592, canc. Cl. 46.
Van Melle N.V., Rotterdam, Netherlands. 794,874, pub. 6–8–65. Cl. 46.
Vapor-X Co.: *See*—
Hoffman, O. C.
Varney Chemical Co., Janesville, Wis. 794,635, pub. 6–8–65. Cl. 6.
Vega Industries, Inc., Syracuse, N.Y. 681,315, canc. Cl. 2.
Verley, Albert, & Co., Linden, N.J. 794,639, pub. 6–8–65. Cl. 6.
Waconia Sorghum Co., Cedar Rapids, Iowa. 794,873, pub. 4–13–65. Cl. 46.
Wade, Wenger Servicemaster Co., Chicago, Ill. 794,943, pub. 6–8–65. Cl. 103.
Waltham Watch Co., Waltham, Mass., to Waltham Watch Co., Chicago, Ill. 416,539, ren. 8–24–65. Cl. 27.
Watch-Kaddy Co.: *See*—
Burdick, Floyd M.
Weatherby, Inc., South Gate, Calif. 794,650, pub. 6–8–65. Cl. 9.
Weco Products Co., Chicago, Ill. 681,630, canc. Cl. 18.
Weiser, Norman S., Harrisburg, Pa. 681,499, canc. Cl. 38.
Wendel, Sanford S., Co.: *See*—
Wendel, Sanford S.
Wendel, Sanford S., d.b.a. Sanford S. Wendel Co., Los Angeles, Calif. 794,685, pub. 6–8–65. Multiple Class (Classes 17 and 29).
Wescott Chemical Co.: *See*—
Wescott, W. A.
Wescott, W. A., d.b.a. Wescott Chemical Co., Lincoln, to Al Knaub and Clara Knaub, West Lincoln, Nebr. 199,236, ren. 8–24–65. Cl. 52.
Western Airlines, Inc., Los Angeles, Calif. 794,950, pub. 6–8–65. Cl. 105.
Western Fashions, Inc., Denver, Colo. 794,831, pub. 6–8–65. Cl. 39.
White Laboratories, Inc., Kenilworth, N.J. 794,894, pub. 6–8–65. Cl. 18.
Whittaker Corp., from Telecomputing Corp., Los Angeles, Calif. 794,679, pub. 6–8–65. Cl. 16.
Wiegardt Bros., Inc., Ocean Park, Wash. 794,882, pub. 6–8–65. Cl. 46.
Wilco Co., d.b.a. Commonwealth Industries, Boston, Mass. 681,374, canc. Cl. 15.
William, J. B., Co., Inc., The: *See*—
Soap Distributors, Inc.
Williams & Humbert, Ltd., London, England. 681,600, canc. Cl. 47.
Wings and Wheels Express, Inc., Flushing, N.Y. 794,951, pub. 6–8–65. Cl. 105.
Winquist, Richard O., Niagara Falls, N.Y. 681,385, canc. Cl. 18.
Winthrop Products, Inc., to Sterling Drug, Inc., New York, N.Y. 414,796, ren. 8–24–65. Cl. 18.
Wood Treating Chemicals Co., St. Louis, Mo. 794,640, pub. 6–8–65. Cl. 6.
Worthington Steel Co., Worthington, Ohio. 794,669, pub. 6–8–65. Cl. 14.
Woster, Alice C., Plattsmouth, Nebr. 794,728, pub. 6–8–65. Cl. 22.
Yardley of London, Inc., Totowa, N.J. 794,908, pub. 6–8–65. Cl. 51.
Young Accent, Inc., New York, N.Y. 681,538, canc. Cl. 39.
Zekaria, Carl S., d.b.a. National American Products Co., New York, N.Y. 794,676, pub. 6–8–65. Cl. 15.
Zwack, Vera: *See*—
Kraus Bros. & Co., Inc.

U.S. GOVERNMENT PRINTING OFFICE:O—1965

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
August 31, 1965 Volume 817 Number 5

PATENTS

NOTICES

Public Law 89–83

[89th Congress, H.R. 4185]

July 24, 1965

AN ACT

79 Stat. 259.

To fix the fees payable to the Patent Office, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the items numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10, respectively, in subsection (a) of section 41, title 35, United States Code, are amended to read as follows: Patent fees. 66 Stat. 796.

"1. On filing each application for an original patent, except in design cases, $65; in addition, on filing or on presentation at any other time, $10 for each claim in independent form which is in excess of one, and $2 for each claim (whether independent or dependent) which is in excess of ten. Errors in payment of the additional fees may be rectified in accordance with regulations of the Commissioner.

"2. For issuing each original or reissue patent, except in design cases, $100; in addition, $10 for each page (or portion thereof) of specification as printed, and $2 for each sheet of drawing.

"3. In design cases:

"a. On filing each design application, $20.

"b. On issuing each design patent: For three years and six months, $10; for seven years, $20; and for fourteen years, $30.

"4. On filing each application for the reissue of a patent, $65; in addition, on filing or on presentation at any other time, $10 for each claim in independent form which is in excess of the number of independent claims of the original patent, and $2 for each claim (whether independent or dependent) which is in excess of ten and also in excess of the number of claims of the original patent. Errors in payment of the additional fees may be rectified in accordance with regulations of the Commissioner.

"5. On filing each disclaimer, $15.

"6. On appeal for the first time from the examiner to the Board of Appeals, $50; in addition, on filing a brief in support of the appeal, $50.

"7. On filing each petition for the revival of an abandoned application for a patent or for the delayed payment of the fee for issuing each patent, $15.

"8. For certificate under section 255 or under section 256 of this title, $15.

"9. As available and if in print: For uncertified printed copies of specifications and drawings of patents (except design patents), 50 cents per copy; for design patents, 20 cents per copy; the Commissioner may establish a charge not to exceed $1 per copy for patents in excess of twenty-five pages of drawings and specifications and for plant patents printed in color; special rates for libraries specified in section 13 of this title, $50 for patents issued in one year. The Commissioner may, without charge, provide applicants with copies of specifications and drawings of patents when referred to in a notice under section 132.

New Applications Received June 1965

Patents	8657
Designs	456
Plant Patents	7
Reissues	28
Total	9148

Issue—August 31, 1965

Patents	1248	No. 3,203,003 to No.	3,204,250, incl.
Designs	67	No. 202,097 to No.	202,163, incl.
Plant Patents	3	No. 2,549 to No.	2,551, incl.
Reissues	5	No. 25,844 to No.	25,848, incl.
Total	1323		

"10. For recording every assignment, agreement, or other paper relating to the property in a patent or application, $20; where the document relates to more than one patent or application, $3 for each additional item."

SEC. 2. Section 41 of title 35, United States Code, is further amended by adding the following subsection:

"(c) The fees prescribed by or under this section shall apply to any other Government department or agency, or officer thereof, except that the Commissioner may waive the payment of any fee for services or materials in cases of occasional or incidental requests by a Government department or agency, or officer thereof."

79 Stat. 260.

SEC. 3. Section 31 of the Act approved July 5, 1946 (ch. 540, 60 Stat. 427; U.S.C., title 15, sec. 1113), as amended, is amended to read as follows:

"(a) The following fees shall be paid to the Patent Office under this Act:

"1. On filing each original application for registration of a mark in each class, $35.

"2. On filing each application for renewal in each class, $25; and on filing each application for renewal in each class after expiration of the registration, an additional fee of $5.

"3. On filing an affidavit under section 8(a) or section 8(b) for each class, $10. 15 USC 1058.

"4. On filing each petition for the revival of an abandoned application, $15.

"5. On filing opposition or application for cancellation for each class, $25.

"6. On appeal from the examiner in charge of the registration of marks to the Trademark Trial and Appeal Board for each class, $25.

"7. For issuance of a new certificate of registration following change of ownership of a mark or correction of a registrant's mistake, $15.

"8. For certificate of correction of registrant's mistake or amendment after registration, $15.

"9. For certifying in any case, $1.

"10. For filing each disclaimer after registration, $15.

"11. For printed copy of registered mark, 20 cents.

"12. For recording every assignment, agreement, or other paper relating to the property in a registration or application, $20; where the document relates to more than one application or registration, $3 for each additional item.

"13. On filing notice of claim of benefits of this Act for a mark to be published under section 12(c) hereof, $10. 15 USC 1062.

"(b) The Commissioner may establish charges for copies of records, publications, or services furnished by the Patent Office, not specified above.

"(c) The Commissioner may refund any sum paid by mistake or in excess."

66 Stat. 803.

SEC. 4. Section 151 of title 35, United States Code, is amended to read as follows:

"§ 151. *Issue of patent*

"If it appears that applicant is entitled to a patent under the law, a written notice of allowance of the application shall be given or mailed to the applicant. The notice shall specify a sum, constituting the issue fee or a portion thereof, which shall be paid within three months thereafter.

"Upon payment of this sum the patent shall issue, but if payment is not timely made, the application shall be regarded as abandoned.

"Any remaining balance of the issue fee shall be paid within three months from the sending of a notice thereof and, if not paid, the patent shall lapse at the termination of this three-month period. In calculating the amount of a remaining balance, charges for a page or less may be disregarded.

"If any payment required by this section is not timely made, but is submitted with the fee for delayed payment within three months after the due date and sufficient cause is shown for the late payment, it may be accepted by the Commissioner as though no abandonment or lapse had ever occurred."

79 Stat. 261.

SEC. 5. Section 154 of title 35, United States Code, is amended by inserting the words "subject to the payment of issue fees as provided for in this title," after the words "seventeen years,". 66 Stat. 804.

SEC. 6. The analysis of chapter 14 of title 35, United States Code, immediately preceding section 151, is amended in the first item thereof by striking out the words "Time of issue of patent" and inserting in lieu thereof "Issue of patent".

SEC. 7. (a) This Act shall take effect three months after its enactment. Effective date.

(b) Items 1, 3, and 4 of section 41(a) of title 35, United States Code, as amended by section 1 of this Act, do not apply in further proceedings in applications filed prior to the effective date of this Act.

(c) Item 2 of section 41(a), as amended by section 1 of this Act, and section 4 of this Act do not apply in cases in which the notice of allowance of the application was sent, or in which a patent issued, prior to the effective date; and, in such cases, the fee due is the fee specified in this title prior to the effective date of this Act.

(d) Item 3 of section 31 of the Trademark Act, as amended by section 3 of this Act, applies only in the case of registrations issued and registrations published under the provisions of section 12(c) of the Trademark Act on or after the effective date of this Act. 60 Stat. 432. 15 USC 1062.

SEC. 8. Section 266 of title 35, United States Code, is repealed. Repeal. 66 Stat. 811.

The chapter analysis of chapter 27 of title 35, United States Code, is amended by striking out the following item:

"266. Issue of patents without fees to Government employees."

SEC. 9. Section 112 of title 35, United States Code, is amended by adding to the second paragraph thereof the following sentence: "A claim may be written in independent or dependent form, and if in dependent form, it shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim."

SEC. 10. Section 282 of title 35, United States Code, is amended by deletion of the first paragraph thereof and substituting therefor the following paragraph: Patents, validity.

"A patent shall be presumed valid. Each claim of a patent (whether in independent or dependent form) shall be presumed valid independently of the validity of other claims; dependent claims shall be presumed valid even though dependent upon an invalid claim. The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting it."

Approved July 24, 1965.

LEGISLATIVE HISTORY:
HOUSE REPORT No. 113 (Comm. on the Judiciary).
SENATE REPORT No. 301 (Comm. on the Judiciary).
CONGRESSIONAL RECORD, Vol. 111 (1965):
Mar. 17: Considered and passed House.
June 15: Considered and passed Senate, amended.
July 12: House concurred in Senate amendments.

Board of Appeals Decisions Rendered in the Month of July 1965

Examiner affirmed	242
Examiner affirmed in part	55
Examiner reversed	97
Total	394

International Convention for the Protection of Industrial Property

Adherence of Uganda to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence of the Government of Uganda to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect June 14, 1965.

EDWARD J. BRENNER,
July 20, 1965. *Commissioner of Patents.*

International Convention for the Protection of Industrial Property

Adherence of Kenya to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland, of the adherence of the Republic of Kenya to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect June 14, 1965.

EDWARD J. BRENNER,
July 20, 1965. *Commissioner of Patents.*

New Ground of Rejection After Final

Although it is permissible to withdraw a final rejection for the purpose of entering a new ground of rejection, this practice is to be limited to situations where a new reference either fully meets at least one claim or meets it except for differences which are shown to be completely obvious. Normally, the previous rejection should be withdrawn with respect to the claim or claims involved.

The practice should not be used for application of subsidiary references, or of cumulative references, or of references which are merely considered to be better than those of record. Furthermore, the practice should not be used for entering new non-reference or so-called "formal" grounds of rejection such as those under 35 U.S.C. 112.

Contrary to previous practice (see 1005, paragraph 2), consultation with or approval by the Group Manager is not required, whether or not the rejection after final is itself made final.

Cancel paragraph 2, section 1005.

RICHARD A WAHL,
Aug. 11, 1965. *Assistant Commissioner.*

Disclaimers

2,716,876.—*Julian H. Surratt*, Denton, N.C. APPARATUS FOR KNITTING ELASTIC FABRIC AND METHOD. Patent dated Sept. 6, 1955. Disclaimer filed May 26, 1965, by the assignee, *Morpul, Inc.*

Hereby enters this disclaimer to claims 1 through 3 of said patent.

3,016,194.—*Lowell S. Bensky*, Levittown, Pa., and *David L. Nettleton*, Haddonfield, N.J. DIGITAL COMPUTING SYSTEM. Patent dated Jan. 9, 1962. Disclaimer filed May 26, 1965, by the assignee, *Radio Corporation of America.*

Hereby enters this disclaimer to claims 2–10 and 12 of said patent.

Patents Available for Licensing

In accordance with the provision of 10 C.F.R. § 81.10–81.12, the U.S. Atomic Energy Commission is prepared to grant nonexclusive, revocable, royalty-free licenses under the following patents.

Applications for licenses should be addressed to the Assistant General Counsel for Patents, U.S. Atomic Energy Commission, Washington, D.C., 20545, indicating the State of incorporation, if a business firm, or citizenship, if an individual.

3,181,653. CRASH ENERGY ABSORBER FOR HEAVY APPARATUS.

3,181,700. IMMISCIBLE LIQUIDS SEPARATOR.

3,182,102. METHOD AND APPARATUS FOR MAKING DENSE BODIES OF REFRACTORY MATERIALS.

3,182,208. LINEAR GATE WITH GATING PULSES APPLIED TO COLLECTOR THROUGH THE PRIMARY OF A TRANSFORMER.

3,182,280. PROTECTION OF ELECTRICAL CONNECTOR CONTACT PINS.

3,182,499. METHOD OF MEASURING WIND VELOCITY.
3,183,059. PLUTONIUM ADSORPTION AND DESORPTION.
3,183,061. XENON TETRAFLUORIDE AND PROCESS OF MAKING SAME.
3,183,166. LOW TEMPERATURE GRAPHITE RADIATION DAMAGE REMOVAL.
3,183,390. PHOTOMULTIPLIER.
3,183,499. HIGH DIRECTIVITY SOLID CURTAIN PERIMETER INTRUSION SYSTEM.
3,183,936. EXPANSION JOINT.
3,184,604. HIGH-DUTY-CYCLE MULTIVIBRATOR.
3,184,849. MINI-CAM TRACER PLATE.
3,185,063. MAGNETICALLY ACTUATED SHUTTER.
3,185,548. PROCESS OF MAKING RADON FLUORIDE AND OF SEPARATING RARE GASES FROM EACH OTHER.
3,186,160. SEPARATION OF METAL VALUES BY CATION EXCHANGE FROM CONCENTRATED PERCHLORIC ACID SOLUTION.
3,188,231. PROCESS OF MAKING CRUCIBLES.
3,188,278. FUEL ELEMENT FOR A SUPERCRITICAL PRESSURE POWER REACTOR.
3,188,470. METHOD OF DETERMINING THE NEGATIVE REACTIVITY OF NEUTRONIC MULTIPLYING SYSTEMS.
3,189,023. BLOOD PRESSURE INDICATING DEVICE.
3,189,419. ZONE-MELTING CRYSTALLIZATION TECHNIQUE.
3,189,445. BINARY NICKEL BASE ALLOYS.
3,189,446. TERNARY NICKEL BASE ALLOYS.
3,189,476. METALLIZING PROCESS FOR CERAMICS.
3,189,666. METHOD OF PREPARING URANIUM DIOXIDE FUEL COMPACTS.
3,189,817. DEVICE FOR TESTING METAL SHEETS BY MEASURING THE TIME REQUIRED FOR ELECTROMAGNETIC PULSES TO PASS THERETHROUGH.
3,189,833. VARIABLE TIME CONSTANT PULSE INTEGRATOR.
3,189,861. ROTARY CONTACT.
3,190,804. METHOD FOR PRODUCING, SEPARATING AND PURIFYING PLUTONIUM.
3,191,026. SCANNING ELECTRON MICROSCOPE.
3,191,048. LIGHT SENSITIVE ALARM SYSTEM.
3,191,092. PLASMA PROPULSION DEVICE HAVING SPECIAL MAGNETIC FIELD.
3,191,662. CONTINUOUS SOLUTION CONCENTRATOR.
3,191,792. MEMBRANE DOUBLE WALL INTERCONNECTED PRESSURE VESSEL.
3,192,016. XENON HEXAFLUORIDE AND METHOD OF MAKING.
3,192,054. FOOD IRRADIATOR AND METHOD.
3,192,069. RADIOACTIVE ISOTOPE POWERED THERMOELECTRIC GENERATOR SYSTEM.
3,192,122. FUEL ELEMENT FOR A NUCLEAR REACTOR HAVING STACK OF THIN FUEL WAFERS SUBMERGED IN LIQUID METAL.

Patents Available for Licensing or Sale

Des. 201,501. THREE DIMENSIONAL APPLIQUED WALL HANGING OR SIMILAR ARTICLE. Norma I. Hovdal, 3644 19th St., San Francisco, Calif.

2,765,110. BELT ATTACHED WALLET CARRIER. Richard R. Wirth, P.O. Box 1026, Coral Gables 34, Fla.

2,785,466. STADIA TOPOGRAPH. Eugene L. Foster, 1581 5th St., Sacramento, Calif.

3,192,625. GARDEN CLIPPER. Otis S. McJohnson, 1018 Maple Ave., Pasadena, Tex., 77502.

3,194,247. EXTINGUISHER FOR CAR ASH TRAY. Billy E. Fox, 1924 Woodstock Way, Sacramento 25, Calif.

3,196,474. ELECTRIC FLOOR WASHERS. Brendan Gallagher, 76 Grove St., New Canaan, Conn., 06840.

General Electric Company is prepared to grant non-exclusive licenses under the following 11 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 7 patents should be addressed to: General Electric Company, Flight Propulsion Division, 1000 Western Ave., West Lynn, Mass., 01905, Attn: Patent Counsel.

3,002,863. OXIDATION RESISTANT IRON-CHROMIUM ALLOY.
3,011,889. OXIDATION RESISTANT ALLOY.
3,015,559. OXIDATION RESISTANT CHROMIUM ALLOY.
3,017,265. OXIDATION RESISTANT IRON-CHROMIUM ALLOY.
3,027,252. OXIDATION RESISTANT IRON-CHROMIUM ALLOY.
3,031,297. OXIDATION RESISTANT ALLOY.
3,078,995. RADIOACTIVE MAGNETIC PARTICLE INSPECTION.

Applications for license under the following 4 patents may be addressed to: Division Patent Counsel, Missile and Space Division Valley Forge Space Technology Center, P.O. Box 8555, Philadelphia, Pa., 19101.

3,149,921. METHOD OF MEASURING THE PARTIAL PRESSURE OF A GAS.
3,151,295. COMMUNICATION SYSTEM EMPLOYING MEANS FOR ADJUSTING THE POWER BETWEEN CONTROL AND RELAY STATIONS.
3,162,764. SPACE VEHICLE ATTITUDE CONTROL.
3,179,890. REMOTELY CONTROLLED STIMULATOR.

General Signal Corporation is prepared to grant non-exclusive licenses under the following 50 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patents may be addressed to: General Railway Signal Company, a Unit of General Signal Corporation, Attention: Manager, Patent Department, P.O. Box 600, Rochester, N.Y., 14602.

2,914,749. RELAY SHIFT REGISTER.
2,915,622. AUTOMATIC SWITCHING SYSTEM FOR CLASSIFICATION YARDS.
2,915,623. FREQUENCY RESPONSIVE TRAIN SPEED CONTROL SYSTEM WITH DIRECT CURRENT CHECK CIRCUIT.
2,916,612. RAILWAY SIGNALING SYSTEM WITH AUTOMATIC MEETS BETWEEN TRAINS.
2,916,613. POSTING INDICATOR CONTROL SYSTEM.
2,922,389. SEARCHLIGHT SIGNALS.
2,924,807. TERMINAL WIRE CONNECTORS AND MOUNTING MEANS THEREFOR.
2,924,808. MULTIPLE TERMINAL ELECTRICAL CONNECTORS.
2,934,636. DECODING CIRCUIT FOR A MECHANICALLY RESONANT RELAY.
2,934,637. CAB SIGNALING SYSTEM FOR RAILROADS.
2,934,678. ELECTRONIC SHIFT REGISTER.
2,947,814. CARRIER TRANSMITTER.
2,948,234. REMOTE CONTROL ORGANIZATION FOR A LOCOMOTIVE.
2,951,452. REMOTE CONTROL SYSTEM FOR A TRIMMING LOCOMOTIVE.
2,953,772. CODE COMMUNICATION SYSTEM.
2,955,278. ELECTRONIC CODE COMMUNICATION SYSTEM.
2,958,765. CODED TRACK CIRCUIT SIGNALING SYSTEMS.
2,959,669. CAB SIGNALING SYSTEM FOR RAILROADS.
2,959,670. CAB SIGNALING SYSTEM FOR RAILROADS.
2,967,232. SWITCH AND SIGNAL CONTROL SYSTEM FOR RAILROADS.
2,967,233. SWITCH POINT INDICATOR FOR RAILWAY TRAFFIC CONTROLLING SYSTEM CONTROL PANELS.
2,975,268. LIGHT SIGNAL.
2,976,402. CONTROL CIRCUIT FOR A FIELD START RELAY IN A CODE TYPE COMMUNICATION SYSTEM.
2,976,405. MECHANICAL LOCK FOR RAILROAD TRACK SWITCHES.
2,979,295. ROLLER BEARING SUPPORTS FOR RAILWAY SWITCH POINTS.
2,982,851. CAB SIGNALING SYSTEM FOR RAILROADS.
2,982,962. ANTENNA SYSTEM.
2,986,630. SWITCH MACHINE FOR RAILROADS.
2,995,324. RAILWAY SWITCH POINT BEARINGS.
3,008,041. CENTRALIZED TRAFFIC CONTROL SYSTEM FOR RAILROADS.
3,008,042. HUMPING RATE INDICATING SYSTEM.

3,016,457. DETECTOR MEANS FOR IMPROPERLY LUBRICATED JOURNALS.
3,016,479. CYCLICAL CODE OSCILLATOR WITH MAGNETICALLY BIASED TORSION PENDULUM.
3,021,506. COMMUNICATION SYSTEM.
3,025,393. HIGHWAY CROSSING SIGNAL CONTROL SYSTEM.
3,034,099. CODE COMMUNICATION SYSTEM.
3,034,100. NORMALLY INACTIVE MULTIPLE STATION CODE COMMUNICATION SYSTEM.
3,034,240. HIGHWAY CROSSING GATE CONTROL SYSTEM FOR RAILROADS.
3,038,991. HIGHWAY CROSSING PROTECTION SYSTEM.
3,042,799. BROKEN DOWN JOINT PROTECTION FOR SWITCH LOCK RELEASE TRACK CIRCUITS.
3,045,112. VEHICLE CONTROL SYSTEMS.
3,054,890. RAILWAY ROUTE CONTROL SYSTEM.
3,054,891. CONTROL SYSTEM FOR RAILWAY CAR CLASSIFICATION YARD.
3,054,893. AUTOMATIC CAR RETARDER CONTROL SYSTEM.
3,054,894. VEHICLE WEIGHING SYSTEM.
3,055,455. CAR RETARDERS FOR RAILROADS.
3,056,022. AUTOMATIC CAR RETARDER CONTROL SYSTEM FOR RAILROADS.
3,056,068. LIGHTNING PROTECTION APPARATUS FOR COMMUNICATION SYSTEMS.
3,056,121. CONTROL PANEL FOR RAILWAY TRAFFIC CONTROLLING SYSTEMS.
3,056,126. INDICATOR CONTROL SYSTEM FOR A TRAIN DESCRIBER.

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF JULY 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	3- 3-58
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Manager Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	12- 7-62	9-22-58
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Manager Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	6-20-60
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Manager Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	10- 1-62	5-26-59
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Manager Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-18-62	1- 6-60
COATING AND LAMINATING, GROUP 160—J. REBOLD, Manager Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures	7-20-62	3-22-60
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Manager Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	8-10-59
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Manager Gas, Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Distillation; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12-18-62	7-24-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Manager Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10-12-62	11-22-60
SECURITY, GROUP 220—S. BOYD, Manager Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	1- 3-62	7-14-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Manager Communications; Multiplexing Techniques; Facsimile and Related Art.	10-22-62	2-20-60
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Manager Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	10-30-58
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Manager Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 2-62	2- 2-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Manager Optics; Radiant Energy; Measuring.	9-24-62	7- 9-59
ELEMENTS, GROUP 270—E. J. SAX, Manager Conductors; Switches; Miscellaneous.	1-25-63	2-20-61

Total number of pending applications (excluding Designs)	197,122
Total number of Design applications pending	5,148
Total number of applications awaiting action (excluding Designs)	147,473
Total number of Design applications awaiting action	1,827
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	March 3, 1958

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during August 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 600. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents ..... Numbers 2,446,165 to 2,448,896, inclusive

Plant Patents ..... Number 806

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. B. BRONAUGH, Director.		
MATERIAL HANDLING, GROUP 310—A. BERLIN, Manager Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6-26-63	11-14-61
MANUFACTURING; METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus.	10-26-62	10-14-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—A. M. HORTON, Manager Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	3- 5-63	11- 2-59
TOOLS, JOINTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	5- 3-61
FLUID HANDLING, GROUP 360—E. PAUL, Manager Fluid Handling; Valves; Pipes and Tubular Conduits; Fluent Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing; Centrifugal Bowl Separators.	2- 4-63	12-13-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Manager Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	5-20-63	7-20-60
HEAT GENERATION, TRANSFER AND UTILIZATION, GROUP 380—P. L. PATRICK, Manager Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation; Refrigeration; Drying; Ventilation; and Illumination.	4- 8-63	8-26-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AMUSEMENT, HUSBANDRY AND PERSONAL TREATMENT, GROUP 410—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery and Toiletry.	4- 5-63	8-28-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Manager Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 5-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-28-63	1-10-61
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Manager Textiles, Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Manager Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-21-63	9-21-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Manager Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	6- 6-63	9-13-61
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Manager Printing; Typewriters; Stationery; Material Treatment.	7-20-62	12-31-58
DESIGNS, GROUP 480—J. A. MANIAN, Manager Industrial Arts; Household, Personal and Fine Arts.	9- 2-64	6-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE MELVIN H. BOLDT

No. 7292. Decided May 13, 1965

[52 CCPA —: 344 F.2d 990; 145 USPQ 414]

1. DESIGN—PATENTABILITY—COMBINING REFERENCES—OBVIOUSNESS—NON-ANALOGOUS ART.

"* * * the question in design cases is not whether the references sought to be combined are in analogous arts in the mechanical sense, but whether they are so related that the appearance of certain ornamental features in the one would suggest application of those features in the other. * * * Thus, we do not think the mere fact that the Home Workshop Encyclopedia and Club Aluminum references are not directed to radio cabinets necessarily proves the Board to be in error."

2. SAME—SAME—PARTICULAR SUBJECT MATTER—"RADIO CABINET."

The refusal of the claim in an application for a design patent entitled "Radio Cabinet," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. D62,232.

REVERSED.

John J. Pederson (*Homer R. Montague* of counsel) for appellant.

Clarence W. Moore (*S. Wm. Cochran* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

The question here is whether the Board of Appeals committed reversible error in affirming the rejection on prior art of the sole claim [1] in Boldt application Serial No. 62,232, filed September 21, 1960, for a design patent for a "Radio Cabinet."

The application discloses a cabinet with a rectangular front divided along a vertical line into two rectangular portions, one relatively narrow, the other relatively wide. The narrow portion is provided with a circular tuning dial centrally located thereon, and a circular control knob of smaller diameter disposed directly thereunder.

The larger rectangular portion constitutes the grille behind which the speaker is normally disposed. It is provided throughout with evenly, closely spaced apertures and has a circularly brushed appearance. Appellant states:

The novel features of my design reside in the provision of a multi-apertured semi-bright or satin finish panel having a circularly brushed surface effect to present multitudinous varying reflection and moiré [2] effects dependent upon ambient lighting and the viewing aspect of the observer * * *

The references relied on by the Examiner and Board are:

Mart magazine, February 1959, page 49, Admiral pocket radio, lefthand column.

Mart magazine, May 1958, page 48, Regency transistor radio, lefthand column.

Everybody's Home Workshop Encyclopedia, © 1948, page 163, metal discs, top of page.

Club Aluminum, catalog slip sheet, form DSA–270, © 1952 by Club Aluminum Products Co., griddle, bottom of page.

[1] The claim is in formal design form reading:

The ornamental design for a radio cabinet substantially as shown and described.

[2] Appellant describes the moiré effect as "curlicue light interference patterns."

The 1959 Mart magazine shows a radio cabinet whose front has a speaker grille, tuning dial and control knob located and proportioned much like appellant's cabinet. A similar cabinet is shown in the 1958 Mart publication, the grille there clearly appearing as a flat panel provided throughout with evenly and closely spaced circular apertures.

Everybody's Home Workshop Encyclopedia discloses a metal panel decorated with overlapping brushed areas, each of which shows radial highlights.

The Club Aluminum reference shows an aluminum griddle with a circularly brushed surface exhibiting radial highlights.

The Examiner and Board thought that, in view of the Home Workshop Encyclopedia and Club Aluminum reference, it would be obvious to a person of ordinary skill in the art to apply a circular brushed pattern to the perforated grille shown in Mart. In reaching that conclusion, the Board took judicial notice that "the visual effect produced by a circularly brushed surface with changed relative positions of a light source and an observer" was common knowledge long prior to appellant's filing date.

To support his allegations that the Board erred, appellant advances two principal contentions: That the secondary references are from non-analogous arts; and that his design creates a visual effect distinctly different from any of the references, "particularly in the development of varying moiré patterns with variations in viewing angle and ambient lighting."

[1] As to the first contention, the question in design cases is not whether the references sought to be combined are in analogous arts in the mechanical sense, but whether they are so related that the appearance of certain ornamental features in the one would suggest application of those features in the other. *In re Glavas*, 43 CCPA 797, 230 F.2d 447, 109 USPQ 50. Thus, we do not think the mere fact that the Home Workshop Encyclopedia and Club Aluminum references are not directed to radio cabinets necessarily proves the Board to be in error.

However, we do question whether the prior art of record would make appellant's claimed design obvious to one of ordinary skill in the art. Both secondary references show a circularly brushed effect on a solid metal surface. One skilled in the art might expect that such treatment of a perforated grille surface would result in an effect resembling the similarly treated solid surface so far as radial highlights are concerned. We doubt, however, that he would find anything in the references to suggest that a varying moiré effect be provided on a radio cabinet grille or that moiré patterns could be obtained by applying the circular brushed effect to the perforated panel of the prior art radio cabinet. The contribution which the moiré effect makes to the ornamental appearance of appellant's design for a radio cabinet supports our conclusion that what appellant has done would not be obvious within the meaning of 35 U.S.C. 103.

[2] The decision is reversed.

REVERSED.

RICH, *J.*, dissenting.

In my opniion the *claimed* design is clearly obvious within the meaning of 35 U.S.C. 103 and therefore unpatentable.

As to the actual rejection before us and who made it, it was the Examiner's position that the design is "rejected for lack of patent-

able design novelty over the references of record but specifically as lacking patentable design merit * * *"; that "no element of design invention would be involved in applying the technique of circularly brushing a metal surface * * * nor would it require an exercise of the inventive faculties," and that the differences from the prior art "do not provide the instant design with any new distinctive or ornamental appearance * * *."

It is something of an oversimplification to say, as did the Board, and as does the majority, that all of the foregoing Examiner's grounds of rejection constitute a statement that the design wuold have been "obvious." I am unable to tell what statutory basis the Examiner applied, whether 35 U.S.C. 102, 103 or 171, the last-mentioned being the only section he referred to. He definitely seems to have had lack of "design novelty" in mind—whatever that is. The only novelty requirements pertaining to design inventions under section 171 are those of 102, as in the case of other kinds of inventions.

It cannot be gainsaid, and the majority does not attempt to do so, that appellant's design is *primarily* the application to an initially flat, finely perforated panel of the old circularly-brushed effect *commonly* applied to pots, pans, griddles and an infinite variety of other metal or even plastic articles. There is no question but that it looks good on a radio panel, but when metal grilles came into vogue to replace cloth and plastic grilles it seems to me an entirely obvious way to finish them.

The argument which the majority accepts as adequate to take the circularly brushed effect out of the category of obvious finishing techniques is the moiré effect allegedly produced. I say "allegedly" because I do not believe mere circular *brushing* of a perforated plate will produce that effect. It is there, in an evanescent way, on a sample radio submitted but it would hardly be noticed unless attention were called to it and under most viewing conditions I would not say it is there at all. Something that is *invisible* under most conditions seems a slim thread on which to hang patentability of an *ornamental* design. Furthermore, no moiré pattern is illustrated in the application drawings, wherein the design is supposed to be "shown"—being solely a matter of appearance—nor can one be seen in an illustrative brochure in color submitted at the hearing or its black-and-white reproduction in the record (filed in the Patent Office June 21, 1961).

A peculiar aspect of this case is that this now all-important moiré effect does not, as I indicated, appear to be the result of *brushing* the perforated metal panel, for the submitted radio sample in which the moiré effect may sometimes be seen *does not have a brushed panel.* What the specification describes in words as a "satin finish panel having a circularly brushed *effect*" (my emphasis) produces that "effect" by a *ribbed* surface, not produced by brushing, the rib being spiral and having spacing about equal to the grooves on a 78 r.p.m. phonograph record. I believe that the moiré effect (when present) results from the combined light-reflecting effect of the *ribs* and the interference therewith by the multitudinous fine perforations. I do not believe *brushing* or other abrading commonly used to produce a "circular brushed effect" will produce the moiré effect. The specification does not describe the ribs which do produce the effect or otherwise tell how to obtain it.

Alternatively it might be said that the moiré effect as an aspect of *appearance*, for which alone design patents are granted, is not "shown" but only mentioned in words and being vague, evanescent, and indefinite cannot be relied on for patentability.

I would affirm.

U.S. Court of Customs and Patent Appeals

IN RE ANTHONY L. GARNERO

No. 7260. Decided May 20, 1965

[52 CCPA —; 345 F.2d 589; 145 USPQ 457]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"STRUCTURAL MATERIAL OF EXPANDED MINERALS AND METHOD FOR MANUFACTURING."

The decision of the Board of Appeals refusing the claims in an application entitled "Structural Material of Expanded Minerals and Method for Manufacturing," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 714,831.

AFFIRMED.

Herman Hersh (*James H. Littlepage* of counsel) for appellant.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

Anthony L. Garnero appeals from a decision of the Board of Appeals affirming the Examiner's rejection of claims 2–12, all of the claims in appellant's application.[1]

The invention is a method of forming an insulating mat of expanded perlite, an inorganic siliceous material. When perlite is passed through a zone heated to a temperature such that the particles are in a "pyroplastic" state, combined water contained in the perlite particles is driven off. As a result, the particles expand and become porous. The porous particles still in the pyroplastic state are collected on an endless conveyor where they become fused together forming a porous mat. Claims 2 and 5 are illustrative:

2. The method of producing a composite structure of an expanded perlite comprising the steps of heating the perlite while in movement individually in finely divided form to raise the temperature of the perlite to above 1200° F. but below 2500° F. whereby the perlite is caused concurrently to release combined water while the entire mass is in a pyroplastic stage to cause expansion, and projecting the individually heated particles of perlite onto a collecting surface to agglomerate the expanding perlite while still in the expanded and pyroplastic stage to form a composite structure.

5. The method of producing a composite structure of an expanded perlite comprising the steps of heating finely divided perlite particles in movement in an individual finely divided state for a time concurrently to raise the temperature of the entire mass of the mineral to a pyroplastic stage during which the combined water is released to expand the particles and to flux the mineral, and projecting the heated particles of perlite onto a collecting wall to agglomerate the expanded perlite particles while in the expanded and pyroplastic stage to form a composite structure.

The references relied on are:

Slidell, 1,845,350, February 16, 1932.
Wyatt, 1,882,052, October 11, 1932.
Hermann, 1,929,425, October 10, 1933.
Parsons, 2,341,059, February 8, 1944.
"Perlite, The Wonder Material," Page Convertor Co. (pp. 1–3) (1949).

[1] Serial No. 714,831, filed February 12, 1958, for "Structural Material of Expanded Minerals and Method for Manufacturing."

Parsons discloses the production of lightweight, porous, ceramic materials for insulation by passing ceramic particles through a high temperature zone and then fusing the particles in a collecting zone to form a composite structure. Ceramic material such as clay is ground into particles and passed through a furnace. According to the reference:

> The temperature of the furnace and the time allowed for the particles to remain therein are calculated to allow the surfaces of the individual particles to come into a fused or molten state. * * * The particles are collected in a zone of the furnace in a mass, each particle adhering to one or more of the others by virtue of their respective fused surfaces.

Porosity may be obtained by expansion of gas within the particles. Thus,

> * * * a combustible material such as sawdust, naphthalene, or other organic material is incorporated into the molded clay mass. The combustible material is then burned out during the firing, and voids are left in the product. Gas-liberating substances are also sometimes incorporated with the clay in order to lend porosity to the resulting product. * * *

Parsons further states:

> In order further to increase the space between the particles, the addition of fluffing agents such as asbestos or mineral wool, cyanite, and the like is also within the scope of this invention. The fluffing agents may act to further separate the particles either by holding the particles apart mechanically or by liberating gas during the formation of the porous mass, thus increasing the size of the voids between the particles. * * * For low temperature work, asbestos or mineral wool works very satisfactorily. * * * Other suitable mineral fluffing agents are vermiculite * * * and silica, the latter preferably at or above 500° C., at which temperature it has an expanding effect. Gas-producing or gas-liberating materials such as gypsum may be incorporated into the dry mix which, when exposed to the high temperature, will volatilize and form cellular structures within the mass.
>
> Furthermore, to accelerate the softening of the surfaces and subsequent bonding action, a flux which is easily vaporizable, such as sodium chloride, may be introduced into the furnace * * *.

The Examiner relied upon the Perlite article for the suggestion of using perlite in the Parsons' process. The article states that perlite possesses the high insulating properties of mineral wool and vermiculite and yet has high strength. Perlite is described as a volcanic glass containing 65 to 75% silica. It is stated that temperatures of 1500–2200° F. expand the perlite 600% to 1500% or more in volume due to the formation of air or gas bubbles. In order for expansion to occur, "it is necessary to heat the glassy particles to the proper viscosity or softness, so that the moisture and/or gas entrapped in the ore will expand the softened mass into several times its original volume."

The Perlite article, which is apparently an advertising brochure for a specific indirectly heated expansion furnace for producing separate particles of expanded perlite, states that several disadvantages result from the use of direct flame heaters. One disadvantage is that there is loss due to unexpanded ore. Another so-called disadvantage is that "there is a fusion of hot particles into clinkers." Appellant argues that this statement would teach away from agglomerating as in the Parsons' process. We disagree. Certainly agglomeration is a disadvantage when individual particles of expanded perlite are desired. However, we find no suggestion that such agglomeration would prevent use of perlite in the Parsons' process. Indeed, the fact that

agglomeration takes place at normal expansion temperatures would indicate that perlite was well suited for the Parsons' process.

Both the Examiner and the Board felt that use of perlite in the Parsons' process would be obvious because Parsons suggested the use of materials similar to perlite. We note that Parsons suggests the use of vermiculites and mineral wool in forming a porous mat. The Perlite article indicates that perlite has the insulating properties of mineral wool and vermiculite and approaches the structural strength of pumice and slags. Claim 2 calls for heating the particles to a temperature of "above 1200° F. but below 2500° F." in order to release water from the particles and cause them to expand. Perlite discloses expansion temperatures of about 1500–2000° F.

The only limitation in claim 5 not present in claim 2 is:

> * * * to raise the temperature of the entire mass of the mineral to a pyroplastic stage during which the combined water is released to expand the particles and to flux the mineral * * *.

Apparently this limitation is used in place of the "1200° F. but below 2500° F." limitation of claim 2. Reference to applicant's specification indicates that the pyroplastic stage and suitable agglomeration are achieved at temperatures as low as 1200° F. and that optimum expansion and agglomeration are achieved in a temperature range of 1800–2200° F. This coincides closely with the Perlite range of 1500–2000° F. We think that the references, when considered together, would suggest the expansion and agglomeration of perlite in the Parsons' process.

The remaining claims are dependent upon claims 2 and 5. Claims 3 and 4 recite temperature ranges of 1600–2400° F. and 1900–2200° F., respectively. Claim 4 recites a particle size of less than 20 mesh and a heating time of from less than 1 to 360 seconds. Claims 6 and 7 call for the addition of a siliceous inorganic eutectic material. Claims 8, 9 and 10 recite the addition of an inorganic fiber of higher fusion point than the pyroplastic stage of the perlite. Claim 9 recites the amount of fiber, 0.5 to 10%, and claim 10 recites that the fiber is glass.

The portions of the record pertinent to the above limitations are summarized below. The recited temperature ranges overlap the 1500–2000° F. range disclosed by Perlite. With regard to particle size, we note that appellant states in his specification that "the size of the particles of perlite is not critical * * *." The eutectic material aids in bonding the perlite particles together. Parsons discloses the addition of a flux "to accelerate the softening of the surfaces and subsequent bonding action * * *." Although the addition of glass fibers is not disclosed, asbestos is added by Parsons as a "fluffing agent." The Board's position was as follows:

> We agree with the Examiner that any differences, such as the particular dimensions of the perlite particles as in claim 4, or the specific amounts of the eutectic materials and the inorganic fibers (including the particular fiber) are mere matters of choice within the ordinary skill of the art. We note that Parsons shows that it is old to use fluxing agents (equivalent of the eutectic material) and fibrous material (the asbestos in the example).

The appellant in his brief has not controverted the above holding of the Board. He apparently is willing to test patentability on the broad claims, 2 and 5, although he did assign the above holding as

error. At any rate, in the absence of clearly demonstrated error on the part of the Board, we find no basis for reversal.

[1] The decision is thus affirmed.

AFFIRMED.

SMITH, *J.*, dissenting, with whom RICH, *J.*, joins.

The principal rejection before us is obviousness of the claimed invention under 35 U.S.C. 103. With the benefit of appellant's disclosure before them and by treating fragments of the claimed invention rather than the invention as a whole, the majority finds no problem in affirming the Examiner and the Board, who, like the majority, have failed to consider the claimed subject matter as a whole, and have relied on a most complete hindsight reconstruction of the prior art in finding what would have been obvious to one of ordinary skill in this art at the time of appellant's invention.

I shall first consider appealed claims 2–12 in determining what appellant claims to be his invention. I do this because I do not agree with the analysis of the majority. This determination is facilitated by considering claim 2, broken down into its several elements as follows:

2. The method of producing a composite structure of an expanded perlite comprising the steps of:

[A] heating the perlite while in movement individually in finely divided form to raise the temperature of the perlite to above 1200° F. but below 2500° F. whereby the perlite is caused concurrently to release combined water while the entire mass is in a pyroplastic stage to cause expansion, and

[B] projecting the individually heated particles of perlite onto a collecting surface to agglomerate the expanding perlite while still in the expanded and pyroplastic stage to form a composite structure.

Claims 3 and 4 are dependent on claim 2 and will stand or fall with it. Claim 5, however, is an independent claim which, when broken down into its several elements, reads as follows:

5. The method of producing a composite structure of an expanded perlite comprising the steps of:

[A] heating finely divided perlite particles in movement in an individual finely divided state for a time concurrently to raise the temperature of the entire mass of the mineral to a pyroplastic stage during which the combined water is released to expand the particles and to flux the mineral, and

[B] projecting the heated particles of perlite onto a collecting wall to agglomerate the expanded perlite particles while in the expanded and pyroplastic stage to form a composite structure.

Appealed claims 6–12 are dependent on claim 5 and claims 6–10 and 12 stand or fall with it. However, there is a separate ground of rejection of claim 11 which is ignored by the majority but which I think requires separate treatment.

The majority, the Solicitor and appellant agree that Parsons and the Perlite article are the most pertinent references. Parsons discloses an apparatus for producing lightweight, porous ceramic materials useful for sound and heat insulation. Discrete solid ceramic particles are introduced into the top of a furnace and emerge as solid particles which, however, have become fused and are thus bonded together when collected in the form of a sheet on a conveyor at the discharge end of the furnace. While various ceramic materials may be utilized by Parsons in preparing the product, there is no disclosure that such materials are to be expanded in the final product. Instead, Parsons discloses the addition of what he terms "fluffing agents," which expand on heating. These agents, when incorporated into the dry mix of ceramic materials fed to the furnace and exposed to a high temperature, form expanded cellular structures which fill the spaces between the still solid ceramic particles and thus act as a matrix or binder for holding said particles in the final product.

As distinguished from Parsons, the central feature of appellant's invention is found in the fabrication of a composite insulation panel of *expanded* perlite particles, by a method in which the perlite particles are caused simultaneously to expand and to agglomerate while in the expanded state to form a porous composite insulation panel without the need for use of the Parsons "fluffing agents" to provide the matrix or binder for such particles.

The Perlite article describes expanded perlite as having the high insulating properties of vermiculite as well as the structural strength of cinders, and describes the expansion of perlite at temperatures from 1500–2200° F. The reference discloses the heating and expansion of perlite as discrete particles and teaches that:

To process a perlitic ore, it is necessary to heat the glassy particles to the proper viscosity or softness, so that the moisture and/or gas entrapped in the ore will expand the softened mass into several times its original volume.

The Perlite reference thus teaches only a method for causing the expansion of individual perlite particles by heating them. It does not teach one of ordinary skill in this art that it is possible to expand perlite and form the resultant discrete expanded particles into a structural material by the adhesion of expanded particle to expanded particle, using the freed water as a flux in the process. While the Perlite reference teaches expansion of individual discrete particles of perlite, it lacks any teaching as to steps required for utilization of the "pyroplastic" state of the particles for effecting the adhesion of the expanded particles to one another in forming a structural panel.

In teaching merely the expansion of perlite to form discrete expanded particles, the Perlite reference does not suggest other significant features of appellant's invention which, as pointed out in his specification, include the observation that:

When the perlite particles are expanded separate and apart from agglomeration, the vapor necessary for fluxing the perlite is not available for subsequent agglomeration so that it becomes necessary to heat the expanded particles to a temperature in excess of about 2400° F. for coalescence. Since such temperatures are close to the temperature of collapse and since much greater time is required to agglomerate the previously expanded particles, it will be found difficult to form a composite structure of previously expanded perlite particles having the degree of porosity and strength which is capable of being achieved by the concepts embodying the features of this invention. It is for this reason that the art has had to turn to the use of external binders in combinations with the expanded perlite for the manufacture of porous products.

It is the position of the Examiner and the Board that it would be obvious to use perlite in Parsons' method because the ceramic particles utilized by Parsons are analogous to perlite. The error I find in this position of the Examiner and the Board is inherent in the statement from the Solicitor's brief that:

The fact that appellant treats a different form of the material does not make the process patentable to him. It has been held that the steps comprising the process are the essential features for consideration in determining the right of appellants to a patent—not the particular material to which the process is applied, *In re Swain et al.*, 33 CCPA 833, 154 F.2d 118; *In re Fahrni*, 41 CCPA 768, 210 F.2d 302.

The position as thus stated can be justified only by overlooking the fact that the "method" claimed, as stated in the preambles of the

appealed claims, is a "method of producing a composite structure of an expanded perlite." The art does not disclose such a method. It is true the art does disclose the manipulative steps of the method claimed, but in such a context that I do not think it would have been obvious to one of ordinary skill in this art to take these disclosures and utilize them for a specific end as appellant has done to produce a composite structural member of expanded perlite. The majority, the Examiner and the Board base their position on such an analysis of appellant's invention that the claimed invention is reduced to a use of the Parsons prior art furnace and method (for the compaction of solid particles) to the expansion and subsequent adhesion of expanded individual perlite particles to each other. I do not agree that this is all appellant has taught the art. There is no question but appellant's apparatus and manipulative steps correspond to a marked degree to the Parsons apparatus and method. However, I do not agree that this is enough to establish obviousness of appellant's claimed method. In Curtis's Law of Patents (4th ed., 1873), the controlling principle is stated at p. 12:

> * * * A process may be altogether new, whether the machinery by which it is carried on be new or old. A new process may be invented or discovered, which may require the use of a newly-invented machine. In such case, if both the process and the machine were invented by the same person, he could take separate patents for them. A new process may be carried on by the use of an old machine, in a mode in which it was never used before * * *. In such a case, the patentability of the process in no degree depends upon the characteristic principle of the machine, although machinery is essential to the process, and although a particular machine may be required. * * *

All elements of the appealed claims must be considered in determining what constitutes appellant's method. Here the failure of the majority, the Examiner and the Board to consider and give meaning to the preambles of these claims underlies what I consider to be their error. The method as defined in these claims covers more than the use of perlite in the Parsons furnace. Thus the cases relied upon by the Solicitor as supporting his position are not persuasive. The method here claimed cannot be considered apart from its purpose. When appellant's claimed invention "as a whole," is thus considered, it is seen that it embraces passing perlite particles, in finely divided form, through a zone under time and temperature conditions sufficient to achieve a pyroplastic state in the particles before the combined water is driven off. The pyroplastic particles of perlite are expanded as the vapor given off by the combined water is released. While the particles of perlite are in the pyroplastic state and the released water is present as a "flux," they are caused to adhere to one another when they are brought together on an endless conveyor, the result being the formation of a porous insulation panel. It is only by a hindsight addition of this disclosure to Parsons that his "clinker" becomes porous and the discrete expanded particles of the Perlite reference form a composite structure.

I do not think such a method was obvious to one of ordinary skill in this art from the disclosures of the references relied on.

Accordingly, I would *reverse* the rejection of all appealed claims on the ground of obviousness of the claimed invention over the two main references. However, in view of appellant's failure to overcome the other rejection of claim 11 as incomplete, indefinite and based on an insufficient disclosure, I would *affirm* the rejection of that claim. *In re Le Baron*, 42 CCPA 956, 223 F.2d 471, 106 USPQ 176.

U.S. Court of Customs and Patent Appeals

IN RE WARREN R. ATTWOOD

No. 7367. Decided April 15, 1965

[52 CCPA —; 343 F.2d 498; 145 USPQ 210]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"MEANS FOR LOCKING SLOTTED MEMBERS."

The refusal of certain claims in an application entitled "Means for Locking Slotted Members," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 669,027.

AFFIRMED.

Robert C. Hauke, Byron B. Collings for appellant.

Clarence W. Moore (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of claims 10–21 in patent application Serial No. 669,027, filed July 1, 1957, for "Means for Locking Slotted Members."

Claim 10 is the only independent claim and reads:

> 10. A device for locking a metal structural member relative to a screw or bolt fastening means projecting through an opening in the member, comprising an element of metal *harder* than said member and arranged to *closely surround* said fastening means, *sharpened elongated straight teeth* on at least one face for presentation to the surface of the member so as to be forced straight into the surface when the fastening means is tightened, said teeth being of *symmetrical cross section* and *spaced apart* on the face of said element in said member, said element having *planar surfaces* intermediate said teeth for bearing on the surface of said member. [Emphasis ours.]

The italicized words represent features relied on by appellant in contending that his locking device is patentable.

The invention is a form of washer, or the under surface of a bolt head, adapted to bear against a metal member such as a strut or a bracket to be fastened to another member by one or more bolts, provided with straight sharp teeth adapted to bite into the softer metal of the structural members. The use of such bolts or washers is desirable in those cases where the openings through which the bolts pass are larger than the bolts as, for example, where it is a circular hole of greater diameter than the bolt or where a bolt passes through an elongated slot. There is the possibility in these cases, unless something is done to prevent it, that after the bolts are tightened stress may cause the bolt to slip in the larger opening and destroy the adjustment of the structure. By providing sharp gripping teeth on one or both faces of a washer which itself closely surrounds the bolt, or equivalent teeth on a bolt head, such slippage is prevented.

All claims are rejected as failing to define anything unobvious in view of the disclosures of the prior art as shown by the following three patents:

Hale, 1,279,686, September 24, 1918.
Hosking, 2,179,575, November 14, 1939.
Swiss patent, 101,329, September 17, 1923.

Hale shows a washer to fit closely on a bolt to fix its position in a slot in a metal member, the washer being aptly described in the single claim of the patent as follows:

> As an article of manufacture, a washer having a knurled edge, the knurling projecting laterally beyond a face of the washer so as to form a series of relatively small biting burrs.

The specification states and the drawing shows that the burrs may extend on both sides of the washer if desired. The face of the washer lying inside of the circumferential ring of burrs is planar. Clearly the purpose served is the same as that disclosed by appellant for his invention.

Hosking discloses a variety of spring steel lock washers for the usual purpose of securing nuts against shaking loose. Appellant insists that his device "is distinguished from the usual 'lock washer' type of device commonly used to prevent a nut or bolt, once tightened, from backing off and becoming loose," notwithstanding the function of his washers is to *lock* bolts against shifting in holes. We can concede the distinction. The Patent Office cites Hosking only for its showing of planar surfaces between teeth and radially arranged teeth.

The Swiss patent describes and illustrates a washer having concentric circular V-shaped grooves on its opposite faces. The boundaries of the grooves coincide so that in effect there are also V-shaped circular teeth or ridges. The patent refers to these washers as connecting washers intended to prevent any slippage that might cause dislocation of an assemblage and shows how they are used. It also points out that the bolt holes in the parts of the assemblage may be enlarged or have oval or elongated holes to permit adjustment of the parts. The translation says, "The washers being grooved and tempered, creates a gripping on the faces of contact and any slippage or any dislocation of the elements in this way assembled is excluded."

While the circumferential teeth are the only form illustrated in the Swiss patent, the specification concludes with the following paragraph:

> The washers in FIGS. 1 and 2, instead of having concentric grooves, could have helicoidal grooves. The grooves could be constituted of grooves parallel to one of the diameters or could have a radial direction, or could be constituted by a combination of these different forms of execution, providing that it presents surfaces of gripping contacts, which offers to the connection the greatest adherence with the assemblage elements.

Appellant argues strenuously that the substitution of radial *grooves* would not result in radial *teeth* like his but segmental flat portions which would not grip. The Board's view was:

> It is obvious that wide flat faces on the outermost portion of the washer would not be effective. The only fair interpretation which should be given to the Swiss patent, *in order to provide the utility set forth therein*, would be that the Swiss patent teaches or *suggests* the use of means in the form of *teeth* between the grooves which *teeth* would be in the outermost portion and be sufficiently sharp to provide an effective gripping action. [Emphasis ours.]

We agree with the Board at least to the extent that such would be the *suggestion* to one of ordinary skill in the art. We have considered all of appellant's arguments but are unable to find any reason to disagree with the conclusion of the Board that the claims do not define any unobvious variations from the prior art.

[1] The decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,475,579, J. W. Napier, TIRE RECAPPING APPARATUS; **2,712,156**, H. E. Potter et al., TIRE RETREADING APPARATUS; **2,723,425**, Z. Mattox et al., TIRE BEAD SPREADING DEVICE, filed Nov. 7, 1963, D.C., W.D.N.C. (Charlotte), Doc. 1834, *Charles C. Hertwig, trustee (Precision Recapping Equipment Company)* v. *Retreading Equipment Company et al.* Order dismissing complaint and counterclaim May 21, 1965.

2,476,960, G. W. Daughtery, SPRAYING AND DUSTING MACHINE; **2,569,274**, R. A. Andrews, same; **2,784,521**, Britten and Bowie, METHOD AND APPARATUS FOR DISTRIBUTING PESTICIDE, filed June 5, 1963, D.C., N.D. Ohio (Cleveland), Doc. C63-436, *FMC Corporation* v. *The F. E. Myers & Bros. Co.* Stipulation dismissing action based on Patent No. 2,784,521 with prejudice May 12, 1965.

2,569,274. (See 2,476,960.)

2,610,557, C. W. Bros, PNEUMATIC ROLLER COMPACTOR, filed June 8, 1959, D.C. Minn. (St. Paul), Doc. 4-59/92, *Browning Manufacturing Company et al.* v. *Bros, Incorporated.* Patent held invalid; counterclaim dismissed June 12, 1962. Appealed Sept. 24, 1962, C.C.A., 8th Cir., Doc. 17169, *Bros, Incorporated* v. *Browning Manufacturing Co. et al.* Judgment of District Court affirmed May 27, 1963.

2,638,620, G. Civitelli, DOOR STOP, filed May 2, 1962, D.C. Mass. (Boston), Doc. 62-320, *Gennaro Civitelli et al.* v. *J. Russell & Co., Inc.* On June 7, 1962, J. Russell & Co., Inc. dismissed as defendant—Amerock Corporation intervening defendant. Judgment for defendant Amerock Corporation dismissing the complaint, and judgment for defendant on its counterclaim adjudging claims 1, 3, and 4 of Patent No. 2,638,620, to be invalid Mar. 15, 1965.

2,670,074, S. Golden, GREETING CARD PACKAGE AND DISPLAY CONTAINER, filed Nov. 15, 1963, D.C., S.D.N.Y., Doc. 63/3354, *Sunshine Art Studios, Inc.* v. *McCrory-McLellan-Green Stores, Inc.* Default judgment; defendant's motion granted; plaintiff's complaint dismissed with prejudice Apr. 21, 1965. Same, Doc. 63/3355, *Sunshine Art Studios, Inc.* v. *Polygraphic Company of America.* Decree as above.

2,712,156. (See 2,475,579.)

2,723,425. (See 2,475,579.)

2,784,521. (See 2,476,960.)

2,977,231, Fox and Palley, PACKAGING AND DISPENSING BEVERAGE CONCENTRATES, filed Apr. 23, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c634, *Cecil Wolfson et al.* v. *McCarthy, Shy & Bogg, Inc. et al.*

Re. 23,863, F. J. Sowa, SOLUTIONS OF ORGANIC MERCURY COMPOUNDS, filed Oct. 14, 1963, D.C.N.J. (Newark), Doc. 855-63, *Frank J. Sowa et al.* v. *Metalsalts Corp.* Stipulation of dismissal May 10, 1965.

Re. 25,188, Brown and Waller, METHOD AND APPARATUS FOR HANDLING RAW MATERIAL IN THE PRODUCTION OF HYDROLYZED FEATHER MEAL AND OTHER POULTRY BY-PRODUCT MEAL, filed May 21, 1965, D.C., E.D. Mo. (St. Louis), Doc. 65C170(1), *El Dorado Poultry By-Products Company* v. *Ralston Purina Company.*

Re. 25,500, W. W. Miller, SILL ASSEMBLY FOR EXTERIOR OPENINGS, filed May 28, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65-807-WM, *Wallace W. Miller* v. *Western Weatherstrip Company.*

Des. 173,231, R. B. Morrison, LABORATORY TABLE UNIT, filed Jan. 27, 1964, D.C., E.D. Pa. (Philadelphia), Doc. 34960, *E. H. Sheldon & Company* v. *Wilson & Stevenson.* Stipulation and order dismissing case with prejudice (notice May 4, 1965). Same, filed Apr. 7, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C-349, *E. H. Sheldon & Co.* v. *Norbute Corp.* Consent judgment for injunction May 3, 1965.

Des. 176,986, J. E. McPhee, LIQUOR POURER, filed May 26, 1965, D.C., M.D. Pa. (Scranton), Doc. 3952, *Anchor Products, Inc.* v. *General Store Fixture Co.* Voluntary dismissal June 14, 1965.

Des. 178,966, A. J. Ouellette, BABY CHAIR, filed Aug. 14, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 63-978-Y, *Infanseat Company* v. *Welsh Co. of Calif., Inc. et al.* Stipulation and order dismissing action without prejudice Apr. 6, 1965.

Des. 192,279, J. M. Zuckerman, GARMENT HANGER; **Des. 195,157**, J. G. Warmath, same, filed May 24, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C-521, *Yankee Plastics, Inc.* v. *Global Plastics Corp.* Consent judgment for injunction May 28, 1965.

Des. 194,156, Schnur and Appel, SALT SHAKER OR SIMILAR ARTICLE, filed June 20, 1963, D.C., S.D.N.Y., Doc. 63/1824, *Deka Plastics, Inc.* v. *Johns Bargain Stores Corp. et al.* Final consent judgment; defendants enjoined May 3, 1965.

Des. 195,156. (See Des. 192,279.)

Des. 196,871, S. J. Koch, ADJUSTABLE TABLE LAMP OR SIMILAR ARTICLE, filed Nov. 20, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C-1131, *Amprobe Instrument Corp.* v. *Mobilite, Inc. et al.* Stipulation dismissing complaint May 6, 1965.

Des. 199,966, B. W. Maute, COIN HOLDER, filed May 13, 1965, D.C.N.J. (Trenton), Doc. 528-65, *Atlas Plastics, Inc. et al.* v. *BBB Plastic Products et al.*

U.S. GOVERNMENT PRINTING OFFICE: O—1965

REISSUES

AUGUST 31, 1965

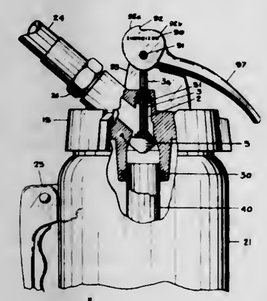
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,844
MEANS FOR OPERATING A FIRE EXTINGUISHER

Robert J. Zellner, Wilmette, Ill., assignor to The Ansul Company, a corporation of Wisconsin

Original No. 3,088,522, dated May 7, 1963, Ser. No. 861,916, Dec. 24, 1959. Application for reissue Sept. 24, 1964, Ser. No. 410,340

4 Claims. (Cl. 169—31)



1. A fire extinguisher discharge apparatus comprising: a container having fire extinguisher agent under pressure, a head having a bore therein at one end of said container, a discharge passage in said head, a hose removably connected to said discharge passage, sealing means in said bore, an axially movable plunger attached to said sealing means, a cam located adjacent one end of said plunger and having a first working surface and a second working surface, a third surface on said cam which abruptly departs from said first surface and merges with said second surface, a lever connected to said cam for rotating said cam whereby said sealing means is moved to an open position by said first working surface engaging and moving said plunger and said sealing means can then be moved by pressure in the container into a desired open position in which position said one end of said plunger engages said third surface, said lever being located with respect to said hose so that a portion of said lever is adapted to engage said hose after said sealing means has been moved to the desired open position to thereby prevent movement of said cam with respect to said plunger, said second surface being adapted to engage said plunger upon rotation of said arm to disengage said plunger and said third working surface whereby said cam can be returned to its original position.

25,845
DAYLIGHT FLUORESCENT COMPOSITIONS

Gaetano F. D'Alelio, South Bend, Ind., and Robert W. Voedisch, Morton Grove, Ill., assignors to Lawter Chemicals, Inc., Chicago, Ill., a corporation of Delaware

No Drawing. Original No. 3,116,256, dated Dec. 31, 1963, Ser. No. 133,548, Aug. 24, 1961. Application for reissue Feb. 19, 1964, Ser. No. 358,390

12 Claims. (Cl. 252—301.2)

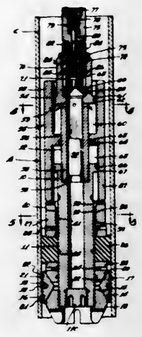
12. A daylight fluorescent material consisting essentially of the combination of a daylight fluorescent dyestuff in a resinous base formed by the co-condensation of an aryl sulfonamide aldehyde and benzoguanamine and aldehyde, wherein the aryl sulfonamide is selected from the group consisting of p-toluene sulfonamide and o-toluene sulfonamide and mixtures thereof and wherein the aldehyde is selected from the group consisting of formaldehyde and paraformaldehyde, wherein the daylight fluorescent dyestuff is present in an amount sufficient to impart daylight fluorescence and the benzoguanamine is present in an amount within the range of more than 50 mol percent of the aryl sulfonamide up to an amount less than 100 percent by weight of the aryl sulfonamide.

25,846
WELL PACKER APPARATUS

Don G. Campbell, Downey, Calif., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California

Original No. 3,055,430, dated Sept. 25, 1962, Ser. No. 740,708, June 9, 1958. Application for reissue Sept. 9, 1964, Ser. No. 406,650

17 Claims. (Cl. 166—122)



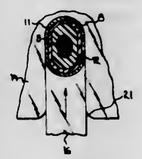
10. In a well tool: body means; means for securing said body means in a running-in string for lowering the well tool in a well bore; normally retracted means on said body means; a first annular piston secured to said body means; a second annular piston secured to said body means; an annular cylinder engageable with said normally retracted means and including a head slidable along said body means between said pistons and first and second sleeve portions slidable along said first and second pistons, respectively; sealing means for preventing leakage between said head and body means and between said pistons and sleeve portions; and means providing a fluid pressure in said cylinder between said head and one of said pistons to shift said head toward the other of said pistons to expand said normally retracted means; said body, head, other of said pistons, and the sleeve portion slidable along said other of said pistons together providing a confined space into which well bore fluid cannot enter to prevent such well bore fluid from acting on said head in opposition to the action on said head of said fluid pressure in said cylinder.

25,847
METHOD OF MAKING AN ELECTRICAL CONNECTION

Edgar W. Forney, Jr., Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Original No. 3,010,184, dated Nov. 28, 1961, Ser. No. 773,638, Nov. 13, 1958. Application for reissue Sept. 30, 1963, Ser. No. 313,150

6 Claims. (Cl. 29—155.55)



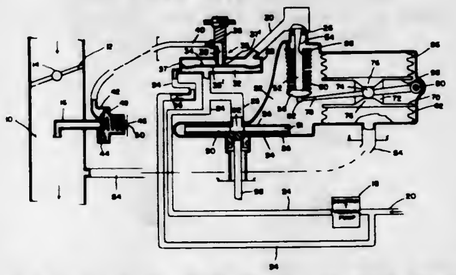
3. The method of compressing a ferrule of substantially circular cross section onto a conductor member extending therein comprising the steps of: forcing said ferrule into a female die having a width which is less than the diameter of said ferrule and a depth which is greater than the diameter of the ferrule thereby partially to flatten said ferrule and to impart to it a substantially oval-shaped cross section and to pitch said conductor member between the sides of said ferrule, and thereafter and while said ferrule is retained in said female die, compressing said ferrule along the length thereof by application of a compressing force along the major axis of its oval cross section to reduce said major axis until said ferrule is again of substantially circular cross section and is in constrictive embracing relationship with said conductor member.

25,848
FUEL CONTROL FOR SPARK IGNITION INTERNAL COMBUSTION ENGINES

Chester Karpiej, Detroit, Mich., by Holley Carburetor Company, Van Dyke, Mich., a corporation of Michigan, assignee

Original No. 2,898,899, dated Aug. 11, 1959, Ser. No. 551,064, Dec. 5, 1955. Application for reissue Oct. 17, 1963, Ser. No. 326,312

9 Claims. (Cl. 123—139)



1. A fuel system for an internal combustion engine having an air valve therefor, said system comprising a metering valve, a fuel pump for supplying fuel at constant pressure, means for delivering fuel from said fuel pump to the inlet of said metering valve at a pressure dependent upon engine speed, a chamber in open communication with the outlet from said metering valve, an outlet valve from said chamber, said outlet valve having a valve element movable in response to differential pressure and exposed at one side to pressure within said chamber and at the opposite side to the constant pressure of fuel from said fuel pump for maintaining the fuel at the outlet side of said metering valve at said constant pressure.

PLANT PATENTS

GRANTED AUGUST 31, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,549
ROSE PLANT

Eugene S. Boerner, Newark, N.Y., assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Apr. 29, 1964, Ser. No. 363,689

1 Claim. (Cl. Plt.—22)

A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a prolific production of cut flowers, an attractive and distinctive general color tonality of the flowers, with the inside of the flower petals being Rose Red and the reverse side being Marguerite Yellow, faintly overcast with La France Pink, and long-lasting flower qualities.

2,550
ROSE PLANT

Reimer Kordes, Barmstedt, near Elmshorn, Germany, assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Apr. 29, 1964, Ser. No. 363,691

1 Claim. (Cl. Plt.—16)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous and strong habit of growth, abundant production of large flowers, and a distinctive and attractive general color tonality of the buds corresponding to Nopal Red, very lightly overcast with Scarlet-Red, which finishes in the open flowers as Light Orange-Yellow, lightly overcast with Salmon-Orange.

2,551
VARIETY OF CREPE MYRTLE

Otto Spring, Okmulgee, Okla., assignor to Howard Corley and Al Hoschke, both of Tulsa, Okla.

Filed Oct. 30, 1963, Ser. No. 320,243

1 Claim. (Cl. Plt.—54)

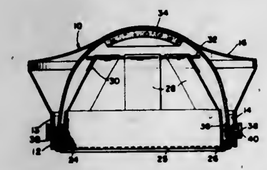
The new and distinct variety of crepe myrtle plant herein described and illustrated, characterized by the distinctive strong purplish pink color as shown by the Nickerson Color Fan—7.5 R.P.—7/10, a natural dwarf habit of growth, and long and prolific blooming habit.

PATENTS

GRANTED AUGUST 31, 1965

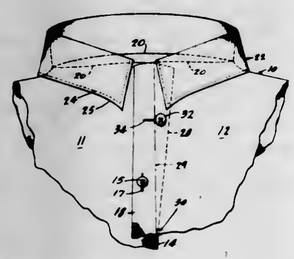
GENERAL AND MECHANICAL

3,203,003
HEAD PROTECTING HEAD GEAR
Mario A. Piastino, 120 Tally Lane, Wantaugh, N.Y.
Filed Nov. 8, 1963, Ser. No. 322,366
2 Claims. (Cl. 2—3)



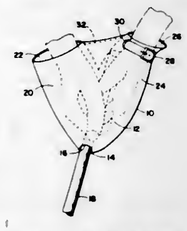
1. A head protecting headgear, comprising, in combination, an outer head covering having a head receiving opening and a yieldably-rigid head protecting shell having a head receiving opening fitted snugly within said outer covering, with the edges of their head receiving openings in substantial register, said protective shell having a plurality of inwardly extending bands secured by one edge against the inner face of a marginal edge portion of the head receiving opening thereof, in preferably spaced relation to one another, said shell bands having their other end portion engaged upon a contractable element, to thereby form a sling of adjustable depth adapted to rest on the head of the wearer, a sweat band secured to the edge portion of said head receiving opening of said protected shell inwardly of said band with its outer edge in substantial register with the edge of the head receiving opening of said shell, and means releasably interengaging said outer head covering and said protecting shell at spaced points along their marginal edge portions, said interengaging means comprising internally threaded studs secured on said shell and projecting from the exterior thereof, registering openings formed in said outer head covering, said studs extending into said openings, and a threaded element having a head threaded into each of said studs from the exterior of said outer head covering.

3,203,004
BUTTONLESS SHIRT COLLAR
Dwight Gast, Toledo, Ohio, assignor of fifty percent to Hugh A. Kirk, Toledo, Ohio
Filed Aug. 12, 1963, Ser. No. 301,584
2 Claims. (Cl. 2—128)



1. In a shirt having:
a pair of front panels,
overlapping margins on said panels,
a split collar, split at said margins of said panels,
a series of buttons along one of said margins, and
a series of corresponding button-holes therefor along the other of said margins, which said other margin overlaps said one margin,
the improvement comprising:
the upper portion of said one margin extending inwardly further under said overlap at an angle upwardly from a point along said one margin below at least the topmost button of said series of buttons,
the topmost button of said series being below said collar and mounted on said inwardly extending upper portion of said one margin, and
the topmost button-hole for said topmost button of said series extending horizontally away from said other margin from a point in alignment with the majority of the lowermost buttons of said series when said margins of said shirt are buttoned together,
whereby said collar may be increased in size without separating the upper portions of said margins of said panels.

3,203,005
TWO-HANDED MITTEN
Dale L. Burrows, 1707 Club View Drive NW., Huntsville, Ala.
Filed Apr. 9, 1964, Ser. No. 358,542
2 Claims. (Cl. 2—158)



1. A two-handed mitten comprising:
(A) a central hand portion adapted to accommodate a left and right hand together;
(B) a first wrist portion extending from said central hand portion including an encircling wrist enclosure and a first opening for entry of a first hand and wrist;
(C) a second wrist portion extending from said central hand portion and including an encircling wrist enclosure of larger wrist cross-section than said first wrist portion and a second opening larger than said first opening for entry of a second hand and wrist; and
(D) a third opening positioned at one end of said mitten which is generally opposite to the positions of said first and second openings.

3,203,006
BOWLING GLOVE
Leland H. Shirey, 2525 6th Ave., Fort Worth, Tex.
Filed May 14, 1964, Ser. No. 367,395
1 Claim. (Cl. 2—159)

In a weighted glove for use in bowling, intended to be worn on the hand of a player opposite the hand which holds the ball, as an aid to the player in balancing himself against the weight of the ball as the ball is rolled, the combination of a fingerless glove having a single lead weight of predetermined, selected weight, of the order of about one pound, secured in a pocket therefor in the palm of the glove, said weight being generally circular and being concave-convex whereby it is conformable to the hand of the player and to the spherical surface of the ball, as in holding the ball momentarily in the hand on



which the glove is worn preparatory to rolling it with the opposite hand, and said weight being comparatively thin relative to its diameter and having a diameter smaller than the length and width dimensions of the palm of the glove whereby said weight is adapted to be grasped firmly in the hand of the player to further assist him in executing his manuvers.

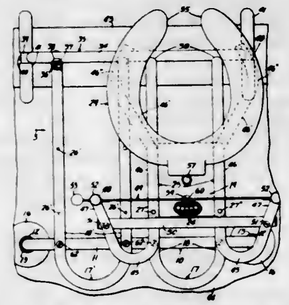
3,203,007
PORTABLE-COLLAPSIBLE TOILET
Donald M. Olson, 613 Pinon Drive, P.O. Box 2165, Santa Fe, N. Mex.
Filed June 24, 1963, Ser. No. 289,872
6 Claims. (Cl. 4—116)



1. A toilet which comprises:
(a) a substantially vertical supporting pole, in sections, with a seat-support near but spaced from its base,
(b) other supports adapted to be removably fastened to the upper part of the pole for supporting a tent containing a translucent area and a normally closed entrance opening,
(c) a panel comprising front legs for holding up the front of a toilet seat,
(d) a support having an opening therethrough for a plastic bag, the open end of said bag extending up through, across and around the periphery of the support when in use,
(e) said toilet seat supported by said vertical pole and by said panel, there being a seal between the lower part of the seat and the portion of the bag which extends across the top of the support, and
(f) a lid for covering and substantially sealing the opening in the seat when said seat is not in use.

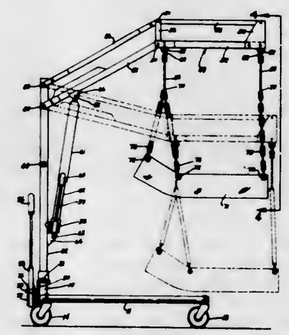
3,203,008
SWINGABLE SEAT STRUCTURE FOR BATHTUBS
Charles E. Murcott, Valley Drive, Huntington, N.Y.
Filed Feb. 7, 1963, Ser. No. 256,903
10 Claims. (Cl. 4—185)

1. A seat structure of the character defined consisting of a supporting part comprising a U-shaped leg frame having means adjustably supporting said frame in connection with the bottom of a bathtub, spaced frame members fixed to and extending at right angles to said leg frame, said members having a tube fixed to ends thereof, U-shaped bathtub wall engaging grippers fixed to ends of said tube, a plate fixed to at least part of said frame members, said plate having a pivot portion, a seat supporting unit comprising a pair of arms, a seat proper mounted on one end portion of said arms, the other end portion of said arms forming backrest supporting posts, a plate fixed to said arms, means supporting said plate on the first named plate for rotation on the pivot of the



first named plate in movement of the seat of said unit into different positions on said supporting part, a flexible strip backrest, means for detachably coupling said backrest with said posts, and interengaging means on said plates securing the seat proper in at least two different positions with respect to the first named part in positioning the seat proper over one side wall of a bathtub and entirely within the environment of the bathtub.

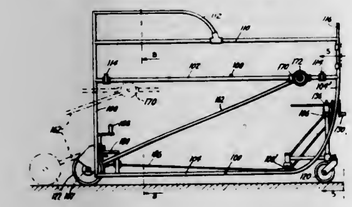
3,203,009
PATIENT LIFT
Olaf Alfred Lundberg, 512 49th Ave. N., Minneapolis, Minn.
Filed Dec. 4, 1963, Ser. No. 327,895
4 Claims. (Cl. 5—81)



1. A lift and carrier for patients comprising
(A) a wheeled generally horizontal supporting base including
(1) a pair of horizontally extending spaced apart elongated arms which are open at one end and pivotally connected at the other,
(B) an elongated vertical standard extending upward from said base,
(1) said standard being centrally disposed between the arms of the base adjacent the pivotal connections of the arms,
(C) at least two parallel and vertically spaced apart elongated lifting arms of substantially equal effective length,
(1) each pivotally connected to said vertical standard a substantial distance above said base,

(2) extending from said standard above and between the extending arms of said base, and
(3) movable in a vertical plane to extend angularly outwardly from said standard,
(D) a generally constantly horizontal elongated rigid patient supporting frame,
(1) pivotally connected to each of said parallel lifting arms,
(2) extending from the ends of the lifting arms spaced from the standard above and between the extending arms of the base, and
(3) movable in a vertical plane with said lifting arms to remain generally constantly horizontal,
(E) Body supporting means for the patient suspended from said patient supporting frame,
(1) said body supporting means including
(a) an elongated horizontal supporting bar,
(b) swivel mounting means suspending said horizontal supporting bar from said patient supporting frame,
(i) one end of said horizontal supporting bar extending beyond said swivel mounting means a greater distance than the other end of said bar,
(c) at least two longitudinally spaced apart yoke members suspended from said supporting bar adjacent the ends thereof, and
(d) a flexible sling suspended from said yoke members by a plurality of flexible and substantially vertically extending connecting links, and
(F) jack means pivotally connected to at least one of said parallel lifting arms to permit said arms to be raised.

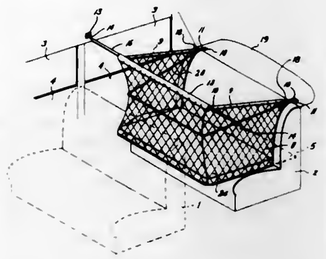
3,203,010
LOAD TIPPING DEVICE
Russell S. Smith, R.F.D. 3, Alford, Mass.
Filed Apr. 11, 1963, Ser. No. 272,489
5 Claims. (Cl. 5—86)



1. A load tipping device comprising an oblong flat frame for carrying a load normally at a distance above floor level, an oblong curved frame attached to said flat frame for support of said flat frame in different angular positions with respect to floor level, mechanical operating means including a raising frame extending lengthwise and outward from said device and being hinged at its inner end to said flat frame, said raising frame being operable for tipping said flat frame and said curved frame lengthwise over a curved portion of said curved frame and thereby tipping said flat frame into a substantially vertical position from a substantially horizontal position or vice versa.

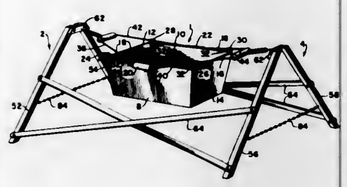
3,203,011
SAFETY COMPARTMENT FOR INFANTS FOR USE IN AUTOMOBILES
Joseph Faludi, 1400 Holcomb Blvd., Houston, Tex.
Filed Mar. 23, 1964, Ser. No. 353,944
2 Claims. (Cl. 5—94)

1. In a safety compartment for infants to be used on rear seats of a passenger automobile, anchor means mounted on the rear shelf of the automobile and anchor means mounted on the inside walls of the automobile, a rectangular base member resting on the rear seat of the automobile, a netting anchored onto the said base member and extending upwardly from the end and front margins of said base member, reinforcing cords in said



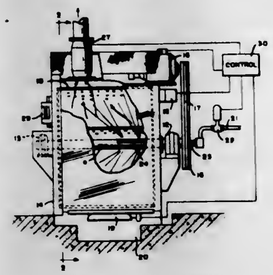
netting and snap hooks in said cord engageable with the means on the rear shelf of the vehicle and sleeves on the upper margins of said netting, a bar extending through the sleeve on the front upper margin of said netting, tubular members detachably secured to the ends of said bar, snap hooks on said tubular members engageable with the anchor means on the side walls of the vehicle body.

3,203,012
HAMMOCK CRADLE
Robert J. Roberts, 351 Hamilton Place, West Islip, N.Y.
Filed Apr. 2, 1964, Ser. No. 356,817
3 Claims. (Cl. 5—120)



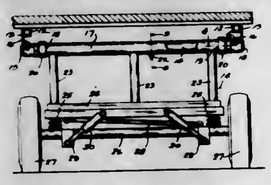
1. A cradle for use with a hammock or as a receptacle carryable independently of said hammock, comprised of an open top hollow shell having end walls, side walls and a bottom wall, said end and side walls having top edges, said edges defining the periphery of the open top of said hollow shell, an elongated arcuate hook member disposed adjacently of the top edge of each said side wall and extending horizontally and turning downwardly therefrom, a pair of spaced ears projecting upwardly of the top edge of each said side wall, said hook member being disposed therebetween, each said ear having a socket passage disposed therethrough, the passage disposed through each respective ear of one side wall being in axial alignment with the passage disposed through respective ears of the other side wall, a pair of U-shaped support members each being formed of divergingly arranged free-ended arms and a horizontal apical section therebetween, each arm having a bent portion provided terminally of the free ends thereof, said bent portions being removably receivable within said ear passages, whereby said hollow shell may be supported by said support members, said horizontal apical section of each member providing a handle for carrying said cradle.

3,203,013
LAUNDRY METHOD
Benjamin Alvin Bass, East Moline, Ill., assignor to Ametek, Inc., a corporation of Delaware
Continuation of application Ser. No. 718,204, Feb. 28, 1958. This application Apr. 6, 1964, Ser. No. 357,402
4 Claims. (Cl. 8—158)



1. The method of laundering clothes which comprises performing several washing and rinsing operations thereon within a drum in a composition consisting essentially of water by rotating said drum about a substantially horizontal axis at a slow washing speed, draining the washing and cleaning fluid, rotating said drum at an extracting speed to effect centrifuging the washed laundry to pack the laundry around the periphery of the drum and in the form of a hollow substantially cylindrical mass and to remove some of the excess water, and spraying steam around the interior surface of the packed laundry mass while it is being centrifuged while inhibiting the escape of steam from within said drum, so that said steam continuously forms condensate over the inner surface of the packed laundry while it is being centrifuged, which condensate is forced by centrifugal force through said mass, said drum being rotated at a speed which produces centrifugal force which is exerted on the mass related to the duration of rotation at said extracting speed, duration of spraying steam around said interior surface, and the supply pressure of said steam, to attain a percentage of moisture retention in the range of about 40 to 50%.

3,203,014
TRAILER EQUIPPED PONTOON YACHT
Clifford H. Krueger, 849 N. Glenview Ave., Apt. 2, Wauwatosa, Wis.
Filed Oct. 16, 1963, Ser. No. 316,725
1 Claim. (Cl. 9—1)



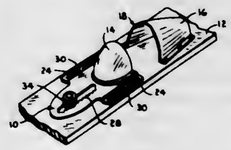
A pontoon yacht, a pair of elongated parallel pontoons for supporting the same in the water, frame members attached adjacent the top of said pontoons and spacing the same, a horizontal shaft fixed to said frame members at right angles to and aligned with the tops of said pontoons, a hollow shaft freely embracing said fixed shaft, a wheel assembly attached to said hollow shaft, means for retracting the same, exterior threads on both ends of said hollow shaft, lubricant retentive gaskets abutting the ends of said hollow shaft, a grease cup in said hollow shaft for introducing lubricant between the hollow and the fixed shafts, and an apertured internally threaded element for each end of the hollow tube, said element having a reduced portion for contact with the fixed shaft, and an internal shoulder in said element to back the lubricant retentive gasket.

3,203,015
APPARATUS FOR PROVIDING A DISPLACEMENT HULL HAVING AUXILIARY PLANING SURFACES
Richard C. Cale, 1129 Swanston Drive, Sacramento, Calif.
Filed Aug. 15, 1963, Ser. No. 302,280
5 Claims. (Cl. 9—6)



1. A boat hull comprising,
a basic displacement, non-planing surface extending from bow to stern,
a first auxiliary planing surface permanently and immovably secured to said displacement surface on one side of the keel of said hull and extending aft of the midships section of said hull and below said displacement surface,
a second auxiliary planing surface spaced apart from said first auxiliary surface and permanently and immovably secured to said displacement surface on the other side of said keel of said hull extending aft of the midships section of said hull substantially the same distance as said first auxiliary planing surface and below said displacement surface,
the forward area of each of said planing surfaces joining with said displacement surface so as to form smooth continuous surfaces,
a step between the forward areas of said first and second auxiliary planing surfaces, and
fairing means joining said planing surfaces and said displacement surface for providing streamlined surfaces therebetween.

3,203,016
LOCKING MEANS FOR MOVABLE SUPPORT PLATE
Merle J. Miller, 6717 W. 88th Place, Oak Lawn, Ill., and Howard J. Petty, 1420 Burnham Ave., Calumet City, Ill.
Filed Feb. 17, 1964, Ser. No. 345,160
6 Claims. (Cl. 9—310)



3. A heel support for water ski comprising:
a plate member, said plate member having trackways and an elongated slot formed with a plurality of closely spaced notches;
pin means connecting said water ski and engaging said trackways of said plate member to constrain said plate member to slidable forward and rearward movement;
a pivot post connecting said water ski and extending upright through said elongated slot in said plate member;

a wire spring interposed between said water ski and said plate member, one end of said wire spring being anchored to said water ski and the other end of said wire spring being upturned for extending upright through said slot above said plate member forward of said pivot post; and

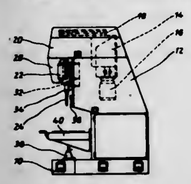
knob means mounted on said pivot post for rotatable movement thereon, said knob means having passageway therein for receiving said upturned end of said wire spring, and said upturned end being guided by said knob means out of and into a selected notch, forward of said pivot post, against and with, respectively, the urging of said spring.

3,203,017

MAGAZINE SPINDLE DRILLING MACHINE

Horst Hölzl, Oppenweiler, Germany, assignor to Karl Häller G.m.b.H., Ludwigsburg, Germany, a German firm

Filed Jan. 11, 1963, Ser. No. 250,915
9 Claims. (Cl. 10—138)



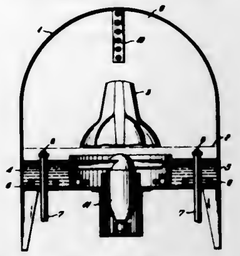
3. A magazine spindle drilling machine comprising, in combination, a machine frame; tool spindle driving means located at a working station of the machine; a spindle magazine mounted for movement on said machine frame past the working station transversely of the axis of tool rotation and of the direction of tool feed, said magazine being formed with a plurality of uniformly spaced spindle device compartments each extending parallel to the direction of tool feed; a plurality of spindle devices interchangeably insertable into the compartments of said magazine for selected movement by said magazine into the working station of the machine for coupling to said driving means; each spindle device including a tool spindle rotatable about the axis parallel to the axis of tool rotation and transverse to the direction of magazine movement; cooperating guiding and positioning means extending longitudinally of said compartments and of said spindle devices, whereby each spindle device is slidably insertable into and removable from the magazine in any position of the latter; feed slide means juxtaposed with each spindle device moved into the working position, each magazine compartment having a longitudinally extending opening for exposing a spindle device therein for juxtaposition with said feed slide means; indexing and clamping means operable to index and clamp each spindle device, when at the working station, to said feed slide means for movement as a rigid unit with the latter; said feed slide means being mounted for rigidly guided reciprocation in said frame parallel to the direction of tool feed to move the respective spindle device bodily out of the magazine and axially into the work engaging position, and for return of the removed spindle device into its compartment in the magazine whereby, when in the working position, each spindle device is supported solely by said feed slide means; and including spindle movement control devices on said frame; individually adjustable spindle movement setting elements of each spindle device cooperable with respective control devices when the respective spindle device is moved into the working station; a preselecting gear for controlling the speed and direction of rotation of the tool spindle, and the feeding and retraction of the tool spindle as well as the feeding and retracting speeds thereof; said spindle movement control devices including a tapping depth setting device controlling said preselecting gear for a tapping operation; said spindle movement setting elements on each respective spindle device including a tapping depth setting element cooperable with said last-named setting device upon movement of the respective spindle device into the working station; said tapping depth setting device, upon an attainment of threaded depth corresponding to the setting of said tapping depth setting element, operating through said preselecting gear to reverse the direction of rotation of the tool spindle and to retract the latter at the feed speed established by the setting of said setting element.

3,203,018

APPARATUS FOR STEAM TREATING THE UPPERS OF SHOES

Robert Klein, Lembergerstrasse 14, Pirmasens, Pfalz, Germany

Filed Apr. 1, 1963, Ser. No. 269,631
Claims priority, application Germany, Apr. 4, 1962, K 46,370
5 Claims. (Cl. 12—1)



1. Apparatus for steaming the outside of the uppers of shoes while maintaining the inside in dry condition, said apparatus comprising a housing having a lower end and an upper portion forming an apex, means in said housing for supporting said uppers, means for directing an air current upwardly into the interior of said uppers, heating means disposed at the apex of said housing, means disposed laterally and proximate the lower end of said housing for projecting a water spray into said housing and against said heating means for additionally vaporizing said spray and with the aid of the air current directing vapor downwardly onto the outside of said uppers.

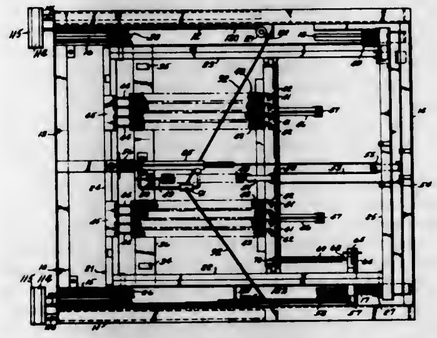
3,203,019

MANUALLY OPERATED DOCKBOARD CONSTRUCTION

Robert L. Le Clear, Albion, Mich., assignor to T & S Equipment Co., Albion, Mich., a corporation of Michigan

Filed Dec. 21, 1962, Ser. No. 246,381
The portion of the term of the patent subsequent to Jan. 8, 1980, has been disclaimed
4 Claims. (Cl. 14—71)

1. In a dockboard including a frame assembly, a carriage assembly supported for forward and rearward movement on said frame assembly, a ramp pivotally mounted on said carriage assembly, means to partially counterbalance the weight of said ramp, yieldable means to urge said carriage assembly rearwardly on said frame, and means to raise said ramp and move said carriage assembly forwardly on said frame assembly, the improvement comprising latch means for releasably retaining said carriage assembly in adjusted forward position, said latch means comprising a hydraulic cylinder secured to one of said assemblies, a piston slidable in said cylinder and having a piston rod secured to the other of said assemblies, a conduit connecting the ends of said cylinder on opposite sides of said piston to provide a closed hydraulic circuit for the flow of fluid between opposite ends of said cylinder, a releasable check valve in said circuit to permit free flow of fluid from one side of said piston to the other side when said carriage assembly moves forwardly,



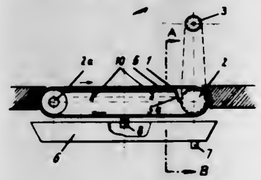
said check valve preventing flow of fluid in the opposite direction to retain said carriage assembly in adjusted forward position, and means to release said check valve to permit flow of fluid in the opposite direction to permit rearward movement of said carriage assembly.

3,203,020

SHOE CLEANING DEVICE IN THE FORM OF AN ENDLESS BELT

Adolf Merkel, Im Tann 19, Unterpfaffenhofen, near Munich, Germany

Filed Feb. 11, 1963, Ser. No. 259,772
3 Claims. (Cl. 15—36)



1. Shoe cleaning mat in the form of an endless belt, comprising an endless belt, means for supporting said belt including two rollers parallelly spaced around which said belt is wound, means for rotatably supporting said rollers including members having upper surfaces extending along and close to the edges of the belt, said belt having upper and lower portions, the upper portion being directly exposed to the shoe sole to be engaged thereby, and a backing plate arranged close to, and below said upper portion, said backing plate having projections extending outwardly and downwardly from the edge of the topmost portion of the belt, and a receptacle arranged below said bottom portion of said belt and having portions extending sidewise from under said bottom portion of said belt to a position to receive dirt from said downward projections of said backing plate.

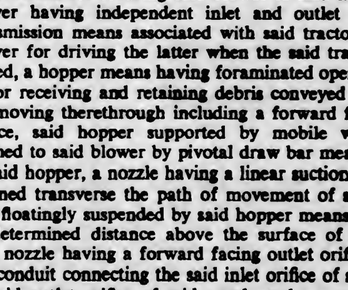
3,203,021

APPLICATOR FOR THIN LAYER CHROMATOGRAPHY

Nicholas Pelick, State College, Pa., assignor to Applied Science Laboratories, Inc., State College, Pa.

Filed Sept. 20, 1963, Ser. No. 310,315
6 Claims. (Cl. 15—236)

1. A spreading device for use in thin layer chromatography for spreading a thin layer of uniform thickness on plates comprising in combination, a pair of side support members of substantial length disposed in spaced relation, base surfaces of substantial length on said side support members in the same plane adapted for engaging a flat surface, a handle member connected at opposite ends between said pair of side support members to rigidly connect said side support members in spaced relation, said handle member connected a substantial distance above said base surfaces and generally centrally of the length thereof, downwardly sloping parallel upper edges on said pair of side support members, a



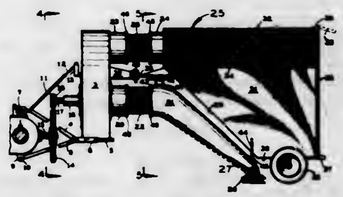
scraper blade member movably attached to said downwardly sloping parallel upper edges of opposite side support members, a knife edge extending along the lower edge of said scraper blade member, means for keeping parallel to the plane of said base surfaces said knife edge, whereby said device may be longitudinally moved in either direction by said handle member to spread a thin layer of uniform thickness upon plates positioned on the flat surface between said pair of side support members with said knife edge which layer is independent of imperfections on the surface of the plates.

3,203,022

VACUUM CLEANER FOR LAWNS

Stanley E. Clarke, 776 W. 54th St., Miami Beach, Fla.

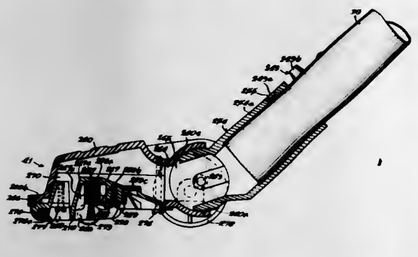
Filed Jan. 13, 1964, Ser. No. 337,231
4 Claims. (Cl. 15—340)



3. In a vacuum cleaner attachment for a tractor of the character described a centrifugal blower including attachment means for securing said blower to said tractor, said blower having independent inlet and outlet orifices, a transmission means associated with said tractor and said blower for driving the latter when the said tractor is operated, a hopper means having foraminated openings there in for receiving and retaining debris conveyed therein by air moving therethrough including a forward facing inlet orifice, said hopper supported by mobile wheels and hitched to said blower by pivotal draw bar means secured to said hopper, a nozzle having a linear suction orifice positioned transverse the path of movement of said tractor and floatingly suspended by said hopper means a uniform predetermined distance above the surface of said lawn, said nozzle having a forward facing outlet orifice, a flexible conduit connecting the said inlet orifice of said blower to said outlet orifice of said nozzle and a second flexible conduit connecting said blower outlet orifice to said hop-

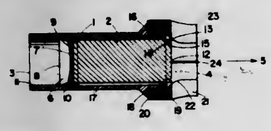
per inlet orifice whereby the debris on said lawn will be induced into said suction orifice through said blower and be deposited in said hopper when said tractor is operated.

3,203,023
CLEANING ATTACHMENT FOR VACUUM CLEANER
Ivar Jepson, Sister Bay, Wis., and Julius P. Wied, Oak Park, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application June 30, 1960, Ser. No. 39,865, now Patent No. 3,170,184, dated Feb. 23, 1965. Divided and this application Nov. 6, 1964, Ser. No. 409,533
5 Claims. (Cl. 15—371)



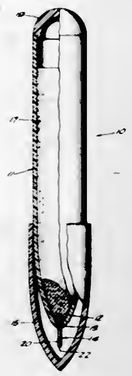
1. A cleaning attachment for a suction cleaner comprising a housing defining an elongated chamber open at the bottom and including means adapted to be connected to a suction cleaner to produce a suction in at least a portion of said chamber, a plurality of pairs of spaced guide members in said housing, an elongated brush including an elongated rigid brush supporting member, said brush supporting member having its longitudinal axis parallel with the longitudinal axis of said elongated chamber and disposed in the space defined between said pairs of spaced guide members, fixed stop means engageable with the lower edge of said brush supporting member determining the lowermost position of said brush, spring means biasing said brush against said stop means, a brush lock plate pivotally mounted within said housing about a generally vertically axis when said open bottom of said chamber is adjacent a surface to be cleaned, said brush lock plate including a cam surface engageable with the lower edge of said brush supporting member to provide adjustable stop means determining selectively adjustable lower positions of said brush.

3,203,024
SOAP HOLDER AND APPLICATOR
Robert E. Hawkins and Robert J. Van Zile, Fort Wayne, Ind., assignors to Lather-Stik, Inc., Fort Wayne, Ind.
Filed May 7, 1963, Ser. No. 278,655
10 Claims. (Cl. 15—555)



3. A soap holder and applicator comprising: an elongated tubular handle member open at both ends; an elongated cylindrical stick of solid soap supported in said handle member for axial movement toward one end thereof, said stick having one end thereof projecting axially beyond said one end of said handle member, said stick and said handle member having exterior and interior diameters, respectively, said exterior diameter being less than said interior diameter when said stick is moist and expanded, frictional means for opposing said axial movement of said stick mounted within said handle member, securing said stick in said handle member in spaced-apart relationship from said handle member and partially constricting the interior of said handle member; said handle member having an annular projection integrally formed on its exterior surface spaced from said one end thereof and defining an annular shoulder; an annular applicator sleeve member formed of sponge material having an initial inside diameter less than the outside diameter of said handle member, said applicator member having one end thereof mounted over and adhered to said exterior surface of said one end of said handle member and seated against said shoulder, the other end of said applicator member extending axially outwardly beyond said one end of said handle member to define a first portion in contact with said stick and extending axially outwardly beyond said one end of said stick to define a lathering second portion said second portion having an axial length greater than said first portion, the inside diameter of said lathering portion being smaller than the outside diameter of said stick; and a follower member engaging the other end of said stick and frictionally engaging the inner surface of said handle member for feeding one end of said stick toward said lathering portion as said stick is consumed.

3,203,025
WRITING INSTRUMENT
Clarence Schreur, Escondido, Calif., assignor to Pacific Research Laboratory, Escondido, Calif., a partnership
Filed Aug. 15, 1962, Ser. No. 217,212
21 Claims. (Cl. 15—563)



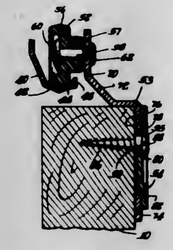
15. A nib adapted to be mounted in a holder for a supply of writing fluid, said nib comprising an elongated thin-walled slightly flexible tube open at its opposite ends, said tube having one end thereof rounded to provide a smooth glide surface when said nib is placed in contact with a surface to be written upon at a conventional writing angle for a hand-held writing instrument, said tubing being formed of semi-rigid wear-resisting material and being charged with a snugly-fitting flexible core comprising a multiplicity of filaments extending the length of said tube, the outer exposed ends of said filaments being contoured to provide an outwardly protruding semi-spherical surface merging smoothly with the similarly rounded glide surface on the outer end of said flexible tube and which core of filaments is effective to feed ink to a writing surface in contact therewith and with said glide surface.

3,203,026
FLUID APPLICATOR
Gilbert Schwartzman, Scarsdale, N.Y., assignor to Glide-O-Matic Corp., Yonkers, N.Y., a corporation of New York
Filed Apr. 5, 1963, Ser. No. 271,019
2 Claims. (Cl. 15—566)



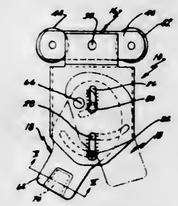
1. A fluid applicator comprising a retainer ring having a projecting portion, a cover secured to said ring, said ring having a tapered opening therein forming a valve seat, a valve assembly formed of polyethylene and including a valve head having a conical surface portion engageable with said valve seat to close said opening and being movable with respect to said valve seat to control fluid flow through said opening, said valve assembly further including a mounting ring, said projecting portion having a swaged end holding said mounting ring in place, said valve assembly also including helical coils of polyethylene integrally connected to said mounting ring and said valve head urging said valve head against said valve seat, and a resilient porous body disposed between said cover and said valve seat, said body being deformable so that said cover may be depressed urging a portion of said body toward said opening to depress said valve head away from said valve seat against the forces exerted by said helical coils of polyethylene.

3,203,027
SLIDING DOOR SUPPORT
Thor Ohman, 1633 Farwell Ave., Chicago, Ill.
Filed July 2, 1962, Ser. No. 206,870
4 Claims. (Cl. 16—105)



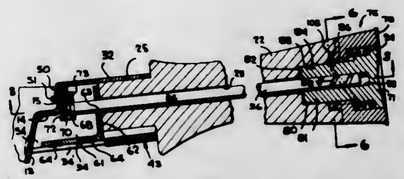
1. A sliding door support comprising, in combination, a support plate for attachment to a door header, a substantially vertical spacer fixed to said support plate, a runner offset fixed to said vertical spacer, a first elongated convex section fixed to said runner offset, a second elongated convex section fixed to the first convex section to provide an elongated groove between said sections, an elongated rail fixed to the second convex section, a roller having a convex outer periphery rollably engaging the first and second convex sections to roll in a predetermined path above the groove, a shaft rotatably supporting the wheel, a plate fixed to said shaft, said plate having an aperture contained therein, a disc positioned adjacent to said aperture, said disc having a fastener aperture contained therein, a fastener positioned in said fastener aperture, and a door fixed to said fastener and said fastener holding the disc in frictional engagement with the plate to secure the plate to the door.

3,203,028
ADJUSTABLE HANGER
Herbert F. Knape, Grand Rapids, Mich., assignor to Knape and Vogt Manufacturing Co., Grand Rapids, Mich., a corporation of Michigan
Filed Dec. 9, 1963, Ser. No. 329,143
5 Claims. (Cl. 16—105)



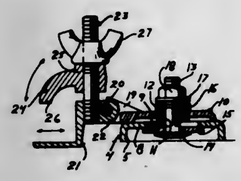
1. A vertically adjustable mounting bracket for a sliding door, comprising: hanger means for movement along a guide track, and door mounting means; a pivotal connection between said hanger means and door mounting means; and a slot and pin connection between said means including vertical linear slot means in said hanger means and overlapping arcuate slot means in said mounting means; screw means extending through said overlapping slot means and beyond for extension into the door; said slot means and screw means providing with an arcuate path of ajustment movement having a center of curvature near to but offset from said pivotal connection and radially extending means allowing pivotal movement and thus vertical adjustment of said door mounting means by vertical shifting of said screw means, when loosened, with pivoting of said radial extending means and said mounting means.

3,203,029
DETACHABLE HANDLE APPARATUS
Anthony W. Serio, Hillcrest Road, Elmira, N.Y.
Filed June 21, 1963, Ser. No. 289,700
13 Claims. (Cl. 16—114)



1. Detachable handle apparatus comprising a hand grip portion, clamping means adjacent one end of said hand grip portion and being movably supported by said hand grip portion for movement into and out of clamping position, actuating means mounted adjacent the opposite end of said hand grip portion, means interconnecting said actuating means with said clamping means whereby said clamping means may be operatively moved by said actuating means, said actuating means including a portion which is mounted for rotation with respect to said hand grip portion and which is also slidably mounted for movement longitudinally toward and away from said hand grip portion, and means on said actuating means and said hand grip portion for positively locking said actuating means against rotation with respect to said hand grip portion and being interengageable upon sliding movement of said actuating means portion toward said hand grip portion, said interengageable locking means also being selectively releasable.

3,203,030
ADJUSTABLE MOUNTING HINGE FOR SCREEN PRINTING FRAMES
Vincent H. Barnes, 1322 Linda Rosa Ave., Los Angeles 41, Calif.
Filed June 7, 1963, Ser. No. 286,332
4 Claims. (Cl. 16—129)



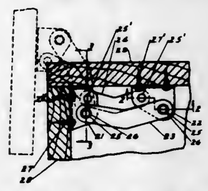
1. An adjustable mounting hinge for screen printing frames, comprising:
(a) a mounting base member having a raised deck and an accommodation aperture therein;
(b) a bolt extending through said aperture;
(c) means carried by said bolt and engageable with the margins of said aperture;
(d) a hinge support adapted to receive said bolt and effect movement thereof within the boundaries of said aperture;
(e) means engageable with said bolt and said base member for locking said bolt with respect to said base member;
(f) hinge means incorporating said hinge support;
(g) and a screen printing frame clamp carried by said hinge means.

3,203,031
COMBINATION HINGE AND DETENT
Ted L. Youngdale and Louis L. Youngdale, both of 818 Crescent Drive, Vista, Calif.
Filed May 31, 1963, Ser. No. 284,545
2 Claims. (Cl. 16—145)



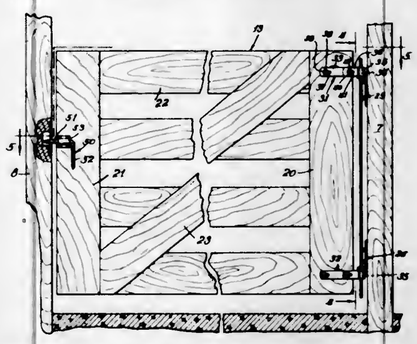
1. In a hinge and detent structure for a door and an adjacent jamb in a cabinet, a first plate member adapted for attachment to said door, a second plate member adapted for attachment to said jamb, hinge means connecting adjacent ends of said first and second members together for swinging movement relative to each other, a freely rotatable roller mounted on one of said members, and a resilient keeper mounted on the other of said members in the path of relative movement of said roller with respect to said keeper upon execution of swinging movement of one member relative to the other, said roller engaging said keeper when said first and second members are at the limit of their swinging movement in one direction relative to each other, a curved recess forming portion appended on the resilient keeper, a resilient bar element extending from a slot on the other of said members, said bar element extending from said slot and having a formed recess at its end, a leaf spring interposed between said curved recess forming portion and said formed recess for biasing the bar element to a position for engaging said rotatable roller.

3,203,032
HINGE LINKAGE
Milton C. Everett, 42 W. Raymond Ave., Roosevelt, N.Y.
Filed Feb. 6, 1962, Ser. No. 171,405
1 Claim. (Cl. 16—163)



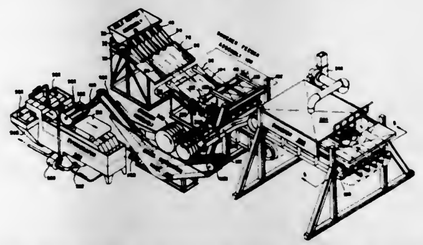
A hinge linkage for a container cover comprising a relatively long link pivotally connected at one end to said cover and at the other end to the interior of said container and a relatively short link displaced sideways from said long link and pivotally connected at one end to said cover and at the other end to the interior of said container, said short and long links being opposite each other and being mounted substantially parallel to each other and to the cover when the cover is in normally closed position and the short link being closer to said cover than the long link when the cover is in said closed position, the dimensions of said links and the spacing of said links relative to each other and the said cover and the said container being such that when said cover is open said short link crosses over said long link and bears against an edge of said container to hold said cover in open position and completely away from the opening in said container.

3,203,033
LIVESTOCK PEN STRUCTURES
George Banse, Sterling, Ill., assignor to National Manufacturing Co., Sterling, Ill., a corporation of Illinois
Filed Oct. 25, 1962, Ser. No. 232,987
2 Claims. (Cl. 16—176)



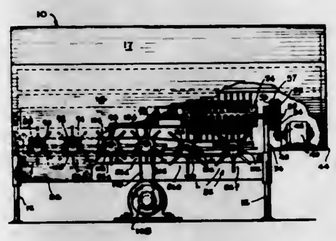
1. A hinge set for use in supporting a swingable and detachable closure member on a supporting member, comprising a pair of L-shaped pintle brackets, each of said pintle brackets having a plurality of mounting apertures in one side thereof and a single pintle receiving opening in the second side thereof, a pair of hinge strap members, each of said hinge strap members having a portion thereof bent back upon itself in partial overlapping relationship to provide a pintle receiving opening, said hinge strap members having mounting apertures both through said overlapped portions and through said unoverlapped portions, said pintle brackets and said hinge strap members being contiguously positioned with said pintle receiving openings in mutual alignment, said second sides of said brackets and said hinge strap members being in mutual engagement and cooperating when in use to prevent vertical movement of said hinge strap members relative to said brackets, pintle means loosely extending through said pintle receiving openings for pivotally joining said pintle brackets and said hinge strap members, said pintle means having an offset bent portion to prevent the vertical dropping of said pintle means through said members, said pintle means being removable from said members upon a short vertical lift thereof, thereby permitting said closure member to be both swingably mounted and completely detached as desired.

3,203,034
MATERIAL HANDLING APPARATUS
Rudolph F. Matzer, 13229 Fort Caroline Road, and Edward Seidel, 5241 Damascus Road, both of Jacksonville 7, Fla.
Filed Oct. 25, 1962, Ser. No. 233,039
1 Claim. (Cl. 17—2)



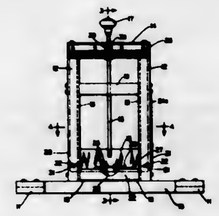
In an apparatus for sequentially shucking and eviscerating bivalves, means for heating predetermined zones of the bivalves comprising means for orienting and transporting bivalves along a predetermined path, heater means disposed along said predetermined path for simultaneously directing hot gases on predetermined zones of each opposed shell of the bivalves to effect a release of the adductor muscle of the bivalve from the shells thereof, conveying means for transporting the heated bivalve from said heating means to shearing means, and means for shearing the opposed shells of the bivalve from the viscera and adductor muscle thereof, said means for shearing the bivalves including a pair of cooperating rollers having mating cavities for receiving the bivalves, one of said rollers having a larger diameter than the other, and means for driving said rollers at the same r.p.m. causing a difference in the peripheral speed and effecting a shearing action on the bivalves.

3,203,035
POULTRY PICKING APPARATUS
Horace J. De Long, Gainesville, Ga., assignor to Gainesville Machine Company, Inc.
Filed June 20, 1963, Ser. No. 289,279
8 Claims. (Cl. 17—11.1)



1. An improved poultry picking apparatus comprising: a pair of spaced picking drums that define a path of travel for the passage of poultry therebetween mounted for rotation about axes that lie outwardly of and along said path;
and at least one picking drum in said path that is rotatably mounted on an axis that is vertically spaced from said first mentioned axes and is substantially transverse to said path.

3,203,036
POULTRY HEAD CHOPPER CONSTRUCTION
Jack L. Allison, Box 133, Wilmot, Ohio
Filed Dec. 23, 1963, Ser. No. 332,605
1 Claim. (Cl. 17—12)

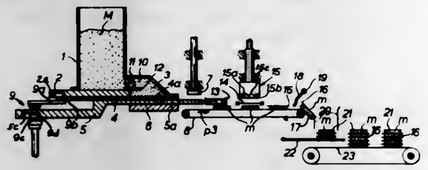


Poultry head chopper construction including a base member, a pair of grooved upright members providing guide means extending from the top to the bottom thereof mounted on the base member, a top member mounted on the upright members and extending between the upright members; the base, upright members and top members forming a frame, a vertically disposed blade having a cutting edge mounted in the frame slidable from the base to the top member in the guide means, handle means attached to the blade for sliding the blade in the guide means between lowered and raised positions, guard means mounted between said upright members and spaced from the top member, said guard means being located at a position to cover the cutting edge of the blade when the blade is in the raised position, blade stop means mounted on the base positioned to prevent the cutting edge from contacting the base when the blade is in the lowered position, a blade locking pin for positively locking the blade in the raised position, poultry neck-receiving means mounted on the base having a vertical blade travel space formed therein and flexible means cooperating with the poultry neck-receiving means to surround and confine the neck of poultry to the poultry neck-receiving means.

3,203,037
MACHINE FOR PORTIONED EXTRUDING OF CHOPPED MEAT, OR OF A SIMILAR PLASTIC MASS
Norvald Anhanger and Odd Anhanger, both of Arbeidergt 2, Trondheim, Norway
Filed May 6, 1963, Ser. No. 278,361
Claims priority, application Denmark, Feb. 28, 1963, 934/63
3 Claims. (Cl. 17—32)

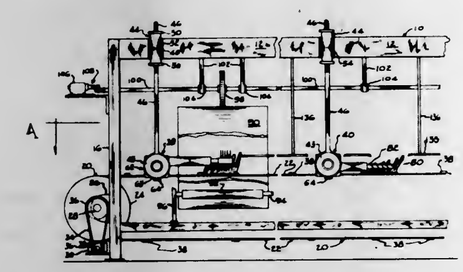
1. Apparatus for forming meat patties and the like from a mass of comminuted meat or similar plastic material, comprising a supply hopper, means for removing material from the hopper and for shaping the removed material and for discharging the shaped material, said means including slide means having at least one aperture therein for receiving and shaping material in one reciprocated position and for discharging shaped material in another reciprocated position, piston means reciprocable normal to the path of said slide means in said another position of the slide means to discharge shaped material from said

at least one aperture, a water container reciprocable below said piston means, and means moving the slide means



and the piston means and the water container in such synchronism that the piston means moves into the water container and said at least one aperture in alternation.

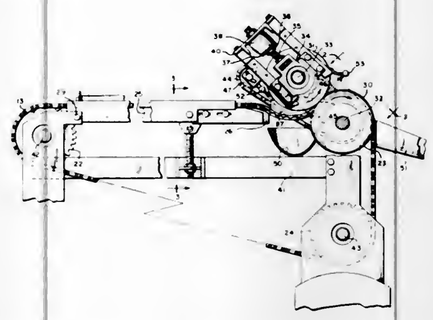
3,203,038
RECOVERY OF MEAT FROM BONES
Bernard T. Hensgen, Highland Park, and Donald Kenneth Jewell, Chicago, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois
Original application Apr. 3, 1961, Ser. No. 100,234, now Patent No. 3,154,804, dated Nov. 3, 1964. Divided and this application Nov. 15, 1963, Ser. No. 329,333
5 Claims. (Cl. 17—45)



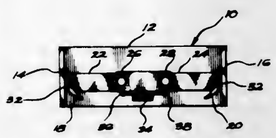
1. An improved method for stripping residual meat from bone, said method comprising: conveying said bones serially along a given path, said bones being conveyed while held in an upstanding attitude so as to expose the residual meat clinging thereto; successively brushing areas of each of said bones at a plurality of zones spaced longitudinally along said path to strip the meat therefrom, said areas thus brushed collectively representing the entire meat retaining surface of said bones, and loosening by continuous cutting action residual meat at at least one area of said bones, said loosening being carried out along said path in advance of at least one brushing zone whereby to facilitate the stripping of said meat at said one zone.

3,203,039
REMOVAL OF MEAT FROM SEPARATED SECTIONS OF THE LEGS OF KING CRAB
Ernest W. Glidden, Seattle, and Lloyd C. Fredrickson, Bellingham, Wash., assignors to Wakefield Seafoods, Inc., Seattle, Wash., a corporation of Washington
Original application Oct. 1, 1963, Ser. No. 313,011. Divided and this application Nov. 9, 1964, Ser. No. 409,768
6 Claims. (Cl. 17—45)

4. The method of extracting meat from a king crab leg having an opening in the large end, comprising depositing the leg, small-end first, upon a conveyor moving along an established path in course of which the conveyor passes between a pair of counter-rotating pressure rollers entering at the nip thereof, and retarding the counter kickback refusal by the rollers of the entering leg through providing positive engagement between the spines of the conveyed leg and the conveyed surface.

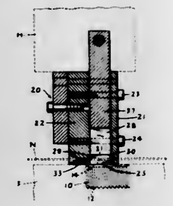


3,203,040
CLAMP FOR SKINS AND PELTS
Robert E. Dunaway, Nashville, Tenn., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed July 31, 1962, Ser. No. 213,644
4 Claims. (Cl. 17—21)



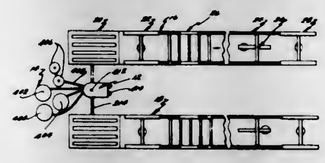
1. An improved apparatus for securing the skins and pelts of animal carcasses and removing said skins and pelts therefrom, said apparatus comprising: carcass holding means for initially positioning a carcass substantially vertically whereon the skin has been loosened about two leg portions; a unitary clamp for securing the two said loosened portions of skin, said clamp including, a flat back plate; upstanding edges at two opposite ends of said back plate; a pair of arms pivotally mounted to said back plate between said edges; arcuate gripping shoes attached to opposite ends of said arms, said arms and gripping shoes being openly exposed on said back plate and between said upstanding edges and positioned so that movement thereof in a given direction will move said gripping shoes toward engagement with said upstanding edges and any skin located therebetween so that said portions of skin may be inserted prior to such engagement between said shoes and edges and held against movement in said direction and said portions of skin may be removed therefrom by urging in an opposite direction; resilient means connected to said arms normally urging said gripping shoes toward contact with said upstanding edges; and power means associated with one of said carcass holding means and said clamp for moving a carcass and said clamp apart from one another so as to pull at said portions of skin in said clamp in said direction whereby said skin will be held and stripped from said carcass.

3,203,041
DEVICE FOR CUTTING AND INSERTING LOCKING ELEMENTS INTO THREADED FASTENERS
Clyde R. Beuter, Beverly Hills, Mich., and John W. Brightman, Ridgewood, N.J., assignors, by mesne assignments, to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Original application Feb. 27, 1961, Ser. No. 91,811. Divided and this application Sept. 26, 1963, Ser. No. 312,831
3 Claims. (Cl. 18—1)



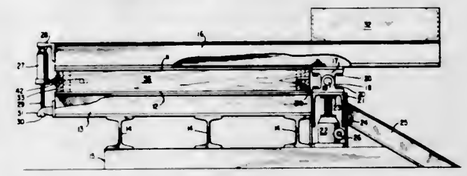
1. Apparatus for cutting locking strips for threaded members comprising a hollow housing having an elongated slit extending transversely of one end thereof, and connecting with the interior of said housing, a bore extending transversely of said housing and lengthwise of said slit bewteen its inner and outer ends, said bore being of greater diameter than said slit to receive a plastic filament of greater cross-sectional width than said slit, and a blade in said housing and reciprocable in said slit transversely of said bore for cutting a section from said filament substantially equal in length to the length of said slit, forcing said section through said slit to compress said section transversely and ejecting it from said housing through said slit.

3,203,042
INJECTION FOAM MOLDING SYSTEM
Folke A. Axelsson, Grand Haven, Mich., assignor to Airspace, Inc., Fruitport, Mich., a corporation of Michigan
Filed Sept. 20, 1963, Ser. No. 310,210
3 Claims. (Cl. 18—4)



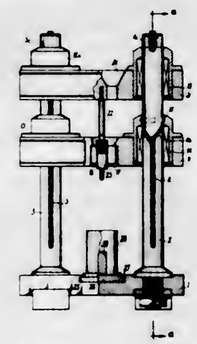
1. An injection molding system for mass production of foam core sandwiches comprising: a mixing and injection head; a plurality of production lines arranged about said head for cooperation therewith; each of said lines having a plurality of mold cars, each having an internal mold restrained against expansion for containing foam sandwiches to be formed by injection molding; each line having elongated conveyor means operably engaged with and supporting a plurality of said cars for movement of said cars therealong, enabling said cars to be in different zones thereof during various stages of injection, reaction, curing and unloading of the foam core sandwich; said cars each having support means retaining a pair of sheet panels in spaced relationship, and compression retention means holding said panels against expansion upon the injection of pressure foaming material between said panels; said compression retention means being releasable after curing of the foam core in said sandwiches for removal of said sandwich; a shiftable high pressure press at the injection and reaction zone of said conveyor means, including a bed beneath said car and an overhead pressure element, and means holding said bed and pressure element in fixed spaced relationship with each other and in contact with the car during injection and initial reaction of the foaming polymer to prevent expansion of said sandwich with generated pressures greater than the retention force of said compression retention means; each of said high pressure presses being adjacent said mixing and injection head; said head having an outlet conduit extending therefrom and communicable with the molds in the cars in said presses in sequential fashion, whereby said molds are filled, removed from said presses, cured, unloaded, and reassembled in sequential fashion between production lines.

3,203,043
LAMINATING PRESS MOLD FOR MANUFACTURING CELLULAR PRODUCTS
Howard G. Mathews, 2 Penndale Lane, Levittown, N.J.
Filed Oct. 13, 1961, Ser. No. 144,877
6 Claims. (Cl. 18—5)



3. In a mold for manufacturing cellular products the improvement comprising removable mold sections constituting side forms for said mold, said removable mold sections having offset joint portions at least at one end thereof, and means to rigidly clamp joint portions of adjacent mold sections together, at least some of said mold sections being tapered in the upper end regions to provide a slight clearance between adjacent mold sections when clamped together.

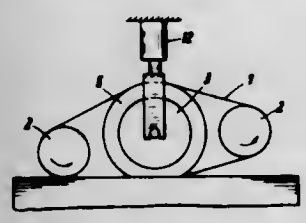
3,203,044
COATING APPARATUS
Alain Tarbé de Saint Hardouin, Saint Cloud, Jean Martin, Chatillon-sous-Bagneux, and André Valentin, Paris, France
Filed July 10, 1962, Ser. No. 208,756
Claims priority, application France, July 26, 1961, 869,154
6 Claims. (Cl. 18—5)



1. Coating apparatus for holding a part to be coated, comprising: a base having a flat, horizontally disposed

upper surface portion providing a support for the part to be coated; a ring for enclosing said part having the lower edge thereof seated in sealing engagement on said support and extending upwardly to a height above said support which is greater than the height of the part to be enclosed and coated; a first counterweight mounted on said base for vertical movement above said ring, said first counterweight being movable between an upper position spaced above said ring and a lower position resting on the upper edge of said ring for applying the ring against the support during a coating operation; said first counterweight having a vertically extending opening formed therethrough positioned above said ring for conducting coating material into said ring and around the part to be coated; a second counterweight mounted on said base for vertical movement and positioned above said first counterweight and said ring; a member rigid with said second counterweight and depending therefrom in vertical alignment with said opening and with said part to be coated, said member being of such a size as to pass freely through said opening, and to permit coating material to pass freely between the wall of said opening and said member during a coating operation, said second counterweight being movable between an upper position spaced above said first counterweight when it is in its upper position and a lower position spaced above said first counterweight when it is in its lower position and with said member extending through said opening and resting on the part to be coated for applying the part against the support during a coating operation, said second counterweight being formed with passage means for guiding coating material therethrough and to said opening in said first counterweight.

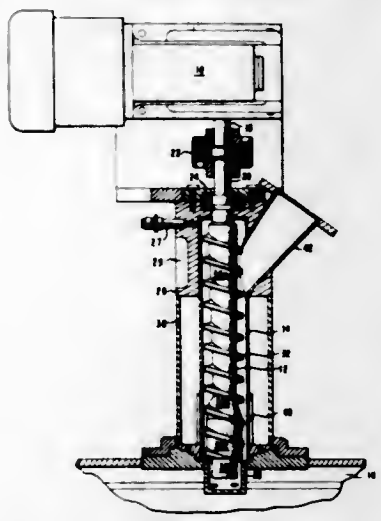
3,203,045
ROLLING MILLS FOR METAL POWDER ROLLING
Gerhard Naeser, Otto Wessel, and Helmut Ern, Duisburg, Germany, assignors to Mannesmann Aktiengesellschaft, Duesseldorf, Germany, a joint-stock company
Filed Mar. 15, 1963, Ser. No. 265,510
Claims priority, application Germany, Mar. 22, 1962, M 52,209
4 Claims. (Cl. 18—9)



1. In a metal powder rolling mill having smooth cylindrical rolls and end faces thereon,
a device to bridge the roll pass gap,
comprising endless steel bands as cover members which bridge the pass gap laterally and in the plane formed by the axes of the rolls are wider than the pass gap, and deflecting rollers to guide the steel bands as they bridge the pass gap.

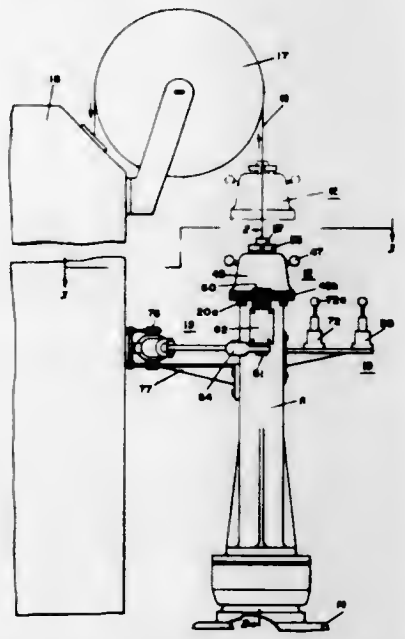
3,203,046
SCREW MELTER
Abraham Stein, Ramos Mejia, Argentina
Filed Apr. 11, 1962, Ser. No. 188,387
(Filed under Rule 47(b) and 35 U.S.C. 118)
2 Claims. (Cl. 18—12)

1. A screw melter comprising: a jacketed screw barrel having an inlet for granular material and an outlet; an elongated screw rotatably mounted in said barrel and extending from said inlet to said outlet, said screw including a shaft having a helix of constant pitch and diameter thereon, said shaft tapering gradually to a minimum diameter and abruptly to a maximum diameter in successive feed and compression lengths and terminating in a metering length having said maximum diameter; and a heating



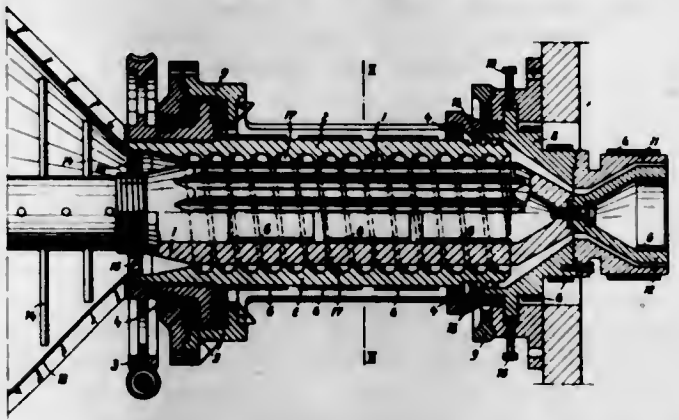
means surrounding said barrel in the compression and metering lengths.

3,203,047
DIE CLAMPING SYSTEM
Raymond E. Fleming, Philadelphia, and Herman E. Reichert, Willow Grove, Pa., assignors to Jennings Machine Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 21, 1962, Ser. No. 246,500
9 Claims. (Cl. 18—13)



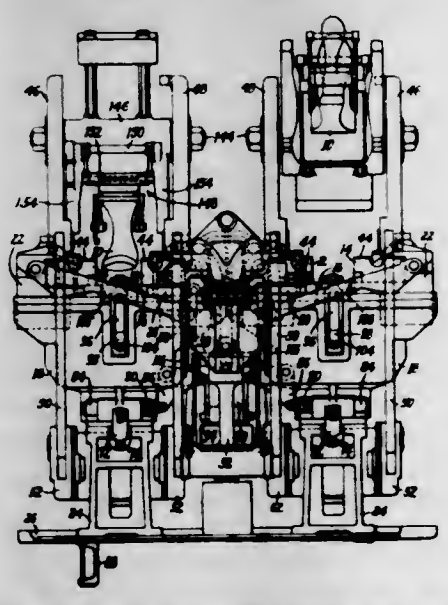
1. A system for clamping the die of extrusion equipment comprising cylinder means adapted to receive the material to be extruded, die head means, the interior of said die head means and the exterior of said cylinder means having threaded areas adapted for engagement with each other, handle means on said die head means for manually tightening said thread of said die head means with respect to said threads of said cylinder means, gear means disposed on the outer circumference of said die head means opposite said threaded area and spaced from said handle means, shaft means supported on said cylinder means, pinion means on one end of said shaft means, said pinion means having teeth adapted for engagement with the teeth of said gear means, and ratchet means connected to the other end of said pinion shaft means remote from said pinion means for rotation of said pinion means to drive said gear means in reverse directions as required to finally tighten said die head means with respect to said cylinder means and to initially loosen said die head means with respect to said cylinder means.

3,203,048
CYLINDER PRESSES, ESPECIALLY FOR WORKING UP SYNTHETIC SUBSTANCES
Jean Joseph Gérard Daubenfeld, 12 Rue Astrid, Luxembourg, Luxembourg
Filed Dec. 7, 1962, Ser. No. 243,098
Claims priority, application Luxembourg, Feb. 12, 1962, 41,235
7 Claims. (Cl. 18—14)



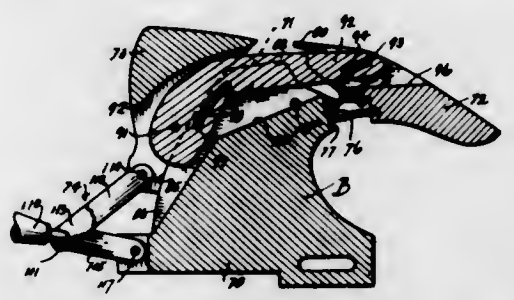
1. A cylinder press for working up thermoplastic synthetic substances into tubular form, comprising
a housing having a cylindrical space with two open ends, and a stationary core therein, into which cylindrical space material to be worked up is fed at one end and extruded at the other end,
an extrusion head on the extrusion end of the cylindrical space,
a cylindrical casing rotatably fitted in the cylindrical space around the stationary core,
longitudinally oriented corrugations on the stationary core to restrain the advance of material in the press,
and cross-sectionally rounded screw threads on the core-facing surface of the casing to advance material in the press.

3,203,049
MACHINES FOR VULCANIZING SOLES ONTO SHOE BOTTOMS
Terence John Brown, Raymond Derek Edwin Eldred, and William Alan North, Leicester, England, assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed July 10, 1962, Ser. No. 208,848
Claims priority, application Great Britain, July 29, 1961, 27,611/61
2 Claims. (Cl. 18—17)



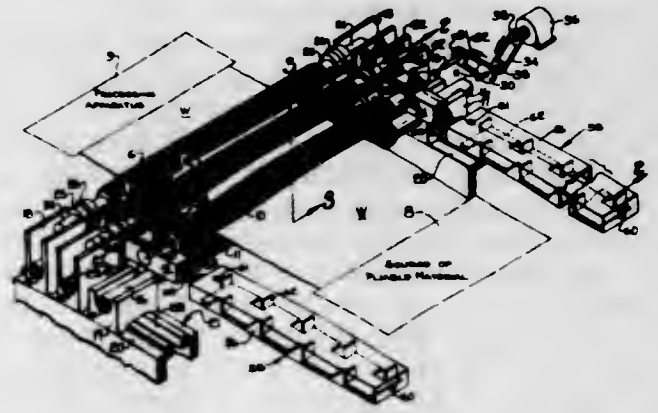
1. In a machine for molding soles onto shoe bottoms and having a carrier for a shoe form, a first means for moving the carrier from an intermediate station to a molding station, side mold members mounted in the molding station, and a second means for mutually closing the side mold members; means for selectively varying the sequence of operation of the said first and second means comprising means carried by the side mold closing means for operating the carrier moving means, and selective means for shifting said operating means between an operative and an inoperative position.

3,203,050
SHOE LAST STRUCTURE FOR THE MANUFACTURE OF PLASTIC SOLES UPON SHOE UPPERS
Howard H. Hoffman, Nashville, Tenn., assignor to Southern Shoe Machinery Company, Nashville, Tenn.
Filed Jan. 8, 1963, Ser. No. 250,882
7 Claims. (Cl. 18—46)



1. In a last construction the combination of a rigid base portion, an elongated last comprising a unitary heel block movably mounted on the base portion for movement transversely to the normal plane of the last, means for moving said heel block to opened and closed positions on the base, a toe block pivotally and tiltably mounted on said base for up and down movements transverse to the normal plane of the last, and linking means connecting the heel block to the toe block to enable free self-opening of the toe block upon the base when the heel block is opened and having means to effect closing of the toe block when the heel block is closed.

3,203,051
EVENER APPARATUS FOR FEEDING PLIABLE MATERIALS
Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed July 9, 1962, Ser. No. 208,393
19 Claims. (Cl. 19—239)



1. Apparatus for feeding pliable material at a variable rate of speed and wherein the material is originally of varying density and/or thickness comprising
(a) a pair of intermeshing fluted first and second feed rolls,
(b) means yieldably urging at least one of said rolls toward the other, and
(c) means supporting said first roll for angular movement along an arc generated about an axis parallel to that of both rolls, said angular movement of said

first roll having a first component radially of the axis of said second roll and a second component normal to said first component and being substantially greater than said first component whereby the first roll moves toward the second roll and away from the second roll to a lesser extent than respective angular movements of the first roll in one direction and the opposite direction with said supporting means.

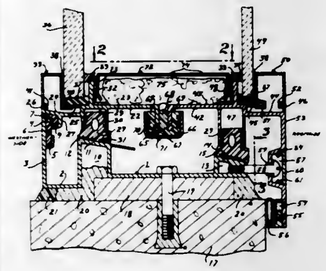
3,203,052
VIEWING DEVICE
Joseph A. Curtis, Jr., Anaheim, Calif.
(7940 Owensmouth, Canoga Park, Calif.)
Filed Mar. 26, 1962, Ser. No. 182,194
1 Claim. (Cl. 20—39)



A device adapted to be installed in a single opening in a door of a structure to permit a person inside said structure to see and converse with a person adjacent the exterior of said door without being seen, including:

(a) first and second frames having edge portions that contact the exterior and interior surfaces of said door adjacent said opening;
(b) first means for guiding said first and second frames in telescopic adjustment to permit the same to be installed in a door of any thickness lying within a predetermined range;
(c) second means for moving said first and second frames towards one another to cause said edge portions to pressure contact said interior and exterior surfaces and frictionally hold said first and second frames at a fixed position on said door;
(d) third means for transmitting speech through said first and second frames from the interior of said structure to the exterior thereof;
(e) a plate that acts as a two-way mirror held within the confines of said first and second frames, which plate permits viewing therethrough from the darker to the lighter side thereof, with said plate acting as a mirror when an attempt is made to look from the lighter side to the darker side thereof;
(f) a first sheet of transparent tinted material disposed in alignment with said plate but rearwardly spaced therefrom, with the tinting of said material being sufficient to cut down the light transmitted from the interior of said structure to the surface of said plate to the extent that said interior surface is illuminated to a lesser extent that the exterior thereof; and
(g) an electric bulb;
(h) fourth means for holding said bulb between said flanges and edge of said opening, with the light from said bulb passing through an aperture formed in said first frame to fall on the exterior surface of said plate;
(i) a source of electric power;
(j) a normally open circuit extending from said source of power to said bulb; and a manually operable switch forming a part of said circuit, which switch is so disposed relative to said frame as to be operable from the interior of said structure.

3,203,053
MULTIPLE WINDOW CONSTRUCTION
Ralph G. Lane, Altadena, Calif., and George F. Lamb, Washington, D.C., assignors to Frank B. Miller Mfg. Co. Inc., Burbank, Calif., a corporation of California
Filed Sept. 4, 1962, Ser. No. 220,996
13 Claims. (Cl. 20—56.5)



6. An acoustical window construction, comprising:

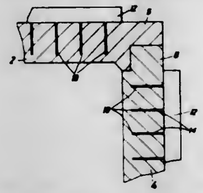
(a) an outer frame structure including an inwardly directed weatherside pad and an inwardly directed roomside pad;
(b) a weatherside inner subframe structure and a roomside inner subframe structure spaced therefrom, each subframe structure including an outwardly directed peripheral channel confronting the weatherside and roomside pads respectively;
(c) sound isolating cushioning members yieldably fitting said channels and yieldably seated on said pads;
(d) a windowpane for each subframe structure;
(e) and yieldable sound isolating cushioning means interposed between each window and its subframe structure.

3,203,054
PRINTING
Leslie Clarence Nicoll, 18 Birchwood Road, Pett's Wood, Orpington, Kent, England
Filed Dec. 11, 1961, Ser. No. 158,502
Claims priority, application Great Britain, Oct. 24, 1956, 32,423/56; Jan. 20, 1961, 2,375/61
1 Claim. (Cl. 22—5.5)



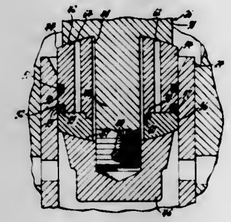
A matrix for casting stereos, comprising a thin, flexible, composite, porous plate having on one side printing impressions and on the opposite side a flat surface without depressions arising from the formation of the printing impressions, said plate including two compressed fibrous paper laminations namely a flong sheet having the printing impressions and a single layer porous backing of paper having the character of uncompressed and uncalendered filter paper compacted to a thin flexible sheet approximately 0.050 inch thick and pre-impregnated with a stiffening and adhesive agent consisting of starch tanned with a dichromate in the proportion of 5% by weight dichromate to starch, said composite plate having the fibers of the laminations thereof expanded into intermingling relation, compressed and adhesively bound together.

3,203,055
CONTINUOUS CASTING MOLD
Adolf Baugeroth, Duisburg-Hochfeld, and Erwin Scheufele, Duisburg-Ungelsheim, Germany, assignors to Mannesmann Aktiengesellschaft, Duesseldorf, Germany, a German company
Continuation of application Ser. No. 14,368, Mar. 11, 1960. This application Dec. 24, 1962, Ser. No. 248,833
6 Claims. (Cl. 22—57.2)



4. A continuous casting mold for the casting of molten material, especially iron and steel, having planar mold walls with a decreasing temperature gradient within the walls from inside to outside when in use, each mold wall comprising a plate portion, a frame portion integral with said plate portion and a portion having spaced rectangular columns also integral with said plate portion, said frame portion surrounding said column portion and extending outwardly from said plate portion a distance approximately 4 times as great as the thickness of said plate portion, said column portion extending outwardly the same distance and comprising a plurality of rectangular columns positioned in vertical and horizontal rows spaced from each other a distance which is about one-fifth the thickness of said plate portion, the spacing between said columns being such that cooling water could hardly circulate therein even if said spacing were not filled with solid material, said spacing being filled with a solid yielding heat retaining material; whereby the temperature gradient across the inside to outside dimension of the mold wall remains substantially constant and said yielding material absorbs deformations in said columns due to the temperature gradient in the mold wall thereby stopping deformations from accumulating from one column to another and from one part of the mold wall to another.

3,203,056
DIE CASTING APPARATUS
William E. Thompson and Keith P. Tracy, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 25, 1962, Ser. No. 233,121
6 Claims. (Cl. 22—70)

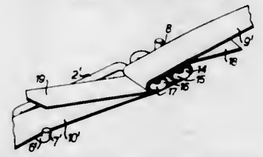


1. A piston construction comprising a cylindrical body having an external radial shoulder at one end, a connecting rod rigidly secured to said body in axial alignment therewith, an end plate having an outside diameter substantially the same as said outside diameter of said shoulder, means for removably securing said end plate to the side one end of said body remote from said shoulder and in axial alignment with said body, a piston ring assembly having a greater diameter than said body including an axially removable annular carriage on said body and spaced therefrom between said shoulder and said end plate, a circumferential groove in said carriage, a seal ring in said groove, said anular carriage having partially spherical axial end surfaces, said end plate having partially spherical surfaces engaging one of said partially spherical carriage ends, said shoulder having partially spherical surfaces engaging the other of said partially spherical carriage ends whereby said carriage is capable of limited universal movement without any substantial transverse or relative axial movement.

3,203,057
PROCESS FOR MAKING CORES AND MOLDS, ARTICLES MADE THEREBY AND BINDER COMPOSITIONS THEREFOR
Charles R. Hunt, Denmark Road, and Hall Stewart, 1005 N. Washington, both of Danville, Ill.
No Drawing. Filed Mar. 13, 1963, Ser. No. 264,756
7 Claims. (Cl. 22—193)

6. A binder for sand cores for metal casting consisting of a liquid component consisting essentially of an aqueous solution of alkali-metal silicate having an alkalinity calculated as weight percent of free alkali hydroxide in the range of 18 to 30, and a dry component consisting essentially of about 3 to 100% of Al_2O_3 based upon the weight of the alkali-metal silicate solution.

3,203,058
TIGHTENING DEVICE
Ture Ake Gillis Roing, Kvarngarden, Malmo SV, Sweden, assignor to Aktiebolaget Textilkonst, Malmo, Sweden, a corporation of Sweden
Filed Nov. 21, 1963, Ser. No. 325,314
Claims priority, application Sweden, Nov. 23, 1962, 12,583/62
1 Claim. (Cl. 24—68)



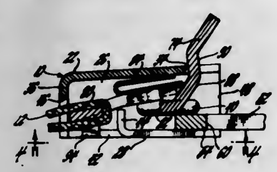
In a tightened strap tie comprising aligned first and second strap portions, a strap tightening and fastening device comprising an integral rod having a straight elongated portion forming a lever, said rod at one end of said lever being bent transversely thereof to form a first straight strap engaging part, said rod being bent upon itself in a loop at the end of said first part and extending parallel to and spaced from such part to form a second strap engaging part, said rod being bent upon itself to form a loop at the end of said second part remote from said first loop and then extending transversely of the strap to form a third strap engaging part, said parts lying in a common plane with said lever, said rod at the other end of said lever being bent transversely to form a fourth strap engaging part parallel to said first, second and third strap engaging parts, the extremities of said third and fourth parts being bent to form stubs, said first strap portion extending past all of said first, second and third parts in that order, thence around said third part in a first loop, thence to and around said second part in a second loop, thence between said second and third parts back to and around said third part in a third loop within said first loop, said third loop being sandwiched between said first loop and said third part, and thence past said second and first parts in that order, said second strap portion being connected to said first part and bearing against said second loop in said first strap part.

3,203,059
FASTENER CLIP MEMBER
Charles H. Becker, Braintree, Mass., assignor to United-Carr Incorporated, a corporation of Delaware
Filed Jan. 22, 1963, Ser. No. 253,157
1 Claim. (Cl. 24—73)



A fastener clip member for holding two or more parts in assembly, said fastener clip member having a plate-like portion provided with opposed, flat, self-piercing, hook-like portions in edgewise alignment, a bowed portion between the hook-like portions for moving them into interlocking engagement with one of said parts when said bowed portion is flattened and a yieldable spring-like finger also extending from said plate-like portion to cooperate with said plate-like portion to engage the other of said parts to be held by said fastener clip member.

3,203,060
SEAT BELT BUCKLE
Andrew J. Van Noord, Grand Rapids, Mich., assignor to Kent Engineering Consultants, Grand Rapids, Mich., a partnership
Filed Jan. 21, 1963, Ser. No. 252,716
6 Claims. (Cl. 24—77)



1. A seat belt buckle assembly, comprising:
(a) a housing member open at opposite ends,
(b) a keeper member having an end received and retained within said housing member,
(c) a seat belt tongue member receivable in one end of said housing and engageable with said keeper member,
(d) said keeper member being formed to include
(1) an opening in the housing received end thereof
(2) providing a cross rail at one end of said opening receptive of seat belt webbing in engagement therewith,
(3) and a depending latch shoulder at the other end thereof,
(e) and said tongue member including a cross rail receivable under said keeper member and for engagement with said latch shoulder.

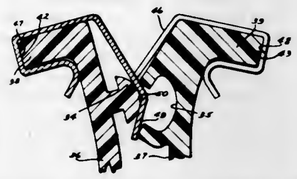
3,203,061
CLAMPING UNIT FOR CLOTHES HANGER
Ernest Thomas, Roselle, Ill., assignor to Ekco Products Company, Chicago, Ill., a corporation of Delaware
Filed May 22, 1962, Ser. No. 196,776
3 Claims. (Cl. 24—81)

1. A clamping unit for supporting an article in suspended relation to an overhead supporting member, said unit having a pair of jaw members and an integral flexible bridge section by which said jaw members are joined in normally forwardly converging relation to said bridge section, said jaw members having integral rearward extensions defining normally outspread finger gripping arms which on movement toward each other are effective to open said jaw members via flexure of said bridge section along lines limited to marginal areas of said bridge section along its junction with said jaw members, and means for establishing a detachable connection between said clamping unit and said overhead supporting member including yieldable supporting member engaging ribs formed integrally with and projecting for-



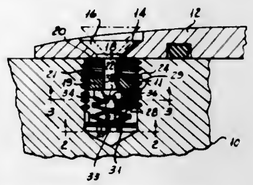
wardly from said bridge section and occupying positions totally within the confines of the area between said jaw members, said ribs and said bridge section being joined along an area centrally of and sufficiently removed from said lines of flexure of said bridge section to maintain gripping action independently of the open or closed position of said jaw members.

3,203,062
DOUBLE HINGED FASTENER
Steven Ausnit, 124 E. 61st St., New York, N.Y.
Filed Sept. 7, 1962, Ser. No. 222,016
3 Claims. (Cl. 24—201)



1. A flexible closure structure comprising first and second opposed flexible strips having releasable pressure interlocking elements including a rib element and a groove element, a laterally outwardly extending flange on each of the strips, a slider on the strips, means on the slider tapering downwardly and engaging the upper surface of said flanges for applying forces to help bend the strips apart, and means on the slider for applying a separating force to the strips by engaging the rib element and by projecting into the groove element so as to pull the rib element out of the groove element.

3,203,063
ROTATABLE STUD FASTENER
John L. Vander Sande, North Haledon, N.J., assignor to Camloc Fastener Corporation, Paramus, N.J., a corporation of New York
Continuation of application Ser. No. 33,712, June 3, 1960. This application Feb. 21, 1963, Ser. No. 260,279
5 Claims. (Cl. 24—221)



1. A fastener assembly for securing two members, one of which has a threaded recess in assembled relationship including in combination a receptacle comprising a body

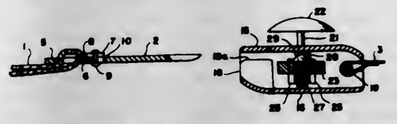
having a longitudinal axis and having external screw threads along its length, said body being provided with a pair of legs having walls forming a first slot extending through said body and from one end thereof for a distance along the longitudinal axis to provide a slot base, means forming a second slot extending axially through said body into and along the walls of said first slot, said body being disposed in said recess, a fastener element carried by the other member, said fastener element having a T-head adapted to be inserted into said receptacle through said second slot, said fastener element being adapted to be rotated to bring said head into engagement with the walls of said first slot, spring means disposed in said recess below said T-head, and interengageable detenting means between said head and said spring means adapted to engage in response to the action of said spring means when said head engages said walls releasably to retain said fastener element in a position with its head in engagement with the walls of said second slot.

3,203,064
SAFETY BELT BUCKLE
Merrill M. Murphy, Sr., Cortland, N.Y., assignor to Irving Air Chute Company, Inc., Lexington, Ky., a corporation of Kentucky
Filed Sept. 3, 1963, Ser. No. 306,215
1 Claim. (Cl. 24—230)



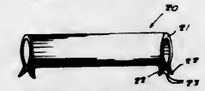
In a safety belt buckle the combination of a base, a tongue clip having means thereon to which belt webbing may be connected having spaced openings, a dog lever pivoted intermediate its ends upon said base and having at one side of the pivot axis a latching leg and at the other side of the pivot axis having push button means by which the lever may be rocked to move the dog latching leg from latching position, spring means engaging said base and lever and normally urging the latter into latching position, a ramp mounted on the base beneath the latching end of the lever having a rearwardly and upwardly inclined ramp surface adapted to direct the tongue clip upwardly as it is inserted into the base to move it into latching engagement with the latching leg, the width of the ramp being less than the width of the base, the latching lever having a plurality of spaced latching legs complementary to said openings located between the outer sides of said ramp, said latching legs being spaced a greater distance in width than the width of said ramp, so the legs can clear the sides of the ramp and extend through and into the openings of said clip when inserted.

3,203,065
SEAT BUCKLE
David Hoppenstand, Miami Beach, Fla., assignor, by mesne assignments, to Charles E. Zimmerman, Kenmore, N.Y.
Filed Sept. 12, 1963, Ser. No. 308,478
1 Claim. (Cl. 24—230)



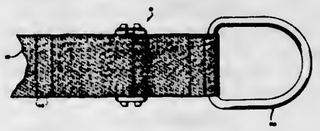
A quick-release clasp for a belt comprising a stiff tongue and a housing into which the tongue is inserted, the housing comprising a face, a back, and parallel sides, a channel open at one end positioned intermediate the face and the back to receive the tongue, a pin extending on both sides of the face through a clearance hole therein, a button on the outside end of the pin, a cross piece fixed to the inside end of the pin extending on opposite sides thereof parallel to the face and movable to a position below the channel, means urging the cross piece toward the face, cooperating means carried by the cross piece and the sides maintaining the cross piece parallel to the face, a projection on each side of the cross piece extending toward the face, a central slot in the tongue dimensioned to clear the pin and two depressions in its undersurface adapted to receive the projections and lock therewith when the tongue is pushed into the channel.

3,203,066
FASTENING MEANS FOR A SWIMMING POOL COVER
Paul Harry Lapoll, 78—27 90th Ave., Woodhaven 21, N.Y.
Filed June 7, 1963, Ser. No. 286,378
3 Claims. (Cl. 24—257)



1. A pool cover holding clip comprising an elongated, arcuately curved channel-shaped resilient body, and respective divergent pairs of depending guide lugs on the opposed end corner portions of said body, said pairs of lugs being outwardly-concave so as to define opposing inner convex clamping surfaces.

3,203,067
WEBBING-FITTING ASSEMBLY
Edwin C. Elsner, Glendale, Calif., assignor to Aeroquip Corporation, Jackson, Mich.
Filed Jan. 22, 1963, Ser. No. 253,132
9 Claims. (Cl. 24—265)



7. In combination with a length of webbing having a plurality of uniformly spaced transverse slots defined by the weaving pattern of said webbing, a member having a transverse portion, said length of webbing being looped around said transverse portion thereby providing an upper section of said webbing overlying a lower section of said webbing wherein a slot in said upper section is juxtaposed a slot in said lower section, securing means including a substantially U-shaped member having a pair of parallel, spaced, rigid leg portions interconnected at one end and each having a free end adapted to extend into and through one of said juxtaposed slots to connect said upper and lower sections to thereby close said loop, and means interconnecting the free ends of said leg portions.

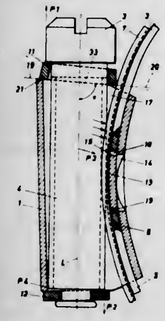
3,203,068
HOSE CLAMPS
Erik Bergström, Djursholm, Sweden, assignor to Allmänna Brandredskapsfabriken AB, Stockholm, Sweden, a corporation of Sweden
Filed Mar. 1, 1961, Ser. No. 92,513
6 Claims. (Cl. 24—274)

1. A hose clamp comprising, in combination,
(a) an annularly bent steel band having inner and outer end portions overlapping each other,

(b) there being transverse threads on the outer end portion of said steel band,

(c) a screw having a threaded portion and a head on said threaded portion forming an annular shoulder, the face of the head of said screw being directed toward the housing substantially perpendicular to the axis of said screw, the threaded circumferential outer surface of said screw engaging the band only over a relatively short arc, the portion of the screw located near the head thereof being located at a distance from the threaded outer surface of the band,

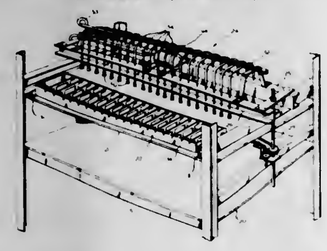
(d) a housing having a bottom portion enclosing and fixed to the inner end portion of said band, said screw being journaled within said housing to be



axially immoveable, said housing containing a space within which said outer end portion of said steel band passes between the threaded portion of said screw and the inner end portion of said steel band, the threaded portion of said screw engaging said transverse threads, and

(e) an axial projection extending from the side of said housing disposed away from said steel band and engageable with the annular shoulder of said screw, said axial projection and said threads exerting a torque on said screw when said screw is tightened, said threaded portion of said screw having an end engageable with the annular shoulder of said screw, so that the torque on said screw forces said threaded portion of said screw towards said band.

3,203,069
APPARATUS FOR CASTING PANELS FROM PLURALITY OF BRICK-LIKE BODIES
John P. Wogulis, St. Charles, Richard K. Malm, Maple Park, and Clarence B. Monk, Jr., Batavia, Ill., assignors, by mesne assignments, to Structural Clay Products Institute, Geneva, Ill., a corporation of Delaware
Filed Sept. 4, 1962, Ser. No. 221,095
1 Claim. (Cl. 25—1)



An apparatus for casting panels from a plurality of brick-like bodies comprising in combination:

(a) a supporting surface,

(b) a spacing support carried by said supporting surface for a plurality of brick-like units including,

(1) a pair of spaced elongated and parallel side members and means holding said side members together,

(2) a plurality of spaced, transversely extending members supported on said side members,

(3) said side members having supporting means extending inwardly at the lower portions thereof so as to support brick-like units thereon and having resilient fingers on one side thereof adapted to force brick-like units against the surface of adjacent transversely extending members,

(4) said transversely extending members being of generally equal width so as to uniformly space brick-like units therebetween when said units are supported on said side member supporting means and including resilient fingers positioned inwardly thereof adapted to center brick-like units therebetween when positioned on said member supporting means,

(c) an elevating and gripping assembly positioned above said supporting surface including,

(1) a supporting frame,

(2) a plurality of tubes mounted on said supporting frame, each of said tubes having a resilient downward opening cup at a lower end thereof,

(3) means for connecting said tubes to a source of suction,

(4) means for raising and lowering said elevating and gripping assembly,

(d) said spacing support adapted for movement towards and away from a position beneath said elevating and gripping assembly, and

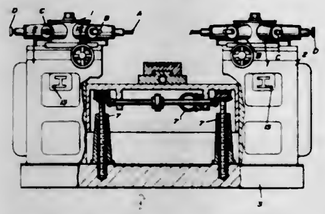
(e) a grout pan carried by said supporting surface for movement towards and away from a position beneath said elevating and gripping assembly.

3,203,070
MORTAR JIG
Thaddeus M. Kolakowski, 1421 Scoville Ave. SW., and Jose Perez, 2515 Saratoga Ave. SW., both of Canton, Ohio
Filed Sept. 24, 1963, Ser. No. 311,112
1 Claim. (Cl. 25—118)



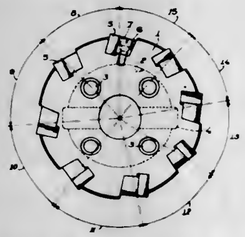
A mortar jig for placing a segment of mortar of uniform thickness on a course of bricks, including two horizontally extending parallel side members, two spaced parallel end members secured to and extending from one side of one of the side members, each end member having at least one notch spaced from said one side member, each notch having a vertical shoulder facing said one side member, the other side member having a slot engageable with each notch on each side member, each side member having upper and lower edge portions extending above and below a course of bricks, said other side member being pivotally movable about a longitudinal axis extending between the points of contact between the notches and slots, the extent of pivotal movement being between loose and snug-fitting engagement of the lower portion of the other side member with a course of bricks, a spring extending between the upper edge portion of said other side member and the end member and holding the lower edge portion of the other side member in snug-fitting engagement with a course of bricks and holding the upper edge portion against the vertical shoulder, said other side member also being manually movable out of the notch and slot engagement position, whereby the other side member is easily detached from snug-fitting engagement with the course of bricks to permit removal of the jig from a course of bricks after mortar is laid.

3,203,071
DUAL TURRET HEADS TYPE HORIZONTAL BORING MACHINE
Yoshiro Uchida, Higashi-Katsushika-gun, Japan, assignor to Hitachiseiki Kabushiki Kaisha, Tokyo, Japan
Filed Nov. 19, 1962, Ser. No. 238,532
5 Claims. (Cl. 29—36)



1. A dual turret horizontal boring machine, comprising two spaced turret heads each rotatable around a vertical axis and having a plurality of horizotnal spindles adapted to be fitted with different tools, means in each turret head for rotatably driving only the spindle which is directed toward the other turret head, a work holder between said turret heads adapted to hold work fixed relative to the work holder, and means coupled to said work holder for moving said work holder reciprocally and horizotnally along a line between said turret heads, horizontally along a line transverse to the line between said turret heads, and vertically with respect to a horizontal line between said turret heads.

3,203,072
MILLING CUTTERS
Michel Careje, Lille, France, assignor to Societe dite: Derefa Etablissement pour Le Developpement, Recherches et Fabrications Industrielles, Vaduz, Liechtenstein
Filed Jan. 29, 1965, Ser. No. 430,246
Claims priority, application France, May 11, 1962, 897,210
5 Claims. (Cl. 29—105)



1. A milling-cutter having a plurality of cutting teeth, the successive interdental peripheral spacings of which, are successively increased and decreased relative to the basic spacing by an amount e which is determined by the following sinusoidal law

$$e=\alpha \sin (\theta+\theta_0)$$

in which:

α is a constant, namely, the maximum amplitude of the sinusoidal curve admissible for the duty of the milling cutter,

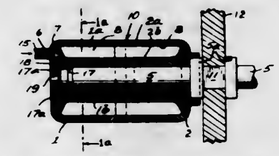
θ_0 is a constant small angle adapted to prevent the increment e from taking the same value twice in succ-

θ is equal to

$$K\times\frac{360°}{n}$$

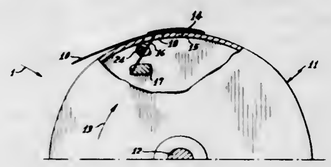
in which n is the number of teeth of the cutter and K is the number which defines the order of the successive teeth and which, therefore, varies from 1 to n.

3,203,073
TOP ROLL FOR DRAFTING DEVICES ON TEXTILE MACHINES
Marcel Stein, 51 W. 81st St., New York 24, N.Y.
Filed Sept. 7, 1962, Ser. No. 222,231
9 Claims. (Cl. 29—113)



1. In a textile apparatus, two interconnected members comprising a fixed shaft and a feed roll journalled on said shaft, said feed roll comprising a pair of end sections composed of plastic material, each of said sections including a cylindrical hub wall having a bore to receive said shaft and a cylindrical outer wall spaced therefrom and integrally joined to said hub wall by an end wall, the hub walls and outer walls of said sections being joined together to form a closed annular chamber within said roll, one of said walls having an air passage therein and carrying a valve means adapted when open to admit a fluid under pressure into said chamber and adapted to be closed in response to fluid pressure in said chamber, said outer cylindrical wall being sufficiently flexible to be bulged outwardly in response to said fluid pressure, one of said end walls extending across and forming an end closure for the bore of said hub wall and having an air release vent therein to permit said roll to be positioned over the end of said shaft, said hub wall and said shaft having cooperating retaining means adapted to releasably secure said roll onto said shaft.

3,203,074
SHEET CLAMPING ARRANGEMENTS
Hugh M. Monaghan, Broux, N.Y., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed June 4, 1962, Ser. No. 199,909
7 Claims. (Cl. 29—118)



1. In a cylindrical carrier for sheet material, in combination,

an elongated fixed clamping strip for said sheet material mounted adjacent the external cylindrical surface of and extending parallel to the axis of said carrier

so as to provide a small space between the surface of the support and the clamping strip,

a plurality of independent flexible leaf spring fingers arranged side-by-side along the length of the clamping strip and engaging the underside of said clamping strip,

said spring fingers being disposed at such an angle with the clamping strip as to permit an edge of the sheet material to be inserted by the act of sliding it between the spring fingers and the strip, and

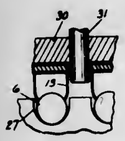
means for flexing the spring fingers to release the sheet material, said means including a pivoted cam rod engaging said spring fingers.

3,203,075

METHOD OF MAKING ELECTRIC CIRCUIT ASSEMBLIES

James H. Foster and Phillip E. Sterner, Erie, Pa., assignors to Erie Technological Products, Inc., a corporation of Pennsylvania

Original application June 19, 1956, Ser. No. 592,400, now Patent No. 2,970,369, dated Feb. 7, 1961. Divided and this application Dec. 8, 1960, Ser. No. 74,537
10 Claims. (Cl. 29—155.5)



1. The method of making electric circuit assemblies each having components having pin-like bodies with terminals at each end which comprises fastening to a strip of insulating material of length sufficient to make a plurality of assemblies (*a*) a printed wiring pattern for making the desired circuit interconnection between the components of each assembly and (*b*) an aligned pair of regularly spaced clips for the end terminals of each components to each assembly along separate paths transsome part of the patterns and with one clip of each pair having a plug-in prong projecting from the strip, feeding components to each assembly along separate paths transverse to the strip into positions of the same regular spacing as the respective pairs of clips, pressing the components and clips together as a group to electrically and mechanically connect the clips to the end terminals of the components, performing further operations on the prongs, cutting the strip into individual assemblies, and holding the individual assemblies by the prongs while applying a protective coating to the strip and the components assembled thereon.

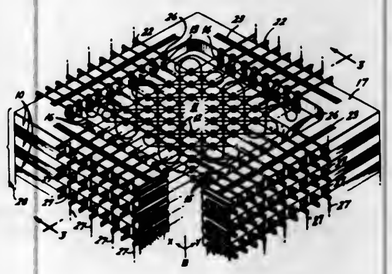
3,203,076

METHOD OF CONSTRUCTING MEMORY STORAGE ARRAYS

Norman M. Emslie, Yardley, and Sung Y. Wong, Ambler, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Continuation of application Ser. No. 742,852, June 18, 1958. This application Apr. 18, 1962, Ser. No. 190,522
4 Claims. (Cl. 29—155.5)

1. In the fabrication of a multiplane core storage array consisting of a single frame supporting two core memory planes one adjacent either face of said frame, the steps which comprise: providing a generally flat, insulative frame; securing to said frame, at spaced intervals around its perimeter a plurality of electrically-conductive terminal pairs the terminals of each pair being interconnected by a common body portion; orienting opposed terminals of each terminal pair in spaced relation transverse the plane of said frame in such manner that each terminal pair has a terminal positioned in each of said two core memory planes; securing individual drive windings of said two core memory planes to opposed terminals of said terminal pairs; and providing the desired electrical circuit between superposed core planes by selective removal of body portions of appropriate terminal pairs.

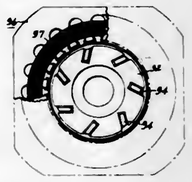


3,203,077

FASTENING ASSEMBLY AND PROCEDURE

Wilbur J. Zimmerle, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Original application July 19, 1961, Ser. No. 125,191, now Patent No. 3,110,831, dated Nov. 12, 1963. Divided and this application Oct. 17, 1962, Ser. No. 231,121
4 Claims. (Cl. 29—155.5)



1. In a procedure of manufacture of a metal lamination assembly for rotors and the like by use of progressive die operation on a strip of material to have conductor-receiving slots therein, the steps comprising, aperturing the strip of material in predetermined locations, punching the strip of material to provide one pair of cuts extending into the strip material from where subjected to said aperturing, bending strip material between the cuts due to punching into substantially elbow-shaped fastening portions, and joining laminations of strip material in sequence individually to each other completely in die means progressively operable to form and join metal laminations.

3,203,078

METHOD OF MAKING AN ELECTRICAL CONNECTION

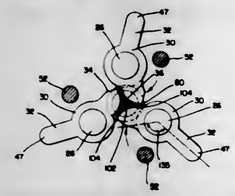
George Ustin, Verona, N.J., assignor to Buchanan Electrical Products Corporation, Hillside, N.J., a corporation of New Jersey

Continuation of application Ser. No. 1,084, Jan. 7, 1960. This application Jan. 4, 1963, Ser. No. 249,533
2 Claims. (Cl. 29—155.55)

1. The method of making an electrical connection between a conductor and a fitting including an axially extending deformable metallic ferrule and a sleeve of extrudable insulating material surrounding said ferrule, said method comprising the steps of:

(a) inserting the end of said conductor into said ferrule, and

(b) deforming the fitting radially inwardly at a plurality of circumferentially spaced areas of the fitting to establish a plurality of concave portions in said fitting and to secure the conductor within the fitting by applying a force at each of a plurality of relatively small circumferentially spaced areas of the fitting, each said force having a radially inward component and a component tangential to one of said concave portions, each said force being of substantially the same magnitude and the tangential component of each said force being directed in generally the same circumferential direction, thus tending to rotate the fitting, and progressively increasing each said force while increasing the total area over which each said force is applied so portions of the insulating material are extruded in generally the same circumferential direction outwardly from each area to which a force is applied and portions of the ferrule are deformed inwardly to effect a mechanical and electrical connection between the ferrule and the conductor without perforation of the sleeve of insulating material.



3,203,079

METHOD OF MAKING LOUVERED VENTILATOR

Lester L. Smith, Peoria, Ill. (P.O. Box 68, Princeville, Ill.), and Frank E. Randall, Peoria, Ill; said Randall, assignor to said Smith

Filed Jan. 26, 1961, Ser. No. 85,108
9 Claims. (Cl. 29—163.5)



1. The method of integrally forming louvers from sheet stock which have end regions curved in transverse planes, which method comprises the steps of punching the sheet stock along a line to define a longitudinal louver edge and an edge of a vent opening, forming the louver to project outwardly from the plane of the sheet stock and to provide regions at opposite longitudinal ends thereof which are curved in planes transverse to one another, and coining the said curved end regions of the louver during said forming to vary the thickness of the stock in said curved end regions, thereby to effect elongations of said curved end regions in amounts related to the required elongation of the louver stock in relation to the normal dimensions of the sheet stock.

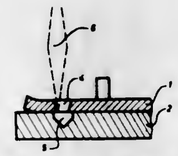
3,203,080

METHOD FOR WELDING SYMBOLS IN RELIEF OVER A DIAL

André Vogt, La Chaux-de-Fonds, Switzerland
(150 Nassau St., New York 38, N.Y.)

Filed Jan. 9, 1962, Ser. No. 165,206
Claims priority, application Switzerland Jan. 12, 1961
3 Claims. (Cl. 29—177)

1. A method for welding symbols on the face of a dial of a watch comprising, providing a dial and at least one symbol to be welded thereon, providing in said dial an aperture having a smaller diameter than an under surface of said symbol, disposing the symbol with said under surface in contact with the face of said dial in a position in which said symbol is to be welded on the face of said dial, and in registry with said aperture, applying a focused beam of atomic particles through said aperture on said under surface of said symbol and a portion of a wall defining said aperture adjacent to an area on said surface onto which said beam is applied thereby to weld the symbol to said face in at least one area of contact between said symbol and said dial face.

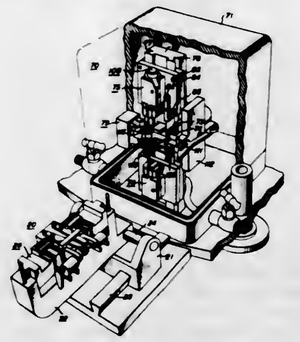


3,203,081

APPARATUS FOR MAKING SEALED CONTACT REED SWITCHES

Frank Reck, Flushing, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 30, 1963, Ser. No. 334,305
10 Claims. (Cl. 29—203)



1. In a device for assembling reed switches the combination comprising: support means, carriage means slidably disposed on said support means for holding a tube, for sequentially sealing inserted reeds into the ends of the tube, and for carrying said tube a spaced distance between reed sealing sequences, jaw means slidably disposed on said support means for accepting and inserting reeds into said tube, means for enclosing said tube in a controlled atmosphere, and loading means for inserting prepositioned reeds into said jaw means.

3,203,082

ALIGNED ASSEMBLY METHOD

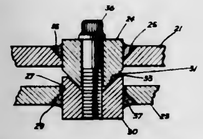
James S. Robbins, deceased, late of Seattle, Wash., by William W. Miller, executor, Northfield, Ill., assignor to Goodman Manufacturing Company, a corporation of Illinois

Original application June 15, 1959, Ser. No. 820,200, now Patent No. 3,061,288, dated Oct. 30, 1962. Divided and this application Mar. 26, 1962, Ser. No. 183,691
3 Claims. (Cl. 29—469)

1. A method of assembling two parts in aligned relation with respect to each other comprising the steps of through drilling the parts through adjacent facing surfaces and drilling the holes in one part to size,

and the holes in the other part over size, mounting shear collars in the drilled holes drilled to size and welding said shear collars thereto,

registering the parts in aligned relation with respect to each other,



placing mating shear collars through the holes drilled oversize and loosely fitting in said holes,

drawing the shear collars in the holes drilled oversize into mating engagement with the shear collars in the holes drilled to size,

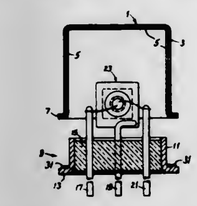
and then welding the shear collars to the holes drilled oversize and thereby accommodating accurate assembly of the parts regardless of the number of times the parts are assembled and disassembled.

3,203,083

METHOD OF MANUFACTURING A HERMETICALLY SEALED SEMICONDUCTOR CAPSULE

Robert E. Obenhaus, South Easton, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Feb. 8, 1961, Ser. No. 87,863
4 Claims. (Cl. 29—470.1)



1. The method of manufacturing a hermetically sealed semiconductor capsule or the like, comprising forming space-enclosing parts with an outwardly directed circumferential comparatively hard metal flange on each, each of said hard metal flanges being formed with a comparatively soft face-forming metal metallurgically prebonded thereon, one of said flanges having formed in its soft metal face a circumferential protrusion and the other flange being formed in its soft metal face with a nongrooved portion for engagement by said protrusion, bringing said hard flanges together with said prebonded soft metal therebetween, and circumferentially applying opposing forces on the hard metal flanges to force them together to deform the protrusion to effect a solid-phase bond at least in the region of the protrusion.

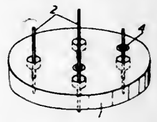
4. The method of manufacturing a hermetically sealed semiconductor capsule or the like, comprising forming space-enclosing parts with an outwardly directed circumferential comparatively hard metal flange on each, one of said flanges having a circumferential protrusion extending from its inner face, the other flange being formed with an inner nongrooved portion opposite said protrusion, at least one of said flanges being formed with an inner metallurgically prebonded comparatively soft metal facing in a position to be squeezed by the protrusion when the flanges are pushed together, and circumferentially applying opposing forces on the hard metal flanges to force them together to squeeze said soft metal facing between the protrusion on the one flange and the nongrooved portion on the other flange to solid-phase bond the soft metal to effect a strong hermetically sealed connection between the flanges at least in the region of the protrusion.

3,203,084

BONDING OF METALS TO CERAMIC MATERIALS

Peter Best, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 25, 1961, Ser. No. 159,472
Claims priority, application Great Britain, Oct. 12, 1960, 34,934/60
5 Claims. (Cl. 29—473.1)



1. A method of bonding a metal member to a ceramic member comprising the steps of forming a suspension of a mixture of a metallic oxide selected from the group consisting of molybdenum oxide and tungsten oxide with a further metallic oxide of a metal selected from the group consisting of iron, cobalt, nickel and copper in an organic binder, applying the suspension to form a coating on the ceramic surface to be bonded, placing the metal member in juxtaposition to the coating with a brazing metal in between, said brazing metal being selected from the group consisting of copper, copper-nickel, copper-silver, copper-gold and copper-silver-palladium, and firing the assemblage in a predetermnied heating schedule in a hydrogen atmosphere to reduce the oxide to metal and join the metal and ceramic members, the further metallic oxide being such as to increase the wettability of the reduced metal by the brazing metal.

3,203,085

CONTINUOUS SOLDERING METHOD AND APPARATUS

Arthur K. Turner, Bayonne, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Filed June 23, 1961, Ser. No. 119,219
9 Claims. (Cl. 29—498)



1. Apparatus for continuously forming a soldered seam in an electric cable sheath as it is formed on a moving core of insulated conductors by folding a metal strip longitudinally with the longitudinal edges of the strip overlapping and separated by a solder ribbon comprising, in combination, means for pressing the outer overlapping strip edge toward the inner overlapped strip edge in firm contact with the interposed solder ribbon, said pressing means comprising a transitory shoe that contacts with the outer overlapping strip edge and that travels with the sheath in heat-transfer engagement therewith, and means for establishing a radio frequency electro-magnetic field along the course of movement of the transitory shoe, said shoe being made of material that is heated inductively by said field to supply heat by conduction to the outer strip edge to melt the solder ribbon pressed between the strip edges.

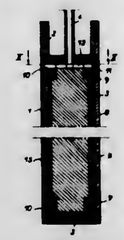
5. The method for continuously forming a soldered seam in an electric cable sheath which is made of highly conductive metal unsuitable for direct heating by electric induction heating, and as part of a process in which the sheath is formed around a moving core of insulated conductors by folding the metal strip about the core with the longitudinal edges of the strip overlapping and separated from one another by a solder ribbon, and while the edges are held together and in contact with the solder strip by a shoe in contact with the outer of the overlapping strip edges, said method comprising the steps of applying heat to the seam by conduction from the shoe for locally heating the sheath to melt the solder, restricting the contact of the shoe to the region of the seam while the remainder of the sheath remains out of contact with the shoe, generating an electro-magnetic field of high frequency at the side of the sheath having the seam and only on that side, spacing the field with respect to the sheath and on the other side of the shoe from the sheath so as to concentrate the inductive heating in the shoe rather than the sheath, heating the shoe by said induction heating to a temperature to melt the solder strip by conduction heating and with minimum heating of the core within the sheath.

3,203,086

PROCESS AND DEVICE FOR THE MANUFACTURE OF A PERMEABLE MEMBRANE

Charles Eyraud, Lyon, Georges Counas, Le Plessis Robinson, Michel Eudier and Daniel Massignon, Paris, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed Jan. 13, 1961, Ser. No. 82,491
Claims priority, application France, Jan. 23, 1960, 816,490
7 Claims. (Cl. 29—528)



1. A process for the manufacture of a permeable membrane, which comprises providing a microporous metallic support of hollow form and having a wall thickness between 0.2 and 1 mm., a mean pore radius from 1 micron to several tens of microns, with a layer on its internal face of a thickness of 0.05 to 1 mm. of a metallic compound admixed with a binder and capable of undergoing thermal dissociation into a subdivided metal having particle dimensions from 0.5 centimicron to 0.5 micron and a volatile constituent, introducing into the coated support a rigid core having a polished external surface fitting against the coated layer, introducing the assembly formed by the coated support and the core into a casing of internal form corresponding to the external form of the support with a clearance of the order of 0.02 to 1 mm. between the support and the casing, sealing the casing with the exception of at least one aperture and then, removing oxygen from said casing effecting thermal dissociation of the metallic compound, eliminating the volatile constituent evolved by aspiration towards the aperture, applying hydraulic pressure of 1 to 15 tons/cm.^{2} to the external surface of the casing to compress the casing and the support and subdivided metal against said core, holding said casing at a temperature between the ambient temperature and the temperature of sintering of said subdivided metal while said hydraulic pressure is applied thereto thereby forming said subdivided metal support into a permeable membrane, then separating said permeable membrane from said core and casing.

3,203,087

NECKED RECEPTACLE SEAL CUTTER WITH A RATCHET TOOTH

Carl M. Jahn, 2120 S. Joliet St., Denver, Colo.

Filed June 3, 1963, Ser. No. 285,065
5 Claims. (Cl. 30—1.5)



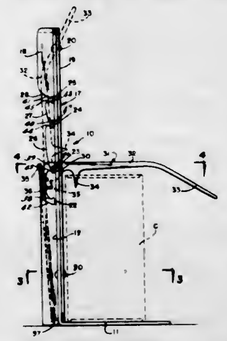
1. A beverage container opener comprising a seal cutter component formed as a stiffly-resilient, interrupted, arcuate band yieldably adaptable to embrace the neck of a container and a single revoluble cutter carried by said band for rotation intrusively of the band-defined area on and about an axis perpendicular to the median plane of the band, means on said band effective in one direction of band manipulation to oppose angular displacement of the band relative to container features embraced thereby, and means affixed exteriorly to said band for rotational manipulation thereof in opposite directions.

3,203,088

CAN PUNCH HAVING MEANS TO ACCOMMODATE CANS OF VARYING HEIGHTS

Jesse W. Voll, Live Oak, Calif.
(351 E. 7th St., San Jacinto, Calif.)

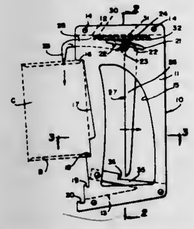
Filed Aug. 16, 1963, Ser. No. 302,648
4 Claims. (Cl. 30—10)



1. A can punch comprising a base including a forwardly extending horizontal plate adapted to receive the base of a can to be punched and a vertical base member having an elongated slot therein, means on said vertical base member forming rearwardly extending flange projections on each side of said slot, a plurality of spaced horizontally aligned notches in each rearwardly extending flange, a punch member including an elongated handle, a transverse pin at the inner end of said handle, a depending punch element carried by said handle at a point adjacent said pin, said pin being selectively engageable in one pair of said aligned notches in accordance with the can to be punched, and spring means connected with the inner end of said handle and a pin extending between the lower portion of said rearwardly extending flanges, and a closure partition which terminates short of the bottom

of said rearwardly extending flanges, and said rearwardly extending flanges being slotted vertically from the bottom to permit the same to extend over said closure member to the bottom of said vertical plate.

3,203,089
CAN PUNCTURING DEVICE HAVING VERTICAL DOWNWARDLY EXTENDING OPERATOR HANDLE AND HORIZONTAL PUNCH MEMBER
Jesse W. Voll, Live Oak, Calif. (351 E. 7th, San Jacinto, Calif.)
Filed Aug. 16, 1963, Ser. No. 302,641
6 Claims. (Cl. 30—10)



1. A can puncturing device comprised of a substantially rectangular frame including a pair of side plates, spacers mounting said side plates in parallel spaced relation, one side of said frame being inwardly cut adjacent its top to provide a shoulder adapted to engage the top of the can, the lower end of said one side being cut away to form at least one notch adapted for the reception of the flange on the bottom of the can, said side plates having a relatively large central transverse opening therethrough rearwardly of said shoulder and notch, a pivot pin extending transversely through said plates adjacent the top thereof above said central transverse opening, a generally L-shaped punch member pivoted on said pin, said punch member including a normally horizontal arm extending between said plates and terminating outwardly of said one side above said shoulder, a punch element on the outer end of said first arm and a second normally vertical operating arm extending downwardly into said opening, whereby compression of said second arm toward the side of the frame opposite said one side will pivot said punch element downwardly to puncture the top of a can, and spring means biasing said first arm and said punch element upwardly to punch retracted position.

3,203,090
ELECTRICALLY OPERATED HAIR CLIPPING AND SHAVING DEVICE
Ivar Jepson, Oak Park, and Sigmund R. Kukulski, Chicago, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application Nov. 1, 1955, Ser. No. 544,212, now Patent No. 3,072,809, dated Jan. 8, 1963. Divided and this application Apr. 2, 1962, Ser. No. 184,109
3 Claims. (Cl. 30—34.1)



1. In a hair removing device comprising an integral cutter including a U-shaped center portion and a pair of outwardly directed flanges disposed on either side thereof, each of said flanges having a row of cutting teeth defined on the outer edge, said cutting teeth being formed on one cylindrical radius and, a comb shaped to enclose said cutter flanges, said comb having a row of slots disposed over each row of said cutter teeth to allow the entrance of hair to be sheared, said slotted portion of the comb being formed on a larger cylindrical radius than said cutting teeth radius, said slotted comb portion and rows of cutter teeth only being in angular contact along two relatively thin spaced cutting lines defined therebetween, means positioned between said flanges biasing said cutter teeth into cutting engagement with said slotted comb portions, the thickness of said comb being greater along one side cooperating with one of said flanges than along the opposite side.

3,203,091
INJECTOR RAZOR WITH BLADE ADJUSTMENT
Burnie J. Craig, 1042 La Presa Drive, Pasadena, Calif.
Filed Mar. 3, 1964, Ser. No. 349,101
2 Claims. (Cl. 30—62)



1. In a razor, a body including a handle having a blade held in shaving position thereon, and a guard member arranged below the blade, said guard member integral depending portion being made of a material having resilient so that the upper portion thereof may swing with the guard member backwardly and forwardly to a limited extent, said guard member integral depending portion due to the resiliency of the material from which it is made being biased to move in one direction, said guard member including a guard portion which is mounted to move forwardly and backwardly under the blade to alter the exposure of the cutting edge of the blade, and manual means including mating cam members on the body and on the depending portion of the guard member and operable to move the guard member, said manual means including a dial, a shaft on said dial, said guard member depending portion having a cylindrical aperture therein, said aperture serving as a bearing for said shaft, a stub shaft on the inner face of the rear portion, said dial having a central recess therein serving as a bearing receiving said stub shaft, said dial having an end wall thereon closing said central recess, the stub shaft engaging said end wall in thrust bearing relationship, a cam member associated with the bearing on said guard member depending portion, an operating wing on said dial, a slot in said body through which said wing extends, a cam member on the shaft which is on the dial and engaging said first cam member, said cam members being operable to move the depending portion of the guard member to alter the blade exposure when the dial is rotated.

3,203,092
ADJUSTABLE INJECTOR RAZOR
Burnie J. Craig, 1042 La Presa Drive, Pasadena, Calif.
Filed May 14, 1964, Ser. No. 367,296
1 Claim. (Cl. 30—62)

A razor including an elongated body, a blade seat upon the upper end of said body, said blade seat being immovable with respect to the body, said blade seat including a blade receiving portion having blade stops thereon for engagement with the front end edges of a blade on the blade receiving portion, a separately formed clamping member including a forwardly projecting blade engaging portion adapted to hold a blade upon the blade seat, said clamping member also including a depending portion disposed upon the rear of the body and integrally united to the body at a location below the blade seat, said clamping member depending portion being made of a material having resilient characteristics so that it may move backwardly and forwardly to a limited extent, stop means associated with the blade clamping member and adapted when the clamping member is in clamping position to urge a blade on the blade receiving portion into engagement with the blade stops, said clamping member depending portion being biased due to the resiliency of the material from which it is made to move forwardly to urge the blade engaging portion forwardly to clamp a blade upon the blade seat, there being a slot in advance of said clamping member depending portion for the reception of a cam finger on a blade magazine, the cam finger being



adapted to move the clamping member and its blade engaging portion in a direction away from the blade seat, and a guard member for a blade upon the blade seat, said guard member being free of attachment to the blade seat, said guard member including a guard portion disposed below the cutting edge of a blade on the blade seat, said guard member including a depending portion which supports it, said guard member depending portion being secured to the front of the body at a location below and remote from the blade seat, the guard depending portion being made of a material having resilient characteristics so that it may move backwardly and forwardly to a limited extent to thereby move the guard member and the guard portion backwardly and forwardly with regard to the blade seat and under the blade seat while the blade seat remains stationary, the guard depending portion being biased due to the resiliency of the material from which it is made to move in one direction, and manual means operable to move the guard depending portion in a reverse direction and against the bias of said guard depending portion to thereby shift the guard portion and change the blade exposure.

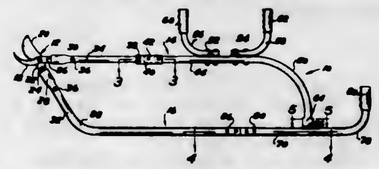
3,203,093
SAFETY RAZOR WITH ADJUSTABLE GUARD
Leopold Karl Kukal, Stratford, Conn., assignor to Eversharp, Inc., Milford, Conn., a corporation of Delaware
Filed Mar. 14, 1963, Ser. No. 265,246
10 Claims. (Cl. 30—63)

1. In a safety razor for single-edge blades, which razor includes a main frame having a forwardly projecting cap which is adapted to overlie the blade, and a relatively movable seat member which supports the blade against the underside of the cap, the provision of a relatively movable guard member having a blade guarding portion at its upper end in front of and below the front edge of the blade on the seat member, which guard member is fulcrumed intermediate its upper and lower ends against the seat member, a finger piece which is journaled on the main frame, a cam which is connected with the finger piece for rotation with the latter, a cam follower on the lower end of the guard member in engagement with the cam, and a spring in engagement with the guard member, which spring presses the guard member against the seat member, acts through the guard member to press



the seat member against the main frame, causes the cam follower at the lower end of the guard member to follow the cam, and causes the blade guarding portion at the upper end of the guard member to move toward and away from the front edge of the blade, depending on the direction of rotation of the finger piece.

3,203,094
PRUNING APPLIANCE
Pierre Couture, 23031 Donaldson, Dearborn, Mich.
Filed Jan. 17, 1963, Ser. No. 252,233
2 Claims. (Cl. 30—250)



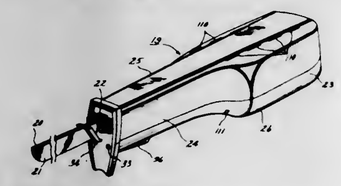
1. A lower branch tree pruning appliance, comprising
a stationary cutting blade,
a movable cutting blade,
a pivot element pivotally interconnecting said blades;
an elongated bent stationary appliance-positioning member having a lower portion with a length a multiplicity of times the length of said stationary blade secured to and extending downwardly from said stationary blade and having an upper portion with a length a plurality of times the length of said lower portion disposed at an obtuse angle to said lower portion in rigidly-connected relationship therewith and having a bent fulcrum portion at the junction therebetween,
an elongated movable power-applying elbow lever secured to and extending upwardly from said movable blade,
said power-applying elbow lever including a lower arm secured at its lower end to said movable blade and an upper arm pivoted at its lower end to the upper end of said lower arm and having a movable connection at its upper end to said stationary member;
and a power-applying elbow lever operating device including an operating member engaging and flexing said elbow lever arms relatively to one another around their common pivot whereby to move said cutting blades into shearing relationship relatively to one another.

3,203,095
POWER-OPERATED KNIFE
Thomas F. Nelson, Stratford, Conn., assignor to General Electric Company, a corporation of New York
Filed July 29, 1963, Ser. No. 298,301
7 Claims. (Cl. 30—272)



1. An electrically operated slicing knife comprising:
(a) a housing;
(b) an electrical motor mounted in said housing;
(c) transmission means in said housing connected to said motor;
(d) a pair of driven members connected to said transmission means for opposite reciprocating motion with respect to one another when said motor is energized;
(e) a guide channel in each of said members;
(f) a pair of blade members each having a vertical side face, said faces being in intimate sliding contact with one another;
(g) each of said blade members having a cutting portion and a tang, the tang of each blade member being complementary with the channel of one of said driven members for vertical reception therein to provide two reciprocating units;
(h) a resilient element secured to one member of each reciprocating unit; and
(i) means on the other member of each of said units for laterally engaging said resilient element of said one member to secure said blade members to said driven members.

3,203,096
ELECTRIC SLICING KNIFE
James W. Beisheim, Spencerport, and Otto F. Gerry, Brockport, N.Y., assignors to General Electric Company, a corporation of New York
Filed July 29, 1963, Ser. No. 298,302
8 Claims. (Cl. 30—272)

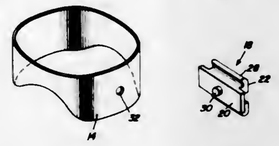


1. An electrically operated slicing knife comprising:
(a) a housing having a rearward portion and a forward portion which is of such size that it may readily be gripped by the hand of a user so that the fingers may completely surround the housing;
(b) an electric motor positioned entirely within said rearward portion so that the center of mass of the knife is rearward of said forward portion;
(c) a driven mechanism within said forward portion connected to said motor;
(d) a knife blade adapted for connection to said driven mechanism;
(e) a pair of switch contacts positioned within said forward portion for controlling energization of said motor;
(f) a movable switch member positioned adjacent the forward end of the bottom of said forward portion immediately below said switch contacts and having one of said contacts secured thereto;
(g) resilient means secured to said housing and to the forward end of said switch member for biasing said member to an open position, said switch member being pivotal about said resilient means to close said pair of contacts;
(h) said switch member extending rearwardly from the forward lower end of said forward portion of said housing to provide convenient operation of said knife by the squeezing action of the index finger of the user when said housing is grasped by said forward portion.

3,203,097
GERMICIDAL DENTAL PAD
Julius Hollander, Merion Station, and Bernard S. Sabreen, Philadelphia, Pa., assignors, by direct and mesne assignments, to The Denver Chemical Manufacturing Company, Stamford, Conn., a corporation of Colorado
No Drawing. Filed Apr. 25, 1963, Ser. No. 275,511
6 Claims. (Cl. 32—2)

1. A cushion for an artificial denture comprising a relatively thin layer of cloth of a substantially U-shape, and impregnated with a composition including a water-insoluble paraffin wax which does not melt at body temperature a fat or oil plasticizer and an effective amount of a germicidal material compatible with said wax and said plasticizer.

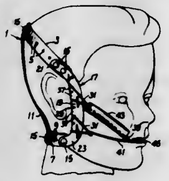
3,203,098
ORTHODONTIC APPLIANCE
Benedict J. Petraitis, 10418 NE. 193rd, Bothell, Wash.
Filed Sept. 19, 1961, Ser. No. 139,148
9 Claims. (Cl. 32—14)



1. In an orthodontic appliance, the combination of a tooth band, a bracket having an inwardly disposed planar surface proximal with the outer peripheral surface of said band opposed in close proximity to said peripheral surface and positioned on said band and having an arch wire receiving slot, and coacting means provided on said band and on said bracket for locating the bracket at a predetermined point on the band while permitting angular movement of the bracket about said point for adjustment of orientation of said slot relative to the band, said means being provided in part on said band and in part on said planar surface and being located at the intended centralized attaching point of the bracket to the band and being confined to a position inwardly of the lengthwise and transverse marginal edges of said bracket, said means comprising a locating element provided on said band at said predetermined point, said bracket being provided with a recess, said locating element being snap-fittingly received in said recess.

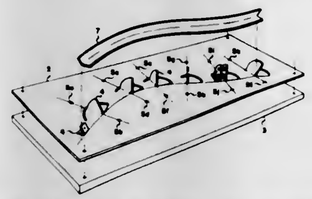
3,203,099
TRACTION HEADGEAR FOR ORTHODONTIC USE
Sebastino Interlandi, Brentwood, Mo., assignor to Orthoband Company, Inc., St. Louis, Mo., a corporation of Missouri
Filed July 5, 1963, Ser. No. 292,994
10 Claims. (Cl. 32—14)

1. An orthodontic headgear to be worn on the human head for the anchoring of elastic bands to be attached to a face bow of an orthodontic appliance, comprising a pair of yokes adapted to be positioned on opposite sides of the wearer's head adjacent the wearer's ears, each yoke having an elongate bar portion adapted to extend in a generally vertical direction anterior of the respective ear, an upper arm adapted to extend posteriorly over the respective ear, and a lower arm adapted to extend posteriorly under the respective ear, first and second straps, fasteners securing the ends of said first and second straps



to the posteriorly extending upper and lower arms, respectively, of said yokes, the first strap being adapted to extend around the back of the wearer's head from one side to another, the second strap being adapted to extend around the back of the wearer's neck, the elongate bar portion of each yoke having a plurality of notches spaced at intervals along its posterior edge, said notches being adapted to receive said elastic bands.

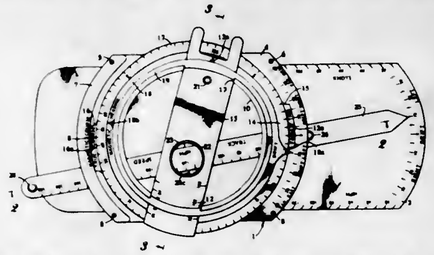
3,203,100
CHECKING FIXTURES AND METHOD OF MAKING
Louis J. Hegedus, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Oct. 28, 1960, Ser. No. 65,713
5 Claims. (Cl. 33—174)



1. A one piece tooling fixture for checking a workpiece surface contour comprising: a base plate, a plurality of gauge tabs extending outwardly from the plane of the base plate, said tabs originally a portion of the base plate within the plane thereof and formed by perforation in the base plate to outline the contours of the tabs and bending of said tabs out of the base plate plane, said tabs when bent out of the base plate plane remaining an integral part of said base plate, each of said tabs formed by perforation of said base plate having an edge rim of a width that is substantially the thickness of the base plate, a portion of said edge rim of each said gauge tab forming an angle gauge face for checking the surface contour of a workpiece at a predetermined location on the workpiece.

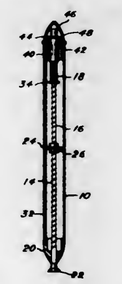
3,203,101
VECTOR COMPUTER
Clarence K. Brown, 6219 E. 6th St., Long Beach, Calif.
Filed June 11, 1962, Ser. No. 201,571
6 Claims. (Cl. 33—76)

1. A navigational computer device comprising a support, an elongated craft speed slide shiftably mounted in said support for longitudinal movement, means on said slide and said support for enabling adjustment of the longitudinal position of said slide to an indicated craft speed, a protractor, means rotatably supporting said protractor on said support overlying said craft speed slide, an index on said support adjacent said protractor to enable orientation of said protractor relative to the course of said craft, a second elongated slide, means mounting said second slide on said support for angular and longitudinal movement relative to said craft speed slide and said protractor, said second slide having means to enable longitudinal positioning thereof at an indicated position representative of a force acting on said craft and also having



means for orienting the same relative to said craft speed slide and said protractor to an indicated direction, and an elongated member pivoted on said craft speed slide and pivotally and longitudinally movably connected to said second slide to be oriented responsive to orientation and longitudinal positioning of said second slide, and means for indicating on said elongated member the resultant speed of said craft.

3,203,102
ROLLING CONTACT MEASURING INSTRUMENT WITH ADJUSTABLE SCALE
Louis J. Petion, 36 Barstow Road, Great Neck, N.Y.
Filed Apr. 13, 1964, Ser. No. 359,627
3 Claims. (Cl. 33—141)



1. A measuring instrument including a tubular housing made of a translucent material, various scales longitudinally delineated on the surface of said housing, a shaft within the housing, a compression spring extending over the full length of the scales on the housing, loosely mounted on said shaft, an indicator movable along said scales, said indicator having a portion engaged in the space between the spring coils, means for preventing rotational movement of said indicator, a wheel for rolling over the surface to be measured secured to said shaft, and means for adjusting the space between the spring coils.

3,203,103
UNIVERSAL TORSION SPRING GAUGE
William G. McElfresh and William A. Ross, Springfield, Ill., assignors to Dura Corporation, Oak Park, Mich., a corporation of Michigan
Filed May 8, 1961, Ser. No. 108,623
5 Claims. (Cl. 33—181)

1. A universal torsion suspension gauge for checking wheel alignment on vehicles having a torsion spring

suspension system, and comprising: a tubular member having telescoping end sections extendable between a pair of torsion spring supported vehicle wheels, swivel means provided on the ends of said telescoping end sections and selectively positionable for engagement with the outer ends of the torsion spring members supporting said wheels, transversely and laterally adjustable clamps provided on said telescoping end sections and selectively positionable near the ends thereof for engagement with said torsion spring members and for holding said swivel means engaged with the outer ends of said torsion spring mem-



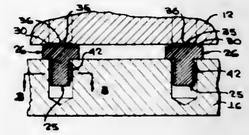
bers, laterally adjustable members including vertically adjustable linear measuring scales provided on said tubular member and selectively positionable on either side thereof for relative alignment of said scales under the other ends of said torsion spring members, and means of magnetic attraction provided on the ends of said scales for selective attraction and attachment to said other torsion spring ends permitting springing of said suspension system without dislocation thereof, said scales being calibrated to measure the carrying height between the respective ends of said torsion spring members.

3,203,104
HINGE SETTING APPARATUS
Lawrence Heathington, 2742 W. Madison, Phoenix, Ariz.
Filed Dec. 13, 1962, Ser. No. 244,481
2 Claims. (Cl. 33—189)



1. A hinge setting apparatus comprising in combination:
(A) a frame including,
(B) a lower tube having longitudinally spaced diametrically disposed selectable bores therein,
(C) an upper rod telescopically carried in the bore of said tube having a diametrically positioned bore,
(D) a positioning pin arranged to be presented in said selectable bores in said lower tube and said diametrically positioned bore in said upper rod to relatively and positively axially position said rod and tube,
(E) a lower hollow rectangular slide guide having its top portion fixed to the lower end of said tube,
(F) a downwardly extending foot plate fixed to the bottom portion of said lower hollow rectangular slide guide,
(G) a yielding pressure foot mounted on the lower portion of said foot plate including,
(H) a vertically slidable plunger having,
(I) a rubber floor contacting knob on the lower end of said plunger adapted to engage the floor and
(J) a yielding means between said plunger and said foot plate to normally urge said plunger downwardly against the floor surface,
(K) an upper hollow rectangular slide guide fixed at its lower portion to the upper end of said upper rod,
(L) an abutment shaft fixed to the top portion of said upper hollow rectangular slide guide,
(M) a flip dog pivotally mounted to the upper end of said abutment shaft having,
(N) an abutment lug including,
(O) a door header abutment surface and a door engaging abutment surface arranged to be placed alternately in operative position by the flipping of said dog to selected positions on said abutment shaft.

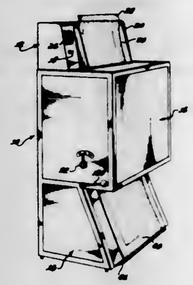
3,203,105
TRANSFER DEVICE
Lawrence V. Whistler, 251 Doncaster Road, and Lawrence V. Whistler, Jr., 259 Doncaster Road, both of Kenmore, N.Y.
Filed Apr. 17, 1963, Ser. No. 273,790
6 Claims. (Cl. 33—189)



1. A transfer device comprising body means, marking means supported at one end of said body means, said body means being adapted to fit within a hole in an associated element and including a resilient portion arranged to expand and contract radially with respect to the body means so as to fit snugly in either drilled or tapped holes and locate said marking means concentrically therein, said resilient portion comprising a one-piece body of resilient material having a continuous outer peripheral surface to ensure uniform expansion and contraction thereof and including a part having a generally barrel-shaped outer configuration for fitting within a hole.

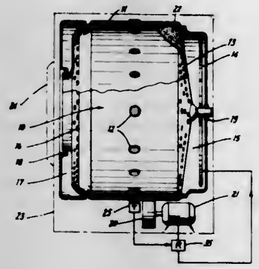
3,203,106
APPARATUS FOR DRYING STEREOTYPE MATS
Samuel Oderman, Whittier, Calif., assignor to Sta-Hi Corporation, Whittier, Calif., a corporation of California
Filed Apr. 24, 1961, Ser. No. 105,170
4 Claims. (Cl. 34—48)

3. In an apparatus for drying mats, the combination of: gate means for temporarily supporting a mat in a drying position; means for closing said gate means; means for holding a mat temporarily supported by said gate means in said drying position and for drying it in that position; means for energizing said holding and drying means; movable shrinkage sensing means incorporated in said gate means and engageable with a mat supported thereby for sensing shrinkage of the mat as it is dried; and means actuable by said shrinkage sensing means for de-energizing



said holding and drying means and for opening said gate means.

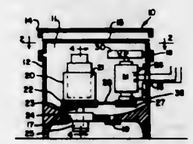
3,203,107
DRYER CONTROL USING THERMALLY MAGNETIZABLE ELEMENTS
Donald W. Scofield, Glenside, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Sept. 7, 1962, Ser. No. 222,065
6 Claims. (Cl. 34—48)



1. In a dryer of the type wherein articles are tumbled in a hollow moving drum and are heated by application of hot air, while tumbling, the improvement which comprises: a series of normally substantially non-magnetizable bodies distributed over and secured to the hollow drum for movement with the same, said bodies consisting of material which becomes readily magnetizable at a predetermined elevated temperature thereof, a first surface of each body being arranged for intimate heat transfer relation with the articles tumbling in the drum and which articles are heated by the hot air, while another surface of each body faces a region outside the drum; and an electrical system, located in said region outside the drum, for responding reactively when said bodies become magnetizable to control the application of hot air.

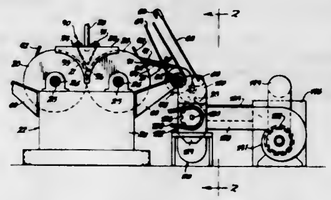
3,203,108
CENTRIFUGAL FREEZE DRYING APPARATUS
Samuel M. Broadwin, 345 E. 81st St., New York, N.Y.
Filed Nov. 28, 1962, Ser. No. 240,508
1 Claim. (Cl. 34—58)

Apparatus for freeze drying a heat sensitive liquid containing living cells comprising a self-contained unit consisting of a cabinet having a vacuum chamber that is closed, sealed and evacuated to 2 mm. and maintained at this reduced vacuum, said vacuum chamber comprising a bottom wall, a plurality of vertically disposed shafts rotatably mounted on said bottom wall, a bottle holder mounted on each of said shafts for retaining a small bottle containing said heat-sensitive liquid and constituting a plurality of vertical centrifuges within said vacuum chamber, a motor positioned within said chamber and connected through pulleys to drive said centrifuges as a unit, a vacuum pump disposed within said chamber and driven by said motor for evacuating said chamber, said



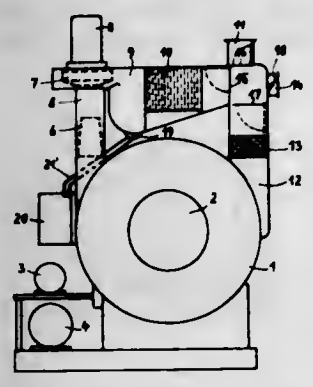
holder having a hollow bottom portion, a heater arranged in said hollow portion of each of said bottle holders to provide an equal distribution of heat by conduction to said heat sensitive liquid, said pulleys being arranged about said hollow bottom portion, a thermometer connected to each of said centrifuges to indicate the temperature within each centrifuge at all times, a rheostat electrically connected to said motor for varying the rotational speed of the motor and said vacuum pump to control the rapidity of freezing of the heat sensitive liquid in said centrifuges.

3,203,109
APPARATUS FOR MAKING PASTE FLAKES
James G. Moore, Williamsville, N.Y., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Original application Apr. 20, 1959, Ser. No. 807,382, now Patent No. 3,082,541, dated Mar. 26, 1963. Divided and this application June 21, 1962, Ser. No. 204,247
3 Claims. (Cl. 34—62)



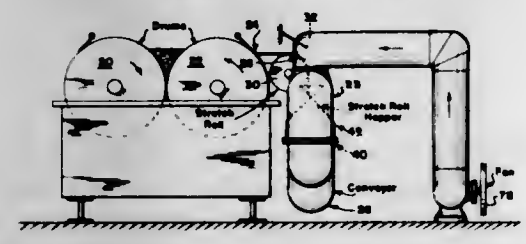
1. Apparatus for removing and cooling a continuous layer of tomato paste or the like from the surface of a drying drum revolving about a horizontal axis, comprising a doctor blade in contact with said drum surface, a traction cylinder mounted on the doctor blade side of said drum parallel with said doctor blade and having its periphery formed to provide a traction face adapted to engage frictionally the layer draped over said traction cylinder to provide tension in the section of said layer between said drying drum and traction cylinder, means for driving said traction cylinder at a suitable speed in relation to said drying drum to effect tension in said section of said layer between said drying drum and traction cylinder, an encloaed box having a top wall provided with a narrow slot therethrough extending parallel with said doctor blade and through which the pendant layer descending from said friction cylinder drops into said box, means for passing a stream of air through said box, and means in said box for breaking up said layer.

3,203,110
CHEMICAL CLEANING APPARATUS
Heinrich Führing, 7½ Waldfriedenstrasse, Augsburg, Germany, and Johannes Helmut Sieber, Wackerlestrasse 1, Neusess, near Augsburg, Germany
Filed May 9, 1962, Ser. No. 193,517
Claims priority, application Germany, May 16, 1961, B 62,503
6 Claims. (Cl. 34—80)



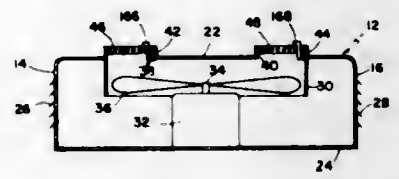
1. A dry-cleaning machine comprising a housing; a rotatable drum in said housing for articles to be treated with a volatile solvent; duct means in said housing forming an extraction passage for said drum, an entrance passage for said drum and a connection between said passages; blower means in said extraction passage; and adsorber means for volatile solvent in said connection including a container in said housing for a charge of activated charcoal, said duct means being provided in the housing with a closable air-intake port and an exhaust port at the junction of said connection with said entrance passage and being further provided with valve means selectively operable for directing vapors from said drum, driven by said blower means through said adsorber means, into the atmosphere through said exhaust port in a first position of said valve means and into said entrance passage for recirculation through said drum in a second position of said valve means.

3,203,111
APPARATUS FOR PRODUCING DEHYDRATABLE BABY FOODS
George J. Lorant, Murray L. Rollins, and Donald C. Guterman, Albion, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed June 4, 1959, Ser. No. 818,092
1 Claim. (Cl. 34—85)



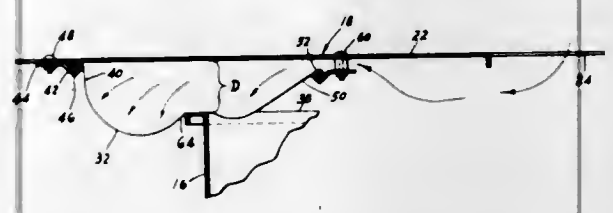
Apparatus for removing and cooling a continuous layer of tomato paste or the like from the surface of a drying drum revolving about a horizontal axis, comprising a doctor blade in contact with said drum surface, a traction cylinder mounted on the doctor blade side of said drum parallel with said doctor blade and having its periphery formed to provide a traction face adapted to engage frictionally the layer draped over said traction cylinder to provide tension in the section of said layer between said drying drum and traction cylinder, means for driving said traction cylinder at a suitable speed in relation to said drying drum to effect tension in said section of said layer between said drying drum and traction cylinder, and a plurality of rolls each rotating about an axis parallel with the axis of said traction cylinder arranged along the descending side of said traction cylinder and bearing against the descending layer on said friction cylinder to increase the grip of said traction face on said layer.

3,203,112
FOOTWEAR TREATING APPARATUS
George F. Edmonds, 16183 Capital Road, R.R. 4, Wichita, Kans.
Filed July 26, 1962, Ser. No. 212,518
10 Claims. (Cl. 34—104)



8. In footwear treating apparatus of the type including a pair of upstanding tubular members each provided at its upper end with means adapted to be received within and to support footwear, and wherein means is provided to heat and force such heated air upwardly into the lower ends of the tubular members; the improvement comprising in combination therewith of means above the lower ends of the tubular members for introducing a treating agent into heated air passing through the tubular members, said last means including means for holding a vaporizable treating agent in direct contact with heated air passing through the tubular members.

3,203,113
CROP DRYING DEVICE
William E. James, Ephrata, James G. Greiner, Lancaster, and Paul N. Exstrom, East Petersburg, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Apr. 23, 1962, Ser. No. 189,444
7 Claims. (Cl. 34—218)

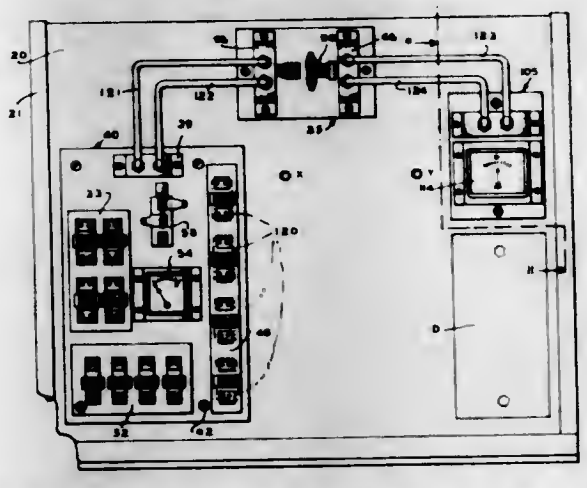


1. Drying means for drying crops contained in a wagon having an open top and sides and/or a bottom perforated to permit exhausting from the wagon drying air directed into the open top thereof, said drying means comprising an overhead air duct arranged to be connected to a source of drying air under pressure greater than atmospheric and supported with the lower wall of the duct at a predetermined height above a floor surface adequate to permit the top edge of crop wagons of the foregoing type to pass therebeneath with reasonable clearance and said duct also having a discharge opening in said lower wall thereof of a predetermined size which is smaller than the open top of wagons to be placed therebeneath, in combination with flexible and impervious inflatable sealing means connected to the lower surface of said duct and surrounding the perimeter of said discharge opening, said sealing means being arranged to be inflated and thereby urged flexibly away from said duct a predetermined maximum distance downward for yieldable and substantially air-tight engagement with the top edges of the sides of a wagon when placed beneath said discharge opening in said duct to discharge drying air thereinto for drying crops in said wagon, and means to introduce air from said duct into said sealing means to inflate it.

3,203,114
SYSTEM FOR DEMONSTRATING ELECTRICAL SCIENCE

Alfred William Adler, 5 Belgrade Terrace, West Orange, N.J.

Filed Oct. 19, 1962, Ser. No. 231,751
4 Claims. (Cl. 35—19)



1. In a system of the character described, the combination which comprises:

(1) a base panel bearing plural sets of perforations arranged in a pattern to provide reception and unique positional support for each of a plurality of individually unique, non-interchangeable demonstration units as named hereinafter,

(2) a battery power unit mountable in one set of such perforations, said unit including an output strip with two terminal sockets and having plural and different battery holding means arranged so as to supply selectively different voltages to said terminal sockets,

(3) a main switch unit mountable in another set of such perforations, and including an input strip with a pair of terminal sockets, an output strip with a pair of terminal sockets, and polarity reversing means between said respective pairs of sockets,

(4) a main experimental unit mountable in still another set of such perforations and including an input strip with a pair of terminal sockets and an electrical phenomenon demonstration device, and

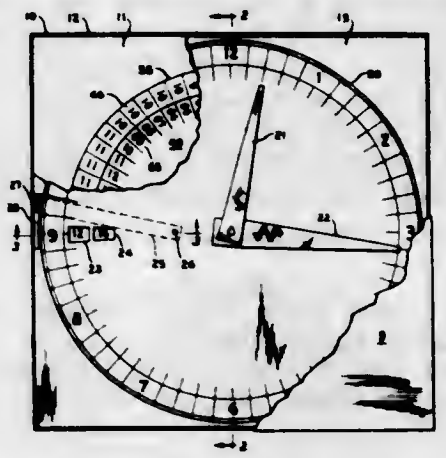
(5) plural sets of rigid connecting bars of respective lengths appropriate for connecting respectively and uniquely the power unit output to the main switch input and the main switch output to the main experimental unit input, the arrangement being such that no alternative connections can be made inadvertently.

3,203,115
TOY EDUCATIONAL CLOCK

Paul D. Friday, Portland, Oreg., assignor of one-half to Howard C. Gammon, Hillsboro, Oreg., and one-half to Donald H. Stanton, Portland, Oreg.

Filed May 20, 1963, Ser. No. 281,639
1 Claim. (Cl. 35—39)

A toy educational clock comprising a rectangular cardboard box having a bottom wall and side walls, a clock face comprising a flat sheet of cardboard having side flaps of less width than the depth of the box, said flaps being inturned perpendicular to said sheet and secured to inside surfaces of said side walls with the edges of the flaps abutting the bottom of the box whereby the clock face is recessed in the box, a sleeve journaled for rotation in an opening in said face sheet, a radial flange on the inner end of said sleeve, a circular dial secured to said flange, a radial shoulder surface on the outer end of said sleeve, a hand secured to said shoulder surface, an arbor mounted for rotation in said sleeve, a head on the inner end of said arbor bearing against said bottom wall of the box and having an axial point adapted to indent said bottom wall and stabilize said sleeve and arbor perpendicular to said face, a radial shoulder surface on said head, a circular dial larger than said first dial secured to said last shoulder surface behind said first dial, a radial shoulder surface on the outer end of said arbor in front of said first hand, a second hand secured to said last

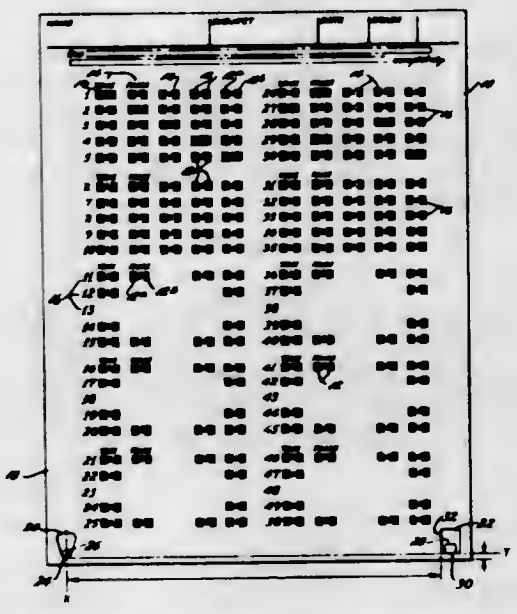


shoulder surface, a pair of windows in said face arranged in side by side relation on a 9 o'clock to 3 o'clock diametral line, hour numbers on one of said dials arranged to appear in the left window, and minute numbers on the other dial arranged to appear in the right window.

3,203,116
STUDENT TEST SHEETS

John S. Shaw, Kensington, Md., John J. Dostal, Long Island, N.Y., and Donald K. White, Fairfax, Va., assignors, by mesne assignments, to Acme Visible Records, Inc., Crozet, Va., a corporation of Delaware

Filed Mar. 28, 1963, Ser. No. 268,813
6 Claims. (Cl. 35—48)



1. A test answer sheet adapted for electromechanically scoring which comprises a generally rectangular sheet of paper having a plurality of test answer spaces defined by printed markings on said sheet, said spaces being arranged in rows and columns and having a predetermined accurate spaced apart relationship; a primary registry slot adapted to receive a cylindrical pin of appreciably smaller cross-sectional area than the area of said primary slot, and a secondary registry slot adapted to receive a rectangular pin of appreciably smaller cross-sectional area than the area of said secondary slot, said slots being positioned immediately adjacent to one end of said sheet, at opposite corners thereof, the primary slot being of a generally triangular configuration with side walls tapering to a rounded apex portion towards said end of said sheet and adapted thereat to snugly receive and seat said cylindrical pin, said tapered side walls of the primary slot acting as sheet guide surfaces, said secondary slot being of a generally

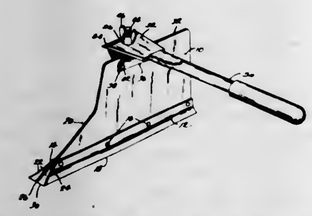
rectangular configuration wherein the walls are disposed generally parallel to the edges of the sheet and to the sides of said rectangular pin, said slots and answer spaces being spaced relative to a first base line which joins one wall of the secondary slot to the rounded apex portion of the primary slot and to a second base line bisecting the rounded apex portion of the first slot and perpendicular to the first base line in a parallel relationship to said columns, whereby each such sheet upon being placed within a test scoring machine may be guided by the slots into reproducibly accurate registration of the test answer spaces thereon to the scoring mechanism of the machine.

3,203,117
HEEL GUARD FOR INSIDE WORK SHOES
William R. Shelton, Box 20, Swiss, W. Va.
Filed Nov. 2, 1964, Ser. No. 408,050
1 Claim. (Cl. 36—69)



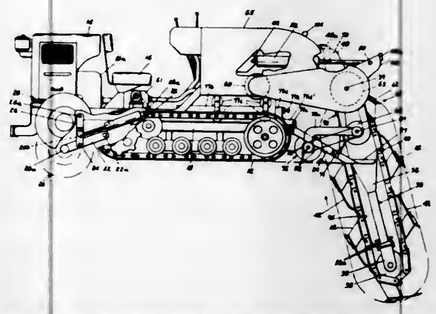
A heel guard having an integral metal structure comprising a generally U-shaped band having a generally vertical but convex shaped outer surface and a generally vertical but concave shaped inner surface, said band having top and bottom edges and two legs, the bottom edge of the band being horizontal and U-shaped, the top edge of the band being connected to the bottom edge at the ends of the legs and rising vertically therefrom to a maximum height at the center of the portion of the band intermediate the legs, and a plurality of separate equidistantly spaced flanges secured to the bottom edge and extending horizontally inward therefrom, each flange having the shape of a trapezoid and having a hole adapted to accommodate a nail, said flanges being separated by V-shaped notches.

3,203,118
DEVICE FOR CLEARING SNOW FROM THE PATH OF AN AUTOMOBILE
Isaac Bonic, 3000 N. 54th St., Milwaukee, Wis.
Filed Feb. 6, 1963, Ser. No. 256,768
4 Claims. (Cl. 37—53)



1. A tool for scraping and chopping snow and the like from the path of the wheel of a parked vehicle, said tool comprising a handle, a substantially planiform blade connected with the handle and having pavement-contacting shoe means along its lower margin projecting outwardly from both faces of the blade and formed to provide a broad horizontal chisel-shaped apex at the forward end of the blade and toward which said blade has a forward extension with an upper margin approaching said apex at an acute angle, said shoe means comprising sheet metal strips of transversely concave form connected in face contact with the blade along their upper margins and having their lower margins directed oppositely from the plane of the blade.

3,203,119
MOBILE DITCHING MACHINE
Vincent S. Penote, Shaker Heights, and Hans L. Preu, Wickliffe, Ohio, assignors to The Cleveland Trencher Company, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 23, 1962, Ser. No. 239,548
13 Claims. (Cl. 37—90)

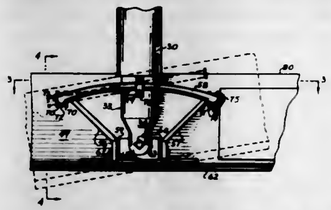


4. In a mobile trenching machine comprising a chassis, traction means mounting said chassis for movement along the ground, an endless digging unit pivotally mounted on said chassis for movement from an inoperative position to an operative digging position and vice versa, means for driving said digging unit, rotatable screw means extending generally transversely of said chassis and adapted to receive spoil from said digging unit and transfer it to a side of the machine means extending between said chasis and said digging unit and coupling said screw to said chasis and to said digging unit, the last mentioned means providing for relative substantially linear movement of said screw with respect to said chassis during swinging movement of said digging unit with respect to said chassis.

13. A mobile trenching machine comprising, a chassis, endless belt traction treads mounting the chassis for movement of the machine along the ground, an endless digging unit movably mounted adjacent the rearward end of said chassis, means for moving the digging unit from an inoperative position to an operative digging position and vice versa, wheel means disposed at the front end of said chassis forwardly of said traction treads for mounting said chassis for more rapid movement along the ground, means movably mounting said wheel means on said chassis for selectively raising and lowering said wheel means above and below said traction treads, and tow means disposed adjacent the distal end of said digging unit for coupling said machine to a towing vehicle for rapid portability of said machine upon said lowering of said wheel means and movement of said digging unit to said inoperative position.

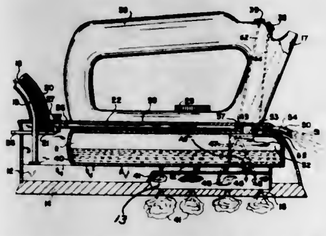
3,203,120
SLOPE GRADER
Robert F. Burton, 3141 Wynn Drive, Avondale Estates, Ga.
Filed May 17, 1963, Ser. No. 281,167
11 Claims. (Cl. 37—155)

11. A slope grader comprising, in combination, a mold board having a lengthwise axis, said mold board being pivotable about a first axis substantially parallel to its lengthwise axis and about a second axis perpendicular to said first axis; and a positioning member attached to the mold board and pivotal about a third axis parallel to the said first axis; means for rotating the positioning member and said third axis about said second axis, and



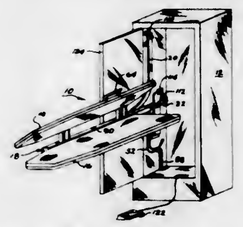
means for causing rotation of said mold board about said first axis in response to such rotation.

3,203,121
ELECTRIC STEAM IRONS
Thurlow G. Gregory, 1440 W. 3rd St., Cleveland Heights, Ohio
Filed Apr. 22, 1963, Ser. No. 274,651
1 Claim. (Cl. 38—77)



A hand-propelled steam and sprinkle iron having a front portion and a flat ironing surface comprising a sole plate, a heating element in said iron adjacent said sole plate, an open-bottom steam generator chamber formed between said sole plate and the heating element, a manually fillable water reservoir supported in said iron positioned above said open-bottom steam generator chamber, means communicating between said water reservoir and said open-bottom steam generator chamber to allow water to enter said open-bottom chamber and form steam, flow-water intake means formed in the rear of said iron, a flow-water pipe structure constructed of heat resistant material operatively connected with said intake means, the said flow-water pipe structure including a by-pass pipe portion which by-passes the water storage reservoir and extends to and opens into said open-bottom steam generator chamber to provide said open-bottom steam generator chamber with a continuous supply of water which is formable into additional steam, and outlet means communicating between said open-bottom steam generator chamber and said sole plate to direct steam onto material being ironed, the flow-water pipe structure of the iron also comprising a sprinkle water pipe portion of like material operatively connected thereto by a water valve and located above the flat ironing surface, which said sprinkle water pipe structure comprises the said water valve, a sprinkler means positioned at the front of the iron above the flat ironing surface of the iron, a sprinkle pipe portion above the flat ironing surface of the iron communicating between the water valve and the sprinkler means for the conveyance of sprinkler water in flow-water form, the said sprinkler means opening forward from the iron, a closed-bottom steam generator chamber supported in the iron between the water valve and the sprinkler means into which a part of the piped sprinkle water of the iron can flow and form additional steam, a flow-water pipe means communicating between the sprinkle-water pipe structure and the closed-bottom steam generator chamber, steam exit means communicating between the closed-bottom steam generator chamber and the sprinkle water pipe structure at a point adjacent the sprinkler means through which steam can flow to accelerate the formation of flow-water of the iron into sprinkle water form and propel the sprinkle water forward upon material being ironed, a water valve communicating between the by-pass pipe portion of the open-bottom steam generator and the flow-water pipe means of the closed-bottom steam generator through which flow-water of the iron can flow simultaneously into both steam generator chambers of the iron for simultaneous sprinkling and steam ironing.

3,203,122
FOLDAWAY PRESSER
Stanley L. Sweatt, 9935 Tecum Road, Downey, Calif.
Filed Dec. 14, 1964, Ser. No. 418,101
7 Claims. (Cl. 38—104)

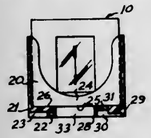


1. A foldaway presser comprising:
a pair of presser heads for pressing articles therebetween;
elongated support means mounting said heads;
an elongated first suspension arm having an inner extremity adapted for pivotal securement within a vertically elongated enclosure, and having an outer, swinging extremity pivotally connected to said support means whereby said heads may be pivoted on said swinging extremity and swung inwardly with said first suspension arm to a vertical storage position inside the enclosure, and whereby said heads may be pivoted on said swinging extremity and swung outwardly with said first suspension arm to a horizontal operating position outside the enclosure;
and an elongated second suspension arm having an inner extremity adapted for pivotal securement within said enclosure, and having an outer, swinging extremity pivotally connected to said support means adjacent said first suspension arm whereby said second suspension arm urges said heads toward said vertical position upon inward swinging movement of said heads, and urges said heads toward said horizontal position upon outward swinging movement thereof.

3,203,123
MAGNETIC SLIDE TRAY
Olin O. Donley, Savannah, Ga.
(Rte. 1, Box 221–A, Rincon, Ga.)
Filed Feb. 25, 1963, Ser. No. 260,458
6 Claims. (Cl. 40—78)

1. In combination, an elongated photographic slide tray having an open top and vertical partitioning members transverse in the tray; substantially non-magnetic substantially loose slides in the tray and leaning on and between the partitioning members; the tray having a bottom provided with transverse slits between the members for the admission of a plunger; magnetic material near but spaced from a longitudinal bottom corner edge portion

of the elongated tray and adjacent each partitioning member; and magnetic means secured on each slide and substantially at an edge of each of said slides and sub-



stantially registering with said material near said corner only when the slides are in predetermined facing and orientation in the tray.

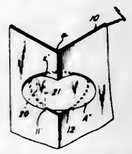
3,203,124
COLLAPSIBLE DISPLAY DEVICE
Henry Kurt Stoessel, 21 W. 45th St., New York, N.Y.
Filed Feb. 5, 1963, Ser. No. 256,476
3 Claims. (Cl. 40—124.1)



1. A display device comprising a plurality of foldable box members having hingedly connected side wall members, a top member and a bottom member, said top and bottom members having a hinged marginal edge connection with a top and bottom edge, respectively, of a side wall portion, a locking flap on said top wall portion and on said bottom wall portion, said flaps being insertable between opposed side wall members to lock said box members against collapsing, an aperture formed in said top and bottom wall portions, said apertures, in the erected condition of said box, being in registry and being eccentrically disposed in said top and bottom walls, a vertically disposed pole member comprising a plurality of connectible sections threaded through said apertures to permit horizontal, pivotal movement of said boxes about said pole member, said boxes being in stacked array on said pole with a bottom wall portion of all but the lowermost box member resting upon a top wall portion of the box immediately beneath the same, said lowermost box member including therein spaced, inturned flange portions paralleling said top and bottom wall portions, said flange portions including apertures in registry with the apertures of said top and bottom wall portions of said lowermost box, and said pole comprising nesting sections of disparate diameters, the diameter of the pole section within said lowermost box being of greater diameter than the aperture in the top wall section of said lowermost box.

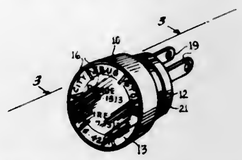
3,203,125
DISPLAY STRUCTURE AND METHOD OF FORMING THE SAME
Henry Kurt Stoessel, 21 W. 45th St., New York, N.Y.
Filed Feb. 21, 1963, Ser. No. 260,264
1 Claim. (Cl. 40—124.1)

A display device comprising a sheet member of cardboard or the like, an aperture formed in said sheet member, the walls defining said aperture being relatively widely spaced apart at a central portion and converging to both sides of said central portion, said sheet member being folded on a fold line intersecting said central portion of said aperture whereby the portions of said sheet member to opposite sides of said fold line are angularly oriented with respect to each other, and a form member having an outline corresponding with the dimension of said aper-



ture in the flat condition of said sheet supported in generally centered position within said aperture in spanning position of said fold line, at least one of said members including cutout portions engaged with portions of said other member to retain said form member in said aperture.

3,203,126
NIGHT LIGHT
Sol S. Eliot, Chicago, Ill., assignor to Crest Specialty, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 21, 1964, Ser. No. 346,447
2 Claims. (Cl. 40—131)

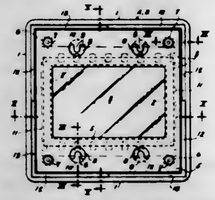


2. A night light comprising:
(a) a translucent cylindrical lamp housing including a laterally extending cylindrical reduced rear portion and a recessed front wall,
(b) a transparent indicia bearing cover plate mounted to the housing in front of the recessed wall,
(c) a mounting plate having a peripheral flange providing a groove into which the peripheral edge of said reduced portion is positioned,
(d) said mounting plate having a lamp mounted thereon and a pair of prongs extending rearwardly therefrom and connected in circuit with the lamp and adapted to be inserted in the slots of an electric fixture,
(e) a bezel having a stepped interior surface encircling said peripheral edge of said reduced portion of said housing and said peripheral flange of said mounting plate for rotatably securing said mounting plate onto said housing to permit said housing to be rotated relative to said mounting plate to dispose the indicia on said cover plate in an upright position.

3,203,127
DIAPOSITIVE MOUNTS
Sven Göran Pettersson, Vrebergsvagen 15, Solna, Sweden
Filed Feb. 11, 1963, Ser. No. 257,565
Claims priority, application Sweden, Feb. 23, 1962, 2,014/62
3 Claims. (Cl. 40—152)

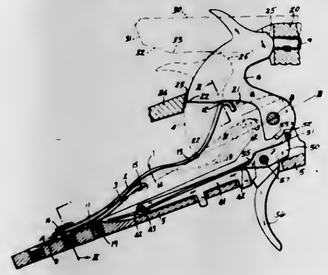
1. In a protective mount for a film transparency, the combination of two identical components to be placed on opposite sides of the transparency to be mounted, each of said components comprising a frame portion of plastic having a quadri-lateral opening with a recess along the edge of said opening at the inner side of the frame portion and a protective glass pane covering said opening and seating in said recess, said frame portion further having, on its inner side, ridges and grooves alternately

following each other with the ends of each groove coinciding with the ends of the adjacent ridges to form a continuous pattern of said ridges and grooves along a line extending entirely around said frame portion slightly inside the outer contour thereof and outside said glass



pane, said ridges and grooves of each frame portion being complementary so that, upon assembly of the two components, the ridges of each frame portion extend into the grooves of the other frame portion and form a continuous labryinth seal encircling the space within which the transparency is to be positioned.

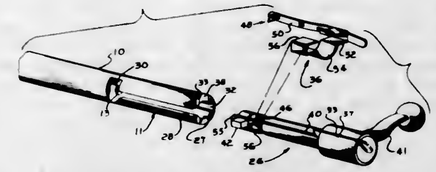
3,203,128
GUN HAMMER-SPRING MECHANISM
Harvey H. Friend, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Feb. 3, 1964, Ser. No. 342,189
6 Claims. (Cl. 42—69)



1. In a firearm, the combination of a hammer pivotally mounted about an axis for movement between a full cock position and a firing position, said hammer including a spring contact surface terminating in a heel extending rearwardly from the pivot axis, and a spring member for biasing said hammer into firing position, said spring member comprising an elongated mainspring connected at one end to the firearm rearwardly of said hammer with the other end extending forwardly into contact with said spring contact surface and having intermediate its ends a concavely bent portion and a convexly bent portion, and a base leaf spring connected at one end to said firearm and having a head portion at the other end in contact with said mainspring at a point intermediate its ends.

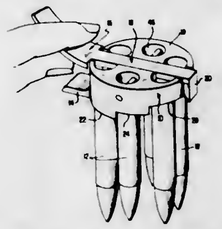
3,203,129
BOLT ACTION RIFLE BARREL CONSTRUCTION
Louis Elkas, Agawam, Mass., assignor to Emhart Corporation, a corporation of Connecticut
Filed Nov. 19, 1963, Ser. No. 324,670
4 Claims. (Cl. 42—76)

4. Bolt action rifle comprising a bolt having a radially extending lock lug adjacent its forward end, a firing pin slidable longitudinally on said bolt and having a shoulder adjacent its outer end, an integral barrel having a rifled bore, a second bore extending from said rifled bore and of larger diameter than the first named bore, the second bore having a lock lug receiving slot for holding the bolt in breech locking position, the end wall of said second bore having a recess to receive the shoulder of said firing pin



when the bolt is locked and a cam surface for retracting said firing pin to a "safe" position whenever the bolt lock lug is not in said slot.

3,203,130
REVOLVER CARTRIDGE CLIP WITH A SERIES OF IRREGULAR STEPS ON ONE FACE
Gabriel Alfonso y Diaz, Mahatma Gandhy 19, Santo Domingo, Dominican Republic
Filed May 1, 1964, Ser. No. 364,224
5 Claims. (Cl. 42—89)



1. A cartridge clip for rapid loading of revolvers of the type including a cylinder mounted on said revolver for pivoting away from a first position with one bore in alignment with the barrel to a second position allowing loading, said clip comprising: a disc like base member having opposed faces with one face cut away to form a series of irregular steps, said steps including grooves formed therein at right angles to the edges of said steps, the sides of said grooves being undercut to form cartridge retaining lips and releasable latch means operably positioned on said clip for selectively preventing transverse removal of cartridges positioned within said grooves.

3,203,131
SELF-PROPELLED TROLLING DEVICE
Claude J. Myers, Stone Mountain, Ga.
(4165 Ballins Drive, Decatur, Ga.)
Filed Nov. 2, 1962, Ser. No. 235,077
8 Claims. (Cl. 43—26.1)



1. A self-powered trolling device comprising an elongated hollow hull having bottom and top walls, side walls, a prow, and a transom, an electric motor provided with a pair of terminals and mounted within the hull and having a rearwardly extending motor shaft, a rearwardly extending propeller shaft journaled through the hull and having a propeller on its rear end, said propeller shaft being connected at its forward end to the motor shaft, a battery supported within the hull forwardly of the

motor and having a contact electrically connected to one terminal of the motor, switch means supported within the hull forwardly of the battery, said switch means comprising a contactor plate spring-pressed to engagement with the other contact of the battery, and a switch operating rod slidably supported within the hull and having a rear end portion extending rearwardly beyond the transom, a water-pressure disc fixed on the switch operating rod behind the transom, a rudder behind the transom and located below and spaced from said disc and carried by the transom, a fishing line attached to said rudder, said rod being operatively connected to said contactor plate, said rod being connected to the other terminal of the motor, said rod normally being in a position wherein the contactor plate is engaged with said other battery contact, said rod being adapted to be moved forwardly to move the contactor plate away from said other battery contact for deenergizing the motor whenever the hull is moved rearwardly in the water by pull exerted on the fishing line either by the fisherman or by a fish snared on the fishhook.

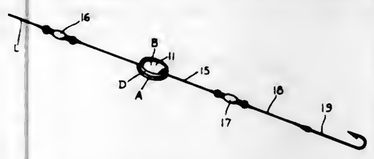
3,203,132
ARTIFICIAL FISH LURE
Richard J. Kotis, Kent, Ohio
Filed Oct. 9, 1961, Ser. No. 143,655
4 Claims. (Cl. 43—42.24)



1. An artificial fish lure, comprising: an elongated bait body having front and rear ends; said body being of molded, yieldingly soft, flexible elastic material; an elongated one-piece member of thin, self-supportingly rigid material embedded in said body longitudinally of the body with the plane of the member vertical therein; said member having integral rigid extensions providing line and hook attaching portions at the front and rear ends of the member, respectively, and a plurality of integral anchoring portions generally in planes extending laterally at substantial angles to said plane thereof; the elastic material of the body being anchoringly molded about the said anchoring portions; said anchoring portions having substantial surface areas presented in longitudinally opposing directions anchoringly to prevent relative movement of the member longitudinally in either direction with respect to the body; said line attaching portion projecting from the front end of the body, and the hook attaching portion projecting from the underside of the body substantially centrally thereof, whereby a substantial extent of the body rearwardly of said hook attaching portion is adapted to flex with respect to said member when the body is retrieved through water.

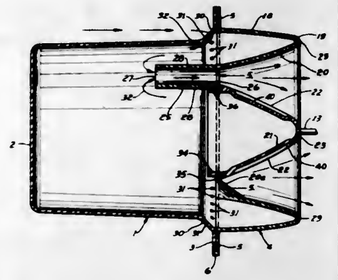
3,203,133
FISHING SINKER
Joe L. Gilliam, Greenville, S.C.
(P.O. Box 10486, West Palm Beach, Fla.)
Filed Mar. 17, 1964, Ser. No. 352,585
2 Claims. (Cl. 43—44.9)

1. A fishing sinker comprising, a body having a pair of aligned spaced substantially symmetrical segments, and an intermediate portion joining said segments integrally on one side thereof to define an open longitudinal slot extending into the central portion of the sinker body thus formed, said body being constructed essentially of lead, and a loop member fixed upon one of the segments adjacent the open side of the slot extending transversely across the slot adjacent both ends thereof, said loop member being spaced from and overlying the other segment adjacent both ends of the slot, whereby a fishing strand



may be passed under said loop member into the slot and retained therein during fishing by said loop member permitting sliding movement of the sinker on the strand.

3,203,134
COMBINED LIVE BAIT TRAP AND PAIL
Elijah Ames Alden, 9311 King Memorial Road, Chardon, Ohio
Filed Jan. 30, 1964, Ser. No. 341,200
6 Claims. (Cl. 43—100)



1. A combined live bait trap and pail comprising a hollow body having a closed rear end and a forward end with inner and outer radially aligned and radially spaced guide walls defining an annular guide passage of gradually diminishing cross section in a direction rearwardly of the body, said guide walls terminating rearwardly in forwardly spaced relation to the rear end of the body, a plurality of tubular members in the body and extending, endwise, forwardly and rearwardly of the body and distributed in laterally spaced relation to each other circumferentially of the guide passage, each member having a passage extending endwise therethrough and in communication at its forward end with the guide passage and at its opposite end with the interior of the body in spaced relation to the walls of the body.

3,203,135
FLY SWATTER HANDLES
Samuel R. Tunnell, 426 Bishop Ave., Pacific Grove, Calif.
Filed July 20, 1964, Ser. No. 383,628
6 Claims. (Cl. 43—137)

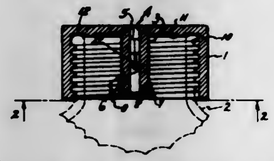
1. A fly swatter handle comprising
(a) a tubular handle rod
(b) a head formed on the free end of said rod
(c) a hollow cup on the free end of the said head having an aperture therein communicating with the interior of said head and having a mouth edge for bearing on a surface about an insect
(d) a handle element on said head reciprocable axially relatively to said head,
(e) a compressor member on said handle element,

(f) a system of passages in said head communicating air flow from said compressor member with said hollow cup thereby to force air through said cup



and through said aperture into the interior of said head for carrying said insect from said surface into said head.

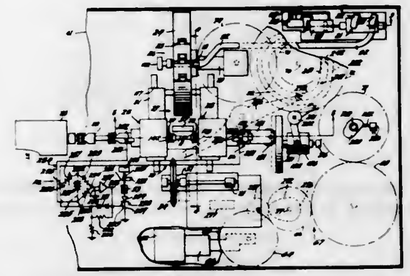
3,203,136
CONTAINER CAP WITH SOUND EMITTING MEANS
Peter J. Scray, 6626 Aires Road, and Cary A. Crews, 5411 Kincaid Road, both of Jacksonville, Fla.
Filed Oct. 1, 1962, Ser. No. 227,177
4 Claims. (Cl. 46—175)



1. A screw cap for use on the screw-threaded neck of a squeeze-type plastic commodity bottle comprising a body portion marginally provided with a rim portion, said body portion being further provided with a centrally disposed axially bored neck, the bore of said neck providing an open-ended air passage, an air pressure responsive sound producing device mounted within the confines of said passage, and a second cap auxiliary to said first-named cap and removably fitted on and normally closing an inwardly disposable end of said axially bored neck.

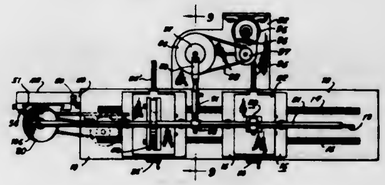
3,203,137
APPARATUS FOR MACHINING SELECTED AREAS OF THE SURFACE OF AN ARTICLE
James L. Owens, Clemmons, and Anthony J. Vrsecky, Winston-Salem, N.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Original application June 25, 1962, Ser. No. 204,990, now Patent No. 3,138,065, dated June 23, 1964. Divided and this application Sept. 25, 1963, Ser. No. 318,139
3 Claims. (Cl. 51—59)

1. In a device for presenting articles having a coating to a fabricating tool to remove selected portions of the coating from the article,
supply means for feeding said articles,
first slide means mounted for movement in a first direction between the fabricating tool and the supply means,
chucking means mounted on the first slide means for gripping an article from the supply means,
lever means pivotally mounted on the first slide means for actuating the chucking means,
second slide means mounted for movement in a second direction transverse to said first direction, said second slide means having a cam surface extending in said first direction,
unitary drive means for concurrently moving the first slide means in said first direction and moving said second slide means in said second direction, and



roller means mounted on the lever means for rolling movement along the cam surface in said first and second directions upon said concurrent sliding of the first and second slide means to actuate the lever means.

3,203,138
APPARATUS FOR PRODUCING ASPHERIC SURFACES
Thomas L. Ford, Dallas, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed July 8, 1963, Ser. No. 293,338
10 Claims. (Cl. 51—58)

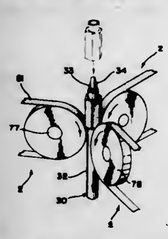


1. Apparatus for producing aspheric surfaces including a supporting base, a guide member carried by the base and having an arcuate guiding surface, a support member rigidly carried by the base, an elongate member mounted in the support member for pivotal movement about a center in the support member, the elongate member engaging the arcuate guiding surface of the guide member and being transversely movable with respect to the guide member, a surface generating assembly carried by the elongate member at a point spaced longitudinally thereof from the guide member and the support member, and a rotatable work support juxtaposed the surface generating assembly.

3,203,139
MACHINE AND METHOD FOR SURFACE FINISHING OBJECTS
Elroy J. Giese, Cleveland, Ohio, assignor to Tomlinson Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 14, 1963, Ser. No. 258,493
13 Claims. (Cl. 51—140)

1. A device for surface finishing a work-piece having a plurality of sides comprising,
a holder for said work piece,
means for reciprocating and indexing said holder,
finishing means positioned adjacent to the path of reciprocation of said holder,

timing means for said reciprocating and indexing means, whereby said holder is indexed at the end of each



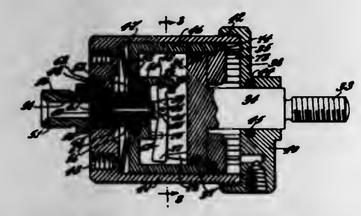
stroke of said holder to thereby present an unfinished surface to said finishing means on the return stroke.

3,203,140
CUTTING DISC WITH DIAMONDED SEGMENTS
Charles Pierre Hallez, Forest, Belgium, assignor to Diamant Boart, Forest, Brussels, Belgium
Filed Feb. 14, 1963, Ser. No. 258,550
Claims priority, application Belgium, Feb. 22, 1962, 614,239
5 Claims. (Cl. 51—206)



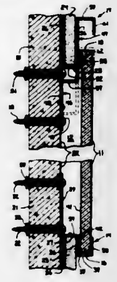
1. A cutting disc provided, along its periphery, with a plurality of radial slots defining a plurality of circumferential cutting teeth provided with diamond-tipped segments, at least one of said teeth having a circumferential length which is different than at least one of the circumferential lengths of the adjacent teeth.

3,203,141
INSISTOR
C Walton Musser, 928 Via Panorama, Palos Verdes Estates, Calif.
Filed Mar. 15, 1961, Ser. No. 95,909
14 Claims. (Cl. 52—1)



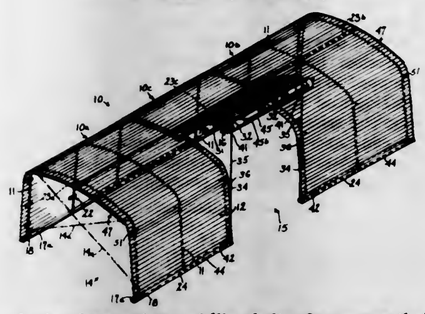
1. A device for use in correction for change in position of structure, said device comprising a first element adapted to be grounded by fastening to a grounded first structural member, an actuator element adapted to be connected to move in response to force with a movable second structural member opposite said first element, a driven element operatively interconnected between said first element and said actuator element and adapted to be driven and move said actuator element against force exerted by said actuator element, and a control element for said driven element responsive to force and position of said actuator element and inducing counter to force of said actuator element a corrective motion of said driven element varying as a direct function of force and position of said actuator element whereby, upon said first element being fastened to a grounded first structural member and upon said actuator element being connected with a movable second structural member under load which alters positions in space of both first and second points on the movable second structural member and simultaneously induces strain in the movable second structural member with concurrent change in position of the first point with reference to the second point, corrective motion of said driven element counter to the load is induced by said control element for said driven element to move said actuator element counter to the load a distance substantially restoring the position in space of the first point.

3,203,142
MIRROR MOUNTING MEANS AND METHOD
James I. Narmore, 2826 S. Meridian St., Indianapolis, Ind.
Filed Aug. 28, 1961, Ser. No. 134,459
3 Claims. (Cl. 52—27)



1. In a building construction, the combination comprising:
means providing a first wall surface,
wall surfacing elements secured to said first wall surface and having outer faces providing a finished wall surface lying in a first plane in horizontally spaced relation to said first wall surface, said elements being arranged to provide an opening in said finished surface, with said first wall surface exposed in said opening and recessed from said finished wall surface, said elements having edges bordering said opening;
a single plate completing covering said opening;
a support hanger having a first portion with a back surface attached directly to said first wall surface adjacent an upper bordering edge of said elements at a lower border of said opening, and said hanger having a forwardly projecting portion resting on one of said edges at the said lower border of said opening, and said hanger having a portion projecting downwardly from said forwardly projection portion and opening upwardly to form a book supporting the lower edge of said plate;
and a retainer having first and second members, the the first member thereof having a first portion with a rear surface attached directly to said first wall surface adjacent another bordering edge, and said first member having a second portion projecting forwardly from said first portion thereof at a lower bordering edge of said elements at an upper border of said opening, said second portion of said first member having a slot therein intercepting the said plane of said finished wall surface, and said first member having a third portion extending vertically from said second portion at a front margin of said slot;
the second member of said retainer having a first portion extending vertically upwardly through said slot at said finished wall surface and having a second portion projecting forwardly from said first portion of said second member above said slot, and said second member having a third portion projecting down from said second portion thereof, said first, second, and third portions of said second member from a hook retaining the upper portion of said plate, said second member having a fourth portion extending rearwardly from said first portion below said slot and engaging the first portion of said first member and thereby providing horizontal support for said second member.

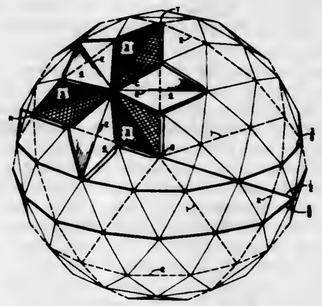
3,203,143
AUTOMOBILE SHELTER
Oscar J. Swenson, Killingworth, Conn. (Branford, Conn.)
Filed Aug. 14, 1962, Ser. No. 216,851
5 Claims. (Cl. 52—64)



1. An elongated tunnel-like shelter for compactly housing an automobile and providing improved access to such automobile for a person whose height is greater than the height of such shelter, said shelter comprising oppositely spaced, elongated, upright side walls, a roof wall, said roof wall spanning said side walls and defining thereabove a continuation thereof, said roof wall and said side walls defining a trasverse cross-sectional profile of said shelter of such internal dimensions as will permit such automobile to pass therethrough with only slight clearance from each of the walls, said walls comprising partially rigid panels, means interconnecting said panels into a rigid unitary structure conforming to said profile and defining a continuous self-supporting wall structure having an end terminal opening for access of the automobile into the shelter, one of said side walls having an access passageway extending therethrough and continuing through an adjacent portion of said roof wall and defining a free opening so as to permit normal free access into such housed automobile simultaneously through said passageway and doorway of the automobile from a position extending into a level above said roof wall, said passageway spaced from the ends of said shelter with portions of said side wall and roof wall extending on each side of said passageway.

3,203,144
LAMINAR GEODESIC DOME
Richard Buckminster Fuller, 407 S. Forest St., Carbondale, Ill.
Filed May 27, 1960, Ser. No. 32,268
2 Claims. (Cl. 52—81)

1. A geodesic dome comprised of panels arranged in overlapping relation to one another, said panels having inner and outer sheets and spacing means between said inner and outer sheets, said panels in their assembled relationship exhibiting an overall pattern of planar triangular facets which are paired in diamond-shaped sections, six diamond sections grouped together with the vertexes of



the acute angles at one end of the long axis of each meeting at a common point, three of the six sections of the group having the following chord factors:

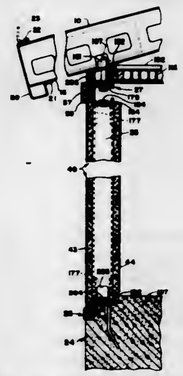
Sides adjacent said acute angles=0.42
Remaining sides=0.33
Short axis of diamond=0.38

and the other three of said six sections of the group being alternated with the first three sections and having the following chord factors:

Sides adjacent said acute angles=0.42
Short axis of diamond=0.44
Long axis of diamond=0.71

by virtue of which the dome comprises only two types of diamond sections and the edges of the panels are aligned along parallel lines defining a three-eighths sphere, one-half sphere and five-eighths sphere each terminating in a base plane defined by the aforesaid aligned edges of the panels.

3,203,145
PREFABRICATED MODULAR HOME CONSTRUCTION
Burt F. Raynes, Chula Vista, Calif., assignor to Rohr Corporation, a corporation of California
Filed July 25, 1962, Ser. No. 212,393
29 Claims. (Cl. 52—234)

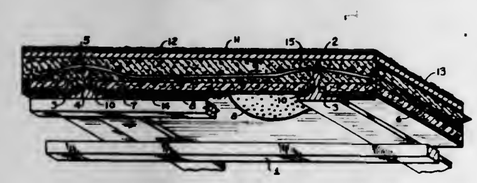


1. In a modular building construction, the combination of a panelled wall comprising an all steel load-bearing framework and non-load-bearing, foam-cored sandwiched panels, each of said panels comprising a fully factory fabricated and integrated floor-to-ceiling unit having an

edge grooved foamed core and spaced facing skins secured to the core, said frame work comprising a plurality of studs set on module and enclosed with the confronting edge grooves of adjacently disposed panels, and each pair of adjacently disposed studs comprising a frame individual to one of said panels and extended perimetrically thereof for engaging the core of the panel yieldably in free floating, weather sealing, and interlocking relation therewith.

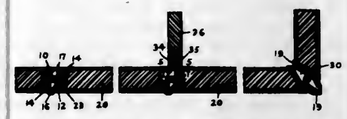
13. In a modular building construction, the combination of a foundation structure, a ceiling structure, and inner and outer panelled walls each comprising framework structure and foam-cored sandwiched panels interlocked and held thereby yieldably in weather sealing relation therewith and in position on said foundation structure, each of said panels comprising a fully factory fabricated and integrated floor-to-ceiling unit having a foamed core engaged perimetrically by the framework structure individual thereto, said framework structure for the outer panelled walls comprising hollow metal studs set on module and enclosed by the foam-cores of adjacent panels and a composite header beam, said header beam comprising upper and lower hollow metal square tubes each being generally C-shaped in cross section, said framework structure for the inner panelled walls comprising hollow metal studs set on module and enclosed by the foam-cores of adjacently disposed panels and a header beam conforming to and coextensive with said lower metal tube of the composite beam and providing therewith a continuous wireway, certain of said studs having electrical outlet means, each of said studs having means including a hollow fastener for securing the same to the header beam individual thereto and for passing wiring from said wireway therethrough into the studs to said outlets therein, said ceiling structure comprising a plurality of sandwich panels, said upper hollow metal tubes having longitudinally extending slots for receiving therewithin the edge portions of certain ones of said ceiling panels, said composite beam having means for securing said upper and lower tubes together and simultaneously locking the upper tubes to said certain ones of the ceiling panels.

3,203,146
WALL CONSTRUCTION
David C. Carter, Martinsville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 752,992, Aug. 4, 1958. This application Aug. 28, 1962, Ser. No. 219,983
3 Claims. (Cl. 52—328)



3. A wall construction comprising a plurality of spaced supports, a plurality of vapor permeable boards contacting the supports adjacent the ends of the boards, a cementitious mixture adhering to the side of said boards opposite the side adjacent said supports and forming with said boards a solid continuous wall, a vapor impermeable covering on the side of said cementitious mixture opposite said boards, and a sheet of vapor impermeable material on the side of the boards opposite the cementitious mixture, said sheet having a plurality of minute openings in the areas not engaged by the supports, whereby vapor may pass from the cementitious mixture through the minute openings to allow said mixture to cure.

3,203,147
DEVICES FOR CLOSING THE JOINTS OF PREFABRICATED WALL PANELS
Benjamin S. Penley, Morristown, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed June 15, 1960, Ser. No. 36,265
6 Claims. (Cl. 52—461)



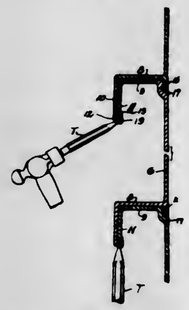
1. A wall structure comprising joined structural panels, each of said panels comprising a pair of rigid facing sheets and a layer of heat-insulating material therebetween, a space along the abutting ends of adjacent panels, said panels being aligned, and having the space between said abutting ends closed by a device, said device including a vertically disposed fixed rod in said space, a pair of opposed means overlying said space on opposite sides thereof, a tubular member surrounding said fixed rod in rotatable relation thereto, sheet metal members fixed to opposed sides of said tubular member and to the respective opposed means, at least one of said means comprising a strip, said tubular member being under torsional stress with said means clamped to the exterior surfaces of said panels and means locking said tubular member under said torsional stress, whereby release of said locking means will release said torsional stress and permit said tubular member to rotate to its relaxed state thus releasing said means for clamping engagement with said panels.

3,203,148
APPARATUS FOR SUSPENDING TILE CEILINGS
Frederick White, 9 Chipping Road, Don Mills, Ontario, Canada
Filed Feb. 23, 1962, Ser. No. 175,207
3 Claims. (Cl. 52—485)



1. In combination a ceiling tile suspended from a joist by at least one hanger along at least one edge thereof, said ceiling tile having at least one tongue and at least one groove on the edges thereof, said hanger comprising an elongate generally rectangular planar sheet metal shank member formed of a single flat web of sheet metal having transverse and longitudinal axes normal to one another and having upper and lower end portions lying in a single common plane, nail holding means defining a nail passageway formed integrally with said shank member extending along said upper end portion thereof along an axis parallel to the plane of said web of said shank member and to said transverse axis thereof; a bracket of generally rectangular planar sheet metal engaging said edge of said tile and formed into a single flat web lying in a single plane and having a transverse axis parallel to said transverse axis of said shank member formed integrally with said lower end portion of said shank member by deflecting an endwise extension of said shank member through substantially a right angle along a fold line parallel to said transverse axes, the plane of said bracket being normal to the plane of said shank member and defining therewith substantially an L-shape in longitudinal section and a nail in said passageway swingably fastening said hanger to said joist for swinging movement of said bracket toward and away from said edge.

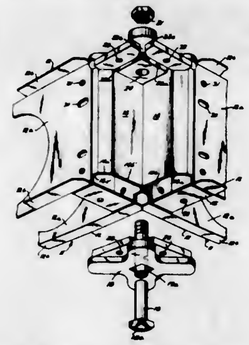
3,203,149
INTERLOCKING PANEL STRUCTURE
Thomas C. Soddy, Downers Grove, Ill., assignor, by mesne assignments, to American Seal-Kap Corporation of Delaware, New York, N.Y., a corporation of Delaware
Filed Mar. 16, 1960, Ser. No. 15,376
4 Claims. (Cl. 52—593)



1. A unit for use in a multi-unit transversely-rigid wall-like structure formed of a plurality of units arranged edge to edge in coplanar relation, said unit comprising a wide plate-like body with a relatively narrow rigid web disposed normal to the body along each of two opposite margins, one web having a rigid flange spaced from and substantially parallel to the plane of the body and extending outboard of the adjacent margin of the body and including a flat inner surface of substantial width facing toward the body, there being an inwardly offset lip at the outer margin of said flange forming a shoulder facing toward said one web, the other web having a rigid flange extending transverse of said other web and spaced from the body and extending inboard of the adjacent margin of the body and including a flat outer surface facing away from said plane, there being an inwardly offset lip at the outer margin of said outer surface projecting beyond said first-mentioned lip and forming a shoulder facing away from said other web, the width of said surfaces on both flanges being the same so that the shoulder on the outboard extending flange of one unit may snap over and tightly engage the shoulder of the inboard extending flange of a like juxtaposed unit, said lips forming a crevice for the insertion of the end of an elongated prying tool and also a fulcrum for the tool.

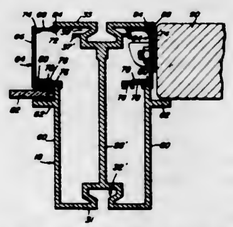
3,203,150
BUILDING FRAMEWORK
Lars Gunnar Sernoblad, Goteborg, Sweden, assignor, by mesne assignments, to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Feb. 27, 1961, Ser. No. 91,682
17 Claims. (Cl. 52—664)

1. A building framework comprising a plurality of elongated members including first and second members in alignment with one another and a third member transverse to the first and second members, the elongated members comprising pairs of walls which are adjacent to and substantially parallel to one another and extend lengthwise of the members, the adjacent walls of the members being formed by elongated multi-sided angle parts having sides forming the adjacent walls, each wall of said pairs of walls being a component of a different angle part, the first, second and third members being separate from one another, one end of each member being closely adjacent to one end of each of the other members, the one ends of the members closely adjacent to one another each including as a part thereof a five-sided U-shaped strap having one side at its closed end and a pair of arms extending therefrom each having two sides, means connecting the adjacent walls at the ends of the members, said connecting means at the one ends of the members including the straps, the sides of each strap at the outer ends of the arms being respectively joined to the adjacent walls at the one end of the member of which it forms a



part, the sides of the arms adjacent to the closed end of each strap converging toward one another, the sides of the straps at their closed ends defining a zone within the plane of the framework, fastening means including an element extending through the zone for fastening together the straps at the one ends of the members with the converging sides thereof bearing against one another, and the fastening means embodying structure for producing forces which act on the edges of the straps only in directions substantially perpendicular to the plane of the framework while the converging sides thereof bear against one another.

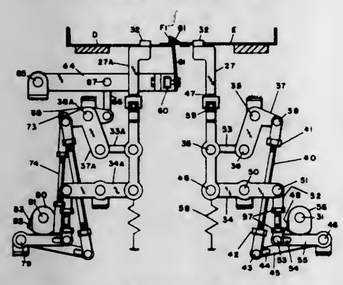
3,203,151
METAL BUILDING CONSTRUCTION
Ernest Owen Bransford, Jr., Greensboro, N.C., assignor to Beaman Corporation, a corporation of North Carolina
Filed Apr. 11, 1961, Ser. No. 102,174
4 Claims. (Cl. 52—729)



1. A stud for use in a building wall construction comprising a metal member of general I-shape having a web and oppositely disposed flanges extending perpendicularly to said web at opposite edges thereof, at least one of said flanges having a groove therein extending substantially the entire length of said one flange, said groove including a narrow throat portion forming a slot opening from the outer face of said one flange intermediate the width of said one flange and including interior walls laterally obliquely diverging from the inner end of said throat portion whereby the groove is substantially T-shaped in cross section with its base substantially wider

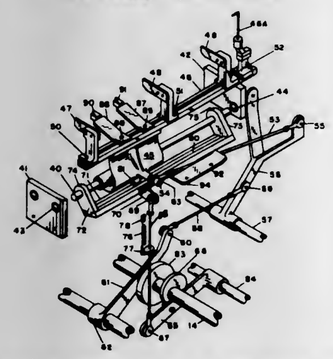
than its throat portion and is thereby adapted to receive and interlockingly hold the divergently reversely bent hooked flanges of a pair of edge-abutting sheet metal wall panels, each of said laterally obliquely diverging interior walls being formed with an outstanding projection spaced inwardly from and parallel to said one flange and forming therewith a pair of aligned grooves extending in opposite directions from said narrow throat portion for reception of the marginal edges of wall panel elements.

3,203,152
PACKAGING MACHINE
Richard T. Wilcox, Decatur, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Mar. 1, 1962, Ser. No. 176,572
11 Claims. (Cl. 53—48)



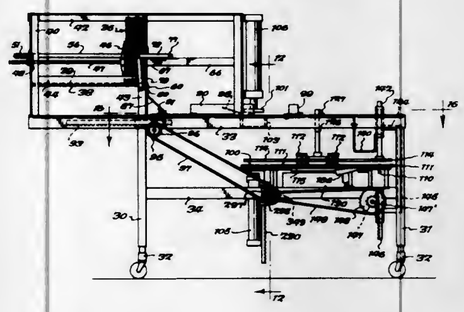
1. Mechanism for tightening a wrap-around type of blank about a group of articles to be packaged, said mechanism comprising a movable tightening element, a pair of spaced relatively movable support elements pivotally interconnected with said tightening element, and a thrust linkage pivotally connected with each of said support elements, each of said linkages being arranged to impart movement to its associated support element which is in a different direction to the direction of movement imparted to the other support element whereby controlled resultant movement is imparted to said tightening element.

3,203,153
PACKAGING MACHINE
Prentice J. Wood, College Park, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed May 7, 1962, Ser. No. 192,875
10 Claims. (Cl. 53—48)



7. A machine for placing a wrap-around blank about a group of articles to be packaged, said machine comprising blank engaging means, a movably mounted support yoke on which said blank engaging means is mounted, spring means for imparting blank folding and tightening movement to said yoke and to said blank engaging means, and folding and tightening cam control means arranged to oppose folding and tightening movement of said yoke and of said blank engaging means.

3,203,154
CARTON MAKING, FILLING AND CLOSING MACHINE
Alexander Litchard, 322 N. Main St., Wellsville, N.Y.
Filed Oct. 31, 1961, Ser. No. 148,945
4 Claims. (Cl. 53—75)



2. In a carton handling machine having means for forming a blank into a carton having a lid in upright position, an indexing table on which the formed carton is advanced, a weighing scale at one station of said indexing table upon which the carton is supported while being filled, an electric switch closed by said scale when the carton is filled to complete a circuit, means actuated by said circuit for advancing the carton to a lid-closing station, and a closure plate mounted on said lid-closing station and movable downwardly into engagement with the lid for moving the lid into closing position, means mounted on said closure plate for interlocking parts of said lid with a side of the carton, and means for discharging the closed carton from the machine, said means mounted on said closure plate including a key having a part movable into engagement with the front wall of the carton to move a part thereof inwardly to open slots therein, and parts on said key for guiding parts of said tucking extension into said slots, said key having a recess on the face thereof adjacent to the front of the carton and into which a part of said lid enters and which bends said part downwardly into position approximately parallel to the front wall of the carton, said key guiding said part into position to interlock with said front wall.

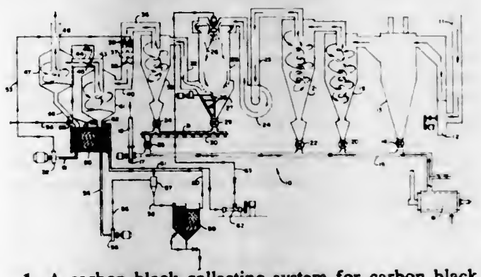
3,203,155
EMISSION ELECTRODE SYSTEM FOR ELECTROSTATIC PRECIPITATORS
Algot Haglund, Jonkoping, and Gösta Mildh, Vattersnas, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Apr. 2, 1962, Ser. No. 184,834
2 Claims. (Cl. 55—148)

1. An emisson electrode system for electrostatic precipitators comprising two spaced apart parallel electrode-supporting bars disposed in substantially the same vertical plane, at least one socket member fixedly secured to each of said bars, the socket member on one of said bars being disposed opposite to and spaced substantially vertically from the socket member on the other of said bars, each of said socket members having a tubular bore therethrough and a narrow slot extending along the length thereof and intersecting said bore, the bores of said opposite socket members being parallel and the slots opening toward one another in confronting relationship; and a wavy ribbon electrode extending between said opposite socket members and having integral bent tubular end elements mounted in said tubular bores with the ribbon electrode passing through said slots, said tubular end elements of the ribbon electrode being axially longer than the length of the bores of said socket members and projecting from



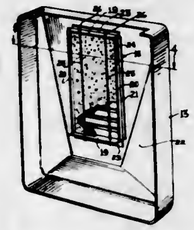
both ends of said socket members, the projecting ends of said tubular end elements being flared into firm contact against opposite ends of said socket to tightly secure said end elements in said socket bores and establish firm electrical joint connections between said ribbon electrode and said socket members.

3,203,156
CARBON BLACK COLLECTING SYSTEMS
James D. McGregor and Alain A. Osgood, Borger, Tex., assignors to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
Filed Feb. 5, 1962, Ser. No. 171,057
3 Claims. (Cl. 55—223)



1. A carbon black collecting system for carbon black furnaces comprising a spray dryer scrubber, means for conducting combustion gasses from a carbon black furnace to the top of said spray dryer scrubber, means including a rotary atomizing spray head for spraying carbon black slurry into said scrubber adjacent the top thereof, said spray dryer scrubber entraining carbon black particles in said combustion gas into slurry droplets which are dried in said spray dryer scrubber forming carbon black particle agglomerates, means adjacent the bottom of said spray dryer scrubber for collecting and discharging a portion of said carbon black agglomerates, a gas outlet adjacent the bottom of said spray dryer scrubber, a cyclone positioned adjacent said spray dryer scrubber, means connecting said spray dryer scrubber to said cyclone for conducting the exhaust combustion gases from said spray dryer scrubber to said cyclone, said cyclone having carbon black particle agglomerate collecting and discharging means for removing remaining carbon black particle agglomerates from said combustion gases, said combustion gases and said sprayed carbon black slurry moving concurrently downwardly in said scrubber, a baffle plate scrubber positioned adjacent said cyclone, mean for conducting exhaust gases from said cyclone to said baffle plate scrubber, a primary wet cyclone, a secondary wet cyclone, said primary and secondary wet cyclones positioned adjacent said baffle plate scrubber, means for conducting the gases from said baffle plate scrubber to said primary wet cyclone and from said primary wet cyclone to said secondary wet cyclone, said primary and said secondary wet cyclones being adapted to produce a carbon black water slurry, means for collecting said carbon black water slurry and means for pumping said carbon black water slurry from said collecting means to said rotary atomizing spray head in said spray dryer scrubber.

3,203,157
FILTER FOR HAIR DRIERS
Lee S. Watlington, 1204 N. Linden Ave., Bloomington, Ill.
Filed Jan. 23, 1963, Ser. No. 253,328
1 Claim. (Cl. 55—495)

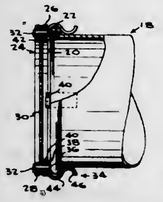


An air filter for a hair drier comprising
(a) a frame secured to and extending laterally from the inner surface of the wall of the drier,
(b) said frame comprising end and side flange members extending laterally from said wall,
(c) elongated rods extending transversely of the frame in spaced relation with respect to each other and secured to opposite end flange members of said frame,
(d) said wall having a plurality of equally spaced vertically aligned slots formed therein within the area of the frame with said slots extending transversely to and in spaced relation to said elongated rods,
(e) a pliable filter element having an area substantially the same as that defined by said frame and removably mounted in said frame inwardly of said slots,
(f) said slots being of a size to receive one end portion of the filter element as it is inserted through the uppermost of said slots and drawn downwardly into said frame between said rods and said wall so as to be removably mounted in said frame.

3,203,158
AIR CLEANER AIR INLET SCREEN
Edwin L. Zadra, 1750 W. Mosier Place, Apt. 21, Denver, Colo.
Filed Jan. 4, 1963, Ser. No. 249,493
4 Claims. (Cl. 55—505)

1. In combination, an intake conduit having an outer end, a screen assembly extending across said outer end and secured to the conduit, said outer end having an external bead extending therearound, said screen assembly comprising inner and outer registered rings, a screen extending across the openings of the rings and having a peripheral portion clamped between the rings, spring clips non-rotatably fixed to said inner ring and engaged over said bead, headed rivets extending through and holding said rings, said peripheral portion and said clips in fixed, assembled relationship, said clips having bases engaged

with the inward side of the inner ring, said rivets having inner heads engaged with the inner sides of the bases,



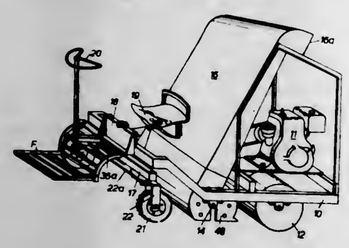
said bases having lateral flanges on their inward ends engaged with the radially inward edge of the inner ring.

3,203,159
METHOD OF HARVESTING BERRIES AND SIMILAR PRODUCE FROM THEIR PLANTS
Raymond M. Weygandt and Raymond A. Weygandt, both of Rte. 1, Box 308, Canby, Oreg.
Filed July 29, 1963, Ser. No. 298,219
2 Claims. (Cl. 56—1)



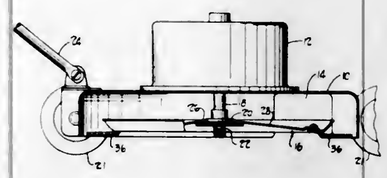
1. The method of dislodging ripe fruit from a fruit-bearing bush or the like having a substantially vertical center axis without engaging individual branches, leaves and the like comprising the steps of: progressively moving a compression trough open at upper and lower ends along the entire height of a fruit-bearing bush or the like and compressing and confining the entire bush simultaneously from two opposed continuous vertical planes along the entire height of the bush from opposite sides of the path of travel of said trough toward the vertical center axis of the bush during the entire path of travel of said compression trough; and transitionally relieving pressure along one vertical plane with respect to the vertical center axis at one side of said bush and increasing the pressure at the other side thereof while maintaining at least the initially imposed compressive force imposed on said bush.

3,203,160
LAWN MOWERS
Edward Bernard Thomas, Oswestry, England, assignor to Edward Thomas & Company (Oswestry) Limited, Oswestry, England, a British company
Filed Feb. 18, 1963, Ser. No. 259,253
Claims priority, application Great Britain, Feb. 21, 1962, 6,663/62
3 Claims. (Cl. 56—24)



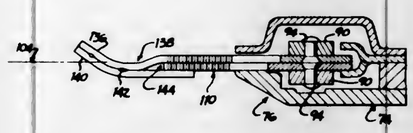
1. A glass mower comprising a frame, a high speed motor supported on said frame, a rotatable shaft, a housing therefor supported on said frame, driving means connecting said shaft to said motor through a centrifugal coupling, track wheels for guiding the mower, a drive roller, driving means connecting said drive roller with said motor through reduction gearing, a plurality of cutting elements consisting of small plates having hollow cylindrical bosses at one end and a cutting edge curved out of the plane of the plate at the other end, the cutting elements being arranged in rows, the elements of one row being staggered in relation to the elements of an other row, a plurality of fins radially extending from said rotatable shaft a distance at least as great as the radial length of said cutting elements and spaced circumferentially of the shaft hinge bosses spaced apart on said fins at the edges remote from the shaft, and hinge pins directly securing the hollow cylindrical bosses of said cutting elements in pivotal mounting between the hinge bosses on said fins.

3,203,161
ROTARY LAWN MOWER CUTTING UNIT
John H. Breisch, 2103 Arthur Ave., Lakewood 7, Ohio, and Arnold E. Biermann, Redart, Va.
Filed May 10, 1963, Ser. No. 279,399
3 Claims. (Cl. 56—295)



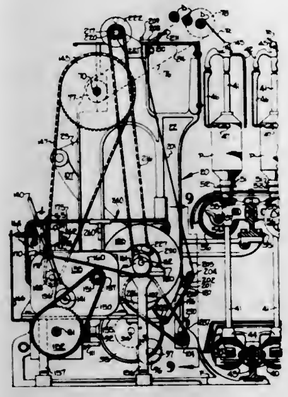
1. A grass cutting element for a rotary lawn mower having a wheeled housing and vertical drive shaft extending into said housing, said cutting element being adapted to be affixed to said drive shaft and comprising a rotor having a central flat section, a frusto-conical portion extending outwardly and downwardly from said central flat section, a plurality of recesses formed in the frusto-conical section, said recesses being above the conical plane, a cutter blade for each recess, said blade having an off-set shank in the recess, and pivotally mounted therein, the cutter portion of the blade being exposed below the low surface of the rotor.

3,203,162
AGRICULTURAL MOWER
Andrew Blaauw, 114 S. Prairie Ave., Bloomingdale, Ill., and Floyd W. Howarter, 2661 E. 78th St., Chicago, Ill.
Filed May 20, 1963, Ser. No. 281,501
4 Claims. (Cl. 56—297)



1. In a mower, an elongate cutter bar, an elongate upper sickle section having a series of cutting teeth projecting forwardly from one side thereof, an elongate lower sickle section having a series of cutting teeth projecting forwardly from one side thereof, means mounting said sickle sections upon said cutter bar for sliding longitudinal reciprocatory movement relative to said cutter bar and to each other, the teeth on said upper sickle section overlying the teeth on said lower sickle section in sliding cutting relationship therewith, forwardly projecting tip portions on the teeth of said upper sickle section projecting forwardly from said cutter distance a substantial distance beyond the tips of the teeth on said lower sickle section, and a clip secured to the lower side of each of said tip portions and projecting rearwardly therefrom into sliding underlying relationship with the teeth of said lower sickle section.

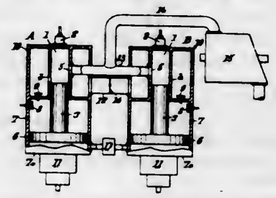
3,203,163
TRAVERSE AND TENSION CONTROL FOR WINDING MACHINES
John R. Long, Hickory, N.C., assignor to Shuford Mills, Inc., Hickory, N.C., a corporation of North Carolina
Filed May 31, 1963, Ser. No. 284,647
19 Claims. (Cl. 57—98)



1. Apparatus for controlling the building of packages of strand material on a winding machine having rotating bobbins for receiving thereon the strand material, strand guide means adjacent each bobbin, a reciprocable traverse mechanism for imparting relative axial movement between said guide means and said bobbins, and means shiftable between first and second positions for reversing said traverse mechanism at the ends of strokes thereof in respective first and second directions; said apparatus comprising

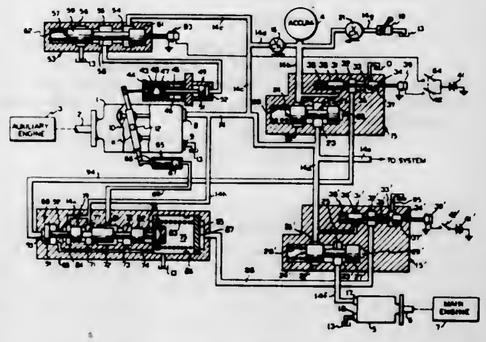
(a) a frame,
(b) first and second spaced switches movably mounted on said frame,
(c) a tumbler movable between and adapted to engage and actuate said switches in alternation,
(d) means operatively associated with said traverse mechanism for reciprocating said tumbler in synchronism therewith,
(e) first and second electrically operable means for shifting said shiftable means to the respective first and second positions and being electrically connected in parallel to the respective first and second switches whereby the direction of movement of said traverse mechanism is reversed each time said tumbler engages and actuates each of said switches, and
(f) means responsive to each engagement of said tumbler with at least one of said switches for imparting a step in movement to at least one of said switches toward said tumbler thereby to vary correspondingly the range of movement of said traverse mechanism and said tumbler relative to said frame.

3,203,164
STARTING DEVICE FOR AUTOGENERATORS
Auguste Moiroux, Lyon, and Edmond Salel, Meyzieux, France, assignors to Societe d'Etudes et de Participations Eau, Gaz, Electricite, Energie S.A., a society of Switzerland, Geneva, Switzerland
Filed Feb. 1, 1965, Ser. No. 429,296
Claims priority, application France, Feb. 10, 1964, 963,244
4 Claims. (Cl. 60—14)



1. In a group of autogenerators, each of which comprises a casing for compressed air, a motor cylinder in said casing, inlet ports in said motor cylinder adapted to connect the interior space thereof with the interior space of said casing, a motor piston reciprocating in said motor cylinder and uncovering said inlet ports when approaching one of its dead end centres thereby permitting the scavenging of said motor cylinder by the compressed air of said casing, a compressor cylinder connected with said motor cylinder, a compressor piston, integral with said motor piston, reciprocating in said compressor cylinder, means for feeding air in said compressor cylinder on the side of said compressor piston opposite to said motor piston for starting said autogenerator, at least one duct connecting the casings of said autogenerators, the provision of valve members in said duct and of means for holding said valve members in the position for which they shut the connections between the casings at least during the starting period of the operation of said autogenerators.

3,203,165
HYDRAULIC DEVICE
James R. Parr, Watertown, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Aug. 10, 1962, Ser. No. 216,191
4 Claims. (Cl. 60—18)

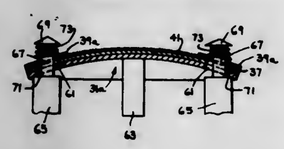


1. A hydraulic system for accelerating an engine comprising

(a) a hydraulic motor connected with the engine for driving same and having inlet and discharge ports;
(b) an auxiliary engine;
(c) a hydraulic motor-pump unit of the overcenter type connected with the auxiliary engine and having

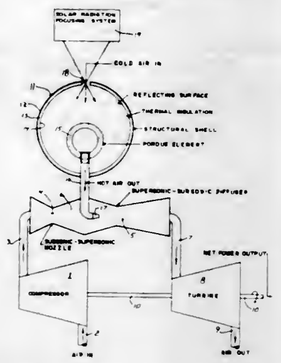
high and low pressure ports and a displacement control element shiftable between first and second maximum displacement positions on opposite sides of a neutral zero displacement position;
(d) an accumulator;
(e) a first conduit connecting the accumulator with the high pressure port of the motor-pump unit;
(f) means biasing the displacement control element toward the first maximum displacement position;
(g) a fluid pressure control motor connected with the displacement control element for moving it toward the second maximum displacement position;
(h) a second conduit connecting the high pressure port of the motor-pump unit with the inlet port of the hydraulic motor;
(i) first and second starter valves controlling flow through the first and second conduits, respectively, each valve being shiftable between open and closed positions;
(j) a control valve having an inlet passage connected with the high pressure port of the motor-pump unit, an outlet passage connected with the control motor, and an exhaust passage and including a movable valve member shiftable between first and second positions in which, respectively, the outlet passage is connected with the exhaust passage and the inlet passage and having an intermediate lap position in which the outlet passage is isolated from both the exhaust passage and the inlet passage;
(k) a spring biasing the valve member toward the first position;
(l) a movable spring seat for the spring shiftable between low spring load and high spring load positions;
(m) means responsive to the pressure in the inlet passage for urging the valve member toward the second position;
(n) a first actuating motor acting in opposition to the spring;
(o) a second actuating motor connected with the movable spring seat and arranged to move the seat toward the high spring load position;
(p) reservoir means connected with the low pressure port of the motor-pump unit, the discharge port of the hydraulic motor, and the exhaust passage of the control valve;
(q) means for selectively energizing and de-energizing the first actuating motor; and
(r) means for selectively energizing and de-energizing the second actuating motor.

3,203,166
THERMOSTATIC ELEMENTS
Charles D. Flanagan, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Sept. 8, 1961, Ser. No. 136,956
8 Claims. (Cl. 60—23)



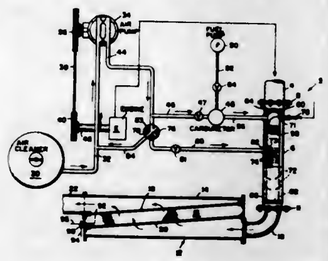
1. A thermostatic device comprising a snap-acting thermostatic disk having a layer of electrical insulating material, an electrical resistance heater for said element comprising a film bonded to said layer, said disk, layer and film having holes therein, electrically conductive supports for said disk extending through said holes, and electrically conductive springs on said supports, one end of each spring being in contact with the respective support and the other end of each spring making electrical contact with said film.

3,203,167
MEANS AND METHOD OF UTILIZING SOLAR ENERGY
Leon Green, Jr., Corona del Mar, Calif.
(5117 Westpath Way, Washington 16, D.C.)
Filed July 6, 1962, Ser. No. 208,073
3 Claims. (Cl. 60—26)



1. Means for producing useful power comprising: a compressor having an outlet for compressed gas; a turbine for driving said compressor; nozzle means connected to said outlet for directing compressed gas to flow in a stream at high velocity; means for heating and directing a secondary gas into said high velocity stream adjacent said nozzle; diffuser means for confining said stream of mixed gases to flow at reduced velocity and for directing the same to said turbine to drive the same, said means for heating and directing said secondary gas comprising a porous wall exposed on one side to ambient atmosphere and conduit means communicating with the other side thereof and extending to said position adjacent said nozzle; and means for concentrating solar energy on said one side of said porous wall.

3,203,168
METHOD AND APPARATUS FOR IMPROVING THE PURIFICATION OF EXHAUST GASES FROM AN INTERNAL COMBUSTION ENGINE
William R. Thomas, Paoli, Pa., assignor to Oxy-Catalyst, Inc., Berwyn, Pa., a corporation of Pennsylvania
Filed May 21, 1962, Ser. No. 196,260
4 Claims. (Cl. 60—30)



1. In combination with an engine having an exhaust system provided with an exhaust pipe for conveying exhaust gases from the engine and an exhaust purifier containing an oxidation catalyst for the oxidation of the oxidizable constituents of the exhaust gases into which the exhaust pipe discharges, the improvement comprising a casing having an open end and forming a combustion chamber secured with said exhaust pipe with the open end at the downstream end of the casing, a carburetor, a fuel line connected to said carburetor, air supply means connected to said carburetor, means to convey an air fuel mixture from the carburetor to the combustion chamber, means to ignite said air fuel mixture in the combustion chamber, a line connected to said air supply means and connected to the combustion chamber downstream of the connection of the air fuel mixture conveying means to the combustion chamber to supply secondary air to the combustion chamber and air for oxidation of oxidizable constituents in the exhaust gases by the oxidation catalyst, means responsive to a predetermined minimum temperature of the oxidation catalyst to stop the flow of fuel through the fuel line to the carburetor and to stop the flow of air through said line connected to said air supply means.

3,203,169
IRRADIATED POLYMERS AND PROPULSION PROCESS
Gaetano F. D'Alelio, South Bend, Ind., assignor to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed Apr. 24, 1958, Ser. No. 730,531
28 Claims. (Cl. 60—35.4)

1. A solid propellant fuel consisting essentially of an irradiated paraffin mass containing about 0.1–50 percent by weight of a polyunsaturated crosslinking modifier, based upon the combined weight of said paraffin and said modifier, and having a tubular shape with substantially uniform cross section throughout its length, said mass having been exposed to at least two and no more than 100 megareps of high-energy, ionizing radiation derived from an energy source equivalent to at least 100,000 electron volts, said polyunsaturated crosslinking modifier being selected from the class consisting of polyunsaturated compounds having one of the following formulas:

(a) $R_2C{=}CR{-}Z{-}CR{=}CR_2$

(b) $RC{\equiv}C{-}Z{-}CR{=}CR_2$

(c) $RC{\equiv}C{-}Z{-}C{\equiv}CR$

(d) $R_2C{=}CR{-}K{-}\overset{O}{\overset{\|}{C}}{-}X{-}Z{-}X{-}\overset{O}{\overset{\|}{C}}{-}K{-}CR{=}CR_2$

(e) $R_2C{=}CR{-}K{-}\overset{O}{\overset{\|}{C}}{-}X{-}Z{-}\overset{O}{\overset{\|}{C}}{-}X{-}K{-}CR{=}CR_2$

(f) $R_2C{=}CR{-}K{-}\overset{O}{\overset{\|}{C}}{-}X{-}Z{-}X{-}K{-}CR{=}CR_2$

(g) $R_2C{=}CR{-}K{-}X{-}\overset{O}{\overset{\|}{C}}{-}Z{-}\overset{O}{\overset{\|}{C}}{-}X{-}K{-}CR{=}CR_2$

(h) $R_2C{=}CR{-}K{-}X{-}\overset{O}{\overset{\|}{C}}{-}Z{-}X{-}K{-}CR{=}CR_2$

(i) $R_2C{=}CR{-}K{-}X{-}Z{-}X{-}K{-}CR{=}CR_2$

(j) $R_2C{=}CR{-}K'{-}\overset{O}{\overset{\|}{C}}{-}X{-}K'{-}CR{=}CR_2$

(k) $R_2C{=}CR{-}K''{-}X{-}K''{-}CR{=}CR_2$

(l) $R_2C{=}CR{-}K'{-}CR{=}CR_2$

(m) $R_2C{=}CR{-}K''{-}\overset{O}{\overset{\|}{C}}{-}X{-}K'{-}CR{=}CR_2$

(n) $R_2C{=}CR{-}K'{-}X{-}K'{-}CR{=}CR_2$

wherein Z is a divalent group having at least two carbon atoms between said valencies and being selected from the class consisting of divalent hydrocarbon, divalent pyridine, divalent piperidine, divalent morpholine, divalent furane, divalent pyrimidine, and divalent piperazine groups, and the hydrocarbon, chloro, fluoro, alkoxy, cycloalkoxy, alkaryloxy, aralkoxy, acyloxy, cyano, —COOR" and —CH_2COOR" derivatives thereof; K represents a symbol selected from the class consisting of Z and a single bond connecting the two atoms of the formula adjacent to and connected to K; X is selected from the class consisting of oxygen and NR_3"; K' and K" are the same as defined above for K, except that in Formula (*g*) the sum of the carbon atoms between the valencies in the two K" is at least two, in the formula (*k*) the sum of the carbon atoms between the valencies in the two K"'s is at least three, in Formulas (*l*), (*m*) and (*n*) when K' and K" represent a divalent radical, then both valencies are attached to the same carbon atom in said radical, and in Formula (*m*) only one of the symbols selected from the class consisting of K" and K' can represent a divalent radical; R" represents a radical selected from the class consisting of hydrogen and hydrocarbon groups; and R represents a radical selected from the class consisting of hydrogen, hydrocarbon groups and the chloro, fluoro, alkoxy, aryloxy, cycloalkoxy, alkaryloxy, aralkoxy, acyloxy, cyano, —COOR" and —CH_2COOR" derivatives of hydrocarbon groups.

27. In a process of propelling a rocket by a rocket motor consisting essentially of a thrust chamber and exhaust nozzle, the step of combusting an irradiated crosslinked mass consisting essentially of paraffin and 0.1–50% by weight of a polyunsaturated crosslinking modifier, as rectified in claim 1, based upon the combined weight of said paraffin and said modifier, said mass being contained in the fuel chamber of a rocket and having an elongated shape with at least one opening extending linearly in said mass, said linear opening being adapted to permit the escape of combustion products from only one end thereof, and said mass having been exposed to at least 2 and no more than 100 megareps of high-energy, ionizing radiation derived from an energy source equivalent to at least 100,000 electron volts.

3,203,170
IRRADIATED POLYMERS AND PROPULSION PROCESS
Gaetano F. D'Alelio, South Bend, Ind., assignor to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed Apr. 24, 1958, Ser. No. 730,532
23 Claims. (Cl. 60—35.4)

20. A process of propelling rockets comprising the step of combusting an irradiated crosslinked mass consisting essentially of a polymeric oxygenated hydrocarbon consisting essentially of a plurality of repeating units having the formula

$$-CH-\overset{X''}{\overset{|}{C}}-$$
$$\quad\;\; X' \quad X$$

wherein X, X', and X" are selected from the class consisting of hydrogen, alkyl, and aryl hydrocarbon radicals and derivatives of said alkyl and aryl hydrocarbon radicals containing a group selected from the class consisting of carboxylic ester, ether, and acetal groups, said derivative radicals having no non-hydrocarbon groups therein other than said carboxylic ester, ether, and acetal groups, at least one of said X, X', and X" radicals being one of said derivative radicals and at least one of said X, X', and X" radicals being hydrogen, and 1–95 percent by weight of an oxidizing agent selected from the class consisting of potassium perchlorate, potassium nitrate, potassium permanganate, potassium iodate, potassium dichromate, ammonium perchlorate, ammonium nitrate, ammonium persulfate, manganese dioxide, perchloric acid,

chloric acid, and aryl perchloryl compounds, said mass being contained in the fuel chamber of a rocket and having a tubular shape having substantially uniform cross-section throughout its length, said tubular shape being adapted to permit escape of combustion products from only one end of the linear opening therein, and said mass having been exposed to at least two megareps and no more than about 100 megareps of high energy, ionizing radiation derived from an energy source equivalent to at least 100,000 electron volts.

3,203,171

NEW MISSILE FUEL COMPOSITIONS CONTAINING HALOGENS AND METHOD OF PROPULSION

Oliver Wallis Burke, Jr., 1238 Berkshire Road, Grosse Pointe Park, Paul Davis, Mount Clemens, and Urs F. Nager, Royal Oak, Mich.; said Davis and Nager assignors to said Burke

No Drawing. Filed Dec. 18, 1958, Ser. No. 781,217
9 Claims. (Cl. 60—35.4)

1. A high energy fuel composition consisting essentially of a system of reactants adapted to undergo rapid combustion, said system having as its predominant exothermal reactants metal as fuel element and fluorine as oxidizing element, said system characterized in that said oxidizing element prior to combustion of the system is present in the system as material selected from Class (I) as hereinafter defined, and in that said fuel element prior to combustion of the system is present in the system as material selected from Class (II) as hereinafter defined with the limitation that at least the predominant portion of said oxidizing element is made up of material selected from group I(*b*) and in that the halogen content and metal content of said predominant reactants are present in the system in approximately stoichiometric proportions to form metal halide; said class (I) consisting of group I(*a*) fluorine itself, the compounds of fluorine with other halogens, the oxygen compounds of the foregoing, the nitrogen compounds of the foregoing, and mixtures of the foregoing; group I(*b*) the organic compounds of fluorine consisting principally of fluorine and carbon, and mixtures thereof; and group I(*c*) mixtures of materials selected from group I(*a*) with material selected from group I(*b*); and said Class (II) consisting of group II(*a*) the metals, and mixtures and alloys thereof in attenuated form; group II(*b*) the organo-metallic-compounds and mixtures thereof; group II(*c*) the metal hydrides and metal-nitrogen compounds and mixtures thereof; and group II(*d*) mixtures of at least two materials selected from different ones of said groups II(*a*), II(*b*) and II(*c*); said system further characterized in that at least a substantial part of said fuel element is selected from said group II(*a*) and at least a further substantial part of said fuel element is selected from said group II(*b*).

4. A process of generating energy which comprises burning in a combustion chamber a fuel system according to claim 1.

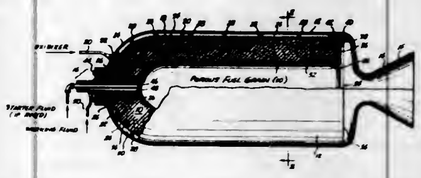
3,203,172

METHOD OF PROPULSION UTILIZING HYBRID REACTION ENGINE WITH POROUS FUEL GRAIN

George S. Sutherland, Seattle, Wash., assignor to Rocket Research Corp., Seattle, Wash., a corporation of Washington

Filed June 27, 1962, Ser. No. 205,688
12 Claims. (Cl. 60—35.4)

1. The method of generating propulsion by combustion of a porous fuel grain and a fluid oxidizer in the reaction chamber of a propulsion reaction engine, said method comprising: delivering the oxidizer into the reaction chamber through the pores of the porous fuel grain; and combusting the fuel and oxidizer as the oxidizer emerges into the reaction chamber.

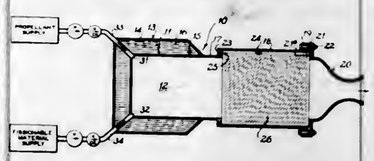


3,203,173

FISSIONABLE FUEL POWER PLANT

Richard Madey, Bellport, N.Y., assignor to Republic Aviation Corporation, Farmingdale, N.Y., a corporation of Delaware

Filed Aug. 16, 1961, Ser. No. 131,853
4 Claims. (Cl. 60—35.5)



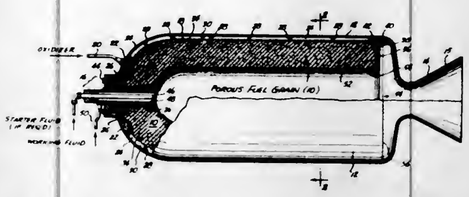
1. In a thrust-producing power plant including a fission chamber adapted to receive and intimately mix a fissionable fuel and a propellant fluid producing a gaseous mixture, the combination with an outlet in the form of a nozzle in communication with said chamber for ejection of said mixture from said chamber, of a plug formed of multiple porous pellets disposed in localized area contact with one another and transversely filling an area of said power plant between said chamber and said nozzle, each of said pellets being fabricated of a material having a relatively high preferential affinity to the fissionable ingredients in said mixture and substantially no affinity to the propellant ingredients in said mixture.

3,203,174

HYBRID REACTION ENGINE WITH POROUS FUEL GRAIN

George S. Sutherland, Seattle, Wash., assignor to Rocket Research Corp., Seattle, Wash., a corporation of Washington

Original application June 27, 1962, Ser. No. 205,688. Divided and this application July 23, 1964, Ser. No. 389,236
22 Claims. (Cl. 60—35.6)



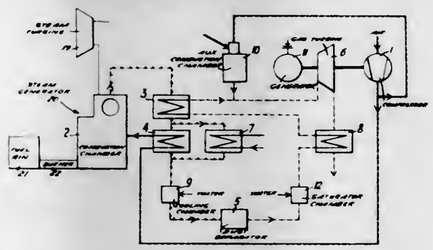
1. In a hybrid type propulsion reaction engine of the type utilizing a solid state fuel and a fluid state oxidizer; a propulsion reaction chamber in part defined by a porous fuel grain; and means including said porous fuel grain for delivering fluid oxidizer into said reaction chamber.

3,203,175

SYSTEM OF OPERATION OF A STEAM-GAS CIRCUIT OR OF A GAS CIRCUIT FOR GAS TURBINES COMPRISING A COMBUSTION CHAMBER FOR SOLID FUEL

Ladislav Michalička, 8 Amurska, Prague 10, Czechoslovakia, and Bohuslav Limpouch, 1214 Pushkinova, Hradec Kralove, Czechoslovakia

Filed July 31, 1962, Ser. No. 213,717
10 Claims. (Cl. 60—39.02)



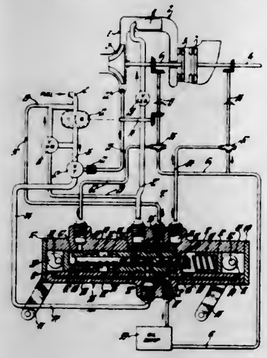
1. A method of operating a gas turbine which comprises:
(a) feeding a solid fuel and air under pressure higher than atmospheric pressure to a combustion zone;
(b) burning said fuel with said air in said zone, whereby a hot gas of combustion having solid material suspended therein is formed;
(c) cooling said gas and the suspended material to a lower temperature;
(d) separating the suspended material from the cooled gas;
(e) heating the separated gas first by heat exchange with an expanded gas and thereafter by heat exchange with said hot gas of combustion, whereby said hot gas of combustion is cooled to said lower temperature, said higher pressure being maintained during said burning, said cooling, said separating, and said heating; and
(f) expanding said heated gas in a gas turbine, whereby said turbine is driven, and the expanded gas for said heat exchange with said separated gas is obtained.

3,203,176

ENGINE GOVERNOR

Richard M. Zeek, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 23, 1962, Ser. No. 219,071
9 Claims. (Cl. 60—39.16)



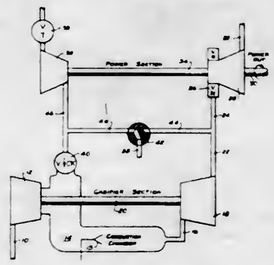
1. In a fuel controlling system for a gas turbine engine including independently rotatable turbines and engine fuel regulating means; engine governing means responsive to the speed of both turbines and effective to limit engine fuel upon overspeed of either turbine comprising, in combination, a body defining a cylinder, a sleeve reciprocably mounted in the cylinder, a spring abutment adjustable in the cylinder, a first spring connecting the abutment and sleeve, a valve spool reciprocably mounted in the sleeve, a slider adjustable in the cylinder, a second spring connecting the spool and slider; first means transmitting a first pressure representative of the speed of one turbine, second means transmitting a second pressure representative of the speed of the other turbine, means in the body communicating the first pressure to one end of the sleeve so as to bias it in opposition to the first spring, means in the body and abutment communicating the second pressure to one end of the spool so as to bias the spool in opposition to the second spring, the pressure biases on the sleeve and spool being in opposite directions; and valve port means defined by the sleeve and spool connected in series with the said engine fuel regulating means.

3,203,177

BRAKE AND REVERSE DRIVE FOR GAS TURBINE ENGINES

Lloyd E. Johnson, East Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Aug. 19, 1963, Ser. No. 302,908
3 Claims. (Cl. 60—39.16)



1. In a gas turbine engine having a compressor and compressor turbine on a common shaft and a combustion chamber between the compressor and turbine, a power turbine, a power shaft driven thereby, an auxiliary compressor driven by said power shaft, a first passage for gas between said compressor turbine and said power turbine, a variable nozzle between said passage and the power turbine, a second passage for gas between said auxiliary compressor and said combustion chamber, a check valve to admit gas from the auxiliary compressor to the combustion chamber, a bypass between the first passage upstream of the variable nozzle and the second passage upstream of said check valve, and a three-way valve in said bypass to close the bypass and vent the auxiliary compressor or close the vent and open the bypass.

3,203,178

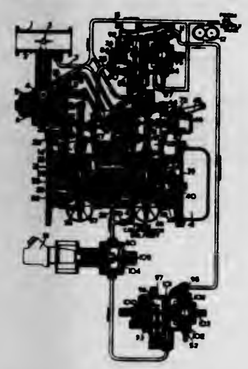
FUEL SYSTEM FOR SUPPLYING GASEOUS FUEL TO A COMBUSTION CHAMBER

Harold Saville and Robin Michael Dakin, Coventry, England, assignors to Bristol Siddeley Engines Limited, Bristol, England

Filed May 23, 1963, Ser. No. 282,708
Claims priority, application Great Britain, June 6, 1962, 21,826/62
3 Claims. (Cl. 60—39.28)

1. A fuel system, for supplying gaseous fuel to a combustion chamber of a gas turbine engine or power plant, comprising a flow-controlling valve in the fuel supply line

leading to the combustion chamber, fluid-actuable means for operating said flow-controlling valve, a pivotally-mounted arm, a fluid control valve, carried on said arm and operable to move said fluid-actuable means, pressure-responsive means, directly responsive to the delivery pressure of a compressor arranged to supply air to the combustion chamber and to the pressure of the fuel downstream of said flow-controlling valve, said pressure-responsive means acting on said arm and being operable to control the amount of opening of said fluid control valve, said fluid-actuable means including a chamber, having an inlet to which a pressure fluid is admitted under the control of said fluid control valve and having an outlet; a piston movable in said chamber in response to the pressure of fluid therein, said piston being movable in the opening sense of said flow-controlling valve, when said fluid control valve opens to admit said fluid at a faster rate than it leaves the chamber, and in the closing sense,



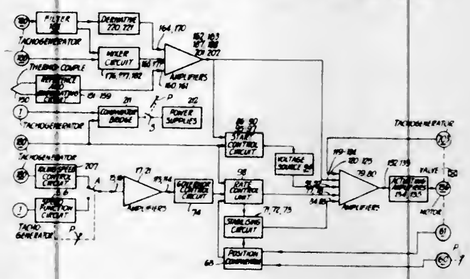
when said fluid control valve moves towards its closed position to admit said fluid at a slower rate than it leaves the chamber, the fuel system also including a second pivotally-mounted arm, a second fluid control valve, said second fluid control valve being carried on said second arm and operable to control the flow of fluid through said outlet, said second fluid control valve being connected in series with said inlet, that is said first-mentioned, fluid control valve, a governor rotatable by a turbine of the engine or plant, pressure-responsive means, responsive to fluid pressure developed by said governor, said latter pressure-responsive means acting on said second arm and operable to control the amount of opening of said second fluid control valve, the latter normally being closed, except for a restricted leak path, when said inlet fluid control valve is open, and said inlet fluid control valve normally being open to a preadjustable setting when said second fluid control valve is open.

3,203,179
ENGINE CONTROL SYSTEMS

Benjamin E. Blackaby, Chalfont St. Peter, England, assignor, by mesne assignments, to The De Havilland Aircraft Company Limited, Hatfield, England, a company of Great Britain

Original application July 13, 1960, Ser. No. 42,585, now Patent No. 3,151,450, dated Oct. 6, 1964. Divided and this application Aug. 10, 1964, Ser. No. 388,571
Claims priority, application Great Britain, July 17, 1959, 24,718/59, 24,719/59, 24,720/59, 24,721/59
20 Claims. (Cl. 60—39.28)

1. A control system for starting a gas turbine engine, the system including a control valve for controlling the fuel supply to said engine, actuating means operable in response to an electrical input signal to change the setting of said control valve, first means responsive to engine speed and to ambient temperature and to engine temperature to derive an electrical temperature signal representing the amount by which said engine temperature is exceeded by a datum temperature which is a function of engine speed and of ambient temperature, second means responsive to engine speed and to the difference between the actual and desired settings of said control valve to derive an electrical rate-control signal, third means responsive to the engine speed and supplied with said temperature signal to derive an electrical biassing signal and

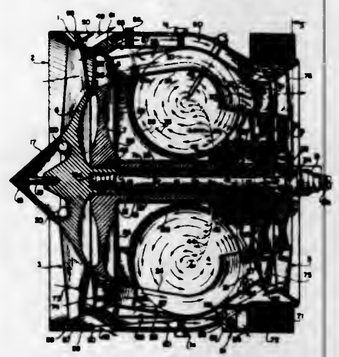


including circuit means operable to cut-off said biassing signal upon attainment by said engine of a predetermined operating condition, and electrical mixing means supplied with said temperature signal and said rate-control signal and with said biassing signal in opposition to said rate-control signal to derive an electrical input signal and apply it to said actuating means, said rate-control signal being rendered substantially ineffective by said biassing signal until said predetermined operating condition of said engine is attained.

3,203,180
TURBO-JET POWERPLANT

Nathan C. Price, Westwood, Calif.
(78 Ramblas de los Capuchinos, Barcelona, Spain)

Filed Mar. 16, 1960, Ser. No. 15,088
1 Claim. (Cl. 60—39.29)



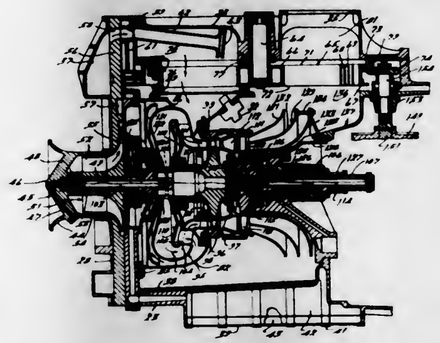
An axial flow turbo-jet powerplant comprising: an annular unitary outer casing member, a multi-stage compressor section, a turbine section, said compressor section driven by the turbine section through a shaft means interconnecting said compressor and turbine sections, an inner casing structure formed by a plurality of annular segments each connected to the outer casing member, said segments forming an inner casing structure extending axially between the compressor section and turbine section and containing passages for airflow therebetween including a combustion section, the inner radial portions of the inner casing segments arcuately shaped around the powerplant axis and providing bearing surfaces for the compressor-

turbine shaft, said inner casing segments radially spaced from the outer casing member forming an annulus therebetween, said annulus extending from adjacent the tips of a compressor stage to the turbine section for passage of some of the airflow directly from the compressor to the turbine to bypass the combustion section, a plurality of controllable spill gate means adjacent the vane tips of a compressor stage upstream of the stage adjacent the annulus, and control means responsive to the fluid flow conditions in the bypass interconnected with the controllable spill gate means for varying the amount of spill air therethrough.

3,203,181
GAS TURBINE

Jack J. Benson, Lathrup Village, Mich., assignor to Williams Research Corporation, Walled Lake, Mich., a corporation of Michigan

Filed Oct. 18, 1962, Ser. No. 231,509
18 Claims. (Cl. 60—39.51)



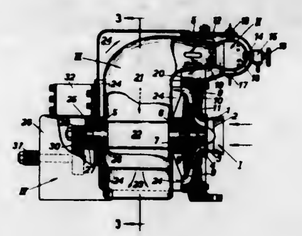
1. In combination, a gas turbine having a centrifugal compressor, a pair of rotatable regenerators on opposite sides of the compressor axis and on a common axis transverse to the compressor axis, covers for the outwardly facing surfaces of said regenerators, each cover having portions forming a compressed air inlet chamber and an exhaust chamber, means for conducting compressed air from said compressor to said compressed air inlet chambers, seals between said compressed air inlet chambers and said regenerators, an annular combustion chamber concentric with said compressor, a dome partially surrounding said combustion chamber and in spaced relation therewith, and means for conducting heated compressed air from the inwardy facing surfaces of said regenerators to the dome interior.

3,203,182
TRANSVERSE FLOW TURBINES

Lothar L. Pohl, 578 Huron St., Toronto, Ontario, Canada

Filed Apr. 3, 1963, Ser. No. 270,367
4 Claims. (Cl. 60—39.75)

1. In a transverse-flow turbine, an outer casing, a turbine housing mounted within said outer casing and spaced therefrom to provide circulation of air around said housing, said housing having a tapered inlet at its top and having a relatively large outlet through its lower end, a combustion chamber in said tapered end of said housing, an inlet for fuel to said combustion chamber, fuel ignition means, a horizontally disposed rotor shaft extending transversely within said housing and extending beyond said housing at each side of the latter, said rotor shaft being journaled exteriorly of said housing, power take-off means engaging with said shaft at one end of said shaft, means within said housing for restricting the flow fluid downwardly in said housing to a narrow discharge mouth extending transversely of the housing

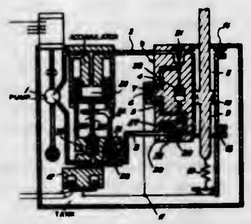


above said rotor shaft, and a rotor mounted on said shaft, said rotor comprising a plurality of angularly related surfaces adapted to be impinged at points near and over the outer edges of said surfaces.

3,203,183
DEVICE FOR ENSURING THE AUTOMATIC RETURN OF A SERVO-MOTOR TO ITS EXTREME POSITION IN THE EVENT OF FAILURE OF THE HYDRAULIC SUPPLY

René Lucien, Neuilly-sur-Seine, France, assignor to Societe a Responsabilite Limitee Recherches Etudes Production R.E.P., Paris, France, a corporation of France

Filed Jan. 29, 1964, Ser. No. 341,042
Claims priority, application France, Feb. 2, 1963, 923,548, Patent 1,355,040
5 Claims. (Cl. 60—51)

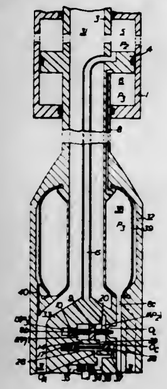


1. In association with a servo-motor comprising hydraulic supply means under pressure, a double-acting hydraulic jack, two supply conduits supplying respectively the two chambers of said jack, a distributor having two orifices and two conduits each coupling one chamber of the jack to one orifice of said distributor, said distributor including a distributor valve for controlling flow of fluid from said orifices and thereby pressure in said chambers, a device ensuring automatic return to an extreme position of the jack in the event of failure of the hydraulic supply means, said device comprising a hydraulic accumulator, locking means for said accumulator, and means for removing the jack from the control of the distributor valve in the event of failure of the hydraulic supply means, the accumulator comprising a movable element and a spring returning said movable element to a discharged position, the movable element of the accumulator being connected to the supply conduit of the first chamber of the jack of said servo-motor, said locking means comprising a piston subjected to the pressure in the supply conduit of the second chamber of the jack of the servo-motor and holding the movable element of the accumulator in a fully closed position by a mechanical coupling.

3,203,184
FLUID PRESSURE MOTIVE SYSTEMS, FOR BOREHOLE DRILLING

Frank Whittle, Walland Hill, Chagford, England, and John Frank Saunders, Northfield, Bristol, England; said Saunders assignor to said Whittle

Filed Oct. 13, 1964, Ser. No. 403,597
Claims priority, application Great Britain, Oct. 15, 1963, 40,667/63
11 Claims. (Cl. 60—52)

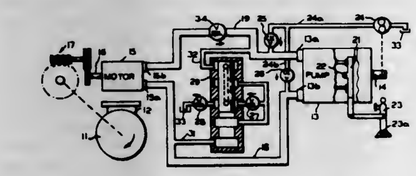


1. Borehole drilling equipment comprising a downhole drilling motor, a hydraulic ram adapted to exert axial force on the drilling motor, a positive displacement pump driven by the motor, means defining a flow path for fluid circulated by the pump, control and loading orifice systems in series in the flow path, means connecting the ram with the flow path so that it is subjected to the pressure drop across the loading orifice system only, first means for varying the area of the loading orifice system, means responsive to the respective pressure drops across the two orifices and operative to actuate the first varying means to maintain a direct proportion between the pressure drops, second means for varying the area of the control orifice system, means responsive to the rate of flow of fluid through the control orifice system and operative to actuate the second varying means to reduce the area of the control orifice system with increase of flow through it and vice versa, and means preventing reduction of the area of the control orifice system below a preselected minimum.

3,203,185
HYDROSTATIC TRANSMISSION

Samuel G. Williams, Cape Vincent, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey

Filed Oct. 24, 1963, Ser. No. 318,639
6 Claims. (Cl. 60—53)

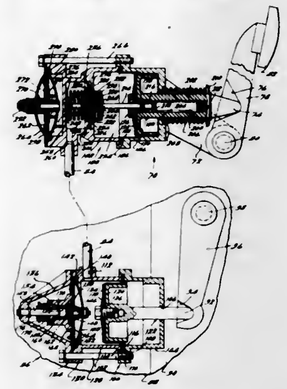


1. A hydrostatic transmission comprising
(a) a reversible pump having inlet and discharge ports;
(b) a reversible motor having inlet and discharge ports;
(c) a first conduit connecting the inlet port of the pump with the discharge port of the motor;
(d) a second conduit connecting the discharge port of the pump with the inlet port of the motor;
(e) a relief valve located in the first conduit and arranged to permit flow from the motor to the pump upon the occurrence of a predetermined pressure differential across the relief valve;
(f) a second relief valve located in the second conduit and arranged to permit flow from the motor to the pump upon the occurrence of a predetermined pressure differential across the relief valve;
(g) a first one-way flow means for permitting flow from one port of the pump to one port of the motor but blocking flow in the reverse direction; and
(h) second one-way flow means for permitting flow from the other port of the pump to the other port of the motor but blocking flow in the reverse direction.

3,203,186
FORCE TRANSMITTING SYSTEM

William L. Sheppard, Romulus, Mich., assignor of one-half to Edwin J. Lukas, Dearborn, Mich.

Filed Aug. 25, 1960, Ser. No. 51,912
38 Claims. (Cl. 60—54.5)

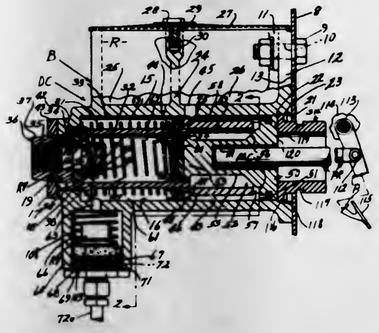


1. In a sealed force transmitting hydrostatic system for association with an actuating device and a responding device, and including an actuating transducer for converting force applied thereto by the actuating device into liquid pressure and a responding transducer for converting liquid pressure applied thereto into force appliable to the responding device, the improvement in which each of said transducers comprises a hollow cylinder assembly having an interior wall surface and a cavity therewithin, a rolling lobe diaphragm having a peripheral lip fixed with respect to said cylinder assembly, and a piston secured to said diaphragm and movable longitudinally of said cylinder assembly and substantially coaxially therewith and connectable to one of the actuating and responding devices; said diaphragm having a surface engageable with the interior wall surface of said cylinder assembly and with said piston and transferring from one to the other during movement of said piston longitudinally of said cylinder assembly and having a rolling lobe between said interior wall surface of said cylinder assembly and said piston; a sealed liquid conduit sealed to and interjoining said cavities of said transducers, a liquid having a temperature coefficient of expansion filling said cavities and said conduit, the effective volumes of said cavities varying inversely with one another as said pistons move during operation of the system, each of said pistons being movable to a position within its associated cylinder assembly to cause the cavity to be generally tubular in form over a portion of its length, at least one of said tubular formed cavities existing at all conditions of operation of the system, said cylinder assembly of at least one of said transducers having a higher temperature coefficient of expansion than the piston thereof for increasing hte percentage differential rate of volume change of the cavity with a change in temperature.

3,203,187
DUAL-CYLINDER HYDRAULIC ACTUATOR FOR AUTOMOTIVE CLUTCH AND BRAKE CONTROL

Glenn T. Randol, 3 E. 2nd Ave., Loch Lynn, Mountain Lake Park, Md.

Filed Apr. 29, 1963, Ser. No. 276,634
26 Claims. (Cl. 60—54.6)



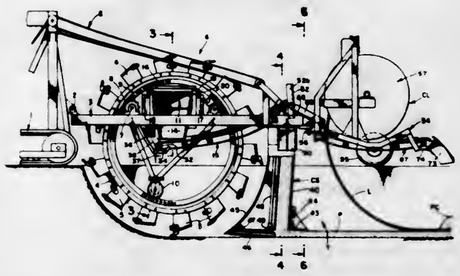
9. In a combined dual master cylinder and a two-compartment fluid supply reservoir therefor: a pair of coaxial telescopically-related cylinders; a pair of pistons reciprocable in said cylinders, respectively; spring means for biasing said pistons toward fully retracted positions; a pair of compensating ports between said reservoir compartments and cylinders, respectively, said ports being normally open when said pistons are fully retracted; an intake port between said pistons and one of said reservoir compartments; a fluid-retaining land slidably interfitting one of said cylinders and cooperable with both of said pistons to define a pair of overlapping concentrically-related annular constant volume static fluid chambers normally communicating with said intake port and the compensating port controlled by one of said pistons; a one-way force-transmitting mechanical connection between said pistons enabling operating force to simultaneously actuate both pistons in a fluid-pressurizing direction; an operator-operated member operable from normally released position to actuate said pistons to initially close said compensating ports and then pressurize the fluid within said cylinders; and a pair of discharge ports communicating with said cylinders, respectively, for conveying such pressurized fluid therefrom.

3,203,188
METHOD AND APPARATUS FOR PREPARING A TRENCH FOR A SUBSURFACE CONDUIT LINE AND FOR LAYING SUCH A LINE

Clifford J. Evans, Pasadena, Calif., assignor to Jetco, Inc., Alhambra, Calif., a corporation of California

Filed Oct. 23, 1961, Ser. No. 146,945
8 Claims. (Cl. 61—72.6)

1. Apparatus for preparing a trench for a subsurface conduit line and laying such a line, comprising: a trenching machine having digging means operable for progressively removing ground along a given path to form a trench; separating means connected to said machine operable to separate from the ground removed in the forming of the trench, the finer particles of such ground; discharging means operatively connected with said separating means for discharging the coarse particles of such removed ground on the surface of the ground to one side of the mouth of the trench; a first depositing means operatively connected with said separating means for depositing on the surface of the ground on the other side of the mouth of said trench, a pile of said fine particles

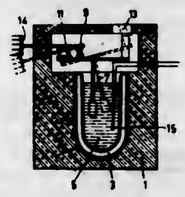


that is subject to use in filling the trench; a second depositing means operatively connected with said separating means for depositing along the bottom of said trench an amount of said fine particles to form a pad for supporting a conduit; conduit laying means connected to said machine operable to lay a conduit on said pad; and conduit covering means operatively connected to said machine for depositing into the trench from said pile on the ground an amount of said fine particles for covering the conduit laid on said pad.

3,203,189
DEVICE FOR MAINTAINING A CONSTANT TEMPERATURE OR DENSITY IN A LIQUID

Alfred Vogt, Aachen-Forst, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 26, 1963, Ser. No. 333,480
Claims priority, application Germany, Jan. 31, 1963, P 31,045
12 Claims. (Cl. 62—3)



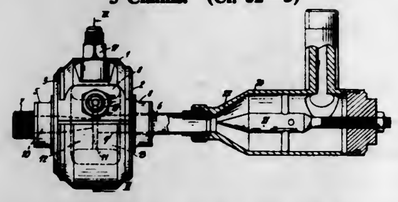
1. Apparatus for controlling the temperature or density of a liquid, comprising a container which holds said liquid, heat transfer means immersed in said liquid to a given level and having a given surface area in thermal contact therewith at a predetermined value of temperature or density of said liquid, thermoelectric heat absorbing means in thermal contact with said heat transfer means, and means for movably mounting said heat transfer means in said liquid, said heat transfer means being responsive to a change in temperature or density of said liquid from said predetermined values for varying its level of immersion thereby varying the surface area of said heat transfer means which contacts said liquid so that the amount of thermal energy extracted from said liquid is varied.

3,203,190

DEVICE FOR THE THERMIC TREATMENT OF GASES REQUIRED TO UNDERGO A SUDDEN RISE AND THEN AN ABRUPT DROP IN TEMPERATURE

Maxime Louis Jentet, Chatou, Seine-et-Oise, France, assignor to Societe Anonyme des Usines Chausson, Asnieres, Seine, France, a company of France

Filed June 24, 1963, Ser. No. 289,908
Claims priority, application France, July 5, 1962, 903,104, Patent 1,335,126
5 Claims. (Cl. 62—5)



1. Apparatus for the thermic treatment and temperature fractionization of gases, comprising

a body containing an annular chamber defining a central cylindrical core, said core containing intermediate its ends a cylindrical space transverse of the core axis for dividing said core into two axially-spaced portions, said body containing also an inlet for introducing a gas tangentially into said annular chamber, and a pair of outlets arranged at the ends of said body, respectively, coaxially with respect to said annular chamber, each of said outlets being in communication at one end with the central portion of said cylindrical space;

vortical tube cooling cell means mounted coaxially in said cylindrical space, said cooling cell means containing a central active chamber in communication at each end with said outlets, respectively, and a plurality of generally radial ducts communicating at opposite ends with said annular chamber and said central active chamber, respectively, each of said ducts being of a generally spiral shape of the logarithmic type and converging in the direction of said central active chamber;

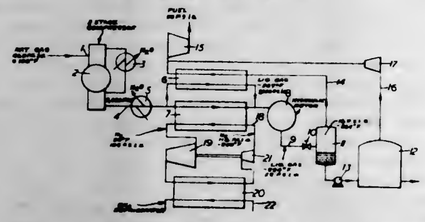
and a spark plug mounted in said body adjacent said inlet for heating the gas prior to its entry into the cooling cell ducts, whereby hot and cold fractions of the gas are evacuated from the body via said outlets, respectively.

3,203,191

ENERGY DERIVED FROM EXPANSION OF LIQUEFIED GAS

Michael Joseph French, New Malden, England, assignor to Couch International Methane Limited, Nassau, Bahamas, a company of the Bahamas

Filed July 20, 1961, Ser. No. 125,398
Claims priority, application Great Britain, Sept. 2, 1960, 30,348/60
11 Claims. (Cl. 62—9)



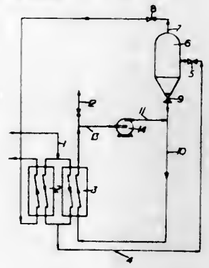
1. A process for the liquefaction of a gas in which the gas is liquefied under a high pressure and the pressure of the liquefied gas is then reduced, the method of effecting such reduction in pressure comprising passing the liquefied gas at the high pressure through a hydraulic motor while maintaining the back pressure on the motor in excess of the saturation pressure of the liquid whereby substantially no gas phase is formed in the motor and energy is produced.

3,203,192

COOLING A GASEOUS MIXTURE WITH A SOLID CONTAMINANT IN VAPOR CARRIER

Hadi Hashemi Tafreshi, London, England, assignor to Couch International Methane Limited, Nassau, Bahamas, a company of the Bahamas

Filed Aug. 15, 1961, Ser. No. 131,652
Claims priority, application Great Britain, Nov. 29, 1960, 40,916/60
12 Claims. (Cl. 62—12)



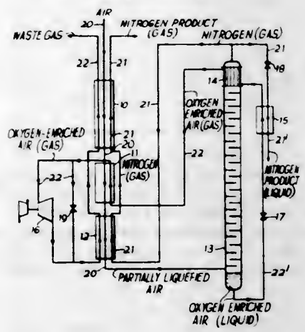
1. A method of purifying a gas containing contaminants which solidfy at higher temperatures than does the gas under treatment which comprises continuously cooling a stream of the gas under superatmospheric pressure, expanding the cold stream of the gas to such conditions of temperature and pressure that the said contaminants precipitate from the gas as a solid, continuously separating the solid contaminant from the purified gas, mixing the separated solid contaminant with vaporised contaminant in sufficient amount to produce a flowable mixture which behaves as a gas, passing said flowable mixture through a heater to vaporise it completely and using part of this resulting vapour as said vaporised contaminant.

3,203,193

PRODUCTION OF NITROGEN

Martin Siegfried William Ruhemann, Brooklands, Sale, and William Leslie Seddon, Sale, England, assignors to Petrocarbon Developments Limited, London, England

Filed Feb. 6, 1963, Ser. No. 256,741
8 Claims. (Cl. 62—13)



1. A process for producing highly pure nitrogen at a substantial superatmospheric pressure from air which has been compressed to about said superatmospheric pressure and from which CO_2 and moisture have been removed, comprising the steps of:

(a) cooling said air at about said superatmospheric pressure to a temperature at which a minor part of said air is liquefied;

(b) supplying the resulting partially liquefied air to the base of a single fractionating column having a condenser for providing reflux at the upper end thereof and operating at about said superatmospheric pressure;

(c) separating said supplied air in said column into a highly pure nitrogen gas as overhead product and an oxygen-enriched liquid air as bottoms product;

(d) withdrawing said oxygen-enriched liquid air from the bottom of said column and expanding the same to a pressure intermediate said superatmospheric pressure and atmospheric pressure;

(e) passing said expanded oxygen-enriched liquid air through said condenser in indirect heat exchange with the nitrogen gas separated in the upper end of said column whereby said oxygen-enriched liquid air is evaporated in said condenser in condensing nitrogen gas to provide reflux for said column;

(f) withdrawing said evaporated oxygen-enriched liquid air from said condenser and passing the same in indirect heat exchange with incoming air to cool said incoming air and warm said evaporated oxygen-enriched liquid air;

(g) then expanding at least a part of said warmed oxygen-enriched air to a pressure close to atmospheric pressure in an expansion turbine thereby to produce cold for use in said process;

(h) utilizing the oxygen-enriched air at close to atmospheric pressure to cool incoming air by indirect heat exchange and then venting it from the process;

(i) withdrawing gaseous nitrogen product from the top of said column;

(j) passing at least a part of said withdrawn gaseous nitrogen product in indirect heat exchange with incoming air to cool said incoming air; and

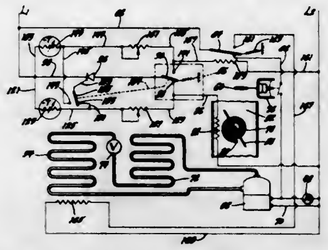
(k) then collecting at least said part of said withdrawn gaseous nitrogen product at substantially said superatmospheric pressure.

3,203,195

REFRIGERATING APPARATUS

Everett C. Armentrout, New Carlisle, and Fred L. Pansing, Brookville, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 27, 1963, Ser. No. 283,290
8 Claims. (Cl. 62—156)



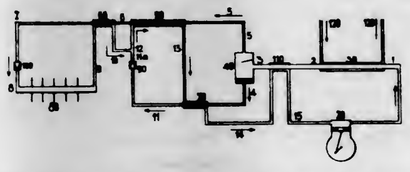
1. Refrigerating apparatus including insulated walls enclosing below and above freezing storage compartments separated from each other, means forming an evaporator compartment having inlet and outlet passage means connecting with said below and above freezing compartments, an evaporator associated with said evaporator compartment, a temperature responsive resistance responsive to the temperature in said above freezing compartment, electrically controlled means for controlling the flow of air between said evaporator compartment and said above freezing compartment, a semiconductor control means connected in controlling relationship with said electrically controlled means, said temperature responsive resistance being connected in controlling relationship with said semiconductor control means.

3,203,194

COMPRESSION PROCESS FOR REFRIGERATION

Andrija Fuderer, Zagreb, Yugoslavia, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed Nov. 26, 1963, Ser. No. 325,875
Claims priority, application Germany, Dec. 1, 1962, F 38,442
7 Claims. (Cl. 62—114)



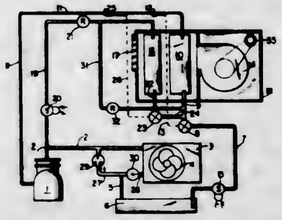
1. In a compression process for refrigeration using a mixture of refrigerants, which process comprises compressing said mixture of refrigerants, partially condensing substantially the higher boiling component from compressed vapors of said mixture of refrigerants in a first condensation stage, separating the resultant condensed and vapor phases, condensing the separated vapors of the lower boiling component of said mixture of refrigerants in a second condensation stage, expanding and evaporating the condensed components to produce refrigerating temperatures, mixing the resultant vapors, and then recycling the vapors to the compression stage, the improvement wherein the expansion and evaporation of the separated condensed higher boiling component are used to cool and condense vapors of the lower boiling component in said second condensation stage.

3,203,196

AIR CONDITIONING SYSTEM WITH FROST CONTROL

Hyman Malkoff, Levittown, Pa., assignor to Kramer Trenton Co., Trenton, N.J., a corporation of New Jersey

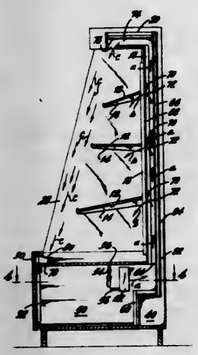
Filed May 10, 1963, Ser. No. 279,515
6 Claims. (Cl. 62—173)



1. An air conditioning system designed and adapted for automatic regulation of both temperature and humidity within a chamber or space, said system comprising, a closed refrigerant circuit including compressor, air cooled condenser and evaporator, means for causing a flow of air through the evaporator, condensing means having pre-set pressure means for affecting the temperature of said air flow to control humidity and temperature

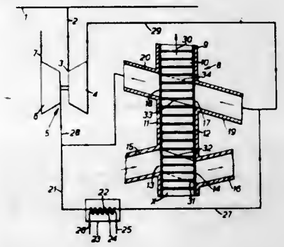
within the chamber or space, and means to insure the maximum dehumidification level within the chamber or space and the lowest refrigerant temperature level within the evaporator while avoiding accumulation of frost on the evaporator surface and eliminating the necessity of a defrost cycle.

3,203,197
COMBINED REFRIGERATED SELF-SERVICE AND STORAGE CABINET
Herman Zaslovsky, Massapequa, and Harry Rosenfeld, Long Beach, N.Y., assignors to Brook Koolair Corp., Huntington Station, Long Island, N.Y.
Filed July 20, 1964, Ser. No. 383,793
1 Claim. (Cl. 62—277)



(A) an open fronted compartment comprised of spacedly opposed side walls, a rear wall, a top wall and a bottom surface, all of which, in combination, define a self-service, article-holding section;
  (a) said rear wall being hollow to define a first air flow passageway extending thereacross;
  (b) said rear wall having a plurality of apertures formed therein whereby said first air flow passageway communicates with said open fronted self-service section;
(B) a plurality of first baffle members disposed in said first passageway transversely of said cabinet in a horizontal plane and at an angle to the vertical plane of said rear wall, said first baffle members being positioned proximate the apertures in said rear wall;
(C) a plurality of second baffle members disposed vertically in said first passageway at an angle to the plane of said rear wall;
(D) a second air passageway formed in said top wall;
  (a) said second air passageway being contiguous with said first air passageway;
  (b) said second air passageway terminating in an outlet port extending transversely across said cabinet whereby the air flowing through said first and second passageways is directed downwardly across the open front of said self-service section in the form of a curtain;
(E) a base member thermally insulated from and in supporting relationship to said self-service station, said base member having:
  (a) a first compartment provided with an apertured floor and an air intake port;
  (b) a second compartment in communication with said first air passageway and said self-service section;
  (c) both of said first and second compartments being thermally insulated from each other;
  (d) said base member being spacedly supported above the ground level on which said cabinet is disposed;
(F) a vertical third air passageway in communication with said first compartment and the air outside of said cabinet;
  (a) said third air passageway extending transversely across the rear of said cabinet behind said first air passageway; and
(G) refrigeration means contained in said base member, said refrigeration means comprising:
  (a) a condenser coil disposed in said first compartment proximate the air intake port;
  (b) a fan positioned behind said condenser coil whereby outside air is drawn into said first compartment and over said condenser coil;
  (c) a compressor spacedly mounted over the aperture in the floor of said first compartment;
  (d) a first pan disposed in the aperture of the floor of said first compartment whereby liquid collected therein is heated by the heat generated by the operation of said compressor;
  (e) a second, heated pan disposed below the floor of said first compartmeent and positioned to catch the overflow of said first pan;
  (f) evaporator coils disposed in said second compartment proximate the point at which said second compartment communicates with said first air passageway; and
  (g) a fan arranged to drive air over said evaporator coils and into said first air passageway.

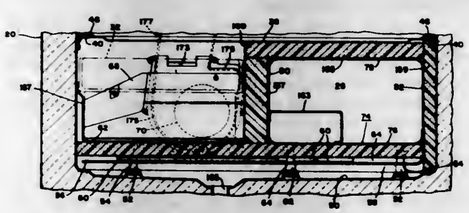
3,203,198
PRESSURE EXCHANGER PLANT
John Anthony Barnes, Wokingham, England, and Neil Milligan Clark, Belfast, Northern Ireland, assignors to Power Jets (Research & Development) Limited, London, England, a British company
Filed Apr. 24, 1964, Ser. No. 362,368
Claims priority, application Great Britain, May 8, 1963, 18,237/63
2 Claims. (Cl. 62—402)



1. A pressure exchanger plant including a turbocharger comprising a compressor and a turbine each having an inlet and an outlet, a pressure exchanger having low-pressure scavenging stage inlet and outlet ports and higher-pressure scavenging stage inlet and outlet ports, a heat-exchanger and ducting connecting the higher-pressure scavenging stage outlet and inlet ports of the pressure exchanger through the heat exchanger, the outlet of the compressor being in communication with said ducting upstream of the heat-exchanger.

3,203,199
REFRIGERATING APPARATUS
David O. Stewart, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 10, 1963, Ser. No. 329,528
8 Claims. (Cl. 62—414)

1. A refrigerator including walls having an inner liner enclosing a compartment, said liner being provided with a plurality of pegs of low heat conducting material projecting into said compartment, a slab of insulation having apertures receiving said pegs and supported upon said pegs,



and a refrigerant evaporator portion within said compartment supported upon the end portions of said pegs.

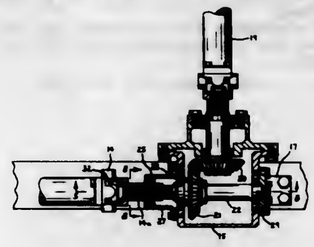
3,203,200
THIN EXPANSIBLE BAND WITH COPLANAR SPRINGS
Zenichi Inotsume, 43–3 Oaza Kiba, Kurosaki-mura, Nishi-Kambara-gun, Niigata-ken, Japan
Filed Mar. 21, 1963, Ser. No. 267,039
Claims priority, application Japan, May 15, 1962, 37/19,452
9 Claims. (Cl. 63—5)



1. A resilient band comprising, in combination, plural relatively elongated resilient frames arranged in laterally juxtaposed substantially coplanar relation; each of said frames comprising a relatively elongated continuous resilient wire bent in zig-zag fashion to define a plurality of coplanar longitudinally juxtaposed substantially similar triangles, longitudinally adjacent triangles of each frame being oppositely oriented laterally of said plural frames; the bases of alternate triangles of each frame being normally substantially rectilinearly aligned to define one normally rectilinear longitudinal edge of the associated frame, and the bases of triangles of each frame, intermediate said alternate triangles, being normally substantially rectilinearly aligned to define a second normally rectilinear longitudinal edge of the associated frame; alternate triangles of each frame each having its base juxtaposed and substantially coextensive with the base of a respective alternate triangle of the laterally adjacent frame; connecting means joining the juxtaposed bases of each pair thereof to each other; and plural link members loosely mounted on said plural frames in longitudinally substantially juxtaposed relation, each link member having a length of the order of that of said triangle bases and a width substantially equal to the overall widths of said juxtaposed frames, said link members engaging laterally extending elements of said frames to limit expansion of said band.

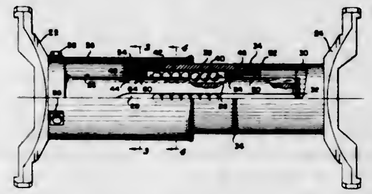
3,203,201
SLIP JOINT FOR A MECHANICAL DRIVE
Harland C. Harbke, Portland, Oreg., assignor to Hyster Company, Portland, Oreg., a corporation of Nevada
Filed Feb. 25, 1963, Ser. No. 260,644
8 Claims. (Cl. 64—23)

1. In a slip joint for a rotary drive,
a pair of elongated inner and outer splined members sliding one inside the other with splines interlocked, radial clearance at the roots of the splines of at least one of said members,
and a series of peripheral grooves in one of said members,



the depth of said grooves at least equalling the root depth of the splines,
said grooves being so spaced that the length of the lands between the grooves is less than a predetermined minimum extent of axial differential movement of the said members.

3,203,202
EXTENSIBLE DRIVE CONNECTIONS
Nelson R. Brownyer, Birmingham, Mich., assignor, by mesne assignments, to Rockwell-Standard Corporation, a corporation of Delaware
Filed Mar. 29, 1963, Ser. No. 268,981
2 Claims. (Cl. 64—23)



1. An extensible torque transmitting drive shaft assembly comprising an inner driving shaft member, an outer hollow driven shaft member surrounding a portion of said inner shaft member, there being an annular space between said inner and outer members and said members being adapted to move axially between limit positions, said members having mating groove spaces, means rigid with said inner member closing the ends of the groove spaces therein, a pair of axially spaced stop assemblies carried by said outer member forming the ends of said groove spaces, said stop assemblies radially bridging the space between said inner and outer shaft members and having inner and outer guide surfaces engageable, respectively, with said inner and outer members to maintain said inner and outer members in radially spaced concentric relation and in axial alignment, at least one of said stop assemblies being removably mounted in said outer member to permit the selective opening and closing of one end of said groove spaces, a group of torque transmitting balls received in each groove space and in rolling contact with the surfaces thereof, the balls in each group being in contact with adjacent balls of said group and drivingly connecting said inner and outer shaft members, the aggregate axial length of said groups of balls being less than the length of said groove spaces, and opposed spring means compressed between the ends of said groups of balls and said stop assemblies maintaining said balls axially centered in the groove spaces when said inner and outer shaft members occupy a centered position between said limit positions.

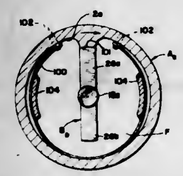
3,203,203

SEALING DEVICE FOR AN IMPULSE TOOL

Howard O. Ward, Candor, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Original application Dec. 12, 1962, Ser. No. 244,151. Divided and this application May 5, 1964, Ser. No. 377,787

8 Claims. (Cl. 64—26)



1. An impulse tool for applying a torque to an object, said impulse comprising:

(a) housing means provided with a cavity for sealingly containing a fluid,

(b) spindle means in said cavity and in said fluid and adapted to enage said object,

(c) drive means connected to said housing means for rotating said housing means with respect to said object and said spindle means,

(d) sealing means on said spindle means,

(e) a sealing portion on said housing means,

(f) resilient sealing means comprising a flexible band and connected to said housing means,

(g) said sealing portion, said resilient sealing means and said sealing means being disposed in sealing relation during a relatively small portion of each revolution of said housing means,

(h) said sealing portion and said resilient sealing means and said sealing means being operable during said relatively small portion of each revolution of said housing means to dynamically seal off a portion of said fluid in said cavity into a high pressure portion so that the pressure in said high pressure portion of the fluid and on said spindle means increase thereby causing said spindle means to rotate with respect to said housing means and to apply a torque to said object.

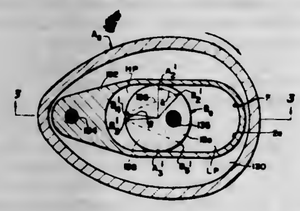
3,203,204

PIVOTABLE INNER-HOUSING TYPE IMPULSE TOOL

Christopher K. Brown, Sayre, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Original application Dec. 12, 1962, Ser. No. 244,151. Divided and this application May 5, 1964, Ser. No. 377,789

10 Claims. (Cl. 64—26)



1. An impulse tool for applying a torque to an object, said impulse tool comprising:

(a) housing means provided with a clearance cavity,

(b) inner housing means in said clearance cavity, pivotable on said housing means and provided with a cavity adapted to contain a fluid,

(c) spindle means rotatable in said inner housing means and in said fluid,

(d) drive means operatively associated with one of said housing means and said spindle means for causing relative rotary movement between said housing means and said spindle means, the other of said housing means and said spindle means being adapted to engage said object,

(e) sealing means on said spindle means,

(f) a first seal point on said inner housing means,

(g) a second seal point on said inner housing means,

(h) said first seal point and said second seal point and said sealing means being disposed in sealing relation during a relatively small portion of each revolution of said relative rotary movement,

(i) said first seal point and said second seal point and said sealing means being operable during said relatively small portion of each revolution of said relative rotary movement to dynamically seal off a high pressure portion of said fluid in said cavity so that the pressure in said high pressure portion of the fluid and on said other increases thereby causing the other of said housing means and said spindle means to rotate with respect to said one and to apply a torque to said object.

3,203,205

CLUTCH DISC ARRANGEMENT

Peter Geibel and Gustav Schneider, Schweinfurt (Main), Germany, assignors to Firma Fichtel & Sachs Aktiengesellschaft, Schweinfurt (Main), Germany

Filed Aug. 17, 1962, Ser. No. 217,635

Claims priority, application Germany, Aug. 19, 1961, F 20,724/47

3 Claims. (Cl. 64—27)



1. A clutch disc arrangement comprising a hub, a clutch disc rotatable on said hub, two annular guide discs non-rotatably secured to opposite sides of said hub for axial displacement of one of said guide discs towards the other guide disc, spring means resiliently forcing at least one of said guide discs towards said clutch disc, vibration dampening discs disposed between said clutch disc and said guide discs and extending radially substantially from said hub to the outer periphery of said guide discs, said clutch disc, vibration dampening discs, and guide discs having substantially aligned apertures, and coil springs positioned in each group of said aligned apertures transmitting torque from said clutch disc to said vibration dampening discs and guide discs.

3,203,206

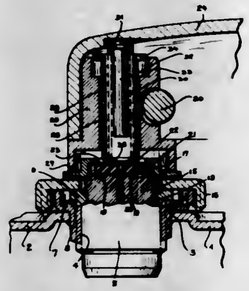
GAS LIGHTER

Wolfgang Maltner, Oberstedten, Germany, assignor to Heinrich Maltner G.m.b.H., Offenbach am Main, Germany

Filed Nov. 26, 1962, Ser. No. 241,105

Claims priority, application Germany, Nov. 25, 1961, M 50,987; Nov. 14, 1962, M 54,804

10 Claims. (Cl. 67—7.1)



1. In a gas lighter, in combination, a container for a compressed combustible gas; discharge means carried by said container and formed with a discharge passage through which gas can escape from the interior of said container, said discharge passage having a discharge end; a plate of compressible and expandable elastic material engaging said discharge means at said discharge end of said passage thereof, said plate being formed with an opening therethrough communicating with said passage, said opening forming the burner tip of the lighter so that compressed gas passing through said opening will expand to cool the plate about said opening, so as to prevent undue heating of the plate by the ignited gas; pressing means located at that side of said plate which is directed away from said discharge end of said passage; and control means operatively connected to said pressing means for placing the latter either in a pressing position engaging said side of said plate and compressing the latter while urging said plate toward said discharge end of said passage or in a non-pressing position relieving the pressure on said plate and interrupting the urging thereof toward said discharge end of said passage, said pressing means when in said pressing position thereof cooperating with said plate for closing said passage to prevent the escape of gas from said container and said pressing means when in said non-pressing position thereof cooperating with said plate to permit gas to escape from the interior of said container through said discharge passage.

3,203,207

WOOL-WASHING MACHINE

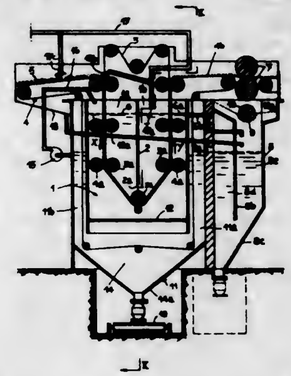
Jules Victor Pouceiet, Froidfontaine-Polleur par Henry-Verviers, Belgium, assignor to Anciens Ateliers Victor Charpentier et Compagnie S.P.R.L., Dolhain-Verviers, Belgium

Filed June 27, 1963, Ser. No. 291,050

Claims priority, application Belgium, July 5, 1962, 619,849

6 Claims. (Cl. 68—44)

1. Washing apparatus comprising a washing tank having a beight greater than its width and adapted for containing a washing fluid, said washing tank having a sloping bottom, a vertical partition in said tank extending to a location spaced from the bottom of the tank, a rinsing tank having first and second compartments located on either side of the washing tank and in communication with one another below the washing tank, said rinsing tank having sloping bottoms in each of said compartments, a collecting tank located to a side of one of the compartments of the rinsing tank remote from the washing tank, a partition in said collecting tank dividing the same into interconnected compartments, said collecting tank having a sloping bottom in each compartment, the apparatus further comprising conveyor means comprising a pair of belts for advancing therebetween material to be washed, first through one of the chambers in the washing tank along a descending path in part vertical, then beneath the partition in the washing tank and then upwardly in the other of the compartments of the washing machine along



a path in part vertical, pressure-drying means located above one of the compartments of the collecting tank for receiving washed material from the conveyor means after the latter leaves the washing tank for extracting fluid from the material, which fluid is deposited into the collecting tank, means establishing communication between the collecting tank and the rinsing tank for supplying fluid to the rinsing tank from the collecting tank and means for advancing one of the belts, after the washed material has been delivered to the pressure-drying means, along a path extending through the two rinsing compartments.

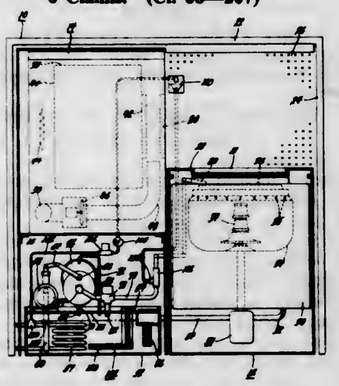
3,203,208

DRY CLEANING APPARATUS

Byron L. Brucken, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 31, 1963, Ser. No. 298,984

6 Claims. (Cl. 68—207)



6. In combination,

(a) means forming a container adapted to contain a dry cleaning solvent such as perchlorethylene or the like for dry cleaning clothes,

(b) means forming a substantially closed sump means containing a predetermined level of dry cleaning solvent therein,

(c) means including a solvent supply conduit connected in supply relationship to said container for effecting the circulation of dry cleaning solvent between said sump means and said container,

(d) means for supplying water to the dry cleaning solvent being supplied to said container including a mixing means in said solvent supply conduit having a water inlet, a water supply conduit having one end connected to a source of water and its other end connected to the water inlet of said mixing means, and valve means in said water supply conduit openable for passing a regulated amount of water to said mixing means for entrainment into the solvent being supplied to said container.

(e) and control means for controlling said valve means, said control means including a relative humidity sensor comprising support means having a first portion submerged in the solvent in said sump means and a second portion adapted to extend out of the solvent and including relative humidity indicating indicia and relative humidity setting indicia, relative humidity indicating means carried on said support means and movable relative to said relative humidity indicating indicia, said relative humidity indicating means including an actuator portion movable therewith along a predetermined path, relative humidity setting means carried on said support means and movable relative to said relative humidity setting indicia and relative to said relative humidity indicating means, switch means having a portion thereof movable in response to said relative humidity setting means along a path coplanar with the predetermined path of said actuator portion and electrically connected to said valve means, and relative humidity sensing means having one portion connected to said support means and another portion connected to said relative humidity indicating means, said relative humidity sensing means being expandable in response to the presence of a predetermined amount of moisture in the dry cleaning solvent to effect the movement of said relative humidity indicating means and said actuator portion respectively to indicate the relative humidity of said dry cleaning solvent and to actuate said switch means thereby to control said valve means.

3,203,209

DRY CLEANING APPARATUS

David R. Paulick, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 31, 1963, Ser. No. 299,049

7 Claims. (Cl. 68—207)

7. In combination,

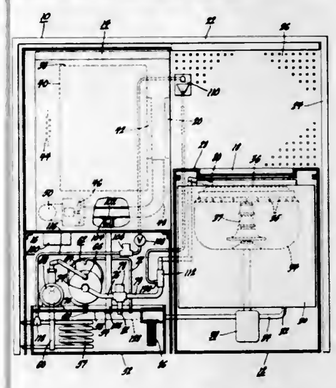
(a) means forming a container adapted to contain a dry cleaning solvent such as perchlorethylene or the like for dry cleaning clothes,

(b) means for conveying a stream of air for removing solvent fumes resulting from said dry cleaning,

(c) means forming a substantially closed sump means containing a predetermined level of dry cleaning solvent therein usable in said container,

(d) duct means interconnecting the air stream conveying means with the sump means in a manner to draw therethrough a stream of vapor from above said predetermined level of dry cleaning solvent in said sump means for sampling the relative humidity of the dry cleaning solvent in said sump means,

(e) means for supplying water to the dry cleaning solvent before it is used in said container including means operable for passing a regulated amount of water to the dry cleaning solvent,



(f) and control means responsive to the relative humidity of the stream of vapor in said duct means for controlling said means for passing water.

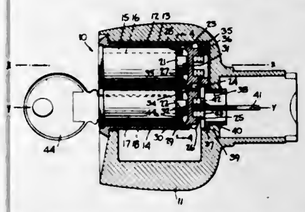
3,203,210

CYLINDER LOCK

Mathias M. Check, Strafford, and Paul P. Kubik, Ambler, Pa., assignors, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio

Filed Feb. 8, 1963, Ser. No. 257,281

11 Claims. (Cl. 70—340)



2. In a lock having two cylinders, a key plug rotatably mounted in each cylinder, each key plug having an inner end portion of reduced diameter, a key slot in each key plug extending axially through the key plug, tumblers for each key plug normally preventing rotation of each key plug but adapted to be set by insertion of a key in said key slot to permit rotation of said key plug, a latch operating member mounted for free rotation on the end portion of reduced diameter of each key plug, means interconnecting said latch operating members whereby rotation of one latch operating member effects rotation of the other latch operating member, means on each latch operating member providing surfaces for engagement by an end portion of a key inserted in the key slot whereby rotation of said key with said key plug rotates said latch operating member, and means preventing access to said means on said latch operating member except through a portion of the key slot which is spaced radially from the axis of rotation of the key plug.

3,203,211

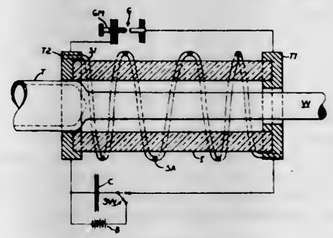
TUBING FABRICATION

George E. Mallinckrodt, 20 Kingsbury Place, St. Louis 12, Mo.

Filed May 22, 1961, Ser. No. 111,696

17 Claims. (Cl. 72—56)

1. A method for fabricating metallic tubing from an elongate metal rod comprising momentarily applying large compressive forces to the outer surfaces of said rod by means of a transient electromagnetic field to cause shock waves to converge symmetrically and radially inwardly on the longitudinal central axis of said rod there-



by to effect a high localized temperature multiplication at said central axis, and permitting said rod to expand outwardly in response to the internal stresses thus engendered in said rod thereby to form a longitudinal central axial opening in the rod.

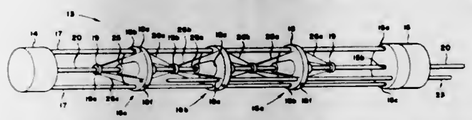
3,203,212

EXPLOSIVE FORMING BY ELECTRICAL DISCHARGE METHOD AND APPARATUS

Esperanto J. Simicich, Huntsville, Ala., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Mar. 1, 1963, Ser. No. 262,075

7 Claims. (Cl. 72—56)



1. A method of explosive forming a tubular member into a desired configuration comprising the steps of: surrounding the tubular member with a die; defining a plurality of electrical discharge forming sections physically isolated from one another within the tubular member; and sequentially discharging a high voltage electrical arc in said sections for generating pressure waves operative to form the tubular member into the configuration of the die.

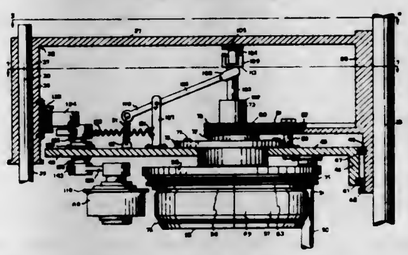
3,203,213

APPARATUS AND METHOD FOR REFORMING SHELLS

Eugene R. Grotnes, Atlanta, Ga., assignor to Atlanta Grotnes Machine Company, Atlanta, Ga., a partnership

Filed May 10, 1961, Ser. No. 109,207

11 Claims. (Cl. 72—82)



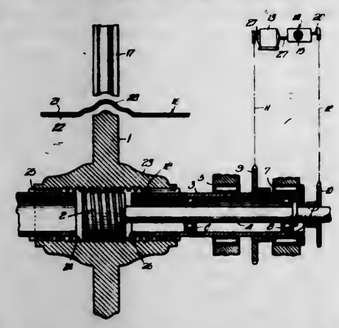
1. An apparatus for forming a neck in a cylindrical shell comprising, in combination, a lower stationary platform; an upper stationary platform; a central shaft with a length extending vertically between the upper stationary platform and the lower stationary platform; an upper movable platform rotatable about the central shaft and positioned between the upper stationary platform and lower stationary platform adjacent to the upper stationary platform; a lower movable platform rotatable about the central shaft and positioned between the upper movable platform and the lower stationary platform adjacent to the lower stationary platform; a plurality of positioning shafts extending through the lower movable platform at locations in a circumference about the central shaft, each positioning shaft having a lower end extending below the lower movable platform and an upper end; a plurality of shell platforms positioned between the upper movable platform and the lower movable platform, each shell platform having its surface perpendicular to the central shaft and each shell platform being rotatably associated with the upper end of one of the plurality of positioning shafts; a plurality of shell platform cam followers, each shell platform cam follower being associated with the lower end of one of the plurality of positioning shafts; a plurality of outer sleeves extending through the upper movable platform at locations about the central shaft which correspond in radial position and distance from the central shaft with the locations at which the positioning shafts extend through the lower movable platform; a plurality of inner sleeves, each inner sleeve being rotatably inserted within one of the plurality of outer sleeves and each inner sleeve having a lower end extending below its associated outer sleeve and the upper movable platform and an upper end extending above its associated outer sleeve and the upper movable platform; a plurality of die stacks, each stack being fixedly associated with the lower end of one of the plurality of inner sleeves and each die stack having an expandable-contractible upper die set, an expandable-contractible lower die set, and a hollow center; a plurality of sleeve gears, each sleeve gear being fixedly associated with the upper end of one of the plurality of inner sleeves; a plurality of outer dies, each outer die being positioned adjacent to one of the plurality of die stacks for movement toward and away from the die stack; a plurality of camming pins with upper and lower ends, each camming pin being slidably inserted into one of the plurality of inner sleeves with the lower end of the camming pin extending into the hollow center of one of the plurality of die stacks and each camming pin having camming surfaces which engage the upper and lower die sets of the die stack into which its lower end extends; a plurality of camming shafts, each camming shaft being rotatably associated at its lower end with the upper end of one of the plurality of camming pins and each camming shaft having an upper end extending toward the upper stationary platform; a plurality of die stack cam followers, each die stack cam follower being associated with the upper end of one of the plurality of camming shafts; a shell positioning cam mounted upon the lower stationary platform to form a circular path around the central shaft, said shell positioning cam having a surface which contacts the plurality of shell platform cam followers and a dimension extending toward the lower movable platform which varies along its circular path; a die stack positioning cam mounted upon the upper stationary platform in a circular path around the central shaft, said die stack positioning cam having a surface which contacts the plurality of die stack cam followers and having a dimension extending toward the upper movable platform which varies along its circular path and which is adjustable at a particular part of the circular path; means for rotating the upper movable platform and the lower movable platform about the central shaft so that every portion of the upper movable platform always corresponds in radial position about the central shaft with a particular portion of the lower movable platform; means associated with each of the plurality of outer dies for moving each outer die toward and away from the die stack adjacent to the outer die in response to the rotation

of the upper movable platform; means for positioning a shell on each of the plurailty of shell platforms when each shell platform is in a particular radial position about the central shaft; and means for removing shells from each of the plurality of shell platforms when each shell platform is in a particular radial position about the central shaft.

3,203,214
DEVICE FOR FORMING CORRUGATIONS IN METALLIC SHEET OR PLATE

Stephen J. Fraenkel, Winnetka, Ill., assignor to Stanray Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 23, 1962, Ser. No. 232,372
8 Claims. (Cl. 72—182)

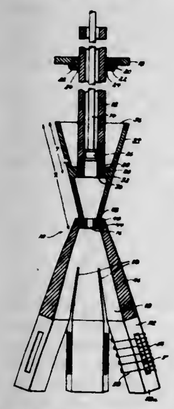


1. In a metal sheet forming machine, a plurality of mating forming wheels adapted to be urged into deforming contact with opposite faces of said sheet, a first means for rotating said wheels so that said sheet will pass between said wheels during the deforming operation, a second means associated with said first means and adapted to simultaneously move said mating wheels in a direction transverse with respect to the common plane of rotation of said mating forming wheels, to provide a sinuous deformation of said sheet.

3,203,215
ULTRASONIC EXTRUSION APPARATUS

James Byron Jones, West Chester, Pa., assignor to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania

Filed June 5, 1961, Ser. No. 114,836
7 Claims. (Cl. 72—253)

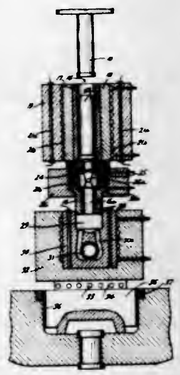


1. Apparatus including a cylinder, a die in communication with the interior of said cylinder, a movable member within said cylinder for urging material into said die, vibrating means for vibrating said die, and a mount, said mount comprising a resonant member engaging said cylinder and said die, said mount having a length equal to even multiples of one-quarter wavelength long according to its geometry and the properties of the material of which the mount is made and its frequency of operation, one end of said mount being free from attachment, a flange extending inwardly from the inner peripheral surface of said resonant member, said flange being positioned at a node on said resonant member spaced an odd unit multiple of one-quarter wavelength according to the geometry and properties of the material of which the mount is made and its frequency of operation from said one end, with said inwardly extending flange being engaged with said cylinder, and with the other end of said mount being coupled to said vibrating means.

3,203,216
MACHINE FOR INCASING CABLES AND THE LIKE

Ernst Müller, Zieglerstr. 57, Duisburg, Germany

Filed Sept. 20, 1960, Ser. No. 57,214
11 Claims. (Cl. 72—258)

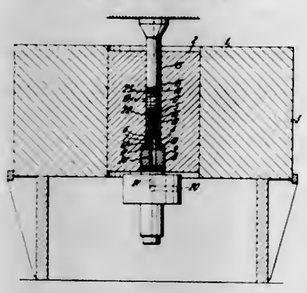


1. In a press for uniformly incasing in a covering of metal or the like an elongated member which continuously advances longitudinally through the press, in combination, receiving chamber means extending along a predetermined axis, having an inlet end and an opposed outlet end, and defining a receiving chamber for receiving a charge of covering material; a main ram coaxial with said receiving chamber means; first moving means operatively connected with said main ram for axially moving the same cyclically along a working stroke into said receiving chamber means through said inlet end thereof, for pressing the charge out of said receiving chamber means through said outlet end thereof, and along a return stroke out of said receiving chamber means so that the latter may be provided with a fresh charge before the next working stroke; press chamber means defining a press chamber through which an elongated member to be covered continuously passes and in which the covering material is pressed around the elongated member; an outer hollow cylinder and an inner hollow cylinder telescopically extending into said outer cylinder and defining a supply chamber therewith, one of said cylinders being operatively connected to one of said chamber means and the other of said cylinders being operatively connected to the other of said chamber means; non-return valve means located between said supply chamber and said receiving chamber means for preventing material from flowing from said supply chamber into said receiving chamber means; second moving means operatively connected with one of said cylinders for moving the same; and control means operatively connected with said second moving means for actuating the same to move said one cylinder in a direction which reduces the volume of said supply chamber during the return stroke of said main ram and for providing yielding movement of said one cylinder during the working stroke of the main ram, in response to the pressure of the material in said supply chamber, in an opposite direction which increases the volume of the supply chamber so that part of the covering material is stored in said supply chamber during the working stroke of said main supply chamber is held substantially constant during operation of the press and the elongated member is continuously and uniformly covered with covering material as the elongated member passes continuously through said press chamber.

3,203,217
FORMING OF MATERIALS BY EXTRUSION

Derek Green, Lytham St. Annes, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed May 31, 1963, Ser. No. 284,524
Claims priority, application Great Britain, June 22, 1962, 24,217/62
1 Claim. (Cl. 72—265)



Apparatus for the extrusion of material to form a tube, comprising: a container having a cylindrical bore, an extrusion die located at one end of the bore in the container, a mandrel rigidly located in the bore of the container in line with the longitudinal axis of the extrusion die, said mandrel having an enlarged head fitting in the bore of the container, means in the bore of the container positioning the mandrel longitudinally in the bore of the container and spacing the head of the mandrel from the extrusion die, a space for a tubular extrusion billet being defined inside the bore of the container around the mandrel and between the head of the mandrel and the extrusion die, and means for pressurising liquid in the bore of the container on the side of the mandrel head remote from the die, longitudinal passageways being provided through the head of the mandrel to allow pressure in liquid on the side of the mandrel head remote from the die to be transmitted to liquid on the side of the mandrel head facing the die.

3,203,218
METHOD AND APPARATUS FOR FORMING METAL CONTAINERS

Richard Robert Bolt, Lake Villa, and Delbert Edmund Wobbe, Cary, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed May 22, 1961, Ser. No. 111,670
9 Claims. (Cl. 72—349)

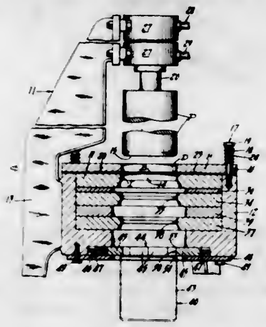
9. An apparatus for forming a metal blank having a substantially uniform thickness into a cup-shaped one piece hollow metal article having a relatively thin side wall as compared to the end thereof and an end thickness equal to that of said blank comprising

a punch having a longitudinal axis,

means for forcibly moving said punch along said longitudinal axis,

holding means adapted to position and releasably press a peripheral margin of said blank against a holding surface with a substantial predetermined force,

and unitary die means having a die opening in axial alignment with said longitudinal axis of said punch, said holding surface comprising a surface of said die means surrounding said die opening,



said die opening comprising a drawing surface extending from the inner periphery of said holding surface and merging into an ironing surface disposed immediately adjacent to said holding surface, said holding, drawing and ironing surfaces forming a continuous unbroken one-piece working surface of said die means adapted to initially draw said peripheral margin of said blank into a drawn side wall portion and immediately subsequent and without interruption to iron said drawn side wall portion to substantially reduce the thickness thereof as said punch is moved through said die opening,

said holding means being adapted to maintain said force on the portion of said peripheral margin in contact with said holding surface as said peripheral margin is progressively withdrawn from said holding means and forced through said die opening by the action of said punch.

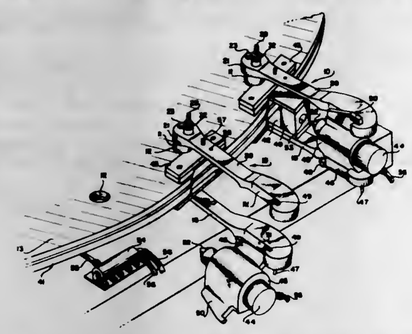
3,203,219
JOGGLE FORMING APPARATUS

Rodney K. Calvert, Dunwoody, and Sam L. Weber, Decatur, Ga., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed June 12, 1961, Ser. No. 116,533
4 Claims. (Cl. 72—386)

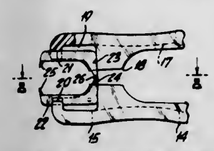
1. A machine for imparting linear motion to a joggle block in a specific direction toward a metal forming surface and an alignment hole in the support for the metal forming surface comprising, in combination, a positioning pin fixedly inserted into the alignment hole and having two exposed ends; an upper arm having one end fixedly attached to one end of the positioning pin and having an extended end which is more remote from the metal forming surface than the joggle block and a lower arm having one end fixedly attached to the other end of the positioning pin and having an extended end which is more remote from the metal forming surface than the joggle block, said upper arm and said lower arm having the joggle block between them; a ram rotatably attached to the extended end of the lower arm and rotatable into an operating position adjacent to the joggle block at which it is fixedly engaged by the extended end of the upper arm and in which the ram line of motion extends towards

the joggle block in the specific direction of joggle block motion; means for moving the ram along its line of motion



to the extent necessary to engage and move the joggle block.

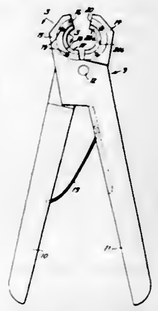
3,203,220
SURGICAL STAPLE APPLICATOR
William A. Kaeperaik, Somerville, N.J., assignor to Ethicon, Inc., a corporation of New Jersey
Filed July 24, 1963, Ser. No. 297,379
2 Claims. (Cl. 72—410)



1. A one use applicator for a U-shaped suturing clip whose legs are squeezed inwardly to effect its suturing function, comprising a holder having a pair of spaced arms adapted to accommodate a suturing clip between them at a first end of said applicator, a member connecting said arms together at a position spaced from said first end, opposed means presented by said arms adjacent said first end of the applicator for engaging the outer lateral edges of the U-shaped clip and located so that the legs of the clip in its normal position in the applicator spreads the arms thereof beyond a normal position outwardly frictionally to hold said clip in its position in the holder with the rear edge of the clip unsupported, and means also presented by said arms to arrest their movement toward each other in a position inwardly of said normal position; said arms being movable toward each other to effect the application of said clip, and movable away from each other to normal position under the resiliency of the material of the holder, to release said clip whereby to permit removal of the holder from the clip in its applied position and discarding of the holder.

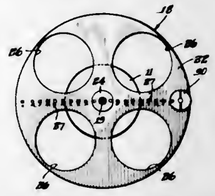
3,203,221
PLIER-TYPE RETAINING RING ASSEMBLY TOOL
Guy O. Conner, Cleveland, Ohio, assignor to Waldes Kohinoor, Inc., Long Island City, N.Y., a corporation of New York
Filed Aug. 26, 1963, Ser. No. 304,364
6 Claims. (Cl. 72—410)

1. A tool for constricting a non-resiliently deformable locking ring comprising at least two jaws pivotally coupled together, said jaws having confronting arcuate recesses on one face for receiving adjacent portions of a ring, said recesses being defined by curved side walls tapering outwardly in a direction from said one face toward a bottom wall of said recess, said walls lying in the same plane, each bottom wall being curved in the same manner as its associated side wall, each jaw having a confronting face at one end of its recess which



lies generally along a radius of the arc defined by said recesses in the closed position of said jaws, and adjacent ends of said recesses being offset from each other to facilitate release of the jaws from the ring.

3,203,222
TORQUE CALIBRATING GAUGE
Dennis J. Rogus, Chicago, Ill., assignor to Power Instruments Incorporated, Skokie, Ill., a corporation of Illinois
Filed May 14, 1962, Ser. No. 194,417
10 Claims. (Cl. 73—1)

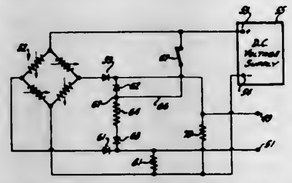


1. A torque calibrating gauge for calibrating a torque responsive device comprising a balanced assembly including a horizontal shaft adapted to be connected to the output member of the torque responsive device to be rotated thereby, and a vertical disc concentrically secured to the shaft and having a plurality of holes regularly spaced along a diameter of the disc on each side of the center of the disc, and a plurality of balanced weights of regularly graduated values having extensions thereon receivable in the holes of the disc for mounting the weights on the disc, said weights being selectively mounted in selected holes along the diameter of the disc for providing desired selected weight times distance torque moments resisting rotation of the shaft by the output member of the torque responsive device when the diametrically arranged holes in the disc are horizontally positioned.

3,203,223
BRIDGE-TYPE TRANSDUCER WITH ABSOLUTE CALIBRATION OUTPUTS
Serge Petrow, Monterey Park, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed May 20, 1963, Ser. No. 281,700
18 Claims. (Cl. 73—1)

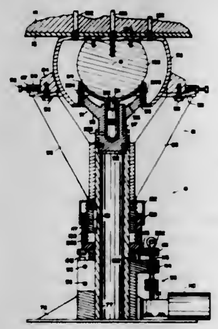
1. Means for providing an absolute calibration output from a bridge-type transducer having direct current voltage excitation applied across one diagonal of the bridge and output terminals coupled to the opposite ends of the other diagonal of the bridge, comprising first and second

electronic switch means respectively serially connected to said output terminals and normally conducting in response to voltage signals at said output terminals to transmit said signals therefrom while being nonconducting in response to voltages at the distal sides of the switch means relative to said output terminals of greater magnitude than the maximum voltage signals which can exist at said ouput terminals, a calibration resistance, third and fourth electronic switch means connecting said calibration resistance between said distal sides of said first and second electronic switch means, said third and fourth electronic switch means normally nonconducting in response to voltages at the respective junctures thereof with said first and second switch means having magnitudes in the range of said



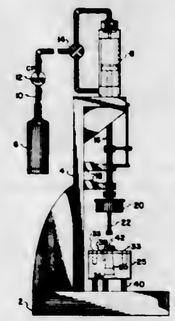
voltage signals at said output terminals, said third and fourth electronic switch means being rendered conducting in response to voltages at the opposite sides thereof from said junctions having magnitudes greater than said maximum voltage signal which can exist at said output terminals, and means coupled to said resistance for selectively applying voltage thereto commensurate with the establishment of voltages at the opposite sides of said third and fourth switch means from said junctures having magnitudes greater than said maximum voltage signals which can exist at said output terminals, whereby in the absence of voltage applied to said resistance the output signals of said transducer are provided at said junctions, and in the presence of voltage applied to said resistance an absolute calibration output is provided at said junctions.

3,203,224
CONTROL APPARATUS
Leonard E. Aske, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Oct. 29, 1962, Ser. No. 233,727
6 Claims. (Cl. 73—1)



4. In combination: platform means including a platform, an inner spherical support member, and a hollow outer spherical support member concentric therewith; and base means including a column carrying a concave spherical pad, for coacting with said inner spherical member to comprise a fluid bearing, a source of pressure fluid for said bearing, bracket means movable axially along said column; a platform support ring carried by said bracket means for normally engaging the spherical surface of said outer spherical member to position said platform means with said inner spherical member out of contact with said pad, and means for moving said bracket means downwardly and upwardly along said column, to transfer the weight of said platform means between said support ring and said fluid bearing.

3,203,225
CAPILLARY EXTRUSION RHEOMETER
Charles L. Sieglaff, Mentor, Ohio, and James M. McKelvey, St. Louis, Mo., assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,673
7 Claims. (Cl. 73—15.4)

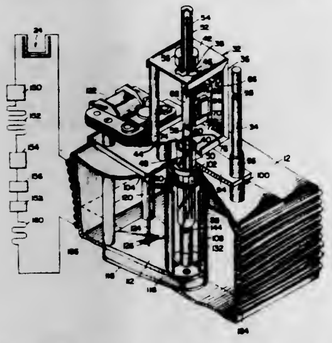


1. An extrusion capillary rheometer comprising a furnace containing a removable barrel; said barrel containing an open cylinder and means for removably affixing a capillary fitting concentric with said cylinder; said capillary fitting having a capillary opening concentric with said cylinder and provided with means for positioning a temperature sensing element in close proximity to at least a portion of said capillary opening; a piston reciprocally movable within said cylinder and capable of being completely removed therefrom for ease in inserting a thermoplastic material within said cylinder; a power source attached through a drive shaft and an electronic pressure sensing element to said piston at its driven end; said pressure sensing element being instantaneously responsive to the force exerted by said source in forcing said thermoplastic material through the capillary opening; an electronic velocity sensing element affixed to said drive shaft and instantaneously responsive to the velocity at which the drive shaft moves the piston forcing the thermoplastic material through the capillary opening; and a source of electrical energy interconnected with said pressure sensing element and said velocity sensing element; said sensing elements being responsive to rapid minute changes in pressure and velocity, respectively.

3,203,226
APPARATUS AND METHOD FOR MEASURING THE FREEZING POINTS OF LIQUIDS
Augustus H. Fiske, Jr., Bethel, Conn., assignor to Fiske Associates, Inc., Bethel, Conn., a corporation of Connecticut
Filed May 17, 1962, Ser. No. 195,522
6 Claims. (Cl. 73—17)

1. A process for determining the concentration of a substance comprising the steps of placing a measured sample of said substance in liquid form into a container, circulating a cooling medium around said container, said cooling medium having a temperature several degrees lower than a normal freezing point of said substance while simultaneously gently stirring said substance to reduce the temperature gradients therein, supercooling the sample a predetermined number of degrees below its

normal freezing point and establishing a metastable liquid state of equilibrium by gently stirring said substance, terminating the circulation of said cooling medium around said container, removing the cooling medium from around said container to form an insulating air pocket therearound, meanwhile continuing the gentle



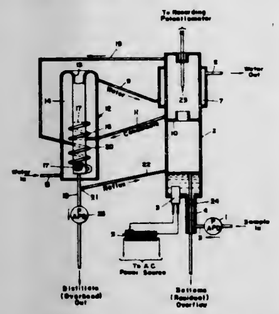
stirring of the sample to isothermalize said sample, imparting a shock from an external source to said container and sample thereby upsetting the metastable state of equilibrium and causing a portion of said substance to freeze, and directly reading the osmotic pressure of said substance.

3,203,227

LIQUID STREAM BOILING POINT ANALYZER

Conard K. Donnell, Springfield, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed May 24, 1962, Ser. No. 197,396
20 Claims. (Cl. 73—17)



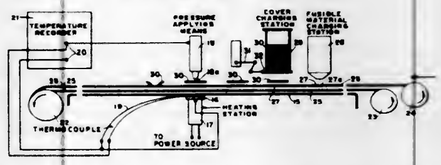
1. In apparatus for analyzing a stream of liquid, distillation means including a heated distillation vessel for vaporizing at least a portion of the liquid fed thereto and a condenser for condensing only a portion of the vapors produced in said vessel; means for feeding at a first predetermined rate to said vessel the liquid stream to be analyzed, means for receiving uncondensed vapors and also condensate from said condenser, said last-mentioned means operating to collect and thereby to cause to be retained in the apparatus substantially all of the uncondensed vapors derived from low-boiling materials contained in said stream, the collected and retained low-boiling materials and condensate produced by said condenser forming a liquid distillate; means coupled to said last-mentioned means for removing liquid distillate from the apparatus at a second rate which is made to be a preselected fraction including unity of said first rate, and means for measuring the temperature of the vapors produced in said vessel.

3,203,228

MELT INDICATING METHOD AND APPARATUS

F. Sutherland Macklem, New Canaan, Conn., assignor to Pyrotel Corporation, Mamaroneck, N.Y., a corporation of New York

Filed Sept. 16, 1963, Ser. No. 309,038
6 Claims. (Cl. 73—17)



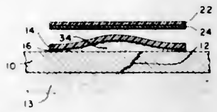
1. A method for continuously determining the softening and melting characteristics of fusible material which comprises, feeding a sheet of electrically and thermally conductive material over and in contact with a supporting surface a portion of which is heated, feeding a sheet of insulative material over and in contact with said electrically and thermally conductive sheet, said insulative sheet having spaced openings passing therethrough for confining fusible material therein, charging fusible material into the openings of said insulative material, applying a cover of electrically and thermally conductive sheet material over each of the openings in said insulation material to form an assembly of said sheets, applying pressure to one of said deformable electrically and thermally conductive sheets over the opening in said insulative material while supporting said assembly on said supporting surface, subjecting said confined fusible material to a heating cycle on the heated portion of said supporting surface while continuing the application of pressure to said deformable sheet, determining the thermal response of said confined fusible material during softening and melting, and recording the thermal response characteristics of said fusible material.

3,203,229

PHOTOELASTIC LEAK DETECTION METHODS

Maxwell Pevar, Philadelphia, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 28, 1962, Ser. No. 205,947
3 Claims. (Cl. 73—40)



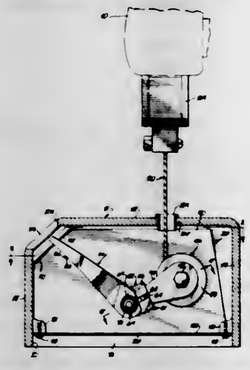
2. The method of detecting fluid flow through an orifice within a given area of a workpiece such as a pressure vessel subjected to differential pressure, which method comprises the steps of: providing a reflecting surface substantially parallel and coextensive with the given area, attaching a testpiece of photoelastic material about the entire perimeter of the given area to the workpiece by means providing a fluid tight enclosure of said area, said fluid flow through said orifice between said enclosure and said vessel creating a pressure site at the photoelastic material-workpiece interface to cause said photoelastic material to bulge relative to said given area of the workpiece, passing polarized light substantially normally into and through the testpiece to the reflecting surface, and analyzing polarized light directed through and out of the testpiece from the reflecting surface, whereby directly observable photoelastic fringe patterns are related to the bulge formation due to the presence of the fluid flow through any orifice within the given area of the workpiece.

3,203,230

VIBRATION INDICATOR

Alfred A. Reiser, Old Lakeshore Road, Lake View, N.Y.

Filed Sept. 21, 1962, Ser. No. 225,179
9 Claims. (Cl. 73—70)



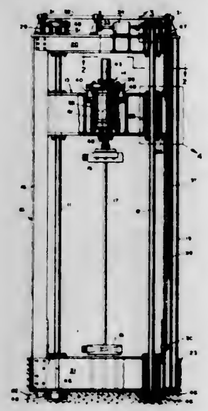
1. A device for indicating the vibration of a part, comprising a stationary support, a reel journaled on said support, a spring biasing said reel to rotate in one direction, a flexible line having one end connected with and wound up on said reel, mean connecting the other end of said line to said part, pointer means on said support and clutch means normally coupling said pointer means to said reel for conjoint oscillation therewith but accommodating relative rotative movement between said reel and pointer means.

3,203,231

MATERIALS TESTING MACHINE

George A. Klatchko, Levittown, Pa., assignor, by mesne assignments, to Tinius Olsen Testing Machine Co., Willow Grove, Pa., a corporation of Pennsylvania

Filed Feb. 6, 1963, Ser. No. 256,684
3 Claims. (Cl. 73—93)



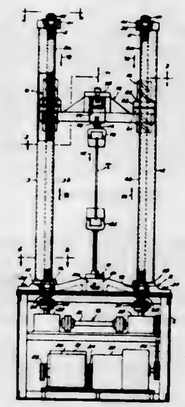
1. In a materials testing machine, the combination of:
a support frame comprising a base, a yoke above said base and a side frame between said base and said yoke;
a pair of vertically spaced test specimen grippers adapted to support a test specimen for the application thereto of tensile and compressive forces;
a loading unit connected to one of said grippers and operative to apply a test load thereto;
a pair of parallel, upright load columns that extend through aligned apertures in said yoke and said base and are slidable relative thereto;
said yoke and said base including a plurality of transverse shoulders each surrounding each aperture and facing away from said frame;
said columns having ends that extend outwardly from said frame and beyond said shoulders;
means connecting one of said grippers to said frame and the other of said grippers to said loading columns;
a plurality of end plates respectively connected to the ends of said columns and engaging said shoulders to restrain movement of said ends towards said frame; and
dampening means operative to prevent sudden movement of said end plates against said shoulders.

3,203,232

TESTING MACHINES

Paul C. Lehnig, Jr., North Wales, Pa., assignor to Tinius Olsen Testing Machine Company, Willow Grove, Pa., a corporation of Pennsylvania

Filed Feb. 8, 1963, Ser. No. 257,283
27 Claims. (Cl. 73—93)



1. In a testing machine for applying a test load to a specimen: a frame; a cross head; a plurality of rotatable loading screws; nut means connecting the cross head to the loading screws, the rotation of the screws moving the cross head toward and away from the frame for applying test loads to a specimen supported between the frame and the cross head, together with thrust bearing structure respectively connecting opposite ends of the screws to the frame and providing a means to effect transfer of load reaction between the screws and the frame to cause corresponding portions of the screws to be in tension when the cross head is moved to apply a test load to the specimen in one direction and other corresponding portions of the screws to be in tension when the cross head is moved to apply a test load to the specimen in a direction opposite to first said direction.

3,203,233

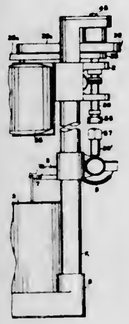
SELF-CENTERING MEANS FOR ROTATING SHAFT

Karl F. Frank, Garden City, N.Y., assignor to Micro-Balancing, Incorporated, Garden City Park, N.Y.

Filed Feb. 6, 1963, Ser. No. 256,753
5 Claims. (Cl. 73—100)

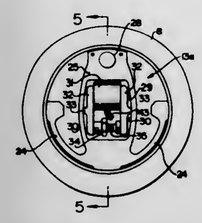
1. Means to maintain one end of a rotating shaft in one plane as said end is moved in said plane comprising:
a frame having two parallel projecting arms,

a hollow member, means to pivotally mount said hollow member between said arms, comprising,
a pair of co-axial shafts connected to said hollow member and slidably mounted in and between said arms perpendicular to said plane,



a bearing slidably mounted in said hollow member, for movement in said plane transverse to the axis of said co-axial shafts,
said rotating shaft being mounted in said bearing so that said shaft may move in said plane perpendicular to said mounting shafts,
and dash pot means mounted on said projecting arms and connected to one of said mounting shafts.

3,203,234
AIRCRAFT WEIGHT AND CENTER OF GRAVITY DETERMINATION SYSTEM
William B. Westcott, Jr., Cleveland Heights, Ohio, and Wallace G. Boelkins, Grand Rapids, Mich., assignors to Cleveland Pneumatic Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 8, 1962, Ser. No. 201,143
14 Claims. (Cl. 73—141)



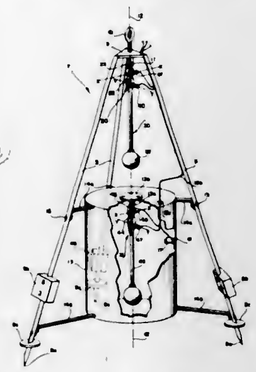
2. A force sensing device comprising a cradle body member, walls of said body member defining a cavity therewithin, transducer means mounted in said cavity capable of proportionally translating force exerted thereon into an electric parameter, means for applying force adjustably to said transducer means for predetermined preloading of the same, adjustable extension means at one end of said cradle body member, and a pair of reversely curved spring arms at the other end of the body member, said spring arms and said adjustable extension means cooperating for mounting of the cradle body member diametrically within an annular structural member, so that loading of said structural member proportionally relieves the preload on the transducer means.

3,203,235
TENSIOMETER
Arnold P. Stein, Silver Spring, Md., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Feb. 7, 1963, Ser. No. 256,855
4 Claims. (Cl. 73—144)



1. A device for measuring the tension of a cable or the like comprising
(a) first means for engaging said cable at two first points thereof spaced a given distance from each other,
(b) second means for engaging the cable at two spaced second points thereof normally aligned with and intermediate the first points and at substantially equal distances from the midpoint between the first two points of the cable, said second means being pivotally mounted on said first means at said midpoint,
(c) third means connected to said second means for applying a torque to said second means to turn the second points of the cable about the midpoint and for measuring said torque,
(d) and means for indicating a given angular displacement of the second points relative to the first points, whereby the tension of the cable is determined by the measured torque.

3,203,236
FLUID FLOW INDICATOR
Morris D. Prince, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Aug. 31, 1962, Ser. No. 221,006
6 Claims. (Cl. 73—189)



1. An indicator comprising: a frame having a longitudinal reference axis, and X and Y axes perpendicular thereto; a first pendulum assembly exposed to fluid flow mounted in alignment with said reference axis including a first connector member fixedly secured to said frame, a second connector member connected to said first connector member for pivotal movement about the X axis, a first synchro transmitter for sensing pivotal movement of said second connector member relative to said first

connector member, a pendulum connected to said second connector member for pivotal movement about the Y axis, a second synchro transmitter for sensing pivotal movement of said pendulum about the Y axis relative to said second connector member; a second pendulum assembly mounted in alignment with said reference axis including a third connector member fixedly secured to said frame, a fourth connector member connected to said third connector member for pivotal movement about the X axis, a first synchro differential for sensing pivotal movement of the fourth connector about the X axis relative to said third connector member, a second pendulum connected to said fourth connector member for pivotal movement about the Y axis, a second synchro differential for sensing pivotal movement of said second pendulum about the Y axis relative to said third connector member; means mounted on said frame to protect said second pendulum assembly from movement due to fluid flow; and a first and second synchro receiver, said first synchro differential being electrically connected to said first synchro transmitter and to said first synchro receiver for indicating the deflection of said first pendulum about the X axis in response to the impingement of fluid thereon and said second synchro differential being electrically connected to said synchro transmitter and to said second synchro receiver for indicating the deflection of said first pendulum about the Y axis in response to the impingement of fluid thereon.

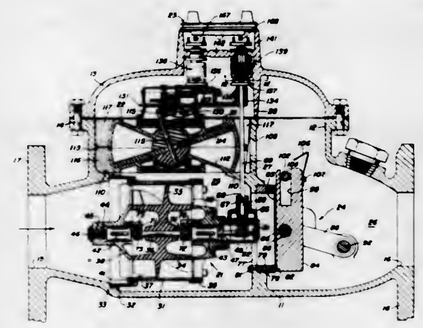
3,203,237
VORTEX RATE SENSOR
Harvey D. Ogren, Roseville, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 6, 1962, Ser. No. 221,777
2 Claims. (Cl. 73—194)



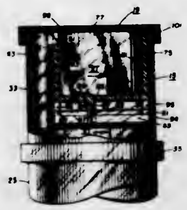
2. In a vortex rate sensor:
a first member having a passage therethrough;
a second member;
porous coupling means; said first member and said second member being mounted on said coupling means to form a cylindrical chamber, the axis of said passage being parallel to the axis of said chamber, said passage being in communication with said chamber so that a flow of fluid through said coupling means and said chamber exits through said passage; and
readout means including airfoil means and strain gauge means, said airfoil means being mounted in cantilever fashion within said passage by said strain gauge means for producing a signal indicative of the displacement of said airfoil means in response to fluid flow perpendicular to said axis of said passage.

3,203,238
COMPOUND METER
Alex R. Whittaker, Fort Myers, Fla., Bernard Last and James F. Edwards, Jr., Uniontown, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 12, 1962, Ser. No. 172,709
13 Claims. (Cl. 73—197)

12. In a meter assembly means defining a substantially horizontal fluid flow passage, a rotary impeller having an impeller shaft adapted to be driven by fluid flow through said passage journaled on radial bearings for rotation on a substantially horizontal axis, and means within the assembly for magnetically suspending the impeller shaft to reduce radial bearing wear comprising an annular magnetic member fixed on said shaft and a fixed magnetic member mounted directly above said annular magnetic member, at least one of said magnetic members being a permanent magnet and said fixed magnetic member being a bar extending longitudinally coextensively with said annular magnetic member substantially parallel to the axis of rotation of said shaft and lying substantially in a vertical plane containing the axis of said shaft.



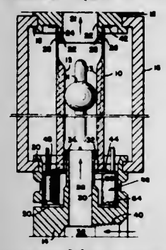
3,203,239
FLUID MEASURING DEVICE
Olen W. Yandell, 6741 Fortune Road, Fort Worth, Tex.
Filed Apr. 15, 1963, Ser. No. 278,505
17 Claims. (Cl. 73—202)



1. A device for proportionately measuring the quantity of milk flowing in a manifold milking system, which device comprises: a metering head including a first chamber defined by a top, a bottom and a sidewall; said metering head including also a plate assembly; said plate assembly having the form of a cup with a sidewall and a plate bottom closure, said cup nesting within said first chamber with said plate being disposed in spaced relation above said first chamber bottom to form an intermediate closure within said first chamber, said plate bottom closure defining with said first chamber bottom a fluid flow channel; a fluid inlet conduit and a fluid outlet conduit oppositely disposed in said sidewall and protruding outwardly therefrom defining an axis of rotation and communicating with said fluid flow channel on opposite sides thereof; orifice means interposed in said fluid flow channel; a measuring chamber removably fixed to the bottom end of said metering head; first fluid passage

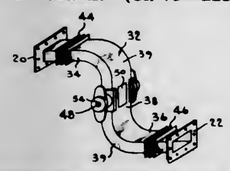
means communicating between said orifice means and said measuring chamber; second fluid passage means in said orifice plate on the downstream side of said orifice means; third fluid passage means communicating between said first chamber above said plate bottom closure and said measuring chamber, with the inlet to said first fluid passage means being above said plate bottom closure and adjacent said first chamber top; a mounting bracket, and means on said bracket for removably receiving said metering head conduit protuberances for pivoting movement about said axis of rotation.

3,203,240
FLOWMETER
John M. McGrath, Philadelphia, and Max H. Gaertner, Hatboro, Pa., assignors to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania
Filed Feb. 1, 1962, Ser. No. 170,367
7 Claims. (Cl. 73—209)



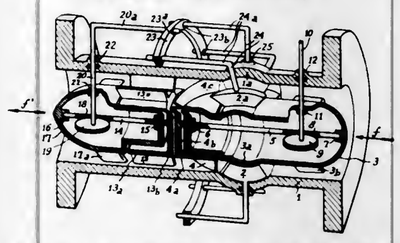
1. A flowmeter comprising support means including inlet and outlet elements, a flow tube mounted between said inlet and said outlet elements, and a collapsible locking assembly for removably locking said tube in operating position including a platform member, rigid spacing means located between said platform member and one of said elements, means biasing said platform member into engagement with said spacing means, said spacing means having major and minor transverse dimensions, and means for moving said spacing means from a first position wherein said platform member and said one element are separated by said major dimensions to a second position wherein said platform member and said one element are separated by said minor dimension.

3,203,241
FLOW MEASURING DEVICE
William K. Genthe, Menomonee Falls, Wis., assignor to Badger Meter Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 4, 1962, Ser. No. 164,230
12 Claims. (Cl. 73—228)



1. A measuring device adapted to be connected in a conduit having a fluid flowing therethrough and comprising, in combination, a generally S-shaped member having inlet and outlet portions, means flexibly connecting said inlet and outlet portions to said conduit for fluid flow therethrough, means supporting said S-shaped member for pivotal movement in response to said fluid flow, an elongated magnetostrictive member having one end connected with said S-shaped member for movement therewith and means connected to the other end of said magnetostrictive member for holding said magnetostrictive member against movement with said S-shaped member and arranged so that fluid flowing through said S-shaped member exerts a rotational force on said S-shaped member and a torsional force is exerted on said magnetostrictive member in accordance with fluid flow through said S-shaped member, means for generating a generally circular magnetic field relative to said magnetostrictive member, and electrically conductive means electrically associated with said magnetostrictive member so that an electrical signal is induced in said electrically conductive means by said torsional force and proportional to the square of said flow.

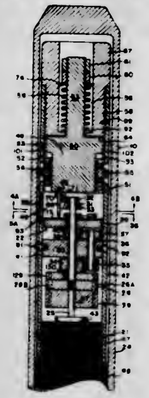
3,203,242
APPARATUS RESPONSIVE TO FLUID FLOW
Daniel Souriau, Paris, France, assignor to Service National dit: Gaz de France, Paris, France
Filed Mar. 16, 1962, Ser. No. 180,228
Claims priority, application France, Mar. 20, 1961, 856,096, Patent 1,258,913
4 Claims. (Cl. 73—231)



1. A volume flow meter for measuring fluid flow comprising a tubular casing having an internal cylindrical surface, a stabilizer disposed within said tubular casing, said stabilizer having movable helicoidal blades for imparting to the fluid passing therethrough a rotational movement with respect to the major axis of said flow meter, a measuring means comprising a turbine mounted operationally behind said stabilizer, said turbine having a shaft adapted to be coupled to registering means for the recording of the volume flow of the fluid passing through said meter, a regulating means comprising a velocity-sensing element disposed operationally behind said turbine and mounted for free rotation about said major axis of said flow meter under the action of the residual rotational movement of the fluid issuing from said turbine, and mechanical actuating means consisting of a mechanical linkage connected between said velocity-sensing element and said helicoidal blades for directly converting the rotation of said element into a motion which changes the angle of orientation of said blades in a direction which tends to reduce to zero the residual rotational speed of the fluid issuing from said turbine.

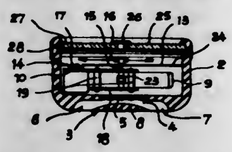
3,203,243
PRESSURE RECORDING DEPTH GAUGE
Cecil Ray Lyles, 2101 E. 16th St., Farmington, N. Mex.
Filed Aug. 9, 1961, Ser. No. 130,319
6 Claims. (Cl. 73—300)

6. An oil fell depth measuring and recording device comprising, co-operatively inter-connected, a pressure sensitive means, a rotatable record sub-assembly, an inertia and scribe sub-assembly, and support means for said assemblies, said pressure sensitive means being firmly attached to said support means, an indicating element on such pressure responsive means, said element being movable with respect to said support means on the application of pressure to said pressure sensitive means, said rotatable record sub-assembly comprising a turntable attached to and driven by said pressure sensitive means and rotatable with respect to said support means beyond one complete revolution of 360°, and a record surface on said turntable, whereby a spiral record of pressure encountered by said pressure sensitive means is continuously made on said record surface and extends beyond a complete revolution of 360°, said inertia and scribe assembly comprising inertia means slidably supported on said support means and movable along the longitudinal axis of said support means on a longitudinal change of momentum of said device, a scribe support attached to said inertia means, a scribe point on said scribe support, said scribe support slidably



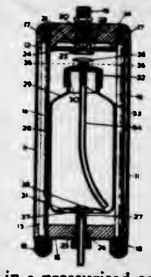
supporting said scribe in continuous recording contact with said record surface, and means attached to said support means moving said scribe radially to and on said record surface while in continuous contact therewith on lengthwise change of momentum of said device in an amount proportional to the amount of said change of momentum.

3,203,244
DEPTH METER FOR DIVING PURPOSES
Carlo Alinari, 4 Via Giusti, Turin, Italy
Filed Oct. 15, 1962, Ser. No. 230,597
Claims priority, application Italy, Nov. 10, 1961, 20,229/61
9 Claims. (Cl. 73—300)



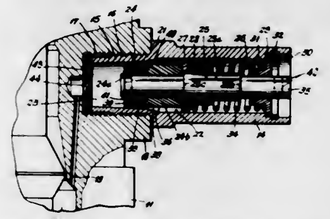
1. A fluid depth meter comprising a casing which defines a hollow chamber, the casing being made of flexibly deformable material, such as plastic or the like, and comprises a concentric side wall and a bottom wall, said bottom wall including an integral diaphragm, said side wall including spaced peripheral grooves on the inner surface thereof, a transparent member sealing one end of said chamber in fluid tight relationship with the exterior thereof, said transparent member being peripherally held in one of said grooves, a Bourdon gauge within said chamber, said Bourdon gauge comprising a dial face which is peripherally held in another of said grooves, said concentric side wall being radially outwardly displaceable to an extent whereby said transparent member and said dial face may be withdrawn from their respective grooves, said side wall also being resiliently returnable to a position whereat said transparent member and dial face peripherally fit within said grooves, an incompressible fluid filling said chamber, said integral diaphragm of said casing being relatively thin and the remainder of the bottom wall and concentric side wall of said casing being relatively thick, said diaphragm being of one piece construction with the bottom wall, being flexibly deformable, and having one side thereof exposed to the exterior of said chamber.

3,203,245
FLOAT FOR USE IN A PRESSURIZED CHAMBER
Cosby Donald Philipps Smallpeice, "Caribbee," Riddell's Bay, Bermuda, assignor of one-half to Nuquip Limited, Richmond, Surrey, England
Filed Feb. 9, 1962, Ser. No. 172,220
Claims priority, application Great Britain, Feb. 28, 1961, 7,212/61
2 Claims. (Cl. 73—322.5)



1. A float for use in a pressurised gas chamber in which a liquid can collect, said float being hollow and made from thin sheet material to provide it with a high degree of buoyancy in the liquid, said float having a vent adjacent its top to establish a permanent communication between its interior and the interior of the chamber to enable the gas pressures existing in said float and said chamber to equalise, and the thin sheet material from which said float is made being highly flexible and resilient so that said float can be partially collapsed by a sudden preponderance of gas pressure in said chamber over the gas pressure in said float while the said preponderance of gas pressure is being relieved by the passage of gas through the vent and into the float, and afterwards recover its original shape by virture of its resilience.

3,203,246
BLOW-OFF VALVE AND PRESSURE INDICATOR FOR FIRE EXTINGUISHERS
Laurence G. Horwitt, New Haven, Conn., and Philip M. Carter, Ossining, and Roman Gurtler, Chester, N.Y., assignors to The Casco Products Corporation, Bridgeport, Conn., a corporation of Connecticut
Filed Apr. 13, 1962, Ser. No. 187,370
3 Claims. (Cl. 73—419)



1. A gauge for use with pressurized fire extinguishers or like devices having a pressurized tank, comprising a cylinder having a bore in communication with the interior of the tank, a piston in the cylinder; a spring engaging the piston yieldingly resisting movement of the piston in response to gas pressure; means connected with the piston to indicate the amount of gas pressure present in the tank, the bore of the cylinder having at one end a diameter larger than that of the piston so that at a predetermined place in the travel of the piston, beyond its normal operating range of movement, to which it is moved when pressure in the cylinder exceeds a predetermined safe

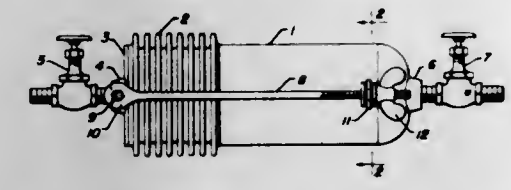
value the gas may escape past the piston to the atmosphere, thereby avoiding the creation of excessive pressure which would damage the device said spring returning the piston to normal operating range when the gas pressure in the tank is reduced to a safe value, and and an obturating ring for the piston, said piston being formed of two relatively movable parts, the adjacent faces of which are shaped to and receive said obturating ring, one of said parts being secured to the piston rod and forming the head of the piston and the other of said parts being slidable on said piston rod and urged against said ring by operative engagement with the end of the said spring facing the piston, whereby as the gas pressure against the head of the piston increases the grip upon the ring by the two piston parts increases.

3,203,247

VARIABLE VOLUME SAMPLING CHAMBER

Edward J. Bicek, La Grange, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Jan. 8, 1962, Ser. No. 164,701
1 Claim. (Cl. 73—421)



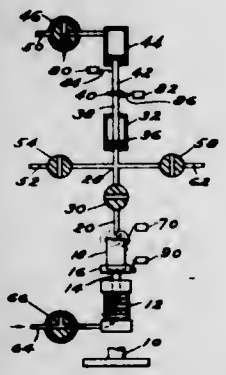
A variable volume sample chamber having flexible fluid displacement means operative to move and discharge a fluid sample from the chamber, comprising in combination, a confined metal wall chamber having separate fluid inlet and outlet valving means connecting therewith, a compressible and expansible corrugated metal wall bellows section forming at least a part of the exterior wall portion of said sample chamber whereby the interior of such section is exposed to and acted upon by the fluid sample entering the chamber, and adjustable threaded means extending between opposing ends of said chamber across said bellows section, whereby the latter may be compressed or expanded by the adjustment of said threaded means and a fluid sample readily discharged.

3,203,248

APPARATUS AND METHOD FOR SAMPLING HEADSPACE GAS OF CANS

James R. Stutler, Warren, and Philip E. Dakin, Lathrup Village, Mich., assignors to The Stroh Brewery Co., Detroit, Mich., a corporation of Arizona

Filed Apr. 19, 1963, Ser. No. 274,157
11 Claims. (Cl. 73—421.5)



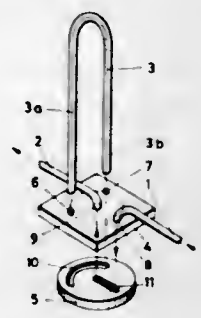
1. Apparatus for sampling gas present in the headspace of a closed container comprising means for piercing the container to establish communication with the headspace thereof, a cylinder, a piston movable in said cylinder, a conduit connecting said piercing means with said cylinder on one side of said piston, a valve operable for opening and closing said connection, means for admitting purging gas to the cylinder during movement of the piston away from said conduit to a first position and while said valve is closed, means for moving the piston from said first position towards said conduit to a second position, means for opening said valve during said movement of the piston from the first to second positions to thereby expel the purging gas from the cylinder via said piercing means, means for causing relative movement of said container and piercing means to effect said piercing and means controlling said piston moving means for effective reciprocation of the piston a second time for admitting the headspace gas via said piercing means into the cylinder and for expelling it from the cylinder to a sample receiver.

3,203,249

GAS CHROMATOGRAPHY VALVING APPARATUS

Dietrich Jentzsch and Horst Weber, Uberlingen am Bodensee, Germany, assignors to Bodenseewerk Perkin-Elmer & Co. G.m.b.H., Uberlingen am Bodensee, Germany

Filed Aug. 14, 1962, Ser. No. 216,807
Claims priority, application Germany, Aug. 18, 1961, B 63,704
5 Claims. (Cl. 73—422)



1. A valve adapted for use in chromatography which comprises: a stator member having a first planar surface and defining in said surface first, second, and third ports, each of said ports being positioned at a corner of an equilateral triangle, and a fourth port being positioned equidistant from said first, second, and third ports; a rotor member having a second planar surface contacting said first surface and defining in said second surface a first channel adapted to interconnect two of said first, second, and third ports to allow fluid flow therebetween and a second channel adapted to interconnect the remaining ports to allow fluid flow therebetween; carrier gas supply conduit means connected to said first port; carrier gas outlet conduit means connected to said fourth port; means for connecting a chromatographic separating column between said second and third ports; and actuating means for rotating said rotor member relative to said stator member, about said fourth port.

3,203,250

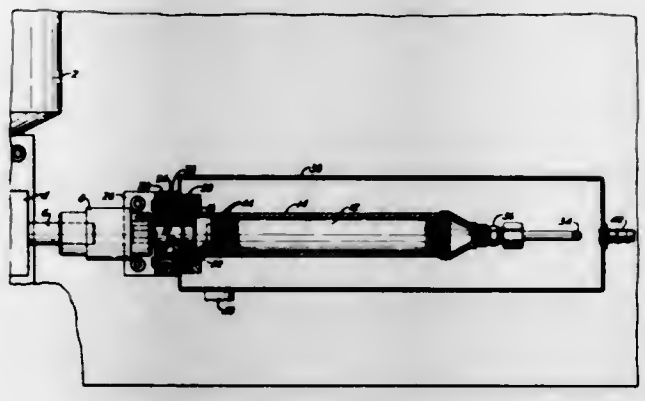
SAMPLING APPARATUS

Norman D. Coggeshall, Verona, and Orville K. Doolen, Oakmont, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

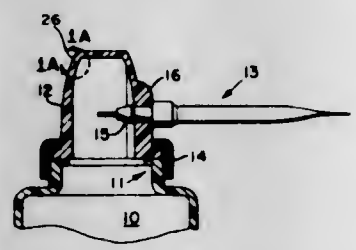
Filed Nov. 29, 1962, Ser. No. 240,882
4 Claims. (Cl. 73—422)

1. Apparatus for sampling a liquid stream flowing in a main conduit and for analyzing the samples so obtained at temperature, fluid pressure and flow conditions other than those existing in said main conduit, comprising analysis means for continuously detecting and measuring a physical property of the liquid to be analyzed, a sampling conduit connecting the analysis means and said main conduit for delivering representative portions of the liquid stream flowing through said main conduit to said analysis means, heat exchange means intermediate

of said main conduit and the analysis means for adjusting the temperature of the liquid in the sampling conduit to the temperature desired in the analysis means, irrespective of the temperature of said liquid stream, means intermediate of said main conduit and said analysis means for adjusting the fluid pressure and the flow rate of the liquid in the sampling conduit to the conditions desired in the analysis means, irrespective of the fluid pressure and flow rate of said liquid stream, said means for adjusting the fluid pressure and flow rate comprising a cylindrical pump tube, a pump screw positioned coaxially within said cylindrical pump tube and having alternate, helical flights and grooves, the latter forming a path of flow through said pump tube, the outer peripheries of the flights of said pump screw being in close proximity to the inside surface of said pump tube, and drive means for causing rotation of said pump screw within said pump tube, whereby liquid introduced into said pump tube is caused to advance therethrough.

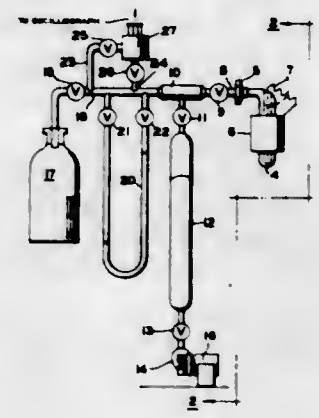


3,203,251
PIPETTE APPARATUS
Robert Alexander Robinson, Cupertino, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Mar. 19, 1963, Ser. No. 266,389
5 Claims. (Cl. 73—425.6)



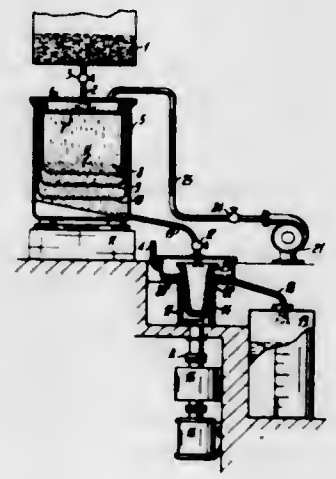
1. A pipette assembly for delivering a measured volume of liquid comprising a deformable reservoir for holding liquid contents to be delivered, a cup-shaped dome, means retaining said dome to form a closure for said reservoir, a vent consisting of a single hole extending through the wall of said dome, a micro-pipette having a cylindrically-shaped hollow body portion, capillary passages formed at each end of said body portion to retain for delivery a precise volume of liquid defined between meniscuses formed within each said capillary passage, means for mounting said body portion with one of said passages extending into said dome in fluid communication with the interior thereof, the last said passage providing an opening dimensioned to provide less resistance to liquid flow therethrough under pressure from within said dome when the assembly is inverted for filling than provided by said vent, said pipette offering more resistance to gas flow therethrough into said dome when the pipette is filled with liquid and disposed upright than the gas flow resistance of said vent at such time.

3,203,252
MEANS AND METHOD OF CATALYST ANALYSES
Leon M. Polinski, 29 Farragut Road, Plainfield, N.J., and Leonard M. Naphtali, 575 West End Ave., New York, N.Y.
Filed May 2, 1962, Ser. No. 191,929
4 Claims. (Cl. 73—432)



1. A method for determining rates of catalytic adsorbtion of gases comprising:
(a) introducing gas into a system having a catalyst adsorbent therein;
(b) cyclically varying the volumetric capacity of the system;
(c) measuring the actual amplitude change in pressure of the system corresponding to the cyclical volumetric variations;
(d) computing the adsorption rate characteristic from the measured change in pressure amplitude.

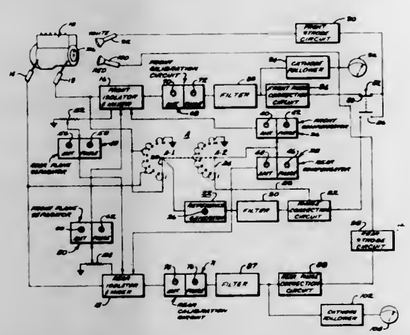
3,203,253
APPARATUS FOR THE TESTING OF BITUMINOUS BUILDING MATERIALS
Ernst Scheid, Limburgstrasse 91, Diez (Lahn), Germany
Filed Nov. 24, 1961, Ser. No. 154,662
Claims priority, application Switzerland, Dec. 2, 1960, 13,531/60
9 Claims. (Cl. 73—432)



1. An apparatus for testing bituminous materials comprising container means having an apertured plate therein on which a sample of bituminous material to be tested is placed, means connected to said container means adjacent said plate to supply solvent onto said sample, means for applying at least to said sample an agitating action in order to increase the effect of the solvent on the sample to dissolve dissolvable parts therefrom and to loosen solid parts therefrom, sieve means disposed in said container means to separate the solid parts into different grain

sizes, means operatively connected to said container means to receive as a continuous stream solute and finer grain solid parts therefrom and to subject the solute and finer grain parts to a separating action to rapidly separate the finer grain parts from the solute, means operatively connected to said receiving means to collect the solute therefrom and to measure same, and drying means for drying said separated solid parts in said container means and said receiving means whereby a rapid determination of the complete composition of bituminous materials may be effected by means of a single operation.

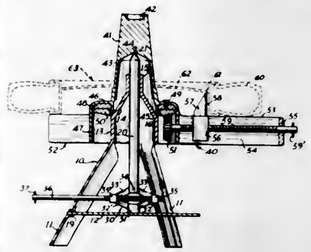
3,203,254
ELECTRONIC BALANCING APPARATUS
Glen H. Thomas, Columbus, and Charles A. Shearer, Westerville, Ohio, assignors to International Research and Development Corporation, Worthington, Ohio, a corporation of Ohio
Filed May 21, 1962, Ser. No. 196,211
12 Claims. (Cl. 73—466)



1. In balancing apparatus adapted to be connected to be a pair of electromechanical transducers for two plane balancing of a rotating member, a reference generator connectable to at least one of said transducers to be energized thereby to produce a reference signal of fixed amplitude and adjustable phase, filter means connected to the output of said reference generator for eliminating all signals other than those due to a single rotating member while producing an output signal which is locked in phase to the input signal applied thereto regardless of the frequency of the input signal, a pair of compensators capable of adjusting the phase and amplitude of a signal fed thereto, a pair of mixers for mixing the outputs of said transducers and the outputs of said compensators, means for connecting said filter means to the compensators, and means for connecting one compensator and one transducer to one of the mixers while connecting the other of the compensators and the ~~other~~ transducer to the other mixer to produce output signals from the mixers which simulate those obtained from a balanced member.

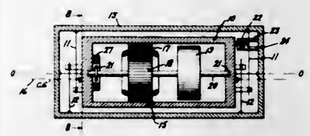
3,203,255
TRUCK WHEEL BALANCER
Wilbur C. Rexroat, Atlanta, Ga., assignor to Dynamic Center Engineering Co., Inc., Norcross, Ga., a corporation of Georgia
Filed June 28, 1962, Ser. No. 205,983
5 Claims. (Cl. 73—484)

2. In a tire balancing device of the type having a supporting member with an upstanding balance point, the combination therewith of a spider adapted to be supported on said point, said spider including a body disposed over said point, a plurality of arms radiating from said body, a plurality of upstanding lugs carried by said arms, means for simultaneously moving all lugs inwardly and outwardly, said last mentioned means including a ring gear carried by said body, a plurality of ring follower



gears corresponding to the number of arms on said spider and meshing with said ring gear, and a plurality of shafts threadedly engaging said lugs and secured to said follower gears for rotation therewith.

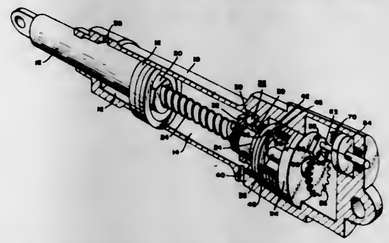
3,203,256
ACCELERATION RESPONSIVE DEVICE
Francis B. Woestemeyer, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 24, 1956, Ser. No. 580,261
8 Claims. (Cl. 73—517)



3. In an acceleration responsive device, a housing, a sealed container mounted for rotation about a given axis within said housing, said container having a center of gravity axis displaced from said given axis whereby a first rotative torque is normally imparted to the container in response to linear acceleration of the housing in a direction perpendicular to said given axis, an electric motor within said container including a stator secured to the container and a rotor driving a flywheel, pick-off means for producing a signal in response to movement of the container, circuit means for applying said signal to the motor to impart a counter torque to the container, means for obtaining a signal proportional to the rotation of said flywheel, said mounting means for enabling rotation between said container and housing including a first flexible member interconnecting said container with said housing in a first geometric plane including said given axis and second flexible means interconnecting said container and housing in a second geometrical plane transverse to said first geometrical plane and including said center of gravity axis and said container.

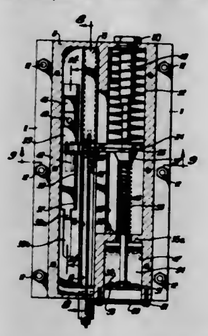
3,203,257
ESCAPEMENT CONTROLLED ACTUATOR
Howard M. Geyer, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 23, 1962, Ser. No. 175,056
1 Claim. (Cl. 74—1.5)

In a screw and nut type actuator, a screw shaft, bearing means rotatably journalling said screw shaft, torque absorbing coil spring operatively associated with said screw shaft, and pendulum actuated escapement means operatively connected to said screw shaft through said



spring for controlling the rate of rotation of said screw shaft.

3,203,258
CONTROL DEVICE FOR TEMPORARILY ALTERING THE TEMPERATURE SETTING OF A THERMOSTAT
Richard D. Grayson, La Canada, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Continuation of application Ser. No. 62,641, Oct. 14, 1960. This application Apr. 1, 1963, Ser. No. 270,500
10 Claims. (Cl. 74—3.5)



6. In a control device for a thermostat having a high temperature position and a normal temperature position: an adjustable member for altering at will the setting of a thermostat from a normal temperature to a higher temperature; a pivoted arm having one position in which said arm is capable of engaging the adjustable member to return it to normal setting condition, and having another position; a time delay device engageable with the pivoted arm for causing the arm to move toward the said one position when it is in a position out of operative relation to the adjustable member; said time delay device including a dashpot and a spring urging the arm in a direction to move the adjustable member; and means operating on the arm upon reaching a definite position for moving the arm into said one position and to disconnect the arm from the dashpot to permit the spring to move the arm to return the adjustable member to normal position.

3,203,259
VISCOUS DAMPED SENSING DEVICE
Harold H. P. Lemmermann, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 31, 1956, Ser. No. 631,903
15 Claims. (Cl. 74—5.5)

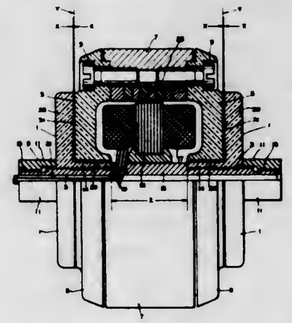
8. In a floated gyroscope: a generally hollow cylindrical housing; a generally hollow cylindrical chamber in said housing; a gyroscope in said chamber; support means

for rotatably supporting said chamber in said housing for rotation about an axis, said chamber having a normal position relative to said housing; a fluid in said housing and surrounding said chamber; and means for resisting relative rotation of said chamber and said housing about said axis comprising a plurality of vanes on said chamber extending generally parallel to said axis and outwardly from said chamber, toward said housing defining a



plurality of restrictive gaps between said vanes on said chamber and said housing, and a plurality of vanes on said housing extending generally parallel to said axis and inwardly from said housing toward said chamber defining a plurality of restrictive gaps between said vanes on said housing and said generally cylindrical chamber, said vanes on said housing and said chamber terminating with arcuate faces of substantial width.

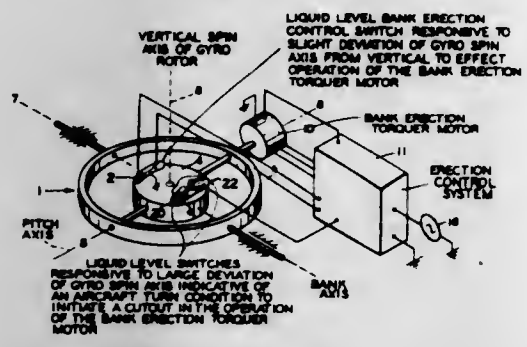
3,203,260
INTERCHANGEABLE HYDRO-DYNAMIC SPIN BEARINGS
Joseph P. Pierry, Lodi, and Howard E. Schulien, Montville, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed June 5, 1962, Ser. No. 200,241
5 Claims. (Cl. 74—5.7)



1. In a gyroscopic rotor means of a type including a shaft, an electric motor mounted on said shaft, and a flywheel driven by said electric motor; the improvement comprising inner race elements, said shaft including a raised portion, said inner race elements including journal portions arranged in abutting relation to the raised portion of said shaft, and said inner race elements including thrust plate portions, outer race elements positioned between the thrust plate portions and arranged in spaced relation to the journal portions and the thrust plate portions of said inner race elements, said inner and outer race elements cooperating to effect a hydro-dynamic wedge therebetween upon relative rotation thereof so as to provide a lubricating film of air between the inner and outer race elements, first means to releasably secure said inner race elements in said abutting relation to the raised portion of said shaft, and second means to releasably secure said outer race elements to said flywheel, and said first and second releasable means being so ar-

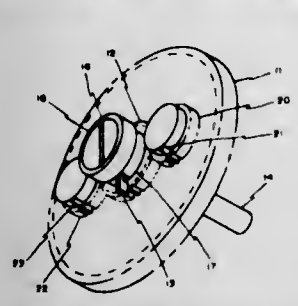
ranged as to permit a variance in the spaced relation between said outer race elements and the thrust plate portions of said inner race elements.

3,203,261
GYRO ERECTION CONTROL SYSTEM
Nathaniel N. Moore, Wayne, N.J., Mario Perez, Jr., Pearl River, N.Y., and Seymour Ackerman, White Meadow Lake, Rockaway, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Feb. 15, 1962, Ser. No. 173,476
7 Claims. (Cl. 74—5.47)



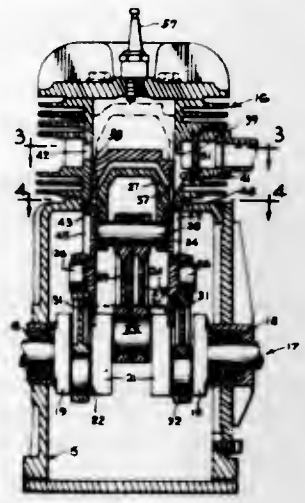
1. In an erection system for a gyroscope of an aircraft having a dynamic vertical varying with flight conditions of the aircraft, said gyroscope including a rotor case with a pivotal horizontal axis, rotor means rotatably mounted in said case and having a spin axis tending to deviate from a predetermined relationship to the dynamic vertical of the aircraft during a turning maneuver of said aircraft, said erection system being of a type including a level switch for controlling the operation thereof, a first relay means to cut the level switch of the erection system out of operation, and a second time delay relay means controlled by said first relay means and effective to render the level switch of the erection system operative after a predetermined delay upon the turning maneuver of the aircraft having been continuous for a period exceeding said predetermined delay; the improvement comprising a switch mechanism operatively connected to directly control said first relay means, and means operatively connecting the rotor case of said gyroscope to said switch mechanism so as to effectively operate said first relay means in a sense to cut the erection system out of operation in response to an excessive deviation in the spin axis of the rotor means from said predetermined relationship to the dynamic vertical of said aircraft during said turning maneuver of the aircraft.

3,203,262
LIMITED MULTIPLE TURN ROTARY MECHANISM
Emanuel E. Beer, White Plains, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 361,103
6 Claims. (Cl. 74—10.2)



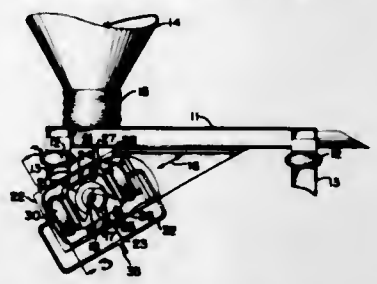
1. A multiturn limit mechanism comprising,
first rotary means,
second and third rotary means each drivingly engaging said first rotary means, the turns ratio between said first and second rotary means and between said first and third rotary means differing,
first and second means mounted on said second and third rotary means, respectively, for rotation therewith, and
third means mounted on said first rotary means for rotation therewith whereby the limits are defined by the simultaneous coacting between said third means and said first and second means.

3,203,263
TWO-CYCLE INTERNAL COMBUSTION ENGINE
Edward J. Gaffney, 903 N. East Ave., Waukesha, Wis.
Filed May 28, 1962, Ser. No. 198,103
4 Claims. (Cl. 74—44)



3. In a gasoline engine, the combination comprising,
(a) an engine cylinder,
(b) a crank case associated with said cylinder,
(c) the crank case having a bearing in axial registration with the bore of said engine cylinder,
(d) a piston reciprocably disposed within said cylinder and including a skirt portion,
(e) a crank shaft rotatably mounted in said crank case,
(f) a pair of coaxially aligned external wrist pins, disposed diametrically at opposed points on said skirt portion,
(g) a connecting rod connecting each of said wrist pins with said crank shaft,
(h) said crank case having an annular groove concentric with the crank case bearing and disposed at the juncture of said cylinder and said bearing,
(i) and an oil ring seated in said groove and in wiping engagement with said piston,
(j) the bearing being separable from said cylinder so as to permit ready installation of said oil ring in said groove.

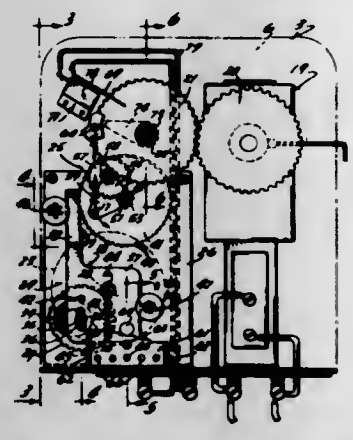
3,203,264
SHEAR SPRING GUIDES FOR VIBRATORY EXCITERS
Robley W. Evans, New Albany, Ind., assignor to Rex Chainbelt Inc., a corporation of Wisconsin
Filed Aug. 11, 1961, Ser. No. 130,962
6 Claims. (Cl. 74—61)



1. In a vibratory work performing system, in combination, a work member of substantial mass to be vibrated, an exciter member having a mass less than said work member, elastomer members stressed in shear connecting the exciter member to the work member for vibration

along a work path, said elastomer members cooperating with said exciter and work members to form a vibratory system having a natural frequency along the work path that is different from the natural frequency normal to the work path, a shaft extending normal to the work path and carrying eccentric weights journaled in the exciter member, means for rotating the shaft at a constant speed generally equal to said natural frequency along said work path, and an air spring connected in parallel with said elastomer members and adapted to adjustably raise the natural frequency of the vibratory system relative to the speed of rotation of the shaft.

3,203,265
RATE OF CHANGE CONTROLLER
Dean F. Flegel, Racine, Wis., assignor to Reliance Time Controls, Inc., Racine, Wis., a corporation of Wisconsin
Filed July 23, 1962, Ser. No. 211,535
6 Claims. (Cl. 74—124)



1. In a temperature control for resetting a thermostat in predetermined temperature increments per unit of time in equal sub-increments, said control comprising,

(a) a timer motor,

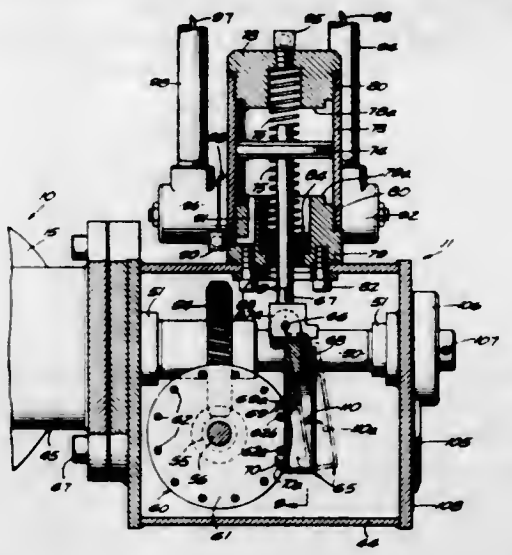
(b) a cam coupled to be continuously rotated by said motor at a rate corresponding to said sub-increments,

(c) a cam pawl mounted for reciprocation with respect to the cam and having a follower resiliently urged into engagement with said cam, said cam pawl having an outer end provided with ratchet teeth on the edge, and

(d) a ratchet wheel rotatably mounted in mesh with said cam pawls and actuated by said cam pawls as the cam pawl moves outwardly of the cam and effectively released from the cam pawl as the cam pawl moves toward the cam, adjustable stop means disposed in the path of the cam pawl as the pawl moves toward the cam to said pawl to variably restrict the movement of the pawl and hold the pawl in spaced relation to the cam for predetermined partial portions of each cycle and thereby varying the movement of the pawl and the temperature increment per unit of time.

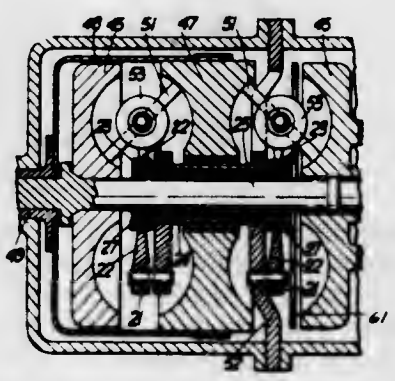
3,203,266
VALVE MECHANISMS
Robert S. Willis, Long Beach, and William J. Baker, Anaheim, Calif.; said Baker assignor to said Willis; N. Elizabeth Willis, executrix of Robert S. Willis, deceased
Filed Sept. 10, 1962, Ser. No. 222,413
9 Claims. (Cl. 74—128)

1. A valve operator for a valve having a movable member, comprising: a movably mounted operating member having means for driving connection to a valve member; motor means including a driving member moving from a rest position in either of two directions; and double acting ratchet means drivingly connected to said driving member to rotate the operating member in either of two directions; said motor means comprising a double acting fluid operating piston and cylinder assembly; spring means biasing said piston to an intermediate position in said



cylinder prior to each power stroke; and stop means in said cylinder for limiting the piston travel in either direction away from said intermediate position.

3,203,267
INFINITELY VARIABLE CHANGE SPEED GEARS
Forbes George de Brie Perry, East Grinstead, Sussex, England, assignor to National Research Development Corporation, London, England, a British body corporate
Continuation of application Ser. No. 50,151, Aug. 17, 1960. This application Dec. 12, 1961, Ser. No. 160,694
Claims priority, application Great Britain, Aug. 19, 1959, 28,397/59
17 Claims. (Cl. 74—200)



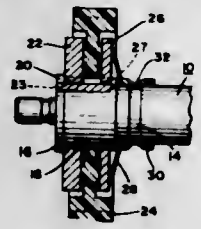
1. An infinitely variable change speed gear of the friction type having coaxial first and second torus discs spaced apart, a plurality of rollers drivably connecting the torus discs, a torque reaction member and means to tilt the axes of the rollers, which means comprises a cam and a plurality of rockers connected with the rollers and all controlled by the cam, said rockers each being pivotally carried by the torque reaction member to pivot about a pivot axis such that the rocker senses the torque reaction of a roller and the said means tends to balance the torque reaction of all the rollers characterised in that each rocker has an arm extending into a cam slot in the cam with radial freedom between the cam and the rocker arm and in that at least one of the cam slots contains a guide member which is shaped to permit a relative movement axially of the slot between the cam and the guide member and to permit relative rotation about the axis of the slot between the cam and the guide member but to retain the guide member against relative movement between the cam and the guide member at right angles to the axis of the slot, and in that the end of the rocker arm extending into the slot is received with friction in the guide member.

3,203,268

WORM SHAFT AND GEAR ASSEMBLY

Arthur P. Manoni and John A. Schum, Rochester, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 12, 1963, Ser. No. 264,607
1 Claim. (Cl. 74—411)



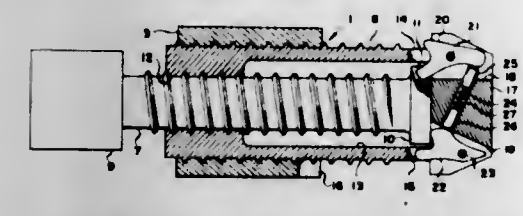
A worm shaft and gear assembly including, a shaft having an integral worm adjacent one end thereof and a hub adjacent the other end thereof with an upstanding shoulder, said hub having an axially extending keyway, a gear journalled on said hub, a pair of clutch plates keyed to said hub and disposed on opposite sides of said gear, a Belleville spring washer engaging one of said clutch plates, and a collar engaging said Belleville spring washer for stressing the same to maintain said other clutch plate in abutment with said shoulder and both clutch plates in frictional engagement with said gear to control the output torque, said shaft having an annular groove spaced axially from said hub, said collar being staked in said annular groove to maintain said Belleville spring washer under said stress.

3,203,269

TELESCOPING SCREW SEQUENCING DEVICE

George C. Perrine, Burbank, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Oct. 22, 1962, Ser. No. 232,020
14 Claims. (Cl. 74—424.8)



1. An extendable-retractable rotary actuating mechanism comprising in combination; a pair of telescoping screw members capable of relative rotation therebetween during extension and retraction of the screw members, a screw nut capable of longitudinal travel along the outer screw member upon relative rotation therebetween, and lock means, said lock means interconnected with the telescoping screw members and adapted to lock the telescoping screw members against relative rotation during longitudinal travel of the screw nut along the outer screw member as well as lock the screw nut and outer screw member against relative rotation during extension and retraction of the telescoping members.

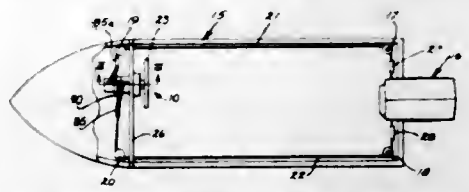
3,203,270

STEERING FOR MARINE CRAFT

William M. Booth, 2006 Vista Place, Grand Haven, Mich.

Filed Jan. 30, 1961, Ser. No. 85,526
4 Claims. (Cl. 74—517)

4. Marine steering mechanism comprising; a steering wheel shaft, a steering wheel fixed to said shaft, winding drum means fixed to said shaft, braking surface means formed at and extending from opposite ends of said winding drum and of lesser diameter than said drum means, a pulley rope wrapped about said winding drum, pulley means including a first and second double tie pulley, one end of the pulley rope being entrained about said first pulley and the other end of the rope being entrained about said second pulley, the one end of said rope also being wrapped about one of said braking surfaces and tied to said first pulley, the other end of said pulley rope being wrapped about the other braking surface and tied to said second pulley, said first and second pulleys also adapted for being tied to tiller cables adapted to be atttached to a motor, said pulley rope being paid-off from said winding drum when turned by said steering wheel but binding on said braking surfaces to prevent said motor from turning said steering wheel, and cowling means enclosing said



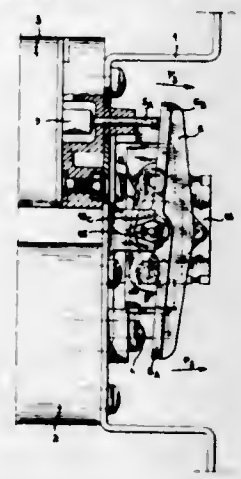
winding drum means and including aperture means for passage of said pulley rope therethrough, a portion of said cowling means being adjustable with respect to the other portions to move said aperture means and thereby facilitate leading said pulley rope off from said winding drum at any point about the circumference thereof, and said first and second pulleys being movable about the circumference of said drum without hampering operation of said mechanism whereby said mechanism enables tiller cables to pass along the same sides or different sides of a boat as desired.

3,203,271

ROCKING DEVICE FOR A TIME-DELAY RELAY

André Georges Faffart, Nanterre, Seine, France, assignor to La Telemecanique Electrique, Nanterre, Seine, France, a joint-stock company of France

Filed Aug. 12, 1963, Ser. No. 301,369
Claims priority, application France, Aug. 28, 1962, 908,009
5 Claims. (Cl. 74—519)



1. A device for the operation of a time-delay relay having an operating push-rod actuated by a driving unit having an actuating push-rod, said device comprising in combination:

An actuating unit and a time-delay unit mounted side by side on a base, the operating push-rods of said actuating unit and said time-delay unit working in parallel directions;

A rocking device constituted by a rocker-arm pivotally mounted on a central shaft;

The two extremities of said rocker-arm being adapted to come respectively into contact with the two above-mentioned push-rods;

A pivotal support articulated on an axis parallel to said rocker-arm and on which is fixed the extremity of the pivotal shaft of said rocker-arm;

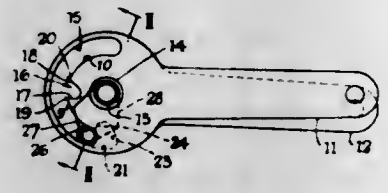
A fixed bearing intended to serve as a support for the free extremity of said pivotal shaft of the rocker-arm, said free extremity forming a pivot pin;

Means for fixing together or separating at will said rocker-arm and said pivotal support;
and elastic means adapted to urge said rocker-arm toward said push-rods.

3,203,272
LOCKING STAYS

Paul Carl Roger Fernberg, Farnham Common, England, assignor to United-Carr Incorporated, a corporation of Delaware

Filed Jan. 22, 1964, Ser. No. 339,547
Claims priority, application Great Britain, Jan. 31, 1963, 4,091/63
8 Claims. (Cl. 74—527)



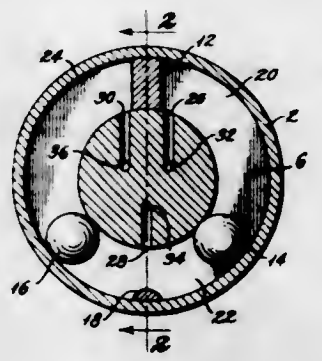
1. A locking stay comprising: a first member having a first flat face and a first profiled edge thereof, said first profiled edge including a first notch, having first and second sides, and first and second cam portions extending away from the first and second sides respectively of the first notch; a second member having a second flat face portion and a second profiled edge thereof; connecting means holding the first and second face portions in sliding contact with one another and constraining the second member to move, relative to the first member, only forwardly in a defined direction and backwardly in the relatively opposite direction; the second profiled edge including a second notch having first and second sides which in one relative position of the first and second members are approximately in register with the first and second sides respectively of the first notch; and the stay also comprising a locking member and spring means which urge the locking member against the first and second profiled edges, the locking member being adapted to slide along the first and second profiled edges and, in the said one relative position of the first and second members, to enter the first and second notches; the first side of the first notch and the second side of the second notch forming a dihedral angle such that on forward movement of the second member from its said one position relative to the first member they combine to cam the locking member out of the notches and, the second side of the second notch extending beyond the first side of the first notch, to carry the locking member on to the said first cam portion; and the second profiled edge further comprising a third cam portion, extending away from the first side of the second notch a distance greater than one half the maximum width of the first notch and terminating in a stop portion at the end thereof remote from the second notch, such that as the second member is moved backwardly the locking member is forced by the stop portion off the first cam portion and carried onto the second cam portion by the third cam portion which is of sufficient length to prevent re-entry of the locking member into the first notch.

3,203,273
UNBALANCE COMPENSATOR

Paul Favrot, Lyon, France, assignor to Landis-Gendron S.A., Villeurbanne, Rhone, France, a company of France

Filed Apr. 5, 1963, Ser. No. 270,878
Claims priority, application France, Apr. 20, 1962, 895,197
8 Claims. (Cl. 74—573)

2. An unbalance compensator for a rotatable member comprising a body member, said body member having an annular chamber therein, concentric with the axis of rotation of the rotatable member, a fixed weight constituting a partition in said chamber, a stop in said chamber diametrically opposite the partition, a movable weight in each chamber space between the partition and the stop,

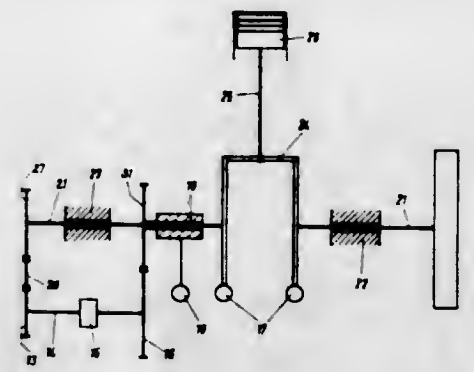


and fluid means responsive to any unbalance in the rotatable member for moving each movable weight relative to the fixed weight and to each other in a direction and to an extent necessary to compensate for said unbalance, each of the movable and fixed weights being of equal weight.

3,203,274
BALANCE WEIGHT ARRANGEMENT FOR RECIPROCATING ENGINES

Hans Barth, Aschaffenburg, and Johann Schmuck, Germering, near Munich, Germany, assignors to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft, Wiesbaden, Germany

Filed June 27, 1962, Ser. No. 205,768
Claims priority, application Germany, June 29, 1961, G 32,608; Mar. 17, 1962, G 34,503
5 Claims. (Cl. 74—604)



5. In a reciprocating engine, a combination of a second shaft, a crankshaft, a bearing housing rotatably mounted on said crankshaft, a balancing weight attached to said bearing housing, and means operatively connecting said balance weight to said crankshaft through said second shaft for rotating said balancing weight with respect to the operation of the engine in a direction opposite to the rotation of said crankshaft, and said second shaft being drivingly connected to an auxiliary means from said engine.

3,203,275
MECHANICAL ACTUATOR

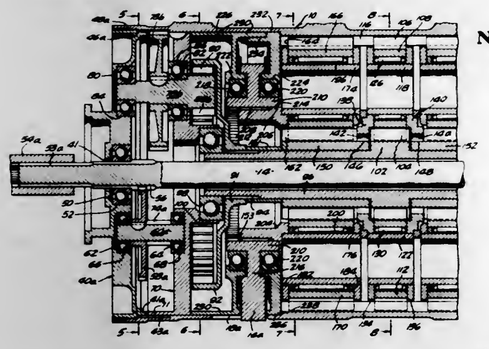
Vaino A. Hoover, 1433 San Vicente Blvd., Santa Monica, Calif.

Filed Nov. 26, 1962, Ser. No. 240,103
13 Claims. (Cl. 74—665)

1. Gear reduction actuator apparatus comprising:
a housing having a cylindrical bore;
a ring gear formed integrally with said housing within said bore,
a drive shaft extending coaxially within said gear ring;
a first sun gear on said shaft;

a first planet gear rotatably mounted on a first carrier means in said housing for simultaneous planetation around said first sun gear, said planet gear meshing with both said sun gear and said ring gear;

a second and third sun gear mounted axially symmetrically on opposite sides of said first sun gear for rotation coaxially relative thereto;

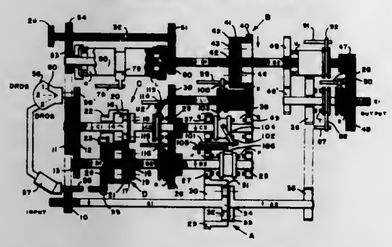


means drivingly interconnecting said first carrier means with said second and third sun gear for coaxial rotation of said second and third sun gear relative to said housing;

a second and third planet gear rotatably mounted on second and third carrier means, respectively, in said housing for simultaneous planetation around said second and third sun gear, respectively, said second and third planet gear meshing with both said second and third sun gear, respectively, and said ring gear;

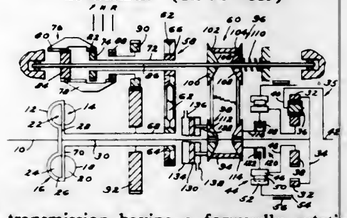
and an actuator member coupled to each said second and third carrier means for coaxial rotational movement thereby.

3,203,276
VARIABLE SPEED TRANSMISSION
Edward P. Bullard III, Cherry Lane, Fairfield, Conn.
Filed Feb. 23, 1961, Ser. No. 91,207
33 Claims. (Cl. 74—687)



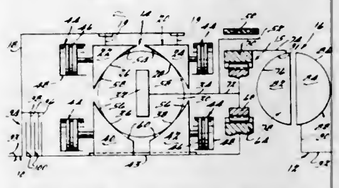
1. In a transmission, two spaced shafts; plural paths of power flow connecting said shafts; an epicyclic gearing arrangement in each path of power flow; selectively operable clutch means connected to one of said arrangements for causing it to produce an output speed range from a point below its base speed to a point above its base speed while the other arrangement is ineffective; other selectively operable clutch means connected to the other of said arrangements for causing it to produce an output range of speeds from a point below its base speed to a point above its base speed while the first mentioned arrangement is ineffective, the design of said epicyclic gearing arrangements being such that the output speed at the low point of the range of the other arrangement coincides with the output speed at the high point of the range of speeds of said first mentioned arrangement; other epicyclic gearing means connected between the two arrangements and one of said shafts for effecting the operation of said two arrangements; and auxiliary variable speed means connected to said other epicyclic gearing means for controlling the operation of said other epicyclic gearing means.

3,203,277
VARIABLE SPEED TRANSMISSION
Norman T. General, Farmington, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 243,383
10 Claims. (Cl. 74—689)



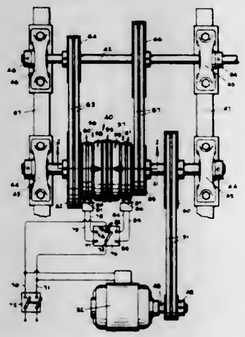
1. A transmission having a forwardly rotating input shaft and an output shaft, and means operatively connecting said shafts providing a plurality of forward speed drives therebetween, said means including a hydrodynamic drive device connected to said input shaft, a gear set having a plurality of rotatable members including a driven member connected to said output shaft, means for holding one member of said gearset against rotation in one direction to condition said gearset for one drive while permitting said member to rotate in the opposite direction, said drive device having a plurality of rotatable elements operatively connected to rotatable members of said gear set for providing split torque power paths to said gear set, the operative connection between one of said rotatable elements and one gearset member including a selectively engageable means, the drive through one of said paths alone providing one forward drive range through said transmission, another of said paths including a belt drive mechanism, the concurrent drive through said one and another paths upon engagement of said selectively engageable means providing a second forward drive range through said transmission.

3,203,278
VARIABLE SPEED FRICTION DRIVE TRANSMISSION
Norman T. General, Orchard Lake, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 2, 1963, Ser. No. 248,932
7 Claims. (Cl. 74—690)



1. A variable speed transmission having rotatable input and output shafts, and means operatively connecting said shafts, said means including a selectively operable variable speed friction drive mechanism and a gearset each having a plurality of rotatable members, releasable means biasing the members of said mechanism together rendering it operable to transmit a drive therethrough, means connecting said input shaft to one of the members of said mechanism and one of the members of said gearset to said output shaft, means connecting a plurality of said members of said mechanism and said gearset together, brake means operable for holding a plurality of said connected members stationary to condition said mechanism and gearset for one drive range of operation upon operation of said mechanism providing an infinite number of speed ratio changes in said range, and selectively engageable means operatively connecting said input shaft to said one member of said gearset bypassing said mechanism and establishing a reverse rotation of said output shaft with respect to the direction of rotation during establishment of said one drive range, the engagement of said latter means and the rendering of said mechanism inoperatble by the release of said releasable means permitting said reverse rotation.

3,203,279
POWER TRANSMISSION DEVICE
Donald D. Rahrig and James F. La Plante, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Oct. 11, 1960, Ser. No. 61,986
2 Claims. (Cl. 74—722)



1. In a power transmission device, the combination of, a base, a driving shaft journaled on said base to rotate about a fixed axis, power means rotating said driving shaft, a driving member splined on said driving shaft to rotate therewith, a pair of driven members mounted on said shaft and disposed on opposite sides of said driving member for rotation relative to said shaft, friction faces formed on opposite sides of said driving member to cooperate with contiguous faces formed on said driven members, means selectively shifting said driving member toward one or the other of said driven members thereby to bring one or the other of said contiguous faces into gripping engagement with one or the other of said driving member friction faces, a driven shaft journaled on said base to rotate about an axis parallel to said fixed axis, and means coupling each of said driven members to said driven shaft to drive said driven shaft in the same direction at either of two different speeds.

3,203,280
CONTINUOUSLY CONTROLLABLE FRICTION WHEEL GEAR DRIVE
Gerhard Kirschey, Baumhof 12, Wuppertal-Barmen, Germany
Filed Aug. 8, 1963, Ser. No. 300,851
Claims priority, application Germany, June 19, 1963, K 50,000
4 Claims. (Cl. 74—796)

1. A continuously controllable friction wheel gear drive, comprising

a housing,

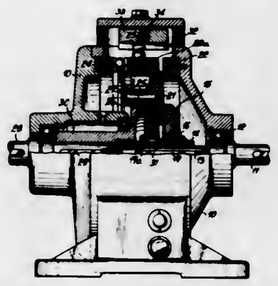
a drive shaft and a driven shaft,

at least two inner gear rings rotated by said drive shaft,

coupling means disposed between said drive shaft and said inner gear rings,

at least two outer gear rings,

one of said outer gear rings being immovably secured to said housing and the other of said outer gear rings being adjustable with respect to said one of said outer gear rings,



a driven disk coupled with said driven shaft, and

flat, double-conical planet gears mounted in said driven disk for adjustment in radial direction, and engaging both said inner gear rings and said outer gear rings,

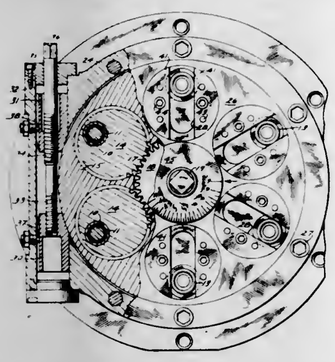
said coupling means including at least one pre-tensioned spring frictionally engaging one of said inner gear rings and having a descending characteristic curve in order to provide a working area of said spring, starting substantially at the summit of said characteristic curve of said spring and descending therefrom.

3,203,281
TOOL PATH CONTROL MECHANISM
Alvin J. Jones, Gates Mills, and Peter E. Forster, Cleveland, Ohio, assignors to The Motch & Merryweather Machinery Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 25, 1963, Ser. No. 260,478
3 Claims. (Cl. 77—1)



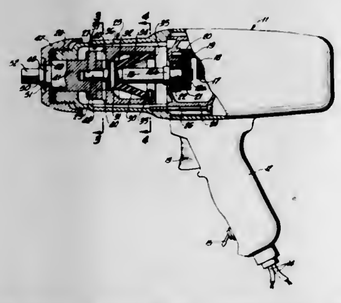
1. In a hydraulic feed piston-cylinder assembly for cutting tools and the like; a hydraulic pulse generating unit comprising a chamber connected to the exhaust side of said cylinder, a piston reciprocably mounted in said chamber, a rocker arm engaging said piston, drive means operative to oscillate said rocker arm thus to reciprocate said piston, said drive means comprising a motor driven shaft, an eccentric on said shaft, an eccentric member surrounding said eccentric on said shaft and including a flattened portion engaging said rocker arm to oscillate the same, means operative to vary the speed of said motor driven shaft to vary the frequency of reciprocation of said piston and thus the generated pulse, support means for said rocker arm, and means operative to adjust the position of said support means to control the amplitude of reciprocation of said piston and thus the amplitude of the generated pulse.

3,203,282
VARIABLE HOLE CIRCLE DRILL HEAD
Charles R. Wilson, Pekin, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Apr. 26, 1963, Ser. No. 275,960
6 Claims. (Cl. 77—23)



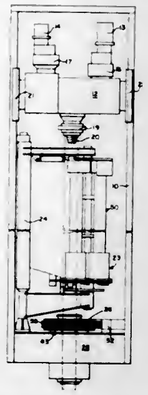
1. A variable hole circle drill head comprising a housing, a block in the housing, a plurality of cylindrical members rotatable in the block and having peripherally disposed gear teeth, a drill spindle carried eccentrically of each cylindrical member, the axes of said cylindrical members being disposed in a circular pattern, a centrally disposed rotatable control member, and a gear on said control member meshing with the gear teeth on all of said cylindrical members whereby rotation of the control member will effect radial adjustment of all drill spindles simultaneously.

3,203,283
IMPACT WRENCH
John P. Newman, P.O. Box 1147, San Jacinto, Calif.
Filed Oct. 18, 1963, Ser. No. 317,188
5 Claims. (Cl. 81—52.3)



1. In an impact wrench, the combination of a drive shaft, a driver member mounted coaxially of the drive shaft, power means for rotating the drive shaft, a hammer member rotatably mounted coaxially of the drive shaft, a conical shaped resilient driving member coaxial with said drive shaft, said driving member having conical inner and outer surfaces and a small diameter end and a large diameter end, said driving member being operably connected to the hammer for rotation therewith and driven from the drive shaft, cooperating means on said hammer member and said driver member for releasable engagement therebetween, means for connecting to the hammer member the large diameter end of the resilient driving member, said large diameter end being most remote from the cooperating means as compared to said small diameter end, and other means for connecting the small diameter end of the resilient driving member to the drive shaft so that upon relative rotational movement between the hammer member and the drive shaft the resilient driving member is twisted and thereby elongated to move the hammer member out of engagement with the driver member.

3,203,284
POWER WRENCH AND POWER SLIP
Robert F. Norrick, Michigan City, Ind., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 9, 1962, Ser. No. 208,497
3 Claims. (Cl. 81—54)

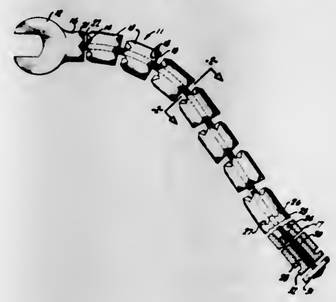


1. A drill rod power wrench comprising a rotatable head portion supported by a frame, said head portion having an opening therein for receiving a drill rod with the longitudinal axis thereof substantially coincident with the axis of rotation of said head portion, said head portion having a plurality of pivotally mounted arms having end portions swingable into and away from said opening, a first power operated means mounted on said head portion connected to said arms for swinging said arms, a fluid operated extensible cylinder mounted on said frame operatively connected to said head portion by an elongated flexible element secured to the periphery of said head portion for rotating said head portion independently of said first power operated means, a pair of cooperating levers having opposable surfaces pivotally mounted on said frame and positioned below said rotatable head, said levers swingable by second power operated means to engage said opposable surface with such drill rod, and a projection mounted on said opposable surface of at least one of said levers for engaging notches on said first drill rod spaced from notches on a second such drill rod threadedly secured to said first drill rod engaged by said pivotally mounted arms whereby said levers hold stationary a drill rod while said arms mounted on said rotatable head rotate said second drill rod to threadedly disengage said second drill rod from said first drill rod.

3,203,285
SELECTIVELY ADJUSTABLE RIGID HANDLE FOR WRENCHES OR THE LIKE
Edward Schmidt, 812 Mills Ave., San Bruno, Calif.
Filed Dec. 5, 1963, Ser. No. 328,351
4 Claims. (Cl. 81—177)

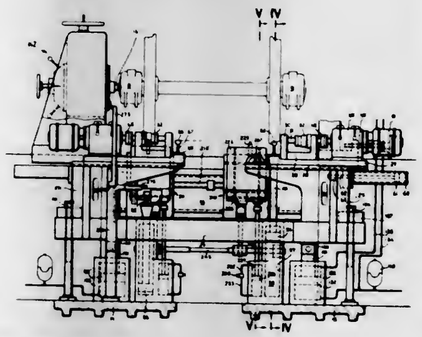
1. A selectively adjustable substantially rigid tool handle comprising a plurality of tubular handle segments, each of said segments having a first side of greater length than that of a second side opposite the first side and

said segments each including pluralities of circumferentially spaced longitudinally projecting teeth and interposed radial notches at their opposite ends, said teeth and notches of the respective segments being interlockingly engageable with each other, a flexible cable loosely threaded through said segments in succession, said cable having an enlarged portion at a first end thereof, means



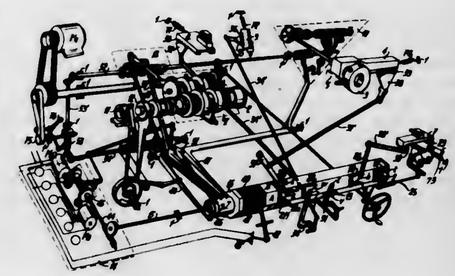
secured to the second end of said cable engaging the end of the correspondingly adjacent one of said segments, and extensible coupling means disposed about said cable at said first end thereof including a first member engaging the end of the correspondingly adjacent one of said segments and a second member selectively longitudinally translatable relative to the first member engaging said enlarged portion of said cable.

3,203,286
UNDERFLOOR LATHE FOR RECONDITIONING RAILWAY VEHICLE WHEELS
Theodor Dombrowski, Erkelenz, Rhineland, Germany, assignor to Wilhelm Hegenscheidt Kommanditgesellschaft, Erkelenz, Rhineland, Germany, a partnership of Germany
Filed Aug. 14, 1961, Ser. No. 137,454
Claims priority, application Germany, Aug. 16, 1960, H 40,221; Nov. 24, 1960, H 41,037; Mar. 2, 1961, H 41,899
12 Claims. (Cl. 82—14)



1. In an underfloor lathe for machining the peripheral surface of a wheel of a railway vehicle in assembled condition, the combination comprising a roller holder, a pair of rollers mounted thereon for rotation about parallel horizontal axes to engage and support said wheel, driving means connected with said rollers for imparting rotation thereto to thereby turn said wheel, a tool holder disposed between said rollers for supporting a cutting tool so as to engage said wheel below its axis, a movable jack carrying one of said holders for vertical movement, adjustable means for keeping the other one of said holders at a fixed but adjustable level, a stationary bracket, sensing means mounted on said bracket and coordinated to the axle of said wheel for sensing the level at which the rotary axis of said wheel is located, and means controlled by said sensing means and connected with said jack to effect movement of said jack thereby to move said one of said holders so as to maintain the vertical distance between said cutting tool and said level constant, while said wheel is turned by said rollers, irrespective of a non-circular condition of the periphery of said wheel.

3,203,287
CONTROL STATION FOR AN AUTOMATIC LATHE
Pierre Bergonzo, 117 Route de la Capite, Cologny, Geneva, Switzerland
Filed Sept. 5, 1961, Ser. No. 135,836
Claims priority, application Switzerland, Oct. 7, 1960, 11,261/60
3 Claims. (Cl. 82—21)



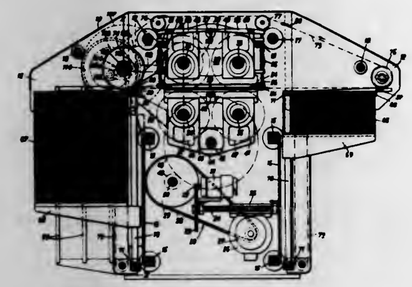
2. A machine tool having a plurality of first tools simultaneously engageable with a workpiece and a plurality of second tools successively engageable with said workpiece, and control means for controlling the cycle of operation of the machine tool, the control means comprising a rotatable member, means for rotating the member about an axis, the member having a polygonal outer periphery comprised of a plurality of flat outer surfaces each disposed in a plane parallel to said axis, cam means having elongated cam tracks thereon the length of which is parallel to the associated said surface, support means mounted on each of a plurality of said surfaces, means mounting the cam means on said support means for adjustive sliding movement of said cam means on and relative to said surfaces and each other in any of a plurality of directions in a plane parallel to said surfaces, first follower means for simultaneously controlling said first tools according to the shape and location of said cam tracks, there being a first series of cam means comprising a plurality of said cam means spaced apart along a said outer surface in a direction parallel to said axis, means mounting said first follower means for simultaneous contact with and movement relative to the cam tracks of said first cam means, second follower means for sequentially controlling said second tools according to the shape and location of said cam tracks, there being a second series of cam means comprising a plurality of said cam means spaced apart peripherally about said member, and means mounting said second follower means for contact with and movement relative to the cam tracks of said second series of cam means.

3,203,288

MACHINE FOR CUTTING AND/OR CREASING SHEETS OF THIN MATERIALS SUCH AS PAPER AND CARDBOARD AND METAL OR PLASTIC FOILS

Hans Blumer, Maschinenfabrik Lentschenbachstrasse 43, Zurich-Oerlikon, Switzerland

Filed Nov. 21, 1960, Ser. No. 70,583
Claims priority, application Switzerland, Nov. 27, 1959, 81,192
5 Claims. (Cl. 83—92)



1. A machine for selectively cutting and creasing individual sheets of thin material one at a time comprising a frame, a tool holder unit and a die-block unit, a pair of eccentric shafts for each of said units, means rotatably mounting said eccentric shafts in said frame, means mounting each of said units on a respective pair of said shafts, drive means for driving said eccentric shafts in opposite directions for moving said units in opposite directions into positions toward and away from each other, conveying means for moving individual sheets from a stacked pile between said units and then to a finished pile, bracket means adjacent one side of said frame for stacking a pile of sheets thereon to be supplied to said conveying means, other bracket means adjacent the other side of said frame for receiving finished sheets from said conveyor means, conveyor drive means operatively connected to said conveyor means for continuously driving said conveying means during the rotation of said eccentric shafts so the speed of said conveying means is at a minimum when said units are in said position towards each other and at a maximum speed when said units are in said position away from each other, said conveying means being in the form of an endless conveyor having spaced sheet gripping means thereon for pulling individual sheets, said units having sheet engaging surfaces corresponding in size generally to sheets to be operated on by said units, and said conveyor drive means driving said endless conveyor a distance equal to the spacing of said sheet gripping means whereby a sheet is presented to said units for each cycle of operation of said units.

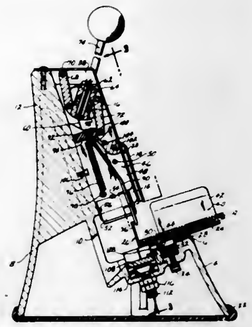
3,203,289

APPARATUS FOR GROOVING CARDS AND THE LIKE

Francis Cheyney Beekley, West Hartford, Conn., assignor to The Beekley Corporation, West Hartford, Conn., a corporation of Connecticut

Filed Apr. 7, 1961, Ser. No. 101,527
12 Claims. (Cl. 83—134)

1. In apparatus for grooving cards and the like, a housing; a metal platen having a cutting face; means resiliently supporting said platen on said housing; a ram reciprocably mounted in the housing for movement towards said platen; a generally V-shaped cutter blade on said ram having a cutting edge movable into engagement with said cutting face of the platen for cutting of cards disposed thereon; pilot pin means carried by said ram for aligning cards to be cut and for ejection of the chips formed by the cutting operation; and drive means for reciprocating said ram to drive said cutter blade through cards carried on said platen, said platen supporting means



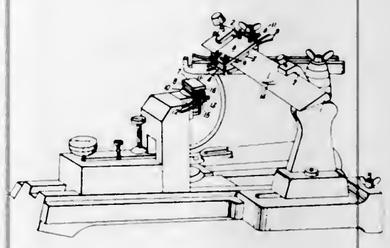
absorbing excessive drive force to prevent damage to said cutter blade and permitting self-alignment of the platen with said cutting face disposed substantially parallel to said cutting edge of the blade.

3,203,290

MICROTOMES

John Henry Ashby, Piner, Middlesex, England, assignor to Frigistor Laboratories Limited, formerly known as Semiconductor Thermoelements Limited, Buckingham, England

Filed June 7, 1963, Ser. No. 286,236
Claims priority, application Great Britain, June 7, 1962, 22,152/62; Apr. 17, 1963, 15,200/63
2 Claims. (Cl. 83—171)



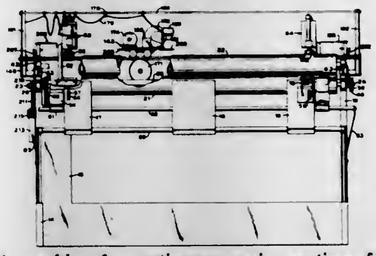
1. A microtome comprising a blade, a first thermoelectric element thermally connected to the blade, first control means adjustable to control the flow of current to the first thermoelectric element and hence the transfer of heat between the blade and the element, a stage, a second thermoelectric element thermally connected to the stage, second control means adjustable independently of the adjustment of the first control means to control the flow of current to the second thermoelectric element and hence the transfer of heat between the stage and the second thermoelectric element, and an anti-roll bar attached to the blade, wherein each thermoelectric element includes blocks of thermoelectric material of two types arranged in a planar array and connected electrically in series by thermally and electrically conducting members such that adjacent blocks are of opposite conductivity type, and each thermoelectric element has on one or both of its faces an electrically insulating but thermally conducting layer.

3,203,291

CUTTING MACHINE

Norman E. Elms, 3081 Maple Drive NE., Atlanta, Ga.

Filed Sept. 2, 1958, Ser. No. 758,234
7 Claims. (Cl. 83—210)



1. A machine for cutting successive sections from a sheet of textile material comprising a frame, a feed roller mounted on said frame for feeding said textile material longitudinally of said frame, a motor driving said feed roller, a pair of transversely movable selvage cutters mounted on opposite sides on said frame for trimming the selvage of said textile material as it is passed thereby, a pair of transversely movable die heads mounted on opposite sides of said frame and alignable with said selvage cutters for cutting notches on opposite sides in said material, means for actuating said die heads, a transversely movable knife carried by said frame for moving across said material from one side of said material to the other for cutting said fabric along a line between said notches, and means for actuating said knife in response to the stopping of movement of said sheet.

3,203,292

CUTTING ARRANGEMENTS

Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany

Filed Nov. 7, 1962, Ser. No. 235,980
Claims priority, application Germany, Nov. 10, 1961, Sch 30,543
3 Claims. (Cl. 83—341)



1. In an arrangement for cutting a longitudinal travelling web in a direction different from the direction of travel, the combination comprising a rotatable member, at least one cutter rigidly mounted on said rotatable member, a rectilinear cutting edge on said cutter, and a rotatable counter-roller, a surface of which is a cylindrical form and arranged for contacting said cutting edge progressively along its length after said cutting edge has penetrated the web when travelling between said rotatable member and said counter-roller, the axes of rotation of said rotatable member and the counter-roller having different inclinations relative to the direction of travel of the web, the cutting edge of said cutter having a skew inclination relative to the axis of rotation of said rotatable member.

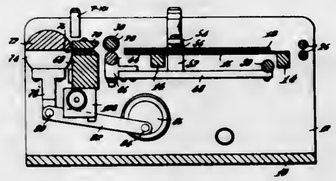
3,203,293

STRIP CUTTER WITH PHOTOELECTRIC CONTROL MEANS

Richard G. Lee, 47-A River St., Wellesley Hills 81, Mass.

Filed Feb. 28, 1962, Ser. No. 176,257
15 Claims. (Cl. 83—365)

11. In a machine for operating on a moving material strip, a control system comprising: a photocell; a lamp illuminating said photocell through the strip; a normally balanced detector circuit including means, responsive to the mean level of illumination received by said photocell,



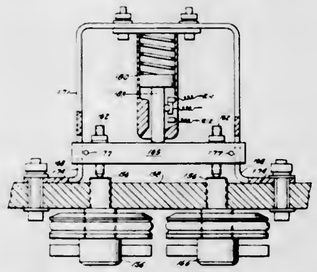
for controlling the light supplied by said lamp so as to maintain the balanced condition and means, responsive to abrupt changes in the level of illumination received by said photocell, for initiating the operation of the machine.

3,203,294

KNIFE CHANGING CONTROLS FOR PAPER CUTTING MACHINES

Carl Thumim, Chicago, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware

Original application Dec. 9, 1960, Ser. No. 74,993, now Patent No. 3,124,989, dated Mar. 7, 1964. Divided and this application Feb. 20, 1963, Ser. No. 259,899
6 Claims. (Cl. 83—399)



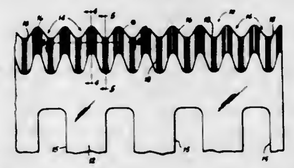
6. In a system of the class described, a circuit controlling storage device for knife-holding means, comprising a switch, a pair of spaced knife-holding means, a movable element disposed to be held in predetermined position relative to said switch by said pair of knife-holding means, whereby removal of either knife-holding means is operative to effect motion of said element to actuate said switch, said movable element being connected to said switch to hold said switch in normally non-actuated condition.

3,203,295

CUTTING RULE CONSTRUCTION

Louis E. Sauer, St. Louis, Mo., assignor to L. E. Sauer Machine Company, St. Louis, Mo., a corporation of Missouri

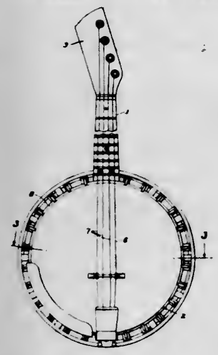
Filed Jan. 17, 1963, Ser. No. 252,218
6 Claims. (Cl. 83—673)



1. A rule comprising a body portion including a continuous closed supporting segment, a continuous closed

teeth supporting segment integral with said first segment and flared in respect thereto, and teeth at the free edge of said teeth supporting segment.

3,203,296
BANJO CONSTRUCTION
Edwin G. Simon, 1117 Ocean Ave., San Francisco, Calif.
Filed Dec. 23, 1963, Ser. No. 332,750
2 Claims. (Cl. 84—269)



1. In a banjo construction,
(a) a banjo body including,
(b) a ring frame,
(c) a hollow banjo box fitting into the ring frame,
(d) a plurality of circumferentially spaced bosses projecting radially outwardly from the outer periphery of the banjo box,
(e) means engaging the ring frame and secured to said bosses respectively for tightly clinching the banjo box to the ring frame,
(f) a plurality of circumferentially spaced locating ribs projecting radially outwardly from the outer periphery of said banjo box,
(g) the outer face of each locating rib being tapered away from said ring so that the wider end of each rib is nearest to said ring,
(h) a cylindrical wooden resonator wall,
(i) a freely vibratable resonator bottom made of a panel of soft wood and secured only at its periphery to said cylindrical resonator wall,
(j) the inner periphery of said resonator wall being tapered so that it is thickest near the resonator bottom and fits over the tapered outer faces of said locating ribs thereby to locate said resonator bottom in a predetermined relation spaced from said banjo box and to space said resonator wall from said banjo box,
(k) and detachable means to secure said resonator wall to said locating ribs respectively in said predetermined spaced position.

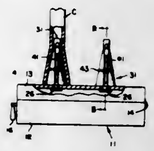
3,203,297
LONG NECK BANJO
William H. Breedlove, 22036 N. Black Canyon, Phoenix, Ariz.
Filed May 8, 1964, Ser. No. 365,888
4 Claims. (Cl. 84—269)

1. In a string banjo having a long neck and a circular head having a circular head ring; said neck having a thickened lower end portion attached to the edge of the circular head ring; said head having a skin cover an inner ring to hold the shape of said head and an outer ring to hold on the skins constituting and forming the head covering; a substantially circular flat resonator solidly attached to the lower thickened end of said neck and made integrally therewith and spaced from the bottom edge of the circular inner ring of said head by a



plurality of annularly spaced screw hooks extending through said resonator at their lower ends and hooking over the top edge of said outer ring at their tops.

3,203,298
COMBINATION CLARINET AND REED HOLDER
John N. Sumrall, Jr., 92 Prince St., Rochester, N.Y.
Filed Jan. 15, 1964, Ser. No. 337,884
14 Claims. (Cl. 84—453)



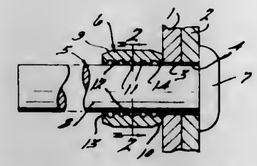
11. A combination clarinet and reed holder, comprising
(a) a member having a truncated-conical body portion adapted at the smaller end thereof to project into the bell-shaped end of a clarinet,
(b) said body portion having in its outside surface at least one longitudinal groove having a length, width and depth slightly greater than the length, width and thickness, respectively, of a clarinet reed,
(c) a strip of non-absorbent material secured in said groove and having a plane, glazed outer face against which a clarinet reed is adapted to be held releasably, and
(d) means on said body portion for releasably securing the larger end thereof against a horizontal support surface.

3,203,299
BLIND ANCHORS OR FASTENER MEMBERS
Walter P. Glancy, 500 NW. 45th St., Oklahoma City, Okla.
Filed Feb. 5, 1964, Ser. No. 343,913
2 Claims. (Cl. 85—5)



1. A blind anchor of a diameter of the order of magnitude of a fraction of an inch including, a central core member having means on its forward end for engaging an article to be held to a surface, an elastomer sleeve initially having a substantially uniform outer diameter throughout the major portion of its length enclosing and engaging throughout its length at least the rearward portion of the core member, means encompassing the rearward end of the member and contracting the entire rearward end of the sleeve to an outside diameter less than the outside diameter of the forward portion of the sleeve whereby when the blind anchor is forced into an opening large enough to receive the rearward end of the sleeve but too small to receive the forward end of the sleeve the forward portion of the sleeve is distorted longitudinally to compress and elongate and reduce the diameter of the forward portion of the sleeve to substantially the diameter of the opening and permit it to enter the opening and frictionally engage the same, the forward portion of the sleeve in the undistorted condition having a cross sectional area greater than the cross sectional area of said contracted end and the opening and slideably engaging the core member so that when the forward portion of the sleeve is forced into the opening the forward portion elongates and contracts to permit the unrestricted entry of said forward portion into the opening, and filaments secured to the rearward portion of the sleeve and having free forward ends extending externally of the forward portion of the sleeve.

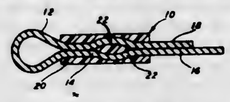
3,203,300
UNIVERSAL GRIP LOCKBOLT
Charles F. Marschner, Grosse Pointe Woods, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 3, 1961, Ser. No. 142,659
7 Claims. (Cl. 85—7)



1. A swage type fastener comprising a metal pin and a pre-formed swageable metal collar having a circular opening therethrough, said pin including a performed head at one end and a solid stem having a smooth exterior extending therefrom, said head extending laterally beyond the stem to provide an abutment, said collar being generally tubular in form and being disposable on said stem, the outer portion of said collar being sufficiently relatively soft to be permanently deformed by a swaging tool and the inner portion being relatively harder than said outer portion of said collar and said pin, said inner and outer portions being substantially coextensive longitudinally thereof, said inner portion being in the form of longitudinally spaced inwardly projecting locking means defining said circular opening having a minimum diameter greater than the diameter of the stem so that the collar may be disposed thereon in embracing relation thereto, said locking means being adapted to be forced into said stem when said collar is swaged onto said stem to form complementary locking means in said stem.

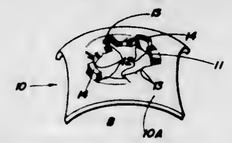
3,203,301
COTTER PIN
Charles C. Faroni, Summit, N.J., assignor to Elastic Stop Nut Corporation of America, Union, N.J., a corporation of New Jersey
Filed Nov. 9, 1962, Ser. No. 236,622
1 Claim. (Cl. 85—8.1)

An article of manufacture comprising a metallic split cotter pin having a looped head portion and a shank portion in the form of a pair of overlying segments integral with and extending from said head portion and having free ends remote from said head portion, a portion of each of said segments being deflected apart to provide an opening therebetween at a location between said head portion and said free ends, and a body of nonmetallic resilient material for damping motion between said pin and other



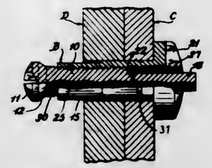
members with which it is assembled, said body surrounding said shank portion and extending through said opening, said head portion and said free ends being free of said material.

3,203,302
SELF-LOCKING SHEET METAL NUT
Henry Frederick, 27 West Drive, Port Washington, N.Y.
Filed Sept. 12, 1963, Ser. No. 308,410
2 Claims. (Cl. 85—36)



1. A self-locking nut comprising
(a) a sheet of tempered spring steel having an aperture centered therein for receiving the shank of a bolt or stud to secure a workpiece thereto,
(b) said sheet being preformed with an arcuate shape having a curvilinear cross-section,
(c) said aperture having opposed peripheral portions thereof bent out of the plane and inclined to the convex side of said preformed shape to define grippers for engaging the shank of the bolt or stud fitted through said aperture,
(d) said aperture having other portions of its periphery bent out of the plane and projected to the concave side of said preformed shape to define spacers for spacing the sheet from the workpiece,
(e) and said shape being turned inside out prior to receiving the shank of said bolt or stud so that said shape can be sprung back to its initial preformed position when said spacers are positioned against the workpiece to bring the marginal portions of the sheet into engagement with the workpiece whereby the same is locked onto the shank of the stud or bolt.

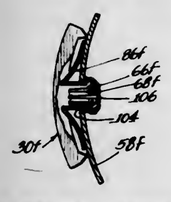
3,203,303
BLIND FASTENER
Rudyard E. Lalsy, Rocky River, Ohio, assignor to The National Screw & Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 10, 1964, Ser. No. 388,631
10 Claims. (Cl. 85—77)



1. In a two piece high strength blind fastener for securing together a plurality of structures having aligned circular apertures therein forming a passage therethrough and accessible from only one side, an internal or blind

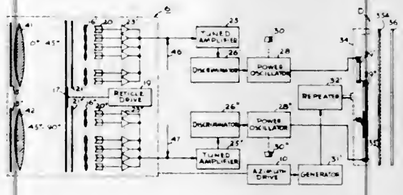
member comprising a threaded shank having a circular head at one end with a bearing surface on its shank side inclined outwardly away from said shank at an obtuse angle to the axis thereof, said shank being of such length that said head thereon will be located behind the nonaccessible side of said structures when said fastener is assembled in said structures preparatory to driving, a driving connection at the end of said shank opposite said head, a weakened section intermediate said threaded shank and said driving connection, and an external or nonblind member threaded onto said shank of said blind member, said nonblind member comprising a cylindrical tubular-like body portion having an outside diameter substantially equal to the diameter of said head of said blind member and an integral head of larger diameter at the end of said body portion remote from said head of said blind member, said nonblind member also comprising a circumferential continuous cylindrical end portion at the end of said body portion opposite its said head adapted to be flared or expanded outwardly to form a blind head at the nonaccessible side of said structures, said cylindrical end portion having an outside diameter about 91% to 99% that of the outside diameter of said body portion, said head of said nonblind member having a bearing surface on its side adjacent to said body portion, said nonblind member being of such length that its said cylindrical end portion opposite its said head projects beyond the nonaccessible side of said structures when said fastener is assembled in said structures with said head of said nonblind member in engagement with the accessible side of said structures, and said body portion of said nonblind member being of such length that its end opposite said head of said nonblind member does not project beyond the nonaccessible side of said structures when said fastener is assembled in said structures with said head of said nonblind member in engagement with the accessible side of said structures.

3,203,304
PLASTIC SEALING WASHER AND FASTENER ASSEMBLY
George M. Rapata, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Original application Sept. 8, 1960, Ser. No. 54,649. Divided and this application Feb. 27, 1964, Ser. No. 347,789
7 Claims. (Cl. 85—83)



1. A fastening assembly comprising a fastening device and a sealing washer said device including a head portion for overlying one side of an apertured work structure, and a plurality of axially extending shank sections for insertion through the aperture of said work structure, said device having a passageway extending axially therein and partially defined by inner surfaces of said shank sections and adapted to accommodate an element insertable therein for expanding said shank sections, and said washer including a resilient annular imperforate body surrounding said shank sections and having axially offset inner and outer margins, said inner margin being in engagement with said shank sections for retaining said device and washer in assembled relationship, one of said washer body margins being sealingly engageable with an under surface of said head portion and the other of said washer margins being sealingly engageable with the work structure when the assembly is applied thereto, said washer margin engageable with the work structure having an axially projected edge whereby the surface area initially engageable is less than the radial cross sectional area of the washer body and an axially extending thin-walled expandable sleeve integral with said inner margin and having a closed end spaced from said inner margin and adapted to receive and envelop said shank sections.

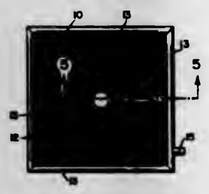
3,203,305
PASSIVE OPTICAL COLLISION WARNING SYSTEM
Avard F. Fairbanks, Canoga Park, Calif., assignor to Thompson Ramo Wooldridge Inc., Canoga Park, Calif., a corporation of Ohio
Filed Feb. 15, 1961, Ser. No. 89,453
5 Claims. (Cl. 88—1)



4. An optical collision warning system for a vehicle comprising:
a lens movable through a predetermined field of view,
a plurality of photocells each positioned to optically receive visible frequency energy through said lens and to generate a signal in response to changes in intensity of the received visible frequency,
a space filtering reticle in the path between said photocells and said lens for modulating the reception of light frequency energy by said photocells,
each of said photocells having a focusing lens whereby said cells receive light frequency energy in different positions of azimuth,
means for generating pulses in response to changes in intensity of the visible frequency energy received by said photocells,
an object position indicator responsive to said pulses,
said position indicator having a warning display movable in synchronization with said movable lens, said display being energized in response to said pulses to thereby indicate the direction of the object causing the intensity change,
means positioned to receive light from said display to retain the object direction while said display continues to move,
whereby continued energization of said warning display while in the same angular direction indicates a collision course between the vehicle and said object and energization of said warning display while in another angular direction will indicate a non-collision course.

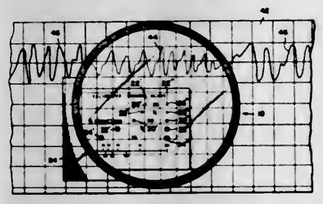
3,203,306
OPTICAL RAY CONCENTRATOR
Peter Lefferts, Princeton, N.J.
Filed Sept. 25, 1961, Ser. No. 140,361
2 Claims. (Cl. 88—1)

1. A device for concentrating optical rays by refraction, said device comprising:
(A) a foldable, transparent sheet of plastic material;
(B) a series of dioptric elements in at least one surface of said sheet, said dioptric elements forming a pattern capable of focusing generally optical rays into a concentrated image when said sheet is maintained in an unfolded configuration; and



(C) means along the perimeter of said sheet for maintaining said sheet taut in said unfolded configuration, said means including
(1) support means comprised of said plastic material and established integral with said sheet along at least a portion of the perimeter thereof; and
(2) rigid frame means engaging said support means for holding said sheet taut in said unfolded configuration.

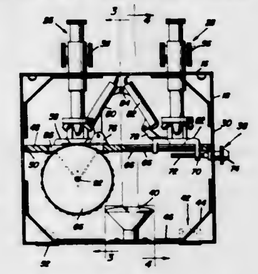
3,203,307
OPTICAL INSTRUMENT
John A. Wegener, 830 Chambers Ave., Gloucester City, N.J.
Filed Jan. 24, 1962, Ser. No. 168,383
3 Claims. (Cl. 88—1)



1. For use by a person desiring to visualize the appearance of an object to be reproduced in a reduced size, the combination comprising:
a negative lens through which the object may be viewed;
means providing at least one first pair of spaced markings closely adjacent to a surface of said lens substantially in a plane normal to its optical axis and within its field of vision;
and means providing at least one second pair of spaced markings adapted to be superimposed on said object closely adjacent thereto to be viewed with the object through said lens and adapted to be brought into visual coincidence with said first markings by displacement of said lens towards and from said object;
the markings of said second pair being spaced from each other by a distance greater than the spacing of the markings of the first pair, the spacings of the markings of the respective pairs having a predetermined relationship determinative of the apparent reduction.

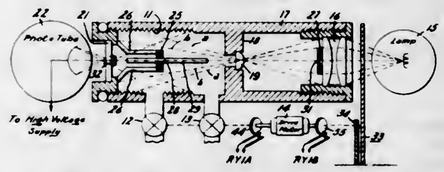
3,203,308
MICROSCOPE FABRIC COMPARISON APPARATUS
Edward C. Brigham, 2550 Pacific St., Bakersfield, Calif., and Edwin F. Bailey, 120 E. University St., Fresno, Calif.
Filed Nov. 9, 1960, Ser. No. 68,282
3 Claims. (Cl. 88—14)

1. A fabric comparison and identification apparatus comprising, light-confining enclosure means, comparison viewing means adjustably mounted within said enclosure means and extending upwardly therefrom for establishing spaced fields of vision within the enclosure means, reference fabric wheel means rotatably mounted within said enclosure means in operative relation to said viewing means for exposing reference fabric to one of said fields of vision, sample slot means disposed in said enclosure means for insertion of a portion of sample fabric into the other of said fields of vision of the viewing means, indicia means operatively connected to said wheel means for identifying the sample fabric in response to positioning of the wheel means to a position wherein matched fabrics are simultaneously perceived from the spaced fields of vision through the viewing means, horizontal



adjustment means mounted on the enclosure means and operatively connected to the viewing means for adjustably spacing said fields of vision to accommodate different spacings between viewer's eyes whereby the viewing means may be conditioned for simultaneous inspection of the fabrics, and movable illumination means illuminating the reference fabric on the reference wheel means and the sample fabric in the sample slot means for all adjustment positions of the viewing means, said illumination means including two separate movable lamps interconnected with each other and the respective viewing means to move in concert therewith for illuminating said fabrics on the reference wheel means and in the sample slot means.

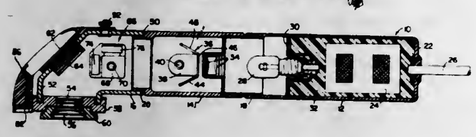
3,203,309
SINGLE PHOTOTUBE STABILIZED CONDENSATION NUCLEI METER
George F. Skala and Theodore A. Rich, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
Filed Sept. 13, 1962, Ser. No. 223,486
9 Claims. (Cl. 88—14)



1. A new and improved condensation nuclei meter including in combination condensing means for periodically condensing liquid droplets about the condensation nuclei particles to be measured as centers, a light source for directing light through said condensing means, light sensitive means responsive to light scattered by the liquid droplets formed in said condensing means for developing an output electric signal representative of the condensation nuclei count, means for transmitting a reference light beam from the light source through said condensing means directly to said light sensitive means so as to avoid any light scattering effect, and light modifying means positioned intermediate the light source and the condens-

ing means for modifying the light from the source to cause it selectively to travel to the light sensitive means by either said light scattering path or directly.

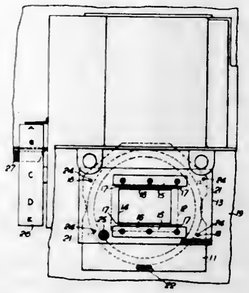
3,203,310
LIGHT COMPARATOR
William Smith, 6715 Sausalito Ave., Canoga Park, Calif., and Alvin D. Cederbaum, 140 Lockwood Ave., New Rochelle, N.Y.
Filed May 18, 1962, Ser. No. 195,836
1 Claim. (Cl. 88—23)



A light comparator comprising an elongated housing,
a light source, stop assembly, filter assembly, including a daylight and an artificial light filter and a condensing lens aligned in order in said housing,
an attachment section mounted on said elongated housing and containing a photocell, a meter for measuring light sensed by the photocell, and electrical connections extending from said meter to said photocell,
said photocell having a face lying in a plane substantially normal to an axis of said condensing lens,
said meter being mounted with a scale face thereof lying substantially outside said photocell face plane and in a position where a user can visually view said scale and a light beam from said source on an object in a single field of view,
said housing comprising a first elongated section having a first longitudinally extending axis and a second elongated section terminated by said condensing lens with said lens axis being substantially at a right angle to said first longitudinal axis,
said attachment section having the shape of a hood and overlying and conforming to the shape of a portion of said first elongated section and a portion of said second elongated section with means removably attaching said attachment section to said housing,
and said meter scale face being angularly offset with respect to the plane of said photocell face.

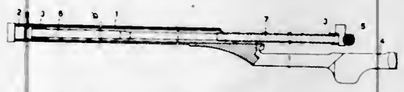
3,203,311
NEGATIVE SUPPORT FOR PROJECTION PRINTERS
Edward Cecil Woodcock and Ian Gordon Hunter, both of Hawthorn Road, Willesden Green, London NW. 10, England
Filed Jan. 29, 1963, Ser. No. 254,816
Claims priority, application Great Britain, Jan. 29, 1962, 3,329/62
2 Claims. (Cl. 88—24)

1. In a photographic projecting printing apparatus adapted to use sensitized material of more than one width from a long supply, comprising a reversible removable adaptor plate corresponding to a particular width of sensitized material use in said apparatus, a negative support removably mounted upon said adaptor plate, means on said plate and said support thereby locating said support on said adaptor plate, said adaptor plate and negative support each having an aperture therein with the aperture in the adaptor plate being larger than the aperture in the negative support, said negative support having a window therein, a series of pairs of symbols on each face of said adaptor plate, each symbol of a pair indicating a magnification ratio and film feed respectively necessary for an exposure of the sensitized material to a negative supported in said support, said window located above said series of symbols in a position determined by the particular negative support used and allowing a pair of said symbols to be visible through said window, and manual adjusting means with a series of symbols corresponding to



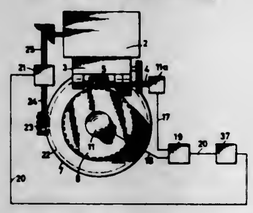
the symbols on the adaptor plate for setting the magnification ratio and paper feed in said apparatus indicated by the pair of symbols visible through said window.

3,203,312
DEVICE FOR DELAYING THE ARMING OF COMBINATION AUTOMATIC AND SEMI-AUTOMATIC FIRE-ARMS
Pier Giuseppe Beretta, Gardone, Val Trompia (Brescia), Italy, assignor to Fabbrica d'Armi P. Beretta S.p.A., Gardone, Val Trompia (Brescia), Italy, a company of Italy
Filed Dec. 9, 1963, Ser. No. 328,857
Claims priority, application Italy, Dec. 13, 1962, 24,352/62
2 Claims. (Cl. 89—129)



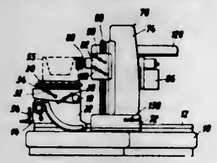
1. A cocking mechanism for a fire-arm that is operable selectively either automatically or semi-automatically, comprising
(a) a reciprocable, tubular operating rod closed at its forward end and open at its rear end, and movable rearwardly by the gases created by firing the fire-arm,
(b) a telescopic guide rod mounted in said operating rod coaxially thereof, and having a rear stationary section and a forward movable section,
(c) means for holding the stationary section against rearward movement,
(d) means limiting the rearward travel of said operating rod upon firing after predetermined rearward travel of the operating rod,
(e) a coil spring mounted within said operating rod and surrounding at least part of said guide rod, and connected to said movable section constantly to urge said movable section into engagement with the closed end of said operating rod so that said movable section and operating rod travel together rearwardly until said operating rod reaches its rear limit position of travel, and so that said spring operates to return said operating rod to its foremost position,
(f) said movable section being movable rearwardly in said operating rod by inertia after said operating rod has been stopped at the rearward limit of its travel, thereby effecting delay in the forward, return movement of said operating rod until said movable section has traveled by inertia, independently of said operating rod, to the limit of rearward movement permitted by said spring, and until said movable section has again been moved forwardly by said spring into engagement with the closed end of said operating rod.

3,203,313
HOBBING MACHINE
Hans Uhrmeister, Asperg, and Friedrich Becher, Ludwigsburg, Germany, assignors to Firm Hermann Pfauter, Ludwigsburg, Germany, an unlimited-liability company of Germany
Filed Aug. 28, 1962, Ser. No. 219,979
Claims priority, application Germany, Sept. 1, 1961, P 27,809
6 Claims. (Cl. 90—4)



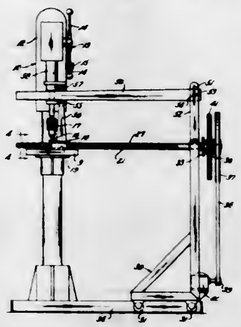
1. A hobbing machine for cutting toothed wheels and the like, having a cutter shaft carrying the hob and a rotary table for carrying a workpiece and means for driving the cutter shaft and the worktable at appropriate speeds, and including means for reducing indexing defects in the operation of the machine, such means comprising two flywheel masses, spring means through which such masses are respectively coupled to the cutter shaft and to the worktable, a first measuring device for measuring the relative angular rotation between the cutter shaft and the flywheel mass coupled thereto, a second measuring device for measuring the relative angular rotation between the worktable and the flywheel mass coupled thereto, a transmission device having a transmission ratio corresponding to that between the speeds of drive of the cutter shaft and the worktable, means for comparing the outputs of the two measuring devices through such transmission device, means for generating a signal in accordance with such comparison, a regulating device associated with at least one of the two drives respectively to the cutter shaft and to the worktable and controlled by such signal, and means whereby the regulating device acts to modify the drive with which it is associated and thereby to maintain a substantially constant ratio between the angular rotations of the cutter shaft and of the worktable.

3,203,314
MILLING MACHINE
Johann Ried, Sand, near Kassel, Germany, assignor to Gebruder Thiel G.m.b.H., Sand, near Kassel, Germany
Filed Feb. 13, 1963, Ser. No. 258,194
Claims priority, application Germany, Feb. 17, 1962, T 21,616
13 Claims. (Cl. 90—11)



1. Apparatus comprising a machine bed including a guide means, a column displaceable along said guide means in a horizontal direction, a tool spindle supported by said column, a work table adapted for supporting a workpiece, and support means supporting said table for pivotable adjustment about an axis fixed relative to said bed and substantially perpendicular to the direction of displacement of the column.

3,203,315
MACHINE FOR MAKING SCREWS
Fred B. Pfeiffer, 270 Ferndale Ave., Akron, Ohio
Filed Oct. 25, 1963, Ser. No. 318,961
5 Claims. (Cl. 90—11.54)

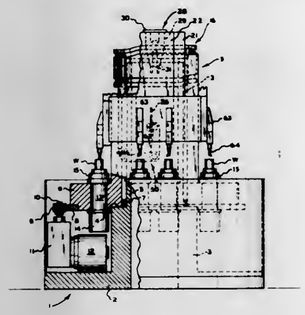


1. A machine designed to machine spirally extending grooves in rods to form extruder screws and the like comprising in combination:
(a) drill press,
(b) carriage tracks extending from base of said press,
(c) a carriage movable on said tracks,
(d) a member fixidly mounted on the carriage and having bearing adapted to receive and retain parallel and rotatable therein a work piece in the form of a rod and a pair of screws,
(e) said press having an attachment member attached to the table thereof, said member being provided with tapped holes adapted to receive in threaded relation said screws and having a bushing disposed therein adapted to receive in snug axially slidable relation said work piece,
(f) a groove-machining rotary tool mounted in and actuated by said press,
(g) the said attachment member having a bearing therein adapted to receive and stabilize said tool,
(h) said attachment means having a bushing adapted to receive in sliding relation said work piece,
(i) said bushing having a slot through which said tool extends to contact the work piece,
(j) means adapted to simultaneously rotate said screws and work piece at predetermined speeds whereby the work piece is fed lengthwise to said tool at predetermined rate of advance and rotation, and
(k) cam means adapted to control the depth of a groove of said screw.

3,203,316
MACHINE TOOL CONSTRUCTION
Robert W. Cashman and Anthony Wasco, Jr., Saginaw, Mich., assignors to Saginaw Machine and Tool Company, Saginaw, Mich., a corporation of Michigan
Filed Apr. 30, 1963, Ser. No. 276,945
16 Claims. (Cl. 90—15)

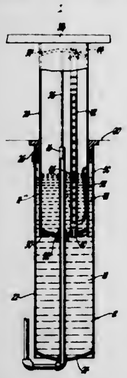
1. A machine tool comprising a frame; a support member mounted on said frame; a cam member mounted on said frame; means operatively connected to one of said members for moving the latter relatively to the other of said members; a first slide; first cam follower means in engagement with said cam member and mounting said first slide thereon for movement relative to said support member; a second slide mounted on said first slide for movement with the latter and for reciprocating move-

ments relative thereto; second cam follower means in engagement with said cam member; and motion transmis-



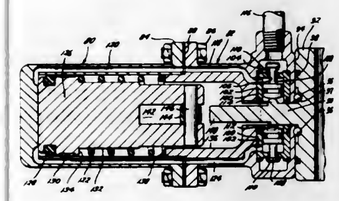
sion means interconnecting said second cam follower means and said cam member for reciprocating the latter independently of said first slide.

3,203,317
LOW OIL LEVEL SAFETY LOCK AND AIR POCKET VENT
Carl S. Taylor, Springfield, Ill., assignor to Dura Corporation, Oak Park, Mich., a corporation of Michigan
Filed Sept. 27, 1963, Ser. No. 312,060
5 Claims. (Cl. 91—4)



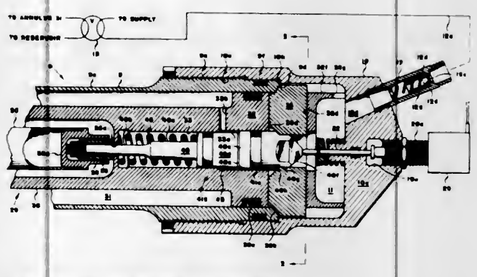
1. An air pocket vent for vertically oriented semi-hydraulic lifts and the like including an air pressure receptive and fluid exhausting ram disposed within an outer cylinder receptive of the fluid exhausted from said ram for the elevation of said ram relative thereto, and which have an air pocket formed therebetween and in the outer cylinder, and comprising:
vent passage means carried by said ram,
said vent passage means being vertically disposed and open at the upper end thereof externally of said ram and for communication with the air pocket in the outer cylinder,
said vent passage means having the lower disposed end thereof open within said ram near the lower end of said ram and below the low oil level mark therefore,
and check valve means operatively disposed within said vent tube and responsive to greater pressure in said ram than at said air pocket end for closure thereof and a reverse pressure condition for the opening thereof and venting of said air pocket.

3,203,318
VALVE OPERATOR
John M. Sheesley, P.O. Box 9365, Houston 11, Tex.
Filed Dec. 11, 1962, Ser. No. 243,791
6 Claims. (Cl. 91—186)



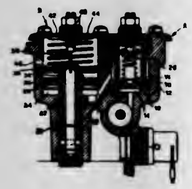
1. Apparatus for operating a rotatable element having an operating stem comprising
a hand-wheel adapted to engage said stem for rotation therewith, and
a power operator on said stem adjacent said hand-wheel, said power operator comprising
a housing having a central opening through which said stem passes,
a rotatable cam wheel in said housing,
means on said cam wheel engaging said stem for rotation therewith,
a plurality of camming surfaces on the cam wheel,
a plurality of pistons in said housing adapted to be moved toward said camming surfaces upon the application of pressure to the pistons, and
a cam follower on each piston positioned to engage said camming surfaces in one position of the piston and to disengage from said camming surfaces in another position of the piston.
3. Apparatus as defined by claim 1 and including
pressure fluid valve means on said housing normally preventing flow of pressure fluid to and from said pistons, and
means actuable by the rotation of said cam wheel to actuate said pressure fluid valve means to allow the flow of pressure fluid to and from said pistons.

3,203,319
INTERNAL LOCK FOR HYDRAULIC ACTUATOR
William C. Cook, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Feb. 7, 1963, Ser. No. 257,013
7 Claims. (Cl. 91—45)



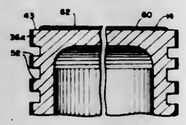
1. A hydraulic actuator comprising:
a cylinder barrel; a piston assembly mounted for extension and retraction within said cylinder barrel; piston assembly mounted lock means for locking said piston assembly with respect to said cylinder barrel at a predetermined relative position; a first control means arrangement movable relative to the piston assembly and activated by pressurized fluid for preventing biasing of said lock means toward locked position during extension of said piston assembly; and a second control means arrangement activated by pressurized fluid for preventing biasing of said lock means toward locked position during retraction of said piston assembly.

3,203,320
CLEANING DEVICE FOR PISTON PORT MEANS IN A PRESSURE REGULATOR
Giuseppe Alfieri, Milan, Italy, assignor to Fabbrica Italiana Magneti Marelli S.p.A., Milan, Italy, a corporation of Italy
Filed Aug. 1, 1962, Ser. No. 213,986
Claims priority, application Italy, Aug. 30, 1961, 15,738/61
5 Claims. (Cl. 92—87)



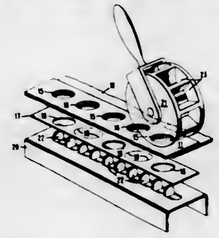
1. In a pressure regulating device, a casing, an air passageway through said casing providing an air inlet and an air outlet, a cylinder within said casing and forming a part of said passageway, a piston within said cylinder containing a central opening therein which forms a part of said passageway, said piston having a cap over said opening containing an orifice, said piston being movable within said cylinder in response to predetermined air pressures at said inlet, and a needle within said orifice and positioned to move relative to said orifice upon movement of said piston.

3,203,321
ARTICLE OF BONDED FERROUS METAL AND ALUMINUM
Carl G. A. Rosen, Woodside, Calif., assignor to Darlite Corporation, Peoria, Ill., a corporation of Illinois
Filed Nov. 20, 1961, Ser. No. 153,483
6 Claims. (Cl. 92—223)



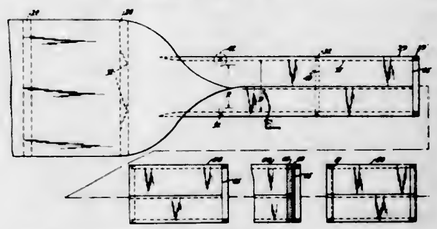
3. A piston for an internal combustion engine comprising a preformed body of high heat conductive metal having spaced wall portions circumferentially around it defining a rounded contour, a layer of particles of molybdenum on each wall portion whose innermost particles are molecularly alloyed with unoxidized metal of said wall portions, a cylindrical body of preformed ferrous metal, means for bonding said cylindrical body to a respective layer of particles upon each wall portion including fused layers of Fe-Al alloy and aluminum, said cylindrical bodies defining a circumferential groove therebetween extending through to said high heat conductive metal for receiving a piston ring therein in direct heat exchange contact with said high heat conductive metal at the inner portion of the groove.

3,203,322
METHOD AND APPARATUS FOR FORMS SPLICING
Robert N. Eichorn, Endicott, and Charles Holovka, Jr., Binghamton, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 5, 1962, Ser. No. 235,444
8 Claims. (Cl. 93—1.1)



1. The method of splicing together continuous forms having splice holes therein with a resilient splicing tape having pre-slit locking tabs which comprises:
positioning the splicing tape on a support member having vertically extending ears thereon;
rolling said tape down around said ears to erect the pre-slit locking tabs;
positioning a continuous form over said tape and rolling the splice holes therein down around the erected locking tabs;
positioning another continuous form over said first form and rolling the splice holes therein down around the erected locking tabs; and
stripping the forms and tape assembly off from said support member whereby the erected tabs of resilient tape will flex and lock the splice holes of said forms.

3,203,323
PROCESS FOR MANUFACTURING BAGS
Samuel T. Adams, New Orleans, La., and Ben P. Zober, Charleston, S.C., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Dec. 7, 1962, Ser. No. 243,034
3 Claims. (Cl. 93—35)



1. The method of making open mouth gusseted pinch bottom bags from a continuous paper web comprising:
(a) forming the web into a gusseted tube having opposite walls and opposite gusseted sides,
(b) prior to said forming while the web is in a flattened condition making a pair of transversely separated and aligned stepped perforations through the web, said perforations extending across only a minor portion of the web width and being separated from the edges of said web by a substantial transverse portion of non-perforated web, each of said pair of perforations comprising two longitudinally displaced transverse sections longer than the depth of the gusset which will extend when the gusset tube is formed inward in opposite walls of the tube from the gusseted side of the tube and a section connecting the

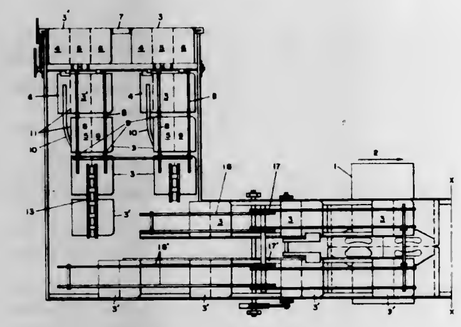
ends of the transverse sections through the portion of the web which will form the gussets,

(c) after formation of the tube transversely perforating each of the opposite walls of the tube along a transverse line connecting the inner ends of the transverse sections of the stepped perforations,

(d) separating the gusseted tube into bag length sections along the lines of perforation, and

(e) folding over and sealing an end portion of the bag length tube upon one wall of the tube.

3,203,324
MACHINE FOR FORMING CARRIER HAVING CUSHIONING PARTITION
Hermond G. Gentry, Atlanta, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Sept. 22, 1961, Ser. No. 140,045
3 Claims. (Cl. 93—37)



1. A machine for forming a carrier from a main blank and a multi-panelled cushioning insert blank, said machine comprising first conveyor means for advancing said main blank in a direction axially thereof with the inside surface thereof facing upwardly, second conveyor means for advancing said cushioning blank in a direction transverse to the direction of movement of said main blank, panel folding means responsive to movement of said blank on said second conveyor means for engaging and folding one panel of said cushioning insert into face contacting relation to a second panel thereof along fold lines generally in alignment with the direction of movement of said cushioning blank on said second conveyor means, third conveyor means for receiving and moving said cushioning insert in the same general direction as said main blank and into ultimate contact therewith, means for applying adhesive to a part of said one panel while being moved by said third conveyor means, and means for subsequently forcing said one panel into firm engagement with said main blank.

3,203,325
METHOD AND APPARATUS FOR MAKING DRINKING STRAW
Harry E. Davis, 544 Vinita St., and Fred B. Pfeiffer, 270 Ferndale Ave., both of Akron, Ohio
Filed May 9, 1963, Ser. No. 279,189
3 Claims. (Cl. 93—80)

1. A method of making a drinking straw of thin heat sealable material of the character described comprising the steps of:

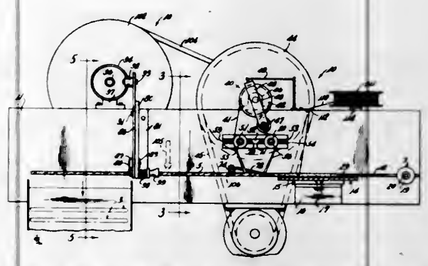
(a) continuously feeding a strip of substantial width of said material to an elongated arbor and spirally winding the strip thereon,

(b) heating the strip prior to its contact with the arbor and maintaining the strip at heatsealing temperature at the time it is wound on the arbor,

(c) heating the arbor by transfer of heat from the strip thereto,

(d) wrinkling the strip before it is wound on the arbor,

(e) feeding said strip onto and about the arbor at such angle relative thereto as to provide an overlap of the edges of the strip such as to form a tube of multi-layers on the arbor,

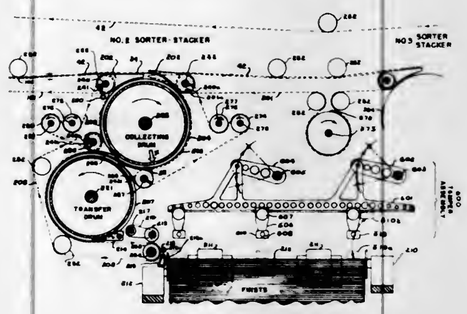


(f) wrinkling the wall of said tube by simultaneously rotating and twisting the tube around its longitudinal axis while advancing the tube lengthwise of the arbor,

(g) subjecting the tube to radially inwardly pressure,

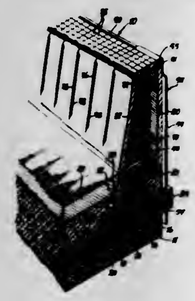
(h) advancing the tube from said arbor into a cutting station and there cutting the tube into predetermined lengths.

3,203,326
SINGLE WEB SHEET CUTTER AND STACKER
David Noel Obenshain, Luke, Md., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Oct. 9, 1962, Ser. No. 230,790
17 Claims. (Cl. 93—93)



1. A sheet delivery mechanism comprising, in combination, a constant, high speed sheet conveying means, a collecting drum constructed and arranged to receive individual sheets one after another from the conveying means and to accumulate them in a registered packet of a predetermined number of sheets, means driving the collecting drum at a constant peripheral speed substantially equal to the speed of the sheet conveying means, a transfer conveying means for receiving the sheet packet from the collecting drum, means automatically effective when the prescribed number of sheets has been accepted for accumulation on the collecting drum to bring about delivery of the resulting sheet packet to the transfer conveying means, receiving mechanism for accepting the packet from the transfer conveying means at greatly reduced speed, means positively driving the transfer conveying means at the peripheral speed of the collecting drum throughout said delivery and automatically effective when the delivery of the packet of sheets to the transfer conveying means has been completed to so modify the transfer conveying means speed that the transfer conveying means is put through a programmed slowdown and restoration cycle during which the transfer conveying means advances the sheet packet at high speed onto the receiving mechanism and then slows down progressively until the packet of sheets is discharged to said receiving mechanism at a relatively low speed, the transfer conveying means drive then progressively restoring the speed of the transfer conveying means to the collecting drum speed by a time no later than that at which a next accumulated packet of sheets on the collecting drum becomes ready for delivery to the transfer conveying means.

3,203,327
CAST METAL STREET CURB
Bernard M. Daley, 81 Colton Ave., Lackawanna, N.Y.
Filed Mar. 22, 1962, Ser. No. 181,671
2 Claims. (Cl. 94—31)



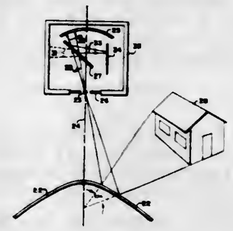
1. A highway curb comprising a concrete base having a vertical edge face, a series of substantially identical curb sections arranged end-to-end each in the form of a single horizontally elongated hollow cast iron body open at its bottom and having front and rear walls connected by an integral top wall, said front and rear walls being seated on said concrete base with said rear wall arranged to form substantially an upward continuation of said vertical edge face of said base, an anchor member adjacent each section embedded in said concrete base along said vertical edge face, a fastening member, means securing each fastening member to its companion anchoring member, and means securing each curb section to its companion fastening member comprising an upwardly opening recess in said top wall of each curb section directly above its said rear wall and a hook-shaped upper end on said fastening member seated in said recess.

3,203,328
FULL CIRCUMFERENTIAL VIEWING SYSTEM
Harry P. Brueggemann, San Marino, Calif., assignor to The Marquardt Corporation, Van Nuys, Calif., a corporation of California
Filed Feb. 21, 1963, Ser. No. 260,250
10 Claims. (Cl. 95—15)

1. A full circumferential viewing system for producing an image of a 360° field of view comprising:

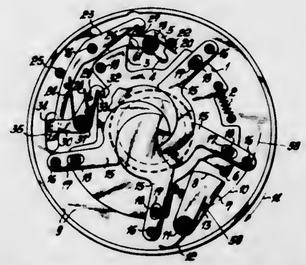
a hyperbolic mirror having a convex specular surface located at a position such as to permit rays from a surrounding scene to fall thereon;

a substantially spherical mirror having its center of curvature substantially coincident with the conjugate focus of said hyperbolic mirror, the concave side of said spherical mirror being specular whereby said image of said scene comprises a real image



which will be formed in a substantially flat field plane.

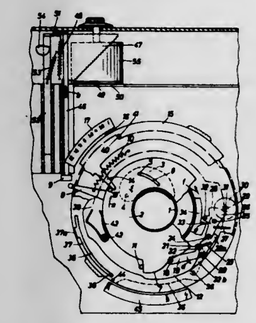
3,203,329
SHUTTER-DIAPHRAGM ASSEMBLIES FOR PHOTOGRAPHIC DEVICES
Hugo Weiss, Wiesbaden, Germany, assignor, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,238
Claims priority, application Germany, Mar. 9, 1962, A 39,667
12 Claims. (Cl. 95—63)



1. In a shutter-diaphragm assembly for photographic devices, in combination, support means formed with an exposure aperture whose center is in the optical axis; a single set of blades carried by said support means for movement to and from a closed position covering said aperture to prevent light from passing therethrough; moving means carried by said support means for movement from and back to a predetermined starting position, said moving means being operatively connected to said blades for locating the latter in their closed position when said moving means is in said starting position thereof and said moving means moving said blades to uncover said aperture during movement of said moving means away from said starting position thereof and to cover said aperture during movement of said moving means back to said starting position thereof; adjustable limiting means carried by said support means and located in the path of movement of said moving means from said starting position thereof for adjustably limiting the extent to which said moving means moves away from said starting position so as to limit the extent to which said blades uncover said aperture whereby said blades perform the function of an adjustable diaphragm; and drive means carried by said support means for movement through the same distance at each operation of the assembly irrespective of the extent to which said moving means moves from said starting position thereof, said drive means being adapted to be connected to an exposure-time determining structure and, after being retarded by the latter structure to provide a given exposure time, moving from a location out of driving engagement with said moving means into

driving engagement with said moving means for returning the latter to said starting position thereof and thus returning said blades in their closed position, so that the exposure time is uninfluenced by the extent to which said aperture is uncovered by said blades and so that said single set of blades also perform the function of a shutter.

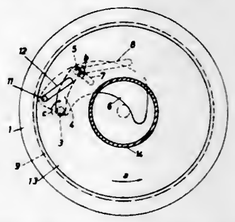
3,203,330
CAMERA CAPABLE OF BEING MANUALLY AND AUTOMATICALLY OPERATED
Gerd Kiper, Unterhaching, near Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed Nov. 6, 1961, Ser. No. 150,316
Claims priority, application Germany, Nov. 12, 1960, A 36,009
11 Claims. (Cl. 95—64)



9. In a camera, in combination, support means; diaphragm means carried by said support means for setting the exposure aperture of the camera, said diaphragm means having an exposure time controlling portion; adjustable retarding means also carried by said support means for adjustably controlling the exposure time; lever means turnably carried by said support means and cooperating with said retarding means for adjusting said retarding means; and manually operable control means carried by said support means for movement between at least one manual control position in which only said manually operable control means cooperates with said lever means for adjusting said retarding means and an automatic position in which only said exposure time controlling portion of said diaphragm means cooperates with said lever means for automatically adjusting said adjustable retarding means during movemnt of said diaphragm means.

3,203,331
DIAPHRAGM FOR PHOTOGRAPHIC CAMERAS
Wilfried Hofmann, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed Nov. 14, 1961, Ser. No. 152,293
Claims priority, application Germany, Nov. 24, 1960, A 36,110
9 Claims. (Cl. 95—64)

1. In a camera, in combination, a pair of rotary diaphragm rings and a plurality of diaphragm blades therebetween; and a pair of pin-and-slot connections connecting each blade to said rings and the slots of said pin-and-slot connections respectively having different configurations providing one type of movement of said blades when one of said rings turns with respect to the other and another type of movement of said blades when the other of said rings turns with respect to said one ring, the pins of the pin-and-slot connections providing when one of said rings turns a plurality of pivot axes for said blades, respectively, with respect to the other ring and when said other ring turns a plurality of pivot axes for said blades, respectively, with respect to said one ring; a plurality of levers respectively connected to the pins of the pin-and-slot connections of said blades to one of said rings; and

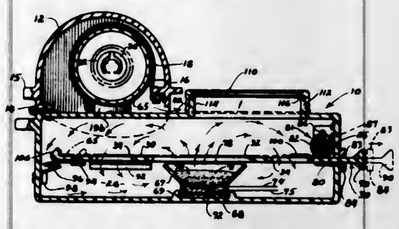


means supporting said levers for rotary movement about stationary axes, respectively, which are parallel to each other and to the common axis of the rotary diaphragm rings.

3,203,332
METHOD FOR MEASURING PHOTOGRAPHIC EXPOSURE TIME
Otto Deile and Kurt Albrecht Wehlmann, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Keuffel & Esser Company, Hoboken, N.J.
No Drawing. Filed Feb. 6, 1963, Ser. No. 256,517
Claims priority, application Germany, Feb. 7, 1962, K 45,841
1 Claim. (Cl. 95—73)

The method of producing proper exposures of a light decomposable diazo compound sensitized copy sheet material with economy of time, said diazo compound on said sheet having the characteristic of being progressively decomposed when exposed to actinic light and thereby progressively passing more actinic light until a maximum decomposition is reached which is the proper exposure, comprising placing a registering master with the copy sheet material betweer. a source of light which includes actinic and non-actinic light for the selected light decomposable diazo compound with the master adjacent the source of light, and a current controlling photoelectric element with a filter passing principally only actiinc light which decomposes the diazo compound and said filter being located between the copy sheet and the photoelectric element, said master, copy sheet, filter, and photoelectric element lying in the path of light from said light source, and continuing the exposure until the current in the photoelectric element reaches a maximum indicating that the portions of the diazo compound struck by light have been decomposed.

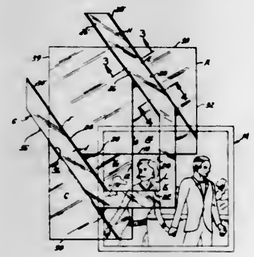
3,203,333
APPARATUS FOR MAKING COPIES BY DIRECT CONTACT PRINTING
Walter Robert Hicks, Manhasset, N.Y., assignor to Reeves Industries, Inc., a corporation of New York
Filed Jan. 15, 1963, Ser. No. 251,531
8 Claims. (Cl. 95—77.5)



1. Apparatus for making contact prints including a housing having a translucent support on which a sheet

to be copied is placed in contact with a light-sensitive sheet, a light behind the translucent support, a developer chamber in the housing extending under the light and the translucent support and separated therefrom by an opaque and impervious wall, the chamber extending forward beyond the translucent support an opening in the front of the chamber, a plate that forms a partition in the chamber generally parallel to the opaque wall, the plate being movable in the chamber and into position to extend for a substantial distance out of the chamber through said opening for insertion of an exposed sheet through the opening and onto the surface of the plate, sealing means around the opening for preventing escape of gas from the chamber when the plate is moved back into a retracted position with respect to the opening, and means within the chamber for generating an atmosphere of gas for developing the light-sensitive paper.

3,203,334
PHOTOGRAPHIC FILM CROPPING DEVICE
Ross B. Wilson and C. William Bowers, both of 645 Westbourne Drive, Los Angeles 69, Calif.
Filed Mar. 5, 1962, Ser. No. 177,351
2 Claims. (Cl. 95—79)

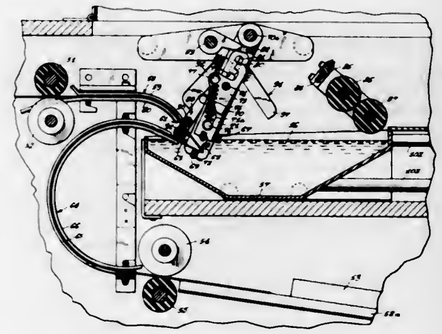


1. A film cropping device that defines a rectangular opening of variable area for use in adjustably selecting a desired portion of a photograph of any dimension for reproduction, which device includes:

(a) an L-shaped sheet of transparent rigid material having a central portion and first and second legs projecting therefrom, said first and second legs having first and second edges which are disposed adjacent and in a direction normal to one another, which sheet has first and second parallel laterally spaced grooves formed therein that are in communication with first and second recesses formed in said first and second legs which extend outwardly therein to said first and second edges, said central portion and said first and second recesses cooperatively defining first and second straight body shoulders at the junction thereof that are parallel to said first and second edges respectively, which first and second grooves have undercut edges with said L-shaped sheet being adapted to be disposed to overlie all or a portion of said photograph without obstructing the view thereof; and

(b) a generally U-shaped member including first and second parallel legs and a web that connects adjoining ends thereof, said first and second legs having tapered side edges which slidably engage said undercut edges, which web defines third and fourth straight edges that are parallel to said first and second edges respectively, with said third and fourth edges contacting said first and second shoulders when said member has been moved inwardly a predetermined distance relative to said sheet to prevent inadvertent displacement of said member from said sheet, said sheet and member cooperatively providing a rectangular opening of variable size but constant proportion between the sides and edges thereof that is bounded by said first, second, third and fourth edges, which opening decreases and increases in cross section as said member is moved towards and away from said plate, and with that portion of said photograph inside said opening presenting the appearance of said photograph after the same is cropped.

3,203,335
DEVELOPING APPARATUS FOR PHOTOGRAPHIC EQUIPMENT
Walter Wanielista, Westchester, and Charles P. Sippel, Jr., Villa Park, Ill., assignors, by mesne assignments, to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 29, 1960, Ser. No. 11,764
4 Claims. (Cl. 95—89)

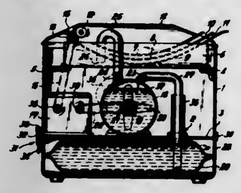


1. In a reproducing mechanism, a container for a pool of developing liquid, first means for guiding a sheet bearing a latent image toward said pool, second means for guiding a press sheet toward said pool, a carrier means receiving the sheets from said guide means and simultaneously moving said sheets into the liquid, a sheet separator including an upper bar positioned above the uppermost of said sheets and a lower bar positioned between said sheets, a separator support moving the separator from a first position where the upper bar guides the uppermost sheet as it leaves the first guiding means to prevent abrasion and to successive positions in a trailing relation to said carrier means while said separator guides both sheets through the pool of liquid to maintain the sheets separated and hold the upper sheet submerged, and means positioned to receive the sheets from the carrier means and press the sheets together to transfer the image to said press sheet.

3,203,336
COPYING APPARATUS
Walter Limberger, Hamburg-Poppenbuttel, Germany, assignor to Lumoprint Zindler K.G., Hamburg, Germany
Filed Apr. 2, 1963, Ser. No. 270,072
Claims priority, application Germany, Apr. 3, 1962, L 41,638
10 Claims. (Cl. 95—89)

1. In a copying apparatus, the arrangement of a treatment tank for the copy material, a reserve container for the treatment liquid to be supplied into the treatment tank, said reserve container being provided beneath said treatment tank, a connection duct between said treatment tank and said reserve container, a non-suction-type pump arranged in said connection duct, said duct serving on stopping of the pump as a return duct to said reserve con-

tainer provided beneath said tank, said pump being arranged outside said reserve container and higher than the bottom of said reserve container, said pump having a housing, said housing having a lower region forming a



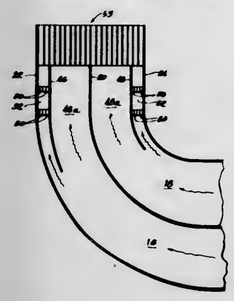
closed container for said treatment liquid within said connection duct, said container serving to hold a limited amount of said treatment liquid, drive means for at least intermittent driving of said pump, and switch means for switching on and off said drive means.

3,203,337

REFRIGERATED DISPLAY CASE AND ELEMENTS THEREOF

Sterling Beckwith, Libertyville Township, Lake County, Ill., assignor, by mesne assignments, to Dual Jet Refrigeration Company, a corporation of Illinois

Filed Feb. 27, 1961, Ser. No. 91,875
3 Claims. (Cl. 98—36)



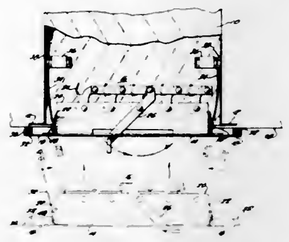
1. A nozzle assembly for use in maintaining non-entraining parallel panels of differently conditioned air across the open side of an otherwise enclosed space which comprises at least two nozzles arranged in side-by-side relationship to extend continuously along the length of one edge of the open side and positioned to direct the air panels towards the opposite edge thereof, one of said nozzles being an inner conditioned air directing nozzle having an inner edge portion positioned adjacent the open side of the enclosed space, the other nozzle being an outer differently conditioned air nozzle having an outer edge positioned towards the ambient atmosphere, said nozzles embodying means for issuing the air streams at lower velocity from the inner portion of the inner nozzle and from the outer portion of the outer nozzle than the air streams issuing from other portions of the inner and outer nozzles, said means comprising a plurality of vanes extending lengthwise across each of the nozzles dividing the nozzles into vaned sections, and additional vaned sections in communication with the vaned sections in the inner portions of the inner nozzle and the outer portions of the outer nozzle to impart resistance to gaseous flow whereby the volume of air passing through said vaned sections having barriers is less than through the remainder of the vaned sections with corresponding decrease in velocity of air issuing from the corresponding inner portions of the inner nozzle and outer portions of the outer nozzle.

3,203,338

MAGNETIC VENTILATOR SUPPORT

John P. Dry, Box 427, Winters, Tex.

Filed Dec. 27, 1963, Ser. No. 333,910
6 Claims. (Cl. 98—114)



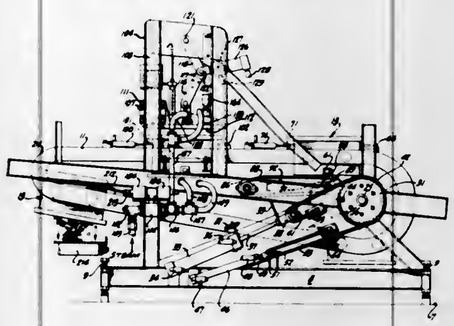
1. In an air circulating conduit including a duct having side walls constructed of magnet responsive material and said walls terminating in an opening and a grill for covering said opening, a mounting support for said grill comprising a resilient arm, means for engaging one end of said resilient arm to said grill and the other end thereof to said duct, said means including a pair of magnets each secured to a respective end of said arm for engaging said grill and said duct respectively for forming a magnetic circuit.

3,203,339

COLOR RELEASING MACHINE

Robert J. Coffelt and George R. Giannini, Davis, Calif., assignors to The Regents of the University of California, Berkeley, Calif.

Filed Apr. 1, 1963, Ser. No. 269,575
6 Claims. (Cl. 99—240)



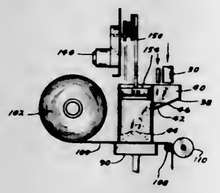
1. A color releasing machine comprising a frame, a closed loop track having a horizontal run, means for mounting said track on said frame, a horizontal platen fixed on said frame below said run, means defining a fluid opening in said platen, means for mounting a section of said track run for vertical movement, an open top container having a bottom with an aperture therein, means for advancing said container on said track to said movable section with said aperture and said opening substantially in registry, a cover for said container, means for mounting said cover on said frame above said container on said movable section and for vertical movement toward and away from said platen, means on said frame for lowering said cover onto said container on said movable section and said container onto said platen, and means on said frame for supplying heating fluid to said container through said fluid opening.

3,203,340

BEVERAGE BREWING AND DISPENSING MECHANISM

Gilbert vP. Totten, % Advance Engr. Co., 2414 University Ave. SE., Minneapolis 14, Minn.

Filed Feb. 1, 1963, Ser. No. 255,629
10 Claims. (Cl. 99—289)



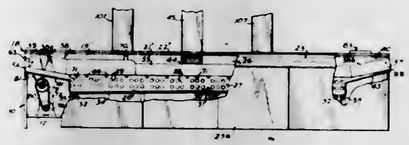
1. A beverage brewing apparatus, comprising in combination, a brewing chamber, a filtering chamber, said filtering chamber having inlet means intermediate its ends and in fluid communication with said brewing chamber including means for introducing liquid and solid beverage brewing materials therein, said filtering chamber having first and second separable portions, drive means for providing relative axial motion between said portions, a filtering medium adapted to be positioned between the first and second portions of said filtering chamber, a drive means for advancing said filtering medium between said first and second portions when said first and second portions have been separated, a plunger slidably mounted within said first portion for operation between positions substantially above said inlet means and in proximity to said filtering medium, said plunger being adapted, upon downward movement to force a substantial quantity of air and said liquid through that part of said filter medium positioned between said first and second portions of said filtering chamber, and duct means communicating with said second portion of said filtering chamber for transporting said liquids away from said filtering chamber.

3,203,341

CONTINUOUS COOKING DEVICES

Wood B. Hedgepeth, 1000 Peachtree St. NE., Atlanta, Ga.

Filed July 11, 1960, Ser. No. 41,993
3 Claims. (Cl. 99—330)



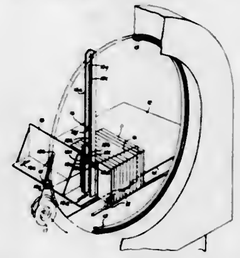
1. In a deep fat fryer, a vat for cooking oil, an inlet member for oil, a conveyor for passing food through the oil, the oil tending to become removed from the vat by the emergence of the food, a substantially smaller leveling tank disposed adjacent said vat and having a partition dam therein for dividing the tank into two compartments side by side, conduit means below the dam for connecting one compartment to said inlet member, a source of make-up oil, means for constantly supplying the make-up oil to said compartment, and conduit means connecting the other compartment to said source, whereby when the make-up oil is added the level in the first mentioned compartment will rise no higher than the dam, but spill over the dam into the other compartment and be returned to the source.

3,203,342

APPARATUS FOR TRAINING FLEXIBLE MATERIAL ABOUT PACKAGES AND THE LIKE

Robert David Sansum, London, England, assignor to Seal-Less Strapping Limited, London, England, a corporation of Great Britain

Filed Aug. 28, 1963, Ser. No. 305,173
Claims priority, application Great Britain, Sept. 18, 1962, 35,454/62
6 Claims. (Cl. 100—27)



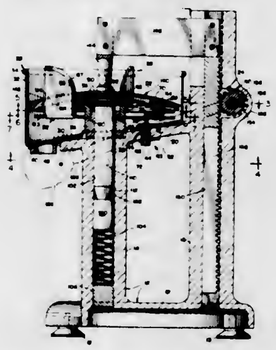
2. In a package binding mechanism, package support means, guide means orbitally movable about a package from a starting position adjacent said package support means for training a length of material about the package in a binding plane, a material engaging element mounted within the area circumscribed by said guide means in its orbital movement about the package, said element being movable into and out of the binding plane to engage and release the material about an axis extending substantially perpendicular to said support means and being additionally movable toward and away from said package support means, and means for urging said material engaging element away from said package support means and into the binding plane, whereby as said guide means trains the material about the package the material will be trained over and held taut by said material engaging element.

3,203,343

JUICE EXTRACTOR

Louis Myers, 2111 Vernon St., Rockford, Ill.

Filed Dec. 3, 1963, Ser. No. 327,615
7 Claims. (Cl. 100—98)



1. In a juice extractor for expressing the juice of fruits, in combination, a tubular pedestal, a shelf-like bowl support on the upper end of the pedestal, a juice-collecting bowl having a substantially flat bottom wall removably seated on said bowl support, a hub projecting upwardly from said bottom wall into the bowl centrally thereof, a slicing member in the form of a flat plate removably seated on the hub within the bowl, a series of thin flat radial slicing blades projecting upwardly from said plate, a

vertical plunger telescopically slidable in said tubular pedestal and projecting upwardly through the hub and plate, a fruit-supporting cradle mounted on the upper end of the plunger and movable bodily therewith between a raised position within the bowl wherein the fruit supported thereby is disposed above the level of said slicing blades and a lowered position wherein the fruit is penetrated by said slicing blades, spring means yieldingly urging said plunger and cradle upwardly, first releasable latch mechanism effective between the plunger and pedestal for limiting the uppermost position of the cradle and preventing removal of the latter from the bowl, second releasable latch mechanism effective between the slicing member and bowl for preventing removal of the former from the latter, third latch mechanism effective between the bowl and support for preventing removal of the former from the latter, a vertically movable pressure member having clearance openings therein for reception of said slicing blades and positioned above the cradle and effective to force the fruit and cradle downwardly within the bowl to effect penetration of the fruit by said slicing blades and compression of the fruit between the pressure member and cradle, and means for moving said pressure member vertically in opposite directions.

3,203,344
LITHOGRAPHIC PRINTING PLATE IMAGING PROCESS

Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York

Filed Feb. 13, 1961, Ser. No. 88,745
4 Claims. (Cl. 101—149.2)

1. The method of placing oleophilic images on the surface of a lithographic printing plate through the use of infrared radiation, which comprises:

(a) superposing an infrared radiation-translucent donor sheet and a transfer sheet having a pressure-sensitive transfer layer comprising heat-meltable, oleophilic, infrared radiation-absorbing composition having a melting point within the range of from about 100° F. to about 250° F.,

(b) applying pressure to said superposed sheets to transfer said composition to the surface of said donor sheet in image form,

(c) superposing a flexible lithographic printing plate with its working surface in contact with said image on said donor sheet,

(d) directing a sufficient quantity of radiation rich in infrared against the donor sheet to selectively heat the image to a temperature within the range of from about 100° F. to about 250° F. to cause it to melt and adhere to the working surface of the plate without materially heating the infrared radiation-translucent donor sheet, and

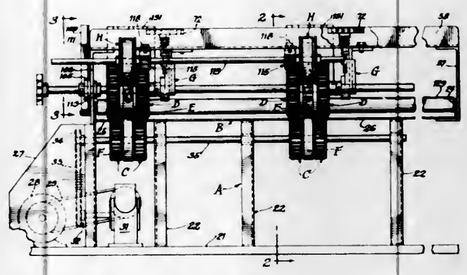
(e) separating said sheets to form the plate having the oleophilic image thereon in an area corresponding to the image area of the donor sheet.

3,203,345
ROTARY BAG PRINTER

Earl E. Gibbons, deceased, late of Fort Lauderdale, Fla., by A. Lucile Gibbons, administratrix, Fort Lauderdale, Fla., assignor to A. Lucile Gibbons

Continuation of application Ser. No. 578,255, Apr. 16, 1956. This application Nov. 8, 1961, Ser. No. 151,104
1 Claim. (Cl. 101—216)

In a bag printing apparatus, comprising a supporting frame having an upper horizontal supporting surface, a driving shaft mounted for rotation about a fixed axis on said frame, a pair of driving rollers fixedly mounted on said driving shaft, a pressure roller mounted for free rotation on said driving shaft between said pair of driving rollers, another pair of driving rollers fixedly mounted on said driving shaft, another pressure roller mounted for free rotation on said driving shaft between said other pair of driving rollers, said driving shaft being positioned so that the upper peripheries of said driving rollers are approximately within the plane of said supporting surface, a driven shaft mounted on said frame above said driving shaft for free rotation about a fixed axis, a pair of driven rollers mounted for rotation with said driven shaft opposite each said pair of driving rollers, a printing roller mounted for rotation with said driven shaft between each said pair of driven rollers and opposite a said pressure roller, said driven rollers being spaced from the oppositely disposed driving rollers a distance less than the thickness of a bag to be printed, said printing rollers being spaced from the oppositely disposed pressure rollers



a distance less than the thickness of a bag to be printed, and driving means for driving said driving shaft so that, when a bag is placed between said driven rollers and said driving rollers, said driving rollers will drive the bag and said driven rollers, through the agency of the bag, to effect a lineal speed of the bag equal to the peripheral speed of said printing rollers, said printing rollers having printing type and a driving surface on the periphery thereof, an inking roller, comprising a circular disk and a circular inking pad mounted adjacent said disk for rotation thereby, a shaft, said inking roller being mounted for free rotation on said shaft, and an inclined surface inclined downwardly toward said driving surface, said shaft being mounted for free sliding movement under the sole influence of gravity on said inclined surface so that said driven disk will engage said driving surface and be driven thereby.

3,203,346
THREE CYLINDER CONVERTIBLE PRINTING PRESS

Robert K. Norton, Twinsburg, and Howard A. Pritchard, Hiram, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Filed May 2, 1961, Ser. No. 107,197
6 Claims. (Cl. 101—217)

1. A three-cylinder convertible printing unit having first, second and third cylinder members arranged for rotation about three parallel axes for printing either directly from a flexible printing plate or by offset from a flexible compressible blanket.

an inker having ink rollers,

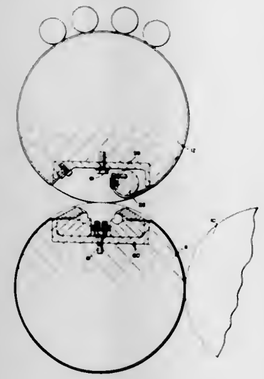
said first cylinder member being arranged to support print-receiving material passing through a printing zone,

first mounting means constructed to releasably receive solely the ends of a flexible, substantially incompressible printing plate element and including a member movable for tensioning an end of said printing plate element,

second mounting means constructed to releasably receive solely the ends of a flexible, compressible blanket element and including a member rotatable

on an axis parallel to the cylinders for tensioning an end of said blanket element,

means on said second cylinder member for securing thereto at least the tensioning member of either said first or said second mounting means for movement about the axis of said second cylinder member, with the corresponding element received thereby being adapted to run in rolling contact with the print-receiving material at said printing zone while supported by said first cylinder member,



and means on said third cylinder member for securing thereto at least the tensioning member of either said first or said second mounting means for movement about the axis of said third cylinder member, with the corresponding element received thereby being adapted to run in rolling contact with said ink rollers and with the element secured to said second cylinder member,

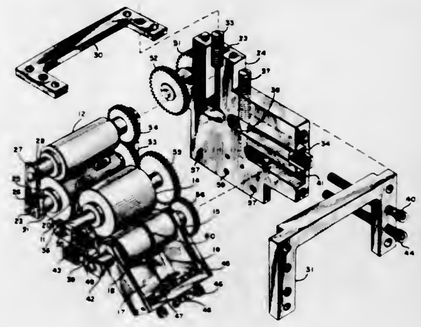
said second and third cylinder members each having an effective circumferential surface for supporting said elements and each having a gap providing identical seats for at least the tensioning members of each said first and said second mounting means whereby said second and third cylinder members may interchangeably receive the tensioning members of said first and said second mounting means to enable print-receiving material to be printed at the printing zone from a selected one of said elements and ink to be transferred from said ink rollers to said selected one of said elements by the other of said elements.

3,203,347
ROTARY PIGMENT PRINTER FOR GELATIN STRIP FOR CAPSULES

Lloyd Frank Hansen, New City, N.Y., and George Spencer Bott, Westwood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed June 14, 1963, Ser. No. 287,842
3 Claims. (Cl. 101—219)

1. In a machine for marking plastic strip from which soft plastic capsules are to be formed comprising a frame assembly having slots therein in which the rolls are adjustable and having a marking roll and a pressure roll between which the plastic strip passes, the improvement comprising the combination therewith of: a transfer and spreading roll in marking fluid transferring relationship with the marking roll, and a pigment marking fluid pick-up roll in marking fluid spreading and transferring relationship with said transfer and spreading roll, a notched doctor bearing on said pick-up roll to scrape clean said roll except for a narrow ribbon of pigmented marking fluid, means to adjust the cross-sectional area of said narrow ribbon of pigmented marking fluid, and gear drive means for all of said rolls, whereby a pigmented marking fluid is adjustably metered by passing through the notch

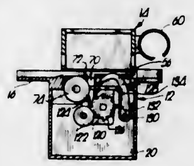


in said notched doctor blade and uniformly spread between said pick-up marking roll and the transfer and spreading roll to give a uniform and consistent rate of feed to the transfer and spreading roll and therefrom to the marking roll over a wide range of viscosity characteristics of the pigmented marking fluid.

3,203,348
PRINTING APPARATUS

Edward R. Ellis, 7208 E. 84th, Kansas City, Mo.

Filed Aug. 5, 1963, Ser. No. 300,031
4 Claims. (Cl. 101—272)



1. In printing apparatus for simultaneously imprinting a sales slip and a summary strip with indicia contained on a printing plate:

a support having a seat for receiving said plate and means for receiving said sales slip with the slip in overlying relationship with said indicia;

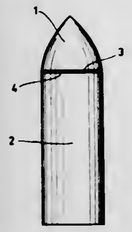
means for supporting said summary strip with a portion thereof in overlying relationship with said indicia;

shiftable means on the support engageable with said strip for advancing the strip longitudinally thereof a predetermined distance each time the shiftable means is actuated;

structure on the support movable between an inoperative position and a position where said slip and the portion of the strip overlying said indicia are pressed between the plate and the structure; and

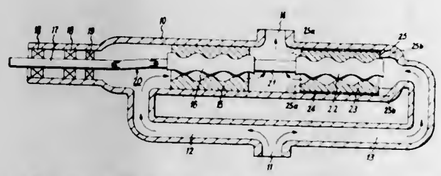
means operably coupled with said shiftable means and disposed for engagement by said plate as the latter is placed in said seat for actuating the shiftable means upon said engagement to advance the strip said predetermined distance, whereby a different portion of the strip is aligned with said indicia during the seating of the plate.

3,203,349
PROJECTILE OR THE LIKE, PREFERABLY FOR ARMOR-PIERCING WEAPONS, AND A METHOD OF MANUFACTURING SUCH A PROJECTILE
Nils Erik Schönberg, Kolsva, Sweden, assignor to Kohlswa Jernverks Aktiebolag, Kolsva, Sweden, a Swedish joint-stock company
Filed Sept. 17, 1963, Ser. No. 309,493
Claims priority, application Sweden, Sept. 18, 1962, 10,053/62
2 Claims. (Cl. 102—52)



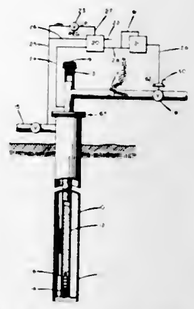
1. Armor-piercing projectile comprising forward and rear portions and a bonding section joining the interfaces of said sections together, said forward and rear sections being composed of sintered material and being of uniform composition throughout the respective portions, said bonding section being composed of a metal composition which is capable of bonding to the respective portions and of preventing diffusion in the interfaces of said portions, said forward and rear portions being of different composition and said bonding section being composed of forward and rear layers which are bondable respectively to said forward and rear portions and to each other, said forward portion being composed of a mixture of a heavy metal with copper and nickel, said rear portion being composed of a mixture of a metal carbide and cobalt, the forward layer of said bonding section being composed of a mixture of copper and nickel, and the rear layer of said bonding section being composed of cobalt.

3,203,350
HELICAL MULTIPLE PUMP
Sheldon S. L. Chang, Bronx, N.Y., assignor to Robbins & Myers, Inc., Springfield, Ohio, a corporation of Ohio
Filed Nov. 5, 1962, Ser. No. 235,182
6 Claims. (Cl. 103—4)



1. A multiple pump comprising a casing having an inlet and an outlet and comprising two outer helical screw elements in axially spaced relation, and two inner helical screw elements in engagement therewith respectively, each of said outer elements having one more thread respectively than the inner element engaged therewith, the threads of one engaging set of inner and outer elements being of opposite hand from the threads of the other set of inner and outer elements, said inner elements being fixed together coaxially to constitute a common rotor, one of said outer elements being fixed in said casing, and the other of said outer elements being free to rotate in said casing to the extent permitted by interference with the inner element, whereby it is self-aligning as to phase with respect to the inner element engaged therein and said two sets of inner and outer elements may coact pumpingly without binding.

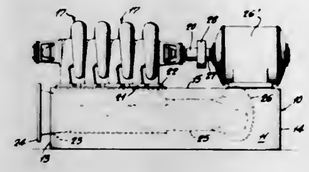
3,203,351
APPARATUS FOR DISCHARGING LIQUIDS FROM WELLS
Malcolm C. Gillis, Oklahoma City, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Nov. 8, 1962, Ser. No. 236,773
6 Claims. (Cl. 103—46)



1. An apparatus for removing liquid from a well through a tubing suspended therein, said tubing having an inlet near the bottom of said well and an outlet at the head of said tubing, the combination comprising:
a vent in said tubing near said outlet,
a valve in said tubing outlet,
a gas-operated valve motor for controlling said valve in said tubing outlet,
means for supplying operating gas to said valve motor in response to the pressure drop in said tubing as a liquid column accumulates in said tubing while gas exhausts through said vent,
said means including a differential pressure responsive valve and two pressure lines leading to said differential pressure responsive valve, one line leading from the inside of the well tubing and the other leading from the well outside said tubing,
a block valve arranged to control the supply of operating gas from said means to said valve motor,
a timing device in operative connection with said block valve,
said timing device including a housing with a partition therein forming a pair of chambers,
a fluid conduit between said chambers,
a throttle valve in said fluid conduit,
means to admit operating gas to said timing device whereby a fluid in one of said chambers is displaced through said throttle valve into the other of said chambers, the other of said chambers being an expansible chamber operatively connected to said block valve whereby the transfer of fluid to said other chamber closes said block valve, and
means to exhaust operating gas from said valve motor.

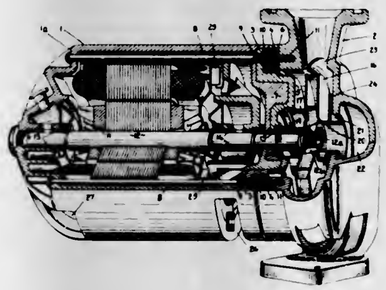
3,203,352
MULTIPLE PUMP ASSEMBLY
Gustav Schafranek, Leechgasse 56, Graz, Austria
Filed May 9, 1963, Ser. No. 279,275
Claims priority, application Austria, May 24, 1962, A 4,252/62
5 Claims. (Cl. 103—87)

1. A multiple pump assembly comprising an elongated hollow base, a top plate on said base, said top plate having a plurality of intake openings and a plurality of discharge openings, a common intake conduit disposed in said base and communicating with said intake openings, a coupling on said intake conduit at one end of said base, a common discharge conduit disposed in said base and communicating with said discharge openings, a coupling on said discharge conduit adjacent one side and the opposite end of said base, a plurality of separate, like pump casings disposed in axial alignment, an in-



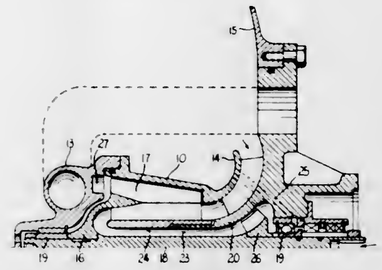
take fitting and a discharge fitting on each casing, said casing being secured to said top plate with said intake fittings communicating with said intake openings and said discharge fittings communicating with said discharge openings, whereby said casings are connected in parallel, a separate and like rotor in each casing to provide a pump unit, a common drive shaft fixed to each rotor, and a drive motor coupled to said drive shaft and secured to said top plate.

3,203,353
MOTOR PUMP UNIT
Clair James Ruby, Toronto, Ontario, Canada, assignor to S. A. Armstrong Limited, Toronto, Ontario, Canada
Filed Mar. 12, 1964, Ser. No. 351,408
5 Claims. (Cl. 103—87)



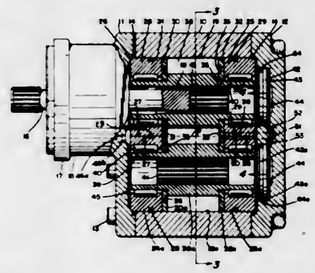
1. A motor and pump unit comprising, a motor housing containing a stator, a pump housing in alignment with the motor housing, a shaft in the motor housing having an end that protrudes into the pump housing, a motor rotor mounted on the shaft, bearing means to support the shaft, said bearing means being within and fixed to the motor housing, an impeller within the pump housing and fast on the protruding end of the shaft, a common wall for the motor housing and for the pump housing, a resilient gasket interposed between the pump housing and the motor housing and having one side which bears against one face of the common wall and another side which bears against one of the housings, the other face of the common wall bearing against the other housing, and tension rods extending from one housing to the other to couple them and the common wall and the gasket together, the tension rods passing through openings in the common wall which are of appreciably greater diameter than the diameter of the rods so that there is no contact betwen the rods and the edges of the openings.

3,203,354
PUMP
Haakon O. Pedersen, Morris Plains, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Mar. 26, 1962, Ser. No. 182,471
3 Claims. (Cl. 103—113)



1. A pump for pumping fluid mixtures of vapor and liquid without loss of head comprising, in combination, a casing including a portion disposed for axial fluid flow, a drive shaft including an impeller fixed thereto journalled in said casing, an annular inlet communicating with said casing to direct pumped fluid axially along said impeller, impeller vanes arranged in said axial portion to impart rotation to the mixture upon rotation of said shaft to effect a separating flow of the lighter vapor components toward and of the heavier liquid components away from the axis of rotation, and a pair of annular, radially spaced walls formed on said impeller vanes defining separate inner vapor and outer liquid passages with said shaft and said housing and directing said separated components to separate discharge means of said casing.

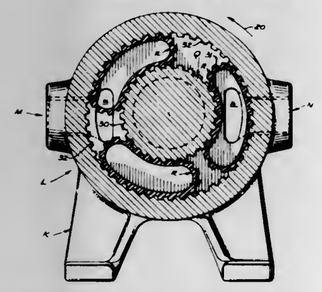
3,203,355
ROTARY PUMP
Howard M. Purcell, Cleveland, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 26,646, May 3, 1960. This application July 24, 1963, Ser. No. 299,138
18 Claims. (Cl. 103—126)



1. A fluid pressure translating device comprising a housing, a chamber in said housing, an inlet recess leading to and an outlet recess leading from said chamber, a rotary member in said chamber subject to fluid under pressure, said member having a surface to be sealed, a movable element in engagement with said surface for sealing the same, said movable element defining with said surface a plurality of areas forming a substantially peripheral area extending from said outlet recess to a position in close proximity to said inlet recess with alternating areas thereof subject to fluid under pressure tending to

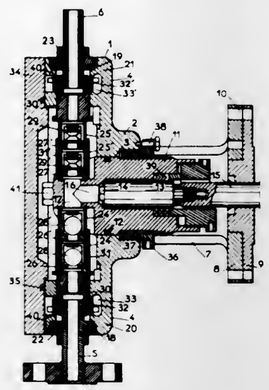
separate the movable element from said surface, first means subjecting said entire substantially peripheral area to increasing and decreasing fluid pressure fluctuating forces as said rotary member rotates, said first means providing pressure communication between said chamber and said outlet recess, at least one of said areas which is otherwise closed to the oulet recess being in communication with said outlet recess through said first means, second means in communication solely with said first means and said outlet recess for applying second forces to said movable element in opposition to said separating forces whereby said element is maintained in sealing contact with said surface, and third means in communication only with said second means and said movable element for solely causing said second forces to increasingly and decreasingly fluctuate substantially in phase, duration and in like manner with said first forces and maintain a substantially uniform incremental force differential therebetween irrespective of whether the said first forces are increasing or decreasing.

3,203,356
PUMP
Henry E. Jepsen, 10902 S. La Serna Drive, Whittier, Calif.
Filed Dec. 27, 1960, Ser. No. 78,351
3 Claims. (Cl. 103—148)



1. A pump comprising a housing have a somewhat cylindrical interior chamber; a shaft journalled in both ends of said housing in axial alignment therewith and extending through said interior chamber; a cylindrical rotor carried concentrically on said shaft and adapted to be driven thereby, said rotor having longitudinally extending teeth uniformly spaced about its entire circumference; the length of said interior chamber being only slightly greater than the length of said rotor, the circumferential wall of said chamber having one circumferential portion which is concentric to said shaft and spaced by a first radius distance from the axis of said rotor, a second and oppositely disposed circumferential portion which is also concentric to said shaft but at a second and larger radius distance from the axis of said rotor, and first and second tapered-radius portions which are oppositely disposed to each other and which interconnect said fixed-radius portions; at least two flexible members disposed in circumferentially spaced positions within said chamber, each of said flexible members being normally of a substantially cylindrical configuration and of substantially the same length as said rotor, but being depressed between the periphery of said rotor and said chamber wall into an approximately elliptical form, each of said flexible members having teeth on its exterior surface which engage said rotor teeth; the circumferential wall of said chamber having teeth formed thereon which are engaged by the teeth of said flexible members; a first opening in an end of said housing communicating with said first tapered-radius portion of said chamber; and a second opening in an end of said housing communicating with said second tapered-radius portion of said chamber.

3,203,357
PUMPS
Jacques Eugene Antonin Delorme, 6 Rue Villebois-Mareuil, Sartrouville, France
Filed Apr. 17, 1963, Ser. No. 273,701
Claims priority, application France, Aug. 1, 1962, 905,758
5 Claims. (Cl. 103—153)



1. A pump comprising a support provided with a longitudinal bore and a transverse channel into a medial point of which the longitudinal bore opens, a cylinder fitted in the longitudinal bore and enclosing a chamber opening through a bore into the end of the cylinder facing the transverse channel, a liquid-operating member reciprocatingly carried inside the cylinder chamber, a suction pipe and a delivery pipe the coaxial ends of which are rigidly secured to the support and open into the corresponding outer ends of the transverse channel, coaxial lines of fluidtightly interconnected tubular valve boxes fitted in alignment with said pipe ends inside the transverse channel, each to one side of its medial point, suction and delivery valves in the valve boxes of the line extending between the medial point and the corresponding pipes, a connection slidingly fitted over the end of each pipe facing the corresponding line of valve boxes, and means adapted to shift each connection over the end of the cooperating pipe to secure it selectively in an operative position ensuring a fluidtight connection between said pipe end and the cooperating valve box line and an inoperative position for which the connection is collapsed over the corresponding pipe end and releases the cooperating line of valve boxes.

3,203,358
FLUID FLOW CONTROL APPARATUS
John Regan, Rolling Hills Estates, and LeRoy Miller, Los Angeles, Calif., assignors to Regan Forge & Engineering Co., San Pedro, Calif., a corporation of California
Filed Aug. 13, 1962, Ser. No. 216,478
11 Claims. (Cl. 103—203)

1. In an apparatus for removing well fluid from a well including spaced, vertical casing and tubing walls forming a reservoir to receive well fluid preparatory to introduction into a well pump, the provision of:

vertical passage means interconnecting said reservoir with well fluid from said well, said passage means extending upwardly in said reservoir above the pump and opening into said reservoir at an upper portion thereof below a normal fluid level;

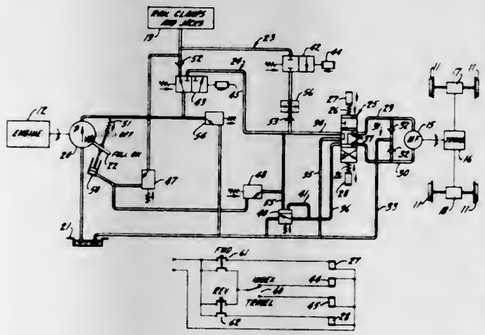
valve means associated with said passage means to control flow of fluid into said reservoir; and

pressure sensitive means responsive to changes in fluid level in said reservoir to operate said valve means to



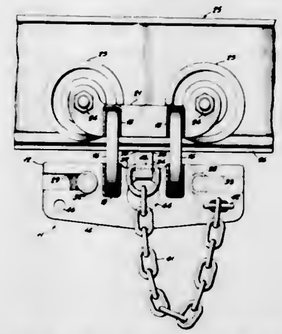
closed position upon the rise of well fluid above a predetermined level within said reservoir.

3,203,359
TAMPING MACHINE DRIVE
James E. Anderson, Ludington, Mich., assignor to Jackson Vibrators, Inc., Ludington, Mich., a corporation of Illinois
Filed Mar. 5, 1964, Ser. No. 350,151
3 Claims. (Cl. 105—27)



1. In a tamper having track engaging wheels and a power plant, a track wheel drive comprising, in combination, a variable delivery pump coupled in driven engagement to said power plant, a reversible fluid motor mechanically coupled in driving engagement to said wheels, a directional valve arranged to direct fluid to said motor for either forward or reverse driving, an indexing circuit coupling said pump and said valve, a traveling circuit coupling said pump and said valve, means in said circuits for selectively opening one or the other of the circuits, a pair of pressure responsive devices, one in each of said circuits, for varying the delivery of said pump so as to limit the pressure in said indexing circuit to an indexing pressure and the pressure in said travel circuit to a travel pressure that is higher than said indexing pressure, and a control for operating said means and said valve so as to drive the tamper in either forward or reverse direction at either index or travel speed.

3,203,360
TROLLEY
Raymond L. Renfroe and Robert C. Renfroe, both of 1926 Spearing St., Jacksonville, Fla.
Filed Aug. 16, 1963, Ser. No. 302,672
1 Claim. (Cl. 105—154)

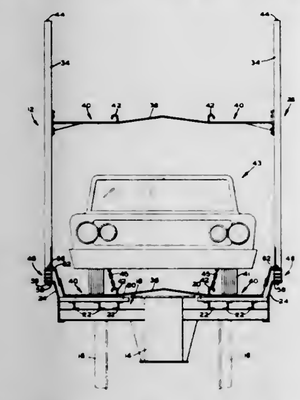


A trolley comprising a pair of clamping members, each of said clamping members having a side plate and hook means rigidly secured to said side plate, a pair of wheels carried by each of said hook means, said wheels being spaced apart longitudinally of said side plates, means for releasably connecting said clamping members together in face to face relationship in clamping position on the flanges of a supporting member so that said wheel engage the upper surfaces of said flanges, said connecting means including a bayonet stud fixed to one of said members and a slot in the other of said members, said stud being slidably engageable in interlocked relation with said slot over a first length, said wheels permitting said clamping members to be moved along said flanges when said clamping members are connected together, means for securing said members against movement along said flanges, and load supporting means defining an aperture through each of said clamping members, said apertures being overlapped with each other over a second length when said stud and slot are fully engaged to define an opening extending through both of said side plates to receive a load carrying member, said opening being centered between said spaced wheels to distribute evenly between said wheels the load carried by said load supporting means, said first length being greater than said second length so that relative sliding movement of said side plates will remove the overlap between said apertures and thus close said opening before disengaging said stud from said slot to preclude separation of said clamping members when any object extends through said opening.

3,203,361
RESILIENTLY SUSPENDED TRANSPORT STRUCTURE
Everett H. Sharp, Lambertville, Mich., assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed Aug. 25, 1961, Ser. No. 133,909
2 Claims. (Cl. 105—368)

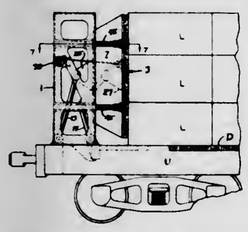
1. A transporting device adapted to carry a plurality of vehicles thereon comprising in combination, a railway car having a longitudinally elongated and laterally extending frame, a plurality of aligned longitudinally and laterally extending structural sections being superimposed relative to said frame and spaced vertically about the same, each of said structural sections comprising a plurality of laterally and longitudinally spaced vertically extending side posts and longitudinally and laterally extending vehicle supporting deck means interconnecting said side posts, a mounting means carried by the lower end of each of said side posts and having a lower face

extending in a substantially horizontal plane, each structural section of said plurality of structural sections having a side post in juxtaposed paired relationship with a side post of the adjacent structural sections, a plurality of mounting means carried by said frame with one mounting means of said plurality of mounting means having an upper face disposed in parallel vertically spaced cooperating relationship with the lower face of the mounting means of each of said juxtaposed paired side posts and one mounting means of said plurality of mounting means disposed in parallel vertically spaced cooperating rela-



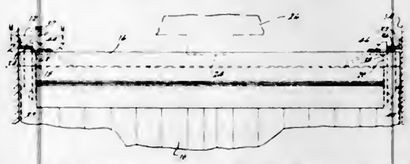
tionship with the lower face of the mounting means of each of the other of said side posts, a resilient cushioning means including a shear type elastomeric element interconnecting the faces of said cooperating mounting means and operative to accommodate the relative lateral and longitudinal components of movement between said frame and said structural sections by deforming in shear and operative to accommodate the relative vertical components of movement between said structural sections and said frame by deforming in tension and compression, whereby said structural sections are operative to move independently relative to said frame.

3,203,362
ADJUSTABLE BULKHEAD
Richard L. Lich, Ferguson, Mo., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
Filed Jan. 12, 1962, Ser. No. 167,469
7 Claims. (Cl. 105—376)



1. An adjustable bulkhead device for use on a horizontal load supporting surface, comprising upstanding structure fixed on the surface, a vertically disposed movable bulkhead structure normally positioned adjacent said fixed structure, means for moving said movable structure in a direction perpendicular to its general plane to selected positions spaced from said fixed structure and for maintaining said movable structure substantially upright at all times, and means independent of said first named means providing horizontal support for said movable structure from said fixed structure, said first named means comprising a pair of struts each pivotally connected at its lower end to said fixed structure and at its upper end to said movable structure and normally supporting the same in elevated relation to the load supporting surface, the pivot axes being parallel to the general plane of said movable structure and forming the corners of a parallelogram, the upper ends of said struts and said movable structure being at their maximum heights when said movable structure is fully retracted toward said fixed structure whereby movement of said movable structure away from said fixed structure is effected by gravity.

3,203,363
BULKHEAD GUIDE BRACKET
Fred B. Miller, Livonia, Mich., assignor to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Filed Mar. 22, 1962, Ser. No. 181,586
3 Claims. (Cl. 105—376)



1. In a bulkhead means for use in a cargo container of the type having spaced parallelly extending side walls, fixed bulkhead support means fixedly mounted in said cargo container, longitudinally movable bulkhead support means movably supporting said bulkhead means on said fixed bulkhead support means and being movable longitudinally within said cargo container, said bulkhead means adapted to be mounted in said cargo container in various partitioning positions extending transversely between the side walls of said cargo container and having cargo engaging side surfaces extending transversely between the side walls of the cargo container and end walls extending parallelly to the side walls in the partitioning positions, said bulkhead means being movable between the various partitioning positions longitudinally of said container with the end walls parallel and the cargo engaging side surfaces transverse to said side walls of said cargo container, transversely movable bulkhead support means movably supporting said bulkhead means on said fixed bulkhead support means and being movable transversely within said cargo container, pivotal connecting means between said bulkhead means and said transversely movable bulkhead support means, said bulkhead means also being adapted to be mounted in said cargo container in various stowed positions extending parallelly between the side walls of said cargo container and having the cargo engaging side surfaces extending parallelly with the side walls, said bulkhead means being movable between the various stowed positions longitudinally of said container with the end walls transverse and the cargo engaging side surfaces parallel to said side walls of said cargo container, said bulkhead means being movable between a stowed position and a partitioning position by pivotal movement about said pivotal connecting means and by transverse movement with said transversely movable bulkhead support means, extendable and retractable locking means mounted on said bulkhead means and being operable between extended and retracted positions to hold said bulkhead means in the partitioning positions and in the stowed positions, locking means fixedly mounted in the cargo container above said bulkhead means and said extendable and retractable locking means, a plurality of openings provided by said locking means to receive said extendable and retractable locking means and lock

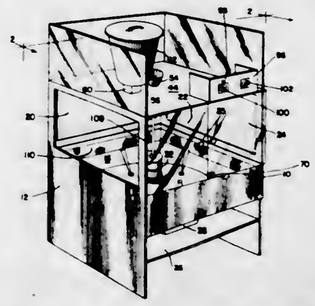
said bulkhead means in the partitioning positions and in the stowed positions: the invention comprising guide and locating abutment means provided adjacent said locking means, guide and locating bracket means mounted on said bulkhead means, each guide and locating bracket means having a first abutment surface extending parallel to said abutment means adjacent said locking rail means in the partitioning positions of said bulkhead means and being spaced from said abutment means a distance less than the spacing of said end walls of said bulkhead means from said side walls of said container, said first abutment surface being spaced from said extendable and retractable locking means a distance approximately equal to the spacing of said abutment means from said openings to provide alignment between said extendable and retractable locking means and said openings when said first abutment surface engages said abutment means, and a second abutment surface extending parallel to said abutment means in the stowed positions of said bulkhead means and being spaced from said extendable and retractable locking means a distance approximately equal to the spacing of said abutment means from said openings when said second abutment surface engages said abutment means.

3,203,364
BRIDGE PLATE ASSEMBLY
Jack E. Gutridge, Dyer, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 11, 1963, Ser. No. 329,663
6 Claims. (Cl. 105—458)

1. In a railway car particularly adapted for piggyback lading operations, said car having coupling means projecting from one end thereof to co-operate with the next adjacent car, the provision of pivoting bridge plate means carried at diagonally disposed ends of said car for projecting over to the next adjacent car, said bridge plate means of sufficient transverse width to permit wheeled lading to be driven thereover when spanning the distance between adjacent cars, said bridge plate means having hinge means at one end thereof for pivotably mounting said bridge plate means on said car for angular movement about a generally horizontal axis, a locking pin member carried by one of said bridge plate means and said car, a pin receiving pocket member on the other of said bridge plate means and said car, and elastomeric means resiliently mounting one of said members to torsionally control and dampen the angular travel of said bridge plate means under shock loading when said bridge plate is locked in a transit position.

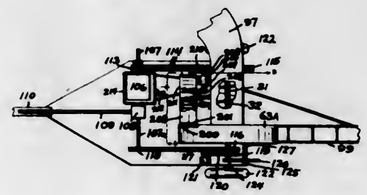
3,203,365
COTTON CANDY SPINNING MACHINE
John Bowe and David Frohlich, both of 29 Maple St., Salisbury, Mass.
Filed June 21, 1962, Ser. No. 204,129
4 Claims. (Cl. 107—1)

1. In combination with a cotton candy spinning machine comprising a base, a vertical shaft rotatably mounted on said base, a spinning head mounted on the upper end of said shaft, and a motor operatively connected to said shaft; a horizontal disk mounted coaxial with said shaft and at a lower level than said head, means for rotating said disk, a circular series of holders for individual paper cones mounted on said disk equally



distant from said shaft, means for rotating said holders about their own axes, and walls extending upward from said base to surround said disk and spinning head.

3,203,366
PELLET-FORMING MACHINE
Vernon J. Lundell, Cherokee, Iowa, assignor to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles, a corporation of the Netherlands Antilles
Filed Dec. 9, 1960, Ser. No. 74,919
1 Claim. (Cl. 107—14)

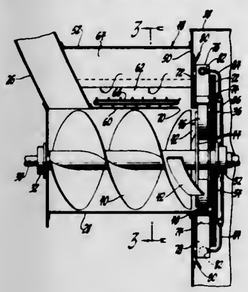


A pellet-forming machine comprising a generally cylindrical stationary chamber, said chamber having an open annular portion including a plurality of radially positioned partitions therein, and means for impelling material received in said chamber between said partitions for forming the same into pellets, an auger for conveying material into said stationary chamber about the inner side of said annular portion, a motor externally of said chamber for driving said auger, a housing enclosing said motor, a blower, said housing communicating to said blower, said blower communicating to said chamber to provide drying means for said pellets.

3,203,367
HAY WAFERING APPARATUS HAVING AIR SEPARATOR
Benson J. Lamp, Birmingham, Mich., assignor to Massey-Ferguson Incorporated, Detroit, Mich., a corporation of Maryland
Filed May 20, 1963, Ser. No. 281,533
20 Claims. (Cl. 107—14)

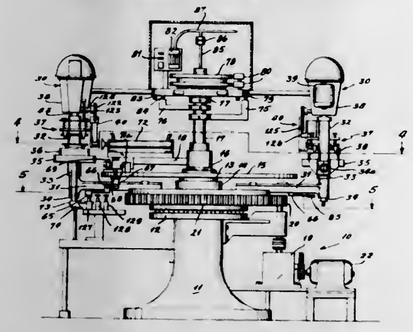
1. In an apparatus for making compressed hay wafers, and of the type including a plurality of die cells having entrance ends thereof communicating with hay compression means for compressing hay into and through said die cells to form wafers, hay feeding means including a feed hopper communicating with said hay compression means for feeding hay thereto, and means for delivering hay to be wafered in an accompanying air stream into said hopper; the improvement comprising means exterior of

and communicating with the interior of said hopper to vent at least a portion of said air stream therefrom, and



means associated with said last-named means for separating hay entrained within said air stream being vented.

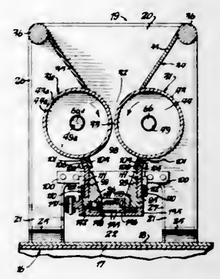
3,203,368
CRUST FORMING MACHINE AND SYSTEM
Noel R. Cooper and James D. Flanigan, Greenville, Ill., John W. Jones, St. Louis County, Mo., James O. Mavis, Greenville, Ill., and Marcus I. Wegner, Tenafly, N.J., assignors to Pet Milk Company, St. Louis, Mo., a corporation of Delaware
Filed Mar. 26, 1962, Ser. No. 182,418
12 Claims. (Cl. 107—15)



1. A crumb pie crust forming machine comprising a bottom mold having a cavity therein adapted to receive a pie shell receptacle, a rotatable, vertically reciprocable top mold constructed and arranged to fit within said bottom mold in spaced relationship to a pie shell receptacle positioned therein, means for adjustably determining said spacing, means for heating said top mold, means for rotating said top mold, means for vertically moving said top mold, and means for holding a pie shell receptacle in fixed position in said bottom mold.

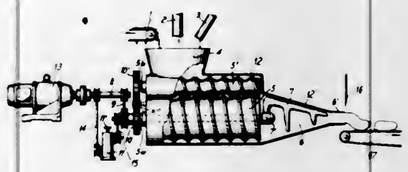
3,203,369
DOUGH DROPPER FOR COOKIE MAKING MACHINES
Virgil L. Archer, Cheektowaga, N.Y., assignor to Haut's Development Co., Inc., Olean, N.Y., a corporation of New York
Filed Apr. 18, 1962, Ser. No. 188,384
9 Claims. (Cl. 107—29)

9. In a cookie making machine having a step-by-step conveyer and a progression of transverse rows of cookie stations thereon; the combination therewith of a cookie dough dropper adapted to deposit separate drops of cookie dough simultaneously on the cookie stations of each row, comprising means forming a dough chamber arranged transversely above said conveyer in vertically spaced relation thereto and having a row of openings through its bottom arranged to register with said cookie stations on said conveyer, means adapted to pressurize the dough in said chamber, a valve associated with each opening and having a plurality of horizontal flat shutter plates arranged in the same horizontal plane and pivoted to swing about vertical axes into and out of edge-to-edge



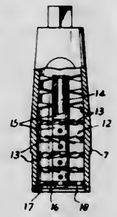
mating relation with one another in which edge-to-edge mating relation they bridge and close said openings, and means rapidly and simultaneously swinging all of said shutter plates to and from said edge-to-edge mating relation with one another to cut off pieces of dough from the dough forced down through all of said openings in response to pressure of the dough in said dough chamber.

3,203,370
DOUGH MIXING AND KNEADING MACHINE
Friedrich Haug, Stuttgart-Weilimdorf, and Gerhard Müller, Asperg, Wurttemberg, Germany, assignors to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a firm of Germany
Filed Sept. 18, 1962, Ser. No. 224,424
Claims priority, application Germany, Oct. 11, 1961, W 30,863
5 Claims. (Cl. 107—30)



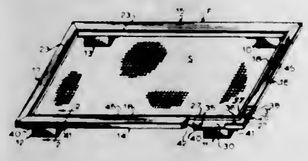
1. A machine for mixing dough forming materials supplied to the machine and kneading the dough, said machine comprising a dough mixing and kneading chamber having an inlet and an outlet, an agitator rotatably mounted within said chamber, a first rotary conveyor worm having an inlet and an outlet for feeding the dough forming materials to the inlet of said chamber and forcing the mixed and kneaded dough out of the outlet of the chamber, a second conveyor worm having an inlet and an outlet mounted rotatably about an axis parallel to but spaced apart from the rotational axis of the first worm and in mesh with the same, drive means for rotating said conveyor worms in the same direction to effect self-cleaning thereof; means for feeding the dough-forming materials to the inlets of the conveyor worms, and a common housing for both said worms whereby said rotating first and second worm subject the dough forming materials supplied to the worms to a pre-mixing and pre-kneading action prior to the final mixing and kneading action in said chamber.

3,203,371
MACHINES FOR WHIPPING OF CONFECTIONERY FILLING AND DAIRY CREAM
Harold Yeoman Mosey, Bridge Road, Southall, England
Filed Sept. 24, 1962, Ser. No. 225,527
Claims priority, application Great Britain, Sept. 29, 1961, 35,156/61
3 Claims. (Cl. 107—31)



1. A nozzle for dispensing of a confectionery or cream whipping, including, baffle means disposed within said nozzle, said means comprising a plurality of disc-like elements, a supporting spindle axially disposed within said nozzle and fixedly mounted therein, each of said elements provided with a central collar for locking said elements to said spindle in an axially spaced-apart relationship, said elements each having a plurality of radial slits providing teeth, said teeth being twisted out of the plane of said elements with the teeth of one element sloping in a direction opposite that of the teeth of an adjacent element, and means having a plurality of apertures at the discharge end of the nozzle, whereby, ribbons of cream directed through the nozzle are divided transversely to cause air to make intimate contact with the particles of cream.

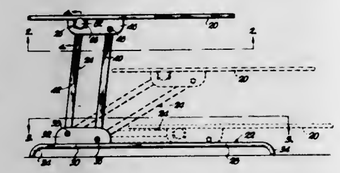
3,203,372
RACK FOR SUPPORTING AND COOLING BAKERY PRODUCTS
James A. Raines, 1505 N. Elam St., Greensboro, N.C.
Filed Sept. 12, 1963, Ser. No. 308,527
4 Claims. (Cl. 108—24)



1. A rack for supporting items, said rack comprising a first side member having a hollow interior and its first and second ends mitered; a second side member having a hollow interior and its first and second ends mitered, said second side member being parallel to and spaced apart from said first side member; a first end member having a hollow interior, its first end mitered and abutting the first end of the first side member, and its second end mitered and abutting the first end of the second side member; a second end member having a hollow interior, its first end mitered and abutting the second end of the first side member, and its second end mitered and abutting the second end of the second side member, said second end member being parallel to and spaced apart from said first end member and forming with said first end member, said first side member, and said second side member a rectangular frame with an inner wall defining a rectangular space; a first corner plate having a first leg within the hollow interior of the first side member and a second leg within the hollow interior of the first end member; a second corner plate having a first leg within the hollow interior of the first side member and a second leg within the hollow interior of the second end member; a third corner plate having a first leg within the hollow interior of the second side member and a second leg within the hollow interior of the first end member; a fourth corner plate having a first leg within the hollow interior of the second side member and a second leg within the hollow interior of the second end member; a first support leg extending downward from said first side member and having a first flange engaging the first side member adjacent to the first end member and a second flange engaging the first side member more remote from the first end member than its first flange; a second support leg extending downward from first side member and having a first flange engaging the first side member adjacent to the second end member and a second flange engaging the first side member more remote from the second end member than its first flange; a third suport leg extending downward from said second side member and having a first flange engaging the second side member adjacent to the first end member and a second flange engaging the second side member more remote than the first end member than its first flange; a fourth support leg extending downward from said second side member and having a first flange engaging the second side member adjacent to the second end member and a second flange engaging the second side member more remote from the second end member than its first flange; a first rivet extending through the first flange of the first support leg, the first side member, and the first corner plate and terminating within the hollow interior of the first side member; a second rivet extending through the second flange of the first support leg, the first side member, and the first corner plate and terminating within the hollow interior of the first side member; a third rivet extending through the first flange of the second support leg, the first side member, and the second corner plate and terminating within the hollow interior of the first side member; a fourth rivet extending through the second flange of the second support leg, the first side member, and the second corner plate and terminating within the hollow interior of the first side member; a fifth rivet extending through the first flange of the third support leg, the second side member, and the third corner plate and terminating within the hollow interior of the second side member; a sixth rivet extending through the second flange of the third support leg, the second side member, and the third corner plate and terminating within the hollow interior of the second side member; a seventh rivet extending through the first flange of the fourth support leg, the second side member, and the fourth corner plate and terminating within the hollow interior of the second side member; an eighth rivet extending through the second flange of the fourth support leg, the second side member, and the fourth corner plate and terminating within the hollow interior of the second side member; a ninth rivet extending through the first end member and the first corner plate and terminating within the hollow interior of the first end member; a tenth rivet extending through the first end member and the third corner plate and terminating within the hollow interior of the first end member; an eleventh rivet extending through the second end member and the second corner plate and terminating within the hollow interior of the second end member; a twelfth rivet extending through the second end member and the fourth corner plate and terminating within the hollow interior of the second end member; a channel member extending the length of the said inner wall, said channel member having a horizontal portion extending from said inner wall and a vertical portion continuous with said horizontal portion and extending upward parallel to said inner wall to form with the horizontal portion a channel adjacent to said inner wall, said vertical portion of said channel member having a shoulder at its upper edge between the said vertical portion and the said inner wall;

a screen having closely spaced mesh and having its outer edge extending downwardly along the vertical portion of the channel member between said channel member and said inner wall and across the horizontal portion of the said channel member toward the said inner wall; and a continuous cord inserted between the said inner wall and the vertical portion of the said channel member, said cord forcing the outer edge of the said screen against the vertical portion and the horizontal portion of the said channel member below the said shoulder.

3,203,373
IRONING BOARD
Arthur S. King, Prairie Village, Kans., assignor to Murry W. Maxwell, Shawnee Mission, Kans., Sam D. Capper and Nelle Ferguson, both of Kansas City, Mo.
Filed Mar. 13, 1964, Ser. No. 351,767
17 Claims. (Cl. 108—138)



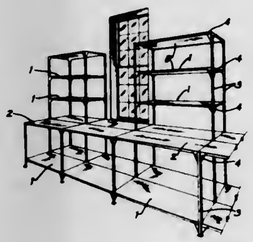
1. In ironing board structure having a pair of parallel links pivotally mounted at their normally upper and lower ends thereof to an ironing board and a base frame respectively, and disposed for swingably mounting the ironing board on the base frame while maintaining the ironing board level regardless of its operative position above the base frame, the combination with said ironing board and said links of means for locking said ironing board in any one of a number of operative positions, said means including:

an elongated element rigidly coupled to one of said links adjacent the upper end thereof;

a coupling unit carried by said ironing board and extending along said element; and

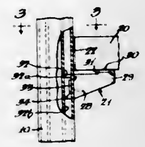
means releasably interconnecting said element and said coupling unit.

3,203,374
ADJUSTABLE SUPPORTING SURFACES
Carl E. Gingher and Carl E. Gingher, Jr., Scranton, Pa., assignors to Gingher Manufacturing Co., Scranton, Pa.
Original applications July 29, 1958, Ser. No. 751,799, now Patent No. 3,014,596, dated Dec. 26, 1961, and Oct. 14, 1960, Ser. No. 62,765, now Patent No. 3,100,572, dated Aug. 13, 1963. Divided and this application Feb. 5, 1963, Ser. No. 256,436
4 Claims. (Cl. 108—144)



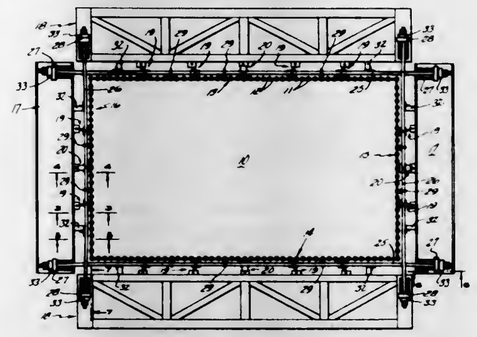
1. A supporting surface arrangement for providing a fire resistant adjustable shelving structure comprising a plurality of shelves fitted together and adjustably supported by vertical uprights, said shelves consisting of a shelf having corner portions with a right angled notch at each of said corner portions, a vertical upright, square in cross-section, positioned in said right angled notch at each of said corner portions, the longitudinal edges of said notches terminating substantially medially of the respective adjacent sides of said uprights, means comprising a bracket of corresponding right angular shape in cross-section and disposed between said shelves and upright and positioned in said right angular notch, said bracket means having arms extending at right angles to each other and engaging and extending along the adjacent sides of said shelves at their corner edges in supporting relation thereto, and detachable means for securing said bracket means to the upright positioned in said right angled notch, said adjoining shelves being spaced apart by said bracket arms to provide a slot opening therebetween for the passage of fire extinguishing fluid.

3,203,375
SHELF STRUCTURE
Victor C. Schroeder, Kalamazoo, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed Nov. 26, 1962, Ser. No. 240,017
4 Claims. (Cl. 108—148)



1. A shelf structure, comprising; upright posts respectively at four corners of a rectangular shelf area; means connecting the posts for maintaining the latter in fixed relationship to each other, each post including a laterally inwardly opening, vertically elongate channel portion of C-shaped cross section; a shelf supporting clip for each channel portion, each clip including a body of resilient material of generally U-shape in plan view, said body having a bight portion and extending therefrom in the same general direction, an upper shelf supporting plate and generally parallel legs below said plate, said legs having free ends resiliently compressible toward each other, the free ends of the legs of each clip projecting into the associated channel opening and having oppositely outwardly turned portions releasably latched within the channel portion at opposite sides of the opening, and below the last said portions said free ends having other portions terminating respectively in pointed ends engaging and adapted to dig into the channel back opposite the opening when a load is placed on the shelf supporting surface to resist pivotal movement of said clip in a first direction, and above the outwardly turned portions, said free ends having elongate fingers terminating adjacent said channel back for effectively retaining the clip in normal shelf supporting positions and for resisting pivotal movement of said clip in a direction opposite to said first direction, the clip being retained in position in the channel by resilience of the clip when not loaded, and being vertically adjustable in the channel upon manual compression of the free ends of the legs thereof toward each other reducing the retentive effect, and being removable from the channel opening upon compression of the free ends to clear the opening; and a shelf member having four corner portions resting respectively on the shelf supporting surfaces of the clips.

3,203,376
BUCKSTAY ARRANGEMENT FOR FURNACE WALLS
Frederick H. Engelhardt, Rocky Hill, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,229
12 Claims. (Cl. 110—1)



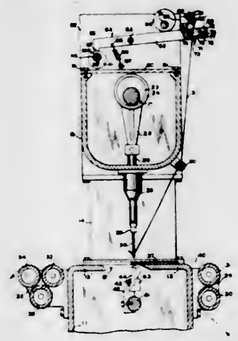
1. A furnace for a steam generator or the like comprising a first pair of oppositely disposed vertical walls, a second pair of oppositely disposed vertical walls extending between said first pair of walls and joined thereto to define a chamber for hot gases, buckstays extending transversely adjacent each of said walls, each of said buckstays having end portions which extend beyond the ends of the corresponding wall, means supporting said buckstays in spaced relationship to said walls, said supporting means including means to permit differential transverse thermal expansion between said walls and said buckstays, rod means extending adjacent each of said second pair of walls and connected to the corresponding end portions of the buckstays adjacent said first pair of walls and rod means extending adjacent each of said first pair of walls and connected to the corresponding end portions of the buckstays adjacent said second pair of walls, said rod means being supported in slidable relation adjacent said walls to permit differential thermal expansion between said walls and said rod means.

3,203,377
INCINERATOR FOR COMBUSTIBLE WASTE MATERIALS
Adolf Claassen, Loestr. 10, Marl, Westphalia, and Fritz Bienlok, Hagebuttenstr. 8, Gelsenkirchen, Germany
Filed Jan. 22, 1962, Ser. No. 167,827
Claims priority, application Germany, Jan. 24, 1961, 23,235
4 Claims. (Cl. 110—18)



4. An incinerator for the self-combustion of combustible waste materials, comprising an annular support section having air-inlet means distributed peripherally about said support section, and an axially extending centrally disposed upstanding perforated tubular boss having a generally conical configuration, said boss being provided with an inlet for admitting air through the perforation thereof to the interior of said support section; an upright bi-partite combustion-chamber shell mounted on said support section, said shell comprising a frustoconical lower section for containing waste material mounted on said annular support section with said boss projecting into said lower section over at least half the axial length of said lower section, said lower section being provided with a multiplicity of peripheral air-inlet apertures disposed in a relatively narrow band at a lower portion of said lower section and with a relatively wide imperforate band at an upper portion, and a frustoconical upper section removably stacked on the tapering upper extremity of said lower section, said upper section being provided with a multiplicity of peripheral apertures located in a plane substantially above said extremity for admitting air into said upper section; means enabling removal of said upper section from said lower section, thereby permitting the ignition from above of said waste materials contained in said lower section; and a flue of generally cylindrical configuration surmounting the tapering upper extremity of said upper section.

3,203,378
APPARATUS FOR AND METHOD OF FEEDING YARNS AT VARYING RATES
George D. Dedmon, Rossville, Ga.
Filed June 13, 1960, Ser. No. 35,507
13 Claims. (Cl. 112—79)

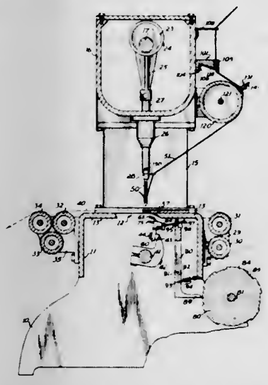


1. In a feed mechanism of the class which feeds yarns at varying rates to a plurality of reciprocating needles as said needles are reciprocated comprising a plurality of grasping and advancing means for grasping increments of said yarns and advancing the gripped increments of said yarns toward said needles, means for reciprocating all of said means for advancing said yarns in synchronization with the reciprocation of said needles and means for damping the reciprocation of said means for advancing said yarns according to a prescribed pattern.

3,203,379
TUFTING MACHINE WITH RETRACTABLE LOOPERS
George D. Dedmon, 315 Oak St., Rossville, Ga., and J. C. Robinson, Chatsworth, Ga.
Filed Aug. 7, 1961, Ser. No. 129,577
16 Claims. (Cl. 112—79)

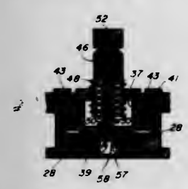
1. A tufting machine comprising a table, a needle above said table, means for reciprocating said needle for penetrating a base fabric moving over said table, a first looper

hook below said table adapted to catch yarn carried by the needle to form a loop, a second looper hook spaced beneath and slidably carried by said first looper hook, said second looper hook being adapted to catch yarn



carried by said needle to form a loop, and means to selectively render inoperative said second looper hook so as to form selectively high and low loops in said base fabric.

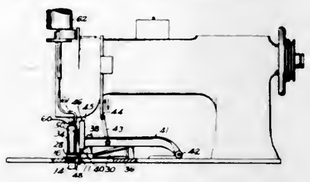
3,203,380
HOOK AND EYE ATTACHMENT FOR SEWING MACHINES
Angelo Micale, 995 Nassau St., North Brunswick, N.J.
Filed Nov. 14, 1963, Ser. No. 323,844
5 Claims. (Cl. 112—114)



1. A hook and eye attachment for a sewing machine, comprising a holding block having a central recess open at the front of the block, a hook and eye block in the lower portion of the central recess, the hook and eye block having in its lower portion a slot for the separate reception of a hook or an eye and adapted to hold one or the other during a sewing operation, a vertical screw passing through the upper part of said holding block into said central recess, said screw having a bore longitudinally therethrough, the bore being counterbored in its lower portion, a compressed coil spring in the counterbore and pressing down on the top of the hook and eye block, and a thumbscrew through said bore and said coil spring and threadedly engaging the hook and eye block, and means on said holding block for attaching said holding block to a sewing machine.

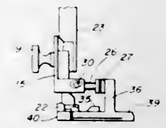
3,203,381
SEWING MACHINE ATTACHMENT
Samuel P. Crane, Great Neck, and Stephen D. Kent, Newburgh, N.Y., assignors to Alpha Research Corp., New York, N.Y., a corporation of New York
Original application May 6, 1960, Ser. No. 27,416, now Patent No. 3,107,368, dated Oct. 22, 1963. Divided and this application July 17, 1963, Ser. No. 295,673
5 Claims. (Cl. 112—122)

1. In a sewing machine, means for trimming the edge portions of the two sheets of fabric, means for depositing adhesive on and close to the outer edges of said edge portions, tape-folding means for folding a tape around said edge portions, the adhesive depositing means depositing adhesive on said edge portions prior to the folding of the tape by said folding means, means for stitching the inner edges of the folded tape to the sheets bearing the adhesive along a line closely adjacent the inner edges



of the tape and inwardly beyond the deposited adhesive, the adhesive-depositing means comprising a cylinder having a discharge opening,
a spring-pressed plunger in the cylinder,
a valve for the opening associated with the plunger,
an oscillatory arm carrying the trimming means, and
means operatively connecting the arm to the plunger to reciprocate the plunger on a predetermined number of oscillations of the arm.

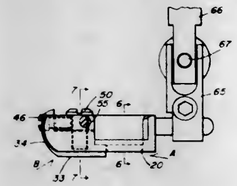
3,203,382
TRIMMING DEVICE WITH FINGER-GUARD AND ANTI-CURLING DEVICE
Angelo Micale, 995 Nassau St., North Brunswick, N.J.
Filed Nov. 14, 1963, Ser. No. 323,845
1 Claim. (Cl. 112—122)



Apparatus comprising a sewing machine, said sewing machine having a plain foot, a pinking knife positioned adjacent the plain foot, said sewing machine including a flat table, said pinking knife being level with the table, said sewing machine having a foot bar to which the foot is secured, a connector connected to the side of the foot bar opposite from the side on which said pinking knife is positioned, said connector being connected to the foot bar so as to be adjustable up and down and also angularly adjustable relative to the foot bar, a horizontal component integral with said connector and extending toward the other side of said foot bar, said horizontal component having a longitudinal bore disposed crosswise of the foot and constituting a finger guard, said horizontal component being connected endwise to the forward end portion of said connector, an anti-curling pin slidably disposed in the bore of the finger guard, fastening means for holding said pin in the finger guard at a selected position, said anti-curling pin extending to a point abutting said upright member and further extending in front of said pinking knife to function as a finger guard to prevent injury by the knife and, further, to prevent curling of material adjacent said upright member.

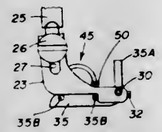
3,203,383
COMBINATION SHIRRING FOOT
Angelo Micale, 995 Nassau St., North Brunswick, N.J.
Filed Nov. 14, 1963, Ser. No. 323,812
4 Claims. (Cl. 112—134)

1. A shirring foot having a flat bottomed heel and having a vertical needle track through the heel, the needle track being elongate in the front-rear direction, the foot comprising a shirring block removably set in its fore part and having a bottom which is at a lower level than the



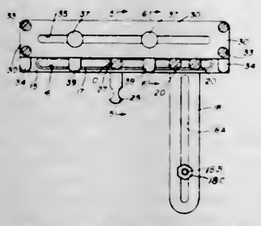
bottom of the heel and being relatively movable upwardly and downwardly so that its bottom may be at a selected level below the bottom of the heel.

3,203,384
COMBINATION FINGER GUARD AND GOODS GUIDE FOR SEWING MACHINES
Angelo Micale, 995 Nassau St., North Brunswick, N.J.
Filed Oct. 22, 1963, Ser. No. 318,030
4 Claims. (Cl. 112—151)



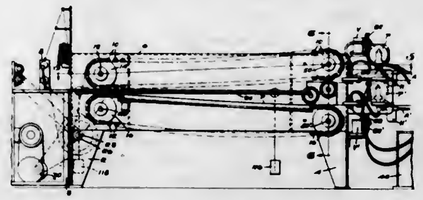
1. A combination finger guard and goods guide for sewing machines, comprising a finger guard having a longitudinal bore therethrough, a connector secured rigidly to the guard and extending rearwardly and upwardly relative to the guard and having an elongate slot extending downwardly from its upper end, a horizontal bar in the bore of the guard and slidable therein lengthwise, the connector and guard being arcuately turnable relative to the bar, a securement means for securing the guard in a selected position along the bar and also in a selected arcuate position relative to the bar, the bar having a vertical hole therethrough adjacent its right hand end, a goods guide extending rearwardly therefrom from the bar substantially at right angles thereto and comprising an upright pin at its forward end, the pin extending upwardly through the vertical hole in the bar, and a second securement means for securing the bar to the pin at a selected height on the pin.

3,203,385
THREE WAY GOODS GUIDE FOR SEWING MACHINES
Angelo Micale, 995 Nassau St., North Brunswick, N.J.
Filed Oct. 22, 1963, Ser. No. 318,033
4 Claims. (Cl. 112—152)



1. A sewing machine attachment, comprising a lower elongate plate, an upper elongate plate above the lower plate and secured thereto and spaced therefrom, each of the plates having a vertical elongate slot lengthwise and extending therethrough from its upper to its lower surface, the slots being offset relative to each other, a pair of lowermost or first-level movable spacers secured to the bottom of the lower plate and extending forwardly from the lower plate at right angles thereo, said first-level spacers being separately movable along the slot in the lower plate, screws for fastening said spacers at selected positions along the slot of the lower plate, one of said spacers having an elongate vertical slot lengthwise therethrough from its upper to its lower surface to receive a stationary fastener by which it may be adjustably secured to a sewing machine table, whereby the main part of the device may be moved to a desired distance from the needles of a sewing machine, a pair of movable spacers between the lower and upper plates and positioned at right angles to the elongate plates and movable along the slot in the upper plate, thumb screws for fastening the second-level spacers at selected positions along the slot in the upper plate, the heads of said thumb screws being above the upper plate, to form a third level channel.

3,203,386
TACKING ALIGNER CONSTRUCTION
Richard Briggs, Reading, Mass., assignor to Birch Brothers, Inc., Somerville, Mass., a corporation of Massachusetts
Filed June 6, 1962, Ser. No. 200,439
6 Claims. (Cl. 112—203)

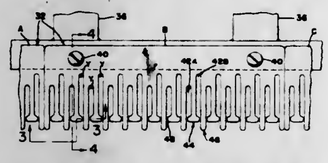


1. A tacking aligner machine comprising a frame, a folding stand arranged at one end of the frame for engaging a web of cloth and continuously forming it into a folded length, a stitching means at the other end of the frame, conveyor chain and pin means mounted on sprockets along one side of the frame for receiving the folded cloth from said folding stand and aligning its marginal edges, said conveyor and pin means consisting of upper and lower components for engaging respective upper and lower edges of the folded length of cloth and advancing said edges to the stitching means, vertically aligned sprockets and sprocket mounting means for the conveyor chains and pin means at the cloth delivering end of said frame, means for driving said sprockets, a first pair of horizontally arranged vertically displaced parallel stub shafts mounted on the end portion of said frame adjacent said folding stand, sprockets and sprocket hub mounting means for said chains and pin means slidably mounted on said stub shafts, a second pair of stub shafts fixedly mounted on said frame and extending parallel to and spaced from the first pair of stub shafts, ring means operably positioned about each of said hub means, said ring means each including a projecting portion terminating in a collar member slidably positioned on an adjacent second stub shaft, cloth edge sensing means mounted upon said ring members and positioned forwardly of said conveyors and pins means and responsive to change in position of the cloth edges, and hydraulic operated means mounted on the frame and connected to said ring member, and means actuated by the sensing means for operating said hydraulic means to move said ring means and sliding sprockets to position said chain and pin means for engaging said cloth in accordance with said sensing means.

3,203,387
YARN GUIDE FOR STITCHING MACHINES

Joseph J. Fedevich, Canton, Ohio, assignor to The Canton Tool Manufacturing Co., East Canton, Ohio, a corporation of Ohio

Filed Mar. 9, 1962, Ser. No. 178,645
1 Claim. (Cl. 112—218)



In a yarn stitching machine having a row of closely spaced needles, a yarn guide comprising

a plurality of coplanar fingers defining transverse slots therebetween for guiding yarn to said needles,

each transverse slot being closed at one end and open at the other end,

every other finger projecting beyond the fingers on either side thereof at the open ends of the slots and constituting a yarn guide finger against the sides of which the individual yarns are guided for admission to the slots on either side of said guide finger,

each finger on either side of the guide finger having a T-shaped head at its extremity cooperating with adjacent guide fingers to partially restrict the entrance to the open ends of the slots on either side of said each finger.

3,203,388
TUFTED FABRIC AND METHOD OF MAKING THE SAME

David B. Parlin, Thompsonville, and Harry G. Gallagher, Suffield, Conn., assignors to Bigelow-Sanford, Inc., Thompsonville, Conn., a corporation of Delaware

Filed June 14, 1963, Ser. No. 288,039
30 Claims. (Cl. 112—410)

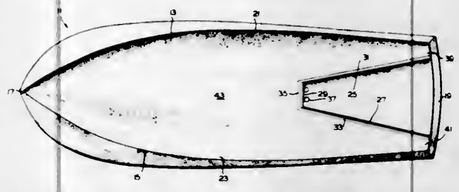


1. The method of making a tufted pile fabric floor covering having a pile face of a tweedy appearance free from pronounced lines of similar appearing pile elements which comprises the steps of simultaneously inserting a plurality of equally spaced pile yarns through a backing sheet to form a transverse row of pile loops upstanding from one face of said sheet and equally spaced along a single line extending widthwise of said sheet, feeding an additional length of yarn to each of said pile yarns, advancing said backing sheet in the direction of its length, shifting said backing sheet in the direction of its width a distance more than about one-half the spacing between adjacent pile yarns, and thereafter again inserting said pile yarns through said sheet to form a transverse row of pile loops upstanding from said one face of the sheet and equally spaced along a single line extending widthwise of said sheet parallel to and spaced from said first-mentioned line, and repeating said inserting, feeding, advancing and shifting movements to form succeeding parallel transverse rows of pile loops, said advancing movements to form succeeding parallel transverse rows being the same in amount, said shifting movements of the backing sheet being the same in amount and occurring in both directions widthwise of the sheet and so that the total amount of shift of the backing sheet in one direction is the same as the total amount of shift in the opposite direction and so that all said shifting movements are more than one-half the spacing between adjacent pile yarns, the positioning of the sheet in its extreme widthwise positions substantially coinciding with a pile yarn insertion.

3,203,389
STABILIZED PLANING HULL

Richard C. Cale, 1129 Swanston Drive, Sacramento, Calif.

Filed Oct. 18, 1961, Ser. No. 145,822
9 Claims. (Cl. 114—66.5)

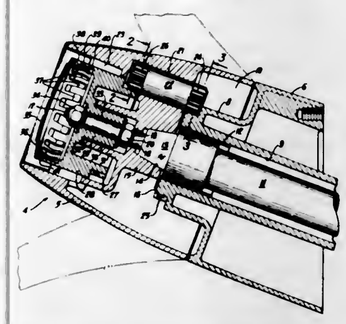


1. In a planing hull including a planing surface, flow control surfaces comprising a chine extending from below the bow of the hull on either side thereof to the outer lower edges of the transom, a continuous cove between each of said chines and said hull, a substantially V-shaped structure secured to the aft section of the planing surface with the apex of said V-shaped structure substantially centrally located on said planing surface and the legs of said structure extending aft to said transom and inboard of said coves, concave surfaces between the outer edges of said legs and said planing surface and means extending into said hull for venting the area of the planing surface enclosed by said V-shaped structure.

3,203,390
STEERING DIRECTION INDICATOR MEANS FOR MARINE PROPULSION UNITS

Robert A. Boda, Oshkosh, Wis., assignor to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Wisconsin

Filed Jan. 7, 1964, Ser. No. 336,300
3 Claims. (Cl. 116—31)

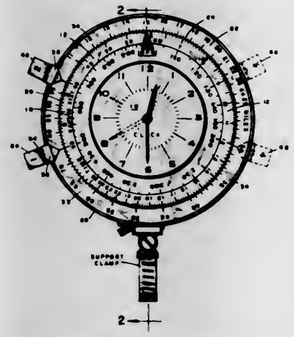


1. In the steering mechanism for marine propulsion steering means, the combination including a steering shaft rotatable on a steering axis and operatively connected to said steering means, a housing for said steering shaft, a steering wheel having a hub secured on said shaft, a first gear provided on said housing coaxially with respect to the steering axis, an indicator carrier coaxially supported with respect to the steering axis and on the opposite side of the hub from said housing and being rotatable relative to the hub, a second gear provided on said carrier, a planet member rotatably carried by the hub, opposed gears provided on said member corresponding to said first and second gears and meshingly engaged therewith, said planet member being rotatable on its own axis to drive the indicator carrier while being carried by the hub about said first gear, said gears being arranged to provide for rotation of the indicator carrier in a direction oppositely from rotation of the propulsion steering means to indicate the direction of travel and having a gear ratio adapted to rotate the indicator carrier in substantial conformity with the angular adjustment of the propulsion steering means.

3,203,391
AIR NAVIGATION INSTRUMENT

Lloyd E. Corwin, 312 North, Baytown, Tex.

Filed Sept. 9, 1963, Ser. No. 307,526
6 Claims. (Cl. 116—135)



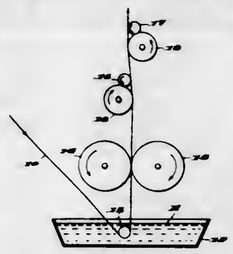
1. An air navigational instrument comprising: a support; a fixed annular member having a circular time scale formed thereon connected to said support; a coaxial annular rotatable member supported by said support and having a circular distance scale formed thereon, said coaxial annular rotatable member having a greater radius than the fixed annular member, and the circular time scale and the circular distance scale being located on said fixed annular member and said coaxial annular rotatable member so as to be adjacent one another; a rim integral with the annular rotatable member; and at least one indicating means, each indicating means including a pointer support, a pointer on said pointer support, a pin member connected to the pointer support, a checkpoint identifying member rotatably mounted on said pin member, and frictional means in frictional contact with the outer edge of the rim of the annular rotatable member, each pointer support having turned in portions fitted over the rim of the annular rotatable member so as to permit movement of the indicating means along the rim of the annular rotatable member.

3,203,392
FREELY SUPPORTED ROD FOR SMOOTHING COATING COMPOSITION APPLIED TO WEBS

Bernard S. Edwards, Tonawanda, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 27, 1961, Ser. No. 119,847
4 Claims. (Cl. 118—115)

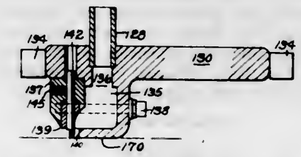
1. In an apparatus for coating a continuous web having means for applying a coating composition to said web, means for regulating the weight of the coating composition applied, and means for smoothing the coating on said web, the improvement in said last means comprising at least one positively driven, rotating roll disposed on each side of said web transversely to said web with each roll in circumferential contact with said web and at least one cylindrical body of smaller diameter than said positively driven roll freely supported by said positively driven rotating roll in the space between said positively driven rotating roll and said web.



3,203,393
APPARATUS FOR APPLYING STRIPES OF LOW VISCOSITY COATING MATERIAL

Richard H. Colwill, Victor, N.Y., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Feb. 18, 1963, Ser. No. 259,042
13 Claims. (Cl. 118—412)



1. An applicator for applying a stripe of a liquid material, supplied from a liquid source, onto a web member having relative movement in a predetermined direction with respect to a web-engaging surface of the applicator, comprising a body member formed with a passageway connected at one end to the source of liquid, said body member being further formed on said web-engaging surface with a striping orifice connected to the other end of said passageway; characterized in that said striping orifice is wider at the trailing edge than at the leading edge thereof with respect to the direction of relative movement between said web and applicator and is defined by at least first and second connecting cut-outs, said second cut-out being substantially narrower than said first cut-out and being positioned for defining the leading edge of said orifice.

3,203,394
XEROGRAPHIC DEVELOPMENT APPARATUS

William D. Hope, Rochester, Christopher Snelling, Penfield, and Paul F. King, Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 1, 1962, Ser. No. 227,352
12 Claims. (Cl. 118—637)

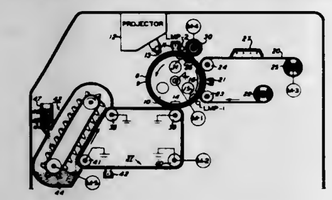
1. Developing apparatus for the development of electrostatic images previously formed on an image-bearing surface comprising in combination:

(a) a donor member capable of retaining a controlled quantity of electroscopic marking particles along one surface thereof, said donor member comprising:

(1) an electrically conductive support base; and,

(2) at least two separate electrically different material elements, at least one of which is characterized by substantially higher electrical resistivity than others of said elements and arranged combined relative to each other in a structurally distinct geometric configuration

overlying said base and adapted to effect a surface charge retention pattern correlated to said configuration to retain charge predominantly in the areas of the higher resistivity elements.

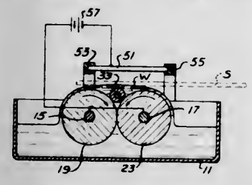


(b) charging means to apply a uniform charge to the upper-exposed surfaces of said different elements to produce controlled electrostatic field patterns along said surface correlated to the relative electrical properties of said different elements in their configuration;

(c) developer loading means to present electroscopic powder marking particles to said upper surfaces of said donor, said marking particles being charged to a polarity which under the influence of said electrostatic fields causes said particles to deposit onto a predominance of surface area; and,

(d) means to bring an image-bearing surface and the particle bearing donor member into a closely spaced relationship in which particles on said donor member are selectively attracted to the electrostatic fields of an electrostatic image to be developed.

3,203,395
APPARATUS FOR DEVELOPING ELECTROSTATIC IMAGES
Richard F. Liller, Rocky River, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 14, 1963, Ser. No. 288,026
9 Claims. (Cl. 118—637)



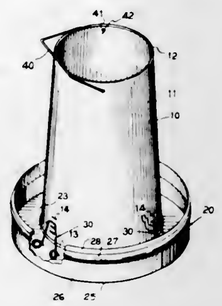
6. In a means for developing latent electrostatic images on sheets with low viscosity developer liquids which means includes a tank for holding the liquid, a pair of parallel adjacent rollers positioned in said tank in close proximity to each other so as to form a trough between them and at such a level as to have at least one of their lower surfaces dipping into the developer liquid in said tank, but with the upper surfaces of both rollers projecting substantially above the liquid level in the said tank, means supporting said rollers in said tank for rotary motion therein, means for so driving said rollers in opposite directions as to have the upper surfaces of said rollers approaching each other and moving developer liquid from said tank and into said trough to form a standing wave of developer liquid therein, and means for moving an electrostatically imaged sheet to be developed across the surface of the standing wave of developer liquid; the improvement which comprises a core member arranged in and extending lengthwise of the trough and submerged in said standing wave to provide a stabilizing means therefor.

3,203,396
METHOD OF AND MEANS FOR MODIFYING RACE COURSES
Henry St. G. T. Carmichael, Jr., 424 W. 2nd St., Lexington, Ky.
Filed Oct. 7, 1963, Ser. No. 314,469
7 Claims. (Cl. 119—15.5)



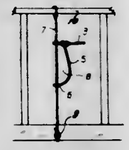
3. In combination, a race course comprising an area of ground over which horses normally pass and which is periodically removed from racing usage, and means forming a portion of said area of race course and including a hollow tube permanently embedded vertically in the ground and having a peripheral flange at its upper end disposed a substantial distance beneath the surface of the ground, a plug member covering the upper end of said tube and rendering the area adjacent said tube suitable for racing, said plug member having a resilient upper portion adapted to lie generally flush with the surface of the ground and having in its lower portion a means for detachably securing the plug member to said flange and comprising an interlockable stud and slot means, and a post-supporting-means insertable in said hollow tube when said plug member is removed and having securing means interlocking with one of said interlockable means.

3,203,397
POULTRY FEEDER
Nelson R. Henry, 583 Willivee Drive, Decatur, Ga.
Filed Nov. 21, 1963, Ser. No. 325,351
2 Claims. (Cl. 119—53)



2. In a feeder including a bin having an opening at the bottom and a plurality of groups of vertically spaced circumferentially elongate slots and a trough disposed below the opening at the bottom of the bin defining a plurality of finger receiving holes, the combination therewith of a plurality of spacer members each including a pair of substantially rigid legs, right angularly disposed arms, selectively receivable in said slots, joining the upper ends of said legs, coil springs formed at the lower ends of said legs, and fingers extending from said coil springs to be releasably engaged through said finger receiving holes.

3,203,398
APPARATUS FOR ATTACHING ANIMALS IN STABLES AND SHEDS
Fernando Garcia Eguizabal, Barrio de Quintana, Cobreces, Spain
Filed Apr. 22, 1964, Ser. No. 361,846
Claims priority, application Spain, Apr. 22, 1963, 98,990
4 Claims. (Cl. 119—119)



2. A device for tethering animals, comprising a pincer member including two latch elements, the cooperating front ends of which form a snap-hook of open loop shape and the cooperating rear ends form control handles, pivot means connecting said elements between said ends, a spring normally urging said handles apart to close the snap-hook, an arcuate elongated arm rigid at one end with said pivot means and extending substantially perpendicularly from said member, and means at the other end of said arm for engaging slidingly and revolvably a member to be releasably engaged by said latch elements to form with said elongated arm an elongated collar for an animal's neck.

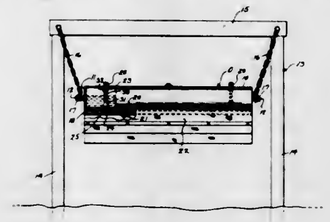
3,203,399
ANIMAL-RUN DEVICE
Harry H. Banks, 8825 Roosevelt Bldg., Philadelphia, Pa.
Filed May 8, 1964, Ser. No. 366,060
7 Claims. (Cl. 119—120)



1. An animal-run device comprising an elongate bed adapted to extend along a ground surface, anchoring means for securing said bed in position, upstanding rail means extending longitudinally along said bed, longitudinally extending overhang means on said rail means, a carriage body adjacent to said rail means, freely rotatable wheel means carried by said body in retained relation beneath said overhang means and mounting said body for free movement along said bed, upstanding swivel means on said body for connection to an animal tether, and an end member on each end of said carriage body extending at least partially across the adjacent wheels to substantially close the space between said bed, rail means and overhang means for effectively preventing the interference of foreign material with body movement.

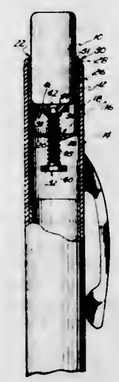
3,203,400
CATTLE OILER
Myron C. Hesse, Pender, Nebr.
Filed Feb. 1, 1963, Ser. No. 255,451
2 Claims. (Cl. 119—157)

2. In a rubbing and oiling station for animals, an overhead support, an elongated reservoir tank for liquid suspended from said support for free rolling and tilting movement, a distributing trough carried by and abutting the bottom of said tank and having a plurality of outlet openings formed therein throughout its length, means for supplying liquid from the tank to the trough including a feed tube disposed within the tank and opening out through the bottom of the tank into the trough, said feed tube having inlet openings therein adjacent to the upper ends thereof and above the normal level of liquid in the



tank, dippers disposed on opposite sides of the tubes and normally immersed in the liquid in the tank, channels inclining upwardly and inwardly toward the tube and in engagement therewith adjacent to said openings, and dams carried by the upper ends of the tubes extending across the channels for directing and guiding liquid from the channels into said openings, whereby upon the rocking of said tank and tilting thereof liquid in the dippers will flow down said channels and into said openings.

3,203,401
ERASER RETAINING AND ADJUSTING MECHANISM
Theodore R. Specht, Sharon, Pa., assignor to W. A. Sheaffer Pen Company, Fort Madison, Iowa, a corporation of Delaware
Filed Oct. 15, 1963, Ser. No. 316,285
6 Claims. (Cl. 120—38)

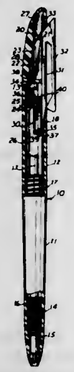


1. A device for supporting and projecting an eraser, comprising a carrier having a closed end and a laterally displaceable section sized to receive one end of said eraser, adjusting means supported relative to said carrier by said closed end, said means being extendable within said carrier through said closed end for projecting said eraser relative to said carrier, and jaw means provided by and movable with said displaceable section for supporting said eraser against movement when said section is biased inwardly.

3,203,402
MECHANISM FOR RETRACTABLE WRITING INSTRUMENTS

John C. Lockwood, Atlanta, Ga., assignor to Scripto, Inc., a corporation of Georgia

Filed Nov. 14, 1961, Ser. No. 152,215
6 Claims. (Cl. 120—42.03)



4. A retractable writing instrument comprising a barrel having a lateral opening therein, a writing unit slidably housed within said barrel for shifting between forwardly projected and rearwardly retracted positions with respect to the forward end of said barrel, biasing means within said barrel urging said writing unit toward retracted position, an actuator disposed within said barrel at said barrel opening with its rearward end being manually operable thereat and having formed on the inner face thereof a rearwardly facing latch shoulder spaced forwardly from said manually operable end with a rocker edge positioned intermediate of said latch shoulder and said manually operable end of said actuator, and stationary means disposed within said barrel that is responsive to a manual force applied to said actuator for guiding said actuator thereon inwardly and forwardly an amount sufficient to project said writing unit and house said actuator within said lateral barrel opening; for engaging said actuator latch shoulder and releasably latching said actuator to maintain said writing unit at projected position, and for supporting said actuator rocker edge when said actuator is in latched engagement whereby inward movement of said manually operable end of said actuator fulcrums said actuator rocker edge on said means and disengages said actuator to allow retraction of said writing unit and return of said actuator to a position exteriorly of said barrel opening.

3,203,403
FOUNTAIN PEN

Seikichi Yanagita, Yasuo Ikeda, and Hajime Ishida, Hiratsuka-shi, Japan, assignors to Pairotto Man-Nen Hitsu Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Jan. 2, 1963, Ser. No. 249,002
Claims priority, application Japan, Apr. 30, 1962, 37/16,815; Oct. 22, 1962, 37/47,258
5 Claims. (Cl. 120—42.03)

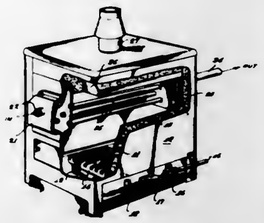


1. In a fountain pen, a barrel having an aperture at its front end through which a writing component located within the barrel is adapted to project when the pen is to be used, and means for closing and opening said aperture, such means including a guide cylinder fixed within said barrel adjacent the front end, means defining an axially extending groove between said guide cylinder and barrel leading to said aperture, a shutter blade mounted in said groove for straight line sliding movement toward and away from said aperture for closing and opening said aperture, a rotatable cylinder within said barrel rearward of said guide cylinder and having a helical cam slot therein, and a pin on said shutter blade positioned in said cam slot so that upon rotation of said rotatable cylinder in one direction the helical cam slot and pin coact to slide said shutter blade axially to close the aperture and upon rotation in the opposite direction slide the shutter blade in the other direction to open the aperture.

3,203,404
WATER HEATER WITH HEAT INSULATING COATING ON TUBES

Avy L. Miller, 13246 Saticoy St., North Hollywood, Calif.

Filed Feb. 17, 1961, Ser. No. 90,080
2 Claims. (Cl. 122—236)



1. A continuous flow water heater comprising: an input chamber having means to receive water to be heated; an outlet chamber having means to deliver heated water from the heater; a plurality of substantially parallel, generally horizontally disposed heat exchange water tubes intercommunicating said chambers; means to pass water-vapor laden flue gases in contact with the exterior of said tubes, said tubes receiving water from said input means at a temperature below the dew point of said gases and delivering heated water as a liquid to said outlet means; and a heat resistant and heat insulating coating on the outer surfaces of said tubes at least between said input chamber and a point along the length of the tubes at which their operating surface temperature is above the dew point of said gases, said coating having sufficient insulating properties to maintain the temperature at its exterior surface above said dew point and decreasing in thickness from said input chamber along the length of the tubes in accordance with the rise in temperature of the water passing through the tubes.

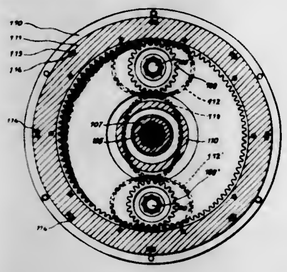
3,203,405
ROTARY ENGINE

Huschang Sabet, Eduard-Pfeiffer-Strasse 52, Stuttgart, Germany

Filed Jan. 30, 1962, Ser. No. 169,779
Claims priority, application Germany, Feb. 3, 1961, S 72,636; Dec. 14, 1961, S 77,140
9 Claims. (Cl. 123—11)

1. A rotary piston engine, comprising, in combination:
(a) a housing defining a chamber and having an inlet for the entrance of fuel mixture and an outlet for the discharge of combustion gases;
(b) at least one igniter arranged in the wall of said housing and communicating with the interior thereof;
(c) an operating shaft rotatably mounted coaxially with and extending through said housing;

(d) a pair of pistons diametrically arranged on opposite sides of, and rigidly connected to said shaft;
(e) a hollow shaft disposed about said operating shaft and extending coaxially with and through said housing, said hollow shaft being rotatable relative to said operating shaft and said housing;
(f) a second pair of pistons diametrically arranged on opposite sides of, and rigidly connected to said hollow shaft;
(g) said pistons of said first and second pairs being interdigitated and being in sealing engagement with said housing thereby dividing said chamber into four chamber sectors; and

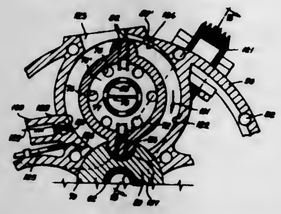


(h) means interconnected between said vanes for controlling them so that one of said vanes revolves with nonuniform velocity, and, during one revolution, each of the four chamber sectors bounded by two vanes increases in size twice due to the advance of one of the vanes with respect to the other and decreases in size twice due to the advance of said other vane with respect to said one vane, said control means including
(1) a disk rotating with the operating shaft of the device;
(2) two revolving shafts arranged symmetrically with respect to the operating shaft and carried by said disk;
(3) a pinion on each of said revolving shafts,
(4) a stationary gear mounted to the housing and engaging said pinions on said revolving shafts;
(5) an elliptical gear on each of said revolving shafts, and
(6) a centrally located elliptical gear meshing with said two elliptical gears and fixed on said hollow shaft and staggered from said two elliptical gears by 90°.

3,203,406
ROTARY ENGINE

Georges Dettwiler, 12405 Jasmin St., Cartierville, Montreal, Quebec, Canada

Filed Nov. 28, 1960, Ser. No. 72,096
4 Claims. (Cl. 123—13)

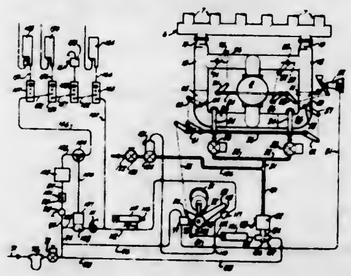


1. A rotary internal combustion engine comprising a housing defining a central chamber and a plurality of cylindrical chambers exterior to and sidewise abutting and communicating with said central chamber, a cylindrical sealing rotor rotatably mounted in said central chamber and having longitudinally extending cavities made at the surface thereof, a toothed rotor rotatably mounted in each cylindrical exterior chamber, and each provided with two diametrically opposed longitudinally extending teeth in sliding sealing contact with the cylindrical surface of their respective cylinders and adapted to engage in sealing engagement with a cavity of said sealing rotor, the cylindrical surface of said sealing rotor being in direct sealing contact with the cylindrical surfaces of each of said toothed rotors, gear means interconnecting said rotors for rotating the same at equal peripheral speeds, said central chamber having end walls provided with high pressure air inlets, one for each external cylinder and disposed in the path of the cavities of said sealing rotor and on the line joining the axes of said sealing rotor and toothed rotor, each external cylinder having an exhaust gas port made in the cylindrical wall thereof in the zone diametrically opposite said sealing rotor, each external cylinder having a fuel inlet port made therein adjacent said sealing rotor and angularly displaced in the direction of the toothed rotor rotation from the associated air inlet port, for the admission of fuel under pressure into said exterior cylinder, each exterior cylinder having combustible mixture ignition means disposed close to and angularly displaced from said fuel inlet port in the direction of the toothed rotor rotation, whereby air under pressure is fed into said exterior cylinder behind a tooth of said toothed rotor leaving the cavity of said sealing rotor, said air under pressure being confined between said tooth and said sealing rotor and being fed with fuel upon passage of said tooth past said fuel inlet port and the resulting combustible mixture is ignited when said tooth passes beyond said ignition means, the spent combustion gases in front of said tooth being discharged through said exhaust port during feeding of said air under pressure, injection of said fuel and igniting of the combustible mixture behind said tooth.

3,203,407
DUAL FUEL SYSTEM FOR A LIQUID FUEL INJECTION ENGINE

Alfred R. Fleischer, Pleasant Hill, Calif., assignor to General Metals Corporation, Oakland, Calif., a corporation of California

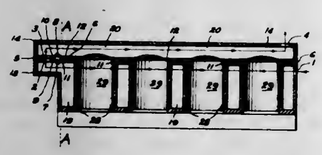
Filed June 17, 1963, Ser. No. 288,129
10 Claims. (Cl. 123—27)



1. In a duel fuel system for a multi-cylinder engine of the compression ignition type having a liquid fuel metering injection pump including a control means for varying the amount of fuel charge delivered by said pump to the cylinders of said engine to maintain a predetermined engine speed regardless of the load on said engine, the improvement comprising an intake structure having a plurality of outlets for supplying the individual cylinders of said engine and having an inlet, a plurality of passageways interconnecting said inlet and said outlets,

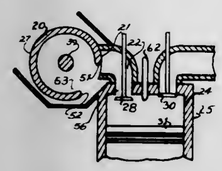
carburetor means located in some of said passageways, others of said passageways forming air by-pass means extending from said air inlet to portions of said intake structure downstream of said carburetor means, mixture throttle means for said carburetor means, air throttle means for said by-pass means operable to restrict the flow therein and produce a variable pressure drop across said carburetor means, and means interconnecting said injection pump control means and said mixture throttle means to move said mixture throttle means and said injection pump control means in inverse relation and to move said air throttle means in inverse relation to said mixture throttle means.

3,203,408
LIQUID COOLING SYSTEM FOR INTERNAL COMBUSTION ENGINES
Henry William Winkelman, 5728 Murdoch Ave., St. Louis, Mo.
Filed Jan. 6, 1964, Ser. No. 335,849
2 Claims. (Cl. 123—41.74)



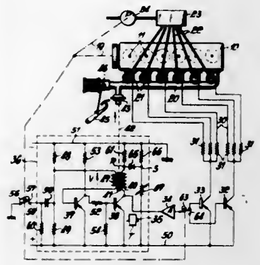
1. In a cooling system for an internal combustion engine having cylinders in line, a cylinder block having at least one cooling water inlet at one end of said block and at least one outlet solely at the other end whereby serial flow of water over said cylinders is obtained, a cylinder head having at least one inlet at one end and at least one outlet at the other end, said cylinder head inlet being connected to said block outlet.

3,203,409
APPARATUS FOR CONTROLLING THE AIR TAKEN INTO THE COMBUSTION CHAMBERS OF A SPARK IGNITION INTERNAL COMBUSTION ENGINE
Robert L. Allen, Atlanta, Ga., assignor to Georgia Tech Research Institute, Atlanta, Ga., a corporation of Georgia
Filed July 9, 1963, Ser. No. 293,720
7 Claims. (Cl. 123—75)



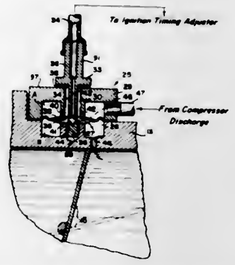
1. The combination with an internal combustion engine having a rotating crankshaft, a combustion chamber, an air inlet passage for admitting air into the combustion chamber, and an air intake valve for opening and closing the air inlet passage at particular rotational positions of the crankshaft of valve means responsive to crankshaft rotation for opening and closing the air inlet passage independently of the opening and closing of the air inlet passage by the air intake valve, said valve means being effectively immediately adjacent said intake valve, and of control means for varying the rotational positions of the crankshaft at which the valve means opens and closes the air inlet passage.

3,203,410
ELECTRICALLY CONTROLLED FUEL INJECTION SYSTEM
Hermann Scholl, Stuttgart, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Sept. 28, 1964, Ser. No. 399,754
Claims priority, application Germany, Oct. 4, 1963, B 73,754
8 Claims. (Cl. 123—119)



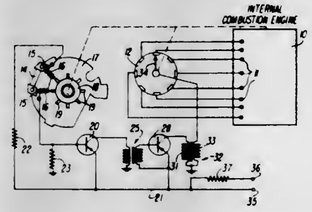
1. In a fuel injection system for an internal combustion engine, incorporating electromagnetically actuated injector means, a monostable flip-flop having an input transistor and an output transistor for producing pulse-shaped supply current for the injector means, which flip-flop further has a time member that includes a transformer whose primary winding is connected to the collector circuit of the output transistor and whose secondary winding is connected to the base circuit of the input transistor, the improvement which comprises, in combination: an input resistor connected in series with said primary winding of said transformer; a rectifier having one terminal connected to the juncture of said input resistor and said primary winding; and two serially-connected resistors forming a voltage divider, at least one of said two last-mentioned resistors being a variable one whose resistance varies as a function of an operating condition of said engine, the other terminal of said rectifier being connected to the juncture of said two serially-connected resistors.

3,203,411
IGNITION TIMING CONTROL DEVICE
Myron A. Selden, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 17, 1964, Ser. No. 360,560
3 Claims. (Cl. 123—146.5)



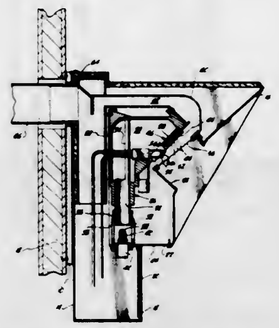
3. In an internal combustion engine of the type having a throttle valve housing, a throttle valve in said housing, a supercharger compressor mounted downstream from said housing, an ignition distributor and a pressure responsive ignition timing adjuster: the improvement comprising; an ignition timing adjuster regulator having a diaphragm valve mounted within said regulator and formed with an aperture, first stop means surrounding said aperture and adapted to sealingly engage one side of said diaphragm when said diaphragm is moved to a first position, second stop means spaced from said first stop means, said second stop means surrounding said aperture and adapted to sealingly engage the other side of said diaphragm when said diaphragm is moved to a second position, first connecting means placing one side of said diaphragm in communication with the discharge side of said compressor, second connecting means placing the other side of said diaphragm in communication with the interior of said throttle valve housing, third connecting means placing said ignition timing adjuster in communication with the interior of said regulator intermediate said stops whereby said adjuster is placed in communication with one side of said diaphragm when said diaphragm is moved to said first position and said adjuster is placed in communication with the other side of said diaphragm when said diaphragm assumes said second position.

3,203,412
IGNITION SYSTEM
Oleh M. Kuritza and Edward V. Havel, Chicago, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Jan. 7, 1963, Ser. No. 249,952
8 Claims. (Cl. 123—148)



1. An ignition system for an internal combustion engine having a plurality of ignition means and a distributor coupled to the engine and selectively applying a single high voltage pulse to successive ones of the ignition means, said system including in combination, pulse producing means operating to produce control pulses in synchronism with the internal combustion engine, a transistor stage having a transistor with varying regions of reverse breakdown capability according to the amount of reverse bias applied thereto, said transistor stage having input and output circuits and including bias means for normally holding said transistor cut off, input circuit means including first transform means connected to said input circuit of said transistor stage for applying control pulses thereto from said pulse producing means for rendering said transistor stage conductive, said first transformer means operating at the termination of each pulse from said pulse producing means to apply a potential to said input circuit of said transistor stage to reverse bias said transistor to cut off and beyond cut off into a region of increased breakdown capability so that said transistor can withstand substantial reverse voltage applied thereto, and second transformer means including a primary winding coupled to said output circuit of said transistor stage and a secondary winding coupled to the distributor, said second transformer means providing voltage step-up of said primary winding to said secondary winding, said primary winding being responsive to cut off of said transistor stage to develop a single high voltage pulse which is stepped up in said secondary winding and applied to the distributor.

3,203,413
INFRARED HEATER
Donald W. Hartzell and Arthur E. Yoos, Centralia, Ill., assignors to Lear Seigler, Inc., a corporation of Delaware
Filed Aug. 24, 1961, Ser. No. 133,642
4 Claims. (Cl. 126—92)



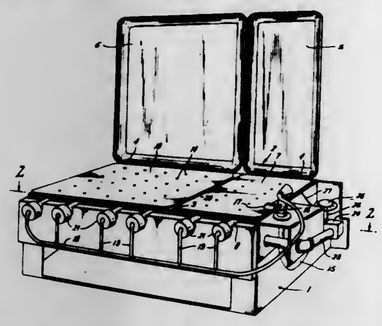
1. A gas infrared heater comprising a housing defining an enclosure, a burner element having a plurality of passages extending therethrough from an inner surface to an outer surface, means mounting the burner element in the housing so that the outer surface of the burner element is inclined to have a vertical component, means for maintaining a combustible mixture of primary air and gas against the inner surface of the burner element for flow of the mixture through the plurality of passages and for combustion of the mixture near the outer surface, intake means spaced below the burner element for intaking secondary air, vent means spaced above the burner element, means capable of transmitting infrared radiations adjacent the outer surface of the burner element and spaced therefrom to promote flow of secondary air across the entire outer surface in close contact with said surface, the lower and upper ends of the outer surface of the burner element being spaced from opposing ends of the infrared transmitting means to provide apertures for entry and exit of secondary air, first passage means enabling flow of secondary air between the intake means and the secondary air entry aperture, and second passage means enabling flow from the secondary air exit to the vent means.

3,203,414
STEAM HEATING DEVICE
Rush E. Lassiter, 1722 W. Thomas St., Hammond, La.
Filed Nov. 4, 1963, Ser. No. 321,225
9 Claims. (Cl. 126—369)

4. An apparatus for heating articles by contacting the articles with steam comprising:
enclosure means for containing the articles to be heated;
a pair of substantially parallel apertured plates carried by the enclosure means,
one of the plates defining the bottom of the enclosure and the other, a supporting plate, being maintained in a spaced relationship directly thereabove for supporting articles to be heated;
a steam generating chamber carried beneath the enclosure means for introducing steam thereto, the steam generating chamber comprising,
at least one elongated member disposed beneath the bottom plate adjacent thereto and having apertures therein which register with the apertures in the bottom plate,
the elongated member also having an opening through which water in liquid or vapor state can be introduced thereto and at least one end which is closed by an easily removable plug to

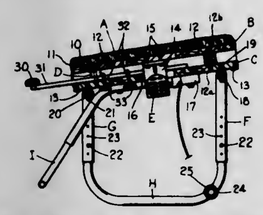
permit access to the interior of the member for rapid and efficient removal of materials deposited therein by evaporating water;

means for introducing water into the steam generating chamber;



means for heating and vaporizing water introduced into the steam generating chamber permitting the steam generated thereby to pass through the registering apertures into the enclosure means and contact articles placed on the supporting plate.

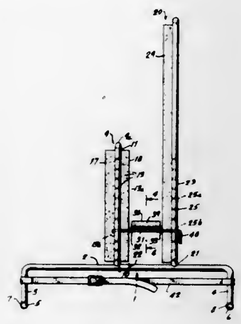
3,203,415
VIBRATOR
Austin T. Moore, 303 Saluda St., Columbia, S.C.
Filed Dec. 26, 1962, Ser. No. 247,132
3 Claims. (Cl. 128—33)



1. A portable vibrator including an inclined substantially square upholstered element having vibrator means carried thereby, a first pair of elongated tubular vertical members, one of said first pair being fixed to the upholstered element adjacent each of the front corners of the upholstered element, a second pair of elongated tubular vertical members shorter than said first pair, one of said second pair being fixed to the upholstered element adjacent each of the back corners of the upholstered element, a pair of substantially U-shaped tubular members each bridging one of the first pair of members with the second member adjacent thereto, each of the legs of said U-shaped members being telescopically mounted with respect to the adjacent vertical member, the bight of each U-shaped member being substantially flat, and an inclined rearwardly extending U-shaped member carried by the upholstered element, the legs of said rearwardly extending member being telescopically carried by the upholstered element.

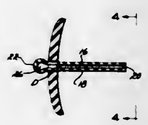
3,203,416
LEG ALIGNER
Frank E. Arrigo, 141 Ayers Court, West Englewood, N.J.
Filed Mar. 29, 1963, Ser. No. 269,102
6 Claims. (Cl. 128—80)

6. A leg aligner comprising:
(a) a base frame adapted to rest on a patient's bed adjacent and parallel to the foot thereof, comprising;
(b) a main portion of predetermined length;
(c) at least one base frame extension extending transversely of the main portion, and
(d) means for securing the frame to a bed;



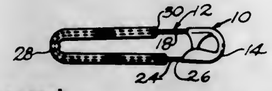
(e) a vertically disposed inner frame having one end attached to the main portion of the base frame, said inner frame extending transversely of the main portion of the base frame and away from the base frame extension, and
(f) a vertically disposed outer frame having one end attached to the main portion of the base frame, said outer frame extending transversely of the main portion of the base frame and spaced from the inner frame and away from the base frame extension,
(g) said outer frame being farther from the middle of the base frame than said inner frame.

3,203,417
MOUTH GUARD STRUCTURE
Norman D. Helmer, 6298 E. Ocean Blvd., Long Beach, Calif.
Filed Jan. 18, 1963, Ser. No. 252,380
8 Claims. (Cl. 128—136)



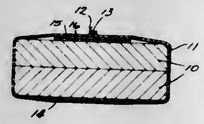
5. A two-piece protective guard for the lips and upper and lower teeth that can be disassembled for cleansing purposes, including:
(a) a longitudinally curved, resilient shield adapted to extend over said lips of the user thereof, which shield has a longitudinally extending slot formed therein;
(b) a doubled-over elongate rectangular sheet of a resilient material which extends through said slot to place the fold of said doubled-over sheet forwardly of said shield;
(c) first means for removably holding said doubled-over sheet in said slot; and
(d) second means positioned between said doubled-over sheet rearwardly of said shield for defining at least one breathing passage that communicates with a breathing passage formed in said fold forwardly of said shield, with said sheet and said shield being separable for cleansing purposes.

3,203,418
EAR SWABS
Charles A. Johnston, De Kalb County, Ga.
(224 Willow Lane, Decatur, Ga.)
Filed June 20, 1962, Ser. No. 203,915
2 Claims. (Cl. 128—269)



1. In an ear swab,
(a) a swab retaining holder having an arcuate retaining end portion on one end thereof,
(b) said retaining holder having an openable end on the other end from said retaining end portion and said openable end leading to said retaining end portion on the other end,
(c) and an elongated swab member in tubular formation of fabric-like material having an opening therein inserted on said arcuate retaining end portion when open and said swab member being positioned at the arcuate retaining end portion about the curvature of said wire to be inserted into the ear.

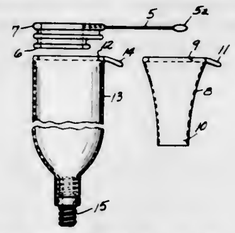
3,203,419
SANITARY NAPKIN
Curt G. Joa, Ocean Ridge, Fla.
(Box 1121, Boynton Beach, Fla.)
Filed Jan. 4, 1963, Ser. No. 249,367
2 Claims. (Cl. 128—290)



1. A sanitary napkin comprising:
(a) a filler having opposed broad sides and opposed narrow sides,
(b) a relatively weak non-woven fabric wrapper about the filler,
(c) two strips of reinforcing material, one at each of the broad sides of the filler and between the filler and said wrapper, said strips being narrower than the width of said broad sides,
(d) a strip of thermoplastic material substantially coextensive with and between one of said reinforcing strips and the side of the filler away from the body when worn,
(e) said strips extending beyond the ends of the filler to a comprise attaching tabs,
(f) and heat seals in said tabs adjacent the ends of the filler.

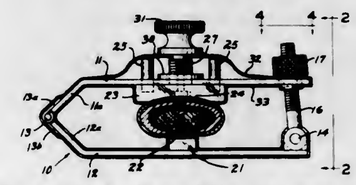
3,203,420
URINARY APPLIANCE
Hervey D. Lockhart, Box 211, 21 Quigley Park, Asheville, N.Y.
Filed May 7, 1962, Ser. No. 192,742
4 Claims. (Cl. 128—295)

4. A urinary appliance having a ring unit through which the penis is adapted to extend, supporting means upstanding from the ring unit, a belt, a connection from the middle front of the belt to the upper end of said supporting means, an open ended flexible sleeve through which the penis is adapted to extend, the end of the flexible sleeve remote from the wearer of the appliance being adapted to grip the penis with a liquid and gas tight seal, a releasable connection between the end of the sleeve adjacent the wearer and the end of the ring unit remote from the wearer, a flexible bag surrounded the sleeve having at its upper end a releasable connection to the



end of the ring unit adjacent the wearer, and said bag having at its lower end a connection to a urinal.

3,203,421
INCONTINENCE CLAMP DEVICE
Jay Arthur Bialick, 7133 Dartmouth Ave., University City 30, Mo.
Filed Jan. 30, 1964, Ser. No. 341,210
2 Claims. (Cl. 128—346)



1. In a urethra clamp device the improvement of a body having a pair of elongated spaced and substantially parallel arms, means connecting said arms at common adjacent ends for movement toward and away from each other, said arms having opposite ends normally spaced from each other, pressure applying means comprising first and second pads each having inner surfaces adapted to cooperate to compress the urethra and cut-off flow, said first pad being fixed in position on one of said arms, means operably connected to said second pad and the other of said arms including a first element rotatable relative to said other arm, a second element connected to said second pad and to said first element and transmitting linear thrust therebetween to effect movement of said second pad selectively toward and away from said first pad, and a third element connected between said second pad and said other arm to slide relative on one of the latter and fix said second pad against angular displacement during linear movement, said inner surfaces being in spaced facing relation and substantially opposite each other and adapted to receive the urethra therebetween and one of said inner surfaces being concave relative to the other inner surface, and infinitely adjustable releasible connecting means joining said normally spaced opposite ends of said arms to cause said first and second pads to compress the urethra between said inner surfaces.

3,203,422
BRASSIERE PAD MEANS
Sonia G. Garutso, 7188 Sunset Blvd., Los Angeles 46, Calif.
Filed Aug. 6, 1964, Ser. No. 387,849
4 Claims. (Cl. 128—480)

1. A resilient padding means for the lower exterior surface of a brassiere cup; said padding means comprising a fabric member adapted to be disposed on the outer surface of at least the lower half portion of the cup and conforming to the configuration of said portion, and a

series of spaced rows of lace strips covering at least the lower half of said outer surface of said fabric member each of said rows having one edge thereof gathered and secured to the outer face of said fabric member by one each of an equal number of lines of stitching and adjacent ones of said lines of stitching spaced apart a distance less than the width of the lace strips whereby the



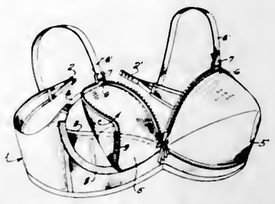
said rows of lace, except one, overlie at least a portion of at least one of the adjacent rows of lace; the lines of stitching each extending in curved lines downwardly and thence upwardly from the upper edge of said member with the beginning and terminating ends of said lines disposed at substantially equal distances at opposite sides of a vertical line defining the center of the cup.

3,203,423
CONFORMAL BRASSIERE CONSTRUCTION
Emory C. Champagne, Woodridge, Conn., assignor to The Berger Brothers Company, New Haven, Conn.
Filed Dec. 17, 1963, Ser. No. 331,274
4 Claims. (Cl. 128—489)

1. In a conformal brassiere having a figure-encircling element and a plurality of bust cups, the improvement comprising: each of said cups having upper and lower members, said upper members extending outwardly and rearwardly of the lower members, said lower members being formed of relatively non-extensible textile material, said upper members being formed of elastic material having horizontal and vertical extensibility, said upper members being interconnected by an upper edge facing of resilient extensibility less than that of the horizontal extensibility of said upper members so that all resilient expansion is confined outwardly of the upper members of the bust cups.

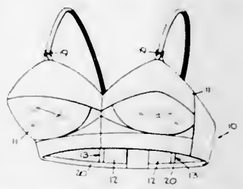
3,203,424
BRASSIERE
Sonia G. Garutso, 7188 Sunset Blvd., Los Angeles 46, Calif.
Filed Aug. 6, 1964, Ser. No. 387,937
1 Claim. (Cl. 128—492)

The combination with a brassiere having a body encircling band and cup components secured thereto, of separate, detachable cover means for each of said cup components; each of said cover means comprising a flexible fabric base conforming generally to the configuration of the associated cup and the upper portion of a breast supported by the cup, means attaching the cover to the brassiere directly above the associated cup, and interengaging fastening means carried and extending along the lower edge of the cover and the portion of the brassiere structure generally conforming to the line of juncture of the cup component with the band component operable to detachably secure the lower edge of said cover to the brassiere in infinite amounts within a range of adjustment laterally and vertically determined by the width of said fastening means; said fastening means comprising a strip of loosely felted Velcro material secured



to the brassiere along the line of juncture of the brassiere cup component with said body encircling band and a strip of the hook component of the Velcro material of less width than said first named loosely felted strip extending along the complementary lower edge of said detachable cover means.

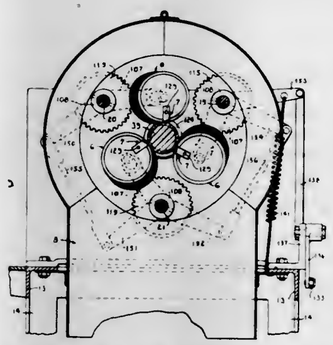
3,203,425
BRASSIERE AND SHOULDER STRAP
Fanny Kaplan, 61—44 232nd St., Bayside 64, N.Y.
Filed Dec. 13, 1963, Ser. No. 330,453
3 Claims. (Cl. 128—510)



3. The combination, with a brassiere or like ladies' undergarment, of two shoulder straps adapted to be extended over the respective shoulders of a wearer, each of said shoulder straps being composed of four strips colored differently from each other, and strips in each strap being arranged in two coextensive pairs with the two strips of each pair abutting and being secured to each other along one lateral edge of each such strip, and the two pairs of strips being secured to each other with the back of each strip of one of said pairs overlying and facing the back of a respective one of said strips of the other of said pairs so as to dispose the two lines of securing of said lateral edges of the two pairs of strips alongside each other, thereby to define a center fold line for the respective shoulder strap to enable the same to be selectively longitudinally folded, even while the garment is being worn, to present on its visible surface any selected one of the four colors.

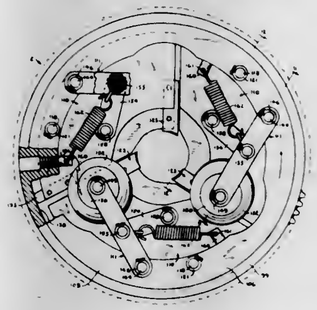
3,203,426
MACHINE FOR CUTTING GREEN CORN FROM ITS COB
Joe R. Urschel, 202 Michigan Ave., Valparaiso, Ind.
Filed Dec. 11, 1961, Ser. No. 159,824
13 Claims. (Cl. 130—9)

1. A machine for cutting corn from its cob comprising: a frame, a plurality of supports rockably mounted on the frame for movement about axes disposed in parallel relation, shafts respectively fixed on said supports and arranged in a substantially spiral relationship, rollers respectively mounted for rotation about the longitudinal axes of said shafts, a plurality of cutters, individual supports for mounting each of the cutters for independent swinging movement adjacent to the rollers, means operatively connecting said roller supports and said cutter supports for effecting simultaneous movement between said supports whereby the roller supports move proportionally to and



through greater ranges than said cutter supports, and means for normally urging the supports so that the rollers will clamp an ear of corn when placed therebetween.

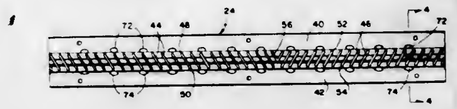
3,203,427
GREEN CORN CUTTER HEAD
Joe R. Urschel, 202 Michigan Ave., Valparaiso, Ind.
Filed June 1, 1962, Ser. No. 199,337
11 Claims. (Cl. 130—9)



1. A machine for cutting kernels from an ear of corn, said machine comprising a mounting, an annular rotor supported for rotation on said mounting, a plurality of cutter devices pivotally connected to said rotor, a plurality of gauge devices pivotally connected to said rotor and operatively connected to said cutter devices, said connected cutter and gauge devices constituting assemblies which are movable independently of one another in response to pressure from an ear when initially introduced between said gauge devices for imparting movement to said cutter devices in direct proportion to the movement of said gauge devices for cutting the kernels from the ear, means for rotating as a unit said rotor and said cutter devices and gauge devices carried by said rotor, and means for holding the ear against rotation while it is being conveyed and cut.

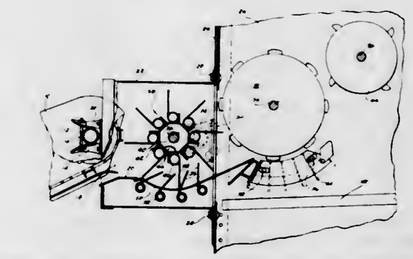
3,203,428
THRESHING CYLINDER BAR
William S. Ausherman, 3500 N. Topeka, Wichita, Kans.
Filed June 21, 1963, Ser. No. 289,496
10 Claims. (Cl. 130—27)

1. In a rasp construction for threshing cylinders of the class including a horizontally disposed and elongated rasp bar having a longitudinally extending row of upstanding teeth thereon, with said rasp bar being provided with downwardly offset, oppositely and laterally extending flanges so as to define a longitudinally extending cavity underlying the rasp bar that is laterally bounded by adjacent margins of the flanges, the combination therewith of means for reducing the accumulation of trash in said cavity comprising at least one of such flanges being pro-



vided with a longitudinally extending row of openings therethrough, said openings being disposed adjacent the juncture of such flange with the rasp bar and opening into said cavity, and said rasp bar being provided with means remote from the openings adapting the rasp bar for being secured to a threshing cylinder with the cavity opening toward the cylinder axis.

3,203,429
AGRICULTURAL IMPLEMENT
Demeter Gawreluk, Davenport, Iowa, assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Apr. 6, 1964, Ser. No. 357,519
5 Claims. (Cl. 130—27)



1. An attachment for incorporation in a combine of the type including a thresher housing, a threshing cylinder journaled in the thresher housing, said thresher housing providing an opening in a wall thereof through which crop material may be introduced into said thresher housing to said cylinder, a concave supported in said thresher housing and adjustable toward and away from said cylinder, coupling means on said thresher housing adjacent said opening, a header, and a feeder housing leading to said opening, said feeder housing having coupling means engaged with the coupling means on said thresher housing, and an

auxiliary cylinder housing; means for securing said auxiliary cylinder housing on said thresher housing in registration with said opening when said feeder housing is removed, and coupling means on said auxiliary cylinder housing engageable with the coupling means on said feeder housing for securing said feeder housing on said auxiliary cylinder housing when said auxiliary cylinder housing is in place on said thresher housing so that said auxiliary cylinder housing is interposed between said thresher housing and said feeder housing, and

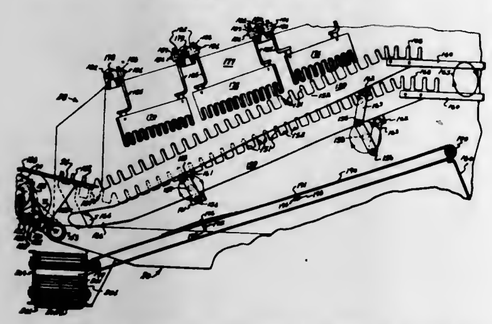
auxiliary threshing means in said auxiliary housing positioned to receive crop material from said feeder housing, to thresh said material, and to pass it on to said threshing cylinder.

3,203,430
SEPARATING CONVEYOR FOR A TOMATO HARVESTER

Coby Lorenzen and Istvan J. Szluka, Davis, and Frederick L. Hill, Rio Vista, Calif., assignors to The Regents of The University of California, Berkeley, Calif.

Original application Sept. 28, 1960, Ser. No. 59,031. Divided and this application May 31, 1963, Ser. No. 289,160

6 Claims. (Cl. 130—30)



1. In a tomato harvesting machine, shaker means for separating said tomatoes from said vines, said shaker means having a pair of transverse crankshafts, each having alternate cranks diametrically opposite each other, the forward crankshaft being at a lower level than the rear cranckshaft and having a substantially shorter throw, and a plurality of walking bars mounted directly on said cranks of said forward crankshaft so that in each adjacent pair they are 180° out of phase, and a link rotatably attached to each crank of said rear crankshaft and rotatably attached to the walking bar thereof, each bar having upwardly extending fingers for shaking said tomatoes from said plants; and a plurality of combs above said walking bars, having depending fingers for retarding the movement of plants through said shaker means.

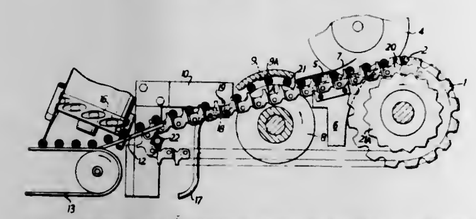
3,203,431
APPARATUS FOR CONVEYING CIGARETTES

George Frederick Pembroke and James George Edward Hillman, London, England, assignors to The Molins Organisation Limited, a British Company

Original application June 7, 1961, Ser. No. 115,355. Divided and this application Sept. 3, 1963, Ser. No. 306,157

Claims priority, application Great Britain, June 8, 1960, 20,094/60

4 Claims. (Cl. 131—27)



1. Apparatus for conveying filter mouthpiece cigarettes and re-rolling their mouthpiece portions, including an endless conveyor device to convey the said cigarettes sideways in succession, and a rolling device positioned to receive successive cigarettes from and replace them on the endless conveyor device, the said rolling device comprising a roller having a peripheral surface which is located in the path of cigarettes carried by said endless conveyor device, with part of said peripheral surface extending above the level of the said path so as to raise cigarettes from and return them to the endless conveyor device, and a counter-rolling element positioned above said peripheral surface and arranged to engage at least the mouthpiece ends of cigarettes on the said peripheral surface.

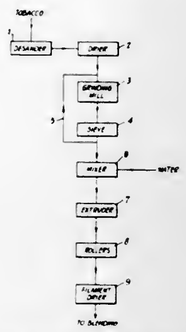
3,203,432
PRODUCTION OF TOBACCO SMOKING MATERIALS

Sydney James Green, Portswood, Southampton, and Peter James Nicholl, Totton, England, assignors, by mesne assignments, to Brown and Williamson Tobacco Corporation, Louisville, Ky., a corporation of Delaware

Filed Apr. 30, 1963, Ser. No. 276,770

Claims priority, application Great Britain, May 3, 1962, 17,071/62

11 Claims. (Cl. 131—140)



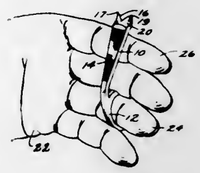
1. A process for production of tobacco smoking materials comprising: grinding tobacco to form a flour-like material, mixing therewith a minor proportion of water of between approximately 15% and 30% of the wet weight of the tobacco so that the resulting mixture is a flowable material and thereafter extruding said mixture through a small orifice into filamentary form while simultaneously subjecting it to sufficient mechanical working and sufficient pressure so as to render certain materials normally present in the natural tobacco leaf gummy and able to serve as an adhesive whereby the filaments are coherent and self-supporting.

3,203,433
FINGER NAIL CLEANER

Albert George Miller, 25 E. Cedar St., Chicago 11, Ill.

Filed June 18, 1962, Ser. No. 203,180

2 Claims. (Cl. 132—75.6)



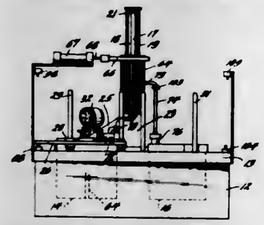
1. In a fingernail cleaner, an elongated body having a V-notch in one end thereof to provide a pair of tines, one for the left hand and one for the right hand, said notch being beveled on the undersurface of said body to present acute angular edges along the inner sides of the notch at the upper surface of said body, said upper surface being concave downwardly and outwardly of said acute angular edges, and a loop projecting downwardly from said body at the opposite end thereof to receive a finger of the hand during use of said fingernail cleaner, said loop being offset from the plane in which the main portion of said body is located.

3,203,434
CHEMICAL POLISHING MACHINE

Karl F. Kipp, Nazareth, and Joseph A. Santangini, Bethlehem, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 6, 1963, Ser. No. 328,612

6 Claims. (Cl. 134—57)



3. In a chemical polishing machine for a silicon slice, a tank for receiving an etchant solution that reacts with silicon and rises in temperature in accordance with the extent of etching of the silicon,

means for supporting a silicon slice in said tank,

normally unoperated means for moving the supporting means to withdraw the slice from the tank, and

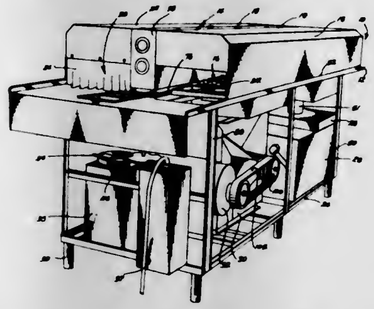
means responsive to a predetermined temperature rise in the etchant solution for operating said moving means to withdraw the supporting means and slice from the tank.

3,203,435
EGG WASHING APPARATUS

John S. Kurtz, Ephrata, Pa., assignor to Automatic Poultry Feeder Company, Zeeland, Mich., a corporation of Michigan

Filed Nov. 13, 1962, Ser. No. 236,932

5 Claims. (Cl. 134—58)



1. An egg washing apparatus comprising: conveyor means adapted to receive and convey perforated trays of eggs; a plurality of egg washing spray means; a first group of said spray means being above said conveyor means and trays of eggs, and a second group being below said conveyor means and trays of eggs to spray eggs through openings in said trays; said first and second groups being successively positioned longitudinally from each other along said conveyor; and said conveyor means including means to stop said conveyor and trays for a predetermined time interval under said first group and over said second group to progressively effectuate thorough washing of upper and lower portions of the eggs without substantial neutralizing interference from the oppositely directed spray.

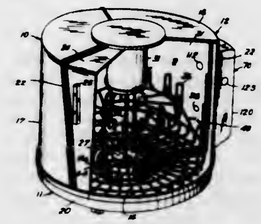
3,203,436
DISHWASHING MACHINE PROVIDED WITH CONTROL MECHANISM

Harald Anton Åke Wallgren, Alvsjo, and Kjell Åke Vilhelm Lovgren, Solna, Sweden, assignors to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden

Filed Feb. 25, 1964, Ser. No. 347,178

Claims priority, application Sweden, Feb. 25, 1963, 2,048/63

9 Claims. (Cl. 134—58)



1. Dishwashing apparatus comprising a compartment for dishes to be washed having a drain outlet at the bottom thereof,

first valve means for admitting liquid into said compartment,

mechanism comprising a second valve means for closing said drain outlet to retain liquid in said compartment,

a drive motor,

means operated by said drive motor for circulating liquid through said compartment and for utilizing said circulating liquid to wash the dishes therein,

sequence control means for controlling operation of said first and second valve means and said motor,

said sequence control means including a first switch to energize said first valve means for admitting liquid to said compartment and a second switch to energize said drive motor and subject the dishes to a preliminary washing action for an interval of time representing a pre-rinse period during which said drain outlet is open and liquid can flow from said compartment,

said sequence control means including a third switch to energize said second valve means for flowing liquid therethrough to actuate said mechanism to render the latter operable to close said drain outlet to retain liquid in said compartment,

said third switch being activated by a third actuating member,

said second switch remaining activated by a second actuating member after said third switch is activated by said third actuating member,

said first switch being activated by a first actuating member which maintains said first valve means open for a sufficient interval of time after said drain outlet is closed by said mechanism to provide an adequate supply of liquid in said compartment for washing dishes by circulating liquid through said compartment and which thereafter functions to inactivate said first switch to deenergize said first valve means to stop admitting liquid into said compartment,

conduit means including a receptacle for holding a body of detergent communicating between said second valve means and said compartment,

said receptable functioning to mix detergent with liquid flowing thereto from said second valve means and delivering the mixture to said compartment,

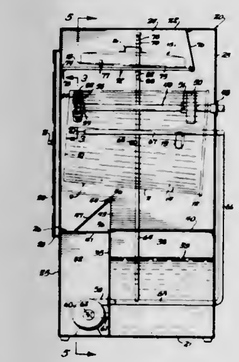
said first switch subsequently being reactivated by said first actuating member to energize said first valve means to admit liquid again into said compartment after an interval of time representing a washing period during which said driving motor remains energized and is operable to drive said liquid circulating means and recirculate liquid retained in said compartment,

said third switch being inactivated by said third actuating member when the washing period terminates to deenergize said second valve means to shut off flow of liquid through said conduit means to said compartment through said receptacle and render said mechanism inoperable to close said drain outlet whereby liquid will drain from said compartment,

said second switch remaining activated by said second actuating member after said third switch is inactivated by said third actuating member, and

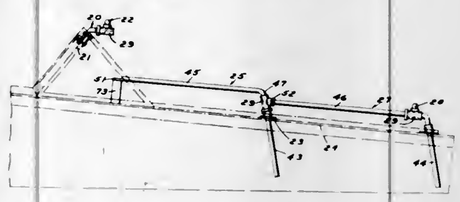
said first, second and third actuating members being inactivated by said first, second and third switches, respectively, to deenergize said first and second valve means and said drive motor after an interval of time representing a rinse period.

3,203,437
TRASH AND GARBAGE CAN WASHER
Francis S. Faust, Buffalo, N.Y., assignor to R. G. Wright Company, Inc., Buffalo, N.Y., a corporation of New York
Filed Jan. 30, 1964, Ser. No. 341,181
4 Claims. (Cl. 134—148)



1. A washer for garbage cans and the like, which cans have a generally circular bottom and a tubular side wall rising from said bottom and terminating in an open mouth and rim remote from said bottom, comprising a generally horizontal, rotatable, cantilevered can supporting shaft, roller means journalled at the outboard end of said shaft to rotate about at least one axis extending transversely of said shaft with the peripheral portion thereof projecting laterally from said shaft whereby the inside of the rim of the can can be placed upon said peripheral portion and upon elevating the bottom of the can it can be moved longitudinally on said roller means lengthwise of said shaft to have the inside of its rim supported by the inboard end of said shaft with the inside of the bottom end of its side wall supported by said roller, means for rotating said can so supported about a generally horizontal axis by said rotating shaft and roller means, and means for spraying cleaning liquid against the can so supported and rotated.

3,203,438
GUARD RAILS AND CANOPY SUPPORTS FOR BOATS
Guy E. Watts, Ferndale, Mich., and Paul R. Emery, 4096 Rochester Road, Troy, Mich.; said Watts assignor to said Emery
Filed Nov. 29, 1963, Ser. No. 326,851
5 Claims. (Cl. 135—6)



1. A combination guard-rail and canopy-support structure easily mountable on a boat and easily convertibly adjustable between selected optional positions comprising,

paired sidewardly spaced front brackets, means for mounting said brackets on a boat super-structure such as a windshield,

paired sidewardly spaced deck sockets mountable on the deck of a boat rearwardly of said brackets; said deck sockets leading downwardly through the deck of a boat on which said deck sockets are mounted;

paired spaced side rails having a first upstanding portion slidably disposed in said deck sockets and a second forwardly extending portion lying at an angle to said first portion; said side rails in their up position leading to a point adjacent said brackets;

releasable lock means on said deck sockets securing said first portions of said side rails in the up position and in the down position; said brackets and said side rail second portions having mating ends;

paired sleeves surrounding said second portions of said side rails adjacent said first portions of said side rails and adapted to be selectively slidable along said second portions of said side rails to a position surrounding said brackets;

releasable lock means on said sleeves for securing said sleeves relative to said side rails and adapted to secure said sleeves to said brackets when said sleeves are located on said brackets;

a bow lying between said sleeves spanning the distance therebetween providing a cross support useable as guard rail and canopy support as desired;

said sleeves when said lock means thereon is released being slidable on said brackets and said second portions of said side rails between points adjacent said brackets and said first portions of said side rails;

said locking means on said sleeves securing said sleeves and said bow on said second portions of said side rails in the adjusted position rearwardly of said brackets providing a cross support adaptable as a cross guard rail spaced from said brackets and a canopy support as desired;

said side rails in said up position providing elevated supports useable as side guard rails and canopy supports as desired;

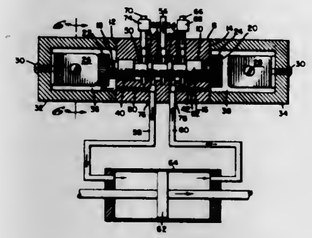
said side rails being movable from said up position to said down position by separating said mating ends of said side rail second portions and said brackets and releasing said lock means on said deck sockets and sliding said side rail first portions downwardly in said deck sockets;

and paired support means mountable on a boat for supporting said side rail second portions in said down positions;

said sleeves and bow being positionable on said brackets and adapted to be positioned on said side rail second portions in said down position;

said sleeves and bow being optionally positionable on said brackets and on said side rail second portions in said down position to provide a guard rail and canopy support as desired.

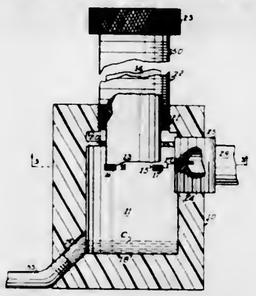
3,203,439
SPOOL VALVE WITH MAGNETIC HOLD
Donald E. Beckett, Wilmington, Ohio, assignor to Beckett-Harcum Co., Wilmington, Ohio, a corporation of Ohio
Filed Oct. 9, 1962, Ser. No. 229,349
5 Claims. (Cl. 137—102)



1. An automatic fluid pressure operated valve for controlling movements of a fluid pressure responsive device, said valve having a body with a bore therein opening through opposite end walls of the body, a fluid entry port for introducing fluid under pressure into the bore, a pair of in-and-out fluid ports each performing to convey fluid outwardly to the fluid responsive device and back therefrom to the bore, and a pair of pressure diminishing ports exhausting to atmosphere from said bore, an elongate unitary valve spool within and shiftable longitudinally of said bore between two operative positions, said valve spool including a piston adjacent to each end and spaced lands intermediate and spaced from the pistons and fixed relative thereto and to one another, the pistons and lands being snugly reciprocable in the bore and the spaced lands and pistons providing three fluid distribution grooves located to direct fluid from said entry port to one of the in-and-out fluid ports while placing the remaining in-and-out fluid port in fluid communication with one of said exhaust ports in each of its two shifted positions, means forming a fluid chamber at each of the opposite ends of the bore and into each of which the adjacent end of the bore opens, an armature carried by each end of the valve spool for reciprocation therewith and located within the adjacent fluid chamber, a magnet secured in each chamber in a position to attract the adjacent armature, the magnets and armatures being so spaced as to hold the spool at either of the limits of its longitudinal shifting movement whenever the spool is shifted by a force in opposition to the holding force of one of the magnets, means whereby each of the fluid chambers has a constant fluid communication with one of the in-and-out fluid ports of the valve body, and means for adjusting each of the armatures longitudinally of the valve spool for changing the longitudinal stroke of the spool.

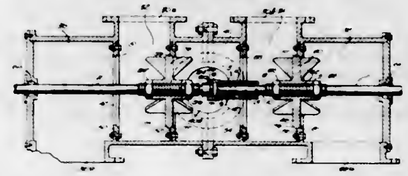
3,203,440
DEVICE FOR FEEDING CHEMICALS INTO LIQUIDS
Thomas E. Schneider, Jr., Atlanta, Ga., assignor to Tesco Chemicals, Inc., Atlanta, Ga., a corporation of Georgia
Filed Oct. 8, 1963, Ser. No. 314,754
7 Claims. (Cl. 137—268)

1. A device for feeding chemicals into a liquid comprising a holder having means for retaining a solid body of soluble chemical bearing compound against lateral displacement, and means for directing a jet of liquid



laterally of said holder and in a direction toward and substantially normal to a side of a solid body of soluble chemical bearing compound retained by said holder.

3,203,441
VALVE CONTROL MECHANISM
Willis Dunn Kervin, Johnson City, Tenn., assignor to Carbonic Development Corporation, Johnson City, Tenn., a corporation of Delaware
Filed Dec. 27, 1962, Ser. No. 247,565
5 Claims. (Cl. 137—309)

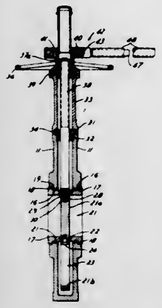


1. Valve control mechanism comprising housing means having a first, second, third, fourth and fifth chamber and a first and second pair of aligned valve openings, one valve opening of the first pair providing communication between the second and third chambers and the other providing communication between said fourth and fifth chambers, one valve opening of said other pair providing communication between said first and second chambers and the other providing communication between said third and fourth chambers, each of said chambers having a port other than said valve openings, a pair of aligned valve discs, means operably connected to said discs for actuating said discs to close one pair of said openings and open the other pair and to alternately open said one pair and close the other, said last mentioned means comprising resilient coupling means between said valve discs to couple said discs for movement together initially during closing of each pair of openings until one of said discs closes one opening of said pair while the other opening of said pair is still open and for subsequent movement of the other disc with respect to said one disc until said other disc closes said other opening of said pair, said coupling including resilient means, said subsequent movement of said other disc with respect to said one disc acting through said resilient means to apply a resilient closing force to said one disc.

3,203,442
GATE VALVE CONSTRUCTION
Marvin H. Grove, 340 Hillside Ave., Piedmont, Calif.
Filed Nov. 2, 1961, Ser. No. 149,608
4 Claims. (Cl. 137—315)

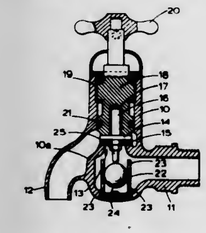
1. In a gate valve construction, a valve body having aligned openings in its side walls, a gate comprising sepa-

rate solid and ported portions for arresting flow and establishing flow through said body respectively, means for detachably securing said portions together, at least one of said openings being of a diameter greater than



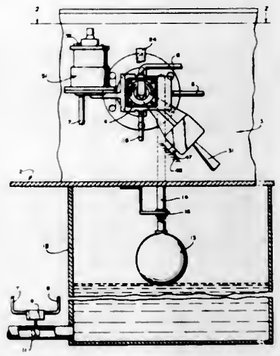
the greatest dimension of each of said portions whereby each of said portions can be assembled or disassembled through said opening, and an operating stem having its one end detachably secured to one of said portions.

3,203,443
VALVE WITH SUPPLEMENTAL REPAIR CHECK VALVE
Cyril Oscar Beadon Morgan, London, England, assignor, by mesne assignments, to Love, Marden and Wilson Limited, London, England
Filed Mar. 26, 1963, Ser. No. 268,057
Claims priority, application Great Britain, Mar. 30, 1962, 12,415/62
2 Claims. (Cl. 137—329.3)



1. A valve comprising a casing having an inlet and an outlet, a partition within said casing, an orifice in said partition for the passage of liquid from said inlet to said outlet, a rotatable spindle member in screw-threaded engagement with said casing, a jumper element on said spindle and movable therewith between a lower position against and closing said orifice and an upper position displaced from said orifice to permit liquid flow therethrough, an extension on said jumper element and movable therewith passing through said orifice, an open-topped cylindrical cup located below and coaxial with the inlet side of said orifice, said cup having an aperture adjacent the bottom of the peripheral wall thereof in constant communication with said inlet, a buoyant ball of diameter less than the height of the cup but substantially equal to the diameter of the cup and adapted to close said orifice when said ball is in the upper portion of the cup, the extension normally engaging said ball to displace it from the upper portion of the cup, upward movement of the spindle, jumper element and extension permitting liquid to enter the cup below the center of the ball to urge positive upward movement of said ball toward and into engagement with said orifice to close same.

3,203,444
AUTOMATIC ULLAGE CONTROL APPARATUS FOR MARINE TANKERS
William H. Gravert, Port Washington, N.Y., assignor to Marine Moisture Control Company, Inc., Inwood, N.Y., a corporation of New York
Filed July 11, 1963, Ser. No. 294,808
6 Claims. (Cl. 137—390)

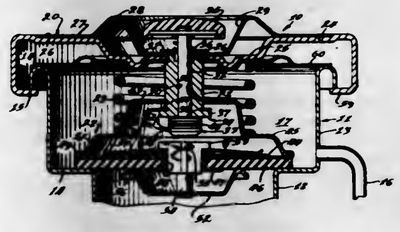


1. In a remotely controlled main valve system for tankers comprising a main fluid supply line for a tank,
(a) a remotely controlled hydraulic motor for operating said main valve to admit fluid to the tank,
(b) a control valve for said hydraulic motor,
(c) a manual control element for operating said control valve,
(d) said control valve having a neutral position in which the hydraulic motor is at rest, a first position for operating the hydraulic motor to open the main valve and a second position for operating the hydraulic motor to close the main valve,
(e) float means in said tank responsive to the liquid level in the tank,
(f) manually settable auxiliary operating means movable from an inactive position in which it is disconnected from the control valve into an active position for operating said control valve to its said second position,
(g) catch means normally retaining said auxiliary operating means in said active position,
(h) and release means actuated by said float means at a predetermined level of liquid in the tank to release said manually settable auxiliary operating means from its said active position, to operate said control valve to its said second position to close the main valve.

3,203,445
COMBINATION VENT CAP AND VALVE FOR AUTOMOBILE RADIATORS
Maurice D. McCormick, Prospect Heights, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Sept. 12, 1963, Ser. No. 308,439
4 Claims. (Cl. 137—493.4)

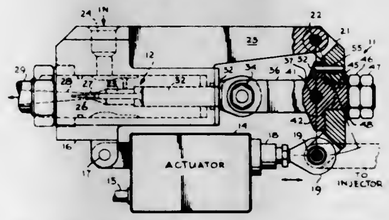
1. A vent cap comprising a cover plate having a stud projecting outwardly therefrom,
a bonnet mounted on said stud for axial sliding movement relative thereto having an end face extending across the projecting end of said stud,
a port formed within said end face,
a valve member positioned so as to cover and uncover said port to control the flow of fluid therethrough,
a plunger slidably mounted for axial movement within said stud and movable to said first position to engage said valve member to move said valve member to a port open position,

locking means engageable with said plunger to hold said plunger in said first position,



and means responsive to the position of said bonnet on said stud for releasing said locking means to permit said valve member to be moved to a port closed position.

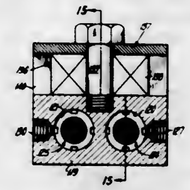
3,203,446
ACTUATOR FOR DIFFERENTIAL POSITIONING OF TWO FLOW CONTROL VALVES
Johannes R. Smirra, Los Angeles, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 11, 1963, Ser. No. 257,515
10 Claims. (Cl. 137—595)



1. An actuator for differential positioning of two flow control valves comprising:
(A) a lever arm pivotally mounted about an axis;
(B) a ratio control element rotatably mounted on said lever arm;
(C) first pivotal means for connecting one valve to one side of said control element and second pivotal means connecting the other valve to the opposite side of said control element; and
(D) means coupled to said lever arm for adjusting the angular position of said control element for varying the flow ratio of said valves, said first and second pivotal means each including a rigid arm member pivotally interconnected between the valve and control element, whereby the angular positioning of said control element oppositely varies the effective moment arm distance between the lever arm and the pair of valves.

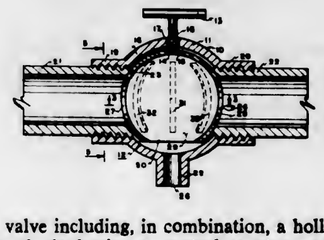
3,203,447
MAGNETICALLY OPERATED VALVE
William C. Bremner, Newington, and Robert W. Weinberg, West Hartford, Conn., assignors to Skinner Precision Industries, Inc., New Britain, Conn., a corporation of Connecticut
Filed Oct. 9, 1963, Ser. No. 314,898
12 Claims. (Cl. 137—595)

12. A valve comprising a body having a plurality of flow passages and inlet and outlet ports opening into the flow passages, said body having portions at opposite ends of the flow passages formed from magnetic material, a plurality of valve members respectively received in the flow passages for slidable movement between first and second positions at the opposite ends of the passages for controlling fluid flow therethrough, permanent magnet means in said valve members providing a magnetic flux for holding the valve members in either of said positions against said body portions, and a magnet means



mounted on the body between the ends and to one side of the flow passages for providing a second magnetic flux for simultaneously shifting the valve members into said positions.

3,203,448
VALVE
Gerhart Jansen, 918 East East So. Temple, Salt Lake City, Utah
Filed Dec. 3, 1962, Ser. No. 241,623
3 Claims. (Cl. 137—625.41)

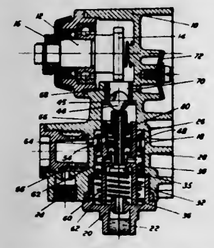


1. A valve including, in combination, a hollow, spherical valve body having a control aperture, at least one inlet orifice, and an outlet orifice; a hollow, valve casing operatively containing said spherical valve body and having an outlet spout and inlet port means; control means passing through said control aperture and affixed to said spherical valve body for moving the latter within said hollow valve casing; and conduit means operatively connected to said inlet port means for communication therewith, said conduit means having extremity means of spherically concave character, said extremity means being in spherical bearing engagement with said spherical valve body; and wherein said spherical valve body and valve casing are provided with intercooperating stop means for determining progressive movement of said spherical valve body within said valve casing at a desired valve condition; and wherein said stop means of said valve casing is concave-configured and disposed diametrically opposite with respect to said extremity means of said conduit means, cooperating therewith in supporting said spherical valve body in a manner as a spherical bearing.

3,203,449
SUPPLY AND EXHAUST VALVE WITH PISTON TYPE INLET
Giuseppe Alfieri, Milan, Italy, assignor to Fabbrica Italiana Magnetti Marelli S.p.A., Milan, Italy, a corporation of Italy
Filed Jan. 21, 1963, Ser. No. 252,883
Claims priority, application Italy, Jan. 25, 1962, 1,450/62
7 Claims. (Cl. 137—627.5)

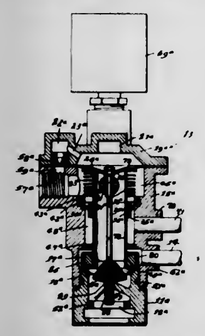
1. A device for controlling air flow between a source of air pressure and a pressurized system comprising a cylinder having an inlet adapted to be connected to said

source and an outlet adapted to be connected to said system, a cam normally in neutral position, means for turning said cam in one direction from said neutral position and in the other direction from said neutral position, a hollow piston within said cylinder and providing therethrough an air passageway between said inlet and said outlet, said piston being in idle position in the absence



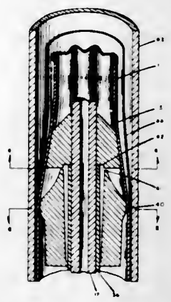
of air pressure at said inlet but being movable from said idle position to an operative position in response to air pressure at said inlet, a valve within said piston normally blocking said passageway, and valve operating means operative to open said valve only when said piston is in operative position and said cam is turned in said one direction.

3,203,450
HYDRAULICALLY-ACTUATED VALVE
Poul J. Olsen, Park Ridge, and Paul F. Ahl, Glenview, Ill., assignors to Culligan, Inc., Northbrook, Ill., a corporation of Delaware
Filed Sept. 12, 1962, Ser. No. 223,146
5 Claims. (Cl. 132—630.19)



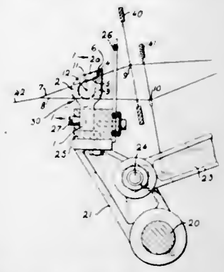
1. A hydraulically-actuated valve assembly, comprising a valve body having a central passage therethrough and closed at its upper end by a cover secured to the valve body, an actuating diaphragm extending across the passage and secured at its periphery between the valve body and the cover, an actuating chamber formed between the diaphragm and the cover, a hollow plunger longitudinally reciprocable in the valve body, an enlarged valve secured to and surrounding the lower end of the plunger, a second diaphragm spaced from said actuating diaphragm bridging the interior of the valve body and centrally secured to said plunger, a cover plate secured to and extending radially outwardly beyond the upper end of said plunger and supporting said actuating diaphragm, said cover plate having a diameter substantially equal to the internal diameter of said central passage and a central depressed portion within said hollow plunger, a valve stem having its upper end extending through the depressed portion of the cover plate and secured centrally to said actuating diaphragm so as to reciprocate relative to said valve body and said hollow plunger, and a poppet valve secured to the lower end of said valve stem and sealingly engaging the lower end of the hollow plunger, said valve stem extending through and spaced from said hollow plunger to form a central passage therethrough.

3,203,451
CORRUGATED TUBE FOR LINING WELLS
Renic P. Vincent, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Original application Aug. 9, 1962, Ser. No. 216,949. Divided and this application June 25, 1964, Ser. No. 384,018
3 Claims. (Cl. 138—143)



1. An article of manufacture suitable for expansion to form a patch for casing in wells, comprising a longitudinally corrugated tube of malleable metal and a mat of glass fibers attached to the outer surface of said corrugated tube and in contact with substantially the entire outer surface of said corrugated tube, said mat being capable of carrying liquid resin.

3,203,452
WEFT CONFINING COMB FOR PNEUMATIC LOOMS
Vladimir Svaty, Liberec, Czechoslovakia, assignor to Sdruzeni Podniku Textilniho Strojirenstvi, Liberec, Czechoslovakia
Filed Aug. 24, 1962, Ser. No. 219,326
10 Claims. (Cl. 139—127)



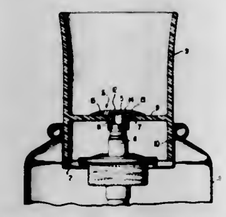
1. For use in a pneumatic loom, in combination, a guiding member for forming an inner opening and having two end portions with ends spaced from each other and forming a permanently open narrow gap adapted to permit passage of a weft thread, said gap having an inner gap portion extending to said inner opening and an outer gap portion extending to the outside of said guiding member, said gap portions extending at an angle to each other, said inner opening being adapted to guide a jet of air and a weft carried by the same, and said gap forming an angular throttling duct for confining the jet of air and a weft carried thereby in said opening but permitting passage of the weft out of said opening after insertion of the weft into a warp shed; slay means for moving said guiding member along a path substantially parallel to said inner gap portion; and shed forming means for moving some warps up and some warps down substantially in the direction of said outer gap portion, the movements of said slay means and shed forming means being interrelated and timed so that said guiding member first moves along said path while a weft resting on the lower warp shed passes through said inner gap portion to a position located at the intersection of said inner and outer gap portions, whereupon the weft is moved by the lower warp shed through and out of said outer gap portion by movement of said shed forming means.

3,203,453
CORE LINER
Kennedy McConnell, Riverdale, Ill., assignor to Interlake Steel Corporation, a corporation of New York
Filed Nov. 19, 1962, Ser. No. 238,550
6 Claims. (Cl. 140—92.1)



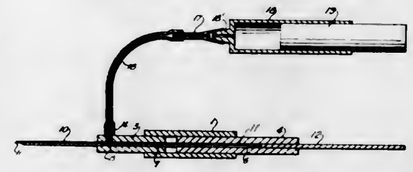
1. A core member for a coil comprising, a strip of flexible material having a hole through one end and a connecting tongue at its other end, said tongue having a wide portion connected by a narrow portion to the main body of the strip, said hole having a wide portion connected to a narrow portion, the wide portion of the hole being wide enough to receive the wide portion of the tongue through it, and the narrow portion of the hole being dimensioned to receive the narrow portion of the tongue in which position the tongue is hooked into the hole and prevented from withdrawal, the length of the tongue being no more than the length of the hole so that the tongue can fit within the hole approximately co-planar with it with the end of the tongue abutting a first end wall of the hole.

3,203,454
MEASURING CUP ATTACHMENT FOR PRESSURE CONTAINERS
Lewis A. Micallef, New York, N.Y., assignor to Leeds and Micallef, New York, N.Y., a partnership
Filed May 13, 1963, Ser. No. 279,961
3 Claims. (Cl. 141—113)



1. A measuring cup for pressurized containers having a downwardly movable discharge valve operating member in an end wall, a tubular sleeve extending downwardly from the bottom wall of said cup, the bottom end of said sleeve being shaped to engage said member and surround the discharge opening of said container, said tubular sleeve extending above the bottom of said cup, discharge passages in the wall of said sleeve adjacent the inner face of the bottom wall of said cup, a closure for the end of said sleeve, said closure having a flange extending substantially beyond the wall of said sleeve and having at its outer edge an unbroken flat surface contacting the bottom wall of said cup and an annular groove within said flat surface, the discharge passages in said sleeve opening into said groove.

3,203,455
SYRINGE FOR INJECTING SMALL MEASURED VOLUMES OF LIQUID
Ivan Samuel Horabin, South Benfleet, Essex, England, assignor to Marryat & Place Limited, London, England, a corporation of the United Kingdom
Filed Feb. 5, 1962, Ser. No. 171,155
Claims priority, application Great Britain, Feb. 20, 1961, 6,200
14 Claims. (Cl. 141—329)

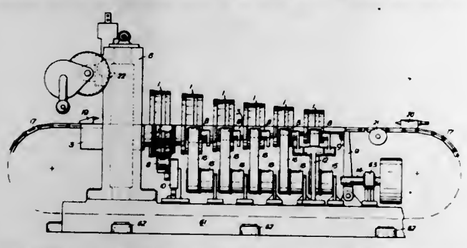


1. In a syringe for injecting small measured volumes of liquid, the combination of a tubular structure having a bore; a needle having a small bore coaxial with said tubular structure bore, the inner end of said needle being fixed with respect to said tubular structure and the inner end of said needle bore being communicable with the adjacent end of said tubular structure bore; means providing an inlet passage opening laterally of said bores into the portion of said tubular structure bore adjacent said inner end of said needle for introducing fluid into said tubular structure bore portion adjacent to the inner end of said needle, a first plunger element mounted to move axially in said bores and being withdrawable from said needle bore to place the inner end of said needle bore into communication with said tubular structure bore portion and being projectable into the needle bore for ejecting liquid therefrom; and means including a second plunger element operable independently of said first plunger element for enabling filling said tubular structure bore portion with liquid, said second plunger element being also operable independently of said first plunger element for discharging liquid through and from said tubular structure bore portion to thereby remove from said tubular structure bore portion any liquid which may contain bubbles so that when said first plunger element is subsequently projected into said needle bore only substantially bubble free liquid will be ejected therefrom.

3,203,456
MACHINE FOR CUTTING UP ESSENTIALLY SEMI-CYLINDRICAL BODIES TO SEMI-TUBULAR ELEMENTS
Walter Witschnig, Metnitz, Karnten, Austria
Filed June 11, 1962, Ser. No. 201,673
Claims priority, application Austria, June 13, 1961, A 4,568/61
24 Claims. (Cl. 143—85)

1. A machine for cutting substantially semi-cylindrical wooden bodies into individual semi-tubular elements, comprising a frame, a set of cutting tools, each of said cutting tools being defined by a unidirectional driven cylindrical saw blade with approximately one-half of the diameter of the blade being adapted to engage the wooden body to be cut, said saw blades having stepped diameters and arranged one behind the other viewed in the direction of travel of the wooden body to be cut, a common carrier member extending in the direction of travel of the wooden body and being stepped corresponding to the

stepped diameters of the saw blades, intermediate friction reducing guide means supporting said saw blades on said common carrier member, means for raising at least one end of said common carrier member for allowing the removal and exchange of said saw blades, drive means for said cylindrical saw blades including belts engaging only the lower portion of the circumference of said saw blades, outer guide rollers for the belts and for pressing said saw blades against said intermediate friction reducing guide means, swinging arms for the guide rollers most remote from the vertical symmetrical plane of said saw blades, the pivotal axes of said arms being outside of the areas inclosed by said belts whereby said rollers are urged



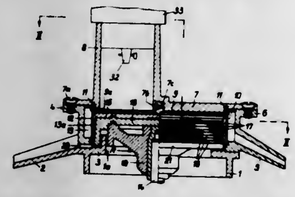
toward said saw blades by the belt tension, a lower outer guide roller in the vertical symmetrical plane of the saw blades with its axis being parallel to the common axis of the saw blades, supporting means for said lower outer guide roller whereby the distance between the axis of such guide roller and the common axis of the saw blades can be adjusted, a vertical guide member in which said supporting means is slidably arranged, a wedge member cooperable therewith for raising and lowering the supporting means, a threaded spindle cooperable with said wedge member for moving the same horizontally, and a graduated scale associated therewith for indicating the extent of displacement of said lower outer guide roller.

3,203,457

COMMINUTING APPARATUS

Albert Minet, Caracas, Venezuela, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany, a corporation

Filed Jan. 11, 1962, Ser. No. 165,532
5 Claims. (Cl. 146—76)



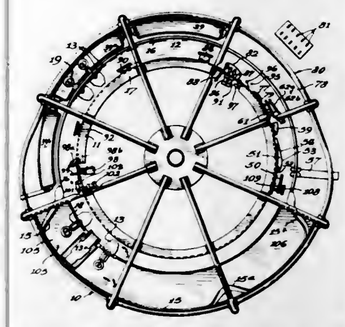
1. Apparatus for finely comminuting substances comprising, in combination, a stator including stationary annular sieve means; a rotor coaxially received within said stator, said rotor having a toothed upper surface and having a peripheral surface facing said sieve means and defining therewith an annular comminuting compartment for receiving the substances partly comminuted by said toothed upper surface, said rotor being formed at said peripheral surface with a continuous screw thread forming a helical cutting edge directed toward said sieve means for further comminuting said substances and for feeding the same in axial direction of said rotor, and a plurality of narrow, elongated wedge-shaped projections projecting from said threads in such a manner that the free ends of said projections are spaced closer to said sieve means than said cutting edge, said projections being spaced from each other in circumferential direction and projections at adjacent threads being staggered with respect to each other; and means connected to said rotor for rotating the same at high speed about its axis.

3,203,458

EGG OPENING AND SEPARATING METHOD

Leonard Shelton, Omaha, Nebr., and Kenneth G. Jones and Robert G. Bush, Green Bay, Wis., assignors, by direct and mesne assignments, to Continent Egg Corporation, Chicago, Ill., a corporation of Illinois

Filed Nov. 24, 1961, Ser. No. 154,718
2 Claims. (Cl. 146—221)



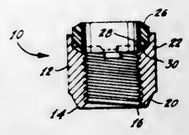
1. A method of handling egg products, comprising clamping an egg shell by gripping the same at a plurality of points on the surface thereof at opposed portions thereof, sharply cutting the shell between the opposed portions while controllably limiting the depth of penetration of cutting elements into the shell to a predetermined depth during cutting of the shell, separating the opposed portions of the shell, emptying the contents of the shell therefrom into the uppermost of a pair of vertically aligned containers to receive the same, which uppermost container is smaller in volume than the total contents of said shell whereby the egg white overflows the upper container and is separated from the egg yolk while flowing from the upper container into the lower container, and repeatedly cutting from the egg yolk, along the edge of the upper container, egg white disposed about the egg yolk to reduce the quantity of egg white clinging to the egg yolk, thereby increasing the proportion of egg yolk solids in the total of egg yolk and egg white remaining in the upper container.

3,203,459

FASTENING DEVICE

Chester P. Coldren, Canton, Ohio, assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 29, 1961, Ser. No. 163,267
4 Claims. (Cl. 151—7)



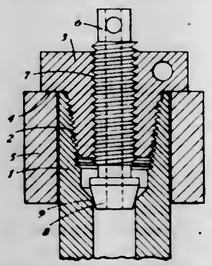
1. A fastener device comprising, in combination
an elongate body member having a bore extending generally longitudinally therethrough with one end portion of the bore having a smaller cross-sectional area than the other end portion thereof and an annular surface disposed intermediate the differential cross-sectional area portions of the body member,
said one end portion of the bore being internally threaded,
said surface of the body member being tapered and disposed at an angle of approximately between 20°–30° relative to a lateral plane passing normal to the longitudinal axis of the body member,
said surface further having groove means defined by circumferentially spaced apart side portions and a bottom portion connecting adjacent ones of the side portions together with the groove means extending generally radially through the full longitudinal extent of said surface from the internal threaded end portion of the bore to the larger cross-sectional area of the other end portion of the body member,
the bottom portion of the groove means being disposed at an angle of approximately between 25°–35° relative to the lateral plane which passes normal to the longitudinal axis of the body member with the inclination of the bottom portion of the groove means relative to the longitudinal axis of the body member being approximately 5° greater than the inclination of said tapered surface thereto,
a deformable washer disposed in the larger cross-sectional area of the other end portion of the bore in the body member in engagement with the annular surface, whereby
a portion of said washer will be deformed on threading engagement of the internally threaded end portion of the body member to cooperating threads of an externally threaded element and be urged between the threads to effectively lock the fastener device between the fastener device and such element and further to effectively create a seal between the cooperating threads.

3,203,460

MEANS FOR LOCKING A SCREW-THREADED CONNECTION BETWEEN TWO COMPLEMENTARY SCREW-THREADED MEMBERS

Gerhard Kühne, Holstein, Germany, assignor to Deutsche Erdol-Aktiengesellschaft, Hamburg, Germany, a body corporate of Germany

Filed Oct. 15, 1962, Ser. No. 230,429
Claims priority, application Germany, Oct. 24, 1961, D 37,306
3 Claims. (Cl. 151—14)



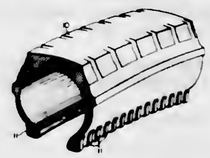
1. Means for locking a screw-threaded connection between a first and second member having complementary screw threads, the first member having a screw threaded passage extending axially therethrough and having an annular contact surface of greater external diameter than said screw-threaded passage, and said second member being contactable with said annular contact surface, said means comprising a screw-threaded spindle in said passage and having screw-threaded engagement solely with said first member, an abutment on said spindle, means to turn said spindle to force said abutment into frictional engagement with the second member to prevent rotation thereof relative to the first member, the complementary screw threads of said passage and spindle being of greater pitch than the complementary screw threads between the said first and second members, attempted unscrewing of said first member from said second member while said abutment is in frictional engagement with said second member and said annular contact surface is in contact with said second member so increasing the pressure between said complementary screw threads as to prevent effective unscrewing of said first member.

3,203,461

TIRE CONTAINING VIBRATION DAMPERS

Robert S. Enabnit, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Apr. 3, 1963, Ser. No. 270,354
2 Claims. (Cl. 152—362)



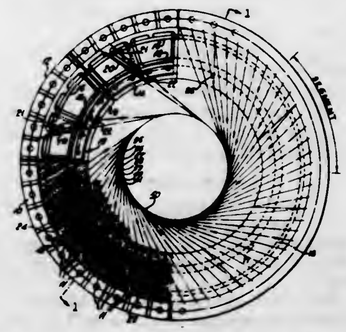
1. A pneumatic tire having sidewalls terminating with a bead portion and adapted to be used with a rim and a plurality of circumferentially equally spaced, radially aligned, elongate elastomeric cushions that are an integral part of the sidewall and extend in an uninterrupted length over the exterior portion of the bead from the toe of said bead to an area on the sidewall of the tire that is located radially outward from the contact portion of a rim, said cushions having spaced apart sides that are parallel to each other and are perpendicular with respect to the sidewall of said tire casing said cushions having a width not less than the space between the cushions and a load bearing surface all points of which are located equidistant from the tire sidewall a distance not less than half of said width, said cushions having tapering ends that taper from said top surface to said tire sidewall, and at least one circumferentially aligned row of sealing bars that interconnect said cushions, thus preventing the escapement of air from the tire.

3,203,462

AIR-COOLED BURNER RING

Eliot C. Prowse, Rutherford, N.J., assignor to Drake Block Co., Inc., a corporation of New York

Filed Sept. 18, 1962, Ser. No. 224,454
9 Claims. (Cl. 158—1.5)



1. An air-cooled burner ring adapted to be mounted in a furnace wall and defining a burner throat, said ring comprising a circular series of elongated bars spaced apart

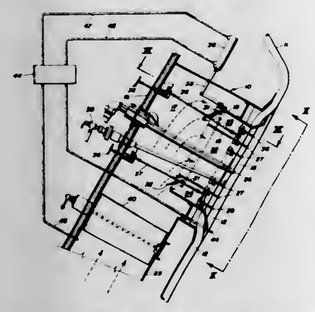
to provide between them substantially throughout their length a series of inwardly directed air passages open at the outer edges of the bars for the entrance of cooling air and open at the inner edges of the bars for the discharge of heated cooling air into the flame area of the burner throat, adjacent bars on their opposing side faces having a zig-zag configuration which provides air passages of corresponding tortuous form in the direction of length of the bars, and mounting means for said bars permitting their individual expansion and contraction, said bars being formed of a high temperature resisting material and presenting inner edges with inserts of the same matching configuration and of a still higher temperature resisting material at least in the ring area subjected to the highest flame temperatures.

3,203,463
BURNER

Earle C. Miller, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts

Continuation of abandoned application Ser. No. 217,322, Aug. 16, 1962. This application May 19, 1964, Ser. No. 370,755

5 Claims. (Cl. 158—1.5)



1. In combination with a furnace wall including water-wall tubes having a main opening extending therethrough by bending said water-wall tubes,

(a) a burner comprising a shroud extending at a right angle to the plane of the furnace wall and surrounding the said main opening,

(b) an air plenum chamber behind the opening,

(c) a wall extending across the shroud and dividing the shroud into a principal passage and an auxiliary passage,

(d) a fuel gun located centrally of the principal passage,

(e) adjustable vanes mounted in the principal passage, the auxiliary passage permitting flow of air at a position spaced from the gun,

(f) a regulator controlling the flow of air through the auxiliary passage, and

(g) control means measuring the velocity of air through the main opening and adjusting the said auxiliary passage regulator to maintain the said velocity below a pre-determined value irrespective of load.

3,203,464
FLASH EVAPORATOR

Wouter Gerhard Kingma, Nuizen, Netherlands, assignor to Werkspoor N.V., Amsterdam, Netherlands, a Dutch company

Filed Nov. 13, 1962, Ser. No. 236,919
Claims priority, application Netherlands, Nov. 17, 1961, 271,501
5 Claims. (Cl. 159—2)

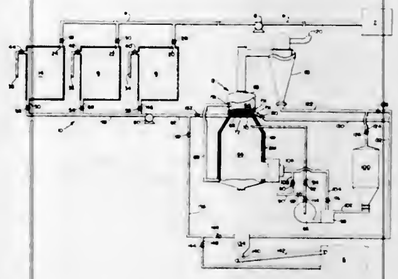
1. A flash evaporator comprising a plurality of flash chambers arranged substantially horizontally downstream of each other on a common bottom, each said chamber being connected near its bottom with the adjacent chamber by a channel so constructed and arranged that the absolute pressure in the evaporator decreases in the downstream direction, each said connecting channel having one wall formed by said common bottom of the chambers and a second wall formed by an imperforate plate spaced above the common bottom and extending horizontally from the interior of one chamber into the interior of the adjacent chamber, and each of said plates at the end reaching into the adjacent downstream chamber being prolonged by an upwardly inclined part forming a downstream-facing dihedral angle with said common bottom.



3,203,465
PROCESS FOR CONCENTRATING A SLURRY CONTAINING PARTICULATE MATERIAL

James T. Clancey, Thomas J. Regan, and Edward J. Wasp, Pittsburgh, Pa., assignors to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 5, 1960, Ser. No. 40,785
5 Claims. (Cl. 159—47)



2. A process for separating particulate coal having a spectrum of particle sizes from a coal-water slurry in a fluidized bed drier having a combustion chamber, a drying chamber and a hollow bed supporting grid therebetween, said hollow bed supporting grid having horizontal flow passages therethrough with vertical interstices therebetween for the vertical flow of gas from said combustion chamber to said drying chamber, said process comprising the steps of

passing a heated gas at an elevated temperature upwardly from a cumbustion chamber through said interstices in said hollow bed supporting grid into said drying chamber,

conducting said slurry through said horizontal flow passages within said hollow bed supporting grid in heat exchange relation with said grid to increase the temperature of said slurry and cool said grid to thereby maintain the temperature of said grid below a predetermined temperature,

thereafter conducting said slurry in indirect heat exchange relation with said combustion chamber to further increase the temperature of said slurry,

maintaining a dense phase fluidized bed of said particulate coal in said drying chamber,

introducing said slurry at said increased temperature into said drying chamber,

said heated gas passing upwardly from said combustion chamber through said interstices in said hollow bed supporting grid into said drying chamber at a sufficient velocity to thereby fluidize said inventory of particulate coal in said drying chamber as a dense phase fluidized bed and vaporize at least a portion of said water in said slurry,

withdrawing a first portion of said particulate coal from said drying chamber with said vaporized water and said heated gas,

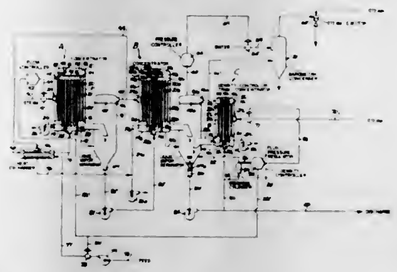
withdrawing a first portion of said particulate coal from said drying chamber, and

separating said first portion of said particulate coal from said water vapor and heated gas, said first portion containing the smaller sized particles of particulate coal in said spectrum, said second portion containing the larger sized particles in said spectrum of particulate coal.

3,203,466
APPARATUS FOR CONCENTRATING LIQUIDS

Albert W. Eckstrom, Snyder, N.Y., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware

Filed May 2, 1963, Ser. No. 277,499
7 Claims. (Cl. 159—44)



1. In a concentrator having

(A) a shell,

(B) an upper tube sheet across the interior of said shell and forming a transfer chamber between it and the upper end of said shell,

(C) a bundle of vertical uptake tubes depending from said upper tube sheet and discharging into the center of said transfer chamber,

(D) an annular series of downtake tubes depending from said upper tube sheet and surrounding said bundle of vertical uptake tubes and opening into said transfer chamber,

(E) means providing lower tube sheets at the lower ends of said tubes and an inlet flash chamber in communication with the lower ends of said uptake tubes and an outlet chamber in communication with the lower ends of said downtake tubes, and

(F) means introducing a heating medium into the space between said upper and lower tube sheets to heat said tubes;

the combustion therewith of means distributing the vapor and liquid discharged upwardly into said transfer chamber by said uptake tubes uniformly to the surrounding downtake tubes, comprising

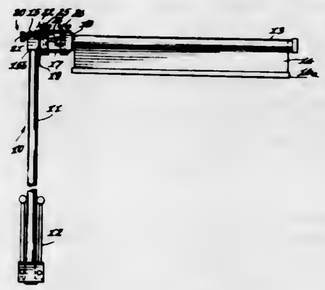
(G) a substantially imperforate horizontal baffle plate in said transfer chamber in vertically spaced relation to said upper tube sheet directly above and with its margin extending beyond the horizontal limits of said bundle of uptake tubes and short of the side walls of said transfer chamber, said spaced relation being such as to provide a velocity of from 30 to 150 feet per second of the vapor leaving radially from under the margin of said baffle plate, and

(H) means adjusting the elevation of said baffle plate with reference to said upper tube sheet to adjust said velocity within said range.

3,203,467
DOCTOR'S SCREEN

Edward W. Wulk, 5011 S. 106th St., Milwaukee, Wis.

Filed Sept. 23, 1963, Ser. No. 310,652
2 Claims. (Cl. 160—24)



1. A screen of the class described comprising, in combination, a vertical pedestal, a number of folding leg supports in the lowermost end of said pedestal, a fulcrum base at the uppermost end of said pedestal, hinge means provided in said base, a screen support held to said fulcrum base and a screen housing secured to said support, said housing having a screen roller therein, a screen on said roller and means for pulling said screen out of said housing, said screen support hingeably held to said base and means for supporting said screen housing horizontally on said hinge means with respect to the ground, said last-named means comprising a fastening screw means, thread means in said fulcrum base, said screw means being threaded into said thread means to secure said screen support to said fulcrum base.

3,203,468
WINDOW SHADE HAVING TELESCOPING ROLLER

Robert C. Gossling and Lawrence S. Wilcoxon, Cincinnati, Ohio, assignors to Clopay Corporation, Cincinnati, Ohio, a corporation of Maryland

Filed Feb. 12, 1963, Ser. No. 257,996
3 Claims. (Cl. 160—323)



1. In a window shade and roller combination the improvement comprising,

a first roller section, said first roller section being tubular,

a second roller section, said second section having one end thereof telescopingly seated within said first section with a substantial portion thereof projecting axially from said first section.

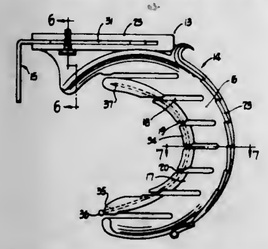
a tube of readily cuttable material having an outside diameter approximately equal to the outside diameter of said first section and an inside diameter of a size to permit free sliding movement between the inside of said tube and said second section,

said tube surrounding said projecting portion of said second section and having one end thereof abutting the end of said first section surrounding said second section,

a window shade of readily cuttable material, and,

adhesive means securing the upper end of said window shade to said first section and to said tube to lock said tube to said first section while maintaing said free sliding relationship between said second section and said tube, whereby upon the cutting of said shade and said tube in a plane normal to the longitudinal axis of said roller that portion of said shade and said tube freed by said cutting may be simultaneously removed by sliding them off the outer end of said second section and whereby said second section thereafter may be telescoped within said first section while sliding freely within said tube.

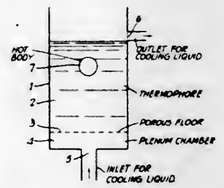
3,203,469
DRAPERY SUPPORT AND MOUNTING
Douglass R. Falkenberg, 20997 Westlake Road, Rocky River, Ohio
Filed Apr. 10, 1963, Ser. No. 272,003
11 Claims. (Cl. 160—348)



1. In a drapery fixture for holding drapery material in supported folded relation to a frame, the improvement which comprises mating portions including a drapery holder and a supporting bracket, said bracket adapted to be secured to a frame, said drapery holder having a curved arm and a base integral therewith, said base being adapted to fit over said bracket and having means for adjustably mounting and securing said holder on said bracket, said drapery holder arm having a plurality of fingers in a common plane extending in the direction of said base from said arm and forming drapery fold receiving slots, said fingered arm, base and bracket adapted to coact with the frame in assembled relation to permit selective visual introduction of the drapery folds into the fold receiving slots from a position facing the assembly whereby the disposition of the drapery folds can be adjusted visually to provide the desired esthetic effect.

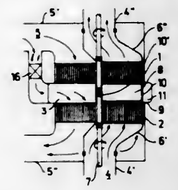
3,203,470
METHOD OF RAPIDLY COOLING SOLID BODIES
Peter Ayers, High Wycombe, England, assignor to The British Aluminium Company Limited, London, England, a company of Great Britain
Filed July 1, 1963, Ser. No. 292,101
1 Claim. (Cl. 165—1)

A method of rapidly cooling a solid body from an elevated temperature which comprises immersing the body in a thermophore having a particle size of from 0.5 mm. to 5 mm., fluidizing the thermophore with a cooling water having a boiling point below said elevated temperature and flowing the cooling water through the thermophore at a rate selected in relation to the mass of the particles to maintain the thermophore in a fluidized condition and



to impart a kinetic energy to the particles sufficient to disrupt the formation of a film of vaporized cooling water at the surface of the body.

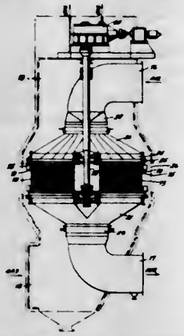
3,203,471
REGENERATIVE AIR PREHEATER WITH STATIONARY HEAT RETAINING MASS AND REVOLVING CONNECTIONS
Jakob Koch, Edingen, near Heidelberg, Germany, assignor to Svenska Rotor Maskiner Aktiebolag, Stockholm, Sweden
Filed Nov. 7, 1962, Ser. No. 236,062
3 Claims. (Cl. 165—4)



1. A regenerative air preheater having a stationary heat retaining mass divided into sector-shaped compartments, inlet and outlet means communicating with said compartments for flow of a heat exchanging fluid therethrough, revolving second inlet and outlet means providing sequential communication with said compartments for flow of a second heat exchanging fluid therethrough, said heat retaining mass being separated into two superimposed heat retaining stages spaced from each other in the direction of fluid flow to provide an annular space therebetween, a rotary slide valve disposed in said annular space between said stages, means to synchronously rotate said valve in phase with said revolving second inlet and outlet means, said valve being divided cross sectionally into sector-shaped passages in alignment with said revolving second inlet and outlet means, whereby said passages provide continuation in said annular space of said revolving second inlet and outlet means.

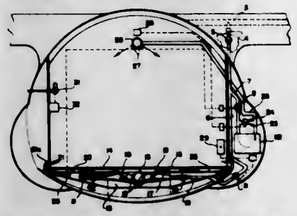
3,203,472
HEAT EXCHANGERS
Herbert Brandt, Rothemuhle uber Olpe, Vahlberg, Westphalia, Germany
Filed Nov. 22, 1963, Ser. No. 325,585
9 Claims. (Cl. 165—10)

8. In a regenerative heat exchanger having an annular heat exchange drum mounted between headers and having relatively displaced inlet and outlet openings for a heating gas and a gas to be heated, which openings register with a different and limited cross sectional area of the heat exchange drum at any one time by relative rotation of the drum and the headers, the improvement which comprises a heat storing and transferring mass comprising thin metal sheets in the hot section of the heat exchanger in communication with ceramic blocks with a multiplicity of passages therethrough having smooth



surfaces provided with a water-repellent glazed coating in the cold section of the heat exchanger.

3,203,473
AIRCRAFT HEATING SYSTEM
Archie E. Goode, Decatur, Ga., and Thomas G. Hill, Glen Cove, N.Y., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Oct. 5, 1960, Ser. No. 60,723
5 Claims. (Cl. 165—35)

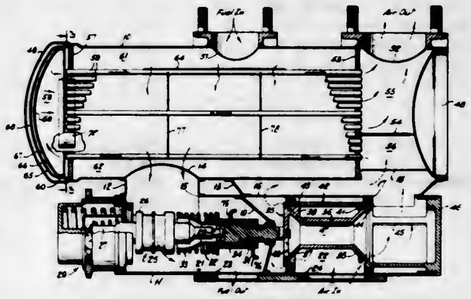


1. A warm air heating system for an aircraft compartment comprising: a pressurized hot air source, a two branch duct means connected to said air source for receiving a flow of hot air therefrom, the entire flow into the two branch duct means being pressurized hot air from said air source, first air distribution means beneath the compartment floor for heating thereof and connected to one of the branch ducts to receive a portion of the air flow therefrom, air flow discharge means proximate the floor level of the compartment passing at least some of the air flow from said first air distribution means into the compartment, a second air distribution means located at a level above the compartment floor, said second air distribution means connected to the other duct branch for discharging the remaining portion of the air flow into the upper portion of the compartment, a throttling valve in said other duct branch controlling the relative air flow portions in the two branches of the duct means, and means thermally responsive to the underfloor air flow adjusting the throttling valve to vary the relative air flows through the first and second air distribution means.

3,203,474
VALVE AND HEAT EXCHANGER ASSEMBLY
Kenneth O. Parker and Joseph P. Boland, Dayton, Ohio, assignors to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio
Original application Oct. 13, 1958, Ser. No. 766,813, now Patent No. 3,145,928, dated Aug. 25, 1964. Divided and this application Dec. 26, 1962, Ser. No. 328,441
1 Claim. (Cl. 165—39)

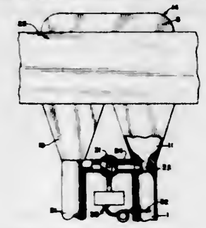
A valve and heat exchanger assembly, including a tubulous heat exchanger unit having a shell and within the

shell a plurality of opened-ended heat exchange tubes, means on one end of said shell defining exit and inlet chambers communicating with said tubes, the other end having means defining a turn-around chamber, transverse openings in said shell, a fluid entering the shell by one of said openings flowing over and around said tubes and leaving the shell by way of another opening, a valve unit providing a first flow path for another fluid extending



through said valve unit to said inlet chamber at said one end of said shell, said valve unit further providing a second flow path leading from said other shell opening through and beyond said valve unit, a valve in said first flow path controlling flow of said other fluid therethrough, and a thermostat in said second flow path affected by the temperature of the first said fluid and connected to move said valve.

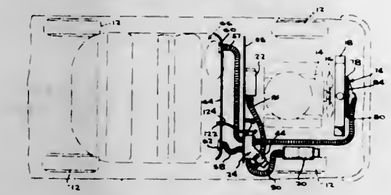
3,203,475
PROTECTIVE RECIRCULATION MEANS FOR HEAT EXCHANGERS
Kenneth G. Crews, Garden Grove, and John L. Mason, Palos Verdes, Calif., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Apr. 21, 1960, Ser. No. 23,773
3 Claims. (Cl. 165—40)



1. In combination: a heat exchanger having first and second fluid passages including portions disposed internally of the exchanger in heat transfer relationship for conveying a first, relatively hot fluid and a second relatively cold fluid, respectively, in heat transfer relation to one another; said first passage having first and second fluid inlets and first and second fluid outlets, said first inlet and said first outlet being adapted for connection to an external fluid circuit; means defining a recirculation passage directly communicating said second outlet to said second inlet through which a portion of said first fluid exhausting from said heat exchanger after having been cooled by said second fluid may recirculate to mix with and cool the relatively hot first fluid entering the heat exchanger from said external fluid circuit through said first inlet; means for inducing flow of said first fluid through said recirculation passage from said second outlet to said second inlet; temperature responsive means disposed in efficient heat transfer relation to said first passage adjacent said first inlet so as to be highly responsive to

the temperature of the hot fluid entering the heat exchanger through said first inlet; and means in said recirculation passage controlled by said temperature responsive means for regulating recircuation flow of said first fluid through said recirculation passage in such manner that said recirculation flow increases in response to increasing temperature of the first fluid entering the heat exchanger and decreases in response to decreasing temperature of the first fluid entering the heat exchanger, thereby to maintain the temperature of the combined first fluid flowing from said first and second inlets to said internal portion of said first passage below a predetermined maximum temperature.

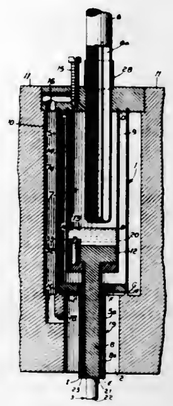
3,203,476
AIR DIFFUSER AND DISPENSER FOR AUTOMOTIVE VEHICLES
Robert D. McMahan, 830 Esperson Bldg., Houston, Tex.
Filed Oct. 25, 1963, Ser. No. 318,965
3 Claims. (Cl. 165—42)



1. The combination with a vehicle having a compartment and a radiator core, of an air diffusing and dispensing device for distributing air over the radiator core comprising a pair of superposed substantially flat triangular plates disposed in laterally-spaced relation and having an air-discharge slot adjacent the bases of the plates, said slot being juxtaposed relative to said core, the apices of said plates being joined to form a hollow boss, an air collector mounted on said vehicle, said air collector comprising a substantially hollow rectangular compartment defined by a substantially rectangular bottom wall having substantially rectangular sidewalls projecting from the longitudinally-extending marginal edges thereof, respectively, a pair of end walls oppositely-disposed relative to one another, and a top wall extending over said side and end walls, an electric motor mounted in one of said side walls and having an air propeller connected therewith in driving relation relative thereto, said air collector having a pair of air outlets connected with said compartment, a conduit connecting said boss with said air collector, and means selectively operable to connect said air collector with an air conditioner.

3,203,477
CRYOGENIC COOLING DEVICES
Jacques R. G. Collard, Nutley, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Nov. 21, 1962, Ser. No. 239,127
10 Claims. (Cl. 165—48)

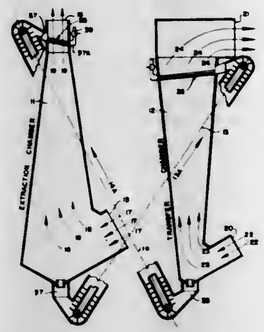
1. A cooling device utilizing a coolant for cooling an article comprising:
(a) a liquid coolant which vaporizes when it adsorbs heat;
(b) a heat sink;
(c) means forming a cylindrical cavity in said heat sink;
(d) a disc-shaped member disposed in closure relationship to said cavity;
(e) means forming a first cylindrical chamber attached to said disc-shaped member and disposed within and apart from the walls of said cavity;
(f) means forming a second cylindrical chamber, coupled to said first cylindrical chamber and disposed within and apart from the walls of said cavity, said second chamber being open to said first chamber;
(g) means forming a third cylindrical chamber attached to said disc-shaped member and coaxial with said first chamber, said disc-shaped member having an aperture therein communicating with said third chamber;



(h) means forming a fourth cylindrical chamber attached to said third-chamber-forming means and coaxially disposed within said first and second chambers, said fourth chamber being open to said third chamber, the annular chamber formed by the inner walls of said first and second chambers, the outer walls of said third and fourth chambers, said disc-shaped member, and the bottom of said second chamber being evacuated;
(i) means for feeding said coolant through said aperture into said third chamber;
(j) means for conducting the vapor formed by said coolant in said third chamber from said third chamber;
(k) thermal conducting means disposed in said fourth chamber in contact with said coolant in said third chamber, said thermal conducting means being adapted to contact an article to be cooled; and
(l) means responsive to the flow of said vapor from said third chamber adapted to prevent the formation of frost on said article when said article is not sealed from the atmosphere.

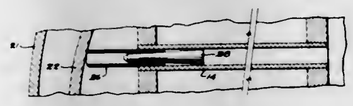
3,203,478
HEAT EXCHANGE UNIT
Marshall Bauder, 6436 E. Broadway, Burnaby 2, British Columbia, Canada
Filed Jan. 15, 1962, Ser. No. 166,200
10 Claims. (Cl. 165—106)

1. In a heat exchange unit of the class having: a vertical extraction chamber adapted for the upwards passage therethrough of gas from which heat is to be extracted, a vertical transfer chamber adapted for the upwards passage therethrough of a gas to which heat is to be added, a body of shot, means to introduce the shot at the top of the extraction chamber constructed and arranged so that the shot shall fall by gravity against the upwards passage of the gas, whereby heat is extracted from the gas to heat the shot, means to convey the heated shot from the bottom of the extraction chamber to the top of the transfer chamber, means to introduce the body of shot at the top of the transfer chamber constructed and arranged so that the heated shot shall fall by



gravity against the upward passage of the gas whereby heat is extracted from the shot to heat the gas; in combination with the foregoing.
(a) a body of shot composed of metallic particles the arithmetic mean diameter of which shall be within the range of about 0.01 inch to 0.02 inch, the shot being selected so that a particular body within the range aforesaid shall be so nearly uniform that the range of terminal velocities of the largest and smallest particles thereof shall be narrow,
(b) means to control the rate of flow of the gases with respect to the rate of fall of the aforesaid body of shot.

3,203,479
CONDENSER TUBE PLUG
Joe M. Hindman, Kenedy, Tex., assignor to Warren Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,527
3 Claims. (Cl. 165—134)



1. An apparatus comprising:
a tubular bundle comprising a plurality of individual tubes;
a shell surrounding said tubular bundle;
means to support said tubular bundle within said shell;
a head cover removably attached to one end of said shell;
a sleeve member having an outside diameter substantially the same as the inside diameter of one of the tubes of the tubular bundle and adapted to fit inside said tube, said sleeve member being longer than the distance between the tube end to be plugged and said shell cover, said sleeve member abutting said head cover and being in sealing engagement through compressive force with said tube; said sleeve member transmitting a portion of the compressive force to said end cover; and
a tapered plug member in sealing engagement through compressive force with said sleeve, the smaller end of said plug member being within said sleeve while the larger end of said plug member extends beyond the sleeve into the tube to be plugged.

3,203,480
USE OF SULFIDES IN FLOODING WATER
H Robert Froning, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
No Drawing. Filed Mar. 18, 1963, Ser. No. 266,078
20 Claims. (Cl. 166—4)

4. A process for water flooding an oil-bearing formation penetrated by at least one injection well and at least one producing well comprising introducing into said formation through said injection well an aqueous solution of a sulfide salt selected from the group consisting of ammonium sulfides and alkali metal sulfides, the concentration of said sulfide salt and the pH of said solution being sufficient to make said formation more water wettable than it is when in contact with the naturally occurring oil and water in said formation, the volume of said aqueous solution being at least about 1 percent of the pore volume expected to be flooded, and recovering oil from said at least one producing well.

3,203,481
METHOD OF MISCIBLE FLOODING
John N. Dew and Philip W. Reed, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Filed Sept. 1, 1960, Ser. No. 53,378
7 Claims. (Cl. 166—9)

1. A method for the secondary recovery of hydrocarbons from a subterranean hydrocarbon-bearing reservoir traversed by an injection well and a recovery well which comprises injecting a gaseous fluid into said reservoir in sufficient volumes establishing pressure in excess of the vapor pressure of liquefied low molecular weight hydrocarbons to be utilized as displacement media, injecting a first liquefied low molecular weight hydrocarbon containing from 2 to 6 carbon atoms down the injection well into the reservoir in an amount of about 1.0 to 10.0 percent of the hydrocarbon pore space thereof, said first hydrocarbon being miscible with the reservoir hydrocarbons, injecting a second liquefied low molecular weight hydrocarbon containing from 3 to 7 carbon atoms down the injection well into the reservoir in an amount of about 1.5 to 15 percent of the hydrocarbon pore space thereof, said second hydrocarbon being miscible with and having a greater viscosity than said first hydrocarbon, injecting a displacement gas down the injection well into the reservoir, said gas being immiscible with and having a lesser viscosity than said second hydrocarbon, maintaining the reservoir pressure at a value greater than the normal vapor pressures of said first and second hydrocarbons under the conditions that prevail within the reservoir, and producing the reservoir hydrocarbons displaced from the reservoir through the recovery well.

3,203,482
JARRING DEVICES
Cecil Ray Lyles, 1301 Cooley St., Borger, Tex.
Filed May 4, 1961, Ser. No. 107,837
8 Claims. (Cl. 166—178)

1. A jarring tool comprising a first sleeve, a second sleeve and a first collar therebetween, a shaft slidably located within said sleeves and collar, a second collar on said shaft, a releasable detent means attachable to said shaft located between said shaft and one of said sleeves, a spring located in one of said sleeves, a laterally projecting thrust collar firmly attached to said shaft, said first sleeve having a first internal chamber therein, one end of said first sleeve being open, the other end of said first sleeve being firmly attached to said first collar, said first collar having a central orifice narrower than said first internal chamber, and said second sleeve being firmly attached at one end to said first collar, said first and second sleeves and said first collar being

coaxial, said second sleeve having a second internal chamber therein of larger cross-section than the cross section of said orifice in said first collar and an internal shoulder firmly attached to said second sleeve at one end thereof, said shaft slidably passing through said first end of said first sleeve and said central orifice in said first collar and terminating at a free end in said second internal chamber, said laterally projecting thrust collar being located within the first sleeve, said thrust collar



having a larger external diameter than the interior diameter of said first collar, said spring supported on said internal shoulder attached to one end of said second sleeve at one end of said spring and at its other end attached to said shaft by said releasable detent means and means on said second sleeve to engage and release said releasable detent means from said shaft after a predetermined movement of said releasable detent means and the end of said shaft toward the said support for said spring.

3,203,483

APPARATUS FOR FORMING METALLIC CASING LINER

Ronic P. Vincent, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Original application Aug. 9, 1962, Ser. No. 216,949. Divided and this application June 25, 1964, Ser. No. 384,017

9 Claims. (Cl. 166—207)



1. Apparatus for placing a metallic liner in a substantially cylindrical metallic vessel comprising a longitudinally corrugated tube of malleable metal, said tube having an external cross-sectional perimeter greater than the internal cross-sectional circumference of said vessel, and the thickness of the wall of said tube times the maximum compressive strength of the metal of which said tube is made being less than the thickness of the wall of said vessel times the maximum tensile strength of the metal of which said vessel is made, a glass fiber mat surrounding said tube, said mat being saturated with a liquid resin capable of being set to a hardened state, and means for expanding said tube to a substantially cylindrical form within said vessel without imposing a tensile stress in the wall of said vessel in excess of the maximum tensile strength, said means for expanding said tube including means for restraining longitudinal movement of said tube, an expanding assembly having a first tube-expanding head and a second tube-expanding head, said first tube-expanding head having a generally conical solid surface with a maximum diameter sufficient only partially to expand said tube as said expanding assembly is forced through said tube, and said second tube-expanding head having a set of tube-expanding elements capable of being forced radially outwardly of the first head in a direction substantially perpendicular to the axis of said tube, said elements being capable of moving inwardly toward the axis of said tube upon application of excessive force to said elements during the expansion of said tube, means for forcing said tube-expanding elements outwardly and means for forcing said expanding assembly through said tube

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3,203,484

PORTABLE FIRE EXTINGUISHING DEVICE

Fabrizio Ruggiero, % Ing. Umberto Fabbretti, Viale dell' Umanesimo 12, Rome, Italy

Filed May 14, 1963, Ser. No. 280,333
Claims priority, application Italy, May 22, 1962, 10,098/62
7 Claims. (Cl. 169—32)



1. A fire extinguishing device comprising a casing, a mixing chamber, flexible sheet material means forming a plurality of reactant containers within said casing, extensions of said sheet material means also forming said mixing chamber, said reactant containers having outlets entering into said mixing chamber, valve means preventing free flow of reactants between said containers and said mixing chamber and means mounted on said casing for simultaneously expressing reactants in a given proportion from said containers past said valve means and into said mixing chamber, said mixing chamber having an outlet for the discharge of reacted reactants from said device.

3,203,485

ROTATING MOUNTING SYSTEM FOR HELICOPTER AUXILIARY EQUIPMENT

Edward H. Jacobsen and Harold E. Lemont, Menlo Park, Calif., assignors, by mesne assignments, to Hiller Aircraft Company, Inc., Menlo Park, Calif., a corporation of Delaware

Filed Jan. 8, 1964, Ser. No. 336,500
6 Claims. (Cl. 170—135.4)

1. In a helicopter comprising a fuselage, a rotor system in conjunction with said fuselage comprising a rotor column having a lower portion within said fuselage and an upper portion partly above and extending into said fuselage coaxial with and spaced from said lower portion, means above said fuselage fixedly secured to the top thereof mounting said rotor column for rotation relative to said fuselage, a rotor hub atop said rotor column, rotor blades surmounting said column and operatively connected with said hub for rotation therewith above said fuselage, means for rotating said rotor column and said blades, and equipment mounting means in conjunction with said rotor column within said fuselage; said equipment mounting means comprising a platform structure secured to and integral with said rotor column intermediate the ends thereof, said structure being interposed between and rigidly interconnecting said upper and lower portions of said rotor column and including a generally cylindrical



tank housing member coaxially occupying the space between and of a greater diameter than and projecting laterally beyond said upper and lower portions of said rotor column to provide on the axis of the rotor column a supporting base completely surrounding said axis, and auxiliary equipment for said helicopter mounted on said supporting base for attendant rotation in unison with said rotor column and said blades, said equipment on said base being accessible within said fuselage during flight and testing of said helicopter and said rotor system.

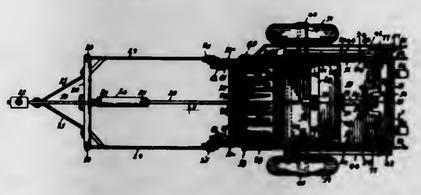
2. The helicopter of claim 1 in which said means for rotating said rotor column and said blades comprises jet engines mounted on said blades adjacent the tips thereof.

3,203,486

STONE PICKER APPARATUS

Lewis E. Ellsworth, Sr., R.D. 4, Tunkhannock, Pa.

Filed Feb. 18, 1963, Ser. No. 259,244
5 Claims. (Cl. 171—63)



1. In a stone picker apparatus, the combination comprising, a forwardly and downwardly inclined lip member and a stone picker fork member operatively related thereover, the fork member pivotally suspended, a vertically oscillating lever, a pivot carried thereby and to which the fork is pivotally suspended, a pivot on the fork member spaced from the first said pivotal connection and a horizontally oscillating reach rod mounted to the pivot on the fork member and whereby a compound oscillation is imparted to the stone picker fork member.

3,203,487

ROTARY HOE GANG ASSEMBLY

Jack C. Whiteside, Albany, Ga., assignor to Lilliston Implement Company, Albany, Ga., a corporation of Georgia

Filed Jan. 9, 1964, Ser. No. 336,777
4 Claims. (Cl. 172—548)

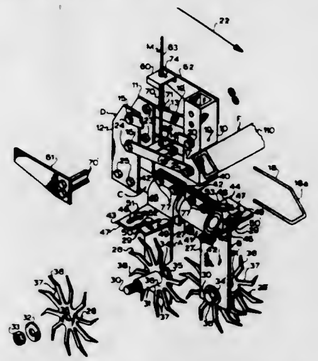
1. A rotary hoe gang assembly for a cultivator adapted to be moved parallel to and over a crop row and adapted to support a plurality of rotary hoes each of the type having a plurality of rigid tines extending substantially in a single plane and said tines extending perpendicular to the axis of rotation of each hoe, said gang assembly comprising;

(A) a frame,

(B) a support member constructed to extend directly over a crop row and to extend in a plane substantially parallel to the surface of the soil of the crop row,

(C) a suspension means connected between said support member and said frame for suspending said support member from said frame and for maintaining said support member substantially parallel to the surface of the soil of the crop row,

(D) a first support means extending downwardly from one side of said support member for positioning on one side of said crop row,



(E) a second support means extending downwardly from said support member from the side opposite to said one side for positioning on the opposite side of said crop row,

(F) a first rotary hoe rotatably connected to said first support means,

(G) a second rotary hoe rotatably connected to said second support means,

(H) means for adjustably displacing said first support means and said second support means from each other in a direction generally parallel to the crop row,

(I) means for adjustably displacing said first support means and said second support means from each other in a direction generally perpendicular to the crop row,

(J) means for adjustably angling said first rotary hoe and said second rotary hoe about axes generally parallel to the crop row, and

(K) means for adjustably angling said first rotary hoe and said second rotary hoe about axes generally perpendicular to the surface of the soil of the crop row.

3,203,488

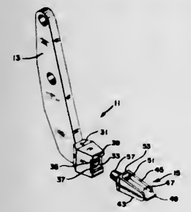
RIPPER TOOTH

Joseph Eastwood III, Hayward, Calif., assignor to Pacific States Steel Corporation, Union City, Calif., a corporation of California

Filed Sept. 7, 1962, Ser. No. 222,012
1 Claim. (Cl. 172—713)

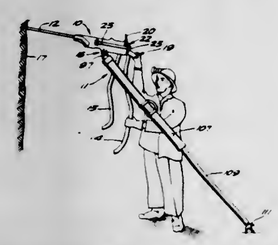
A ripper tooth assembly comprising a shank, a socket member carried on the end of the shank, said socket member including a forwardly facing upstanding face, a pair of generally parallel shoulders extending forwardly beyond said face, a frusto-conical socket opening formed in said socket member and extending rearwardly of said face, a digger tooth carried by said socket member, a frusto-conical plug formed at the rear of the tooth and

having a size and shape comparable to that of the socket opening for cooperative engagement with the wall surface of said opening to transmit horizontal and vertical thrust thereto, means for drawing said plug into said socket opening and for retaining said plug tightly in said opening, said tooth further including a digging portion formed at the forward end thereof and subject to receiving twisting thrusts tending to rotate the tooth about the axis of said plug, said digging portion including



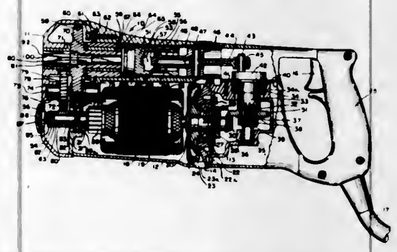
generally upstanding spaced side walls and a web disposed therebetween formed integral with the side walls, a flattened flange portion lying generally in a plane transverse to both said web and both walls and formed to merge with the rear of said digging portion, the flange portion being disposed adjacent said face and formed to include generally parallel edges spaced and disposed to abut said shoulders, said shoulders protruding forwardly in overlying relationship to said edges to prevent twisting of the tooth with respect to the socket.

3,203,489
SINKER DRILL
George H. Fuehrer, Downey, Calif., assignor to Thor Power Tool Company, Aurora, Ill., a corporation of Delaware
Continuation of application Ser. No. 17,288, Mar. 24, 1960. This application July 18, 1963, Ser. No. 296,889
15 Claims. (Cl. 173—36)



6. A pneumatically actuated sinker drill having a main body, an extendible feed leg pivotally connected with said main body with its axis normally disposed at an acute angle to the axis of said sinker drill and including air passage means for supplying pressurized air thereto and for releasing such air therefrom, a backhead assembly secured to the rear end of said main body including a rigid handgrip and a master air control valve adjacent thereto, said master valve having means for cutting on and off the flow of pressurized air to said feed leg air passage means, control valve means mounted on said handgrip for regulating the venting of pressurized air enroute to said feed leg and effective to control the extension of said leg in accordance with operating needs, and fast action air dumping means having an actuating control at said handgrip and operable to discontinue air flow to said leg abruptly independently of the position of said control valve means.

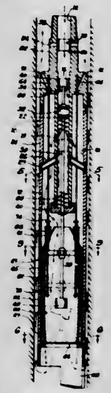
3,203,490
COMPACT ROTARY HAMMER
George W. McCarty and Harold O. Short, Towson, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed June 27, 1963, Ser. No. 291,000
1 Claim. (Cl. 173—109)



A compact rotary-hammer tool, comprising:
(a) a housing having a rearwardly-disposed end handle provided with a trigger-type of switch for manually actuating the tool;
(b) an electric motor in the housing connected to said switch;
(c) said motor including an armature having an armature shaft journaled in bearings forwardly and rearwardly in said housing; the rearward portion of said armature shaft being of larger diameter than the forward portion, and the respective bearing for said rearward portion being correspondingly larger than the respective forward bearing;
(d) a commutator carried on the forward portion of said armature shaft between said armature and the respective forward bearing for the armature shaft, and electrical brushes mounted in the forward portion of said housing for engaging said commutator;
(e) said housing having a longitudinal barrel parallel to said motor and spaced laterally therefrom, and said barrel having a floating ram guided for reciprocation therein;
(f) means including a reciprocating mechanism and a vertically-journaled crankshaft driven by the rearward end of said armature shaft, through cooperating bevel gears, one gear on said rearward end of said armature shaft, and the other gear on said crankshaft, for reciprocating said ram, whereby the larger diameter rearward bearing for the armature shaft accommodates the relatively-higher mechanical loads occasioned by the crankshaft and the reciprocating mechanism;
(g) a gear journaled for rotation in the housing forwardly of said barrel; said gear having integral socket means formed therein for receiving the shank of a tool bit, the end of which is struck repeatedly and directly by said ram;
(h) gearing means driven by the forwardmost end of said armature shaft, forwardly of the respective forward bearing for the armature shaft, for driving said gear; and
(i) a torque-responsive slip clutch means in said gearing means.

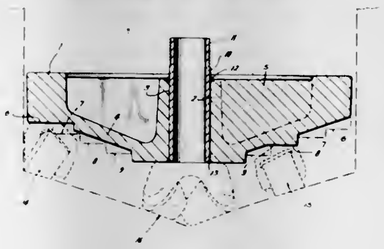
3,203,491
FISHING TOOL WITH MAGNET AND FLUID PORTS
Gerald O. Turley, Box 166, Musselshell, Mont.
Filed Feb. 28, 1963, Ser. No. 261,595
17 Claims. (Cl. 175—235)

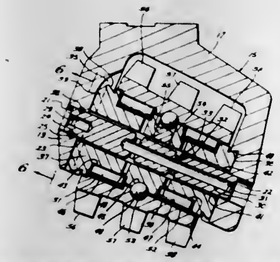
1. A retrieving apparatus comprising a tubular body portion having an open lower end, a fluid entry defined in one end of said body portion, a first passage defined in said body portion and disposed in communication with said entry, a second passage defined by said body portion, and ports providing communication between said passages, outlet means communicating said first passage with the exterior of said body portion, movable means located within said first passage, means releasably closing said outlet means, retrieving means connected to said movable means, said movable means being shiftable be-



tween a first position freeing said ports for communicating the first and second passage and a second position blocking said ports, said retrieving means being located within a tubular body portion adjacent the lower open end for retrieving when said movable means is in said second position.

3,203,492
LARGE HOLE EARTH BORING DRILL BIT
Carl L. Lichte, Dallas, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 255,420
13 Claims. (Cl. 175—355)

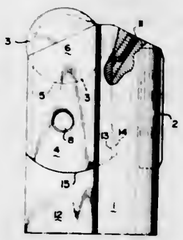




2. An earth boring drill bit comprising a head of generally disc shape about a central axis and having means on one face for securing a rotary driving stem to the head concentrically with said axis, a series of pairs of cutter support arms extending from the opposite face, the pairs being spaced from one another about said axis and

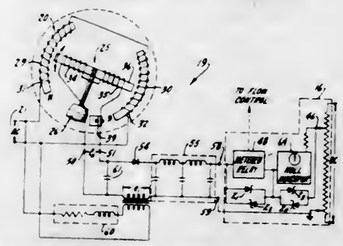
circumferentially aligned in groups, the groups being at different distances from said axis, the arms of each pair being at difftrent radial distances from said axis and having opposed, aligned bearing support parts for receiving and supporting the opposite ends of a cutter bearing, a cutter bearing shaft having spaced portions interlocked with the bearing support parts of the respective arms of each pair, said interlocked bearing support parts and spaced shaft portions comprising tightly interfitting projections and recesses on said parts and shafts extending in a direction transverse to and spaced from said shaft axes to brace the arms of each pair through said shafts and prevent movement of said arms toward and from one another, and projections and recesses on said shafts and one arm of each pair having radially extending interengaging surfaces to prevent rotation of said shafts relative to said arms, and a rotating type cutter rotatably mounted about each such shaft between the arms with which the shaft is interlocked.

3,203,493
DEEP-HOLE DRILL
Ernst Reidar Bergström, Stockholm, Sweden, assignor to Stora Kopparbergs Bergslags Aktiebolag, Falun, Sweden, a joint-stock company of Sweden
Filed May 3, 1963, Ser. No. 277,892
7 Claims. (Cl. 175—383)



1. A deep-hole drill comprising a drill rod having a longitudinal laterally extending base, a rotatably adjustable blade having a peripheral cutting edge and resting on said base, a holding member resting on the base in rear of the blade and having a front seat for the blade conforming to the said edge of the blade, said holding member having a forward portion projecting over part of the blade, and means for clamping the holding member to said drill rod.

3,203,494
POSITION INDICATING SYSTEM
Howard C. Roberts, Urbana, Ill., assignor to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 19, 1963, Ser. No. 266,380
2 Claims. (Cl. 177—1)



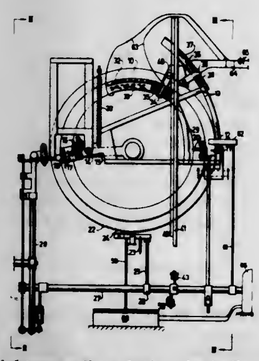
1. In a system for controlling material movement from a source to a measuring station having a selector with an adjustable D.-C. signal output corresponding to a predetermined quantity of material movement, the combina-

tion comprising, a comparator for receiving and comparing the selected D.-C. signal with a variable D.-C. signal, a controller responsive to said comparator for regulating movement of the material, a sensing element continuously varying from a reference position in response to continuous movement of material to the measuring station, an A.-C. signal source, and an inductive transducer energized by said A.-C. signal and coupled to said sensing element for effectuating said D.-C. signal at said comparator which varies substantially linearly with displacement of said sensing element from its reference position, said inductive transducer including, a primary winding energized by said A.-C. source to produce a leakage flux field, and a secondary winding, means for coupling one of said windings for movement with said sensing element and the other of said windings being maintained stationary, said secondary winding having a null position when said movable element is at said reference position and a linearly proportional output signal as said secondary winding is relatively moved from said null position, and means for rectifying said secondary winding output signal, said controller terminating material movement in response to said comparator sensing that the selector signal and the transducer signals are substantially equal.

3,203,495
WEIGHT-RECORDING WEIGHING MACHINES

Nils Einar Lindberg, Koralivagen 16, and Olle Hjalmar Lundblad, Birger Jarlsgatan 5B, both of Jonkoping, Sweden

Filed Mar. 14, 1962, Ser. No. 179,759
Claims priority, application Sweden, Mar. 16, 1961, 2,813/61
10 Claims. (Cl. 177—2)



1. In a weight-recording device, including a rotatable shaft whose angular position is proportional to the instantaneous magnitude of the weight measured, a disc carrying numerical printing indicia, representative of the magnitude of the weight measured, associated with a printing means, and a second rotatable shaft operative by the weighing device when the final value of the weight measured is reached, the improvement comprising:

(a) a plurality of electrical contacts secured to one side of said disc in a preselected, coded arrangement representative of corresponding ones of said numerical indicia;

(b) a probe head pivotally mounted above said contacts and on one side of said disc and adapted to pivot toward and away from said contacts;

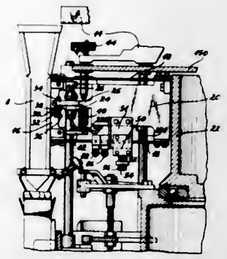
(c) a plurality of electrical probes arranged in said probe head in a manner such that said probes are selectively energized when in contact with said contacts; and

(d) actuating means connecting said second shaft to said probe head and adapted to bring said probes into contact with said contacts when said second shaft is rotated.

3,203,496
WEIGHING HEAD FOR WEIGHING MACHINE AND METHOD

Albert D. Harmon, Durham, N.C., assignor to Sperry Rand Corporation, Wilmington, Del., a corporation of Delaware

Filed July 24, 1963, Ser. No. 297,338
7 Claims. (Cl. 177—210)

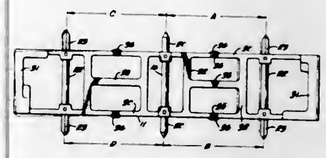


1. In a weighing apparatus; a movable support; a pair of vertically spaced generally parallel leaf springs mounted at their inner ends on said support; a weighing bucket mounted on and spanning the outer ends of said leaf springs; means for detecting vertical movement of said bucket to a predetermined level; and adjustable means operatively connected to said bucket and said support for changing the effective resistance of said springs to downward movement of said bucket, said adjustable means comprising a longitudinal guide, generally parallel to said leaf springs, and having one end carried by said support and the other end carried by means fixed relative to said bucket; and a weight member adjustable movable along side guide.

3,203,497
WEIGHING SCALE LEVER

Warren J. Schieser and William Hecox, Columbus, Ohio, assignors to National Industrial Products Company, Columbus, Ohio, a corporation of Ohio

Filed Oct. 24, 1963, Ser. No. 318,650
8 Claims. (Cl. 177—251)

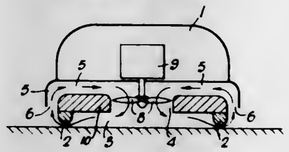


1. A lever for use in a weighing scale comprising a frame-like body including transversely spaced, longitudinally extending members, pivot members on said longitudinally extending members of the lever and extending transversely thereof at longitudinally spaced positions, said longitudinally extending members being provided with slits located between said pivot members, and an additional longitudinally extending member spaced transversely intermediate said first longitudinally extending members, and extending in both directions longitudinally beyond said slits, and means adjustably mounted in said slits to selectively expand therein to stretch or bend said intermediate member.

3,203,498
VEHICLES SUPPORTED ON A CUSHION OF AIR WITH RECOVERY MEANS FOR ESCAPING CURTAIN FLUID

Christopher Sydney Cockerell, East Cowes, Isle of Wight, England, assignor to Hovercraft Development Limited, London, England, a British company

Filed Oct. 14, 1960, Ser. No. 62,649
Claims priority, application Great Britain, Oct. 16, 1959, 35,163/59
12 Claims. (Cl. 180—7)

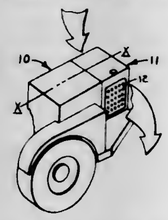


1. A vehicle which, in operation, is supported above the surface over which it operates by at least one cushion of pressurised gas, having a body, at least one projection depending below the plane of the bottom surface of the vehicle body and bounding a space beneath the vehicle, at least one supply port situated on one side of the projection, at least one recovery port situated on the other side of the projection, that port which is situated on the outside of the projection being positioned immediately adjacent to the latter so that the outer surface of the projection is at least in part substantially tangential to the flow of gas through said port, means for supplying gas under pressure to the supply port, and duct means communicating with said gas supplying means and said recovery port through which a flow of gas may be induced, the gas which issues from the supply port flowing beneath the projection and forming and containing with the projection the cushion of pressurised gas, at least part of the gas then flowing into the recovery port, the vertical cross-sectional profile of the projection for at least that part of its periphery associated with the port which is outside of and immediately adjacent the projection being rounded at the bottom and having an outer surface which extends upwardly towards said last named port, whereby the gas flowing beneath the projection at that part of its periphery is constrained to follow the profile by the "Coanda" effect, the recovered gas recirculating through the means for supplying gas under pressure to the supply port.

3,203,499
COOLING ARRANGEMENT FOR SUPERCHARGED ENGINES

Erwin J. H. Bentz, Washington, and Robert R. McCutchen, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed June 8, 1962, Ser. No. 201,187
7 Claims. (Cl. 180—68)

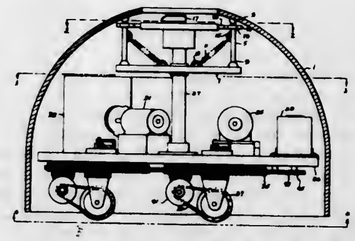


6. A cooling arrangement mounted on a land vehicle having an engine, said vehicle arranged for movement in the direction of a longitudinal axis thereof, said cooling arrangement comprising an air cooler for receiving engine consumed air and having cores arranged on one side of said longitudinal axis for guiding ambient air therethrough, a second fluid cooling means arranged in laterally spaced relationship to said air cooler and having means for receiving ambient air therethrough, said second cooling means being positioned on the opposite side of said longitudinal axis and fan means mounted between said cooling means for rotation on an axis transverse to said longitudinal axis for urging ambient air through said air cooler and said second fluid cooling means.

3,203,500
AREA COVERING DEVICES

Howard A. Gabersen, 45 Pond St., Belmont, Mass., and Nader Hakimi, Box 1769, Teheran, Iran

Filed Oct. 22, 1962, Ser. No. 231,973
3 Claims. (Cl. 180—79.1)

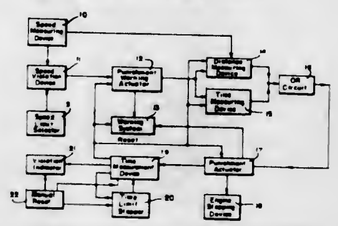


1. An area covering device comprising at least three wheels, means for driving said wheels, means for maintaining said wheels aligned, means for percepting a barrier, means for stopping said device after perception of a barrier, means for causing said device to back up substantially along its previous course of travel after coming to a stop, means for causing said device to cease backing up when the perception means is out of range of said barrier, means for substantially randomly altering the alignment of said wheels after said device has ceased backing up, and means for driving said device forward after realignment of said wheels.

3,203,501
AUTOMOTIVE SPEED CONTROL SYSTEM

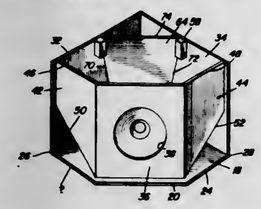
Earl C. Carter, Charleston, Frank M. Ellison, South Charleston, and John B. Kreer, Morgantown, W. Va., assignors, by direct and mesne assignments, to Ell-Car Automatic Speed Control Systems, Inc., Charleston, W. Va., a corporation of West Virginia

Filed May 3, 1963, Ser. No. 277,878
19 Claims. (Cl. 180—82.1)



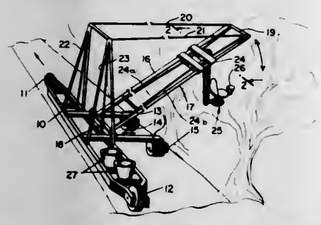
3. In an automotive signaling system, means responsive to excessive automobile speed for giving a first signal and for warning the driver of the automobile, automobile control means having a delay device actuated by the first signal for producing a second signal at a later time, said automobile control means including means that in response to the second signal stops the automobile for a limited time, and a second delay device actuated by the second signal for restoring the first delay device to normal after a period of time.

3,203,502
CORNER SPEAKER ENCLOSURE
Morris J. Rife, deceased, late of Riverside, Calif., by Marjorie M. Rife, widow, 3558 Beechwood Place, Riverside, Calif.
Filed Apr. 28, 1964, Ser. No. 363,305
3 Claims. (Cl. 181—31)



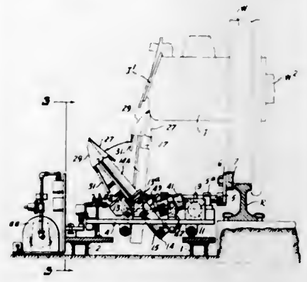
1. A corner speaker enclosure comprising a hollow cabinet shaped to conform with the corner of a room and including a vertical corner and two horizontal corners extending in diverging relation, said cabinet including an opening at the remote ends of said corners, and a baffle extending diagonally across each corner of the cabinet with the baffle terminating at one edge to define a portion of each of said openings with the baffle defining a passageway decreasing in cross-sectional area towards the point of intersection of the corners of the cabinet, the adjacent ends of said baffle being connected to form an opening remote from the intersection of the corners of the cabinet, a transverse front wall forming a closure for the front of the cabinet except for the openings, a top wall forming a closure for the top of the cabinet except for the opening, and a speaker mounted on the front wall for producing sound, said front wall having opening means therein for allowing sound to emanate forwardly from the speaker, the opening defined by the inner ends of the baffles defining an opening for allowing sounds emanating from the rear of the speaker to pass into the passageways defined by the baffles whereby the tapered passageways define horns for allowing sound to emanate therefrom along the corners of the room.

3,203,503
TREE WORKING MACHINE
Roy J. Smith and Daniel T. Seamount, Riverside, and David W. Murphy, Garden Grove, Calif., assignors to The Regents of the University of California, Berkeley, Calif.
Filed Feb. 18, 1964, Ser. No. 345,679
6 Claims. (Cl. 182—2)



1. A supporting apparatus for tree workers, including: a frame structure positionable above the ground; a seat structure for said worker; a suspension and control means for suspending and controlling said seat, said control means including a pair of control members coupled at upper horizontally spaced points to said frame structure at their upper ends and to lower horizontally spaced points on said seat structure at their lower ends, the spacing between the lower ends of said control members being less than the spacing between the upper ends thereof, whereby leaning of said worker to one side of said seat structure tips said seat structure and causes said seat structure to swing in the direction in which said worker leans.

3,203,504
AUTOMATIC TRAVELLING JOURNAL BOX OILER
Donald D. Bryant, 1301 Highfield Drive, Douglas Manor Park, Clearwater, Fla.
Filed Sept. 27, 1962, Ser. No. 229,255
11 Claims. (Cl. 184—2)

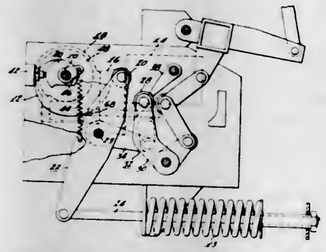


1. An automatic travelling journal box oiler adapted to be disposed at the side of a railroad track upon which railway cars are rolling having journal boxes provided with box lids comprising, a frame; a carriage mounted on said frame to travel parallel with said track; a first cylinder pivotally mounted on said carriage; an extensible member within said cylinder adapted when extended to raise a lid; a second piston and cylinder arrangement mounted on said carriage engaging the first cylinder for pivoting the same, said second piston and cylinder normally maintaining said extensible member retracted out of the path of the journal box; a roller carried by said carriage adapted to be engaged successively by the wheels of the railway car and to move the carriage by and with said engaging wheel; means whereby when the carriage has been moved a certain distance by the engaging wheel the first cylinder will be shifted by the second piston and cylinder arrangement to bring the extensible member into contact with the related journal box of said engaging wheel and to extend the extensible member to partially open the journal box lid and to inject a controlled amount of lubricant through the extensible member into said partly opened journal box; and means whereby upon further movement of the carriage the extensible member with its cylinder will be retracted by the second piston and cylinder arangement away from the journal box, and the carriage will be returned to a normal position to await activation by the next engaging wheel of said car.

3,203,505
TRANSMISSION MECHANISM
Louis Hannauer, Boston, Mass., assignor to Allis-Chalmers, Milwaukee, Wis.
Filed June 6, 1963, Ser. No. 286,017
3 Claims. (Cl. 185—40)

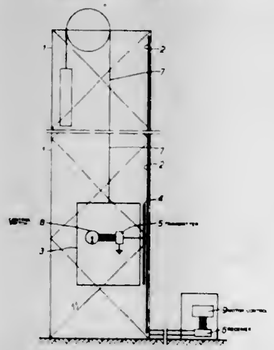
1. In combination, a motor, a spiral worm driven by said motor, a gear driven by said worm, said gear having a toothed portion and a toothless portion and having a movable detent on said toothless portion, a support on which said gear is rotatably mounted, first and second cams connected to said gear and rotatable therewith, a lever mounted on said support and movable by said first cam, a spring on said support and movable by said lever from a discharged to a charged condition, said spring being dischargeable to move said lever to perform a function, means for releasably latching said spring in charged

condition, a switch operated by said second cam for energizing and deenergizing said motor, and biasing means



connected to said gear and to said support for rotating said gear so that said detent engages said worm.

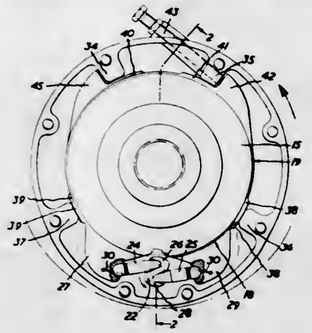
3,203,506
RADIO COMMUNICATION MEANS BETWEEN ELEVATOR CAGE AND MOTOR CONTROL
Peter Anthony Cummins, Aldershot, England, assignor of a joint interest to A.C.E. Machinery Limited, London, England, a British company
Filed Aug. 15, 1962, Ser. No. 217,167
Claims priority, application Great Britain, Aug. 16, 1961, 29,551/61
1 Claim. (Cl. 187—29)



In a lift comprising a tower, a cage adapted to be moved up and down said tower by a motor, motor control means, communication means comprising an electrical conductor tube on said cage extending in the direction of movement of said cage, an electrically insulated conductor passing through said tube and running the length of said lift tower to provide a capacitive coupling between said tube and conductor, a radio frequency transmitter on the cage connected to said tube and a receiver operatively connected to said conductor and said motor control means, a switch assembly for the transmitter mounted on said cage for modulating the transmitter output to produce control signals conveyed by said coupling to the receiver where they are utilized to control said lift motor control means.

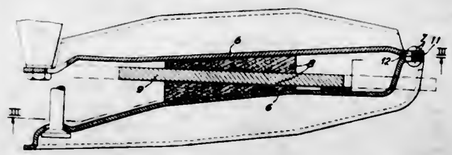
3,203,507
SPREADING TYPE DISC BRAKES
David William Bond, Honeybourne, England, assignor to Girling Limited, Birmingham, England, a British company
Filed Jan. 9, 1964, Ser. No. 336,660
Claims priority, application Great Britain, Jan. 11, 1963, 1,309/63
8 Claims. (Cl. 188—72)

1. A disc brake comprising a stationary housing, a rotatable shaft within said housing, a pair of axially spaced discs slidably mounted on said shaft, annular braking surfaces on opposite sides of each disc, braking means for engagement with said annular braking surfaces, axially spaced radial surfaces in said housing, axially separable pressure plates located between the discs for bringing the discs into frictional engagement with the radial surfaces in the housing, co-operating inclined recesses in adjacent faces of said pressure plates, balls or rollers located in the recesses for urging apart the pressure plates on relative angular movement between the pressure plates, angularly spaced pilot lugs projecting radially inwards from the housing and adapted to co-operate with portions of the



outer peripheries of the plates to locate them centrally with respect to the housing, a cam for effecting relative angular movement between said plates when the brake is applied, an abutment stop for arresting angular movement of at least one of said plates defined at least in part by one of said angularly spaced pilot lugs, and a bolt passing through an opening in the housing and screwed through said one pilot lug for adjusting the angular position of said abutment stop, said bolt at its outer end projecting from the housing and externally accessible for adjustment, and at its inner end engageable with a radial lug on said one pressure plate for arresting angular movement of said pressure plates.

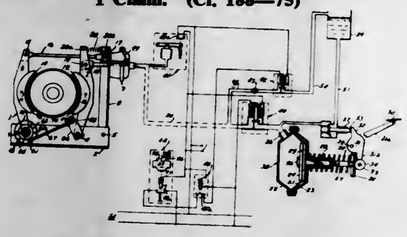
3,203,508
AUTOMATICALLY ADJUSTABLE BRAKE MECHANISM
Antoine Brueder, Paris, France, assignor to Societe Anonyme Andre Citroën, Paris, France
Filed May 21, 1963, Ser. No. 281,891
Claims priority, application France, May 22, 1962, 898,303, Patent 1,334,984
2 Claims. (Cl. 188—73)



1. A brake comprising a rotary disc, two brake shoes with opposite linings disposed on either side of said rotary disc parallel to the plane of said disc and adapted to be pressed against said disc, one end of one shoe being pivotally mounted on a fixed pivot pin, the other end of the same shoe being connected through rivet means to the corresponding end of the other shoe, said connected ends having portions of reduced cross-sectional section in relation to the remaining portion of the shoes so as to be the only yielding portions during a brake application, the yielding being elastic if the linings are

moderately worn and permanent for any additional movement of said linings towards each other as a consequence of the wear thereof.

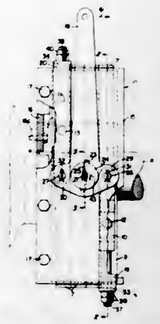
3,203,509
SELF-ADJUSTING HYDRAULIC BRAKES
Donald L. Bohn, Battery Park Hotel, Asheville, N.C.
Original application Sept. 12, 1960, Ser. No. 55,381, now abandoned. Divided and this application July 23, 1964, Ser. No. 385,558
1 Claim. (Cl. 188—75)



A brake means comprising a base, first and second brake arms, first and second brake shoe means mounted to said first and said second brake arms, respectively, a brake drum positioned between said brake shoe means, said brake arms maintaining said brake shoe means operatively positioned with respect to said drum; means pivotally mounting said brake arms to said base; biasing means acting upon said brake arms in directions urging said brake shoe means away from said drum; pressure means connected to each of said brake arms in a manner such that actuation of said pressure means forces said brake shoe means against said drum; said means pivotally mounting said brake arms being a first and a second pin keyed to said first and said second brake arms, respectively; an automatic brake shoe centering means operatively mounted to said pins to insure that said brake shoe means move equal distances away from said brake drum each time said pressure means is deactuated; said centering means comprising a clutch device, a first portion of said clutch device keyed to said first pin for movement in unison therewith, a second portion operatively mounted for pivotal movement relatively to said first pin about an axis coinciding therewith, means providing operative engagement between said portions, a mechanical connecting means joining said second portion to said second said pin; said connecting means comprising a crank and a link; said crank securely fastened to said second pin and rotatable therewith; said link operatively connected between said second portion of said clutch and said crank such that upon deactuation of said pressure means said biasing means is effective to pivot said first and said second pins through equal angles but in opposite directions.

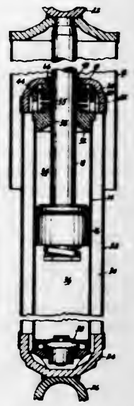
3,203,510
WRAP PARKING AND EMERGENCY BRAKE
Kenneth P. Hillegass, Copley, and Carl E. Bricker, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Aug. 26, 1963, Ser. No. 304,490
5 Claims. (Cl. 188—77)

1. In a brake, the combination of
a rotatable brake drum,
a non-rotatable brake band positioned under internal spring tension in closely spaced helical convolutions around the outer peripheral surface of said brake drum,
non-rotatable frame means slidably supporting the ends of said brake band, said band being free for sliding movement with respect to said frame means in a direction to tighten said band on said drum, limiting means secured to each end of said brake band to limit the sliding movement thereof with respect to said frame means in a direction to unwind off said drum,
actuating lever means having small opposed actuation arms on one end thereof mounted at a point centrally positioned between said actuating arms for unrestricted pivotal movement on said frame means, said actuation lever means being further mounted to said frame means so as to have limited linear movement in a direction substantially tangent to portions of the convolutions of said brake band,



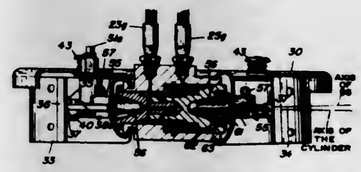
a pair of link means slidably receiving each end of said brake band and connected pivotally to one of said actuation arms so that pivotal movement of said actuating lever means in one direction causes said link means to engage said limiting means to wrap said brake band tightly around said brake drum causing said actuating lever means to move linearly in the direction of rotation of said brake drum to cause one of said link means to be limited in its movement by said frame means to shift the effective pivot point of said actuating lever means to the pivot point of said link means at its respective actuation arm operatively connecting the limited end of said brake band.

3,203,511
ROD SEAL FOR SHOCK ABSORBER
Paul J. Long, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,712
5 Claims. (Cl. 188—100)



1. In a shock absorber the combination of cylinder means, a first closure element for sealing the upper end of said cylinder means, a piston rod directed through said first closure member in sliding supported engagement therewith, means enclosing said cylinder means for forming a fluid reservoir therebetween, a second closure element cooperating with said enclosing means for forming a part of the fluid reservoir, said first closure and second closure elements cooperating to form a sealing chamber, a sealing member within said sealing chamber having a plurality of annular rod gripping inner peripheral portions located in sealing engagement with the outer periphery of said piston rod, and means for biasing said sealing member between said first and second closure members to bias said inner peripheral portions thereon into tight sealing engagement with said rod, said sealing member including an elongated upwardly directed lip portion engaging the outer periphery of the piston rod above the upper head of the sealing member at an acute angular relationship with the piston rod, said lip having an inner surface diverging from the piston rod from the free end of the lip, said inner surface and rod forming a space between said lip and rod for receiving a portion of the lip in wiping engagement with the rod upon a first predetermined movement of said rod, said lip serving to wipe foreign matter from the outer periphery of the rod upon movement thereof opposite to said predetermined direction.

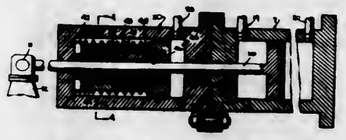
3,203,512
HYDRAULIC DRUM BRAKE
Pierre André Lepelletier, Chatou, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a corporation of France
Filed Feb. 8, 1963, Ser. No. 257,221
Claims priority, application France, Feb. 13, 1962, 887,845
19 Claims. (Cl. 188—152)



1. A hydraulic drum brake comprising gripping shoes which are adapted to come into frictional contact with a rotating drum when they are subjected to expansion, and which are guided with respect to a fixed support incorporating the brake-plate when they are subjected to elastic forces tending to return them towards a defined position of rest, in which said shoes co-operate with two pistons sliding respectively in two coaxial bores which are formed in a cylinder and of which one has a larger diameter than the other, the large piston having a tail-rod enclosed by a movable ring which is axially slidable relative to said tail-rod and which is engaged in and axially slidable relative to the small bore, a primary chamber coupled to a fluid-pressure circuit being defined in said small bore by the small piston, the tail-rod of said large piston, and said ring, while a secondary chamber coupled to another fluid-pressure circuit is defined in said large bore by the large piston and said ring.

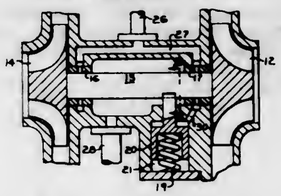
3,203,513
BRAKING MEANS FOR A HYDRAULIC DRIVE CYLINDER
Earle F. Allen, Norwell, Mass., assignor of one-half to Valentine E. Macy, Jr., New York, N.Y.
Filed May 29, 1961, Ser. No. 113,367
7 Claims. (Cl. 188—170)

1. A fail-safe brake for a hydraulic drive cylinder having a movable drive piston and an elongated piston rod coupled thereto within said cylinder and contacting the hydraulic fluid comprising the combination of a generally cylindrical elongated brake shoe having a generally cylindrical inner braking surface surrounding said piston rod and having a flared outer surface, an elongated generally cylindrical braking piston surrounding said brake shoe and having a flared inner surface complementary



to the outer flared surface of the brake shoe, a spring means engaging said braking piston urging said flared surfaces into engagement and said braking surface against said piston rod, and an enclosed cavity adjacent a portion of the braking piston for applying hydraulic pressure against said braking piston to disengage said flared surface.

3,203,514
TURBOCHARGER BRAKE
James M. Davies, Orinda, Calif., and William G. Johnson, Pekin, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Apr. 10, 1963, Ser. No. 272,129
4 Claims. (Cl. 188—170)

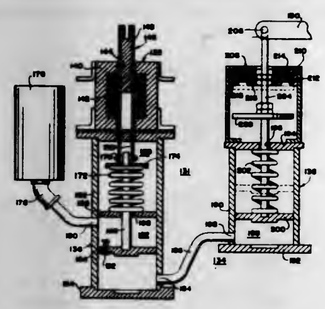


1. In combination with an engine having a turbocharger and a lubrication system supplying oil under pressure to turbocharger bearings when the engine is in operation, means to prevent operation of the turbocharger upon starting of the engine until lubricant under pressure reaches the turbocharger bearings comprising, a brake positioned to engage the turbocharger, a piston connected to the brake, a cylinder enclosing the piston, a spring on one side of the piston urging the brake into engaged position and means to direct lubricant under pressure from said lubrication system through at least one of said turbocharger bearings and to said cylinder at the opposite side of the piston to oppose the spring force and disengage the brake.

3,203,515
ELECTRICAL BRAKE
Panfilo Trombetta, 329 N. Milwaukee St., Milwaukee, Wis.
Original application Sept. 15, 1961, Ser. No. 138,316, now Patent No. 3,151,708, dated Oct. 6, 1964. Divided and this application June 22, 1964, Ser. No. 386,478
4 Claims. (Cl. 188—171)

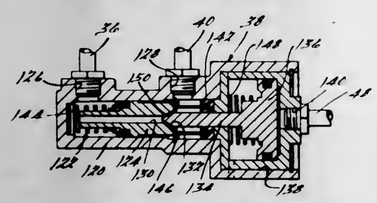
4. Electro-hydraulic actuating means comprising a secondary hydraulic cylinder; a piston in said cylinder reciprocally movable between a closed end position and a second position; a piston rod connected to said piston; spring means biasing said piston to said closed end position; a direct current solenoid including an annular frame carrying a direct current winding, and a disk-shaped armature secured to said piston rod, said armature engaging said frame when said piston is in said second position; a hydraulic primary pump cylinder closed at

both ends, a pump piston reciprocally movable in said pump cylinder; a piston rod connected to the said pump piston and extending through one end of said pump cylinder; spring means biasing said pump piston toward said one end; conduit means connecting the other end



of said pump cylinder with the closed end of said secondary cylinder; and an alternating current solenoid operatively connected to the last mentioned piston rod effective when energized to drive said pump piston toward said other end of said pump cylinder against the return bias of said last mentioned spring.

3,203,516
ANTI-SKID BRAKE CONTROL
William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,507
6 Claims. (Cl. 188—181)



1. A vehicle brake system including a source of fluid pressure, operator controlled means for regulating the pressure delivered from said source of fluid pressure, a brake cylinder arranged for pressurization by said source of fluid pressure, normally deactive means between said source of fluid pressure and said brake cylinder movable in a direction opposing the transmission of fluid pressure from said source of fluid pressure to said brake cylinder, the opposing movement of said last named means being motivated by fluid pressure regulated by said operator controlled means, and means for activating said last named means upon the occurrence of conditions associated with excessive brake application.

3,203,517
MEANS FOR PROTECTIVELY CONCEALING THE STITCHING OF ARTICLES
Leo Stein, 7022 S. Shore Drive, Chicago, Ill.
Filed Feb. 15, 1963, Ser. No. 258,828
2 Claims. (Cl. 190—54)

1. An article having components including edge portions secured together in adjacent relation by means of stitching to form a joint,

and a bead-like protective buffer strip engaged over the joint and having opposite engagement flanges with respective inner engaging and outer buffer faces,

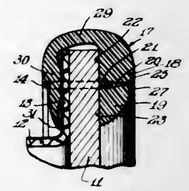
one of the flanges engaging one of the components and the other of the flanges engaging the other of the components,

said stitching securing said flanges to the components,

one of said flanges being of substantial thickness and having a concealed longitudinally extending slot normally open outwardly from said outer buffer face of this flange,

said slot being of substantial depth between coacting closely adjacent solid body portions joined by a web adjacent the inner face of the flange and affording opposed closely adjacent walls defining the slot,

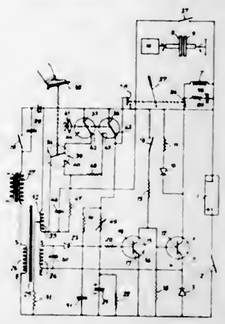
said web being engaged by said stitching which is thereby protectively housed in said slot between said body portions,



said slot being as narrow as practicable and just wide enough to enable reception of the stitching between said closely adjacent walls,

said one flange having a free edge corner thrusting against the engaged component and biasing said solid portions toward one another so that they abut at the outer side of said slot whereby the outer face of said one flange presents a substantially solid bead surface on which the outer side of the slot is apparent only as a barely perceptible fine line in said outer buffer face, a longitudinally coextensive resiliently flexible connecting flange portion connecting said flanges and being substantially thinner than said one flange, and the other of said flanges being substantially thinner than said one flange but having an inwardly arched thicker portion opposite said web through which the stitching engages said other flange.

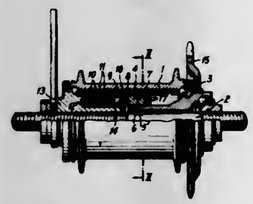
3,203,518
DEVICE FOR CONTROLLING ELECTRIC CLUTCHES OF VEHICLES
Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Jan. 25, 1963, Ser. No. 253,900
Claims priority, application France, Feb. 2, 1962, 886,853, Patent 1,323,553
11 Claims. (Cl. 192—.052)



1. An electric clutch with a control circuit therefor, said control circuit controlling said electric clutch in a motor vehicle as a function of motor speed, said control

circuit comprising an ignition system including a direct current source, an ignition coil, a distributor, and breaker points, a power transistor, said power transistor controlling the output of said direct current source and being controlled by the ignition current impulses to the motor, a control transistor, a diode, a condenser, a transformer, the primary of said transformer being connected in series with the ignition coil and the secondary being connected across said condenser through said diode, said condenser being further connected between the emitter and base of said control transistor so as to be charged each time the breaker points open, a resistance one end of which is connected between said condenser and the base of said control transistor and the other end of which is connected to said direct current source, the collector of said control transistor being connected to a resistance and to the base of said power transistor, said power transistor energizing said electric clutch through the collector, a power diode being connected to the emitter of said power transistor for blocking said power transistor when the motor is not running, whereby polarities are so selected that each time the contact breaker opens the voltage of said current source is added through the resistance to the charging voltage of said condenser to provide a steep-sided wave of substantially constant duration, the value of said resistance being such that said control transistor becomes completely conductive between the charging waves whereaas it is blocked by the passage of each of said charging waves to make the power transistor conductive, the maximum current in the clutch winding being obtained when the charging waves overlap above a motor speed selected by setting the values of said resistance and said condenser, said condenser discharge being limited by the low impedance of the base to emitter circuit of said control transistor at lower motor speeds and between said charging waves.

3,203,519
FREEWHEELING HUB WITH COASTER BRAKE
Hans Joachim Schwerdhöfer, Schweinfurt am Main, Germany, assignor to Fichtel & Sach A.G., Schweinfurt am Main, Germany
Filed May 7, 1963, Ser. No. 278,615
Claims priority, application Germany, May 11, 1962, F 36,778
4 Claims. (Cl. 192—6)



1. A freewheeling hub for a bicycle and the like comprising, in combination:

(a) a support

(b) hub shell means rotatable on said support about an axis;

(c) a driver member rotatable on said support in a forward direction and in a backward direction;

(d) a ratchet coupling interposed between said driver member and said hub shell means for selectively rotating said hub shell means about said axis when said driver member rotates in said forward direction, said ratchet coupling including a plurality of ratchet ribs on said hub shell means; and a pawl engageable with each of said ribs and connected to said driver member for joint rotation therewith about said axis; and

(e) multiple disk brake means including

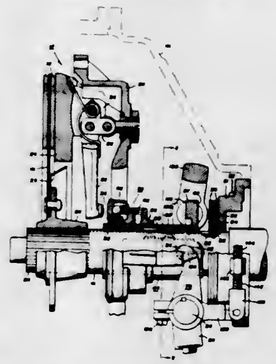
(1) a plurality of first friction disk means secured on said support against rotation about said axis;

(2) a plurality of second friction disk means having respective projections, each projection engaging one of said ratchet ribs and thereby securing the second friction disk means to said hub shell means for rotation therewith,

(3) said first and second friction disk means being axially movable relative to each other toward and away from a position of braking engage, ment, and

(4) pressure means responsive to backward rotation of said driver member for moving said friction disk means toward said position thereof.

3,203,520
CLUTCH BRAKE
Robert S. Root, Syracuse, N.Y., assignor to Lipe-Rollway Corporation, Syracuse, N.Y., a corporation of New York
Filed Mar. 16, 1961, Ser. No. 96,131
1 Claim. (Cl. 192—13)



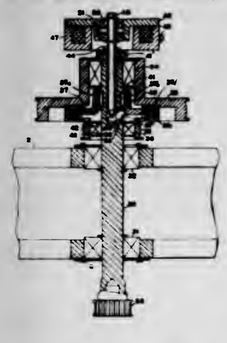
In a friction clutch having a driving member and a driven shaft normally in driving engagement, brake means for braking said driven shaft after said driving engagement is disengaged, said brake means comprising a sleeve journalled on said driven shaft, clutch releasing means mounted on said sleeve, motion transmitting means mounted on a pair of split shafts and being operable when actuated to move said clutch releasing means on said sleeve toward said driving member to disengage said driving engagement between said driving member and said driven shaft, motion reversing means operable upon actuation of said motion transmitting means to move said sleeve rearwardly on said driven shaft, the rearward end of said sleeve being formed with a brake face, a fixed brake located a spaced distance rearwardly of said brake face formed on said sleeve, a brake member fixed to said shaft intermediate said brake face formed on said sleeve and said fixed brake face, whereby rearward movement of said sleeve engages said brake member fixed on said driven shaft between said fixed brake face and said brake face formed on said sleeve to brake the rotation of said driven shaft, said motion transmitting means comprising a first yoke member mounted for rotation on one of said split shafts, said yoke member having a pair of arms engaging said clutch releasing means whereby oscillation of the split shaft on which said first yoke member is mounted moves said clutch releasing means toward said driving member, a second yoke member mounted on the second of said split shafts, a pair of arms formed on said second yoke member engaging said sleeve, and linkage mechanism for transmit-

ting the movement of said first yoke member to said second yoke member to move said sleeve rearwardly on said driven shaft.

3,203,521
HIGH SPEED MAGNETIC CLUTCH MEANS

Karl F. Frank, Garden City, N.Y., assignor to Micro Balancing, Incorporated, Garden City Park, N.Y.

Filed Feb. 1, 1963, Ser. No. 255,506
5 Claims. (Cl. 192—48)



5. Magnetic clutch means for a rotary shaft drive comprising,

a frame,

a driven shaft rotatably mounted in said frame,

said shaft having an axial shaftway in one end,

a pin member mounted in said shaftway for axial movement,

said pin member having a cone point at one end,

a metal plate rotatably mounted to the other end of said pin member,

electro-magnetic coil means fixedly mounted on said frame adjacent said plate,

said shaft having a plurality of equally spaced apertures extending transversely through said shaftway, adjacent to said bottom of said shaftway,

a plurality of balls one set in each of said apertures,

a clutch member mounted on said shaft and having a tapered portion adjacent said balls,

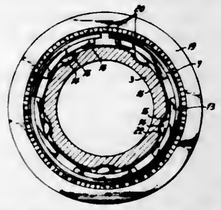
said clutch member being keyed to said shaft but movable axially along said shaft so that when said coil is energized said pin member is moved and said cone point moves said balls outwardly forcing said clutch member in one direction.

3,203,522
CLUTCH WITH SYNCHRONIZING RING

Leopold Schmid, Stuttgart, Germany, assignor to Firma Dr. Ing. h.c. F. Porsche KG, Stuttgart-Zuffenhausen, Germany

Filed Jan. 25, 1961, Ser. No. 84,902
Claims priority, application Germany, Feb. 11, 1960, P 24,419
16 Claims. (Cl. 192—53)

1. A synchronization arrangement for synchronizing two rotary parts adapted to rotate relative to each other, comprising shifting means slidably mounted on one of said parts for rotation in unison therewith and provided with engageable surface means, springy split synchronizing ring means rotatably supported on the other of said parts for unlimited rotation with respect thereto, said ring means being adapted to cooperate with said shifting means and to be rotated thereby, said synchronizing ring means being provided along the outer periphery thereof with engageable surface means for engagement with the engageable surface means of said shifting means and along the inner circumference thereof with friction surface means, and frictional means frictionally engageable with said friction surface means and connecting means between said fric-

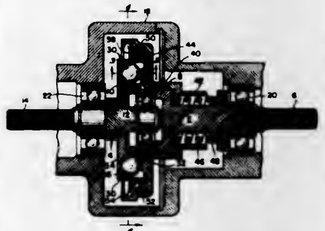


tional means and said other part providing limited rotational movement of the applying radial force to said frictional means.

3,203,523
CLUTCH WITH LOAD LIMITING DEVICE

John A. Gilder and Raymond S. Cole, Los Angeles, Calif., assignors to Electronic Specialty Company, Los Angeles, Calif., a corporation of California

Filed Oct. 3, 1963, Ser. No. 313,681
6 Claims. (Cl. 192—56)



1. A clutch device for connecting and disconnecting a drive shaft and a driven shaft, comprising adjacent parts on the drive and driven shafts respectively, connecting means carried by the drive shaft part and movable toward and away from the driven shaft part, a spring normally urging the connecting means toward the driven shaft part to establish a driving connection between the parts, means operable upon a pre-determined increase in the load on the driven shaft for overcoming the force of said spring and moving the connecting means out of driving engagement with the driven part, and a lock-out device comprising means operable by centrifugal force created by the speed of rotation of the drive shaft and operable upon movement of the connecting means out of driving engagement with the driven part upon the said increase in the load on the driven shaft to lock the connecting means in position away from the driven shaft against the force of the spring.

3,203,524
OVERLOAD OR TORQUE LIMITING CLUTCHES

Olaf John Barclay Orwin, Quinton, Birmingham, England, assignor to Fisher & Ludlow Limited, Tipton, England, a British company

Filed July 12, 1963, Ser. No. 294,684
Claims priority, application Great Britain, July 21, 1962, 28,157/62
13 Claims. (Cl. 192—56)

1. A torque limiting clutch comprising:

(a) driving and driven clutch elements;

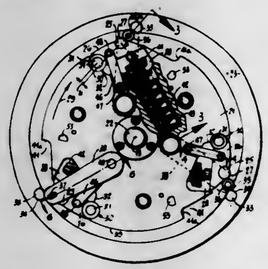
(b) means mounting said clutch elements for relative rotational movement about a common axis of rotation;

(c) one of said clutch elements being formed as an outer shell with the other element being disposed therewithin;

(d) a fulcrum member mounted on said inner element adjacent the periphery thereof and having at each of two opposite sides thereof oppositely directed fulcrum portions each of which is adapted for fulcrum engagement with said inner element;

(e) opposed torque transmitting abutments on the inner periphery of said outer element and on the outer periphery of the fulcrum member;

(f) a carrier member having a torque transmitting roller rotatable thereon;



(g) means mounting said carrier member for angular movement relative to the two clutch elements between a driving position in which the roller on diametrically opposite sides thereof engages between the opposed torque transmitting abutments, and a clutch disengaged position in which the roller is out of engagement with said abutments;

(h) spring means acting between the inner element and the fulcrum member to displace the latter in each of two opposite directions relative to the inner element about its respective two fulcrum portions towards the adjacent part of the outer element;

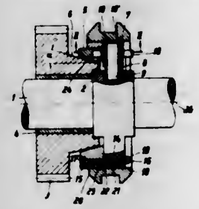
(i) means limiting said outward movement of the fulcrum member; and

(j) said roller in its driving position applying thrust to the torque transmitting abutment on the fulcrum member in a direction to displace the fulcrum member inwardly of the inner clutch element against said spring loading.

3,203,525
FRICTION CLUTCH

Fritz Herbst, Friedrichshafen, Germany, assignor to Zahnradfabrik Friedrichshafen, Aktiengesellschaft, Friedrichshafen, Germany

Filed Mar. 4, 1963, Ser. No. 262,669
Claims priority, application Germany, Mar. 21, 1962, Z 9,309
11 Claims. (Cl. 192—66)

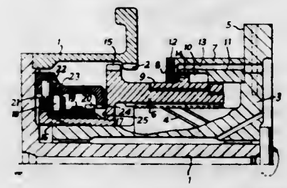


9. In a clutch of the class described, a rotative shaft, a clutch carrier mounted on said shaft and rotative therewith, a driven element to be coupled to said shaft for torque transmission, a friction ring carried on said shaft and a radial cam thereon and rotative therewith and disposed to exert axial thrust on said friction ring, said friction ring being axially shiftable for drive engagement with said driven element, and a cam element rotative with said carrier having a camming coaction with said radial cam, said friction ring being supported so as to have a predetermined degree of rotation relative to said cam element to effect an axial force component on said friction ring through said radial cam, said radial cam comprising a radial edge of said friction ring, said friction ring having a conical internal friction surface terminating at one face of said friction ring, and at an opposite face terminating at said radial edge.

3,203,526
SYNCHRONOUS SELF-SHIFTING CLUTCHES

Herbert Arthur Clements, Weybridge, Surrey, England, assignor to S.S.S. Patents Limited, Surrey, England, a British company

Filed Mar. 12, 1963, Ser. No. 264,630
Claims priority, application Great Britain, Mar. 16, 1962, 10,209/62
3 Claims. (Cl. 192—67)



1. A synchronous self-shifting clutch comprising a first rotary clutch member with clutch teeth, a second rotary clutch member, an intermediate member with clutch teeth and constrained for helical movement relative to the second clutch member whereby to bring the clutch teeth of the intermediate member into and out of engagement with the clutch teeth of the first clutch member, means for initiating precise inter-engagement of the clutch teeth of said intermediate member and of said first clutch member upon relative angular movement of said first and second clutch members in one direction, a cylinder, means mechanically connecting said cylinder to one of said second and intermediate members, a piston located within said cylinder, and means mechanically connecting said piston to the other of said second and intermediate members, means substantially closing said cylinder on one side of said piston, a liquid feed duct to said cylinder at the other side of said piston, said cylinder being otherwise substantially closed on the said other side, the clutch including means defining a leakage path to permit liquid to flow at a restricted rate from one side of the piston to the other upon relative axial movement of the piston and cylinder so that during movement of the intermediate member in one direction liquid is transferred from one side of the piston to the other side at a restricted rate to give a powerful damping action, and liquid is largely retained in the cylinder on the said other side of the piston in readiness to flow back to the said one side of the piston at a restricted rate upon movement of the intermediate member in the other direction to damp movement of the intermediate member in the said other direction.

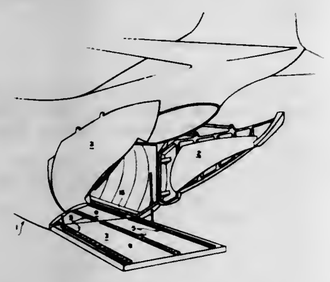
3,203,527
AIRCRAFT CARGO HANDLING SYSTEM

Richard E. Doetwyler, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Oct. 26, 1962, Ser. No. 233,405
3 Claims. (Cl. 193—35)

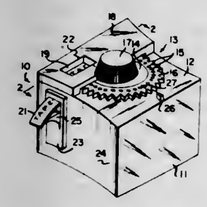
1. A cargo handling system in combination with an aircraft cargo compartment having a floor comprising: a plurality of roller sections extending in a longitudinal direction in the cargo compartment floor and forming at least a pair of parallel roller tracks in the cargo floor,

each roller section having a substantially flat elongate surface, said roller sections each having a plurality of rollers with effective roller surfaces extending outwardly from the side opposite said flat elongate surface and a first and second position relative to the floor in which movement from one position to the other is by inversion



of the roller sections, said first position placing the effective roller surfaces at a point above the cargo floor, and said second position placing the effective roller surfaces below the cargo floor, said flat elongate surfaces of the roller sections forming a part of the aircraft cargo compartment floor surface when the roller sections are in said second position.

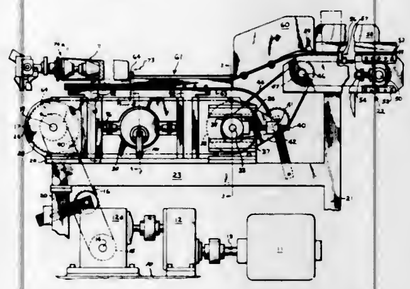
3,203,528
ELECTRICALLY OPERATED IMPRINTING APPARATUS
Benedict E. Bogeaus, Los Angeles, Calif., assignor to Tapeprinter, Inc., Beverly Hills, Calif., a corporation of Delaware
Filed Nov. 5, 1963, Ser. No. 321,518
1 Claim. (Cl. 197—604)



In an electrically energized solenoid operated imprinting apparatus adapted to imprint a preselected character upon an imprinting medium in strip form and to advance said strip automatically into position to receive a subsequent operation, the improvement comprising:

(a) an imprinting means;
(b) first means actuated by said solenoid connected between said imprinting means and said solenoid and momentarily actuated only upon energization of said solenoid to cause said imprinting means to form the character in said medium;
(c) strip advancing means;
(d) second means actuated by said solenoid connected between said strip advancing means and said solenoid and momentarily moved to a first position upon energization of said solenoid;
(e) spring means affixed to said second means for returning said second means to its original position only upon de-energization of said solenoid to thereby actuate said strip advancing means and advance said strip into cooperative position with said imprinting means to receive a subsequent operation;
(f) switch means connected to said solenoid;
(g) force applying means having first and second positions and being engageable with said switch means when in said first position to actuate said switch means;
(h) third means actuated by said solenoid connected between said force applying means and said solenoid and momentarily actuated only upon energization of said solenoid to move said force applying means to said second position to disengage said force applying means from said switch means thereby to produce only a momentary pulse of electrical energy;
(i) said first, second, and third means being operable simultaneously upon actuation of said force applying means to actuate said switch means.

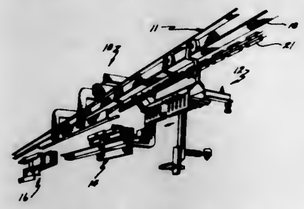
3,203,529
ARTICLE HANDLING APPARATUS
James D. Mallory, Maumee, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Dec. 3, 1962, Ser. No. 241,868
8 Claims. (Cl. 198—33)



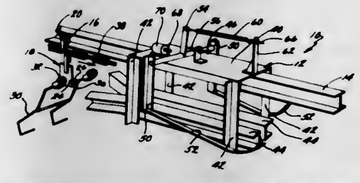
1. Apparatus for successively loading tumblers on spindles of a decorating machine comprising a first horizontal slideway for supporting tumblers placed thereon in an upright position, means for engaging and sliding tumblers in a straight line at spaced intervals on said slideway, a downwardly sloping slideway having a flat surface joined to the end of said first horizontal slideway, a second horizontal slideway positioned at the lower end of said sloping slideway, means carried by the second slideway for engaging the bottom portion of tumblers as they reach the second horizontal slideway for causing the tumblers to fall forward into horizontal position on said second horizontal slideway, and means engaging the closed ends of said tumblers for sliding said tumblers in succession in the direction of their fall into engagement with horizontal spindles of a decorating machine.

3,203,530
SELECTION AND TRANSFER DEVICE FOR CONVEYORS
Mario Thomas Sgriccia, Detroit, and Dean V. Brown, Port Huron, Mich., and Thomas C. McGow, Summit, N.J., assignors to Rapistan-Keystone, Inc., Detroit, Mich., a corporation of Michigan
Filed Dec. 30, 1963, Ser. No. 334,468
9 Claims. (Cl. 198—38)

1. A conveyor selector apparatus comprising: a selector and conditioning mechanism to be mounted adjacent a conveyor and including code reading and selecting means; a plurality of carriers to move along the conveyor, each including code means to match reading means on a predetermined selector; reaction means to be mounted along said conveyor downstream of said selector and positioned to cause a reaction with respect to a particular carrier when actuated; trigger means on said carrier cooperable with said conditioning mechanism upon a selection occurring between said code means and code reading means to cock said trigger means into an operative position; said trigger means in said operative position being cooperable with said reaction means to actuate it and cause a reaction with respect to said carrier.

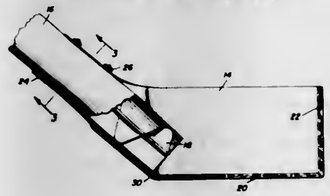


3,203,531
DETECTION DEVICE FOR CONVEYORS
Armand V. Pretot, Jr., Glen Ellyn, Ill., assignor to Rapistan-Keystone, Inc., Detroit, Mich., a corporation of Michigan
Filed July 11, 1963, Ser. No. 294,336
9 Claims. (Cl. 198—40)



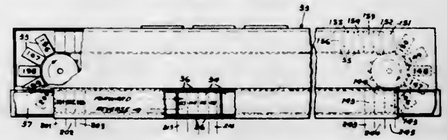
1. A conveyor system comprising a track and at least one load carrier mounted on said track to move one direction therealong; carrier load differentiating means mounted along said track; said differentiating means comprising: an elongated shiftable cam track detector biased in increasing amounts into the path of said carrier in said direction; sensor means responsive to a shift of predetermined magnitude by said detector means; contact means on said carrier to engage and ride along said cam track with passing of said carrier; said detector means being shiftable out of said carrier path to said predetermined magnitude against the biasing force by engagement with said contact means on a carrier loaded to a predetermined weight to actuate said sensor; and said detector means causing temporary shifting of carriers having loads below said weights by causing said contact means to follow said cam track, to thereby differentiate therebetween.

3,203,532
RUBBER HOPPER FOR GRAIN LOADER
Henry W. Mimnaugh and Thomas Dragomir, both of R.F.D 4, Alliance, Ohio
Filed July 3, 1963, Ser. No. 292,677
6 Claims. (Cl. 198—64)



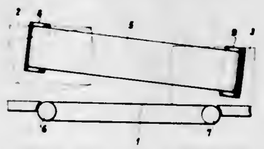
1. In combination with a grain auger and auger tube surrounding said auger, a flexible rubber hopper communicating with said tube and auger whereby grain disposed within said hopper may be conveyed to a storage area by said auger through said tube, said hopper including a split rubber throat receiving said auger and auger tube in tight encompassing relation for preventing leakage and clogging of grain disposed within said hopper.

3,203,533
DISTRIBUTING SYSTEM FOR TRANSFER OF ARTICLES
Werner Hauer, Nutley, and Jean Leon Garnier, Wayne, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed June 18, 1963, Ser. No. 288,735
6 Claims. (Cl. 198—76)



1. A distributing system for transferring articles from trays to a specific number of bins at a specific number of transferring positions wherein the number of bins exceeds the number of transferring positions comprising: a plurality of trays, a plurality of bins, means for moving the bins in one direction through the system below the trays, and means for causing the trays to move at a constantly varying velocity in a reciprocating manner above the bins.

3,203,534
CONVEYOR
Gisbert Burkhardt and Hans Rapparlie, Konstanz, Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed Aug. 30, 1961, Ser. No. 134,900
Claims priority, application Germany, Sept. 1, 1960, T 18,944
3 Claims. (Cl. 198—165)

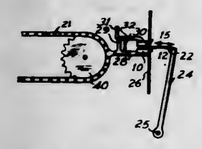


1. A conveyor for aligning flat material to be sorted, such as mail shipments, comprising, in combination: a conveyor belt device for conveying shipments and defining a horizontal reference plane against which the edges of shipments are to be aligned; and spaced guide belts forming side walls for said device and moving in the conveying direction so that any shipments which do not adhere to said guide belts may align themselves solely by the force of gravity, said guide belts being inclined toward said reference plane to align any shipments which do adhere to said guide belts.

3,203,535
GRIPPING DEVICE
Norman E. Elsas, 3081 Maple Drive NE., Atlanta, Ga.
Filed Apr. 19, 1963, Ser. No. 274,098
1 Claim. (Cl. 198—180)

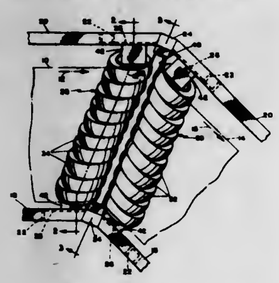
A device for gripping a sheet of material, said device comprising, in combination, a plate having a substantially flat material support surface, said plate being positioned on one side of the sheet of material; a bristle support having a bristle surface substantially parallel to the material support surface of the plate, said bristle support being

on the same side of the sheet of material as the plate; a plurality of parallel bristles, each bristle extending from the bristle surface and having its tip adjacent to a point on the material support surface and each bristle being the hypotenuse of a right triangle having as a first leg a line of reference perpendicular to the material support surface and as a second leg a line of reference parallel to the material support surface and extending between the first leg and the bristle; a tucking blade positioned on the



opposite side of the sheet of material from the plate and having a plane of motion substantially parallel to the material support surface and which passes through the sheet of material and between the plate and the bristle support; and means for reciprocally moving the tucking blade in its plane of motion between a position more remote from the plate than the sheet of material and a position between the plate and the bristle support.

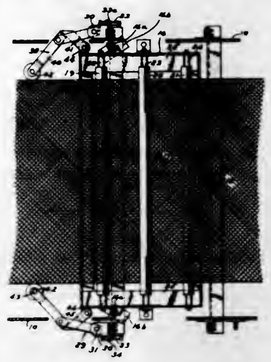
3,203,536
CORNERING ROLLER FOR BELTS
Herbert S. Shaw, La Mesa, Calif. (1526 Rideout Way, Whittier, Calif.)
Filed Sept. 11, 1961, Ser. No. 137,349
9 Claims. (Cl. 198—184)



1. A roller for a cornering device, said roller having a plurality of roller wheels in side by side arrangement along the rectilinear axis of the roller; and means for mounting said wheels inclined to the axis of said roller.

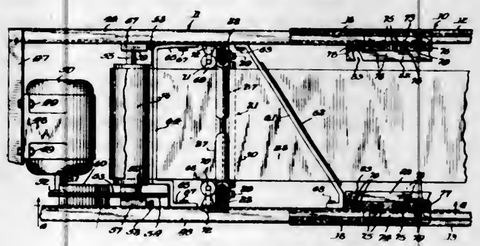
3,203,537
AUTOMATIC CONTROLLER FOR TRACKING OF LEHR CONVEYOR BELTS
Alfred C. Holladay and Curtis C. Houghton, Elmer, N.J., assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed July 22, 1963, Ser. No. 296,887
14 Claims. (Cl. 198—202)

1. In a lehr, the combination comprising
an endless driven lehr belt having a reach thereof passing along a portion of said lehr,
and a lehr belt controller comprising
a frame,
means for supporting said frame for movement laterally of the lehr,
a plurality of longitudinally spaced rolls mounted rotatably on said frame with their axes extending laterally of said lehr and said frame,
said belt being threaded between said rolls,
and mechanical means positioned on each side of said frame engaging said frame and the edge of said belt and responsive to movement of said frame in one direction laterally of said lehr due to lateral movement of said lehr belt to provide a force on the edge of said lehr belt in the opposite lateral direc-



tion and thereby return said lehr belt to its original aligned position relative to the lehr,
said last-mentioned means comprising
a crank pivotally mounted along each side edge of said belt and having one end thereof adapted to engage said lehr belt and the other end thereof adapted to engage said frame.

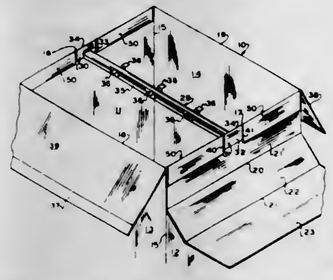
3,203,538
CONVEYOR CONSTRUCTION
John Foster Oury, Wheaton, Ill., assignor to Oury Engineering Company, Wheaton, Ill., a corporation of Illinois
Filed Jan. 22, 1963, Ser. No. 253,182
7 Claims. (Cl. 198—208)



1. A combined conveyor and power unit assembly for transporting concrete mix comprising, a main section, side rails on each side of the said main section having laterally extending flanges at the edges thereof, a tail section, side rails on each side of said tail section having laterally extending flanges at the edges thereof, cross frames intermediate the ends and secured to the side rails of each of said sections, cross angles secured to one of the ends of the side rails of each of said sections, the flanges of the rails of one of said sections being spaced apart a greater distance than the flanges on the other of said sections whereby the side rails of one section are telescopically fitted within the flanges of the other section, a power driven drive roller in said tail section, a drive motor for driving said drive roller mounted on said tail section, a roller at the discharge end of said main section, an endless load supporting belt extending over the said roller on said main section and said drive roller on said main section, and means including plates in overlapping en-

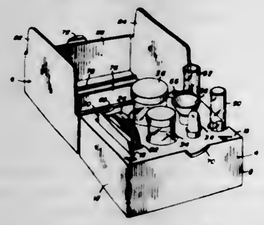
gagement with each other secured to the said side rails having spaced openings therein adapted to receive pins for holding said main and tail sections in adjusted positions relative to each other to maintain required tension on said conveyor belt without altering the relative positional relationship of said drive roller and said drive motor.

3,203,539
WARDROBE CONTAINER
Samuel P. Belsinger, Atlanta, Ga., assignor to Belsinger, Inc., Atlanta, Ga., a corporation of Georgia
Filed Oct. 21, 1963, Ser. No. 317,559
2 Claims. (Cl. 206—7)



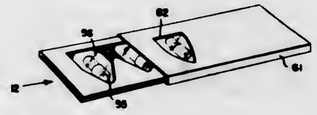
1. A spacer member, for retaining a hook disposed over a fibre board container of the type having two plies joined together along a score line about which one of said plies is adapted to be folded, comprising a U-shaped channel member characterized by a pair of opposed essentially parallel plates each having side edges, a lower edge and an upper edge, and a curved inwardly concaved web joining the upper edges of said plates, the space between said plates being approximately equal to the thickness of two plies of said fibre board containers, the distance from the upper edge to the lower edge of each of said plates and the rigidity of said channel member being sufficient for said channel member, when installed over the scoreline when said one of said plies is folded flat against the other of said plies, to hold said plies together, said channel member being so constructed and arranged that it retards any appreciable sidewise movement in the direction of said channel member of a hook disposed over said scoreline closely adjacent the side edges of said plates.

3,203,540
TEST KIT
Charles J. Kalt, Elkhart, Ind., and Phillip J. Mesl, Elmwood Park, Ill., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
Filed Dec. 28, 1962, Ser. No. 247,927
8 Claims. (Cl. 206—12)



5. A diagnostic kit container comprising a base member and cover member formed of a moisture, acid and base resistant, rigid material, said base member having vertical front and rear wall surfaces, a pair of vertical opposite side wall surfaces and a top wall surface, said base member having means defining sockets and compartments containing therein reagent bottles and implements, at least two of said sockets containing test tubes, said test tube sockets each partially opening through one of said vertical wall surfaces substantially the full length of said sockets to allow visual access to the test tubes positioned therein, said cover member being hinged to said base member and having front and rear walls, a pair of opposite side walls and a substantially flat top wall, said cover member being of such dimensions that when it is in fully open position the outer surface of said top wall thereof is substantially coplanar with the lower edges of the front, rear and side wall surfaces of said base member and said cover affords an open-topped container in side-by-side relation with said base member, the side walls of said cover member being of such dimensions and shape as to substantially cover and closely overlie the vertical surfaces of said base member having said openings therein when said cover is in closed position, said cover being formed with a plurality of internal fins overlying said sockets and compartments in the base member and engaging the reagent bottles and implements disposed in the respective sockets and compartments when said cover is in closed position, and means for locking said cover member to said base member.

3,203,541
PACKAGING
Richard B. Rein, Philadelphia, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 2, 1962, Ser. No. 235,009
1 Claim. (Cl. 206—42)



A packaging receptacle comprising two elements connected together in folding arrangements, each said element having a pair of laterally spaced members joined together and a scalloped edge defining a plurality of scallops on one of said members projecting toward the other of said members in the space therebetween, the connection between said elements being by hinging means comprising a score joining the outer longitudinal edge of the scalloped edge member of one element to the outer longitudinal edge of the other member of the other element, and the longitudinal arrangement of said elements relative to each other and the position of the scallops thereon being such that the scallops of one element overlap the scallops of the other element when said receptacle is in closed position thereby forming a plurality of spaced object receiving pockets between the overlapping scallops, a thin flat encasement positioned between the elements of said receptacle when in closed position, a plurality of objects within said encasement, said encasement holding said objects in spaced relation conforming to the spacing between the pockets in said receptacle with said objects positioned in said pockets, and an open-ended wrapper enclosing the receptacle.

3,203,542
BLISTER CARD PACKAGE
Leon J. Lightner, Livingston, and Martin Link, Wayne, N.J., assignors to Union Bag-Camp Paper Corporation, New York, N.Y., a corporation of Virginia
Filed Jan. 22, 1964, Ser. No. 339,480
7 Claims. (Cl. 206—45.31)

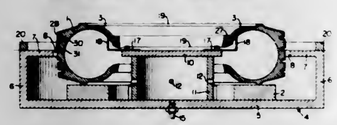
1. A display pack holding and displaying in an upright position a collapsible tubular body fitted with a

removable cap and forming with said cap a concave portion adjacent said cap comprising: a blister of transparent material having a flat portion and hollowed out portion containing at least a portion of the body to be displayed; said blister having a portion of reduced dimensions registrable with said concave portion of said



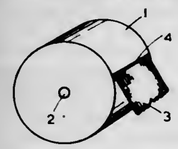
body under the cap whereby said body is suspendingly supported therefrom; and stand-up support means including a base portion and upwardly extending front and back panels tapering from said base portion, said panels being secured to said blister to hold said blister substantially upright.

3,203,543
FILM PROTECTOR FOR TIRES
Charles W. Taylor, Jr., and Vernon R. Carr, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed July 20, 1962, Ser. No. 211,265
8 Claims. (Cl. 206—46)



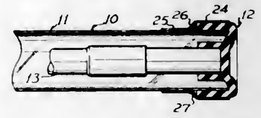
1. In combination with a pneumatic tire with a colored sidewall, an annular self-supporting transparent film over the colored sidewall which film is separate from the tire and separably fastened directly to the tire at its inner edge adjacent that bead which is nearest said sidewall, and at its outer edge adjacent the edge of the tread.

3,203,544
DISPENSER FOR THERMOSETTING RESIN IMPREGNATED TAPE
Peter Derek Gilbert, Chandler's Ford, England, assignor to Pirelli General Cable Works Limited, London, England, a British company
Filed Feb. 11, 1963, Ser. No. 257,686
Claims priority, application Great Britain, Mar. 15, 1962, 9,946
3 Claims. (Cl. 206—47)



1. A dispensing container for impregnating an endless length of a tape with a thermosetting resin fluid to be wrapped about joint or the like, comprising a hollow container including an annular peripheral wall, said container being flexible and manually deformable, said annular wall including a transverse slot therethrough and communicating with the interior of said container, means on said container for filling the container with a thermosetting resin fluid, an activated thermosetting fluid in said container for impregnating a roll of tape disposed in said container, and a convoluted roll of tape in said container and having a leading end extending out of the slot and embracingly engaged thereby, said annular container wall being manually deformable for normally deforming said slot and manually regulating the tension on the tape and controlling the layer of the fluid coated on the tape when it is withdrawn from the container.

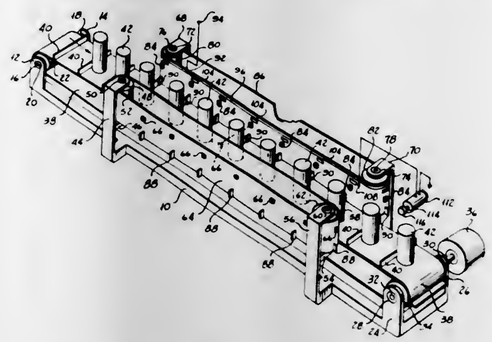
3,203,545
STERILE ARTICLE PACKAGE AND METHOD OF MAKING THE SAME
Robert M. Grossman, Milledgeville, Ga., assignor to McGaw Laboratories, Inc., Milledgeville, Ga., a corporation of Delaware
Filed Feb. 1, 1963, Ser. No. 255,610
5 Claims. (Cl. 206—63.2)



5. In combination a flexible reversible cap and a container tube for a sterile catheter having a cylindrical open end, said cap including a body portion having formed therein an inwardly directed small elastic retaining cup having a centerline, and an outside diameter less than the inside diameter of the container tube, said cup having the end of a catheter inserted therein, said retaining cup and catheter being positioned within the cylindrical open end of the container tube, and a large flexible and reversible substantially cylindrical cup formed integral with said body portion and extending axially outwardly therefrom, said large cup having a centerline which coincides with the centerline of the small cup, an outside diameter near its bottom which is substantially the same as the inside diameter of the container tube, and an outside diameter at its open end which is greater than the inside diameter of the container tube, as the body portion is inserted into the open end of the container tube, the flexibility of the material of the larger cup and the internal diameter of said cup relative to the external diameter of the container tube is such as to permit the inversion of said cup over the outside of said container tube to resiliently close said open end against ingress of ambient air under atmospheric pressure and to permit sterilization of the catheter in said container tube by the passage of a sterilizing gas under pressure exceeding atmospheric through said container tube and out the resiliently closed end.

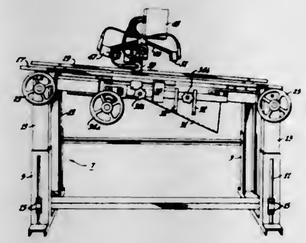
3,203,546
CAN LEVEL DETECTION DEVICE
John S. Rydz, Scottsdale, Ariz., assignor to Nuclear Corporation of America, Phoenix, Ariz., a corporation of Delaware
Filed Apr. 12, 1962, Ser. No. 186,955
3 Claims. (Cl. 209—111.5)

1. A level detection device for determining the presence of a container which is not filled to a desired level including in combination a container conveyor for moving a line of containers along a substantially straight path through a detection zone in spaced relationship, a plurality of energy sources, an endless conveyor for mounting said energy sources in spaced relationship at one side of said container line with a spacing equal to the spacing between adjacent containers for movement through said detection zone along a path generally parallel to said container path at a level just below said desired level, a plurality of energy detectors, an endless conveyor for mounting said detectors in spaced relationship on the other side of said container line with a spacing equal to the spacing between adjacent containers for movement through said detection zone along a path generally parallel to said container path at a level just below said desired level whereby a detector passing through said zone regis-



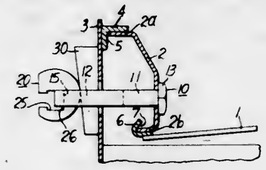
ters with a source passing through said zone, means for driving said container conveyor and said source conveyor and said detector conveyor in synchronism and means for sensing an energized detector as an indication of an unfilled container.

3,203,547
LABEL INSPECTION MACHINE
Joe D. Giulie and Richard A. Wood, Sunnyvale, Calif., assignors to Illumitronic Systems Corporation, a corporation of California
Filed Apr. 3, 1962, Ser. No. 184,731
1 Claim. (Cl. 209—111.7)



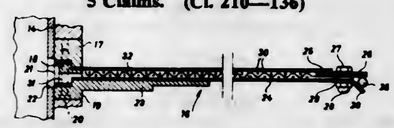
A label inspection machine comprising in combination:
(a) a pair of spaced, slanting rails over which containers can roll;
(b) a pair of swivel members, one located on each rail;
(c) said swivel members normally forming a continuation of the rails, and being adapted to swivel outwardly from each other whereby a container passing thereover will fall between the swivel members and onto a diversion path;
(d) pivoted spring biased members forming a continuation of the path of travel beyond the swivel members whereby as the swivel members swing outwardly allowing a container to partly fall below the level of the rails, the container will push the pivoted spring members aside, permitting the container to complete its travel below the rails and onto the diversion path;
(e) photoelectric means supported over the rails, said photoelectric means being adapted to activate the swivel members, causing them to swing outwardly upon the passage of a defective container under the photoelectric means.

3,203,548
GIB AND COTTER BOLT ASSEMBLY
Alexander J. Roubal, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 3, 1962, Ser. No. 192,197
1 Claim. (Cl. 209—399)



In a vibratory apparatus having a frame, a panel within said frame connected to said frame for pivotal motion relative thereto, a cotter bolt having a cotter way extending therethrough, said cotter bolt engaging said panel and projecting out through said frame to an extent that places a portion of said way on the side of said frame opposite said panel, a cotter in said way and engaging the side of said frame opposite said panel, and a gib in said way between said cotter and an outer end wall of said way, said gib having a continuously curved C-shaped outer edge surface and cap, trunk and foot portions each having an inner flat surface a different distance from the outer edge surface, each of said inner flat surfaces being selectively engageable with said outer end wall, and each of said inner surfaces upon engagement with said outer end wall presenting a different portion of said outer edge surface of said C-shaped gib to engage said cotter a different distance from said outer end wall, and the ends of said cap and foot portions remote of said trunk portion each having lip portions spaced apart from each other a distance less than the remainder of the cap and foot portions to insure said gib remaining in place between said cotter and said outer end wall.

3,203,549
LIQUID FILTERING APPARATUS
Josef Schaedler, St. Gallen, Switzerland, assignor to Filtrox-Werk AG., St. Gallen, Switzerland
Filed Mar. 14, 1962, Ser. No. 179,653
Claims priority, application Switzerland, Mar. 17, 1961, 3,274/61
5 Claims. (Cl. 210—136)



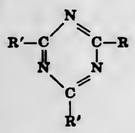
1. Liquid-filtering apparatus comprising a casing for receiving the liquid to be filtered, at least one flat-sided filter element in the form of a disk-shaped hollow body with sieve openings on at least one of its flat sides mounted in the casing, a coaxial tubular carrier in the casing which protrudes through said element and has at least one radial opening communicating with the interior of the element to discharge a filtrate into said tubular carrier, means to rotate said carrier and body, said element having in addition to said sieve openings, at least one additional larger opening, said larger opening including a closing means responsive to liquid pressure obtaining in said casing and capable, when filtering, of closing automatically due to the higher pressure prevailing outside said same, said additional opening extending slot-like along the peripheral circumference of the filter element.

3,203,550
METHOD FOR THE PREPARATION OF SUBSTITUTED S-TRIAZINE COMPOUNDS

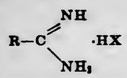
Frederic Charles Schaefer, Darien, Conn., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Mar. 7, 1960, Ser. No. 12,930
7 Claims. (Cl. 260—248)

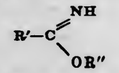
1. A method of preparing a substituted s-triazine of the general formula:



in which R is selected from the group consisting of hydrogen; unsubstituted alkyl having from 1 to 12 carbon atoms; monocyclic aryl-, halo-, cyano-, hydroxy-, di-lower-alkoxy- and carb-lower-alkoxy-substituted alkyl having from 1 to 12 carbon atoms; unsubstituted monocyclic aryl; cyano-, nitro-, halo-, and lower alkoxy-substituted monocyclic aryl; lower alkoxy; monocyclic aryloxy; lower alkylthio; monocyclic arylthio; amino; N-alkylamino in which the alkyl portion is from 1 to 12 carbon atoms; and N-arylamino in which the aryl portion is monocyclic aryl and R' is selected from the group consisting of hydrogen, unsubstituted lower alkyl and unsubstituted monocyclic aryl which comprises the steps of reacting by bringing into contact an amidine salt of the general formula:



in which R is defined as hereinabove and X is a univalent anion selected from the group consisting of anions derived from an acid selected from the group consisting of formic, acetic, propionic, hydrochloric, hydrobromic, hydriodic, nitric and sulfuric with an imidate of the general formula:



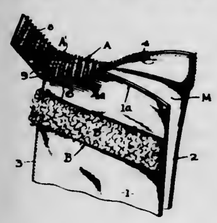
in which R' is defined as hereinabove and R'' is selected from the group consisting of lower alkyl at a temperature between about 0° C. and about 100° C. in which the molar ratio of reactants is about 1:3::amidine salt:imidate and recovering the resultant substituted s-triazine.

7. 2-(1,1-diethoxymethyl)-4,6-dimethyl-s-triazine.

3,203,551
FILTER BAG

Morton Van Loan, Jr., Cleveland Heights, Ohio, assignor to Met-Chem, Inc., Cleveland Heights, Ohio, a corporation of Ohio

Filed Aug. 13, 1962, Ser. No. 216,379
2 Claims. (Cl. 210—486)



1. In a fabric filter bag structure, the combination comprising,

a front wall and a rear wall connected at their bottom and side edges and open at the top to provide a mouth, a cover flap over said mouth, said flap secured at least to the rear wall at opposite side edges thereof,

first securing means secured to said flap and extending outwardly beyond each of the side edges thereof providing a pair of tab members, said securing means having a plurality of non-metallic securing elements on the surface thereof,

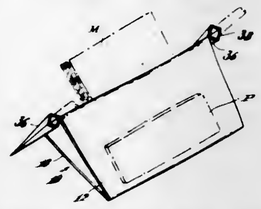
second securing means secured to the outer surface of the front and rear walls of said bag below and spaced from the first securing means,

said second securing means having a plurality of non-metallic second securing elements on its surface for releasable interlocking engagement with the securing elements of said first securing means, said second securing elements being disposed on the front and rear walls of said bag a sufficient distance below said first-mentioned securing elements to be in alignment with said first mentioned securing elements, said first mentioned securing elements overlapping said second securing elements when said first securing means is folded downwardly and the securing elements thereof are pressed into contact with the second securing elements of said second securing means on both the front and rear walls of the bag to provide a seal therebetween.

3,203,552
DESK MOUNT

Edward M. Stolarz, New York, N.Y., assignor to Winthrop-Atkins Co., Inc., Middleboro, Mass., a corporation of Massachusetts

Filed Aug. 17, 1962, Ser. No. 217,695
5 Claims. (Cl. 211—49)



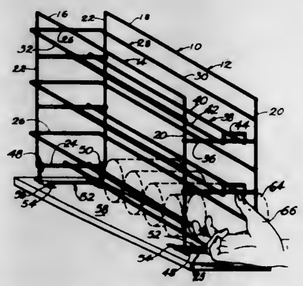
1. A structure comprising exterior front and back panels hingedly connected along adjacent edges with their distal ends in spaced parallel relation, an interior panel connected to the lower edge of the back panel and extending upwardly therefrom parallel to the inner side of the back panel, said interior panel, in combination with the back panel, providing an interior pocket closed at the bottom and having an open top intermediate the top and bottom edges of the back panel, an inwardly projecting ledge constituted by the upper edge of the interior panel at the top of the pocket, said ledge being parallel to the top and bottom edges of the back panel, a brace hingedly connected at one end to the lower end of the front panel, said brace extending rearwardly therefrom diagonally between the front and back panels into abutting engagement with the inner side of the back panel at the level of the ledge and resting on said ledge, a keeper hingedly connected to the distal end of the brace, said keeper extending from the distal end of the brace into the pocket, said keeper, by frictional engagement within the pocket, being operative to hold the distal end of the brace engaged with the shoulder at a predetermined angular distance from the front panel, and the front and back panels at a predetermined angular distance relative to each other, said keeper being operative, by movement outwardly of the pocket, to dispose the brace against

the inner side of the front panel and the front and back panels in a common plane, said back panel containing an opening through it above the shoulder upon which the distal end of the brace rests, said front panel and brace collectively defining a hollow receptacle inclined upwardly and rearwardly which is accessible through the opening in the back panel for supporting writing material in a rearwardly inclined position with its upper end projecting rearwardly therefrom, and said front panel affording a support for holding a calendar pad in a rearwardly inclined position.

3,203,553
REVERSIBLE GRAVITY FEED CAN RACK

John B. Pendergrast, Jr., Atlanta, and Ira J. Silberman, De Kalb County, Ga., assignors to Southern Spring Bed Company, Atlanta, Ga., a corporation of Georgia

Filed Jan. 27, 1964, Ser. No. 340,292
7 Claims. (Cl. 211—49)



1. In a gravity feed can rack mounted on a rigid support such as a supermarket stand:

(a) a can supporting and dispensing shelf of a width sufficient to hold at least the length of one can and of a length to hold a plurality of cans arranged each resting with the cylindrical side thereof and in a row of cans along the length of the shelf,

(b) a front can stopping member on said shelf and a rear can stopping member on said shelf preventing cans from completely rolling therefrom when said shelf is tilted,

(c) means for manually inclining said shelf forwardly for gravity feeding cans toward the front whereby as a can is removed manually by hand another can and all the cans behind roll forward to the can stopping member on the front; and conversely means for inclining said shelf manually by hand to a rearwardly inclined position so that cans manually placed on the front, to load said shelf, roll to the rear until the rack is full, said means including,

(d) a fulcrum means on each side of said shelf and being located approximately in the center of the rack to provide stability and balance.

3,203,554
CAN CARTON RACK

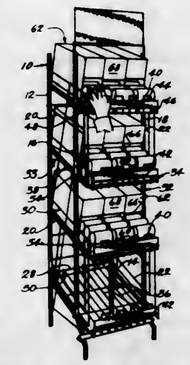
John B. Pendergrast, Jr., Atlanta, Ga., and Raymond H. Vizethann, 706 Terhune Road, Ridgewood, N.J.; said Pendergrast, Jr., assignor to Southern Spring Bed Company, Atlanta, Ga., a Georgia corporation

Filed Jan. 27, 1964, Ser. No. 340,293
14 Claims. (Cl. 211—49)

1. In a combined container dispenser rack having a removable and disposable container and can dispenser thereon,

(a) a merchandise rack supported from the floor and extending upwardly therefrom,

(b) at least one inclined shelf on said rack for supporting a container and can dispenser in inclination thereon to position the container with the rear higher than the front for the purpose of dispensing cans that roll by gravity from the rear towards an opening in said container in the front thereof,



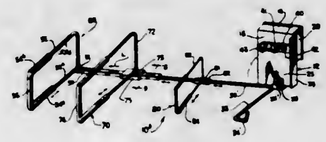
(c) said container and can dispenser initially being the shipping container for said cans and having a portion thereof removable to define the dispensing opening from which cans are removed manually at the front, and said cans rolling from the rear to the front to fill the space left by cans that have been removed by hand from the rack,

(d) and can stopping means to stop the cans at the front of the shelf.

3,203,555
PAINT BRUSH HOLDER FOR ARTIST'S PAINT BOX

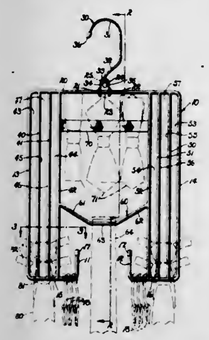
Antonio Garcia, 1839 Lexington Ave., New York 29, N.Y.

Filed Jan. 20, 1964, Ser. No. 338,990
4 Claims. (Cl. 211—65)



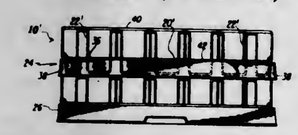
1. A holder for paint brushes and the like in a paint box compartment having a vertical partition defining a wall of the compartment, said holder comprising a spring clamp engageable on said partition, said clamp having a panel disposable in said compartment against said partition, an elongated arm having a loop at one end rotatably engaged by a rivet on the panel so that the arm is movable between a lowered position in said compartment and an upright position extending vertically upward from said compartment, a horizontally disposed leg integral with and extending outwardly of said clamp perpendicular to said panel for supporting said arm in the upright position, a spring clip on said panel for releasably holding said arm in the upright position, and a ring at the other end of said arm movable with the arm from a vertical plane in the compartment perpendicular to said partition to a horizontal plane over said compartment, whereby paint brushes and the like engaged in said ring are movable with the ring and arm between said lowered and upright positions, said ring being rectangular in shape and formed of a pair of telescopic U-shaped ring members for adjusting the size of said ring.

3,203,556
DISPLAY RACK
Elmer R. Tejerian, 1143 B St., Reedley, Calif.
Filed June 21, 1963, Ser. No. 289,539
3 Claims. (Cl. 211—119)



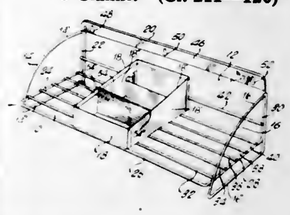
1. A display rack for ties having individual knots preformed therein, the knot having a predetermined forward portion, a pair of laterally opposed flexible retaining members rearwardly outwardly divergently extended therefrom and a retaining element rearwardly extended from the knot substantially centrally located relative to said retaining members, the rack comprising a rigid elongated U-shaped frame member, including a crossbar portion; a support hook; universal connection means pivotally interconnecting said hook and said crossbar portion and adapting the hook to support the frame in a substantially vertical inverted position having laterally opposed depending ends; the frame member including a pair of laterally opposed retaining hooks inwardly spaced from said depending ends and connected thereto by respective bight portions; a plurality of uniformly transversely spaced, parallel elongated rigid rods extended between said crossbar and the respective bight portions of said retaining hooks thereby to define laterally opposed pairs of spaced parallel elongated slots adapted individually to receive and retain a respective one of said flexible members so that the pre-knotted ties are individually releasably mounted in the frame; and means carried by the frame and defining a guideway substantially centrally disposed between each pair of slots.

3,203,557
TRAY AND DISH RACK ASSEMBLY
Ralph Ettinger, Jr., 1370 Lincoln Ave. S., Highland Park, Ill.
Filed June 14, 1963, Ser. No. 287,928
2 Claims. (Cl. 211—126)



1. An assembly for the cleaning and handling of dishes and glassware comprising a tray portion characterized by a peripheral wall, a top rim defined by said peripheral wall, said peripheral wall comprising vertically disposed inner and outer wall portions defining an inverted V-shaped cross section, a flat bed defined by said tray portion and extending within the confines of said peripheral wall, said bed defining an open network for passage of water during a dishwashing operation, a rack portion defining openings for receiving dishes and glassware, a rim member extending all about the periphery of said rack portion, said rim member being located intermediate the top and bottom of said rack portion, said rack portion being adapted to be disposed over said tray portion whereby the dishes and glassware can be supported in an upright position by said rack portion while resting on said bed defined by said tray portion, and means formed at the outer edges of said rack portion for detachably mounting said rack portion on said tray portion, said last mentioned means comprising downwardly extending pins, openings defined in said top rim of the peripheral wall of said tray portion for receiving said pins, each of said pin members extending downwardly from said rim member of said rack portion with said rim member thereby resting on said top rim of said tray portion and whereby the lower portions of said pins are adapted to be bent over in the hollow interiors defined between said inner and outer wall portions.

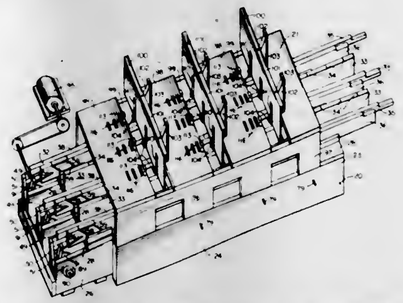
3,203,558
STORAGE UNIT
Allan Ullman, New York, N.Y., assignor to Book-Of-The-Month Club, Inc., New York, N.Y., a corporation of New York
Filed Aug. 21, 1963, Ser. No. 303,591
3 Claims. (Cl. 211—126)



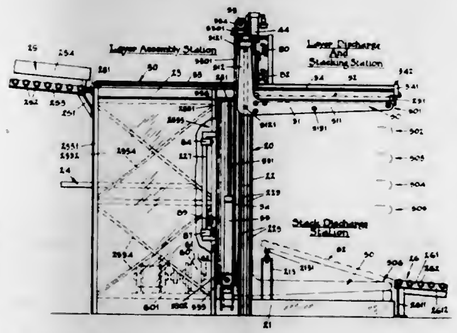
1. A storage unit comprising
bookshelf means formed of a loop of substantially rigid material of circular cross-section bent at right angles to form a supporting ledge and a back support normal thereto,
said ledge including spaced rod like members terminally supported thereon to form an article supporting surface,
spaced side supports formed of loops of substantially rigid material of circular cross-section fixed to the opposed end portions of said bookshelf means substantially normal to said ledge and back support with the lower portions thereof projecting below the surface of said ledge to support the same in spaced relation to an underlying support surface,
a card box sized to be slidably supported on said ledge between said spaced side supports,
and means for guiding said box laterally along said shelf,
said means providing a measure of friction to lateral movement of the box in order that the box may act as an adjustable bookend for supporting books in an upright position between said box and one of said side supports.

3,203,559
LUMBER SORTING AND PILING DEVICE
George E. Macy, 1913 Pennsylvania Ave., Coeur d'Alene, Idaho
Filed July 30, 1962, Ser. No. 213,212
2 Claims. (Cl. 214—6)

1. In a lumber moving and sorting device of the nature aforesaid, the combination of: an elongate frame having cross pieces supporting a plurality of longitudinal rail decks adapted to receive and slideably support in a parallel fashion paired activating rails; a plurality of paired activating rails carried by said rail decks comprising in each pair a two piece moving rail having an upper portion pivotably communicating with the lower portion and adapted to raise upon rearward motion above the upper surface of a moving rail, and a platform rail having an upper surface slightly higher than that of said moving rails; a plurality of paired cams each associated with activating rods pivotably communicating with said paired activating rails, each of said pairs of cams being diametrically out of phase with its mate and of a configuration to cause a reciprocating motion in said rails with each directly out of phase with its mate and having a forward motion approximately twice as fast as its rearward motion, said platform associated cam being adapted to move said platform rail rearwardly, upon the lowered forward cycle of the moving rail, to carry boards thereon rearwardly and elevate boards positioned upon spaced pivotable platforms associated with said platform rails upon predetermined cycles; lifting blocks associated with each moving rail to cause the upper portion thereof to raise on rearward motion with its upper surface above that of said platform rails to cause boards carried thereupon to move rearward thereover; and a prime mover communicating with said cams adapted to activate said cams as aforesaid.

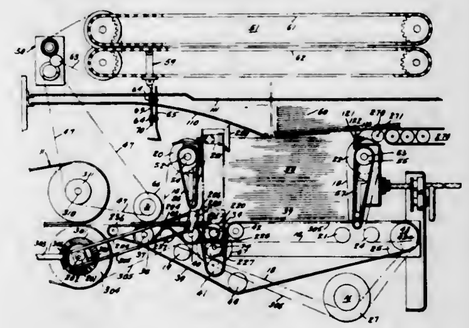


3,203,560
ARTICLE LAYER STACKING APPARATUS
Lorin H. Janzer, Bowling Green, Ohio, assignor to Urschel Engineering Company, Bowling Green, Ohio, a corporation of Ohio
Filed Aug. 1, 1962, Ser. No. 214,084
2 Claims. (Cl. 214—6)



1. For use in an article layer stacking apparatus comprising
a frame having thereon an article layer stacking station and a stack discharge station below and in vertically spaced aligned relation with the layer stacking station and an elevator mounted on the frame for movement between said stations and having means thereon adapted to receive and support successive and accumulative article layers in the downward movement of the elevator thus to form a stack of layers and, on arrival at the stack discharge station to discharge the stack from the elevator and outwardly with respect to the frame,
the improvement in which said means includes
a carriage element having a load carry area thereon of dimensions in length and width exceeding the length and width of an article layer to be stacked;
a bearing in engagement with said carriage element at a point on a line substantially coincident with a perimeter of said load carry area thereof and with an outer end of the elevator for pivotally supporting the carriage element for translatory movement relative to the elevator about an axis substantially coincident with said perimeter;
a stop in engagement with the elevator and inwardly of the outer end of the elevator and of the engagement of the bearing therewith and in a position thereon to be engaged by the carriage element in the translatory movement thereof about said bearing at a point therein in which said carriage element extends to locate the load carry area thereof in a substantially horizontal position to receive and support successive and accumulative article layers; and
a second stop in engagement with the frame in a position to be engaged by the carriage element at a point thereon spaced from said bearing engaged perimeter and at a point in the downward movement of the elevator whereby the inner end of the carriage element is moved upwardly relative to the elevator from engagement with the first mentioned stop and about the axis of said bearing as the elevator approaches the stack discharge station and so that, upon arrival of the elevator at the stack discharge station, the carriage element will be positioned that the load carry area thereof is in an inclined plane to discharge an article layer stack supported thereon by force of gravity.

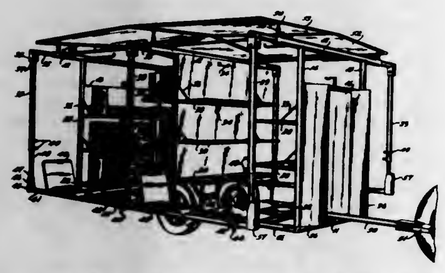
3,203,561
LIFT CAM FOR STACKING DEVICE
Albert F. Shields, Forest Hills, Long Island, N.Y., assignor to S & S Corrugated Paper Machinery Company, Inc., Brooklyn, N.Y., a corporation of New York
Continuation of application Ser. No. 87,870, Feb. 8, 1961. This application Apr. 16, 1964, Ser. No. 360,221
19 Claims. (Cl. 214—6)



1. A stacking, straightening and delivery mechanism adapted for use with a machine for operating on box blanks; said mechanism comprising a horizontal conveyor operable in synchronism with said machine to re-

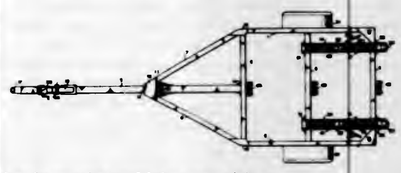
ceive blanks issuing therefrom in a flat position; an intercepting and accumulating device operatively positioned above said conveyor to form said blanks into a stack which is fed from the bottom thereof; said accumulating device including a first and a second means operatively positioned at a stacking region to engage the leading and trailing edges, respectively, of said blanks and imparting upward movement thereto, and vertically oscillatable means disposed adjacent said stacking region in operative position for engaging the intermediate portion and trailing edge of each of the blanks from below between the side edges thereof and lifting the blank as it enters the stacking region.

3,203,562
BULK RACK TOBACCO HARVESTER
William R. Long, Tarboro, N.C., assignor to Long Manufacturing Company, Tarboro, N.C.
Filed July 26, 1962, Ser. No. 212,668
8 Claims. (Cl. 214—5.5)



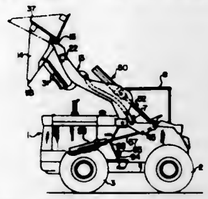
1. A tobacco harvester comprising ground-engaging wheels, a generally rectangular frame mounted on said wheels in enclosing relation thereto and including side upright portions defining upright transverse walls at the front, rear and intermediate portions of the frame, said frame including a lower substantially horizontally extending base portion, a platform for tobacco handling workmen mounted on the lower base portion of the frame between each of the front and intermediate and the rear and intermediate walls, a fixed shelf extending between the side edges of said frame rearwardly from and near the bottom of the front wall, forwardly from near the bottom of the rear wall, and forwardly and rearwardly from the intermediate wall for receiving a rack or holder of tobacco having a horizontal portion on which tobacco can be placed and end portions for retaining the tobacco therebetween, a pivotally mounted overlying confining and supporting shelf for tobacco above each of said fixed shelves and located in parallel spaced relation with regard to the fixed shelf in a manner to be disposed in pivoted elevated non-tobacco confining position to allow the depositing of tobacco in a holder on the lower shelf to a height sufficient to be engaged by the next upper shelf when the latter is in horizontal tobacco supporting and retaining position, and with the weight of the tobacco on the overlying higher shelf serving to compress the tobacco on the underlying lower shelf, suspension means mounting seats for workmen one in front of the other at each side of the vehicle closely adjacent each of said platforms, said suspension means including elongate rigid generally parallel uprights pivoted solely for movement in planes parallel to said frame side upright portions, transversely elongate rigid support members transversely adjustable on said frame from which said uprights pivotally depend, whereby the seats for the workmen may be disposed in selectively spaced relation to the frame during the use of the harvester and close to the frame at other times.

3,203,563
LOAD-SUPPORTING BUNKS FOR VEHICLES
Gale W. Bletchford, Molalla, Oreg.
Filed Nov. 26, 1962, Ser. No. 240,002
5 Claims. (Cl. 214—84)



1. A load-carrying vehicle comprising,
a wheel-supported body,
stationary load-supporting bunks,
each of said bunks comprising a length of channel section,
means fixedly securing said channel sections to said body in parallel relation to each other,
at least one rocker channel within each of said channel sections,
means rockably mounting said rocker channels within their respective channel sections,
said mounting means offset forwardly from the center of each rocker channel,
a load-supporting pad carried by each of said rocker channels at one end thereof,
a load-supporting roller carried by the opposite end of each of said rocker channels,
an actuating lever for each of said rocker channels,
means swingably attaching said levers to their respective channel sections,
means interconnecting said actuating levers with said rocker channels for rocking said rocker channels to alternately move their respective load-supporting pads and rollers into load-supporting positions, whereby the transfer of the load from said pads to said rollers will facilitate removing the load from the vehicle body.

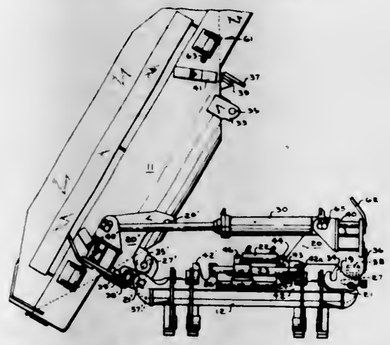
3,203,564
FRONT END AND OVERSHOT LOADER
Erwin C. Brekelbaum, Elyria, Robert J. Bushong, Vermilion, John F. Krueck, Elyria, and Edred B. Williams, Avon Lake, Ohio, assignors, by mesne assignments, to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin
Filed July 6, 1962, Ser. No. 208,841
10 Claims. (Cl. 214—140)



1. In a loader comprising a mobile tractor having ground-engaging propelling means and a forwardly facing operator's seat from which the operator may control the movements of said tractor, and a forwardly extending material handling assembly and actuating means therefor pivotally mounted on said tractor for swinging in a vertical plane from a lower material pick-up position to an upper hoist and dump position, said assembly comprising a pair of hollow booms having rear portions which are pivotally connected to the respective sides of said tractor, rearward of said seat and which, when said booms are in such lower position, extend downwardly and forwardly from such boom pivot, said booms also

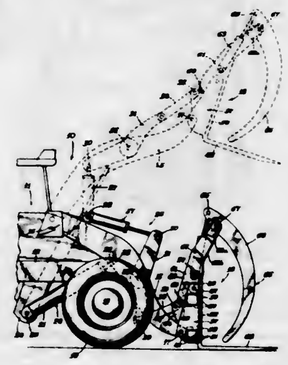
having front portions disposed forwardly of the front end of said tractor and close to the ground when said booms are in such lower position, a material handling scoop pivotally connected to the front ends of said booms for tilting movements about a horizontal axis for scooping material therein and for dumping such material therefrom, and a three part linkage associated with each boom for tilting said scoop to different angular positions with respect thereto, said linkage comprising a first link disposed substantially in its entirety within said boom and pivotally connected at one end to a point below the boom-tractor pivot, an intermediate link pivotally connected between its ends to an intermediate portion of said boom, and a third variable length link pivotally connected at its respective ends to said intermediate link and said scoop in radially spaced relation to the boom-scoop pivot effective to tilt said scoop to different angular positions relative to said boom in response to change in length of said third link, the other ends of said first and intermediate links being pivotally connected together, the pivot connections of said booms of said first link and of said intermediate link to said boom and to said first link defining the corners of an articulated quadrangle which changes the angular position of said scoop with respect to the boom as the latter is swung about the boom pivot; a hoist cylinder connected in operative association with each boom to swing said assembly as aforesaid, said cylinder having one end pivotally connected below the boom and first link pivotal connections and extending generally horizontally into said boom when the latter is such lower position, and having an intermediate portion pivotally connected to said boom to swing the latter upwardly when said cylinder is extended; an overshot member pivotally connected to said tractor, said boom, said first link and said one end of said cylinder being pivotally connected to said overshot member, said pivotal connection for said first link being located on said overshot member at a point below said boom pivotal connection as aforesaid, and said pivotal connection for said cylinder being located on said overshot member at a point below said boom and first link pivotal connections as aforesaid, and means operative to swing said overshot member and thus said booms, cylinders, and three part linkages pivotally connected thereto about said member-tractor pivot to move said scoop to an overshot loading position when said hoist cylinder is thus extended.

3,203,565
VEHICLE MOUNTED LOADER
Howard O. Keskitalo, Batavia, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 11, 1962, Ser. No. 222,812
10 Claims. (Cl. 214—140)



1. A side dump bucket arrangement comprising a cradle having first and second end portions, first and second means movably mounted on said cradle and supporting said bucket on the first and second end portions of said cradle, respectively, and means for selectively moving one of said first or second means into engagement with said bucket and for attaching the cradle to the other of said first or second means whereby said bucket may be selectively tilted at a maximum height about either end portion of said cradle by either the first or second means which is moved into engagement with said bucket.

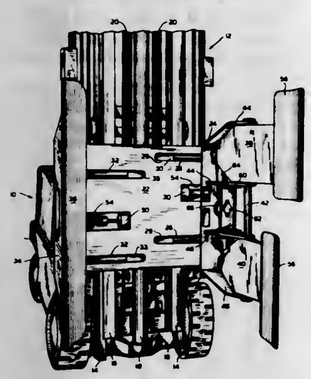
3,203,566
TRACTOR FORK LOADER
Keith W. Kampert, Libertyville, and Richard F. Zimmerman, Waukegan, Ill., assignors to The Frank G. Hough Co., a corporation of Illinois
Filed Sept. 13, 1962, Ser. No. 223,439
12 Claims. (Cl. 214—147)



1. In a tractor loader including boom means and linkage means pivotally connected thereto and extending forwardly of said tractor loader, a load handling device comprising:
(a) a carrier providing a pair of side members connected in spaced-apart relation by a transverse extending member,
(b) said carrier pivotally connected to said linkage means and to said boom means,
(c) said carrier including securing means,
(d) a pair of fork members, one portion of said fork members connected to said securing means in a transverse spaced-apart relation,
(e) a locking means and a releasable projection means to selectively engage said locking means,
(f) one portion of said fork members and said carrier including said locking means and said projection means,
(g) each of said fork members being independently transversely adjustable on said securing means during selective engagement of said releasable projection means and said locking means,
(h) said one portion further providing an extension portion extending upwardly and forwardly of said carrier,
(i) a grab arm pivotally connected intermediate the ends thereof to said extension portion;
(j) separate motor means connected to said grab arm and said fork member, and to said boom means and said tractor loader;
(k) said linkage means further including separate motor means;
(l) said motor means being selectively operable to raise and lower said boom means, to extend and retract said linkage means to pivotally move said device about said boom means from a load engaging

position to a load carrying position and to a load discharging position, and to pivotally move said grab arm about said extension portion from a load securing position to a load releasing position.

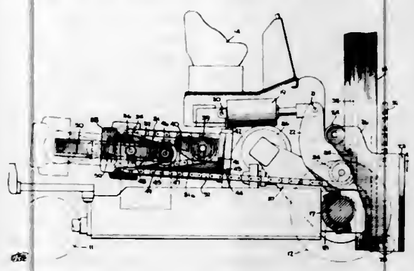
3,203,567
MULTIPLE ROLL CLAMP ARMS
Paul Latham Huitfeldt, Elk, Heggedal, near Oslo, Norway
Filed Feb. 23, 1962, Ser. No. 175,100
4 Claims. (Cl. 214—652)



1. A roll clamping attachment for industrial trucks comprising mounting means adapted for securing the attachment to said truck, a pair of clamping arm means movably carried by said mounting means in spaced facing relation, means for moving said arm means toward and from each other for clamping and releasing a pair of rolls of different diameters arranged in end-abutting relation, at least one of the arm means comprising a pair of arm supports on the mounting means, pivot means mounted on said supports providing a single pivot axis, a pair of arm members spaced apart along said single axis and each supported by one of the supports for swinging movement about the single axis, elongated means pivoted intermediate the supports, and means pivotally supporting said elongated means on said mounting means to rotate about a second axis normal to said single axis, and means pivotally connecting opposite end portions of said elongated means to the arm members at corresponding ends thereof, whereby in clamping movement of the arm means engagement of one of said arm members with the larger diameter roll of said pair of rolls disposed with the plane of the abutting roll ends falling between the arm members causes pivoting of said one arm member about the single axis to effect swinging of said elongated means about said second axis and consequent pivoting of the other arm member about the single axis in the direction opposite that of the one arm member and into engagement with the smaller diameter roll.

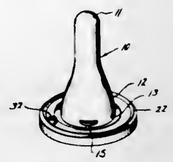
3,203,568
INDUSTRIAL TRUCK WITH A HORIZONTALLY DISPOSED LIFTING RAM
George F. Quayle, Philadelphia, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Apr. 5, 1962, Ser. No. 185,411
4 Claims. (Cl. 214—653)

1. An industrial truck comprising
(a) a wheel supported frame,
(b) a pair of vertically extending, laterally spaced uprights,
(c) means pivotally mounting said uprights on said frame adjacent the lower ends of said uprights for fore and aft tilting movement,
(d) means for tilting said uprights,
(e) a load carriage mounted for vertical movement on said uprights,
(f) an operator's seat on said frame behind said uprights,
(g) a hydraulic lift ram having a cylinder mounted on a vertically extending base plate,
(h) a cross head secured to rearwardmost end of said piston rod,
(i) a series of multiplying sheaves,



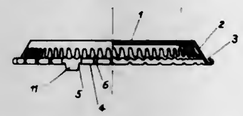
(j) means mounting certain of said multiplying sheaves on said cross head in a position extending along each side of said cylinder when said piston rod is in its retracted position, and means mounting other of said multiplying sheaves on said base plate in a position also extending along each side of each cylinder whereby extension of the piston rod moves said sheaves on said cross head away from said sheaves on said base plate,
(k) a sheave mounted on each upright adjacent the upper end thereof, and a sheave mounted on each upright at the lower end thereof adjacent the point of pivotal attachment of the uprights to the frame,
(l) a flexible lifting element attached to the load carriage adjacent each side thereof and extending upwardly from the load carriage in front of each upright, around the sheave mounted at the top of each upright, downwardly around the sheave mounted on the lower end of each upright, and around the multiplying sheaves carried by said cross head and base plate associated with the horizontally disposed lift ram, whereby extension of the piston rod of said lift ram results in lifting of said load carriage on said uprights, and
(m) guide means associated with said cross head and frame of said truck for stabilizing said lift ram during operation thereof.

3,203,569
NIPPLE VALVE
Joseph J. Shomock, Ravenna, and Herbert B. Mette, Jr., Strongsville, Ohio, both % Dunhill International, Inc., 771 N. Freedom St., Ravenna, Ohio
Filed Nov. 5, 1964, Ser. No. 409,263
4 Claims. (Cl. 215—11)



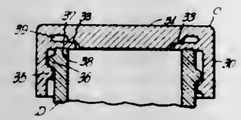
1. A nipple comprising a generally tubular barrel and an annular radially-extending flange affixed to one end thereof, a first passageway through said flange, and a second passageway communicating with said first passageway, said second passageway being at least partially encompassed by a vertically-extending thin-walled deformable extenison of said flange.

3,203,570
CLOSURE CAP FOR CONTAINERS
Pierre Emile Bindschedler, La Côte Rotie, Pixerecourt-Malzeville, France
Filed Feb. 20, 1961, Ser. No. 90,399
Claims priority, application France, Feb. 24, 1960, 819,964, Patent 1,258,315; July 19, 1960, 833,654, Patent 78,129
5 Claims. (Cl. 215—39)



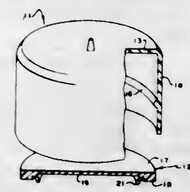
1. A cap of the crown type for sealing the mouth of a vessel which has a peripheral bead, said cap comprising a bottom portion adapted for resting on said peripheral bead to cover the mouth of the vessel, a depending skirt on said bottom portion extending beyond said peripheral bead when the bottom portion rests on the mouth of the vessel, said skirt having corrugations and a smooth corrugation-free terminal rim portion, said rim portion having a free edge and spaced cut-outs extending from said free edge towards said corrugations and defining claws which are upturned and which are separated from one another by said cut-outs, and said cut-outs being restricted to said corrugation-free terminal rim portion and extending to a position spaced from the corrugations to provide a smooth portion in said skirt between the corrugations and the rim portion containing the cut-outs, said cut-outs having a width sufficient to cause adjacent upturned claws to laterally contact each other as said corrugations on said skirt are brought into contact with said bead on the vessel and said rim portion is inwardly deformed to a spaced position with respect to said bead.

3,203,571
SELF SEALING CAP CONSTRUCTION
Robert L. Plunkett, 14 Orsini Place, Larchmont, N.Y.
Filed Dec. 6, 1960, Ser. No. 74,087
12 Claims. (Cl. 215—40)



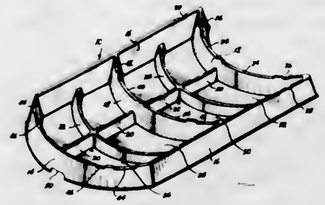
1. An all-plastic molded cap comprising a body having a top panel portion and a depending skirt portion, retaining means on the interior of said skirt portion for engaging retaining means on a container so as to releasably secure said cap in sealing relationship thereon, a flexible annular sealing fin being elongated in radial cross-section projecting downwardly and inwardly into the interior of said cap from its integral circumferential connection to the cap body adjacent the juncture of said top panel and depending skirt portion, and circumferential shoulder means having a bottom annular sealing surface on the underside of said top panel portion and defining the inner sidewall of an upwardly extending annular recess lying above said sealing fin, said annular sealing surface being sealingly engaged by the free inner end of said sealing fin when said cap is secured in sealing engagement on a container whereby the underside of said sealing fin forms a seal with the rim of said container and said sealing flange forms the flexible bottom wall of a sealed air pocket lying above said rim and formed by sealing of said annular recess.

3,203,572
VENTING-TYPE CLOSURE ASSEMBLY
John N. Scott, Jr., and Paul J. Boeke, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,414
5 Claims. (Cl. 215—56)



1. A venting-type closure cap assembly for semi-rigid containers comprising:
(a) A cap having:
(1) A central portion, and
(2) A peripheral skirt extending downwardly from the central portion and adapted to enclose the outer surface of the neck of a container;
(b) An insert formed of a resilient material to be used with said cap for sealing said container comprising:
(1) A central base section, the upper surface of which is adapted to seat tightly within said cap;
(2) A generally flat annular projection disposed adjacent the periphery of the lower surface of said base section and positioned to contact the upper rim of said container;
(3) An annular inwardly inclined lip disposed adjacent and depending from said lower surface and spaced from said projection, and further adapted for normal contact with the inner edge of the upper rim of said container; and
(c) An annular bead on the inner surface of said peripheral skirt defining a spiral of at least one turn adapted to take up said cap assembly, contact said annular projection of said insert on said upper rim, and provide a path for air to enter said container.

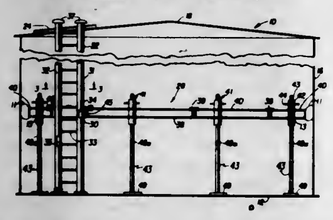
3,203,573
FOOD CONTAINERS
Donald C. Rowe, Box 231, La Conner, Wash.
Filed Apr. 26, 1963, Ser. No. 275,901
3 Claims. (Cl. 220—23.6)



1. An integrally formed, compartmented, stacking and nesting container, for foods, of uniform thickness material providing multiple compartments of uniform elevation bottoms and varying height upstanding walls, which walls, throughout the container, are of inverted V cross-section to permit nesting of identical containers one above the other, said walls including straight parallel longitudinally extending side walls and parallel convex-concave end

walls and a transverse central wall, all of uniform height, and other walls of lesser height and including a central longitudinal wall paralleling said side walls, and centrally positioned laterally extending curved walls paralleling said end walls, all of said higher walls having their tops deformed to provide restrictive ledges below the level of the tops of said walls to receive and align any like container placed above, after it has been oriented 180° from its nesting position, the restrictive ledges being so located and spaced that the outer portions of the inverted V walls of the containers remain substantially free of one another, thereby insuring good ventilation through the ventilated space above the height determined by the lower compartment walls.

3,203,574
STORAGE TANK
Robert W. Bodley, Highland, Ind., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Sept. 27, 1961, Ser. No. 141,110
14 Claims. (Cl. 220—26)



1. A closed storage tank containing a floating roof therein and means for venting to the atmosphere vapors formed beneath said floating roof, said means comprising a substantially vertical member positioned within said tank and extending to the bottom of said tank, said vertical member extending through an opening in said floating roof, said vertical member having a venting passageway therein which communicates with the atmosphere and with said tank below said floating roof, and sealing means cooperating with said floating roof and said vertical member to prevent the flow of vapors from beneath said floating roof to the top of said floating roof, said sealing means comprising an elongate vertical sealing member having an opening therein which is adapted to slidably receive said vertical member, said sealing member being adapted to be non-attachably seated upon said floating roof around the periphery of said opening in said floating roof through which said vertical member extends, said sealing member comprising two mating members which are connected around said vertical members and adapted to slide vertically upon said vertical member with the movement of said floating roof.

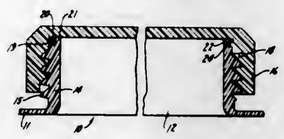
3,203,575
COUNTERBALANCING LID SUPPORT
Ralph F. Anderson and Leonard K. Ploughman, Rockford, Ill., assignors to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Aug. 19, 1963, Ser. No. 302,904
4 Claims. (Cl. 220—35)

1. A counterbalancing lid support for the pivotally mounted lid of a cabinet, comprising a cabinet wing having a horizontal flange secured to a cabinet and a vertical flange extending upwardly and rearwardly of the horizontal flange, a lid wing having an arm pivotally mounted on the rear end of said vertical flange and an arm at right angles to the first arm and secured to the rear of the lid for the cabinet, an elongated housing secured to a side of the lid spaced forwardly of the lid wing and provided with a longitudinal passage therethrough closed at the forward end, said housing having aligned elongated slots on opposite sides of the housing and communicating with said passage, a compression spring located in the passage in the housing with one end seating against the closed end of the housing and a free end, a pin slidably mounted in and extending transversely



through said housing and said elongated slots and against which the free end of said spring abuts, and an elongated link pivotally mounted at one end to said pin and at the other end to the vertical flange of the cabinet wing forwardly of and spaced from the pivotal mounting for the lid wing, said link having a length greater than the spacing between said housing and said lid wing.

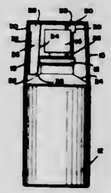
3,203,576
CONTAINER CLOSURE
Gerard Wout, Badhoevedorp, Hendrik Weertman and Haas Fehres, Amstelveen, Netherlands, assignors, by mesne assignments, to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 8, 1963, Ser. No. 271,224
Claims priority, application Great Britain, Apr. 9, 1962, 13,550/62
18 Claims. (Cl. 220—39)



1. In combination, a closure assembly for a container having an orifice surrounded by an orifice defining portion and a closure element for said orifice, wherein at least one of said portion and said element has a circumferential groove formed in its outer surface wall, said groove defining with said wall an annular, outwardly extending, at least slightly resilient tongue adapted to sealingly engage a surface on the cooperating part of the closure assembly, and a supporting ring formed of slightly resilient material positioned in said groove.

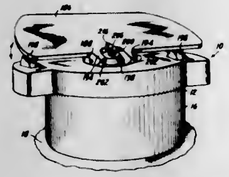
3,203,577
CONTAINER CAP
Joseph W. Parker, Baltimore, Md., assignor to Pharma Plastics Incorporated, a corporation of Maryland
Filed May 24, 1963, Ser. No. 282,938
8 Claims. (Cl. 220—42)

1. A unitary molded resilient plastic cap comprising an axial wall closed at one end by a radial wall and open at its opposite end for application to a container; and at least three perimetrically spaced ribs each having an end fixed to at least one of said walls, each rib having a free portion including an edge proximate to said axial wall spaced over a major portion of its length from said axial wall, and an axial edge provided by said free portion remote from said walls resiliently engageable with a portion of a container, whereby said ribs are yieldable to



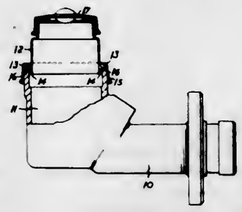
relieve said walls of stresses during application and removal of said cap relative to a container.

3,203,578
CLOSURE DEVICE
Dominick L. Previte, Willowick, Ohio, assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 28, 1962, Ser. No. 176,265
8 Claims. (Cl. 220—44)



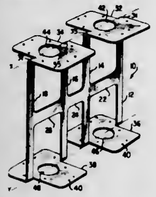
1. A closure device for closing an opening in a pressurized container,
said device having a housing for covering the opening in such container and valving assembly for creating a seal between the closure device and such container,
said housing having an opening provided in the central portion and a plurality of openings disposed in spaced relationship relative to each other adjacent the peripheral portion thereof,
structure for removably securing the closure device to such container including an elongate element disposed adjacent the housing and extending generally thereacross,
said element having a depending part disposed adjacent each end portion thereof in alignment with the peripheral openings in the housing,
linking structure provided with a recess extending therethrough,
said linking structure being disposed in the central opening of the housing and extending therethrough to pivotally interconnect an intermediate portion of the element to the valving assembly to enable the element to be movable between a first position wherein one of said depending parts passes through the respective peripheral opening in the housing and engages such container to effectively secure the closure device thereon and a second position wherein said one depending part of the element is disengaged from such container with the depending parts each being within the respective peripheral openings in the housing and in engagement therewith to facilitate in removing the closure device from the container,
said intermediate portion of the element having a cam surface effective to actuate said linking structure and break the seal between the valving assembly and such container on initial movement of the element from the first position toward the second position to relieve pressure from within such container, and
apparatus responsive to the relief of such pressure on initial movement of the element from the first position to restrain said element in a position intermediate the first and the second positions with the one depending part thereof being in engagement with such container and preventing the removal of the closure device therefrom until such pressure has been relieved from such container,
said apparatus including an elongate member movably disposed within the recess of the linking structure and extending therethrough,
said member being responsive to the relief of such pressure on initial movement of the element from the first position to engage the intermediate portion of the element and prevent further movement thereof toward the second position until after such pressure has been relieved and on relief of such pressure to be disengaged from the intermediate portion of the element and enable the element to be moved toward the second position whereat the closure device may then be removed from such container after such pressure has been relieved therefrom.

3,203,579
CONTAINERS FOR LIQUIDS
Desmond Henry James Reynolds, Sutton Coldfield, England, assignor to Girling Limited, Birmingham, England, a British company
Filed May 13, 1963, Ser. No. 279,730
4 Claims. (Cl. 220—82)



1. Means increasing the effective capacity and for indicating the level of fluid in a reservoir for a master cylinder of an hydraulic braking system of which said reservoir is open at its upper end without said end being surrounded by a flat annular edge and provided at that end with an external screw-threaded portion, comprising a hollow tubular extension member of which as least part of its wall is of transparent or translucent material, an axially extending spigot portion at the lower end of said extension member received within the opening at the upper end of the reservoir, an outwardly extending radial flange integral with said extension member and seated against the upper end of said reservoir, an annular sealing washer interposed between said radial flange and said annular edge of said container, an internally screw-threaded ring clamping said extension member at its lower end to said reservoir and fitting over said radial flange and engaging with said external screw-threaded portion on the upper end of said reservoir, said sealing washer having an external diameter substantially equal to the internal diameter of said clamping member whereby said clamping member engages said washer to restrict its radial expansion under clamping pressure, and a detachable closure cap at the upper end of said extension member.

3,203,580
CARRYING DEVICE FOR CANS
Gerald Erickson, Westport, Conn., assignor to Snap Pac Corporation, a corporation of Delaware
Filed Oct. 19, 1960, Ser. No. 63,580
7 Claims. (Cl. 220—102)



1. A can holding and carrying device for holding together a plurality of cylindrical, flat end, chimed receptacles, such as chimed cans, and for handling and carrying the cans as a unitary package, the device comprising:

(a) an integral one-piece body formed as a substantially flat blank, the one-piece body including;

(b) a flat inside connecting portion having a length substantially equal to the height of receptacles,

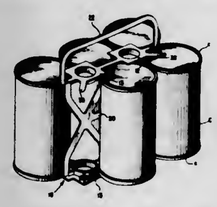
(c) at least one pair of substantially flat, rigid, relatively large, plate-like feet portions integral with the inside portion,

(d) integral bendable hinge connections at both ends of the inside portion hingedly connecting the inside portion with each one of the feet portions at a medial portion thereof such that the large feet-like portions extend substantially on both sides of the hinge line,

(e) both feet portions of the pair of plate-like feet portions being bendable along the integral bendable hinge connections to thereby be positionable wholly within planes parallel to one another and at right angles to the plane of the inside portion, the rigid flat plate-like portions being relatively large and covering a substantial area such that when so bent each of the foot portions is adapted to extend to both sides of the plane of the inside portion with the inside faces of the feet portions overlying flat ends of chimed receptacles, and

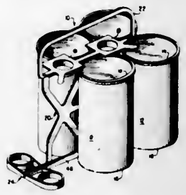
(f) inwardly extending projections integral with and extending inwardly from the faces of opposite feet in the pair of flat plate-like relatively large feet, the projections positioned to engage the chimes of a receptacle to hold them in the device.

3,203,581
CAN CARRIER CLIP
Rixey Britton Wherry, 913 Bank of Southwest Bldg., Houston 2, Tex.
Filed June 5, 1962, Ser. No. 200,126
5 Claims. (Cl. 220—102)



1. A can carrier clip of the type including an integral one-piece body formed as a substantially flat plank, having a flat inside portion, at least one pair of substantially flat relatively large platens integral with the inside portion and hingedly connected thereto to be bendable from the plane of the inside portion to planes parallel to one another for holding cans by their chimes at the top and bottom of the cans, and inwardly extending lugs integral with the platens for engaging can chimes, with the structural improvements comprising; at least one lift tab on one of a pair of platens, bevel loading ramps extending from the outer edge of the platens inwardly and upwardly to the level of the inwardly extending lugs, cylindrically stiffening barrels extending from each platen on the same side as the holding lugs, and holding projections on the outside of the cylindrical barrel at the position of the inwardly extending lugs to aid in holding the chimes.

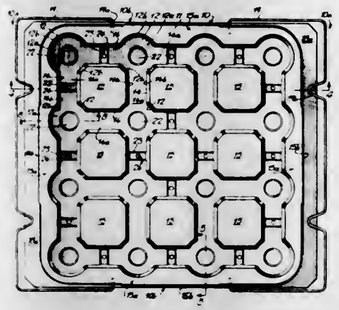
3,203,582
CARRIER CLIP FOR CANS HAVING CHIMES ON ONLY ONE END
Charles E. Waggner III, Chicago, Ill., assignor to Snap Pac Corporation, Houston, Tex., a corporation of Delaware
Filed July 18, 1962, Ser. No. 210,807
3 Claims. (Cl. 220—102)



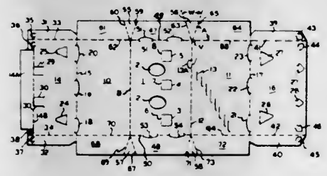
1. A carrier clip for holding a plurality of receptacles together in a unitary package, the receptacles having chimes or similar circumferential projections around one end thereof only, the carrier clip being a unitary blank of moldable plastic material and comprising; at least one platen with depending lugs for engaging and holding the ends of the receptacles having the chimes thereon, an inner portion hingedly integrally connected at one end with the platen and having a length substantially the length of receptacles to extend between adjacent rows thereof, a cantilever support means integrally hingedly connected to the other end of the inner portion, a support beam included in the cantilever support means being hingedly integrally connected with the inside portion and extending parallel to the line of hinging of the inside portion to the platen, a plurality of cantilever support arms rigidly integral with the support beam, there being at least one arm for each can desired to be supported and the arms extending from each side of the support beam and being offset from the platens so as to extend under and support the chimeless end of receptacles held by the clip.

3,203,583
TRAY FOR RECEPTACLES
Stephen W. Amberg, St. James, and David L. St. Clair, Commack, N.Y., assignors to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 7, 1963, Ser. No. 314,436
10 Claims. (Cl. 220—102)

1. A tray for receiving a plurality of tapered drinking cups or the like, said tray comprising an integrally molded one-piece body having peripherally and centrally disposed upwardly protruding plateau-like portions defining a grid-like pattern of equally spaced apart cup receiving sockets and longitudinally and transversely disposed channels interconnecting adjacent sockets, the tops of said plateau-like portions being coplanar and sufficiently extensive to provide liberal spacing between said sockets, said protruding plateau-like portions including arcuately shaped and tapered socket sidewall forming portions whereby the shape of each said socket substantially corresponds to said shape of a cup, said sockets having closed bottoms including respective peripherally disposed and flat surfaces of substantial area residing in the same plane, and said channels having respective flat bottom surfaces of substantial width and extending within the plane of said flat surface areas of the sockets, a plurality of protrusions each of which extends downwardly from the bottom surface of one of a like plurality of those of said channels which are marginally disposed with respect to said tray, each protrusion being situated midway of the length of its respective channel to provide a liquid collecting and draining well, and means defining a drainage opening through each of said draining wells.



3,203,584
ARTICLE CARRIER
Homer W. Forrer, Atlanta, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Sept. 5, 1962, Ser. No. 221,565
2 Claims. (Cl. 220—115)



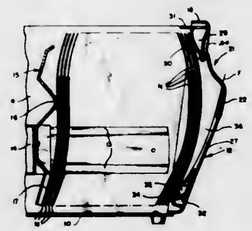
1. A package comprising two rows of cylindrical objects arranged in close parallel relation to each other, the objects having chimed ends, a rectangular main wall disposed in flat parallel relation to the ends of the objects, said main wall being slightly wider than twice the diameter of the objects including their chimes, a pair of rectangular side walls foldably joined respectively along opposite side edges of said main wall and adjacent the sides of the objects, a pair of lap panels having their side edges foldably joined respectively to the edges of said side walls remote from said main wall and extending in flat parallel relation to the ends of the objects remote from said main wall, means securing said lap panels together to form a composite wall of a width slightly less than said main wall, an anchor panel foldably joined to each end edge of each side wall, said anchor panels being at least as wide as the radii of the objects and being folded flat against the inside of said side walls, an end panel foldably joined to each end of said main panel and disposed in normal relation to said main panel and adjacent the sides of the objects, a pair of slots formed in the fold line between each end panel and said main panel, each slot corresponding to one row of objects and being arranged to receive the chime of the end can in one row of objects, a generally triangular web panel foldably joined to each end of each end panel and to the adjacent end of the adjacent anchor panel and with the vertex of said web panel at the adjacent corner of said main panel, the anchoring angle (A) defined by the fold line between each anchor panel and the adjacent web panel and by the fold line between each anchor panel and the adjacent side wall being substantially greater than forty-five (45) degrees and the web angle (W) defined by the fold line between each web and the adjacent anchor panel and by each web and the adjacent end panel being slightly greater than said anchoring angle, and a plurality of chime receiving slots formed along the fold lines between each lap panel and the associated side wall.

3,203,585
ARTICLE CARRIER
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Aug. 30, 1963, Ser. No. 305,454
7 Claims. (Cl. 220—115)



1. An article carrier formed from a blank adapted for side by side nesting with a reversed adjacent blank, each blank comprising a pair of handle panels foldably joined together along a medial fold line, and a pair of riser panels foldably joined respectively to said handle panels along aligned fold lines generally normal to said medial fold line, the end edges of said handle panels adjacent said riser panels being recessed inwardly from said aligned fold lines sufficiently to receive at least a substantial portion of a riser panel of an adjacent identical blank and the recessed edges of said handle panels being configured to conform at least generally with the outer edge of the nested riser panel of the adjacent blank.

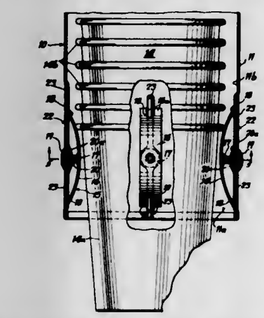
3,203,586
NAPKIN DISPENSERS HAVING MEANS FOR FACILITATING WITHDRAWAL
Cyril E. Downham, Green Bay, Wis., assignor to Fort Howard Paper Company, Green Bay, Wis., a corporation of Wisconsin
Filed Feb. 7, 1963, Ser. No. 256,957
2 Claims. (Cl. 221—55)



1. In a napkin dispenser of the type having a horizontally disposed container for receiving a stack of folded paper napkins of the type having an upstanding front pull flap of less height than the rest of the folded napkin, said flap having an upper tab edge, and said dispenser being of the type having an upright front dispensing panel for said container with a transverse dispensing opening intermediate its height with a lower margin, the improvement characterized as follows: said panel being bulged progressively farther outwardly from its bottom to said lower margin of the dispensing opening to accommodate a pull flap of the forwardmost napkin in a forwardly separated position with its tab edge projecting above the lower mar-

gin of the dispensing opening for easy grasping, means including horizontally spaced upright shoulders projecting inwardly from the inner side of the lower portion of said panel for maintaining the lower portions of the napkins in a rearwardly retarded position in the dispenser to thereby urge said pull flap to fall by gravity to said forwardly separated position, and a pusher plate mounted in the container for sliding movement and having horizontally spaced upright projections on a lower portion thereof positioned correspondingly to said horizontally spaced shoulders of the front panel to coact therewith in preventing the last several napkins from coming out simultaneously.

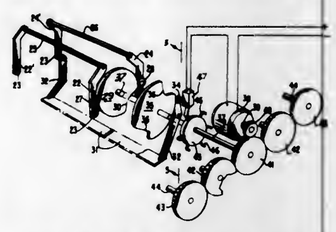
3,203,587
UNIVERSAL RECEPTACLE DISPENSER
Keith B. Mount, New Providence, N.J., and Clark D. Sims, Huntington Station, N.Y., assignors to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 17, 1962, Ser. No. 245,636
13 Claims. (Cl. 221—63)



1. A pull-type dispenser for holding receptacles or the like and for dispensing the receptacles one at a time comprising a hollow cylindrical body having a throat portion at one end thereof through which said receptacles are normally to be dispensed, a plurality of annularly spaced apart and radially inward projecting receptacle abutment elements within said throat portion, each said abutment element extending in longitudinal direction and including a pair of opposite free ends in longitudinally slidable engagement with the interior surface of said throat portion, each said abutment element being resilient and having arcuate shape between its said ends, a stud projecting radially outward from a central location between said opposite ends of each said abutment element, aperture means in said cylindrical body within said throat portion and associated with each said stud, each stud projecting and being radially slidable through its said associated aperture means, and nut means exterior of said throat portion and engaging each said stud, each said stud and its associated nut means biasing said opposite ends of the abutment element from which the stud projects into engagement with said throat portion interior, and each said nut means being adjustable on its said associated stud to vary the extent of said radially inward projection of the abutment element from which the stud projects.

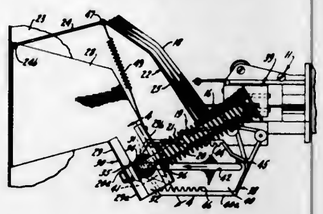
3,203,588
CAM OPERATED ARTICLE RELEASING MEANS
Wilbert O. O'Neal, Arlington Heights, Ill., assignor, by mesne assignments, to L. W. Meazimer, Rockford, Ill., trustee
Filed May 14, 1962, Ser. No. 194,489
4 Claims. (Cl. 221—67)

1. In an article dispensing device having laterally spaced side walls and end walls defining a compartment for holding generally vertical rows of articles in side-by-side relation with the articles in each of the rows laterally and alternately overlapping the articles in the other row, the improvements comprising: a pair of laterally movable abutments in said compartment arranged with one abutment below each of said rows for supporting said articles and mounted for lateral movement to a position to release the bottom article from its row for downward movement in said compartment, each of said abutments having cam follower means fixed thereto; a first disc cam mounted closely adjacent one of said end walls for rotation about an axis parallel to said side walls, arranged with its periphery engaging said cam followers and configured to



effect movement of said abutments alternately and sequentially to cyclically release the lowermost articles from said rows; a laterally movable shelf in said compartment below said abutments, having a further cam follower fixed thereto and arranged to support an article released from any of said rows; a second disc cam adjacent to and fixed relative to said first disc cam and arranged to control lateral movements of said shelf to discharge an article on said shelf from said compartment; and means for cyclically rotating said cams to first effect movement of said shelf to discharge an article thereon, to then return said shelf to article holding position and to then effect release of an article from one of said rows onto said shelf.

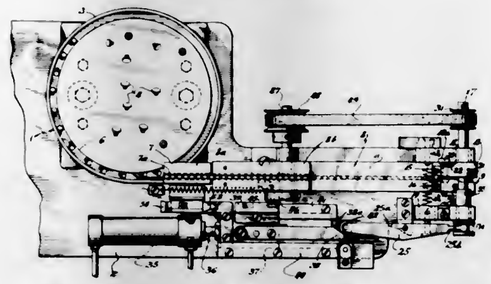
3,203,589
VENDING MACHINE
Hubert M. Glepen, Addison, Ill., assignor to General Vending Corporation, Kenosha, Wis., a corporation of Wisconsin
Filed Nov. 29, 1963, Ser. No. 326,784
1 Claim. (Cl. 221—75)



A mechanism for dispensing flexible articles having relatively rigid sides comprising, in combination, an enclosure defining a pair of vertical side walls for loosely receiving said articles with their rigid sides extending between the side walls, a helix having one end journaled in said enclosure so that the free end of the helix is higher than the journaled end and the helix is between said walls, said helix having a thread dimensioned to receive said rigid sides and thus support said articles on edge between said side walls, means in said enclosure defining an article receiving chute underlying the upper free end of said helix, means for intermittently rotating said helix so as to progressively drop said articles from the free end of the helix into said chute, a follower plate having its lower edge riding in said thread and being disposed substantially at right

angles to said helix so as to underlie and support said flexible articles, means biasing said plate against said helix, and means defining a movable pivotal support for the top of said plate to hold the plate in position with respect to said helix while allowing the plate to be advanced with said articles.

3,203,590
UNIVERSAL PARTS FEEDER
William M. Maki, Martinsville, Ind., assignor to Fansteel Metallurgical Corporation, a corporation of New York
Filed Aug. 17, 1962, Ser. No. 217,746
5 Claims. (Cl. 221—175)



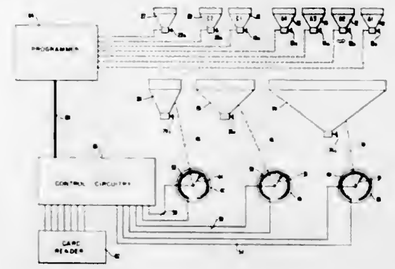
2. A feeder assembly including a parts container, a track connected to said container, means for directing parts from the container into one end of the track, a positioner mechanism disposed adjacent the other end of the track for receiving a part therefrom, means for supporting said positioner, said positioner mechanism including a shaft and a pair of clamping jaws secured thereto for receiving a part therebetween, pulley and lever means secured to opposite ends of said shaft for imparting rotational and transverse movement to said shaft, cam operated means in cooperative engagement with said pulley and lever means to move the positioner transversely and rotate same to locate a part held thereby at a place to be used, interengaging means on said support and positioner for releasing said part from said clamping jaws, and means for controlling the operation of said cam operated means.

ERRATUM

For Class 221—200 see:
Patent No. 3,203,600

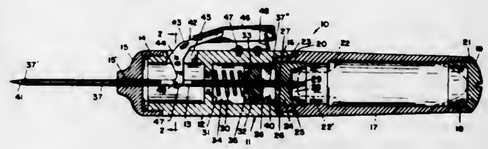
3,203,591
BATCH WEIGHING CONTROL UNIT
Arthur Gerald Daulton and Robert Heller Laing, Minneapolis, Minn., assignors to Magnetic Controls Company, Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 27, 1962, Ser. No. 182,897
20 Claims. (Cl. 222—2)

18. In a batch weighing system for effecting the delivery of desired quantities of first and second ingredients wherein said first ingredient contains an ascertainable proportion of said second ingredient mixed therein, an automatic control unit comprising means responsive to a control media for defininining first and second electrical quantities representative of the magnitudes of the desired pure quantities of said first and second ingredients to be delivered, a first comparison circuit including said first electrical quantity for performing a control function when the sensed delivered quantity of said first ingredient corresponds to the desired quantity thereof, a second comparison circuit including said second electrical quantity for performing a control function when the sensed delivered weight of said second ingredient corresponds to the desired quantity thereof, means responsive to a comparison of said first and second electrical quantities for establishing a reference electrical quantity representative of the summation thereof, means responsive to the amount of said second ingredient included in said first ingredient and to said reference electrical quantity for complementally modifying the response characteristics of said first and second control circuits to have said first circuit perform



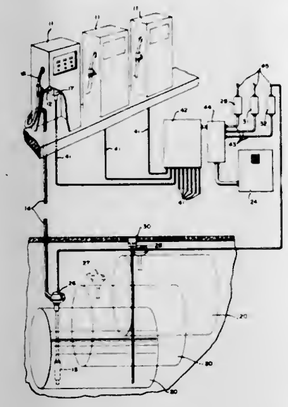
its control function when the actual delivered quantity of said first ingredient in the mixture of said first and second ingredients corresponds with desired quantity thereof and to have said second circuit perform its control function when the sum of the quantities of said second ingredient mixed with said first ingredient and said second ingredient corresponds with the desired quantity thereof.

3,203,592
FLUID DISPENSER
Denis Farandatos, 750 Lexington Ave., New York, N.Y.
Filed Oct. 4, 1963, Ser. No. 314,043
6 Claims. (Cl. 222—5)



1. Apparatus for dispensing controlled quantities of fluid under pressure from a cartridge having a penetrable end, said apparatus comprising a housing including a valve housing portion and a portion adapted to receive and support a cartridge with its penetrable end directed toward the valve housing portion, a sealing plug in said housing intermediate the valve housing and cartridge supporting portions, said plug having a passage extending axially therethrough and having a hollow puncturing needle disposed toward the penetrable end of the cartridge and in axial alignment with said passage, means for moving said cartridge axially relative to the needle to penetrate said penetrable end, spring biased valve means within said valve housing portion, including a tapered end portion adapted in one position to snugly fit said passage through said plug to close the same, and means for retracting said valve means against the force of said spring any predetermined distance, whereby accurately controlled quantities of fluid may be released from said cartridge, said valve means including a dispensing tube terminating at one end in said conical valve member, a piston on said tube in sealing engagement with the valve housing portion of said housing member and in spaced relation to said conical valve member, and port means in said dispensing tube between the piston and said valve member.

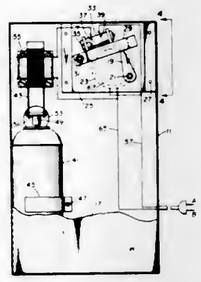
3,203,593
GASOLINE SERVICE STATION USE INDICATING APPARATUS
William J. James, Box 351, Berkeley, Calif., and Hubert E. Friend, Berkeley, Calif.; said Friend assignor to said James
Filed Aug. 29, 1963, Ser. No. 305,408
4 Claims. (Cl. 222—30)



1. A gasoline service station use indicating apparatus comprising, a plurality of dispensers for delivering gasoline to a plurality of automobiles, a supply pump for supplying gasoline to said dispensers and including an electrically operated motor, manually operated means connected to each dispenser for selectively placing each dispenser in dispensing or nonoperative condition, a plurality of electric switches each having open and closed positions and each being mounted on one of said dispensers, said switches each being adapted to be in open position when its corresponding dispenser is in nonoperative condition and in closed position when the dispenser is in dispensing condition, alternating current power supply means electrically connected to said switches, a first plurality of branch circuits each connected to one of said switches and adapted to receive current in one direction from said power supply means when said corresponding switch is in closed position, electrical switching means coupled to said branch circuits and responsive to current from any one of said circuits when any one of said switches is in closed position, said switching means being adapted to energize said motor in response to current in any one of said branch circuits, a second plurality of branch circuits each connected to one of said switches and adapted to receive current in the opposite direction from that of said first branch circuits, said second branch circuits each including means for limiting said current therein to a predetermined pulse, and pulse responsive recording means coupled to said second plurality of branch circuits for recording the events of pulsed currents therein.

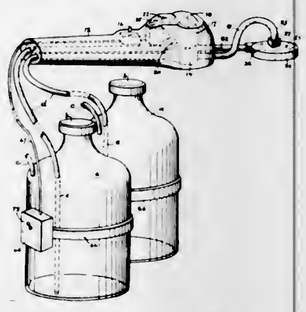
3,203,594
ODOR-CONTROL SPRAY DEVICE
Fulton J. Jones, 2806 Gross Road, Dallas 28, Tex.
Filed Apr. 9, 1962, Ser. No. 186,103
2 Claims. (Cl. 222—70)

1. A system for periodic delivery of material from a pressurized container having a rotatable spring loaded valve element which comprises:
(a) a solenoid having an armature in intimate contact with said valve and having a direction-determining structure for actuating said valve upon energization of said solenoid to eject spray from said container in a predetermined direction,
(b) a casing for receiving said container and for mounting said solenoid and having a port therein positioned for registration with the spray output from said valve,
(c) a cam adapted to be driven cyclically,
(d) means for driving said cam,
(e) power terminals,



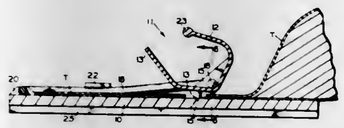
(f) a mercury switch connected in circuit with said solenoid and said power terminals and biased into engagement with said cam for closure of a circuit through said switch periodically in response to movement of said cam, and
(g) means for connecting said power terminals to a source of electric power to energize said circuit.

3,203,595
PRESSURE DISPENSER FOR SEMI-FLUID SUBSTANCES
Melvin J. Berkowitz, 7800 Lafon Ave., University City 30, Mo.
Filed June 3, 1963, Ser. No. 285,076
5 Claims. (Cl. 222—76)



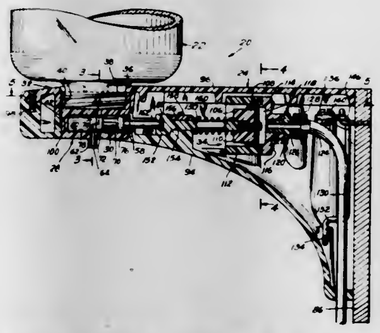
1. For use for dispensing a semi-fluid substance under pressure during a fractional portion of a second, dispenser apparatus comprising
a dispenser head having an opening,
means connected to said dispenser head to supply such substance under pressure, and
electrical actuating control means including in circuit a solenoid-operated valve interconnected between said supply means and said dispenser head for governing the flow of the substance so supplied,
electrical time-delay means coupled to said solenoid-operated valve and whose energization limits the time interval said valve remains open when actuated, and
manually operated switch means electrically connected to said time-delay means and by which the solenoid of said valve is energized,
whereby flow under pressure is initiated manually by the operator and is cut off by the electrical time-delay means in a lesser time than could be controlled by the operator.

3,203,596
HOLDER AND DISPENSER FOR COLLAPSIBLE TUBE
Isaac F. Davidson, 15404 SE. Wallace Road, Portland, Oreg.
Filed June 1, 1964, Ser. No. 371,390
4 Claims. (Cl. 222—103)



1. In a holder and dispenser for collapsible tubes of the character described, a base plate, a substantially trough-shaped operating lever assembly attached to said base plate, a pressure plate portion in said assembly extending forwardly and upwardly from the bottom portion of said assembly, a lifting lever plate extending rearwardly and upwardly from the bottom portion in said assembly, a pair of rearwardly extending cam elements located at opposite sides of the bottom portion of said assembly respectively spaced apart a distance greater than the width of the flattened portion of a collapsible tube on which the device is used and engaging said base plate when said assembly is tilted rearwardly, and a spring hinge mounting for the bottom portion of said assembly on said base plate constantly exerting a force urging the bottom portion of said assembly against said base plate.

3,203,597
SURGICAL SOAP DISPENSER
Richard W. Birch, Carmel, N.Y., assignor to Bard-Parker Company, Inc., Danbury, Conn., a corporation of New York
Filed Jan. 22, 1964, Ser. No. 339,389
18 Claims. (Cl. 222—179)



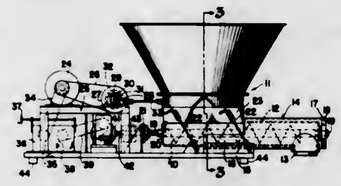
1. A capped receptacle comprising a receptacle body having an open end, a cap extending over the open end, said cap having walls defining a piston pump cylinder and an intake port communicating with the interior of both the body and cylinder and an exhaust port extending from the cylinder to the cap exterior, a piston defining with the cylinder a pumping chamber and being shiftable in said cylinder between a first position at which liquid is withdrawn into the pumping chamber from the body through the intake port and a second position at which the liquid in the pumping chamber is exhausted out through the exhaust port, and a slidable ring valve operatively associated with said piston and adapted to be displaced thereby to close the intake port when said piston is in said second position and close said exhaust port when said piston is in said first position.

3,203,598
CONTROLLABLY OPENABLE AND CLOSABLE HOLDER FOR A DISPOSABLE LIQUID CONTAINER
Muriel M. Alford, 1071 E. Magnolia, Burbank, Calif.
Filed Jan. 31, 1964, Ser. No. 341,499
12 Claims. (Cl. 222—183)



10. A controllably openable and closable holder for a disposable liquid container, comprising: container-receiver means defining a receiving recess therein adapted to receive, engage and support the exterior bottom and side surface portions of an auxiliary disposable liquid container of a similar but slightly smaller shape and having an opening thereinto, said container-receiver means being provided with manually graspable handle means and being provided with cover-receiver recess means cooperable to frictionally receive, engage and hold a disposable cover member in a manner cooperable for covering and closing said opening into said disposable container.

3,203,599
METERED VIBRATORY CONVEYOR
Elmer J. Renner, Aurora, Ill., assignor to Carrier Manufacturing Co., Jeffersonville, Ind., a corporation of Kentucky
Filed June 17, 1963, Ser. No. 288,112
5 Claims. (Cl. 222—196)

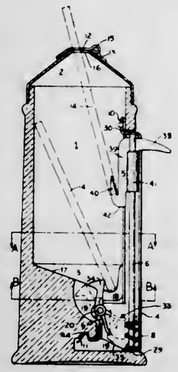


1. A metered vibratory conveyor comprising, in combination, an auger which is rotatably supported in bearings fixed to a base and has its axis at an angle to the vertical, a conduit which extends along at least the lower portion of the auger throughout at least part of the length of the auger and which is mounted on the base for vibratory translation relative to the base, a vibratory drive for producing such vibratory translation of the conduit, and a rotary drive for rotating the auger to produce a metered flow of material along the conduit.

3,203,600
SANITARY SIPPING-STRAW DISPENSER
Leonard Atlee Wills, Arlington County, Va. (P.O. Box 7354, Ben Franklin Station, Washington, D.C.)
Filed Feb. 10, 1964, Ser. No. 343,869
4 Claims. (Cl. 221—200)

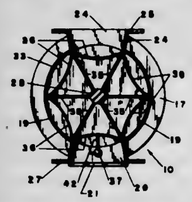
1. A straw dispenser comprising a receptacle having a dispensing aperture and bottom and side walls, the bottom wall being adapted to support the bottom ends of straws, a straw ejector, a straw agitator, said bottom wall having a concave surface therein and an opening in the concave surface for the passage of said ejector and said agitator,

means for mounting said ejector on said receptacle for vertical reciprocation from a lower position to an upper position and during movement from the lower position to pass through the ejector opening, said agitator having first and second portions and being movably mounted on said receptacle and positioned so that said first portion is movable through the agitator opening and adapted to contact the lower portion of the straws to agitate the same,



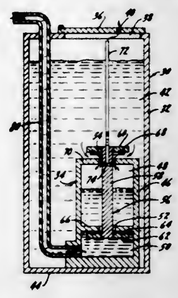
said ejector and said agitator being positioned with respect to each other so that when said ejector moves from its upper position to its lower position said ejector actuates the second portion of said agitator and causes the first portion to move into the agitator opening to agitate the straws to permit a straw to move over the ejector opening and into the path of said ejector whereby the raising of said ejector through the ejector opening may elevate a straw into said dispensing aperture.

3,203,601
ROTARY AIR LOCK DISPENSER
Forrest L. Carson, Borger, Tex., assignor to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
Filed July 5, 1962, Ser. No. 207,519
1 Claim. (Cl. 222—220)



An air lock comprising a hollow cylindrical body, means for connecting said body to, and affording communication with, a hopper, means opposite said first named means for connecting said body to, and affording communication with, a conveyor, a shaft journalled in said body intermediate the means for connecting said body to a hopper and the means for connecting said body to a conveyor, a pocketed wheel mounted on said shaft for rotation therewith with the pockets therein being adapted to successively and respectively align with the means for securing said body to said hopper and to said conveyor, said pockets each including an arcuate plate convexly curved with respect to said shaft and concavely curved with respect to the circumference of said wheel, a second shaft journalled in said body centrally of the means for connecting said body to a conveyor, said second shaft arranged parallel to said first shaft, means connecting said shafts to rotate said second shaft upon rotation of said first shaft in the same direction as said first shaft, a single scraper blade secured to said second shaft in a radially outwardly extending direction, the curvature of said arcuate plate and the radial length of said scraper blade permitting said scraper blade to move respectively through each of said pockets during rotation of said wheel with a wiping relation to said plate, said scraper blade having a radial length of substantially less than the opening in said means for connecting said body to a conveyor whereby upon rotation of said scraper blade said means for connecting said body to a conveyor will remain continuously open.

3,203,602
LINE PRESSURE OPERATED METERING DEVICE FOR WATER CONDITIONING SYSTEM
Benjamin H. Kryzer, St. Paul, Minn., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed June 5, 1963, Ser. No. 285,658
7 Claims. (Cl. 222—442)

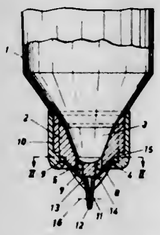


1. A metering device comprising a body member having a pressure chamber and a metering chamber therein, said metering chamber being adapted to receive liquid from a reservoir chamber containing a liquid, said metering chamber and said pressure chamber communicating with one another, a valve means associated with said body member and having a first and second position, said first position preventing liquid from flowing from said pressure chamber to said metering chamber while allowing liquid to flow from said reservoir chamber to said metering chamber and said second position allowing liquid to flow from said metering chamber to said pressure chamber while preventing liquid from flowing from said reservoir chamber to said metering chamber, and vent means attached to said valve means to remove air displaced from said metering chamber as liquid enters said metering chamber.

3,203,603
CLOSING DEVICE FOR CONTAINERS FILLED WITH PASTES OR LIQUIDS
Gustav Eric Valdemar Benson, Stortorget 13, Malmo, Sweden
Filed Jan. 17, 1964, Ser. No. 338,440
Claims priority, application Sweden, Jan. 19, 1963, 609/63; Mar. 14, 1963, 2,772/63
8 Claims. (Cl. 222—494)

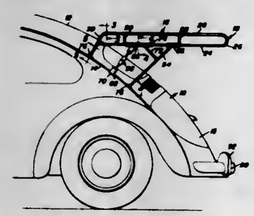
1. A closure device for a collapsible tube having a discharge portion provided with a round mouth, said device comprising an elongated round seat member fluidtight on the discharge portion and axially alined with the mouth of the tube and having a solid projection of circular cross section at the outer end portion thereof and projecting from the tube, the seat member having a circular base portion disposed on the discharge portion coaxial with the mouth, the seat member having a plurality of passageways uniformly angularly and radially spaced with respect to the axis of the projection between

the base portion and axis for communication between the mouth of the discharge portion and the zone at the periphery of the projection where the latter is of circular cross section, and a somewhat generally conically shaped elastic membrane having a reenforcing peripheral mounting portion secured fluidtight on the base portion of the



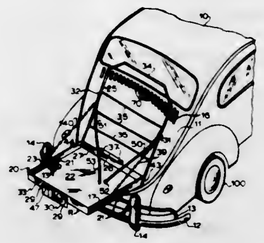
seat member and resiliently engaging on the projection completely therearound at the zone of the circular cross section to seal off said passageways from the atmosphere, the membrane terminating in a beak axially outer from the end of the projection and adapted to be transversely cut off, the material of the membrane being thin near the tip of the beak.

3,203,604
COMBINATION VEHICLE LUGGAGE CARRIER AND SUNSHADE, AND MOUNTING ASSEMBLY THEREFOR
James H. Spence, Burlingame, Calif. (P.O. Box 38, Peoria, Ariz.)
Filed Apr. 6, 1962, Ser. No. 185,594
3 Claims. (Cl. 224—42.1)



1. In combination with a vehicle having a roof and an inclined rear window at the rear thereof, load supporting means disposed at the rear of the vehicle generally below the top surface of the roof and directly above at least a major portion of the rear window to reduce the wind resistance of the load supporting means and the load carried thereon during forward movement of the vehicle, said load supporting means including a platform forming a shield for the rear window and upper and lower side members supporting the platform, longitudinally spaced depending forward and rear supporting members attached to each lower side member for supporting the platform in substantially a horizontal position, the lower ends of said supporting members having means thereon abuttingly engaging the vehicle, and rigid, positively adjustable tension members interconnecting the lower side members of the load supporting means and the vehicle between the forward and rear supporting members retaining the forward and rear supporting members in compression thereby locking the load supporting means to the vehicle and preventing fulcruming movement of the rear load supporting member about the lower end thereof, each rear supporting member including a brace substantially disposed at right angles thereto, said brace being connected with the lower side member of the load supporting means for rigidifying the load supporting means in relation to the rear supporting members thereby precluding fulcruming movement of the platform about the rear supporting member, the upper ends of each of the rear supporting members, braces and tension members terminating in an elongated sleeve pivotally mounted on the lower side members of the load supporting means for enabling pivotal movement thereof about the longitudinal axis of the respective lower side members for positioning the rear supporting members, braces and tension members in a desired orientation in relation to the vehicle.

3,203,605
LUGGAGE RACK
Josef S. Karl, 665 Holman Ave., Athens, Ga.
Filed Aug. 28, 1963, Ser. No. 305,141
1 Claim. (Cl. 224—42.07)



A luggage rack for an automobile having a rear deck, a bumper member, a grill in said rear deck, and a support bracket mounted on said rear deck below said grill, said luggage rack comprising a horizontal tray extending from said rear deck over said bumper member; a plurality of brackets attached to said tray and engaging said bumper member; a wall extending upward from the edges of said tray; a flange extending between said tray and said support bracket to prevent tilting of said tray in one direction; a support member having a substantially U-shape and having a pair of side members pivotally attached to said wall, said support member being disposed substantially parallel to said rear deck of said automobile; a pair of chains, one of said chains being attached to each of said side members and to said wall to prevent tilting of said tray in the opposite direction; a strap extending between said side members; a pair of inner plates positioned on the opposite side of said grill from said support member; a pair of outer plates positioned adjacent to said grill between said support member and said grill; a pair of shafts with one shaft fixedly extending through each of said outer plates, the said grill, and one of said inner plates; a pair of rings with one ring attached to each of said shafts between the said support member and the grill; a pair of sleeves with one sleeve on each of said side members; and a pair of hooks with one hook mounted on each sleeve and engaging one of said rings.

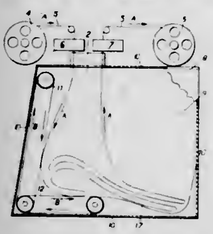
3,203,606
CARRYING ROD FOR WALLBOARD PANEL
Melvin I. Masterson, Jr., Long Beach, Calif., assignor to Wallboard Tool and Equipment Co., Long Beach, Calif., a corporation of California
Filed Sept. 16, 1963, Ser. No. 309,099
4 Claims. (Cl. 224—45)

1. A carrying rod for a wallboard panel comprising,
a shaft,
a handle on one end of said shaft,
a foot fixedly mounted on the shaft at the end opposite said handle,
and a cam flange on said foot, and extending upwardly from the top surface of said foot, said cam flange

extending at a right-angle to the center line of said shaft and in a plane parallel to the handle, and parallel to the wallboard panel in the carrying position of the parts.



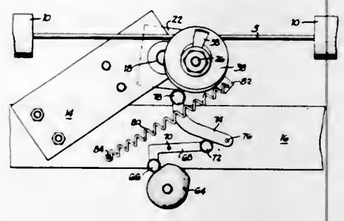
3,203,607
TAPE STORAGE APPARATUS
Ralph Allen Mason, Croydon, Surrey, England, assignor to Creed & Company Limited, Surrey, England, a British company
Filed Oct. 30, 1962, Ser. No. 234,161
Claims priority, application Great Britain, Nov. 15, 1961, 40,857/61
4 Claims. (Cl. 226—119)



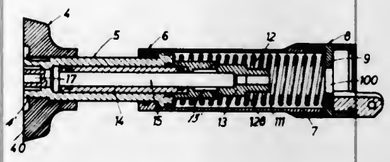
1. Tape-storage apparatus comprising: two substantially parallel surfaces spaced apart by a distance which is slightly greater than the width of said tape; confining means cooperating with said substantially parallel surfaces to form a tape-storage compartment, said confining means comprising a plurality of minor walls substantially normal to said substantially parallel surfaces and comprising further first and second endless belts; means for movably mounting said first belt so that one surface of said belt constitutes a movable confining surface within said compartment and substantially parallel to one of the minor walls thereof; means for mounting said second belt so that a surface of said second belt forms a portion of a movable confining surface within said compartment and substantially parallel to a second minor wall thereof; and means for moving said belts to guide said tape as it is fed into said apparatus to follow a trajectory which is initially substantially parallel to one of said minor walls and which then turns and assumes a direction substantially parallel to said second one of said minor walls.

3,203,608
STOCK HANDLING APPARATUS
Bruce W. Mogolis, Dearborn, Mich., assignor to Bruce Machining & Engineering, Inc., Dearborn, Mich., a corporation of Michigan
Filed Sept. 25, 1963, Ser. No. 311,392
13 Claims. (Cl. 226—124)

1. Stock feeding apparatus for longitudinally feeding elongated rod stock along a predetermined path comprising a shaft mounted for rotation about an axis perpendicular to and offset from said predetermined path, a pair of feed discs mounted on said shaft for rotation therewith, means resiliently biasing said discs into a normal position wherein the opposed faces of said discs are disposed in axially spaced parallel relationship to each other and to said path, means for moving said shaft toward said path to cause said discs to frictionally grip stock supported on said path, means supporting at least one of said discs upon said shaft for limited tilting movement from said normal position while maintaining the disc coupled to said shaft for rotation therewith to accommodate the entrance of said stock between the faces of said discs, and means for driving said shaft in rotation to cause said discs to longitudinally advance stock engaged between said discs along said path.

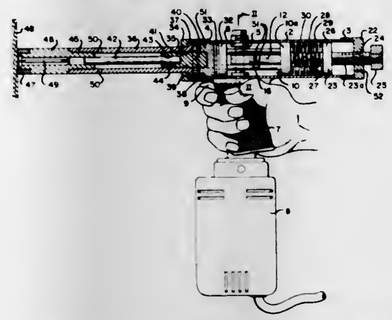


3,203,609
APPARATUS FOR DRIVING BOLTS INTO MASONRY, STRUCTURAL PARTS AND THE LIKE
Karl Diehl, Wuppertal-Elberfeld, Germany, assignor to Carl Bauer, Wuppertal-Cronenberg, Germany, a firm
Filed Apr. 11, 1962, Ser. No. 186,746
Claims priority, application Germany, Apr. 13, 1961, B 62,126; June 22, 1961, B 62,996
9 Claims. (Cl. 227—8)



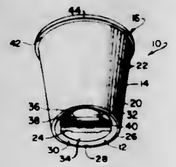
1. An apparatus for driving bolts into masonry or the like comprising, in combination, a housing having a rear end adapted to carry a firing mechanism; cylinder means having a front end and a rear portion facing the rear end of said housing and forming a cartridge holder, said cylinder means being slidably guided in said housing between a forward idle position and a cocked position in which said cartridge holder is located at said rear end of said housing ready to cooperate with the firing mechanism; spring means engaging said cylinder means and biased so as to yieldably maintain said cylinder means in said idle position so as to prevent movement of said cylinder means to said cocked position in the absence of a bolt in said front end portion of said cylinder means; and a piston slidably guided in said cylinder means, said piston having a front end adapted to engage a bolt to be driven by said apparatus and said piston having a shoulder face engaging a corresponding shoulder face on said cylinder means so as to move said cylinder means from said idle to said cocked position upon insertion of a bolt into said front end of said cylinder means in engagement with said front end of said piston and upon exerting forward pressure on said housing.

3,203,610
AUTOMATIC HAMMER
Richard R. Farrell, 203 8th St., Oakmont, Pa.
Filed Apr. 26, 1963, Ser. No. 275,885
12 Claims. (Cl. 227—146)



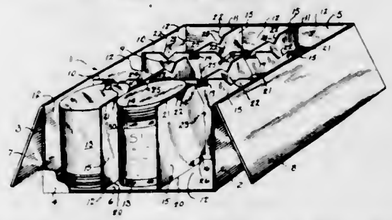
1. An automatic hammer comprising a nail guide having a nail receiving bore terminating in an open end, a striker of relatively small cross-sectional area extending into the nail guide from the opposite end thereof and an impeller of relatively great cross-sectional area in communication with the striker through a completely confined fixed volume of non-compressible fluid, each of the striker and impeller being mounted and guided for movement in contact with and toward and away from the completely confined fixed volume of non-compressible fluid, and means for rapidly advancing the impeller in the direction toward the completely confined fixed volume of non-compressible fluid, causing, since the volume of the non-compressible fluid remains constant, the striker to be projected in the direction away from the completely confined fixed volume of non-compressible fluid at higher speed than the speed of advance of the impeller, to exert greater pressure than the pressure exerted by the impeller on the completely confined fixed volume of non-compressible fluid and through a greater distance than that through which the impeller advances, enabling the striker to drive a nail in the nail guide through the open end thereof.

3,203,611
INSULATED NESTABLE CONTAINER AND METHOD OF MAKING THE SAME
Thomas F. Anderson, Wilmington, David C. Trimble, Yorklyn, and Donald H. Storey and Edwin B. Hoffman, Wilmington, Del., assignors to Haveg Industries, Inc., a wholly-owned subsidiary of Hercules Powder Company, New Castle, Del., a corporation of Delaware
Filed July 10, 1962, Ser. No. 208,866
4 Claims. (Cl. 229—1.5)



1. A thin walled nestable container comprising a container body including a bottom and an upwardly and outwardly tapering peripheral wall extending upwardly therefrom so as to enable said container body to be nested within a similar container with the peripheral wall of said container body inside the peripheral wall of the similar body, said bottom having a pair of upwardly projecting portions spaced inwardly from said peripheral wall and defined by a plurality of thin walled sections disposed in concavo-convex relation, the thin walled sections defining each upwardly projecting portion including an upwardly and inwardly extending arcuate walled section, an upwardly and inwardly extending straight walled section disposed between the ends of said arcuate walled section, and an arcuately segmental walled section extending horizontally between the upper edges of said arcuate and straight walled sections, said pair of upwardly projecting portions providing a pair of upwardly facing horizontally extending stacking surfaces spaced horizontally apart, said bottom including a pair of downwardly facing horizontally extending stacking surfaces spaced horizontally apart a distance which is greater than the distance between said upwardly facing stacking surfaces an amount greater than twice the wall thickness of said bottom.

3,203,612
PARTITION MEMBER
Edwin C. Schaefer, Brookfield, Wis., assignor to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,940
1 Claim. (Cl. 229—15)



A package for jars with caps having edges projecting laterally beyond the lateral side surface of the jars, comprising;

a carton;

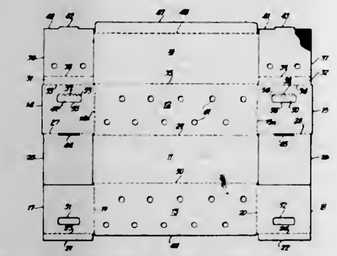
a partition assembly within said carton having row partitions and column partitions, each of said row and column partitions including a plurality of partition cell walls with tops edges, said row and column partitions being assembled in orthagonal interlocking relationship to define cells bounded by said cell walls and containing said jars protectively separated from one another by said partition cell walls, said partition cell walls being approximately as high as said jars and having an upward opening wedge-shaped notch centered in the top edge of each said cell wall;

said notch having a mouth width approximately equal to the length of a cord drawn to said projecting edges of said cap and tangent to said lateral side surface of a jar to be separated, whereby said notches will guide capped jars into said partition cells without interference with the caps.

3,203,613
COLLAPSIBLE SHIPPING CARTON
Jack E. Stowe, Minneapolis, Minn., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Nov. 19, 1962, Ser. No. 238,625
2 Claims. (Cl. 229—16)

1. A collapsible carton blank formed of a substantially rectangular piece of paperboard material and comprising top, back, bottom and front walls integrally attached in the order stated along side edge fold lines, each of said walls being of equal length along said lines, said top and bottom walls being of mutually equal width and said front and back walls being of mutually equal width but less than the width of said top and bottom walls, a pair of end wall reinforcing panels of equal width with and extending out from each end of said front wall and in-

tegrally attached thereto along end edge fold lines, a pair of bottom panels of equal width with and extending out from each end of said bottom wall but detached therefrom, a pair of end wall panels of equal width with and extending out from each end of said back wall panel and integrally attached thereto along end edge fold lines, a pair of top panels and top panel extensions, each top panel together with its associated top panel extension being of equal width with and extending out from each end of said top wall but detached therefrom, each of said panels extending out from their respective walls by a distance equal to the width of said top and bottom walls,



said bottom panels being integrally attached to said end wall panels along fold lines which form extensions of the side edge fold line between said back and bottom walls, said top panels being integrally attached to said end wall panels along fold lines which form extensions of the side edge fold lines between said top wall and said back wall, and said top panel extensions being integrally attached to said top panels along fold lines located such that when said top panels are bent at right angles to their respective end wall panels each top panel extension may be bent over to form the hypotenuse of a right triangle having its apex at the fold line connecting the end wall panel with its associated bottom panel.

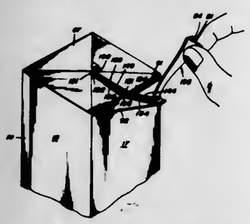
ERRATUM

For Class 229—17 see:
Patent No. 3,204,250

3,203,614
CONTAINER

Louis P. Larson, Glendale, and Walter C. George, St. Louis, Mo., assignors to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware

Original application July 18, 1960, Ser. No. 43,525, now Patent No. 3,082,583. Divided and this application Dec. 31, 1962, Ser. No. 248,628
11 Claims. (Cl. 229—17)

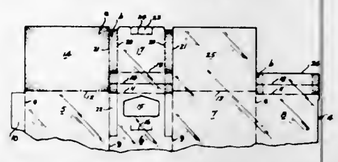


3. A container for flowable materials comprising:
(a) a body structure having a closed planar bottom structure and a closed planar top structure;
(b) a pouring spout being compactly arranged and disposed in said top structure of the container and integral therewith said pouring spout comprising at least four compactly infolded, triangular panels sealed at the top of the container;
(c) integral opening means being carried by and connected with the top structure along predetermined lines of weakness of the container; and
(d) said opening means being adapted to be grasped, pulled, and removed from said structure along said lines of weakness to unseal the pouring spout and simultaneously to erect the same to pouring position.

3,203,615
CARTON HAVING A DISPENSING FACILITY, AND CARTON BLANK THEREFOR

George Arlington Moore, New York, N.Y.
(910 Lake Shore Drive, Chicago, Ill.)

Filed Feb. 21, 1963, Ser. No. 260,224
4 Claims. (Cl. 229—17)



1. A carton blank of foldable material comprising
hinged panels adapted to form the front, rear and side walls of the carton,
one of said side walls being provided with a dispensing aperture adjacent to its end edge,
panels hinged to the end edges of the said front and rear wall panels and adapted to overlie each other to form an end wall of the said carton,
tuck panels secured by connecting hinges to the end edges of said side wall panels respectively and adapted to form tucks underlying the said end wall of said carton,
each tuck panel comprising a pair of adjacent areas hinged together along a line parallel to the connecting hinge,
said areas being superposable to form a two-ply tuck,
a closure flap for said dispensing aperture hingedly connected to the outer edge of the outer ply of the adjacent tuck,
adhesive means adapted to secure said closure flap to said side wall along an area adjacent to said aperture on the side remote from said closure flap hinge,
one of said end wall panels being coated on both faces with heat-activatable adhesive,
the coating on one face serving to bond said panel to the underlying tucks when said carton is folded,
the coating on the other face serving to bond said panel to the other end wall panel to provide a permanent two-layer end wall construction.

3,203,616
POUR SPOUT CARTON CONSTRUCTION

Clay Paul Bolton, Granada Hills, Calif., and Mitchel E. Holy, Chicago, Ill.; said Bolton assignor to Carnation Company, Los Angeles, Calif., a corporation of Delaware, and said Holy assignor to Rockford Paper Mills, Inc., Chicago, Ill., a corporation of Michigan

Filed Apr. 2, 1964, Ser. No. 356,736
1 Claim. (Cl. 229—17)

A carton comprising:
(a) a first, second, third and fourth adjacent sides, bottom, top and a glue flange projecting from said second adjacent side, said first side being adhered to the flange to form an overlapping seam along the adjacent side;
(b) spaced line perforations across the first side defining weakening traverse lines which form a flap adapted to be partially separated from the side along the weakening line, said flap further provided with a cut adapted to provide a locking stem when partially separated from said flap, said stem positioned so that when the flap is depressed into the carton the stem engages beneath the flange and locks under the flange;

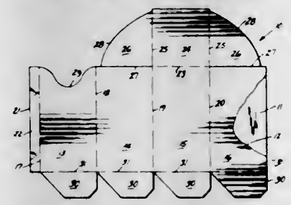


(c) cuts extending outwardly and traversely at each side of the flap at a position overlying the flange, said cuts forming shoulders, said shoulders adapted to abut against portions of said first side to restrain ingress of the flap into the carton.

3,203,617
CARTON-TYPE CONTAINER FOR ELECTRIC LIGHT BULBS

Richard E. Paige, 411 E. 57th St., New York, N.Y.

Filed Jan. 17, 1964, Ser. No. 338,414
4 Claims. (Cl. 229—39)



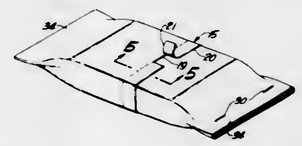
1. A container for an electric light bulb having a globular part and a narrower base, comprising a four-sided sleeve having a cover at one end hinged to one of said sides, the sleeve being adapted snugly to accommodate the bulb with its globular part directly beneath said cover, said cover being provided with lateral tuck-in flaps adapted to slide along the inner surfaces of the adjacent sleeve sides as the cover is swung into and out of container-closing disposition, the inner surfaces of said flaps bearing corrugations extending perpendicular to the cover edges to which they are appended, said corrugations thereby lying parallel to the sleeve axis when the container is closed and swinging toward an orientation at right angles thereto as the cover is lifted to open the container, said flaps being adapted frictionally to engage the globular part of the bulb between them, whereby the changing angularity of said corrugations urges the bulb into the container as the closing of the cover is initiated and resists lifting of the cover after the container is closed.

3,203,618
SHIPPING WRAPPER

James B. Andrews, Sierra Madre, and John C. Fischer, Flintridge, Calif., assignors to St. Regis Paper Company, New York, N.Y., a corporation of New York

Filed Oct. 28, 1963, Ser. No. 319,118
3 Claims. (Cl. 229—40)

1. A shipping wrapper comprising a one-piece plaque of single-face corrugated paper board having a narrow tear strip formed crosswise of said corrugations and free of corrugated paper throughout the length of said tear strip, said tear strip having three parallel weakened lines extending lengthwise thereof to facilitiate folding of said strip upon itself along its median axis and against the exterior of said face sheet to position the adjacent ends of said corrugations closely adjacent one another in end-to-end abutting alignment, said wrapper being wrapable about an article to be shipped with said tear strip encircling and lying flush against the exterior of the wrapped

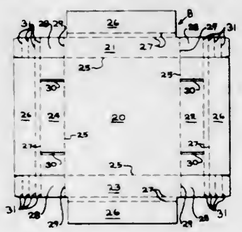


article, and said strip being readily separable from the wrapper proper along said weakened lines thereby providing expeditious access to the wrapper contents at its destination.

3,203,619
SELF-LOCKING CLOSURE

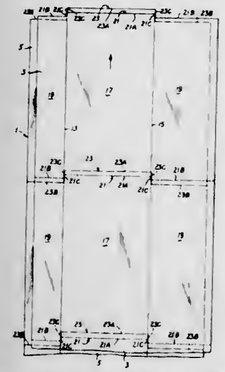
James C. Wilson, Jacksonville, Fla., assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed May 17, 1962, Ser. No. 195,495
1 Claim. (Cl. 229—43)



A shipping container comprising, in combination: a body portion having four side wall panels foldably connected together into a tubular configuration; a body flap foldably attached to each side wall panel at an edge thereof at a first end of said body portion, each of said flaps extending from the respective edge toward the second end of said body portion and lying alongside the respective side wall panel; a closure for closing the first end of said container, said closure comprising a rectangular central panel spanning the first end of the body portion; a first flap foldably attached to each marginal edge of said panel and folded to overlie one of said body flaps closely adjacent thereto; a second flap foldably attached to each of said first flaps and reversely folded to extend therefrom toward the first end of said body portion and being disposed between one of said wall panels and one of said body flaps thereby to interlock said closure and said body portion; a locking tab foldably attached to each end edge of an opposed pair of said first flaps, each of said tabs being folded about the corners of said closure and having a first portion disposed more proximately to the respective end edge and lying in parallel relationship to the adjacent first flaps, and having a second portion foldably attached to the first portion; a pair of spaced apart slots in each of the adjacent first flaps; each of the second portions of the locking tabs being inserted into one of said slots and being reversely folded to extend toward the respective end edge to which said tab is attached, said second portion of the tab lying intermediate one of said first flaps and one of said body flaps and being restrained from retraction through said slot by the closely adjacent disposition of said first flap with respect to said body flap, whereby the opposed pair of first flaps is interlocked with the adjacent first flaps and with the body flaps.

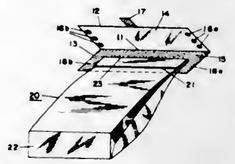
3,203,620
BAGS WITH PINCH-TYPE END CLOSURE
Arnold F. Becker, San Pedro, Calif., assignor to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri
Filed Jan. 24, 1963, Ser. No. 253,653
3 Claims. (Cl. 229—57)



1. A bag formed from a tube having first and second opposed walls joined at the sides of the tube, said tube being a multi-ply tube having an inner ply and an outer ply, said tube at one end thereof having a stepped end formation comprising a first full-width extension of the inner ply of the first wall projecting beyond the respective end edge of the first wall, a second full-width extension of the inner ply of the second wall projecting beyond the respective end edge of the first extension, and a third full-width extension of the outer ply of the second wall projecting beyond the respective end edge of the second extension, said tube at the other end thereof having a corresponding but reversed stepped end formation comprising a fourth full-width extension of the inner ply of the second wall projecting beyond the respective end edge of the second wall, a fifth full-width extension of the inner ply of the first wall projecting beyond the respective end edge of the fourth extension, and a sixth full-width extension of the outer ply of the first wall projecting beyond the respective end edge of the fifth extension, said first, second and third extensions being folded over on a fold line generally coincident with the end edge of the outer ply of said first wall at said one end of the tube so that the first extension overlies said first wall, the second extension overlies the first extension and has a portion projecting beyond it overlying the first wall, and the third extension overlies the second extension and has a portion projecting beyond it overlying the first wall, said first extension and said portions of the second and third extensions being adhered to the first wall thereby to form an end closure.

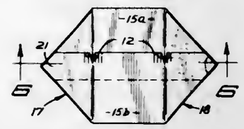
3,203,621
RESEALABLE BAG-TOP CLOSURES
Donald J. Wright, Levittown, Pa., assignor to Tompkins Label Service, Incorporated, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 12, 1963, Ser. No. 272,635
3 Claims. (Cl. 229—62)

3. In combination, (A) a normally-open-top bag having its top compressed in a closed position; (B) a reseallable bag-top closure made from paper folded substantially upon itself along a single crease to form two panels each having a substantial portion of its inside surface coated with a coating of a heat-sensitive, thermoplastic adhesive composition, the adhesive coating on the panel adjacent a fold of the bag top being rendered ineffective except for a small area by a patterned application of a superimposed coating of a permanent masking agent consisting essentially of a printing ink composition containing a difficultly-fusible alkyd resin; and (C) means for retaining the masked panel in a closed position after



opening of the bag, said means consisting of an attached tab depending from the bottom edge of the masked panel and employing an adherent coating of a pressure-sensitive adhesive composition.

3,203,622
BAG TOP CLOSURES FOR CONSUMER SIZE BAGS
Harold K. Fox, Minneapolis, Minn., assignor to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri
Filed Nov. 6, 1963, Ser. No. 321,922
7 Claims. (Cl. 229—62)

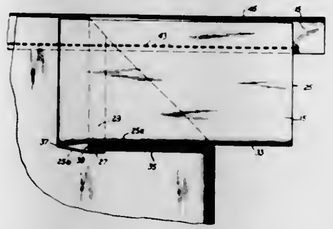


7. A bag closure for an end portion of an upright bag body in an open condition that in at least the upper portion thereof is of a generally rectangular configuration to provide side walls and end walls that are joined at contiguous edges to form four corner portions comprising a first panel joined to one end wall; a second panel joined to the opposite end wall and in part underlapping the first panel; a first flap having a first portion joined to one edge of the first side wall, a second portion joined to one edge of the first panel and to one edge of the first flap first portion and having a free edge, and a third portion joined to one edge of the second panel; a second flap having a first portion joined to the other side wall, a second portion joined to an opposite edge of the first panel and to an edge of the second flap first portion and having a free edge, and a third portion joined to an opposite edge of the second panel; each of said second portions having surface portions intermediate the respective first portion and at least one of the panels; said second portions in the area of said surface portions each having a group of slits extending generally perpendicular to the respective free edge and located closely adjacent a wall; and adhesive adhering panel underlapping portions to one another, the surface portions of said panels that abut against said flaps to said flaps including the area of the second portion adjacent the tabs to both the first panel and to the respective first portion.

3,203,623
BAGS
Richard E. Hartig, Edina, Minn., assignor to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri
Filed Feb. 6, 1963, Ser. No. 259,770
1 Claim. (Cl. 229—62.5)

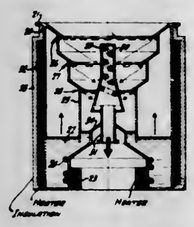
A bag having a valve at one of the corners at one end thereof, said bag being a multiwall bag having a plurality of plies, the inner ply comprising a layer of paper and having a moisture-resistant plastic coating on

the inside thereof, the outer ply comprising a layer of paper and having a moisture-resistant plastic coating on the outside thereof, each ply having edge portions extending throughout the length of the bag which are sealed together thereby forming an individual longitudinal seam for each ply, the longitudinal seam of the inner ply being an inside-face-to-inside-face longitudinal seam in which one edge portion of the inner ply is folded back on the inner ply and has its plastic-coated face adhered to the plastic-coated face of the other edge portion of the inner ply, the valve being constituted by an intucked valve flap at said one corner and a valve sleeve extending from the valve flap, said sleeve comprising a layer of paper and having a moisture-resistant plastic coating on one face thereof, said sleeve being folded in half on a generally central fold in line with the central fold of the valve flap, said sleeve having an end portion lapping the inner



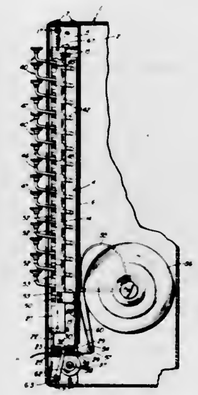
end of the valve flap on the inside of the portion of the inner ply contained in the valve flap and being adhered to the inner end of the valve flap, said sleeve having a portion folded back on a fold line extending transversely with respect to the sleeve and spaced inward from the inner end of the valve flap into a position overlying and extending out of the valve flap, the plastic-coated face of the sleeve being on the outside and said sleeve having an inturned cuff at its outer end, said folded-back portion of the sleeve being adhered to the outside of the portion of the outer ply at the inner end of the valve flap along a line extending completely across the inner end portion of the valve flap in such manner as to prevent atmospheric moisture which may enter between the sleeve and the outer ply of the bag from reaching the portions of the edges of the plies at the inner end edge of the valve flap, and moisture-resistant closures at the ends of the bag.

3,203,624
HIGH VACUUM DIFFUSION PUMP
Hugh R. Smith, Jr., Piedmont, Calif., assignor to Temescal Metallurgical Corporation, Berkeley, Calif., a corporation of California
Filed Aug. 6, 1962, Ser. No. 215,157
4 Claims. (Cl. 230—101)



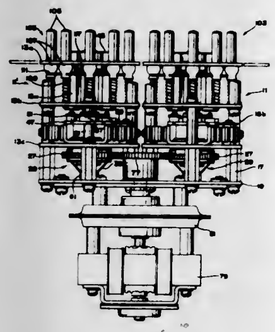
1. A high vacuum diffusion pump comprising an elongated hollow conduit having an inlet at its upper end adapted to be placed in communication with a chamber to be evacuated and having an outlet spaced downwardly from the inlet and adapted to be connected to an exhausting pump, nozzle-defining means disposed around the periphery of said inlet and capable of providing downwardly and inwardly directed vapor, a casing encircling said conduit and including a wall spaced outwardly from the wall of said conduit so as to define a passageway between the conduit wall and the adjacent wall of the casing, said passageway being in communication with said nozzle-defining means and being adapted to supply vapor from a vapor source to said nozzle-defining means, said conduit and said casing being interconnected at their upper ends so as to preclude the passage of gas molecules downwardly therebetween, and a condenser surface arranged within said conduit and positioned in the path of vapor provided by said nozzle-defining means.

3,203,625
PORTABLE TAPE PUNCH
Elliott G. Lupton, 3001 Dakota NE., and Edward M. Murphy, 1004 San Pedro SE., both of Albuquerque, N. Mex.
Filed Jan. 2, 1964, Ser. No. 335,068
8 Claims. (Cl. 234—39)



1. A portable tape punch comprising, a frame, a plurality of punch blades mounted in side by side relation within the frame for reciprocable sliding movement therein, means to bias each punch blade toward an inoperative position, a die held in the frame spaced from the punch blades in the direction of operative movement of the punch blades, a punch pin associated with each punch blade and movable toward and into the die when the punch blades are moved in the direction of operative movement with all of the punch pins lying in a single plane, means defining a tape path across the die on the side adjacent the punch pins and transverse to the plane of the punch pins, a supply of tape for movement along the tape path, means to advance the tape in equal steps and punch a sprocket feed hole in the tape each step of tape advance including a feed blade mounted in the frame for reciprocable sliding movement and having an operative movement in the same direction as the operative movement of the punch blades, and a plurality of keys pivotally mounted on the frame for operative movement in the direction of operative movement of the punch blades and feed blade, and means on the punch blades and feed blades for contact by the keys during movement of the keys in an operative direction, whereby movement of a selected key in an operative direction will cause predetermined punch blade movement and feed blade movement to punch a sprocket hole and feed the tape and produce a desired punch pattern in the tape.

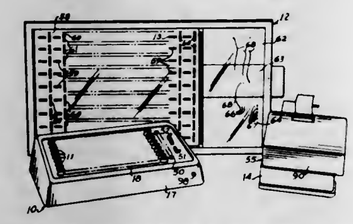
3,203,626
COUNTER
Robert J. Scranton, Mentor, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Feb. 20, 1963, Ser. No. 259,985
11 Claims. (Cl. 235—132)



1. A predetermined counter comprising a rotor including a ratchet wheel rotatable in either a counting direction or a setting direction; an escapement lever coacting with said ratchet wheel for allowing the ratchet wheel when urged in the counting direction of rotor rotation to escape one tooth at a time as the escapement lever is tripped, or for ratcheting over the ratchet wheel teeth as the rotor rotates in the setting direction; means for tripping said escapement lever; a plurality of stops surrounding said rotor each movable between stopping and inert positions; a stop member on said rotor coactable with a stop when placed in stopping position to stop said rotor but only in the setting direction of rotor rotation; and reversible motor means for selectively continuously urging said rotor in either counting or setting direction.

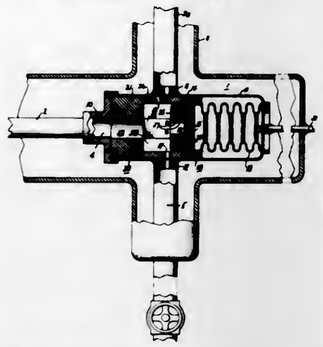
11. In combination in a counter, a plurality of count determining stops selectively settable to active positions to predetermine count values, or to inert positions; a rotatable member movable adjacent said stops to positions representing count values; a stop element on said movable member for coaction with a selected stop in its active position to predetermine a starting position for the counter; means to selectively move said movable member either in one direction of rotation by counting steps to perform a counting operation or in the opposite direction to carry the stop element towards and into abutment with a selected stop to set the counter.

3,203,627
BUSINESS CONTROL APPARATUS
Albert L. Nixon, Chamblee, and Arnold E. Hardy, Decatur, Ga., assignors to Multi/Chek, Inc., Atlanta, Ga., a corporation of Georgia
Filed May 15, 1963, Ser. No. 269,393
5 Claims. (Cl. 235—146)



5. Apparatus for operating a business machine including a keyboard having a plurality of keys, a plurality of microswitches, each of said plurality of microswitches being operable by one of said plurality of keys, a plurality of counters, each of said counters having a counter solenoid and a pair of switches associated with said counter solenoid and operable thereby, a first circuit means to connect said keys to said counter solenoids, second circuit means to connect one of said pair of switches with its associated counter solenoid so that said associated counter solenoid will remain energized through said one of said pair of said switches, a transducer to operate said business machine, said transducer including a plurality of plunger solenoids, third circuit means to connect said microswitches with said plunger solenoids, said third circuit means including a patch board having a plurality of input jacks, a plurality of output jacks, a plurality of patch cords, said output jacks receiving an electrical signal from said first circuit means, fourth circuit means connecting said plurality of plunger solenoids to said input jacks, said patch board allowing the other of said pair of switches of said counters to energize selected ones of said plunger solenoids.

3,203,628
CRYOGENIC FLUID VALVE
Karl F. Schoch, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 16, 1963, Ser. No. 273,447
14 Claims. (Cl. 236—75)

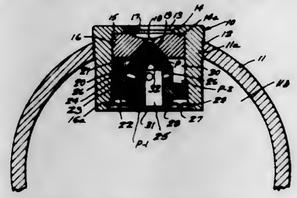


1. A cryogenic fluid valve comprising:
a housing adapted to receive a cryogenic fluid, said housing having a first outlet port therein,
valve means including a portion of superconductive material movably mounted within said housing, said valve means having a second outlet port therein,
biasing means urging said first and second outlets out of alignment,
magnetic flux generating means adjacent said valve means, and
means for energizing said magnetic flux generating means to repel said portion of superconductive material for moving said valve means to effect alignment of said outlet ports when cryogenic fluid causes a sufficient reduction in temperature of said valve means to place said valve means in a superconductive state.

3,203,629
SHOWER NOZZLE
Denis A. Goddard, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Mar. 29, 1963, Ser. No. 269,112
3 Claims. (Cl. 239—108)

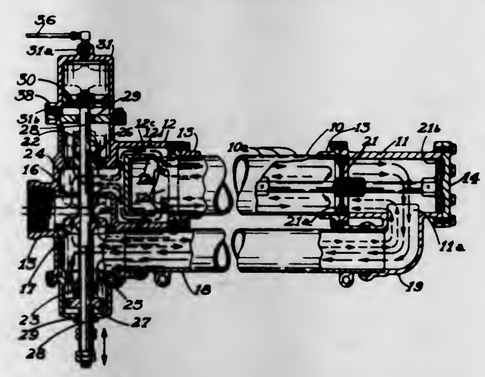
3. A nozzle assembly for supplying liquid comprising
a body member having a cylindrical bore formed therein,

a communication with the supply liquid,
a cylindrical plunger within said bore and closed at the downstream terminal end thereof and having a side wall extending in an upstream direction to form a first chamber in communication with the supply liquid,
said plunger being movable within said bore between a downstream spray position and an upstream cleaning position and having a diameter less than the diameter of said bore to form a second chamber therearound within said bore,



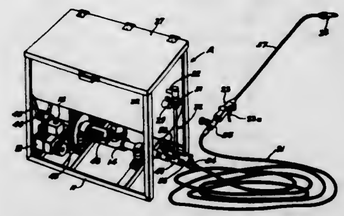
a flange formed on said plunger and engageable with the wall of said bore to partition said second chamber into an upstream chamber and a downstream chamber,
said flange being subjected to liquid pressure in said upstream chamber to urge said plunger in a downstream direction and being subjected to liquid pressure in said downstream chamber to urge said plunger in an upstream direction,
a pressure drop passageway formed in said side wall and communicating said first chamber with said downstream chamber to reduce the pressure of liquid flowing therebetween,
means defining a spray nozzle opening in said body member coacting with said closed terminal end of said plunger in the spray position of the plunger for spraying liquid supplied to the nozzle, and
a spring member interconnecting said plunger and said body member and urging said plunger in the upstream cleaning position thereof.

3,203,630
LIQUID SPRAYING APPARATUS AND SYSTEM FOR CLEANING THE SAME
Arthur E. Broughton, Glens Falls, N.Y., assignor to A. E. Broughton & Co., Inc., a corporation of New York
Continuation of application Ser. No. 34,714, June 8, 1960. This application June 6, 1963, Ser. No. 288,850
4 Claims. (Cl. 239—116)



1. A white water shower system for papermaking machinery comprising an elongated shower tube having ports at both ends thereof and having a plurality of discharge spray openings provided therein, a cleaning plunger mounted in close-fitting sliding relation within said tube; a by-pass tube having one end connected to one of said ports; a valve housing defining a flow inlet chamber with a pair of axially aligned control openings disposed on opposite side thereof; a pair of drain outlet openings spaced from said control openings; a pair of flow passages defined by said housing arranged respectively intermediate said control openings and said drain openings, one of said passages communicating with the other port of said shower tube and the other of said passages communicating with the other end of said by-pass tube, all of said openings being axially aligned, a valve stem extending axially through said aligned openings and having a multiplicity of valves mounted thereon to control the direction of flow through said shower tube and said by-pass tube, said housing having a white water supply inlet communicating with said chamber, an actuating cylinder assembly axially aligned with said openings and having an actuating piston working therein, means for supplying fluid selectively to opposite sides of said piston to actuate said valve stem and selectively position said valves.

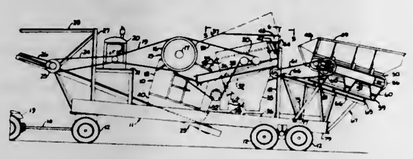
3,203,631
ABRASIVE TYPE ROOF COATING APPARATUS
Alex O. Jutila, 5062 Zion, San Diego, Calif.
Filed May 18, 1964, Ser. No. 368,155
3 Claims. (Cl. 239—124)



1. A single line applicator for abrasive type liquid roofing material, said applicator comprising
a tank having a cylindrical bottom,
an agitator mounted for rotation co-axially of the cylindrical tank bottom,
a plurality of blades mounted on the agitator for rotation therewith, the outward edge of each blade being spaced slightly from the cylindrical tank bottom during rotation of the agitator,
a flexible wiper blade mounted on each agitator blade and extending outwardly therefrom for wiping contact with a portion of the cylindrical tank bottom,
a discharge line from the bottom of the tank in the path of the wiper blades,
a grating covering the inlet end of the discharge line and positioned for wiping engagement by each of the wiper blades during rotation of the agitator,
a pump having its inlet connected to the discharge line from the tank,
power drive means operatively connected to drive the agitator and the pump,
a single hose line connected to the outlet of pump, the hose line being of a length to extend to all parts of a roof area to be coated,
a discharge nozzle at the outlet end of the hose for discharging material pumped from the tank through the hose,
valve means controlling the discharge of material from the nozzle,
a by-pass line adjacent the discharge end of the pump for by-passing material from the discharge line from the pump back into the tank, and

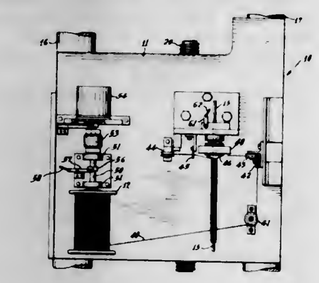
spring biased valve means in the by-pass line for controlling the pressure at which material flows from the pump through the by-pass line and back into the tank.

3,203,632
PORTABLE ROCK CRUSHING PLANT
Corbin C. Poynter, Downers Grove, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 8, 1963, Ser. No. 257,220
5 Claims. (Cl. 241—81)



1. In a portable crushing plant for aggregate and the like, a mobile frame, a crusher mounted on said frame intermediate the ends thereof, an inclined elevating conveyor in material receiving relation with respect to said crusher and extending along said frame in an upwardly inclined plane beyond the forward end thereof, a grizzly in material discharge relation with respect to said crusher, an apron feeder spaced above said grizzly, a movable platform at the rear of said main frame forming a support for said apron feeder, a second platform spaced beneath said first platform and forming a support for said movable platform, supporting said platform beneath the top of said grizzly upon tramming of the plant from location to location, a fixed abutment engaged by said movable platform when said feeder is in position to discharge rock onto said grizzly, movable support means for said movable platform, including parallel links transversely pivoted at their lower ends to said second platform and at their opposite ends to said movable platform, and an extensible power member connected between said main frame and said first platform for vertically moving said first platform and said apron feeder about said parallel links into direct engagement with said fixed abutment, said parallel links being overcenter with respect to their axes of connection to said first platform, whereby the weight of said apron feeder and platform will hold said platform into engagement with said fixed abutment.

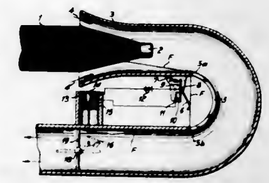
3,203,633
PRECISION WINDING MACHINES AND APPARATUS
Joseph R. Altieri, Scarsdale, N.Y., assignor to Litton Industries, Inc., Beverly Hills, Calif.
Filed Feb. 13, 1963, Ser. No. 258,241
5 Claims. (Cl. 242—9)



1. A resistor winding machine comprising, in combination,

a winding form or mandrel on which resistance wire is to be wound,
means for winding turns of wire on said form or mandrel,
means for supplying constant current traversing the length of the turns of wire wound on said winding form or mandrel during the winding operation,
means for continuously measuring the voltage drop in said length of wire, proportional to its resistance, and
means controlled by said measuring means for varying the spacing of the turns of wire on said winding form or mandrel.

3,203,634
SUCTION DEVICE FOR REMOVING A STARTING LENGTH OF YARN FROM A TEXTILE COIL
Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed Dec. 10, 1962, Ser. No. 243,546
Claims priority, application Germany, Dec. 11, 1961, R 31,660
11 Claims. (Cl. 242—18)

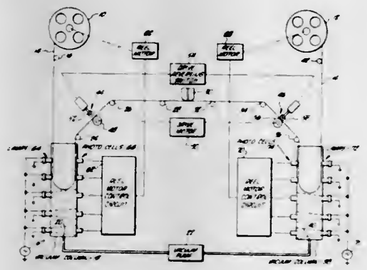


1. A suction device for seeking and removing a starting length of yarn from a yarn coil, comprising a curved suction tube structure having an open end portion surrounding, when in operation, the coil with clearance for pulling the yarn end by suction current into said tube structure, said tube structure defining a given location of minimum curvature radius spaced from said open end portion, said structure having air guiding means for urging the yarn end to said given location, a sensing member mounted adjacent said location of said tube structure and responsive into a responded condition upon presence of yarn at said location, and signal responsive means connected to said sensing member to be controlled by said member when said member is in said responded condition for substantially terminating the suction current in said end portion when a sufficient length of yarn is removed from the coil.

3,203,635
SERVO CONTROL SYSTEM
Harry F. Rayfield, Arcadia, Gregory Wilkinson, Altadena, and Rahmat A. Aziz, San Jose, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 30, 1962, Ser. No. 213,286
16 Claims. (Cl. 242—55.12)

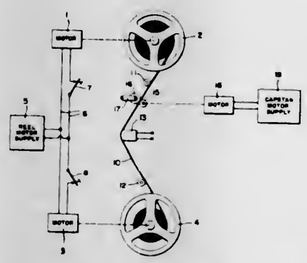
11. A reel servo control system for controlling the position of the end of a loop of a longitudinally moving flexible material relative to a reference position, comprising:

a reel having a length of flexible material wound thereon;
means for directing the material from the reel to form a loop;
means for longitudinally driving the material to cause the reel to rotate;
a light source positioned on one side of the loop;
a plurality of separate light detecting means physically aligned on an opposite side of the loop such that the material, in moving, causes the end of the loop to move in a plane substantially parallel with the light source;
a motor for developing a rotational output, the direction of which is determined by the direction of unidirectional current flow through the motor;
means for coupling the motor to the reel to drive the reel in a direction determined by the direction of the rotational output of the motor;
input means for receiving an alternating current input signal;



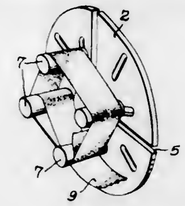
normally open switching means coupled in series between the motor and the input means for passing a unidirectional current through the motor in response to a control signal applied thereto;
means for developing the control signal;
means responsive to a predetermined one of the light detecting means for reversing the direction of unidirectional current flow through the motor;
and means responsive to light striking a light detecting means positioned to one side of the predetermined light detecting means or light being blocked from a light detecting means positioned on an opposite side of the predetermined light detecting means for activating the means for developing the control signal at a predetermined time during each half-cycle of the input signal.

3,203,636
ELECTRICAL APPARATUS
James R. Owen, Littleton, Colo., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 28, 1962, Ser. No. 240,660
4 Claims. (Cl. 242—55.12)



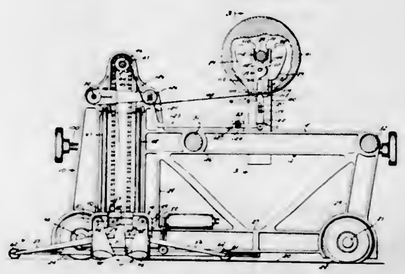
1. A tape drive for a recording tape comprising a driven capstan engaging said tape and operative to drive said tape at a predetermined speed, a tape supply reel, a tape take-up reel, a first direct-current motor driving said supply reel, a second direct-current motor driving said take-up reel, a direct-current motor supply operative to supply a motor energizing signal and circuit means simultaneously connecting said first and second motors in parallel to said motor supply whereby to oppose a torque of said first motor exerted on said tape against a torque of said second motor on said tape and to divide said motor energizing signal between said motors in inverse proportion to the respective amounts of tape on said supply reel and said take-up reel.

3,203,637
TAPE TAKE-UP MEANS
Robert H. Kaiser, Detroit, and Alexander N. Neilands, Union Lake, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 18, 1963, Ser. No. 252,381
2 Claims. (Cl. 242—71.8)



2. A reel for receiving a tape web in the form of a roll comprising a single flexible disc having a plurality of slots extending radially and dividing said disc into sectors, a plurality of tapered posts each attached to a different sector of said disc with the axes of said posts being extending perpendicularly therefrom, said posts spaced from the center of said disc and having their smaller ends adjacent said disc, each of said posts having a taper along its length of approximately 1°, said disc being capable of flexure under slight pressure for diverting the axes of said tapered posts from the perpendicular by at least the amount of said taper to permit removal of said tape, said tapered posts thereby forming a hub for said tape.

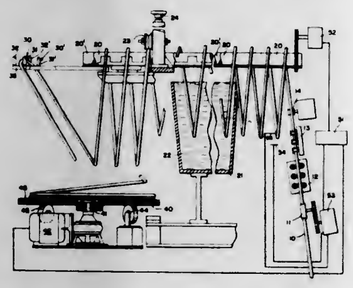
3,203,638
HIGH SPEED CLOTH LAYING MACHINE
Emmanuel Theodosiou, New York, N.Y., assignor to Cutting Room Appliances Corporation, New York, N.Y., a corporation of New York
Original application Nov. 20, 1961, Ser. No. 153,546, now Patent No. 3,112,107, dated Nov. 26, 1963. Divided and this application Mar. 11, 1963, Ser. No. 271,539
3 Claims. (Cl. 242—75.43)



3. In a cloth feed mechanism for use in conjunction with a cloth laying carriage, the improvement comprising: cloth roll spindle supporting means, a cloth roll supporting spindle arranged for relative rotation upon said supporting means, a cloth supply roll supported upon said

spindle, a resiliently biased lever pivotally mounted upon said carriage intermediate each of two ends thereof, a guiding idler roller mounted upon one end of said lever, and brake actuating means including a wedge-shaped cam member at the opposite end of said lever, caliper brake means supported by said spindle supporting means, said brake means having cam follower means thereon engageable with said wedge-shaped cam member, and adapted to selectively bear against said spindle, said caliper brake means being actuated by said lever.

3,203,639
WIRE COLLECTING TABLE
Walter J. Manson, South Bend, Ind., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 229,128
1 Claim. (Cl. 242—83)



In a device for collecting wire from a continuous source of wire in the form of a rotating and advancing helix with a horizontal axis and comprising an electrically operated, positive feeding means for said wire helix,

a substantially circular platform mounted for rotation on a vertical axis,

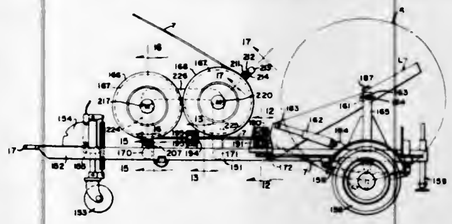
relatively narrow elongated means projecting above the surface of said platform extending in a general radial direction adapted to hold the wire that is collected above the surface of said platform so that open spaces are formed between portions of the collected wire and the portion of the platform adjacent to the projecting means, to provide access to the lower surface of the collected wire, said platform being otherwise flat and unencumbered,

electrically operated means for positively rotating said platform,

and means for driving the electrically operated rotating means for the collecting platform in synchronism with the electrically operated feeding means for said helix whereby the helical wire can be deposited as a circular bundle on said platform in unencumbered untangled coils and whereby said wire may be cut and the bundle removed from the platform without interrupting the operation of the wire feeding means or the movement of the wire.

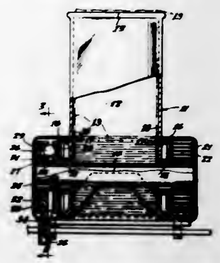
3,203,640
WIRE TENSIONING TRAILER
Edward V. Garnett, Denver, Colo., assignor to Eaton Metal Products Company, a corporation of Nebraska
Original application Feb. 19, 1960, Ser. No. 9,956, now Patent No. 3,073,574, dated Jan. 15, 1963. Divided and this application Feb. 12, 1962, Ser. No. 172,454
6 Claims. (Cl. 242—86.7)

1. In apparatus for pulling a conductor under tension, means for supporting a reel from which said conductor is unwound; a first rotatable resilient annulus having a conductor receiving groove circumferentially therearound and having its axis parallel to the axis of said reel; a second rotatable resilient annulus having a conductor receiving groove circumferentially therearound and being mounted intermediate said first annulus and said reel and having its axis parallel to the axis of said first annulus,



so that said conductor may extend from a point on said reel, to a corresponding point on said first annulus, then circumferentially around said first annulus for more than 180° and then circumferentially around said second annulus for more than 180°; and means for applying braking effect to each said annulus.

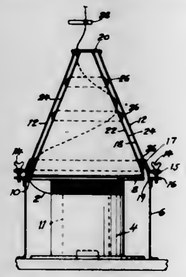
3,203,641
SAFETY HARNESS
Arthur Herbert McFarlane, Basildon, Essex, and Eric Herbert Spouge, Harold Hill, Essex, England, assignors, by mesne assignments, to Pacific Scientific Company, San Francisco, Calif., a corporation of California
Filed Nov. 14, 1962, Ser. No. 237,462
Claims priority, application Great Britain, Nov. 15, 1961, 40,901/61; July 27, 1962, 28,984/62; Aug. 27, 1962, 32,809/62
2 Claims. (Cl. 242—107.4)



1. An inertia operated safety harness for vehicles including aircraft comprising, a housing, a spindle rotatably carried by said housing, a harness reel fixed on said spindle, a flexible connector adapted to be attached to a seat occupant's harness and extending into said housing for connection to said reel to be wound thereupon, spring means within said housing connected to said spindle for winding the flexible connector onto the said harness reel to apply a slight tension on the flexible connector and on the seat occupant's harness while allowing free normal movements of the occupant in use, a substantially cylindrically surfaced inertia member positioned adjacent said reel and mounted on said spindle both for rotational movement with said reel and relative longitudinal and rotational movement with respect thereto, a locking member fixedly carried by said housing opposite said inertia member, inertia member camming means comprising balls within said housing interposed between said reel and said inertia member for urging said inertia member against said locking member for locking the inertia member and said reel against rotation in the pay-out direction on occurrence of said relative rotational movement due to acceleration

movement of said flexible connector exceeding a predetermined value, and a second inertia member comprising a pendulous mass pivoted on said housing and having a projecting portion positioned adjacent said cylindrically surfaced inertia member and responsive to acceleration and deceleration of the vehicle exceeding a predetermined value to cause said projecting portion to grippingly engage the cylindrical surface of said first-named inertia member to thereby operate to restrain rotational movement of said first-named inertia member with respect to said reel, whereby any movement of said reel in the pay-out direction thereafter due to movement of the seat occupant brings the locking means for the first-named inertia member into operation to lock the reel and hold the seat occupant in his seat.

3,203,642
WIRE DEREELING EQUIPMENT
Donald A. Hirst, R.D. 1, Lambertville, N.J.
Filed May 20, 1963, Ser. No. 281,432
1 Claim. (Cl. 242—128)



The combination for dereeling wire from a reel at high speeds while permitting substantially instantaneous starting and stopping of the dereeling operation comprising a container having substantially cylindrical side walls, a reel of wire located in said container having an upper flange which is larger in diameter than the barrel of the reel with said upper flange substantially level with the upper edge of the container and spaced therefrom to provide a space through which the wire may pass freely, a conical cap mounted on the upper flange of the reel and provided on its outer wire engaging surface with a plurality of elastic annular outwardly projecting ribs formed with smooth rounded surfaces, and a hood centered with respect to said cap and presenting an inwardly facing wire engaging surface substantially parallel with the outer wire engaging surface of said cap, the container and the hood being provided with outwardly projecting annular rims, means carried by one of said rims and engageable with the other to adjust the position of the hood with respect to the cap, reel and container, the hood having an opening in the top thereof concentric with said cap, reel and container, and means positioned above and centered with respect to said opening for guiding wire being dereeled from said reel.

3,203,643
SPINDLE ARRANGED AT A TEXTILE MACHINE
Walter Zollinger, Horgen, Switzerland, assignor to Maschinenfabrik Schweiter A.G., Horgen, Switzerland
Filed Feb. 20, 1963, Ser. No. 259,933
Claims priority, application Switzerland, Mar. 1, 1962, 2,563/62
6 Claims. (Cl. 242—129.71)

1. A spindle construction for textile machines adapted to receive a thread carrying tube member, said construction comprising:

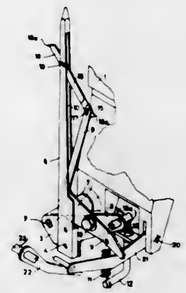
a spindle body adapted to receive individual tube members having internal diameters of variable sizes;

clamping means coupled to said spindle body to secure a tube member thereon;

said clamping means including a lever pivotally mounted on said spindle body and having at least one free and;

a link pivotally attached between it ends to said spindle body and thus having a first and a second free and;

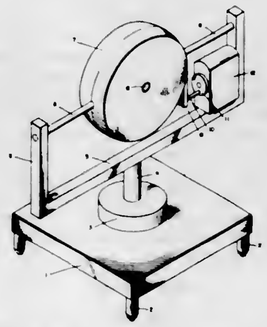
said first link free end and said lever free end being pivotally attached to one another; and,



means for operating said clamping means to move said pivotally attached free ends away from said spindle body to clamp the internal wall of a tube member mounted upon said spindle body, while simultaneously moving said link second free end away from said spindle body and into contact with the internal wall on the opposite side of said spindle body;

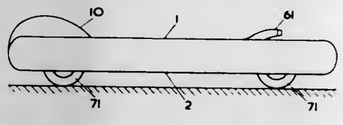
said spindle construction being operative in such a manner that, regardless of the diameter of the tube member clamped on said spindle body, the central axis of such tube member will be directed toward a common point disposed above said spindle body.

3,203,644
GYROSCOPIC INERTIAL SPACE DRIVE
Hosford Dudley Kellogg, Jr., 326 Merion Ave., Narberth, Pa.
Filed Jan. 5, 1961, Ser. No. 80,929
1 Claim. (Cl. 244—1)



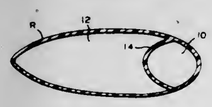
A force generating system comprising, a rotating mass mounted on a pivoted gimbal, motor means connected to said rotating mass adapted to angularly oscillate said rotating mass, a framework connected by a one way drive clutch means to said gimbal, said one way clutch means providing movement to said framework when said gimbal is caused to precess in one direction; said clutch means being operative to disconnect said gimbal and framework when said gimbal precesses in the opposite direction.

3,203,645
AIRBORNE VEHICLES
Ronald Andrew Shaw, Cobbes, Felden, Hemel Hempstead, England, assignor to National Research Development Corporation, London, England
Filed Sept. 21, 1960, Ser. No. 57,455
Claims priority, application Great Britain, Sept. 25, 1959, 32,752/59
8 Claims. (Cl. 244—23)



1. An airborne vehicle capable of operating both close to the ground within the ground effect cushion and in free flight outside said cushion comprising at least one fan mounted thereon with its axis substantially vertical, and having an undersurface formed with an aperture and with nozzle means separate from and outboard of said aperture and extending around the periphery of the vehicle, said aperture being aligned with said fan and having an area substantially equal to that of the fan outlet, said fan being arranged to draw in air and to discharge sufficient air through said aperture as a downwardly directed stream to afford upthrust on the vehicle when the vehicle is in free flight, and means for diverting said stream from said aperture to said nozzle means when the vehicle is operating within the ground effect cushion, said nozzle means being so shaped and arranged that the air is discharged therethrough in a downwards direction as a curtain extending continuously around the periphery of the vehicle.

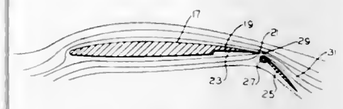
3,203,646
BALLOON HAVING REDUCED WIND DRAG
Arthur D. Struble, Jr., 2101 Rosita Place, Palos Verdes Estates, Calif.
Filed Apr. 3, 1963, Ser. No. 270,416
1 Claim. (Cl. 244—31)



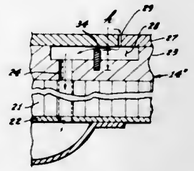
A balloon of reduced wind drag characteristics comprising an outer balloon gas retaining envelope of generally cigarshaped configuration, the gas space within said envelope being divided into at least two separate compartments, one of said compartments being essentially spherical and being located in the forward end of said balloon and containing gas under higher pressure than the gas in any other compartment of the balloon whereby said spherical compartment cooperates with said outer gas retaining envelope to resist dishing and provide the balloon with low drag characteristics.

3,203,647
HIGH LIFT FLAPS FOR AIRCRAFT WINGS
Alberto Alvarez-Calderón, 1560 Castilleja St., Palo Alto, Calif.
Filed Dec. 6, 1961, Ser. No. 157,422
10 Claims. (Cl. 244—42)

1. An aircraft wing comprising a main wing member having an upper surface and a trailing edge, a flap mounted on said main wing member adjacent to said trailing edge with said flap having a flap upper surface, a flap leading edge, and a flap under surface portion adjacent to said flap leading edge, flap actuating means interconnecting said main wing member and said flap for moving said flap between a retracted position with said flap leading edge within the contour of said main wing member and an extended position with said flap leading edge outside of said main wing member and with said flap upper surface extending downwardly from said wing upper surface to increase the camber of said wing, and means on said flap for expanding said flap under surface portion to move a part thereof upstream from said flap and away from said flap upper surface when said flap is in said extended position to increase the camber of said flap in the same direction as the movement of said flap to said extended position increases the camber of said wing.



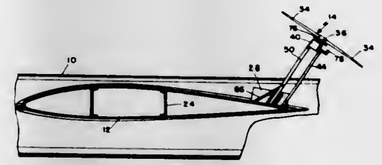
3,203,648
MEANS FOR REMOVING BOUNDARY LAYER AIR FROM AIRCRAFT
Aram Vanesian, Rolling Hills, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Dec. 26, 1961, Ser. No. 162,142
11 Claims. (Cl. 244—42)



1. In an aircraft structural assembly incorporating means for removing boundary layer air therefrom, the combination comprising: first and second sheet members joined together in superimposed relation to provide a subassembly of said structural assembly; as mounted in said structural assembly the spaced side surfaces of said first and second sheet members constituting outside and inside surfaces, respectively, of said structural assembly; a plenum chamber formed in said second sheet; at least one slot formed in said first sheet member adapted to provide fluid communication between said plenum chamber and atmosphere outside of said assembly; passage means formed in said second sheet having a spaced relation with respect to said slot adapted to provide fluid communication between said plenum chamber and atmosphere inside said structural assembly and restrictor means mounted in said chamber at a location between said slot and passage means adapted to meter fluid flowing through said chamber.

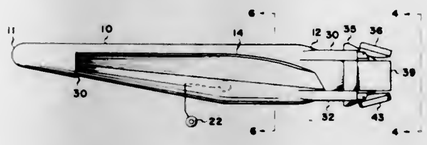
3,203,649
ROTOR FLAP HIGH LIFT SYSTEM
Peter F. Girard, La Mesa, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Dec. 23, 1963, Ser. No. 332,767
6 Claims. (Cl. 244—42)

1. In an aircraft wing, a high lift system, comprising:
at least one driven bladed rotor movably attached to said wing:
means to move said rotor between a stored position within the wing to an operating position over the wing and spaced substantially above the trailing edge portion of the wing with the rotational axis of the rotor disposed upwardly and rearwardly from the wing;



said rotor being disposed, in said operating position, to direct air flow generally downwardly onto and over the trailing edge of the wing.

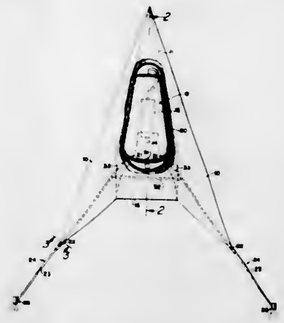
3,203,650
VARIABLE GEOMETRY RE-ENTRY VEHICLE
Charles H. Christenson, Burbank, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Aug. 16, 1961, Ser. No. 131,798
10 Claims. (Cl. 244—46)



3. A variable geometry re-entry vehicle having a blunt nosed, wedge-shaped body of substantially delta planform with an underside having an inclined lifting surface with a continuously enlarging cross-section from the nose of the body aft, wing means hinged on either side of the body along fore and aft axes, the wings adapted to fold against the underside of the body in a faired position with the rest of the body and to be extended to a lateral flying position, a double cowling at the aft end of the body of substantially the same size as the periphery of the aft end of the body, the double cowling being extendable to form a concentric double slotted flap to induce inward flow of air about the base to reduce drag at subsonic speeds, directable propulsion means on the aft end of the body for control, and landing gear means.

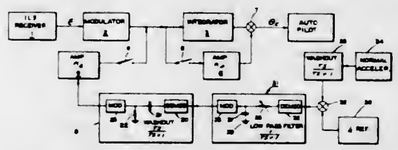
3,203,651
SAFETY APPARATUS FOR VOLATILE FUEL
John C. Garrett, Beverly Hills, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 24, 1962, Ser. No. 168,423
1 Claim. (Cl. 244—58)

In an aircraft having a propulsion system including a heat engine for burning a fuel, a storage tank for said fuel, and means for conducting fuel from said tank to said engine, the improvements comprising:
an envelope enclosing a portion of said system wherein fuel leakage is anticipated so as to define a fuel leakage space between said envelope and the portion of said system enclosed by the envelope;
a duct opening at one end of said space and having its other end terminating in a boom located outboard of the airframe of the aircraft so as to be situated in the airstream surrounding the aircraft during flight;
a combustor mounted on the outboard end of said duct including a housing having a combustion chamber opening through the forward and rear ends of the housing, whereby airflow occurs through said chamber during flight;
fuel injection means mounted in the open, forward end of said chamber and having a passage communicating with said duct and opening to said chamber, whereby fuel which leaks into said leakage space is conducted through said duct and passage to said chamber;



said chamber having a forward, rearwardly convergent intake portion terminating in a constricted throat, and a rearwardly divergent exhaust nozzle leading from said throat through the rear end of said housing, said intake portion being shaped to excite spontaneous detonation of leakage fuel entering said chamber under certain conditions of airflow through the chamber during flight;
an igniter mounted in said chamber behind said fuel injection means, whereby leakage fuel entering the chamber may be burned either by spontaneous combustion or by said igniter; and
means releasably securing said one end of said boom to said airframe, whereby said boom and combustor may be jettisoned in flight.

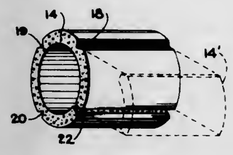
3,203,652
AIRCRAFT FLIGHT CONTROL APPARATUS
Jerry Doniger, Montvale, N.J., and Fred J. Belsky, Los Angeles, Calif., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed July 5, 1963, Ser. No. 292,822
11 Claims. (Cl. 244—77)



1. Flight path control apparatus for an instrument landing system of an aircraft, comprising receiver means for providing a displacement signal proportional to the displacement of the aircraft from a glide slope beam, integrator means connected to the output of said receiver means for developing a signal corresponding to the integral of said displacement signal, means for supplying a signal proportional to the rate of descent of the aircraft, washout means responsive to said rate of descent signal and having an output upon the aircraft being off the

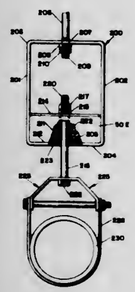
center of said glide slope beam, means for supplying the output from said washout means to said integrator, said integrator being responsive to the output from said washout means for developing a further signal proportional to the integral of the output of said washout means, conductor means connected to receive said integrated signals to provide a pitch command signal to guide the aircraft on said glide slope beam.

3,203,653
INSULATORS FOR FIXTURES
Glenn R. Hall, 216 W. Figueroa, Santa Barbara, Calif.
Filed Feb. 18, 1963, Ser. No. 259,250
2 Claims. (Cl. 248—54)



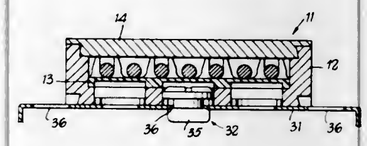
1. A pipe insulator for positioning between a portion of pipe and a surrounding support bracket for securing said pipe to a structure and insulating said pipe against sound vibrations, comprising, in combination: a flexible member curved into a generally cylindrical shape with opposite edges in opposed relationship defining a lateral slot, said member having a smooth interior cylindrical surface and a plurality of longitudinal grooves formed in its exterior cylindrical surface running generally parallel to the axis of said cylindrical shape whereby cylindrically curved sections defined between said grooves are adapted to be successively removed by severing along successive grooves, respectively, to progressively reduce the diameter of said cylindrical shape so that said member is rendered adaptable to pipes of varying diameters without having said opposite edges overlap.

3,203,654
APPARATUS FOR ISOLATING VIBRATIONS
Patrick M. Sweeney and Laurence L. Eberhart, Dublin, Ohio, assignors to Consolidated Kinetics Corporation, Columbus, Ohio, a corporation of Ohio
Filed Mar. 11, 1963, Ser. No. 265,017
9 Claims. (Cl. 248—54)



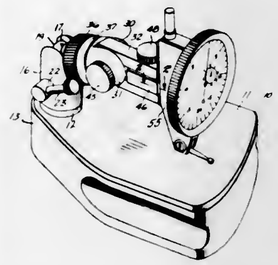
1. A structure for mounting a conduit and isolating vibrations, said structure comprising, in combination, bracket means including a first rigid wall provided with an opening and forming a first inwardly facing surface and a second rigid wall forming a second inwardly facing surface; a plurality of pads of glass fiber material disposed between said first and second inwardly facing surfaces each of said pads including a flexible covering to form composite pads that function as modified air springs, said pads of glass fiber material having a density greater than eight pounds per cubic foot, said fibers extending transversely of the direction of load application, the diameters of said fibers being less than .0005 of an inch; a rigid load plate disposed between certain of said plurality of pads and spaced from said bracket means; and a conduit supporting member extended through said opening and certain of said pads and including an inner end attached to said load plate and an outer end for attachment to said conduit.

3,203,655
CABLE HOLDING DEVICE
George Montague Mejlso, Hounslow, England, assignor to United-Carr Incorporated, a corporation of Delaware
Filed Aug. 27, 1963, Ser. No. 304,751
Claims priority, application Great Britain, Sept. 6, 1962, 34,225/62
2 Claims. (Cl. 248—68)



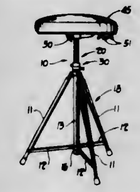
1. A cable holding device comprising an elongated holder and a resilient insert, the holder having a recessed base and two upstanding end walls, the resilient insert having a plurality of pairs of cable-holding arms and said insert being seated in said recessed base with said arms extending transversely of the holder and each of said end walls having formed, at its top and bottom edges respectively, engageable male and female portions so that a plurality of the said devices may be mounted one on top of the other.

3,203,656
DIAL TEST INDICATOR HOLDER
Gunter Bartz, 108—50 71st Ave., Forest Hills 75, N.Y.
Filed July 31, 1963, Ser. No. 298,866
12 Claims. (Cl. 248—124)



1. An adjustable device for holding a dial indicator in a variety of positions comprising a base adapted to be mounted on a rigid platform, and a holder sub-assembly removably attached to the base, and having an outer end adapted for removable connection with a dial indicator, said base comprising a cylindrical shank, and an outer member having internal threads for axially threaded connection to the holder sub-assembly, said holder sub-assembly including an externally threaded member at its inner end threadedly received in the internally threaded member of the base, said holder sub-assembly further comprising a holder pivotally mounted on a thimble, said thimble being an integral extension of the externally threaded member, in further combination with a control shell means threadedly mounted on the said thimble, whereby said shell means can be reciprocated longitudinally with respect to the axis of the thimble, and relative to said pivoted holder, further including spring pressed means disposed between and in contact with the inner end of the holder, and the said thimble, said means being eccentric to the axis about which the holder can pivot, whereby reciprocation of the control shell means towards the holder, will cause pressure on said means, thereby causing rotation of the holder about its pivotal axis, said control shell means encompassing said thimble, said holder further including means for retaining a dial indicator at its outer end, said means being rotatable about an axis at right angles, to the axis about which the holder pivots, said holder and the last said means both being retainable at various positions of rotation with respect to their axes.

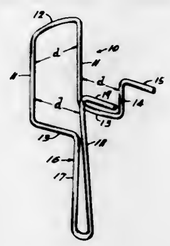
3,203,657
DRUMMER'S THRONE
Josephus B. Thompson, Covington, Ohio, assignor to Joseph Rogers, Inc., Cleveland, Ohio
Filed June 22, 1964, Ser. No. 376,714
3 Claims. (Cl. 248—171)



1. A drummer's throne, comprising in combination, a base member including a tubular vertical column centered therein, open at the top, the column having an annular bearing surface at the upper end thereof and a peripheral circular track cut in the outer face thereof, spaced downwardly of said bearing surface; a threaded support rod telescopically journaled in the column, for free rotation therein; a seat detachably mounted on the upper end of the support rod; a bearing block co-axially mounted on the support rod intermediate the ends thereof, the bearing block having an annular bearing seat adapted to ride on the column end bearing surface, and an abutting cylindrical sleeve adapted to snugly fit over the end of the column in a running fit and cover the track thereat; threaded clamp means formed integral with the bearing block for locating and locking the bearing block at adjusted positions lengthwise of the rod to determine the height of the supported seat above the base; and, an interlock pin mounted in the bearing block sleeve, extending into the column track, and adapted to prevent relative longitudinal movement between the rod and column, while permitting free relative rotation therebetween.

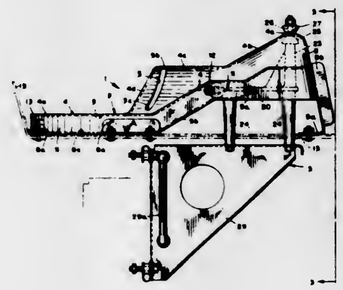
3,203,658
SUPPORT BRACKET
Carl F. Brown, 7 Jackson St., Norwalk, Ohio
Filed Apr. 29, 1964, Ser. No. 363,370
5 Claims. (Cl. 248—211)

1. A support bracket for suspending objects from a said legs normal to the plane of said parallel legs, a ladder comprising, in combination, a pair of parallel, spaced apart legs joined at one end by a cross member, a first arm extending from the other end of the first of finger extending from the end of said first arm parallel to said first leg to form an open slot therewith, a second arm extending from the other end of the second of said legs parallel to and spaced apart from said first arm, an



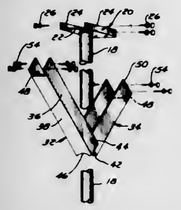
elongate hanger means extending from the other end of said second arm with a return portion extending beyond the other end of said second arm to form a second finger parallel to said second leg and forming an open slot therewith.

3,203,659
POSITIONING MECHANISM
David P. Crowder, Fort Worth, Tex., assignor, by mesne assignments, to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Apr. 10, 1964, Ser. No. 358,798
9 Claims. (Cl. 248—323)



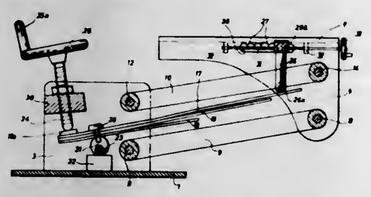
1. A positioning mechanism comprising in combination:
- a mounting portion;
- a first slot guide track formed through said mounting portion;
- second and third guide tracks formed in said mounting portion in symmetrical spaced-apart relation with respect to said first slot guide track;
- a positioning portion;
- first and second guide legs extending from said positioning portion toward said first and second guide tracks on said mounting portion;
- a third guide leg extending from said positioning portion toward said third slot guide track;
- first and second guides on said first and second guide legs in guided engagement with said first and second guide tracks;
- and a third guide mounted on said third guide leg, said third guide having guide portions in engagement with the opposite sides of said slot guide track.

3,203,660
T-HEAD STABILIZER FOR A SHORE
George F. Bowden, Des Plaines, Ill., assignor to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware
Filed Aug. 26, 1964, Ser. No. 392,242
7 Claims. (Cl. 248—357)



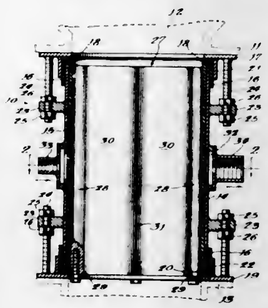
1. In a concrete slab form installation, the combination with an elongated horizontally disposed form-supporting wooden stringer of uniformly rectangular cross section positioned so that its side faces extend vertically, and a vertically disposed supporting shore having its upper end connected to and disposed in supporting relationship with respect to a medial region of said stringer, of a stabilizer for rendering rigid the connection between the shore and the stringer, said stabilizer comprising two similar equal length stabilizer braces each of which is in the form of a length of metal channel stock including spaced apart parallel side flanges and an intermediate connecting web, said braces extending diagonally in brace-like fashion between the shore and the stringer on opposite sides of the shore with the lower edges of the webs bearing against the opposite sides respectively of the shore and the upper edges of the webs bearing against the underneath side of the stringer at regions equally spaced from said medial region, the side flanges of the two braces being directed inwardly toward the shore with adjacent pairs of channel flanges straddling the shore and overlapping each other in the lower regions of the braces, a pivot pin pivotally connecting the lower ends of each adjacent pair of flanges in the overlapping regions thereof, the side flanges of the two braces straddling the side faces of the stringer in the upper regions of the braces, and means fixedly securing said upper regions of the braces to said side faces of the stringer.

3,203,661
SEAT SUPPORT
Friedrich Brendel, Hauptstrasse, Saalstadt, Pfalz, Germany
Filed July 13, 1962, Ser. No. 209,694
Claims priority, application Germany, Aug. 31, 1961, B 63,850
13 Claims. (Cl. 248—399)



1. A seat support, particularly for use in automotive vehicles, comprising a base; a load-transmitting frame adapted to support a seat; guide means articulately connecting said frame with said base so that the frame is movable between an upper position and a lower position; resilient cushioning means comprising at least one elongated leaf spring having a first end portion supportingly engaging said frame and a second end portion adjacent to said base; fulcrum means mounted in said base and supportingly connected with said spring intermediate said end portions thereof so that the spring is rockable about said fulcrum means; first adjusting means provided on said base and engaging said second end portion for adjusting the inclination of said spring and for thereby adjusting the elevation of said frame, said frame being movable downwardly against and upwardly under the bias of said resilient means; and second adjusting means provided on said load transmitting frame, said second adjusting means having a portion engaging said first end portion of said spring and being adjustable in the longitudinal direction of said spring so as to change the effective length thereof and to thereby change the bias which said spring exerts on said load transmitting frame.

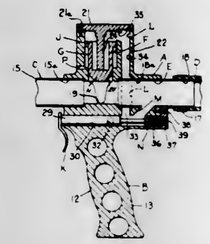
3,203,662
SLEEVE VALVE
Erwin M. Lau, Dolton, Ill., assignor to Black Products Co., Chicago, Ill., a corporation of Illinois
Filed July 16, 1963, Ser. No. 295,347
8 Claims. (Cl. 251—5)



1. A sleeve valve comprising a substantially cylindrical casing, a rubber sleeve disposed interiorly of said casing and of a length greater than the length of said casing, the ends of said sleeve being folded back and overlapping the cylindrical portions of the ends of said casing, annular end plates engaging said sleeve at the fold points where it is folded back over the end portions of said casing, means drawing said end plates against the casing ends to provide a gas-tight seal between said casing ends and said sleeve, inlet means for introducing a fluid between said sleeve and said casing to extend said sleeve, and stop means reacting directly on said casing for limiting the pressure exerted by said end plates on said fold points, whereby a compressive force applied to said end plates in an axial direction will be transmitted directly from said end plates to said cylindrical casing without affecting said fold points.

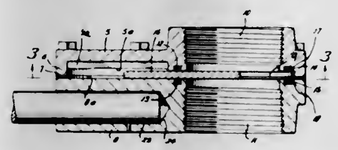
3,203,663
EVISCERATING DEVICE
James F. Basham, 453 West View Drive, Joseph E. Wages, 118 Indiana Ave., and Guy T. Reid, 110 Sherwood Drive, all of Athens, Ga.
Filed May 6, 1963, Ser. No. 278,061
3 Claims. (Cl. 251—25)

3. In a vacuum operated device for eviscerating fowl and the like having a nozzle and a vacuum hose connection, the improvement comprising, a housing intermediate the nozzle and the vacuum hose connection, a substantially straight passageway within the housing between said nozzle and said vacuum hose connection, a piston having a passageway portion and a chamber portion and carried within the housing substantially at right angles to the passageway, said passageway portion of said piston conforming to said passageway and normally ex-



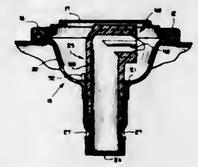
tending into the passageway closing same, said chamber portion having a pressure surface, an opposed surface of said piston open to atmosphere at all times, and a manually operated valve means for subjecting said pressure surface of the piston remote from the passageway to the vacuum in the hose or to atmospheric pressure.

3,203,664
PIVOTED GATE VALVE
Burton Ver Nooy, Tulsa, Okla., assignor to T. D. Williamson, Inc., Tulsa, Okla.
Filed Mar. 12, 1962, Ser. No. 178,818
3 Claims. (Cl. 251—302)



1. A valve comprising, in combination, a housing including two plates having opposed flat parallel surfaces defining sides of a cavity within the housing; opposed flow openings in each plate combining with the cavity to provide a flowway through the housing; opposed annular grooves in each plate around and spaced from the flow openings; a rotatable shaft extending across said cavity and through openings in the two flat plates and exposed to pressure in said cavity; means for sealing between the shaft and each plate, the sealing means encompassing equal cross-sectional areas to balance out the effect of fluid pressure in the cavity on the shaft, the shaft having a noncircular portion between the plates; a flat plate valve closure member mounted on the shaft and having a noncircular opening engaging the noncircular portion of the shaft to prevent relative rotation between the closure member and the shaft and to allow relative longitudinal movement between the closure member and the shaft, the closure member being rotatable by the shaft from a first position across the flow openings to a second position out of alignment with the flow openings, an annular O-ring type seal in each of said grooves and being of sufficient cross-sectional area relative to the depth of the groove to engage an inner wall of the groove and to extend from the groove to engage a side of the closure member when the latter is in said first position, the closure member being of sufficient thickness to engage both of said annular seals on opposite sides of the closure member when in said first position, said closure member being free to be moved longitudinally into sealing engagement with the downstream annular seal by line pressure.

3,203,665
FLEX FAUCET
Edward J. Grant, Racine, Wis., and Glenn T. Rieke, Auburn, Ind., assignors to Rieke Metal Products Corporation, Auburn, Ind., a corporation of Indiana
Filed Feb. 18, 1963, Ser. No. 259,245
2 Claims. (Cl. 251—351)



1. A normally nesting extensible plastic closure for containers including a body having a first body portion with an outer periphery adapted to be secured to the container for flexing between a nesting postion within the container and an extended position outside of the container, said first body portion having an inner periphery, a generally cylindrical second rigid body portion integral with said first body portion and extending inwardly of said container from the inner periphery of said first body portion, said second portion having a closed inner end and having holes in the sidewall thereof, a spout extending out of said second body portion, said spout including a cylindrical stem telescoped within said second body portion, said spout being movable axially of said second body portion to a first position wherein said stem covers said holes and communication between said container and said spout is blocked, said spout being movable axially of said second body portion to a second position wherein said stem uncovers said holes so that communication is effected between said container and spout, said second body portion being internally threaded along a portion thereof adjacent said first body portion, said stem being externally threaded whereby said spout can be screwed inwardly of said container into said second body portion from said first position, said second body portion having an internal bead adjacent its threads and said stem having first and second external beads, said first bead being disposed inwardly of said internal bead and engageable therewith for stopping said spout in said second position and in pressure and sealing engagement with the internal surface of said second body portion to provide a fluid seal between said second body portion and said stem when said holes are covered or uncovered, and said second bead being disposed at the inner end of said stem in pressure and sealing engagement with the internal surface of said second body portion to provide a fluid seal between said body portion and said stem when said holes are uncovered, said spout having an extending end portion external of said second body portion and projecting at right angles to the axis of said cylindrical stem, said spout being rotatable in said second body portion between said first position and said second position for aiming said spout, outwardly projecting finger tabs extending from the distal end of said spout, and cooperating stop members on said stem and body for limiting threading of said stem into said second base portion.

3,203,666
BLADED ROTOR CONSTRUCTION
Harrison West, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Nov. 23, 1962, Ser. No. 239,524
3 Claims. (Cl. 253—39)

1. A lightweight axial-flow bladed turbomachine rotor comprising:

a plurality of annular sheet-metal rotor drum pieces, each piece having an axially-extending portion form-

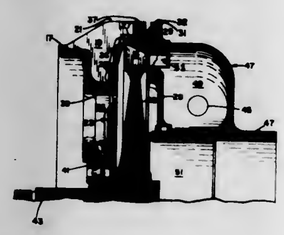
ing part of the drum surface and flow path boundary wall through the turbomachine and an integral radially-extended portion, the latter portion including a load transition section adjacent the drum surface and an inner web section wherein said drum pieces are attached to each other at the inward extremities of the web sections to form a hollow disk;



a plurality of blade members, each blade member including an airfoil and a shank, said shank having a circumferentially-extending dovetail portion and a pair of axially-spaced generally radial flanges, said blade member shanks being located between the radially-extending portions of adjacent drum pieces with said axially spaced flanges being in abutting attachment with their respective load transition sections;

and a plurality of platform elements each having a surface wall portion, a first pair of curvilinear flanges in mating abutment with adjacent airfoils and a second pair of curvilinear flanges overlying part of the axially-extending portions of the adjacent drum pieces, said axially-extending drum-piece portions cooperating with said platform surface wall portions to complete the said turbomachine flow path boundary wall.

3,203,667
TURBINE DEVICE WITH EXHAUST OPENING PROTECTION
Robert E. Sweet, Utica, N.Y., assignor to The Bendix Corporation, Utica, N.Y., a corporation of Delaware
Filed Sept. 3, 1963, Ser. No. 306,121
4 Claims. (Cl. 253—39)



1. A turbine device comprised of:
a turbine wheel having blades,
an exhaust housing having a plurality of openings for exhaust gases and struts between said exhaust openings,
said openings being of such size that part of a hand or a tool can be inserted therethrough,
said blades and openings being arranged so that access to said blades is provided,
a unitized guard comprised of at least one ring and a plurality of fingers,
a turbine wheel housing having recesses,
said fingers of said wheel unitized wire guard being mounted in said recesses in said housing, and
said exhaust housing cooperating with said turbine wheel housing to firmly locate said wire fingers and hence rigidly position said ring of said guard whereby a part of a human hand or a tool cannot be inserted through said openings into contact with said turbine wheel blades.

3,203,668
FLOOR JACK
Marley T. Pitsenbarger, Box 216, Sophia, W. Va.
Filed Mar. 25, 1964, Ser. No. 354,554
3 Claims. (Cl. 254—15)

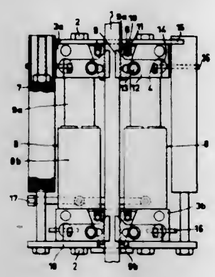


1. A flooring jack comprising an anchor shank having a pointed end, a push rod having one end pivotally connected adjacent the pointed end on said shank, a thrust plate pivotally connected to the other end of said push rod and having a groove to engage and receive a tongue portion of board flooring, a hammer slidably disposed on the other end of said shank, said shank including a longitudinal slot intermediate the ends thereof, a pin secured to said hammer and disposed in said slot in sliding engagement therewith for guiding said hammer along said shank, and means on said shank for braking relative movement between said hammer and said shank when said hammer is disposed proximate to the end of its path of movement.

3,203,669
CLIMBING JACK
Rolf Gustaf Johansson, Saltsjo-Duvnas, Sweden, assignor to AB Byggförbättring, a company of Sweden
Filed May 14, 1962, Ser. No. 194,631
Claims priority, application Sweden, May 17, 1961, 5,189/61

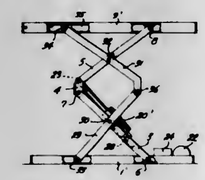
1. In an assemblage for raising and lowering a load, jack means including at least two gripping heads arranged in spaced substantially parallel relationship, springs interconnecting said gripping heads and normally urging said heads toward each other, cylinders and pistons located between said heads, the cylinders being connected to one head and the pistons to the other head, each gripping head having an open ended slot extending heightwise thereof with said slots being in alignment, rod means adapted to be positioned in said slots, each slot having upwardly and outwardly inclined walls, a pair of gripping clamps for each head arranged in the slots, each clamp having a surface complementary to said inclined wall and a surface for engagement with the rod means so

that downward movement of said clamps effects engagement with the rod means and upward movement effects disengagement with the rod means, the load being adapted to be supported on one of said means, and means oper-



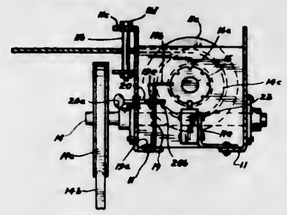
ably connected with each gripping clamp for displacing each clamp for effecting engagement and disengagement with the rod means whereby the jack means may be mounted on the rod means from the side through said open ended slots.

3,203,670
DOUBLE LINKAGE SUPPORTED TABLE
William A. Farris, deceased, late of Kirkland, Wash., by Twyla D. Farris, executrix, assignor to American Manufacturing Company, Inc., Tacoma, Wash., a corporation of Washington
Original application, Mar. 20, 1960, Ser. No. 16,711, now Patent No. 3,110,476. Divided and this application Apr. 1, 1963, Ser. No. 269,686
5 Claims. (Cl. 254—122)



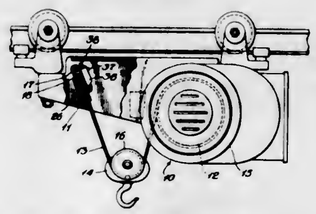
1. A table adjustable in height comprising a base, a table top, thrust linkage interengaged between said base and said table top and including an upper link, a lower link, pivot means interconnecting said upper link and said lower link and elongated thrust actuator means variable in effective length, reacting between thrust points on said links to effect relative swinging thereof between a folded position supporting said table top in a lowered position and an unfolded position supporting said table top in a raised position, and said elongated thrust actuator means being disposed wholly between said thrust points at all times, stabilizing linkage including an upper link of a length substantially equal to the length of said thrust linkage upper link, disposed in a position crossing said thrust linkage upper link and having its upper portion engaged with said table top, a lower link of a length substantially equal to the length of said thrust linkage lower link, disposed in a position crossing said thrust linkage lower link and having its lower portion engaged with said base and pivot means connecting the lower portion of said stabilizing linkage upper link and the upper portion of said stablilizing linkage lower link, pivot means connecting the crossing portions of said thrust linkage upper link and said stabilizing linkage upper link, and pivot means connecting the crossing portions of said thrust linkage lower link and said stabilizing linkage lower link, the links of said stabilizing linkage being swingable relatively by relative swinging of said thrust linkage links and operable to restrain tilting of said table top relative to said base.

3,203,671
HOIST CONTROL MECHANISM
John Leavitt Anderson, 2501 Crosby Road, Wayzata, Minn.
Filed Apr. 11, 1963, Ser. No. 272,484
2 Claims. (Cl. 254—141)



1. Control for a line take-up mechanism of the type having a rotary drum and means for driving the drum, said control comprising:
(a) a shaft member adapted for connection to and rotation by said take-up mechanism having external threads thereon;
(b) at least one internally threaded projectable nut member threadably mounted on said screw shaft and having a plurality of recesses in the outer peripheral surface thereof;
(c) holding means having a recess receiving flange for interfitting with a selected recess of such nut to permit rectilinear movement of said nut while preventing rotation thereof, said holding means being shiftably mounted to permit movement from a selected recess whereby the position of the nut may be initially adjusted;
(d) locking means positively connected to said holding means for positively holding said recess receiving flange in engagement with a selected recess; and
(e) means mounted in cooperative relation to said projectable nut member and responsive thereto for stopping the driving means.

3,203,672
LOAD INDICATING DEVICE
Gerard R. Santos, Levittown, Pa., assignor, by mesne assignments, to Yale and Towne, Inc., New York, N.Y., a company of Ohio
Filed Feb. 9, 1962, Ser. No. 172,295
10 Claims. (Cl. 254—173)



1. A load indicating device comprising
(a) a load shaft mounted for rotation about a predetermined central axis,
(b) a surface formed on said load shaft with the central axis of said surface offset relatively to said predetermined central axis,
(c) load means bearing against a portion of said surface which is offset relatively to said predetermined

central axis and adapted to apply rotational torque through said offset surface to said load shaft, and

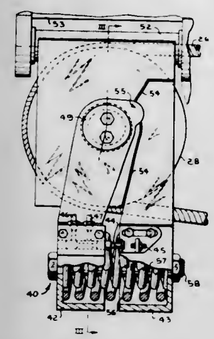
(d) means resisting rotation of said shaft by said load means acting on said surface.

3,203,673

CABLE CONTROL SYSTEM HAVING TENSION CONTROLLING MEANS INCLUDING MEANS TO AUTOMATICALLY CLUTCH AND DECLUTCH CABLE WINCH

Fred H. Norris, Elmwood, and Norman C. Zeter, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Sept. 28, 1962, Ser. No. 226,818
6 Claims. (Cl. 254—173)



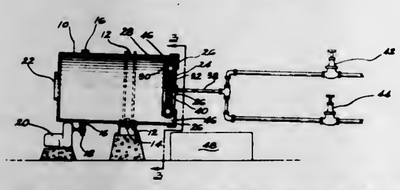
1. A cable control system comprising a first member arranged for movement towards or away from a second member, a tensioned cable operatively engaging said first member for urging said first member towards said second member, biasing means arranged for urging said first member away from said second member and means for constantly sensing and regulating the amount of cable tension to automatically pay out said cable when cable tension exceeds a predetermined amount and for automatically stopping the paying out of said cable when the tension thereof is relieved below said predetermined amount, said means including a valve means mounted on one of said members in operative engagement with dual stop means mounted on the other of said members, said stop means being so mounted that when said members are moved a predetermined distance away in one direction one of said stops operates to open said valve and when said members are moved away a predetermined distance in the opposite direction the other of said stops operates to close said valve.

3,203,674

MIXING APPARATUS AND METHOD

James W. Watson, Lansing, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed Sept. 24, 1962, Ser. No. 225,570
14 Claims. (Cl. 259—3)



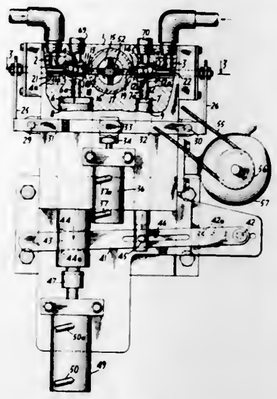
1. An improved method of discharging material from a rotatable cylindrical zone comprising: rotating the cylindrical zone and opening an annular area about the periphery of one end of the rotating cylindrical zone by decreasing the outside diameter of said end of said zone to allow the material to be discharged through said annular area.

3,203,675

MIXING GUN

Wallace W. Ward, Chatham, N.J., assignor to Louis F. Muccino, Rye, N.Y.

Filed June 19, 1963, Ser. No. 288,933
8 Claims. (Cl. 259—7)



1. A mixing gun comprising a housing having a mixing chamber formed therein, said housing also having two separate valve chambers and a separate passage connecting each of said valve chambers to said mixing chamber, said housing also having a separate supply passage connecting each of said valve chambers to a source of supply of a liquid component, said housing also having two metering chambers formed therein with one of said metering chambers opening into one of said valve chambers and the other of said metering chambers opening into the other of said valve chambers, a reciprocating plunger mounted in each of said metering chambers, valves mounted in said valve chambers, means for operating said valves to open communication between said valve chambers and said supply passages and to close communication between said valve chambers and said mixing chamber, and for operating said valves to close communication between said valve chambers and said supply passages and to open communication between said valve chambers and said mixing chamber, and means for reciprocating said plungers to alternately fill and discharge said metering chambers.

3,203,676

HUMIDIFIER AND COOLER

Lowell E. Sprouse and Everett D. Wiseman, Columbus, Ind., assignors to Vernco Corporation, Columbus, Ind., a corporation of Indiana

Filed Apr. 1, 1963, Ser. No. 269,600
11 Claims. (Cl. 261—28)

1. In a humidifying device, the combination with

a housing having an upper front opening, a rear upper opening, and a water reservoir in its lower portion; and

a motor driven fan behind said front opening; of

a belt-carrying frame;

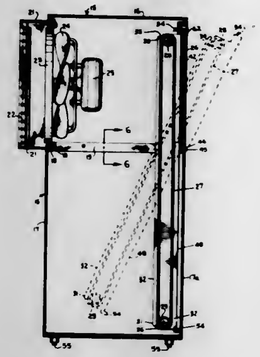
a pair of belt-carrying rollers;

means carried by said frame in vertically spaced apart relation to carry one roller revolubly across an upper portion of said frame and to carry the other roller revolubly across a lower portion of said frame within said reservoir;

motor means driving said one roller;

said frame being adapted to be entered into and removed from said housing through said rear opening;

an elastic, foraminous belt trained about said rollers; and



frame support means located at the bottom of said housing rear opening and engageable with said frame so that said frame may rock to position said trained belt approximately vertically within said housing, across said rear opening, and carry the lower belt portion into said reservoir;

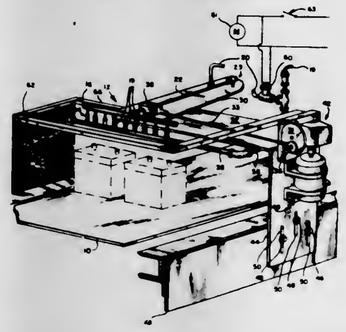
the upper portion of said belt traversing said opening from adjacent its top and from side to side, and being in the path of a current of air induced by said fan to enter said rear opening, flow through said belt, and out through said front opening.

3,203,677

BATTERY FLAMING DEVICE

Anthony Sabatino, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed Mar. 15, 1963, Ser. No. 265,533
13 Claims. (Cl. 263—6)



2. Apparatus in combination with a moving generally horizontal conveyor and adapted to apply heat to battery sealing compound on batteries being transported on said conveyor, said apparatus comprising, in combination.

generally elongated burner means;

means supporting said burner means in a horizontal position above and directed toward said conveyor and further supporting said burner means for movement in a horizontal plane; and

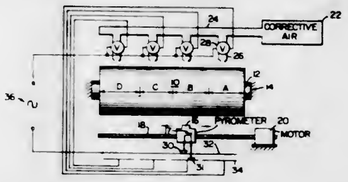
means for oscillating said burner means in said plane so that said burner means is adapted to move across batteries on said conveyor in uniform spaced relationship from said batteries.

3,203,678

TEMPERATURE CONTROL SYSTEM FOR ROLLS

Willard C. Sawyer, Westbrook, Maine, and Gilbert Forrester, Millicent, South Australia, Australia, assignors to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts

Filed May 1, 1963, Ser. No. 277,297
8 Claims. (Cl. 263—6)



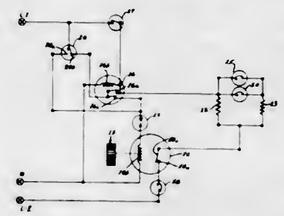
1. Apparatus for regulating the surface temperature of a cylindrical roll comprising: temperature sensing means adapted to be spaced from the surface of a cylindrical roll; control means responsive to said temperature sensing means for selectively passing a signal when the sensed temperature exceeds a given magnitude; traversing means adapted to laterally convey said temperature sensing means continuously across adjacent surface segments of the cylindrical roll; coolant dispensing means adapted to direct coolant onto the surface of the cylindrical roll, said coolant dispensing means including multiple valve-controlled nozzles each adapted to be laterally disposed opposite a cylindrical roll surface segment; and means for relaying signals passed by said control means to said valve-controlled nozzles for selective actuation thereof.

3,203,679

AUTOMATIC CONTROL OF PLURAL HEATERS IN A CLOTHES DRIER

James T. Williams, St. Joseph, and Samuel J. Miller, Baroda, Mich., assignors to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware

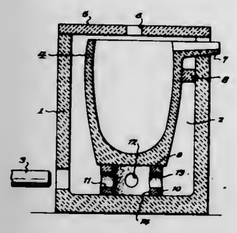
Filed Oct. 17, 1960, Ser. No. 63,105
8 Claims. (Cl. 263—10)



1. In a dryer operable through a drying cycle and having means forming a drying chamber, a plurality of independently operable heating means for evaporating moisture from articles placed within said chamber, a drying control circuit including said heating means, relay means in said circuit, switch means in said circuit in control of said relay means, drive means in said circuit for controlling the circulation of air through said drying chamber, and a plurality of thermally responsive means in said cir-

cuit located to sense the temperature of exhaust air from said chamber and operable upon sensing a first temperature of exhaust air to first deactivate at least one of the heating means to provide a reduced thermal input to the articles under normal operating conditions and operable upon sensing a second temperature of exhaust air to then deactivate said relay means and drive means, terminating the drying cycle.

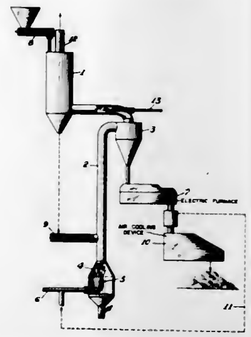
3,203,680
CRUCIBLE FURNACE
Milton H. Berns, Hamburg, N.Y., assignor to Electro Refractories & Abrasives Corporation, Buffalo, N.Y.
Continuation of abandoned application Ser. No. 292,678, July 3, 1963. This application Oct. 6, 1964, Ser. No. 401,958
2 Claims. (Cl. 263—11)



1. A crucible furnace unit, comprising:
(a) a hollow refractory container having a bottom, side walls and an opening at the top thereof, and having a removable refractory cover over said opening;
(b) said side wall having an inlet opening adjacent the bottom thereof for passage of the combustion gases to the inside of said refractory container;
(c) a burner outside said side wall adjacent said inlet opening;
(d) a hollow mounting piece of high thermal emissivity when heated disposed within said container and centrally positioned on said container bottom, said mounting piece extending up to a point above said inlet opening;
(e) a crucible within said container and supported on said mounting piece in spaced relation with respect to said container side walls to define a combustion chamber about said crucible;
(f) said mounting piece being open at the top thereof and having access openings which are substantially horizontally aligned with said wall inlet opening so that flame from said burner will pass therethrough into said combustion chamber to envelop the crucible side walls, said flame also passing through said mounting piece access openings to simultaneously contact substantially the entire outer surface of the bottom wall of said crucible which is exposed within said mounting piece.

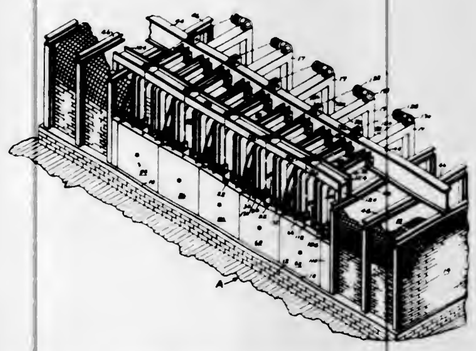
3,203,681
METHOD FOR HEAT TREATMENT OF POWDERED RAW MATERIAL
Josef Rosa, 225 U Tisnova, Drasov, Czechoslovakia; and Vlastimil Petr, 123 Simackova; Jiří Sečkář, 20a Sumavska; Zdeněk Kospil, 78 Palackeho; and Jaroslav Novák, 5 Smiltkova, all of Brno, Czechoslovakia
Filed Dec. 13, 1963, Ser. No. 330,349
Claims priority, application Czechoslovakia, Dec. 15, 1962, 7,073/62
13 Claims. (Cl. 263—21)

10. In an apparatus for heat treating a pulverulent material, in combination:
(a) preheating means for preheating said pulverulent material;
(b) an upright column, said preheating means communicating with a bottom portion of said column for passage of the preheated material into said column;
(c) a combustion chamber communicating with said bottom portion;
(d) burner means in said chamber for burning a fuel to a hot combustion gas, whereby said gas passes upward through said column, entrains the preheated material, and burns the entrained material while being cooled thereby, said burner means and said combustion chamber constituting first heating means;



(e) separator means communicating with a top portion of said column for separating said burned material from said cooled gas, said separator means having a discharge opening for discharge of the separated burned material; and
(f) second heating means spaced from said first heating means and communicating with said discharge opening for receiving said burned material and for further heating the same.

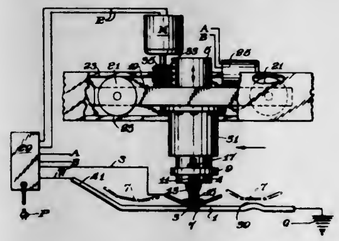
3,203,682
OPEN HEARTH FURNACE
Joseph J. Kerin, 5713 Main St., Duluth, Minn.
Filed Nov. 20, 1963, Ser. No. 324,935
6 Claims. (Cl. 263—46)



1. An open hearth furnace comprising:
(a) a front longitudinal base support member,
(b) a rear wall,
(c) a longitudinal intermediate door and roof support member including a multiplicity of hollow elongated separate sections in end-to-end alignment,
(d) a roof supported at its longitudinal edges on said rear wall and said intermediate support sections,

(e) end walls connected to said rear wall and roof,
(f) an upper longitudinal door support beam extending longitudinally of the extent of the roof,
(g) a main longitudinal support beam extending substantially centrally and longitudinally of the extent of said roof,
(h) a multiplicity of charging doors in side-by-side relationship adapted to rest on said front base support with a single door opposite and adjacent a single intermediate support section, said doors forming a front wall when in a closed position,
(i) at least one cantilever beam for each intermediate support section including a horizontal leg portion connected to said main beam and
(j) a right angular vertical leg portion depending therefrom and connected to an intermediate support section to support said section, and
(k) means for raising and lowering each of said doors.

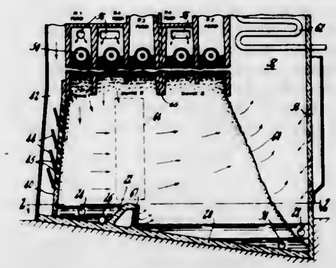
3,203,683
CUTTING TORCH APPARATUS
Hans Philipp Emmerich Weiler, Hofheim, Taunus, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany
Filed Jan. 30, 1963, Ser. No. 254,950
Claims priority, application Germany, Feb. 2, 1962, K 45,812
9 Claims. (Cl. 266—23)



1. In a torch cutting apparatus comprising a torch, means for moving said torch across and above a work piece to be cut, means for raising and lowering said torch as it moves across said work piece, a height registering shoe supported by said torch and spaced from said work piece surface, and automatic adjusting means connecting said shoe and work piece with said torch raising and lowering means for maintaining a uniform spacing between said nozzle and said work piece surface regardless of high and low areas in said work piece surface over which said torch is moved, the improvement being the portion of the shoe directed to the work piece surface has upwardly curved portions on the outer edge of the shoe, corresponding to the direction of movement of the torch.

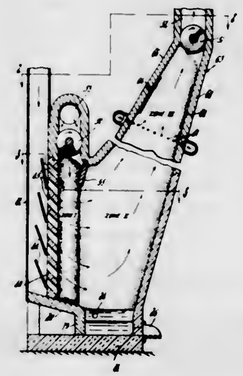
3,203,684
SOLID FUEL FURNACE
Ervin G. Bailey, Bethlehem Township, Pa., assignor to Bailey Inventions, Inc., Bethlehem Township, Pa., a corporation of Pennsylvania
Original application Oct. 10, 1960, Ser. No. 61,633. Divided and this application Feb. 13, 1962, Ser. No. 173,039
5 Claims. (Cl. 266—25)

1. A solid fuel furnace having a generally horizontally extending supporting surface and a generally vertically extending rear wall adapted to support a vertically descending charge with a front face of the charge exposed as a generally vertically extending off-gas surface, at least two laterally spaced overhead feeds having separate feed passageways for replenishing the vertically descending charge with different materials at each feed, the overhead feed adjacent said rear wall being adapted to feed combustible solid fuel on top of the vertically descending charge and the next adjacent feed being adapted to feed meltable material on top of said charge for vertical descent in juxtaposed side-by-side relation to and supporting fuel fed from said fuel feed, walls spaced laterally on the other side of said feeds from said rear wall forming a



passageway separate from said feed passageways for leading gases away from said off-gas surface without encountering materials being fed to said furnace through said feed passageways, and means for conducting a blast of combustion sustaining gas through said rear wall transversely across said furnace through said descending charge, out of said off-gas surface and into said lead-away passageway.

3,203,685
BLAST FURNACE
Ervin G. Bailey, Bethlehem Township, Northampton County, Pa., assignor to Bailey Inventions, Inc., Bethlehem Township, Northampton County, Pa., a corporation of Pennsylvania
Original application Oct. 10, 1960, Ser. No. 61,633. Divided and this application Feb. 13, 1962, Ser. No. 173,038
5 Claims. (Cl. 266—30)



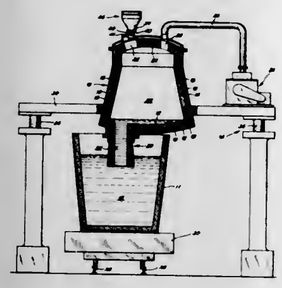
1. A blast furnace having walls forming a closed chamber, including a pair of opposed generally vertically extending walls merging at their tops into a furnace stack, one of said walls having a lower gas pervious section and an upper solid section extending upwardly in laterally off-set relation with respect to said lower section, first

overhead feed means between said lower section and said upper section for feeding solid fuel into said chamber to form a burning descending solid fuel bed supported on its rear side by said pervious wall section, second overhead feed means disposed adjacent said other wall underneath said stack for feeding material, including ore, into said chamber in a descending bed having one side of its upper portion supported by said upper solid wall section and having its bottom portion on said side in juxtaposed relation to and supporting and retaining at least a portion of the front side of said burning fuel bed, and means for conducting a blast of oxygen-containing gas through said pervious wall into the rear side of said fuel bed to drive hot gaseous reaction products of said fuel into said retaining bed for reaction with said ore and for ascending passage through the upper portion of said ore bed and through said second feed means into said stack.

3,203,686
APPARATUS FOR DEGASSING MOLTEN METAL

Patrick J. Wooding, Canonsburg, Peter J. Wynne, Pittsburgh, and Walter Sieckman, Canonsburg, Pa., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed May 16, 1961, Ser. No. 110,462
5 Claims. (Cl. 266—34)



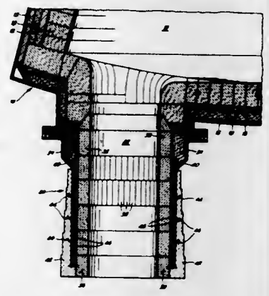
1. In combination, a sealed vessel for the vacuum treatment of molten metal, and hermetically sealed receptacle means mounted adjacent said vessel and interconnected thereto, said receptacle means being divided into a plurality of compartments comprising a main compartment and a plurality of auxiliary compartments, said auxiliary compartments being volumetrically inter-related according to a geometric progression which increases by a factor of two first means for individually discharging the contents of said auxiliary compartments into said main compartment and second means for discharging the contents of said main compartment into said vessel.

3,203,687
APPARATUS FOR DEGASSING MOLTEN METAL

Peter J. Wynne, Pittsburgh, and Patrick J. Wooding and Walter Sieckman, Canonsburg, Pa., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed May 16, 1961, Ser. No. 110,539
4 Claims. (Cl. 266—43)

1. In a refractory lined, metal encased vacuum degassing vessel having a nozzle for conducting molten metal to and from the interior thereof, said nozzle having a metallic shell and a refractory lining, a plurality of metallic creepage rings surrounding the outer surface of said metallic shell and affixed thereto, said rings extending obliquely away from their line of attachment to the surface of said metallic shell and upwardly toward said vessel, and a

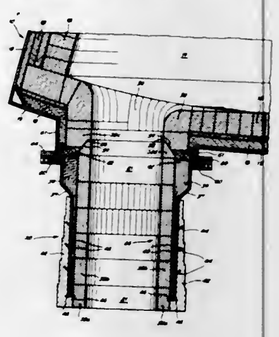


ramplaced jacket surrounding the lower end of said nozzle and covering said metallic rings, said jacket being composed of a high alumina refractory material.

3,203,688
APPARATUS FOR DEGASSING MOLTEN METAL

Walter Sieckman and Patrick J. Wooding, Canonsburg, and Peter J. Wynne, Pittsburgh, Pa., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed May 16, 1961, Ser. No. 110,540
6 Claims. (Cl. 266—43)

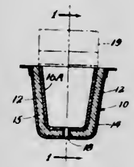


2. In a vacuum degassing vessel including a metallic nozzle extending from its lower end for drawing molten metal into said vessel for degasification and having lining support means at its lower end and extending inwardly toward the axis of said nozzle, the improvement comprising a refractory lining for said nozzle including a plurality of refractories arranged in courses surrounding the longitudinal axis of said nozzle, each of the refractories defining the lowermost of said courses lying in side-by-side abutment and each having a transverse groove extending across one side and between a pair of longitudinal edges, each of said grooves embracing said lining support means to support the refractories thereabove in said lining, each of said grooves being located a predetermined greater distance from one of the ends of said refractories than the other, said grooves being symmetrical in cross-section so that said lining support means may be embracingly engaged with either of the ends of said refractories being in an upright position, whereby variations in the lengths of the refractories in said nozzle lining resulting from normal manufacturing tolerances may be compensated by reversing the refractories in said lowermost course.

3,203,689
REFRACTORY-LINED TUNDISHES

Howard Thomas Hallowell, Jr., Rydal, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania

Filed May 10, 1962, Ser. No. 193,789
Claims priority, application Great Britain, May 15, 1961, 17,635/61
2 Claims. (Cl. 266—43)

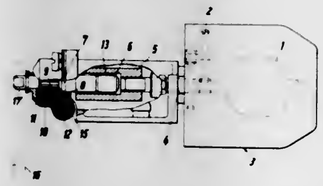


1. A tundish comprising a rigid metallic outer casing having upwardly extending sides and a flat bottom portion, said casing being capable of supporting the weight of the tundish together with a charge of molten metal, a layer of heat insulating material within said outer casing, an inner monolithic lining for said tundish formed from a high strength refractory material, said lining forming a structurally self-sustaining shell removable as a unit, said inner lining, said heat insulating material and said outer casing each being provided with aligned apertures located in the bottom portion of the tundish, and a nozzle inserted in and projecting through said aligned apertures.

3,203,690
OPERATING DEVICE COMPRISING FRICTION CLUTCH MEANS, FOR SLIDING WINDOWS OF MOTOR VEHICLES

Johannes Werner, Offenbach, Main, Germany, assignor to H. T. Golde G.m.b.H. & Co. K.G., Frankfurt am Main, Germany

Filed Aug. 5, 1963, Ser. No. 299,979
Claims priority, application Germany, Aug. 10, 1962, G 35,691; Nov. 20, 1962, G 36,450
4 Claims. (Cl. 268—124)

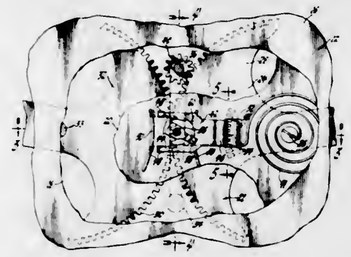


1. In a driving mechanism for a sliding window of a motor vehicle, said mechanism having a drive cable connected to the window, and a driving wheel in driving engagement with said cable to displace the same in opposite directions to raise and lower the window, the improvement comprising a driving unit including a reversible motor and reduction gearing, a first shaft driven by said motor via said gearing in opposite directions, a second shaft, means connecting said driving wheel to said second shaft in driving relation, one of said shafts being hollow, the other of said shafts being inserted in the latter shaft, and friction clutch means constituted of flexible sheet material in the form of a hollow cylindrical body interposed between said shafts and preloaded to bear under initial radial stress against the hollow shaft for frictional engagement therewith and adapted for driving engagement with said other shaft for transmitting torque of limited magnitude in either direction between said shafts, said cylindrical body being constituted of at least one winding of said material and having radial terminal faces at opposite ends of the cylindrical body, said cylindrical body having a normal outer diameter exceeding the inner diameter of the hollow shaft, said body being inserted within and urged outwardly against the inner surface of the hollow shaft in frictional engagement, and means rotatably secured with the said other shaft for engaging respective of said terminal faces, dependent upon the direction of rotation of said first shaft, to drivingly engage the said other shaft and the cylindrical body together for transmitting torque of said limited magnitude between said shafts, said cylindrical body tending to expand in diameter as torque is transmitted between said shafts due to the winding of said body.

3,203,691
LOCKING MEANS FOR WINDOW REGULATOR MECHANISMS

Walter Pollak, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 17, 1963, Ser. No. 295,757
4 Claims. (Cl. 268—126)



1. In a vehicle body having a window mounted thereon for movement between open and closed positions, window operating means adapted to move the window, and clutch means for releasably holding the operating means in any adjusted position of the window, the combination comprising, a lift arm mounted on said body and operatively connected to said window for moving said window between said positions thereof, means including said clutch means for operatively connecting said lift arm to said operating means, a locking member mounted on said body for movement relative thereto and laterally of said lift arm between locked and unlocked positions, cooperative locking means on said lift arm and said locking member engageable in the locked position of said locking member to prevent movement of said lift arm relative to said body and movement of said operating means regardless of release of said clutch means, and means for moving said locking member between said locked and unlocked positions thereof.

3,203,692
WORK CLAMP FOR AUTOMATIC STRUCTURAL BAR PUNCHING MACHINES AND THE LIKE

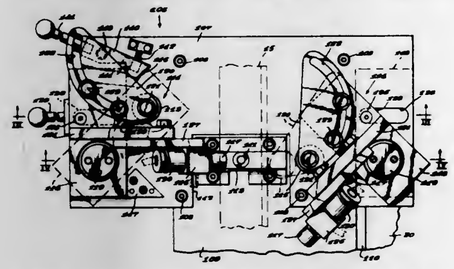
Robert C. Kidd, Elmhurst, Ill., assignor to Mississippi Valley Structural Steel Company, Decatur, Ill., a corporation of Illinois

Original application Sept. 25, 1958, Ser. No. 763,255, now Patent No. 3,134,284, dated May 26, 1964. Divided and this application Aug. 13, 1964, Ser. No. 389,501
8 Claims. (Cl. 269—152)

1. In apparatus of the character described wherein a work piece is required to be held in position for work to be performed thereon,

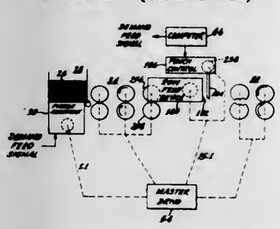
a work supporting structure,

a pair of relatively shiftable gripping heads each having a reciprocable gripping plunger and a work gripping roller mounted to grip a work piece on



said work supporting structure, and means for selectively positioning said heads for alternative coaction of the respective rollers and plungers thereof for gripping a work piece located therebetween on said work supporting structure.

3,203,693
DOCUMENT HANDLING SYSTEM
Frederick W. Pfleger, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 17, 1962, Ser. No. 245,071
6 Claims. (Cl. 271—10)



1. In a document handling machine, the combination comprising:

a document processing station having a fixed operating cycle of T seconds measurable from a time when the processing station is conditioned to process the first line of data storage positions on a document;

relatively slow speed means for feeding documents through said station at an average speed of

$$\frac{X}{T}$$

inches per second, where X is the dimension of a document in the direction of document feed plus the desired interdocument spacing;

an input hopper for storing documents to be fed to said station;

means for feeding a document out of said hopper selectively on demand, in response to a "demand feed" signal, at a time T_a in one operating cycle of said station, said hopper being spaced from said station by a distance greater than

$$\frac{(T-T_a)X}{T}$$

inches; and

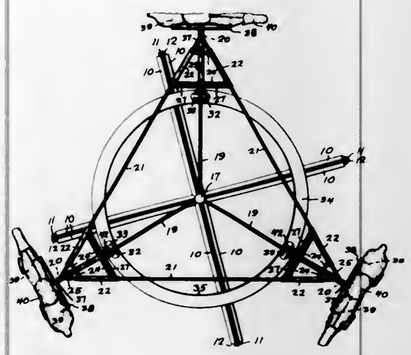
relatively high speed means for feeding the output document from said hopper to arrive with its first line of data storage positions at said station at the beginning of the next operating cycle.

3,203,694
SIMULATED PORPOISE AQUATIC DEVICE
Gary K. Kobashikawa, 3460 Maluhia St., Honolulu, Hawaii
Filed Jan. 14, 1963, Ser. No. 251,372
1 Claim. (Cl. 272—1)



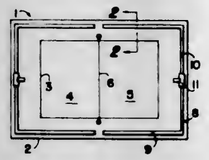
An aquatic device comprising an inflatable balloon having the shape of a porpoise, a valve mounted in said balloon to permit same to be inflated and deflated, the valve serving as an eye, a horizontal member extending through said balloon, O rings interposed between said horizontal member and said balloon at the points of passage of said horizontal member through the balloon to serve as water-tight seals, a vertical member joined to the horizontal member and extending downward through said balloon, an O ring interposed between the vertical member at the point at which the vertical member passes through the balloon to serve as a water-tight seal, a rudder, means securing the rudder to the lower end of the vertical member, and a pair of guide pedals secured to said securing means to guide the rudder, said pedals, means, rudder and vertical member weighting down the tail of the porpoise to cause the balloon to extend vertically upward when in the water, the head extending upward out of the water.

3,203,695
OCCUPANT PROPELLED MERRY-GO-ROUND
Fred D. Parker, Alcester, S. Dak., assignor of one-fourth each to I. T. Kehn, Calvin H. Kehn, and Earl H. Waltner, all of Bridgewater, S. Dak.
Filed Apr. 15, 1963, Ser. No. 272,897
2 Claims. (Cl. 272—33)



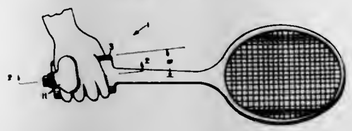
1. An exercising device comprising a substantially circular track-way, wheels mounted on said track-way, a framework supported on said wheels, said framework including simulated horses mounted thereon for rocking action, means positioned between said simulated horses and said wheels for rotating said wheels whereby said wheels will travel along said track-way, said means including lengthened tubes for providing bearings, shafts received in said tubes, sprockets attached at the inner terminals of said shafts, sprocket chains passing over said sprockets, further sprockets attached to said wheels over which said sprocket chains pass for driving said wheels, ratchet members secured to said sprockets, pawls attached to said shafts for engaging said ratchet members for driving said ratchet and said wheels in one direction.

3,203,696
GAME APPARATUS
Hermon R. Sawyer, % Alfredo Salazar 583, Dept. 202, San Isidro, Lima, Peru
Filed May 10, 1962, Ser. No. 193,775
7 Claims. (Cl. 273—29)



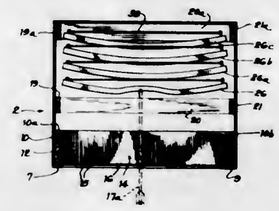
1. A tennis court apparatus for retrieving tennis balls which are knocked out-of-play, said apparatus comprising: a rectangular tennis court including a pair of sides and opposite ends and a tennis net extending across the middle of said court between its opposite sides to divide the court into halves; a ball station mounted adjacent each half of said court for storing and individually dispensing a plurality of tennis balls; a series of moving conveyors extending along both sides of each court half and along the end of each court half, the conveyors of each court half being arranged to catch and bodily transport balls to the ball station for that court half from the sides and end of that court half; and ball guide means located along the sides and end of that court half to cause balls to roll into said series of conveyors.

3,203,697
STABLE GRIP TENNIS RACKET HANDLE
Paul G. Berzatzy, 231 N. Robinson St., Schenectady, N.Y.
Filed Feb. 6, 1963, Ser. No. 256,704
4 Claims. (Cl. 273—75)



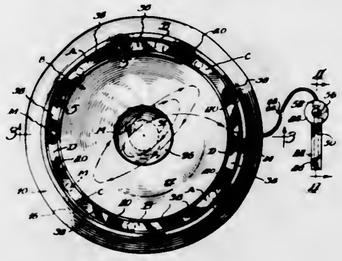
1. A handle for a tennis racket having adjustably positionable therewith a handle assembly; said handle assembly including an L-shaped support member, seat, screw and nut; said handle having a cylindrical insert inserted in the rear of said handle, said L-shaped support member being attached to said seat by said screw and nut, said cylindrical insert attachably receiving therein said seat whereby one leg of said L-shaped support member is parallel to said handle and the other leg of said L-shaped support member is perpendicular to said handle, said seat being slidable within said cylindrical insert, a portion of said seat being slotted, said nut being disposed interiorly of said seat at said slotted portion of said seat, said screw engaging said nut, said screw and nut therebetween carrying said L-shaped support member, said slotted portion of said seat being in locking engagement with said cylindrical insert upon said nut radially expanding said slotted portion, said support member thusly being discretely movable and positionable in longitudinal, radial and/or translatory directions relative to the longitudinal axis of said handle.

3,203,698
ARCHERY TARGET WITH ARROW STOP MEANS
Charles A. Saunders, 313 Morton Road, Columbus, Nebr.
Filed May 14, 1962, Ser. No. 194,581
10 Claims. (Cl. 273—102.4)



8. In an archery device the combination with a straw filled type target matt for receiving directed arrow projectiles, of an arrow-impermeable stop means comprising a series of partially overlapped and staggered bowed resilient shields having their convex sides presented towards said matt rearwardly and horizontally aligned with said matt and means tensioning said shields to bias the same into said bowed position.

3,203,699
BALL GAME WITH ROTATING BALL PROJECTION MEANS
Charles Pearson, Jr., 396 Huntington Lane, Elmhurst, Ill.
Filed Aug. 29, 1962, Ser. No. 220,234
1 Claim. (Cl. 273—119)



An amusement device comprising a play section having a plurality of arcuate shaped troughs, a ball, an inwardly downwardly sloping annular wall inwardly of said trough, an inwardly concave rotatable member centrally positioned inwardly of said downwardly sloping annular wall, the periphery of said rotatable member having a surface substantially flush with the adjacent sloping annular wall to permit a ball to roll across the top surface of the rotatable member, said ball member being positioned on said rotatable member and adapted to be propelled by the rotation of said rotatable member to roll over the top of said rotatable member and onto said sloping annular wall and into an arcuate shaped trough, and means to intermittently rotate said rotatable member for controlling the path and direction of travel of said ball across the top of said rotatable member and into said trough so that as the ball rolls over the rotatable member and said annular wall it moves in an elliptical path.

3,203,700
GOLF TEE

Anthony J. Antonious, Baltimore, Md., assignor of twenty-five percent to Leo A. Rheaume, Hyattsville, Md.

Filed Mar. 20, 1963, Ser. No. 266,707
7 Claims. (Cl. 273—202)



1. A golf tee comprising;
(a) a tee body including a tapered pointed tip and a concave head for holding the ball,
(b) a plurality of pairs of notched grooves only in opposite sides of the body at spaced heights thereon, and
(c) a separable clip, the clip being a generally flat rigid disc-like element including a central opening and an opening throat leading into the opening, the smallest dimension of the throat and opening being slightly larger than the width of the body at the base of the notches but less than the width of the body which is not notched, so that the clip may be inserted on the body and then turned relative to the tee body to lock it onto the body in use to function as a stop to determine the distance the tee body may be inserted into the ground.

3,203,701
AUTOMATIC RECORD CLEANING MECHANISM

Richard A. Rosenthal, New Brunswick, N.J.
(164 Charter Circle, Ossining, N.Y.)

Filed June 26, 1963, Ser. No. 290,678
5 Claims. (Cl. 274—47)

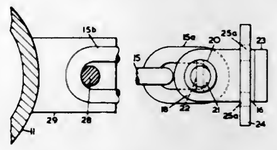


1. A dust removing mechanism for use with record players of the type having a tone arm, turntable, and changing mechanism for operating said tone arm through a cycle, said dust removing mechanism comprising in combination,
(a) an auxiliary arm pivotally supported on said record player,
(b) a dusting device attached to said auxiliary arm and adapted to remove dust from a record positioned on said turntable while said turntable is rotating, and
(c) means operatively connecting said auxiliary arm to said tone arm and said changing mechanism during only those portions of said cycle when said tone arm is out of engagement with a record on said turntable and permitting disengagement of the tone arm and auxiliary arm when said tone arm engages the record.

3,203,702
FLAIL TYPE MATERIAL UNLOADER

John Arthur Howard, West Horndon, England, assignor to Rotary Hoes Limited, West Horndon, England

Filed Jan. 8, 1964, Ser. No. 336,582
Claims priority, application Great Britain, Jan. 14, 1963, 1,674
8 Claims. (Cl. 275—3)

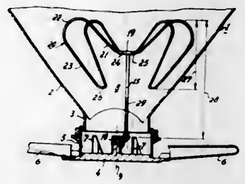


1. An implement comprising a receptacle for material to be unloaded through a lateral opening of the receptacle, a shaft within said receptacle, a plurality of flails secured at one end to said shaft, respective drag members for said flails, and means for securing said drag members to the other ends of said flails, each said drag-member-securing means including a stem extending lengthwise of the flail through a hole in the associated drag member, means for detachably securing one end of each said stem to its associated flail, and lateral abutment means at the other end of each said stem, said securing means and said abutments spaced apart by an amount greater than the thickness of said drag members and providing stops for limiting sliding movement of said drag members along their associated stems.

3,203,703
DEVICE FOR SPREADING GRANULAR OR POWDERY MATERIAL

Cornelis van der Lely, Zug, Switzerland, and Ary van der Lely, Maasland, Netherlands, assignors to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company

Original application Jan. 26, 1959, Ser. No. 783,884, now Patent No. 3,038,643, dated June 12, 1963. Divided and this application May 31, 1962, Ser. No. 199,020
6 Claims. (Cl. 275—15)



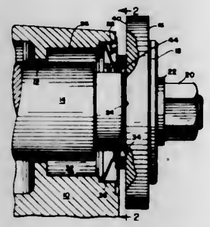
3. A device for spreading material comprising a material container, said container decreasing in width towards its lower end, an agitator arranged within said container, said agitator having a shaft and downwardly extending arms, the upper ends of said arms being provided with laterally extending portions, means for connecting said portions to the upper end of said shaft, a rotating and driving mechanism pivotally connected to the lower end of said shaft for moving said agitator during operation, said downwardly extending arms being located substantially in the same conical surface.

3,203,704
ROTARY MECHANICAL SEAL

Peter A. Mueller, Oak Park, Ill., assignor to Mueller Seal Company, Lyons, Ill., a corporation of Delaware

Filed Dec. 3, 1962, Ser. No. 241,663
2 Claims. (Cl. 277—42)

1. In a rotary mechanical seal for sealing a housing wall opening through which a rotatable shaft extends, in combination, an anti-friction washer having a cylindrical opening extending therethrough and adapted to surround the shaft, said washer having an annular forward end face designed for running engagement with a cooperating annular radial surface normal to and turning with the shaft, a generally cylindrical retainer encircling at least the rear end region of the washer and adapted to be pressed into the housing wall opening, the rear rim region of said retainer being provided with an inturned and re-entrant flange defining a forwardly facing annular channel, a thin flexible imperforate generally frusto-conical

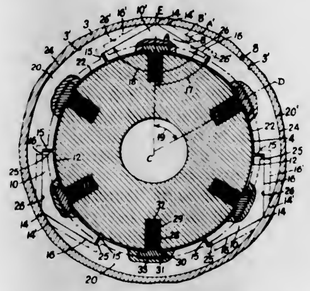


compression ring formed of spring material and having its large end projecting into the retainer and seated within said channel, a quantity of resin-type epoxy adhesive disposed within said channel and fixedly securing the large end of the frusto-conical compression ring to the retainer, the small end of said compression ring being provided with a short forwardly turned cylindrical portion which extends into the cylindrical opening in the washer, and a quantity of an epoxy resin interposed between the wall of the cylindrical opening in the washer and said forwardly turned cylindrical portion and serving fixedly to secure the compression ring to the washer.

3,203,705
PISTON RING ASSEMBLY

Eugene J. Doperalski, Michigan City, Ind., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 22, 1963, Ser. No. 274,571
7 Claims. (Cl. 277—150)



1. A piston ring assembly comprising: a first set of segments, a second set of segments having the same number of segments as said first set of segments, segments of said first set of segments alternating with segments of said second set in coplanar abutting engagement therewith to form a piston ring with a portion of the circumference of said piston ring being formed by each of said segments, each of said sets of segments comprising at least three segments, each of said segments of said first set of segments having a pair of angularly disposed side surfaces extending convergently outwardly of said ring, said side surfaces defining an obtuse angle A with each other, said obtuse angle A having a number of degrees given by the formula $A=180°\ (S-1)+S$ in which S is equal to the number of segments in each set of segments, each of said segments of said second set of segments having surfaces in engagement with said side surfaces of the adjacent segments of said first set of segments respectively.

3,203,706
CONVERTIBLE COASTER STEERED BY TILTING RIDER SUPPORT

Albert C. Boyden, San Diego, Calif.
(1336 Pepperville Drive, El Cajon, Calif.)

Filed Sept. 30, 1963, Ser. No. 312,422
4 Claims. (Cl. 280—7.12)

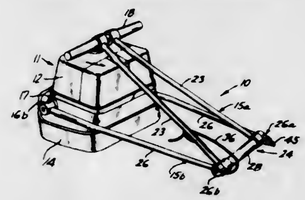


1. In a vehicle toy of the type having an elongated platform of a length to permit a person to stand on the platform with one foot in front of the other, undercarriage means for said vehicle comprising:
sheet metal, generally V-shaped, rigid strap brackets mounted on the underside of said platform located at the front and rear thereof, each of said brackets having a generally vertical leg, the bracket at the front having a leg inclined downwardly and forwardly, the bracket at the rear having a leg inclined downwardly and rearwardly;
a transverse support member mounted on said inclined leg of each bracket for pivotal movement about axes normal to said inclined legs;
spring means connecting each transverse support member to said platform and urging said transverse support members into positions at substantially right angles to the longitudinal axis of said platform; and
ground-contacting elements secured to each of said support members.

3,203,707
COLLAPSIBLE MANIPULATING HANDLE FOR FLOOR TREATING MACHINE

Erik Arne Anderson, Hagersten, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden

Filed Apr. 17, 1964, Ser. No. 360,538
Claims priority, application Sweden, Apr. 19, 1963, 4,358/63
6 Claims. (Cl. 280—47.37)



1. A handle structure for an electrically operated floor treating machine of the type having a housing movable over a floor surface, said handle structure comprising two rod-like elements pivotally connected, at one end, to opposite sides of the housing, an operating handle secured to the other ends of said rod-like elements for use in ma-

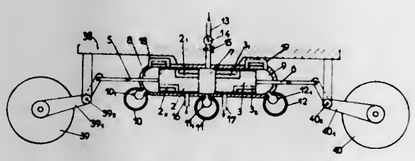
nipulating the machine during its operation, each of said rod-like elements having first and second elongated portions of approximately equal length extending from said housing and from said operating handle, respectively, and joint means pivotally connecting the ends of said first and second portions of each element which are remote from said housing and operating handle, respectively, so that said second portions of the two rod-like elements can swing as a unit about a lateral axis relative to said first portions between an extended operative position and a folded position, said joint means including a tubular member coaxial with said lateral axis and extending between the two rod-like elements at the pivotally connected ends of said elongated portions of the latter to form a carrying handle for the machine when said second portions are in said folded position, said pivotally connected ends of said portions of the rod-like elements having end pieces thereon with the end pieces of said second portions being laterally inside the end pieces of said first portions, said end pieces of the second portions being axially movable on the ends of said tubular member constituting a carrying handle, said joint means including a spacer bolt extending axially through said tubular member and said end pieces of the second portions and means securing said end pieces of the first portions to the ends of said spacer bolt, said end pieces of the first and second portions having confronting surfaces formed with similarly shaped recesses and projections engageable with each other to retain said second portions in said extended operative position relative to said first portions, and said recesses and projections being disengageable from each other to permit swinging of said second portions to said folded position by axial movement of said end pieces of the second portions inward toward each other.

3,203,708

INTERACTING FLUID SUSPENSION AND VEHICLES FITTED WITH THESE SUSPENSIONS

André Alin Ludovic Chaneac, Cours du Palais, Privas, France, and Henri Gaston Chaneac, 127 Boulevard, Saint Michel, Paris, France

Filed Mar. 8, 1962, Ser. No. 178,465
Claims priority, application France, Mar. 10, 1961, 855,246, Patent 1,291,031
4 Claims. (Cl. 280—124)



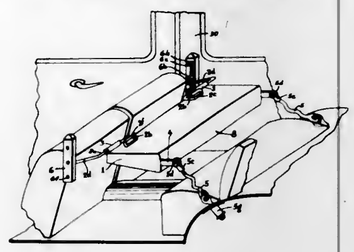
1. Interacting fluid suspension of adjustable flexibility for a wheeled vehicle, comprising a cylinder fixed to a vehicle chassis, two pistons dividing said cylinder into two lateral fluid compression chambers and a central fluid compression chamber, two rods passing through the two ends of the cylinder and connecting each piston to a wheel of the vehicle so as to balance its load by fluid pressure difference on both end faces of the corresponding piston, a pressure fluid inlet conduit communicating with the central chamber, a pair of fluid inlet conduits connected in the lateral compression chambers, means for opening and closing said pair of fluid inlet conduits controlled by the positions of the pistons in the cylinder, fluid outlet conduits in the lateral compression chambers, means for opening and closing of said outlet conduits controlled by the positions of the pistons, each of said pistons being automatically returned to a median position of equilibrium during vehicle movement to retain a substantially equal difference of pressure on its end faces by opening and closing of said pair of fluid inlet and said outlet conduits caused by wheel engendered movements of the pistons, and a valve actuable by a vehicle operator and located in the pressure fluid inlet conduit of the central chamber allowing manual variation of the fluid pressure in the central chamber followed by a similar pressure variation in the lateral fluid compression chambers which returns the pistons to their median positions of equilibrium, whereby to obtain a variation of flexibility of the suspension.

3,203,709

SAFETY CRASH TRAY FOR VEHICLES

Peter Presunka, Cardinal Heights, Ontario, and James F. Liston, Ottawa, Ontario, Canada, assignors of one-third to Steve Presunka, Cardinal Heights, Ontario, Canada

Filed Mar. 12, 1962, Ser. No. 178,858
14 Claims. (Cl. 280—150)



1. A combined safety device and utility tray for vehicles having a seat structure for passengers comprising

(a) a rigid front beam positioned ahead of and parallel to said seat structure, and

(b) a pair of links connecting said beam rearwardly of said beam to anchoring lugs firmly attached to said vehicle, and

(c) crushable material mounted between said links and abutting said beam and extending to rear of said beam so as to form a flat tray with said beam, said tray being bounded by substantially flat top and bottom surfaces, said crushable material and said beam having their greatest cross-sectional dimensions lying substantially parallel to said surfaces, and

(d) mounting means extending outwardly and upwardly from opposite ends of said beam and connecting said beam pivotally to said vehicle enabling the rear of said tray to be positioned adjacent to the bodies of said passengers whereby sudden deceleration of said vehicle from a high forward speed will cause said crushable material to be crushed between said passengers and said beam, thereby absorbing a substantial portion of impact energy and decelerating said passengers at a controlled rate through a substantial distance.

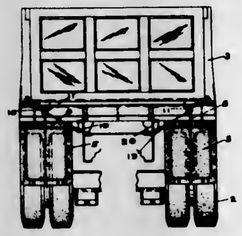
3,203,710

MUD FLAP RETRACTOR

William A. Harting, Jr., Baltimore, Md. (2930 Hammonds Ferry Road, Lansdowne 27, Md.)

Filed Apr. 24, 1964, Ser. No. 362,405
2 Claims. (Cl. 280—154.5)

1. In a wheeled road vehicle having a frame including longitudinally extending frame beams, and an overhanging elevating body tiltably mounted on the frame near to the rear end including cross beams, a vertically hanging flexible splash guard fixedly hung by its upper edge from the back of the body rearwardly of the rear wheel, a bracket having spaced openings therethrough adjustably secured to one of said cross beams and having cable guides at its opposite ends, a further cable guide on said body forwardly of said bracket, and a cable connected to the lower end of said splash guard extending through all



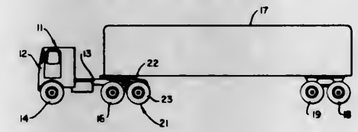
of said cable guides with means connecting the forward end of said cable to a frame beam to fold up the splash guard upon the elevation of said body.

3,203,711

FLOATING AXLE ATTACHMENT

Norman B. Chew, Portland, Oreg., assignor to Freightliner Corporation, Portland, Oreg., a corporation of Delaware

Filed Feb. 19, 1962, Ser. No. 173,996
4 Claims. (Cl. 280—415)



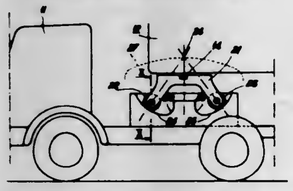
1. Apparatus for carrying a load over terrain comprising a frame adapted to carry the load, first and second pairs of ground engaging wheels supporting the frame in stable relation to the terrain at each end of the frame, a load distribution attachment disposed between the pairs of ground engaging wheels to distribute the load therebetween, said attachment comprising a frame, an axle, a pair of ground engaging wheels carried by said axle, resilient means having substantially zero spring rate interposed between the axle and the last named frame to support the load in varying spaced relation with respect to the axle with substantially constant force applied by said resilient means whereby load distribution between the first and second pairs of wheels is maintained constant.

3,203,712

ANTI-BUCK-JUMP COUPLING GEARS FOR TRACTOR AND SEMI-TRAILER VEHICLES

Jean Lorrin, Lyon, France, assignor to Automobiles M. Berliet, Lyon, France, a French corporation

Filed Apr. 1, 1963, Ser. No. 269,334
Claims priority, application France, Apr. 5, 1962, 893,466, Patent 1,339,517
2 Claims. (Cl. 280—438)



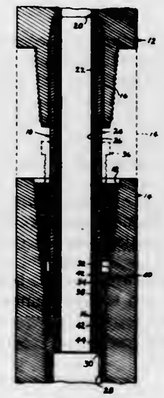
2. A device for reducing the buck-jump effect in tractors of semi-trailer vehicles, comprising at least two pairs of rollers connecting the king-pin supporting platform of the tractor to the chassis thereof, each pair of said rollers being disposed on the same lateral side of the platform with respect to the longitudinal axis of the vehicle and so directed that a radius of each of said rollers on one side intersects at a point located above the tractor platform, at least two pairs of raceways having a predetermined vertical curvature fixedly attached to said tractor chassis, one end of each of said load-bearing means being in rolling engagement with a corresponding raceway to define a momentary axis of vertical rotation passing through said intersection of the load bearing means, said axis being above said platform and shifted forward when the tractor is rearing and backward when the tractor is tilting forward.

3,203,713

AUXILIARY DRILL COLLAR CONNECTION

James H. Pangburn and Clay Trigg, both of P.O. Box 4364, Oklahoma City 9, Okla.

Filed May 3, 1962, Ser. No. 192,103
1 Claim. (Cl. 285—18)

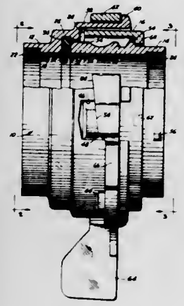


An auxiliary drill collar connector for connecting the adjacent ends of an upper drill collar to a lower drill collar, said drill collars having cooperatingly threaded box and pin ends and having counterbores extending coaxially inward beyond the threads of their threadedly connected ends, comprising: an elongated tubular member threadedly connected coaxially at one end to the wall forming the inward end portion of the counterbore in said upper drill collar, the depending end portion of said tubular member having an annular outstanding flange slidably received coaxially by the counterbore in said lower drill collar; means sealing the depending end portion of said tubular member fluidtight within the lowermost drill collar, said means comprising a relatively short sleeve of a size complementary slidably surrounding said tubular member and threadedly connected to the wall forming the counterbore in said lower drill collar inwardly of the threads of the latter and above the flanged end on said tubular member, said sleeve having at least one annular packing ring groove formed in its inner periphery, and a packing ring within the groove of said sleeve; and cooperating ratchet teeth formed on the upper edge surface of the flanged end of said tubular member and the depending end surface of said sleeve, said ratchet teeth being engaged with each other by an expanded telescoped position of said tubular member with respect to said sleeve, whereby reverse rotation of said upper drill collar unscrews said tubular member from said upper drill collar.

3,203,714
QUICK OPENING COUPLING

Fred Y. Cronk, Jr., Tulsa, Okla., assignor to J. Frank Winters, Wichita, Kans.

Filed July 26, 1963, Ser. No. 297,887
3 Claims. (Cl. 285—81)



1. A quick acting coupling comprising a first element adapted for engagement with a second element, ring-cam means loosely disposed on the outer periphery of said first element, lug and flange means provided on the outer periphery of the first element for retaining the ring-cam means thereon, lug means provided on the outer periphery of said second element and extending radially outward through the first element for cooperating with said ring-cam means for wedging said second element within said first element upon rotation of the ring-cam means in one direction, and swivel means loosely disposed within said second element and independently secured thereto, said swivel means being rotatable with respect to said first and second elements to permit rotational orientation with respect to the first element without a longitudinal disengagement therebetween.

3,203,715
GLASS-TO-METAL SEAL

Jules Edward Benbenek, Lawrenceville, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 31, 1959, Ser. No. 863,343
5 Claims. (Cl. 285—238)

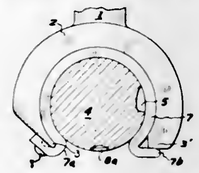


1. A vacuum-tight non-magnetic metal-to-glass seal comprising a stainless steel member including chromium in an amount only from 12% to 25% by weight, said stainless steel member having a first tapered region extending to an end of said member and a second tapered region extending to said first tapered region, said first tapered region having a greater thickness than said second tapered region in the zone of juncture of said regions, and a hard borosilicate glass member sealed to and in direct contact with said first tapered region.

3,203,716
CONNECTING ROD AND PIVOT PIN CONNECTION

Robert J. Lannen, Detroit, Mich., assignor to Micro-Poise Engineering and Sales Company, Detroit, Mich., a partnership

Filed Feb. 19, 1962, Ser. No. 174,069
2 Claims. (Cl. 287—93)

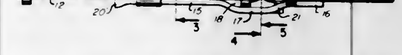


1. A connecting rod and pivot pin connection, comprising a connecting rod terminally formed with an arcuate bearing, a liner inserted in said bearing, a pivot pin inserted in the lined bearing, the bearing and liner having substantially coextensive gaps, the liner being formed at opposite margins thereof with a pair of spaced arcuate outwardly projecting flanges, an inner portion of the bearing being fitted between such flanges, a lateral face of the bearing being formed with a pocket, one of said flanges having an identation received in said pocket to prevent relative rotation of the bearing and liner.

3,203,717
TIE-ROD COUPLER

Carl M. Jahn, 2120 S. Jollet St., Denver, Colo.

Filed May 1, 1962, Ser. No. 191,484
4 Claims. (Cl. 287—111)

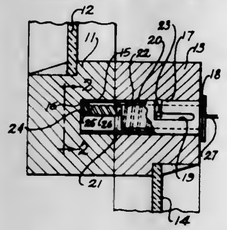


1. A rod coupler for detachably engaging a terminally-headed rod to and as a coaligned extension of a like headed projection conventionally terminating a tie-rod horizontally fixed in use association with a concrete form, comprising an elongated, rigid member formed with a laterally-open, concavely-bottomed trough portion adapted to receive and conformably seat in closely-spaced coaxial opposition the head of said projection and a terminal head of said rod, laterally-open, concavely-bottomed trough extensions aligned in fixed engagement with an unequal opposite projection from the ends of said trough portion adapted to receive and conformably seat the rod components terminated by the heads accommodated in said trough portion, said trough extensions being relatively shorter and longer in lengths of projection from the trough portion exceeding the combined length dimensions of the heads receivable in said portion, abutments at the conjunctions of said trough portion and trough extensions coactable with the heads engaged within the trough portion to inhibit axially-directed separation thereof, means fixedly restricting the lateral opening of the trough portion in overhanging relation with the abutment at the joinder of said trough portion and shorter trough extension effective to prevent release from the trough portion of a head bearing against the abutment in termination of a rod component traversing the shorter trough extension, and other means slidably and revolubly embracing the longer trough extension selectively manipulable to effect seated reception of a terminally-headed rod in the trough portion and associated longer extension, to accommodate at option oscillation of the so-seated rod with attendant displacement of its head relative to the trough portion, and to latch the head of the so-seated rod in bearing engagement with the contiguous abutment interiorly of the trough portion.

3,203,718
WINDOW ALIGNING, ADJUSTING AND LOCKING DEVICES

Winford R. Bishop, Atlanta, Ga.

Filed Dec. 31, 1963, Ser. No. 334,890
7 Claims. (Cl. 292—62)

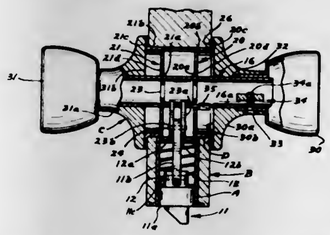


1. In a device of the character described, a tubular member having a thread engaging element extending from the inner wall thereof and being securely anchored thereto, a second tubular member having a small flange at one end thereof and a stop member at the opposite end, an L-shaped slot formed in the side of said second tubular member, a coil spring inserted in said tubular element so that one end engages said flange, a bolt member inserted in said second tubular member, a handle on one end of said bolt, a pin secured to one side of said bolt at approximate right angles thereto, said pin operating in said slot; and an off-set smaller end segment formed integral with said bolt, said segment having a longitudinally extending flat surface and threads for engaging the inwardly extending element of said first tubular member, whereby when the bolt is forced inwardly and its handle is rotated, said thread members will generate a locking-aligning-tightening action as between said first and second tubular members and any structure to which they may be secured at the time.

3,203,719
SIMPLIFIED CONSTRUCTION FOR DOOR LATCH OPERATING MECHANISM

Francis J. Moore, 4248 Drew Ave. S., Minneapolis, Minn.

Filed Oct. 22, 1962, Ser. No. 232,110
8 Claims. (Cl. 292—167)

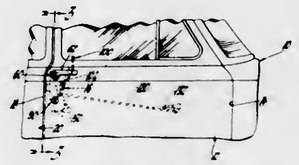


1. A spring door latch mechanism comprising a movable latch element adapted to be mounted on a door, spring means normally maintaining said movable latch element in extended latching position, an elongated hollow rotatable member adapted to be mounted on a door and having a longitudinally disposed assembly slot extending from one end thereof at least into the door surrounded portion thereof, means adapted to be mounted on said door for journaling said rotatable member for stabilized rotation on a fixed axis, an arm-mounting member slidably received within the hollow portion of said rotatable member to permit assembly in interfitted relation of the mounting and rotatable members, an arm fixed to said arm-mounting member for oscillation by said rotatable member, means connecting said arm to said movable latch element to retract the same against said spring when said rotatable member is rotated, and handle means connected with said rotatable member for facilitating rotation thereof.

3,203,720
CLOSURE LATCH

Herman J. Thomas, Roseville, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 9, 1962, Ser. No. 208,192
1 Claim. (Cl. 292—280)

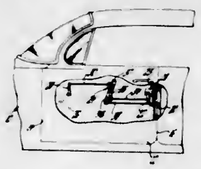


A latch for a front door of a vehicle, said door being hinged at its forward edge, said latch comprising, latch means located adjacent the free swinging edge of the door, detent means movable between latch engaging and latch releasing positions, outside operating means operable to move said detent means to latch releasing position, first inside operating means operatively connected to said detent means and located remote from the free swinging edge of the door for ready accessibility by a front seat passenger and being generally inaccessible to a rear seat passenger, and second inside operating means operatively connected to said detent means and being spaced from said first operating means and located adjacent the free swinging edge of the door for ready accesibility by a rear seat passenger, said first and second inside operating means being independently operable to move said detent means to latch releasing position.

3,203,721
LATCH ACTUATING MEANS

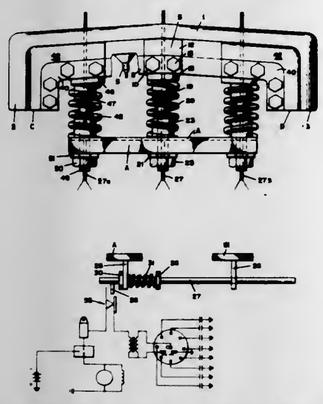
Bewley D. Priestman, Grosse Pointe, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 24, 1963, Ser. No. 289,878
5 Claims. (Cl. 292—336.3)



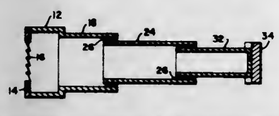
1. In a vehicle body including a door latch having a movable release member, latch actuating means, comprising, movable operating means mounted on said body, a first shiftable member connected to said operating means, a second shiftable member connected to said latch release member, means connecting said first member to said second member for movement of said second member and said release member in response to movement of said first member by said operating means, and means mounting said connecting means on said body for movement of said connecting means, said first member and said second member independently of movement of said operating means and said latch release member.

3,203,722
PNEUMATIC BUFFERS FOR MOTOR VEHICLES
Theodore Zahoroday, 5702 W. Galena St., Milwaukee, Wis.
Filed Jan. 23, 1963, Ser. No. 253,442
4 Claims. (Cl. 293—4)



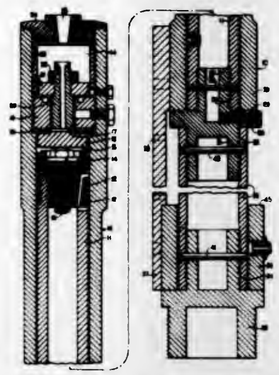
1. In a buffer assembly for a vehicle having a vehicle frame element, an inflatable buffer assembly including an annular outer casing having a pair of flat spaced wall portions, an expansible tube in said buffer assembly including an inflation valve projecting outwardly therefrom, means for connecting the inflatable buffer assembly to the frame element comprising a plurality of bolts, said bolts being arranged in laterally spaced relation and having their ends telescopically mounted on said frame element, the other ends of said bolts being provided with enlarged heads, a pair of casing housing elements rigidly fixed at the opposite outer edge portions of each of said enlarged heads and including laterally projecting arcuate wings for receiving adjacent annular wall portions of said casing and flat wall portions for engagement with the flat spaced wall portions of said outer casing, means extending through said flat wall portions for securing said inflatable buffer assembly in position, and coil springs positioned between said enlarged heads and said frame element to cushion sliding movement of said bolts when said inflatable buffer assembly is under impact.

3,203,723
PNEUMATICALLY CUSHIONED BUMPER
Anthony Montemare, 326 N. 4th St., Reading, Pa.
Filed July 10, 1962, Ser. No. 208,709
6 Claims. (Cl. 293—89)



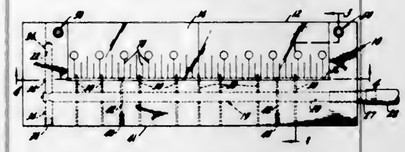
1. An automotive bumper and cushioning device, comprising a bumper having an elongated width and a plurality of hollow, air-filled telescoping sections telescoped individually into each other, said telescoping sections having elongated widths, means for attaching the rearmost of said sections to a motor vehicle, said bumper being mounted on the foremost of said sections, the width of each of said sections extending substantially parallel and substantially across the width of said bumper and each of said sections being of substantially the same configuration in cross section, means for sealing the outer sides of one of said sections against the inner sides of the section in which it is adapted to telescope and substantially pneumatically sealing the interior of said device.

3,203,724
PNEUMATICALLY CUSHIONED BUMPER
David L. Brunt, 725 S. Shore Road, Jacksonville, Fla.
Filed Aug. 30, 1963, Ser. No. 305,644
1 Claim. (Cl. 293—89)



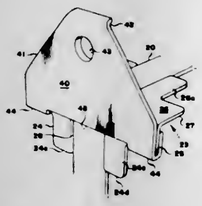
A bumper assembly for automotive vehicles, comprising a bumper member and a pair of spaced supports extending from adjacent the ends of the bumper member, each said support comprising a cylinder and a piston slidable in the cylinder between extended and retracted positions, and one-way valve means permitting free flow of fluid into the cylinder upon movement of the piston toward an extended position but blocking flow of fluid out of the cylinder upon movement of the piston toward a retracted position, the cylinder having an internally screw-threaded inlet end, the internal screw threads of said inlet end terminating in an inwardly extending shoulder, an externally screw-threaded plug having an axial bore therethrough, said plug being in screw-threaded engagement with said internal screw threads of said inlet end, a flat annular ring secured between said plug and said shoulder and extending radially inwardly from said shoulder, said ring comprising a valve seat for said one-way valve means, said one-way valve means including a valve member in the form of a circular disc disposed on the piston side of said ring, said disc having an outer annular surface disposed in a plane perpendicular to the axis of said disc and contacting said radially inwardly extending portion of said ring in the closed position of said one-way valve means, said disc having a raised central portion that extends away from the piston on the side of the disc opposite the piston and that extends into the central opening of said annular ring and that is bordered by a circular beveled edge of a diameter substantially as great as the internal diameter of said annular ring.

3,203,725
COMPOSING STICK
James E. Bitter, 824 Elmwood Ave., West Chicago, Ill.
Filed Jan. 10, 1963, Ser. No. 250,590
9 Claims. (Cl. 294—64)



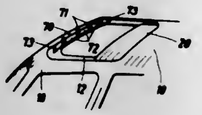
1. A composing stick comprising a body member, a portion of which is transparent, said body member having a chamber therein, means communicating with said chamber for producing a low pressure therein, said body member having a passageway communicating with said chamber and an exterior side of said body member, and means biased by a spring extending from a recess in said body member, said means adapted to move in and out of said recess.

3,203,726
CARGO HOIST APPARATUS
Donald G. Smith, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Jan. 7, 1963, Ser. No. 249,889
4 Claims. (Cl. 294—74)



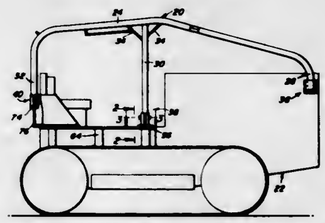
1. In combination:
a cargo package;
at least one cargo strap securely mounted around said cargo package;
and a hoist fitting interposed between said cargo strap and said cargo package on opposed corners of at least one side of said cargo package,
each of said hoist fittings having a pair of portions angulated relative to each other,
each portion having an elongate central area in a first plane for each portion,
the areas of each portion on the opposite edges of each central area being located in a second plane for each portion, said second plane above and parallel to said first plane,
one side of said central area of each portion in contact with the surface of the cargo package when mounted thereto by the secured strap,
the areas of each portion lying in said second plane being spaced from the surface of the cargo package and adapted to be slideably engaged by a hoist element connected to a hoisting line to permit the cargo strapping to serve as the cargo hoisting sling.

3,203,727
VEHICLE ROOF
Johannes Werner, Offenbach am Main, Germany, assignor to H. T. Golde G.m.b.H., & Co. K.G., Frankfurt am Main, Germany
Filed Sept. 25, 1963, Ser. No. 311,571
Claims priority, application Germany, Sept. 26, 1962, G 36,005
6 Claims. (Cl. 296—91)



1. A vehicle roof comprising a fixed roof part, said roof part having an aperture therein, frame portions on said fixed roof part bounding forwardly and laterally said aperture therein, the frame portion forwardly bounding the aperture comprising a generally rearwardly extending flange, a movable roof part displaceable lengthwise of the vehicle roof between a closed position in which said movable roof part closes said aperture and an open position rearward of said closed position, an elongate bearing means fixedly mounted on said flange and beneath said movable roof part in said closed position, and extending widthwise of the vehicle roof, a plurality of arms spaced apart from each other along said bearing means and pivotally mounted adjacent the rear edge of said bearing means, each arm being turnable between a raised position and a lowered position in which it is located on top of said bearing means and beneath the movable roof part in said closed position, wind-deflecting plate means carried by said arms and movable by said arms between an inoperative position in which said plate means is located beneath the movable roof part in said closed position and extends approximately parallel to said movable roof part and an operative position in which said plate means projects upwardly from said fixed roof part, and a stressed, torsion rod extending longitudinally of said bearing means and acting on the one hand on said bearing means and on the other hand on said arms and urging said arms into the raised positions and thus said plate means into said operaitve position.

3,203,728
MOUNT FOR TRACTOR CANOPY
Donald L. Wood, Medford, Oreg., assignor to Concrete-Steel Corporation, Medford, Oreg., a corporation of Oregon
Filed Oct. 4, 1962, Ser. No. 228,421
1 Claim. (Cl. 296—102)



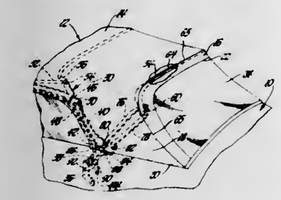
In combination, a tractor canopy post and a vibration damping mount therefor, said mount comprising an upwardly opening socket including a bottom and a vertically extending peripheral side wall rigid with said bottom, an upwardly opening resilient cushioning boot received within said socket, said boot including a bottom generally conforming to and positioned against the socket bottom and a vertically extending side wall generally conforming to and positioned against the interior of the socket side wall, the lower end portion of the post being snugly received within said boot, said lower end portion being spaced from the bottom and side wall of said socket solely by said boot, and means locking said lower end portion of the post within the socket while allowing movement of the lower end portion relative to the socket, this movement being cushioned by said boot, said socket wall being formed in two vertical half sections, each section enclosing substantially one half of the boot received within the socket, said vertical sections facing each other with their edges spaced slightly from each other for allowing a flexing of the sections toward each other so as to effectively confine said boot and limit horizontal movement in all directions, said means consisting of an elongated bolt, said sections and said boot wall having aligned diametrically opposed bolt holes therethrough, said lower end portion of the post including a vertically elongated slot having its lower end terminating above the bottom of the post and its upper end below the top of the socket, said bolt extending through said holes and said slot, said slot allowing a limited vertical movement of the lower end

portion of the post prior to engagement with the bolt, and means engaged with said bolt for effecting a drawing together of the upper portions of the sections so as to clamp the boot encompassed lower end portion of the post therein.

3,203,729
CONVERTIBLE TOP

Gerald E. Brynn, Farmington, and Gerald R. Mahoney, Grosse Pointe Farms, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 19, 1963, Ser. No. 296,261
10 Claims. (Cl. 296—107)

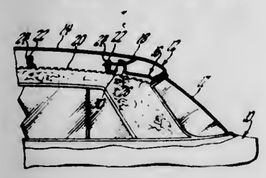


1. In combination with a convertible vehicle body, a top supporting frame mounted on said body for movement between raised and lowered positions, a rear bow member curved transversely of said body, a linkage means, said linkage means mounting said bow member on said frame for positive movement between a folded lowered position and a raised operative position wherein said bow member is downwardly inclined rearwardly of said body and supports a transverse rear upper edge of the top and adjacent upper rear side edge portions of the top spacedly of a top defined rear window opening.

3,203,730
HEADLINING LISTING WIRE SUPPORT

Ronald Chupick, Livonia, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 24, 1962, Ser. No. 225,486
7 Claims. (Cl. 296—137)



1. In a vehicle body including a roof structure and a listing wire, listing wire support means comprising, an elongated lever member fulcrumed intermediate its ends on said body, one end portion of said member supporting said listing wire, the other end portion of said member bearing against said roof structure to prevent downward displacement of said one end of said member.

3,203,731
MULTIPLE SEATING INCLUDING STACKABLE CHAIRS WITH FOLDING BACKS

Allison F. Krueger, Green Bay, Wis., assignor to Krueger Metal Products, Inc., Green Bay, Wis., a corporation of Wisconsin

Filed Sept. 9, 1963, Ser. No. 307,688
7 Claims. (Cl. 297—239)

1. A stackable chair with folding back, said chair comprising the combination with a frame having sides and cross members in integral connection and having legs which are downwardly divergent and connected at their upper ends rigidly with the side members of said frame, of a subcombination which includes seat and back elements having hinge means independent of the frame for directly connecting the back element to the seat element for pivotal movement, and means for connecting the seat element with a cross member of said frame in spaced relation to the side members of said frame, the said hinge comprising straps connected to the respective elements and pintles connecting the respective straps to each other in-

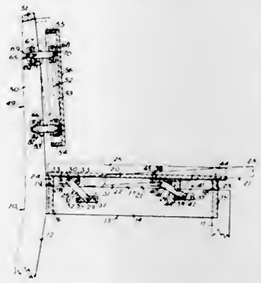


dependently of said frame, a stop comprising a flange on one of the straps in a position to be engaged by the other of said straps for limiting the pivotal movement of the back element with respect to the seat element to define a position of use, the back element being foldable from said position of use to a position of storage in which it overlies the seat element and the chair being stackable with other like chairs when the back element is in said position of storage.

3,203,732
CHAIR HAVING ADJUSTABLE BACK AND SEAT

William A. Hoffman, 670 Powder Horn Road, Atlanta, Ga.

Filed Jan. 28, 1963, Ser. No. 254,128
3 Claims. (Cl. 297—313)



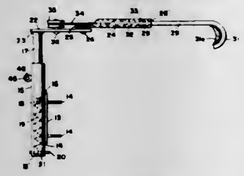
1. A chair comprising a seat sub-frame, legs extending from said seat-sub-frame for supporting said seat sub-frame in about a horizontal position, a seat support member disposed over said seat sub-frame, said seat support member being characterized by a backing frame adapted to rest upon said seat sub-frame in one position of said seat support member, a seat platform carried by said seat sub-frame, a plurality of forward and rear seat pivot arm assemblies connecting said seat sub-frame and said seat backing frame, said pivot arm assemblies including pivot arms and pivot pins pivotally connecting the ends of said pivot arms respectively to said seat sub-frame and said seat backing frame, said pivot arms being pivotal in parallel longitudinal planes, said pivot arms extending rearwardly and upwardly from said sub-frame when said seat backing frame is resting upon said seat sub-frame, said seat support member being movable with respect to said seat sub-frame from its position resting upon said seat sub-

frame to a position shifted forwardly thereof, said pivot arms extending forwardly and upwardly from said sub-frame when said seat support member is in its shifted position, and a stop extending downwardly from said seat support member and engageable with said seat sub-frame when said seat support member is in its forwardly shifted position.

3,203,733
SAFETY DEVICES FOR VEHICLES

Norman F. Priest, Springfield, Va. (Rte. 1, Box 1, Huntsville, Tex.), and Maxim D. Levinrad, 105 Rue de la Gare, Orleans, Loriet, France

Filed Mar. 18, 1963, Ser. No. 265,779
4 Claims. (Cl. 297—389)

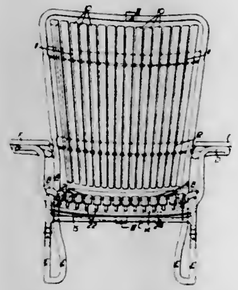


1. In combination with a vehicle having a seat provided with a seat back and constructed of a metallic frame, a safety device supported by said frame including a tubular member secured to said frame, a rod slidably mounted in said tubular member, a spring for yieldingly urging said rod within said tubular member, a supporting plate secured to the upper end of said rod, a pair of tubular arms pivoted to said supporting plate, telescopic arms slidably mounted in said tubular arms, shoulder engaging portions on the outer ends of said arms to engage the shoulders of a passenger occupying said seat, a pulley on said supporting plate, and a flexible cable trained over said pulley with one end connected to one of said telescopic arms and the other end connected to the other of said telescopic arms.

3,203,734
CHAIR

Vivian Home Seymer, 5 Copse Hill, Wimbledon, England

Filed Dec. 18, 1963, Ser. No. 331,425
Claims priority, application Great Britain, Jan. 15, 1963, 1,715/63
13 Claims. (Cl. 297—458)

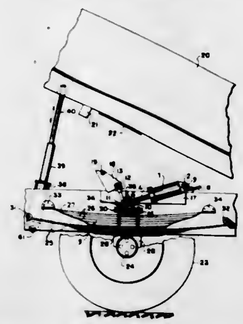


1. A chair comprising a frame forming a seat member and a back member, a pair of resilient rubber-like cross-members having slots and being attached at their ends respectively to the sides of one of said members and being of such inherent flexibility as to be conformable in disposition to the applied load, and a plurality of rigid substantially parallel slats which adjacent their ends fit into the slots of said resilient cross-members, so as to be conformable both in position and orientation to the applied load.

3,203,735
FLUID OPERATED TILTING DUMP TRUCK STABILIZER

Petrus August Vestin, Nyland, Sweden

Filed Aug. 3, 1962, Ser. No. 215,223
Claims priority, application Sweden, Aug. 7, 1961, 8,004/61
1 Claim. (Cl. 298—22)



In an apparatus for stabilizing a bed for carrying a load on a motor vehicle of the type including a frame, a pair of ground wheels, leaf spring means between the frame and each of the ground wheels, means for mounting the bed for raising and lowering movement relative to the frame, means for locking each leaf spring means in compressed condition, means for preventing the locking of the leaf spring means when the carrying bed is in its lowered position on the frame and for restoring the locking means to the unlocked position upon lowering of the bed to the frame, said locking means comprising a pair of cylinders swingably mounted on the frame, a piston carrying rod in each cylinder, a pair of support rods swingably mounted on the frame, each of said piston carrying rods and support rods having a free end, a cross member operably connected to the free end of each piston carrying rod and connecting such free end to the free end of the support rod, a pair of substantially L-shaped locking components carried by the respective leaf spring means with the horizontal leg facing the cross member, each of said locking components adjacent the juncture between the horizontal and vertical legs having an arcuate portion for receiving the cross member, means for introducing fluid pressure into the cylinders for extending the piston carrying rods and forcing the cross members into engagement with each of the locking components at the arcuate portion thereof for locking the respective leaf spring means in the compressed condition, each of said support rods being provided with a further member connected to means carried by the bed and operative on lowering of the bed to the frame to swing said support rods in the direction of said cylinders to force each piston carrying rod back into its cylinder thereby disengaging each of the cross members from the arcuate portion of the locking components and said further member and said means carried by the bed being operably connected to each other so that said locking means are rendered inoperable unless the bed is raised a predetermined amount above the frame.

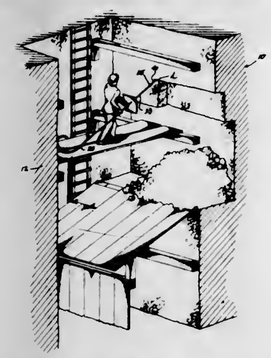
3,203,736
HYDRAULIC METHOD OF MINING COAL AND THE LIKE

James A. Andersen, 351 W. 80th, Seattle, Wash.

Filed Dec. 12, 1961, Ser. No. 158,780
4 Claims. (Cl. 299—17)

1. The method of mining coal or the like comprising directing a hydraulic jet of not greater than one-fourth inch in diameter at its point of origin to its point of contact and discharged under a pressure of net less than 2000

pounds per square inch against the vein of coal and progressively moving the jet and so directing it as to cut a plurality of channels therein in spaced relationship and to

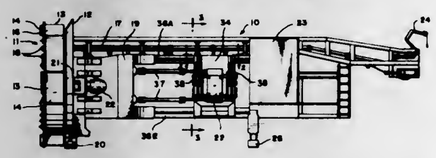


substantial depth then effecting the breaking free of the coal between adjacent channels by the applying pressure of the hydraulic medium in the channels.

3,203,737
ROCK DRILLING MACHINE

Richard J. Robbins, Seattle, Douglas F. Winberg, Bellevue, and John Galgoczy, Seattle, Wash., assignors to James S. Robbins & Associates, Inc., Seattle, Wash., a corporation of Washington

Filed Mar. 18, 1963, Ser. No. 265,812
16 Claims. (Cl. 299—31)



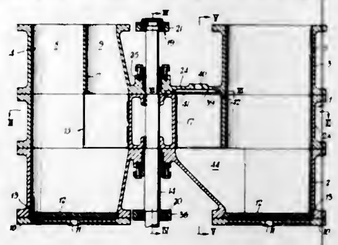
16. In a tunnel-boring machine, a power-driven rotary cutting head, a supporting main frame having said head journal-mounted upon a front portion thereof and to the rear of said journal providing a rigid trunk, the trunk presenting guide faces disposed parallel with the rotary axis of the cutting head, an anchor assembly including shoes arranged to be pressed outwardly into gripping engagement with the wall of the tunnel, trunk-positioning means providing for each of said guide faces a respective surface disposed longitudinal to the tunnel and over which the guide face slides, and operative interconnection between the anchor assembly and the trunk-positioning means permitting the slide surfaces of the latter to be set in selected adjusted positions shifted inwardly and outwardly in relation to the walls of the tunnel so as to steer the head by constraining the head to travel a guided path.

3,203,738
PUMPS

George Howard Forsyth, Grange-over-Sands, and Joseph Hendrick Taylor, Barrow-in-Furness, England, assignors to Vickers-Armstrongs (Engineers) Limited, London, England, a British company

Filed Mar. 14, 1963, Ser. No. 265,253
Claims priority, application Great Britain, Jan. 8, 1963, 937/63
6 Claims. (Cl. 302—49)

1. A pump for pumping powdered material comprising: a casing having a first part defining an inlet chamber for receiving powdered material, a second part defining an outlet chamber through which powdered material is discharged, and a third part defining a further chamber, a rotor disposed within said further chamber and having vanes extending radially of a vertical axis about which the rotor is arranged to rotate, means associated with each of the inlet and outlet chambers for fluidizing powdered material therein, said inlet chamber communicating with the further chamber at a first location around said axis so that fluidized powdered material in the inlet chamber can flow into the spaces between the vanes of the rotor that are at said first location and the outlet chamber communicating with said further chamber at a second location spaced around said axis from said first location, said inlet chamber being elongated in the direction of the axis of said rotor and extending above and

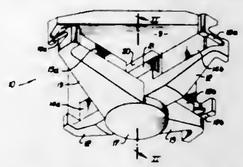


below the axial ends of the rotor, said inlet chamber having a wall dividing that part of the inlet chamber which is above the rotor into an inlet for the powdered material and an outlet for gas, the outlet for gas being above the vanes of the rotor which are at said first location for receiving gas from the spaces between the vanes at the first location and the inlet for the powdered material being radially spaced from these vanes for feeding material into the spaces between the vanes both radially of the spaces and from below the spaces, means at said second location above said vanes for feeding a gaseous medium under pressure into the spaces between the vanes that are at said second location to thereby displace fluidised powdered material downwardly from the spaces into the outlet chamber, and a drive shaft for rotating the rotor to convey the fluidized powdered material from said first location to said second location by the vanes of the rotor.

3,203,739
FRICTIONLESS BEARING

Shirrel R. Young, Westminster, Calif., assignor to Glenair, Inc., Glendale, Calif., a corporation of California

Filed Apr. 1, 1963, Ser. No. 269,459
11 Claims. (Cl. 308—2)



1. An integral frictionless bearing adapted to support a load for movement through 360° about a central point comprising:

a supporting base member vertically spaced from a load receiving suspended base member,

each of said base members having vertical axes which are coincident,

said supporting base member having a central, vertical opening into which a vertical attaching means extends from said load receiving suspended base member;

said load receiving suspended base member being suspended from said supporting base member by horizontally spaced tension elements lying in a vertical plane which passes through said vertical axes, and being adapted to be placed under tension when a load is applied to said frictionless bearing;

said load receiving suspended base member being adapted to rotate about an axis lying in said vertical plane of said tension elements and being perpendicular to said vertical axes;

a mounting base member vertically spaced from said supporting base member and oriented at 90° with respect to said load receiving suspended base member,

said mounting base member having a vertical axis coincident with said vertical axes,

said mounting base member being on the same side of said supporting base member as said load receiving suspended base member;

said mounting base member being connected to said supporting base member by horizontally spaced compression elements adapted to be placed under compression when a load is applied to said frictionless bearing,

said compression elements lying in a second vertical plane which passes through said vertical axes and being disposed at 90° to said first vertical plane and intersecting said first vertical plane at said vertical axes;

said mounting base member being adapted to rotate about an axis lying in said second vertical plane and being perpendicular to said vertical axis;

said mounting base member having restraining means for restraining the rotational movement of said load receiving suspended base member within predetermined limits;

said restraining means comprising a slot in said mounting base and through which said load receiving suspended base member passes;

and said mounting base member having restricting means for restricting the rotational movement of said mounting base member within predetermined limits;

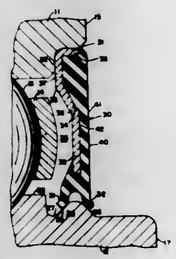
said restricting means comprising a mounting plate integrally connected to said mounting base member,

whereby said frictionless bearing is adapted to provide free movement within predetermined limits through 360° about a central point.

3,203,740
BEARING SEAL

Vasalie L. Peickii, Hillsborough, and Richard C. Lund and George D. Rhoads, Redwood City, Calif., assignors to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan

Filed Apr. 15, 1963, Ser. No. 273,804
4 Claims. (Cl. 308—187.2)



1. In a ball bearing assembly having an outer race with inner and outer surfaces, an inner race with inner and outer surfaces, balls between said races, and a ball retainer also between said races, the combination therewith of an annular ridge on the outer surface of said inner race providing a larger diameter circular portion between two portions of smaller diameter, said inner surface of said outer race having a seal-receiving portion generally opposite said ridge, and a lubricant retainer having a shallow cup-shaped reinforcing ring of metal with a long radially extending flange and a short radially outer axially outwardly extending flange with a free edge, seated in said seal-receiving portion, and an elastomeric member bonded to said ring and having a pair of lips on the inner periphery engaging opposite sides of said ridge in a rotary sealing engagement therewith and flexed by said ridge axially away from each other said lips being separated by a groove, the other edge of said reinforcing ring being seated in said elastomeric member radially with the axis of said groove.

3,203,741
STABILIZERS FOR RAILWAY JOURNAL BEARING ASSEMBLIES

David J. Landig, La Grange, Ga., assignor to Callaway Mills Company, La Grange, Ga., a corporation of Georgia

Filed July 17, 1962, Ser. No. 210,397
10 Claims. (Cl. 308—40)

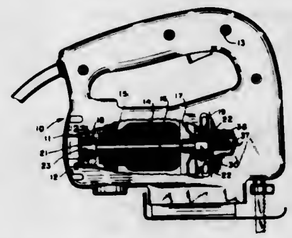


1. In a railway car having a journal box provided with side walls having vertical bearing retainer ribs protruding from the interior thereof, an axle including a journal disposed within said journal box and terminating in a collar, and a bearing member resting on the top portion of said journal, the improvement which comprises a pair of nylon journal stops removably positioned in said journal box on opposite sides of said journal and a flexible strap connected to said journal stops and extending across the bottom of the journal box in a flexed condition for urging said stops against said side walls, each of said journal stops being disposed rearwardly of said collar along a side wall of the journal box and below said bearing member, and each of said journal stops having surfaces in position to contact both the front surface of the adjacent vertical rib and the rear surface of the collar.

3,203,742
BEARING MEANS FOR POWER-OPERATED DEVICE

George W. McCarty, Towson, and John J. Teige, Baltimore, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland

Filed Dec. 17, 1962, Ser. No. 245,094
1 Claim. (Cl. 308—174)



In a power-operated device, the combination of:

(a) a split-housing comprising a pair of complementary

mating halves including a bottom half and a top half detachably secured together along a common vertical midplane; said split housing including an internal wall means separating the housing into a motor housing portion and a gear case portion forwardly of said motor housing;

(b) a pair of spaced-apart semi-spherical recesses formed in each of said mating halves, the recesses in one half cooperating with those in the other half, when said halves are brought together, to form a pair of spherical bearings seats alined with each other in said housing, one of said seats being formed in said internal wall means;

(c) a self-aligning bearing retainer in each of said bearing seats;

(d) each of said bearing retainers having an axial bore and further having an outer spherical surface conforming to that of its respective bearing seat and being trapped in its respective seat and between said mating halves as said halves are secured together;

(e) keying means between each of said bearing retainers and said bottom one of said mating halves of said split-housing, preventing a rotation of said retainer about its axis;

(f) resilient means seated within each of said semi-spherical recesses in said top half of said housing portions and engaging said outer surface of each of said bearing retainers diametrically-opposite to said keying means;

(g) a combination roller bearing and ball thrust bearing assembly secured within the bore of said bearing retainer in said internal wall means; said combination bearing assembly comprising a roller bearing, a ball bearing, and a thrust washed between said ball and roller bearings;

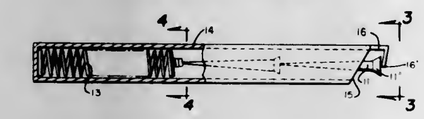
(h) a roller bearing secured within the bore of the other of said bearing retainers;

(i) a motor shaft journalled for rotation in said respective roller bearings; said motor shaft having a shoulder in axial bearing engagement with said thrust washer;

(j) said motor shaft further having a reduced diam eter portion forwardly of said shoulder; said reduced diameter portion projecting into said gear case and having a helical pinion thereon; and

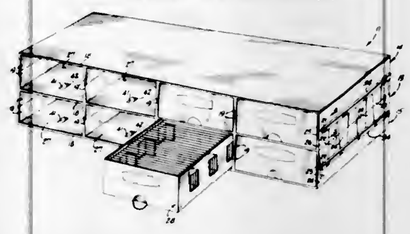
(k) a helical gear mounted for rotation in said gear case on an axis parallel to and radially offset from said motor shaft; said helical gear being in meshing engagement with said pinion, whereby an axial force is generated which constantly urges said shoulder of said motor shaft to bear against said thrust washer.

3,203,743
CARRYING CASE FOR GOLF TEES
William J. Tykol, 3516 S. Cuyler Ave., Berwyn, Ill.
Filed Feb. 17, 1964, Ser. No. 347,644
1 Claim. (Cl. 312—45)



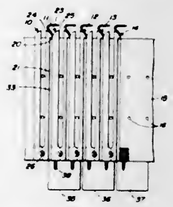
A carrying case for golf tees comprising an elongated tubular casing adapted to receive therein a plurality of golf tees in end-to-end tandem relation, a closure secured to one end of the casing, the other end of the casing being open, the open end cut on a bias so that the casing is longest at one point, a coil spring within the casing which coil spring is substantially as long as the casing, one end of the coil spring resting on the closed end, a socket secured to the other end of the coil spring, the socket construction to receive the pointed end of a golf tee, and a narrow projection extending from the open end of the casing at said point and extending substantially half way across said casing in a direction at right angles to the axis of the casing.

3,203,744
CABINET ASSEMBLY UNIT
Leonard A. Batke, Somerville, and Donald R. Bowes, Fanwood, N.J., assignors to Ethicon, Inc., a corporation of New Jersey
Filed Dec. 12, 1962, Ser. No. 244,140
7 Claims. (Cl. 312—111)



1. A molded cabinet assembly unit which comprises a horizontal wall, a plurality of vertical wall sections integral with said horizontal wall and extending substantially perpendicularly away from said horizontal wall and substantially parallel to one another, said vertical wall sections defining a plurality of drawer spaces between them and being unconnected except for said horizontal wall, and outwardly extending horizontal flanges located along the edges of the extremities of the outermost of said vertical wall sections, the horizontal flanges of one unit being adapted to be superimposed and joined with the horizontal flanges of another unit to form a cabinet structure adapted to receive drawers, said drawers being slidably supported in said cabinet by one of said horizontal walls and in sliding contact with the vertical wall sections of their respective drawer spaces.

3,203,745
CARD RETAINER
Walter H. Righter, Orange, Calif., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Mar. 10, 1964, Ser. No. 350,826
4 Claims. (Cl. 312—183)



1. In an enclosure having parallel side walls, means for holding circuit cards comprising:

a plurality of elongated bifurcated members, each bifurcated member comprised of first and second arms substantially parallel to each other and constructed of spring material;

a plurality of said bifurcated members positioned side-by-side in a row with the first arm of one member being in juxtaposition with the second arm of the adjacent member and parallel thereto with all arms lying in a common plane;

the free ends of said first and second arms being convex,

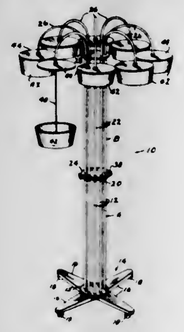
said second arm having a lip on the free end thereof extending outwardly from said member and towards the first arm of the adjacent member to substantially make contact with the adjacent first arm;

said outwardly extension being of sufficient magnitude to create a slot between the second arm of each member and the first arm of an adjacent member of a size to hold a card inserted therein;

means for holding one row of said bifurcated members on one of said walls with the arms substantially parallel to each other,

a second row of said bifurcated members positioned on the opposite wall with an individual bifurcated member being positioned opposite each bifurcated member of said first row and forming a mirror image thereof.

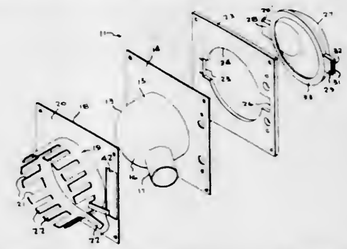
3,203,746
UTILITY RACK
Evelyn R. Shell, 1106 SE. 19th, Oklahoma City, Okla.
Filed Apr. 17, 1964, Ser. No. 360,592
3 Claims. (Cl. 312—201)



3. A utility rack, comprising: a base, a plurality of upright tubes supported in parallel spaced relation by said base, each of said tubes having an inverted U-shaped upper end portion, said tubes being divided intermediate their ends forming an upper and a lower section of tubes; an upper and a lower plate removably connecting the respective adjacent end portions of said upper and lower sections of tubes in coaxial alignment; a flexible element slidably disposed within and projecting outwardly at one end from the upper end of each said tube; a container connected with the outwardly projecting end of each said flexible element; and means frictionally retaining each said flexible element in selected positions of extended and retracted adjustment relative to the U-shaped end portion of said tubes, said means comprising a counterweight secured to each said flexible element within each said tube, and a friction tube surrounding said flexible element within the U-shaped end portion of each said tube.

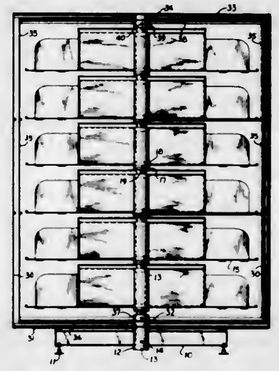
3,203,747
HAIR DISPOSAL UNIT AND ATTACHMENT
Phillip Vercellotti, R.D. #1, Triadelphia, W. Va.
Filed Nov. 8, 1963, Ser. No. 322,379
2 Claims. (Cl. 312—242)

1. A disposal unit comprising a receiving chamber having a substantially hemi-spherical inner portion provided with a conduit adapted to be connected to a vacuum line, flange means on said chamber for supporting the chamber in an aperture in a wall, a closure plate, means hingedly supporting said closure plate adjacent the edge of said chamber in closing relation to the chamber, means biasing said closure plate toward closed position over said chamber, sealing means between the peripheral marging of the closure plate and said flange means, said closure plate having a generally hemi-spherical convex outer contour and being of magnetic material and having



a flattened face portion, and a permanent magnet mounted on said flange means being engageable by said flattened face portion when said closure plate is in its open position, whereby to hold the closure plate in said open position.

3,203,748
RECORD FILING CABINET
Lloyd M. Toms, Crozet, Va., assignor to Acme Visible Records, Inc., Crozet, Va., a corporation of Delaware
Filed June 18, 1964, Ser. No. 376,058
3 Claims. (Cl. 312—252)



1. A record filing cabinet comprising a plurality of vertically spaced tiers, a vertically disposed shaft rotatably supporting said tiers, a base fixedly supporting said shaft, an inner cylindrical angularly open enclosure for said tiers including angularly notched top and bottom supporting discs rotatably mounted on said shaft, and a complementary outer cylindrical angularly open enclosure for said tiers and said inner enclosure including angularly notched top and bottom supporting discs rotatably mounted on said shaft and adapted to form a complete cylindrical enclosure for said tiers in combination with said inner enclosure.

3,203,749
EXTENDIBLE DRAWER SLIDE
Earle C. Bullock, Grand Rapids, and Adrian R. Olree, Caledonia, Mich., assignors to Steelcase, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed July 31, 1963, Ser. No. 298,895
4 Claims. (Cl. 312—339)

1. In a drawer suspension support comprising: a case rail, a suspension rail, and a drawer rail; said case rail and said drawer rail each being telescopically received by

portions of said suspension rail; anti-friction means separating said drawer rail from said suspension rail including at least one ball, and separating said suspension rail from said case rail including at least one ball; a pair of cooperative resilient stop elements mounted respectively



to the walls of said drawer rail and suspension rail on opposite sides of one of said balls, and a second pair of cooperative resilient stop elements mounted respectively to the walls of said suspension rail and case rail on opposite sides of the second one of said balls; said stop elements being placed in straddling abutment with said balls upon extension of said support; and each of said stop elements having a wedge-shaped nose to cooperate with the adjacent wedge shaped nose of the cooperative stop element and wedge a ball therebetween, thereby pressing the resilient stop elements tightly against the walls of said rails; said rails including metallic safety stops severed and deformed to cooperate and form a pair of cooperative safety stops between said case rail and suspension rail, and a second pair of cooperative safety stops between said suspension rail and drawer rail; said safety stops being spaced to normally be free of operative engagement except upon slight over-extension of said support with failure of said resilient stops.

CHEMICAL

3,203,750
PROCESS FOR DYEING SHAPED ARTICLES OF POLYMERS OF OLEFINIC UNSATURATED COMPOUNDS

Jose Carbonell, Basel, Ernest Merian, Bottmingen, and Reinhard Neier, Basel, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed Aug. 3, 1962, Ser. No. 214,526
Claims priority, application Switzerland, Aug. 18, 1961, 9,676/61
8 Claims. (Cl. 8—4)

2. A process for dyeing shaped articles of polymers which the selected from the group consisting of polypropylene and polyisobutylene, said polymers containing metal complex compounds for stabilization against heat and light, said metal complex compounds being selected from the group consisting of aluminum, chromium, nickel and cobalt, the said process consisting in treating the polymer to be dyed at a temperature of from 90° to 140° C. with an aqueous dyestuff preparation containing as essential component a dye of the formula



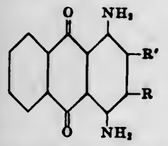
wherein X represents a member selected from the group consisting of alkyl with 1 to 5 carbon atoms, chlorine and bromine.

3,203,751
PROCESS OF DYEING POLYESTER FIBERS WITH DIAMINO - ANTHRAQUINONE - CARBONITRILE DYESTUFFS

John David Hildreth, Beachwood, N.J., assignor to Toms River Chemical Corporation, Toms River, N.J., a corporation of Delaware

No Drawing. Filed July 22, 1963, Ser. No. 296,493
9 Claims. (Cl. 8—39)

7. A process of dyeing and printing a polyester material, which comprises applying to fibrous material of synthetic polyester an aqueous dispersion containing a 1,4-diaminoanthraquinonecarbonitrile of the formula



wherein R' is a member selected from the group consisting of hydrogen and cyano and R is cyano, as the essential color imparting substance.

3,203,752
AFTERTREATMENT OF DYED POLYPROPYLENE FIBERS CONTAINING A METAL COMPOUND WITH METAL COMPLEXES

Walter Percival Mills, Manchester, William Alexander O'Neill, Harrogate, and Raymond Price, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 17, 1962, Ser. No. 244,923
Claims priority, application Great Britain, Dec. 22, 1961, 46,033
5 Claims. (Cl. 8—75)

1. A process for improving dyeings of dyestuffs selected from the class consisting of metallisable dyestuffs of the monoazo- and anthraquinone series on stereoregular polypropylene fibres containing metal compounds selected from the class consisting of zinc, calcium, magnesium and aluminum salts of eight to eighteen carbon atom carboxylic acids which comprises immersing said dyeings in an aqueous dispersion of a metal complex selected from the class consisting of chromium, cobalt, nickel and copper complexes of chelating agents, which chelating agents yield zinc complexes having stability constants of at least 4.0 and at most 12.0, at a temperature between 70° and 120° C.

3,203,753
TEXTILE DYE CARRIER-EMULSIFIER COMPOSITIONS

Edwin C. Sherburne, Fairfax, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 31, 1961, Ser. No. 113,669
5 Claims. (Cl. 8—83)

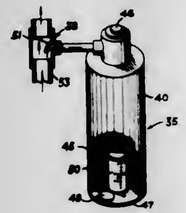
1. A liquid composition of matter consisting essentially of a water-insoluble organic dye carrier component and an emulsifier component consistmg essentially of a cationic emulsifier and a nonionic emulsifier with the ratio of cationic emulsifier to nonionic emulsifier ranging from about 0.2 to about 5, and said dye carrier component constituting from about 20 to about 80 weight percent of the total composition.

3,203,754
DRY CLEANING APPARATUS AND METHOD

John R. Young and Ralf B. Trusler, Dayton, Ohio, and Aloysius X. Hiltgen, Corsopolis, and William H. Matz, Pittsburgh, Pa.; said Young and said Trusler assignors to The Davies-Young Soap Company, Dayton, Ohio, a corporation of Ohio, and said Hiltgen and said Matz assignors to Pittsburgh Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 29, 1962, Ser. No. 183,551
7 Claims. (Cl. 8—142)

1. A dry cleaning apparatus comprising a cleaning assembly for receiving articles to be treated with a dry cleaning solution, said assembly having inlet and outlet means through which the solution is flowed, a filter for removing solid material, recirculating means and conduits connected between said cleaning assembly and said filter providing a closed loop system for flow of the solution through said filter and said cleaning assembly, a color removal device operable to remove discoloring ingredients from the solution, means connecting said color removal device to form a by-pass of a portion of said loop system through which at least a portion of discolored solution is passed and returned in clarified form to the system, said color removal device including a color removal agent maintained in static condition during passage of said solution therethrough, said color removal agent being composed of a granular carbon having a particle size between about 4 and about 60 mesh and having a surface area between about 600 and about 1300 square meters per gram, a molasses number of between about 150 and about 400, and an abrasion resistance between about 50 and about 98, and said static condition of said agent cooperating with said filter to prevent introduction of said agent into said



cleaning assembly and subsequent contact with the articles to be cleaned.

7. A method of clarifying dry cleaning solvent wherein the solvent is flowed during operation thereof in a closed loop system including a cleaning assembly and a filter for removing solids, comprising the steps of continuously flowing at least 5% to 50% of said solvent flowing from the filter through a granular color and odor adsorbing agent of granular carbon to remove at least a portion of the color and odor therein, maintaining said granular carbon in a static non-dispersed condition during contact with said solvent, and intermixing the solvent of reduced color and odor content with the discolored solvent flowing from the cleaning assembly for progressively reducing the color and odor content of all of the solvent and for substantially eliminating contamination of said cleaning assembly by said granular adsorbing agent, said granular carbon having a particle size between about 4 and about 60 mesh, a surface area of between about 600 and 1300 square meters per gram, a molasses number between about 150 and 400, and an abrasion resistance of between about 50 and about 98.

3,203,755
PROCESS FOR THE PREPARATION OF SODIUM SILICATE

Richard K. Rathmell, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 3, 1962, Ser. No. 214,488
2 Claims. (Cl. 23—110)

1. In a process of making sodium silicate by fusing sand with sodium carbonate, including 400 to 3000 parts per million of titanium dioxide based upon sand to increase clarity of silicate solutions subsequently made by dissolving the sodium silicate in water.

3,203,756
METHOD OF PREPARING PERMONOSULPHATES

Anthony MacDonald Hildon, Dunstable, England, assignor to Laporte Chemicals Limited, Luton, England, a British company

No Drawing. Filed Mar. 27, 1962, Ser. No. 182,946
Claims priority, application Great Britain, Mar. 27, 1961, 11,143/61
15 Claims. (Cl. 23—114)

1. A process for the production of a permonosulphate selected from the group consisting of permonosulphates of sodium, potassium, rubidium, caesium and ammonium by reaction between the corresponding bisulphate and hydrogen peroxide, which process comprises forming an aqueous solution containing hydrogen peroxide and the corresponding bisulphate in a molar ratio of at least 3:1, feeding said solution through a reaction column in the form of a film moving along the internal wall thereof; maintaining in the column a temperatue of from 70° C. to 150° C., and a pressure of from 30 to 100 mm. Hg so that the vapour phase in contact with the film contains between 30 to 100 moles percent of hydrogen peroxide based on the hydrogen peroxide and water content of the vapour; and removing resulting permonosulphate-containing reaction product from the column.

3,203,757
PROCESS FOR THE PRODUCTION OF POTASSIUM SULFATE

Hans Henne, Kassel-Wilh., and Kurt Ratsch, Wolfershausen, Werra, Germany, assignors to Wintershall Aktiengesellschaft, Kassel, Germany

Filed May 3, 1962, Ser. No. 192,224
Claims priority, application Germany, May 5, 1961, W 29,949
13 Claims. (Cl. 23—121)



1. In a continuous process for the production of potassium sulfate by reaction of potassium chloride in aqueous solution with kalimagnesia,

the improvement comprising

(a) mixing about one-third of the total amount of sulfate liquor which is obtained from an extraneous reaction of potassium chloride with kalimagnesia and subsequent separation of the resulting potassium sulfate from the reaction mass, with kieserite at a temperature of about 50 to 80° C., whereby a first portion of kalimagnesia and a first mother liquor are produced in the ensuing reaction,

(b) mixing the remaining portion of the aforesaid total amount of sulfate liquor with a member selected from the group consisting of anhydrous magnesium sulfate and epsomite, and with an intermediate mixed salt obtained in a previous run in step (e) below, at about a temperature of 40 to 60° C., whereby another portion of kalimagnesia and a second mother liquor are obtained in the ensuing reaction,

(c) separating said portions of kalimagnesia from said first and second mother liquors and combining the latter,

(d) evaporating about 30 to 50% of the weight of said combined mother liquors, thereby form-

ing a precipitate of said intermediate mixed salt in an end liquor poor in potassium chloride, and

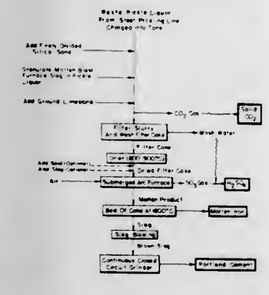
(c) separating said intermediate mixed salt from said end liquor and introducing the former into reaction with said remaining portion of sulfate liquor in step (b).

3,203,758

UTILIZATION OF STEEL MILL PICKLE LIQUOR

Eugene Wainer, Shaker Heights, Ohio, assignor to Horizons Incorporated, Cleveland, Ohio, a corporation of New Jersey

Filed Oct. 30, 1962, Ser. No. 234,065
2 Claims. (Cl. 23—167)



1. A process for the recovery of valuable products from waste spent pickle liquor, which comprises:

establishing a body of said waste spent pickle liquor;

adding finely divided silica sand thereto;

thereafter adding molten blast furnace slag to the mixture of sand and pickle liquor, thereby simultaneously quenching the slag and effecting a reaction between the slag and the mixture;

adding finely divided calcium carbonate to the resulting mixture;

collecting and recovering the carbon dioxide produced as a result of the reaction between the added calcium carbonate and the said mixture;

separating the remainder of the mixture into a predominately liquid containing portion and a portion which is principally solid and recovering each of said portions separately;

drying the solid portion;

heating and melting the dried solid portion while exposed to oxidizing conditions, thereby producing oxides of sulfur as a gaseous product and an oxide melt containing the remaining constituents in said solids;

collecting the sulfur oxide gases;

conveying the collected sulfur oxide gases to the previously recovered liquid portion and reacting the gases and said liquid thereby producing sulfuric acid;

recovering the sulfuric acid as a second valuable product;

contacting the oxide melt with highly heated solid carbon heated to about 1600° C. to reduce at least a substantial portion of the iron oxides in said oxide melt to metallic iron, while the more refractory oxides in said oxide melt are not reduced by the carbon;

collecting the mixture of molten iron and molten refractory oxides;

separating the molten iron from the molten oxides and recovering the molten iron;

and recovering the molten oxides as a product suitable for use as a Portland cement.

3,203,759

METHOD OF PREPARING SILICON DIOXIDE

Gosta Lennart Flemmert, Hamngatan 22, Nyashamn, Sweden

Filed Nov. 1, 1961, Ser. No. 149,340
Claims priority, application Sweden, Nov. 3, 1960, 10,583/60
6 Claims. (Cl. 23—182)

1. A process for recovering at temperatures below about 600° C. finely-divided silicon dioxide having an average particle diameter within the range of 2 to 200 mμ from the hydrogen fluoride-containing gaseous reaction product obtained by reacting silicon tetrafluoride with water in the gaseous phase at temperatures above about 600° C. while inhibiting reverse reaction of the silicon dioxide with hydrogen fluoride to produce silicon tetrafluoride and water, which comprises (1) diluting the reaction product with an inert gas having a lower temperature than the reaction product in a volume to inhibit said reverse reaction of silicon dioxide with hydrogen fluoride, simultaneously reduce the temperature of the reaction product to below 600° C., and thereby maintain the average silicon dioxide particle size diameter within the range from 2 to 200 mμ; and (2) recovering such silicon dioxide from the reaction product.

3,203,760

PROCESS FOR PREPARING SILICA GEL

Milton E. Winyall, Gainesville, Fla., assignor to W. R. Grace & Co., a corporation of Connecticut

No Drawing. Filed Dec. 17, 1962, Ser. No. 244,940
The portion of the term of the patent subsequent to Dec. 25, 1979, has been disclaimed
2 Claims. (Cl. 23—182)

1. A process for preparing a silica gel wherein about 80% of the particles have a particle size below 80 microns and a surface area of about 100 to 250 $m.^2/g.$ which comprises the steps of:

(a) diluting a sodium silicate solution to about 6° Bé.,

(b) adjusting the pH of the solution to about 2.9 to 3.5 with a mineral acid selected from the group consisting of hydrochloric, nitric and sulfuric acids,

(c) aging the resulting sol,

(d) spray drying said sol in a spray drier operated at an inlet temperature of about 900° F. and an outlet temperature of about 300° F.,

(e) washing the resulting particles with a solution of sulfuric acid in about a 6% concentration, followed by a water wash and a wash with a solution of ammonium sulfate in a concentration of about 2%,

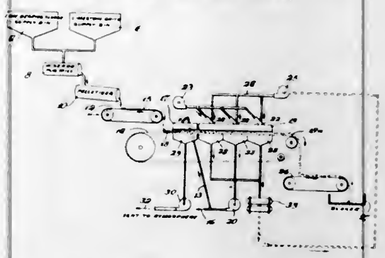
(f) drying and recovering the product silica.

3,203,761

PROCESS FOR PRODUCTION OF LIME

Stewart M. Neuville, Harrison, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Feb. 5, 1962, Ser. No. 171,161
4 Claims. (Cl. 23—186)



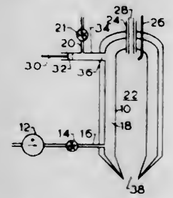
1. In the sulfate pulping process, an improved method for reprocessing to slakeable lime the lime-bearing sludge obtained from causticizing green liquor which comprises starting with unwashed lime-bearing sludge as discharged from the clarifier and containing an appreciable amount of soda, adjusting the consistency of said sludge to a solids content of about 75% to 80% by weight, pelletizing said thickened sludge to form pellets ranging in size from about ¼" to ⅜" in diameter, forming a moving bed of pellets therefrom, passing first stream of gas heated to about 600° F. to 800° F. through said moving bed substantially to dry said pellets, then passing a second stream of gas heated to a temperature within the range of about 2100° F. to 2400° F. through said bed of pellets, said second stream of gas being sufficiently hot to raise the temperature of said pellets to disassociation temperature whereby the pellets are calcined to lime suitable for slaking.

3,203,762

APPARATUS AND PROCESS FOR THE PRODUCTION OF TITANIUM DIOXIDE

Clifford Le Roy Carpenter, Wellesley Hills, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware

Filed Nov. 30, 1962, Ser. No. 241,329
3 Claims. (Cl. 23—202)



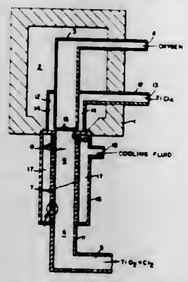
1. A process for converting at temperatures above about 800° C. in a double walled reaction chamber titanium tetrachloride in vapor form to solid titanium oxides in aerosol form while preventing the accretion of substantial solid matter on the walls of said reaction chamber, which comprises introducing axially into one end of the reaction chamber (a) titanium tetrachloride and (b) a co-reactant comprising a molecular oxygen-containing gas, periodically flexing the wall of said reaction chamber by varying the pressure between the inner and outer walls and conducting the aerosol formed in said chamber from the end of said chamber opposite to the end wherein said substance is introduced.

3,203,763

PRODUCTION OF METAL OXIDES THROUGH OXIDATION OF METAL HALIDES

Willard E. Kruse, Dickson, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 17, 1963, Ser. No. 252,081
7 Claims. (Cl. 23—202)



1. A method for preventing high temperature-corrosion atttack and deterioration in a rigid jacketed reaction zone wall in which zone oxidation at an elevated temperature of a metal halide to produce a metal oxide is effected, which comprises forming said wall of a corrosion-resistant foraminous material containing a plurality of perforations ranging in size from 1/64" to ½" in average diameter, and in number equivalent to from .001 to .01 square inch per square inch of total interior wall area and during the oxidation reaction maintaining said wall at a substantially lower temperature than that prevailing in said reaction zone by charging a coolant into and through the perforations provided in said foraminous wall and into said reaction zone.

3,203,764

PROCESS FOR RECOVERY OF BORON HALIDES

Carl B. Linn, Riverside, and George L. Hervert, Downers Grove, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Oct. 16, 1961, Ser. No. 145,456
4 Claims. (Cl. 23—205)

1. A process for the separation and recovery of a boron halide from a substantially anhydrous, normally liquid hydrocarbon containing the same, which comprises contacting said hydrocarbon with a halide of a metal selected from the group consisting of the metals in Groups VI, VII and VIII of Period Four of the Periodic Table at conditions to form a complex of the boron halide and metal halide, and subsequently heating said complex sufficiently to decompose the complex and liberate the boron halide therefrom.

3,203,765

PRODUCTION OF CARBON BLACK

Joseph Iannicelli and Andries Voet, Borger, Tex., assignors to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 19, 1962, Ser. No. 188,857
6 Claims. (Cl. 23—209.4)

1. In the production of carbon black in a furnace operating continuously at high temperature, wherein a liquid hydrocarbon feedstock is fed continuosuly to the furnace and is vaporized and pyrolyzed therein to yield carbon, the method of continuously uniformly modifying the structure of the carbon black produced which comprises reacting with said feedstock a precisely proportioned amount of at least 0.1 part per million part by weight of an alkali metal base dissolved in a hydrocarbon misicible alcohol selected from the group consisting of C_3 to C_5 aliphatic alcohols, said amount of alkali metal base being directly related to the degree of modification in structure of the carbon black to be attained.

3,203,766

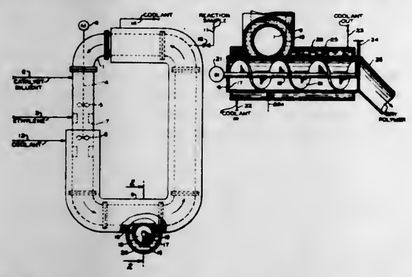
APPARATUS FOR THE RECOVERY OF SOLIDS FROM PRESSURE VESSELS

James F. Mudd, Buffalo, N.Y., and Edward H. Casey, Arlington, Va., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed July 6, 1961, Ser. No. 130,709
5 Claims. (Cl. 23—252)

1. An apparatus comprising in combination a tubular closed loop reactor having two vertical and two horizontal legs, inlet means for introducing reactants into said reactor disposed on one of said vertical legs, means for continuously propelling the contents of said reactor therethrough disposed upstream and downstream from said inlet means, means for straightening the flow of said contents located downstream from said propelling means, a housing intersecting the lower portion of said reactor and in direct open communication with the interior of said reactor, said housing being located in the lower portion of the said reactor so as to receive particulate solids entering from said reactor, worm-type solids conveying means

contained within said housing for laterally removing said solids from an area of particle collection, a constriction disposed in said housing downstream from said area of particle collection, said constriction impeding flow there-



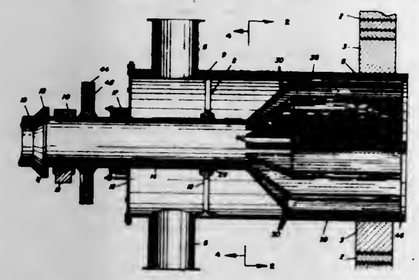
through and causing said particles to compact upstream therefrom whereby diluent is washed back into said reactor and means for withdrawing product from said housing.

3,203,767

APPARATUS FOR PRODUCING CARBON BLACK

Ollie Middlebrooks, Houston, Tex., assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware

Filed May 18, 1962, Ser. No. 195,702
4 Claims. (Cl. 23—259.5)



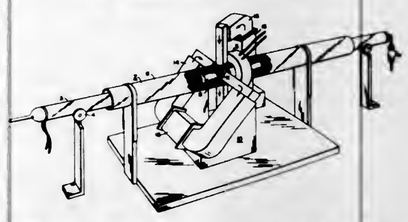
1. Apparatus for producing carbon black by partial combustion of hydrocarbon gas, said apparatus comprising a gas furnace having a cylindrical opening in one of the walls thereof; a cylindrical metallic housing disposed in said cylindrical opening and extending longitudinally outward from the wall of said furnace; a rotatable tube concentrically disposed in said cylindrical metallic housing; said rotatable tube having an axial extension which terminates adjacent the interior surface of the wall of said furnace; a series of substantially rectangular vanes extending radially from the extension on said rotatable tube; a cylindrical metallic cage surrounding the outer edges of said radial vanes and secured thereto; the outside diameter of said cylindrical metallic cage being slightly less than the inside diameter of said cylindrical metallic housing; of apertures; a series of divider plates extending radially from said rotatable tube; the inner edge of each of said divider plates being substantially parallel with the exterior of said rotatable tube; the outer edge of each of said divider plates defining an angle of approximately 45° with respect to the axis of said rotatable tube; said divider plates being the same in number as said aforementioned radial vanes and in aligned relationship with respect thereto; said rotatable tube having an aperture disposed between every other divider plate; means for supplying hydrocarbon gas to the interior of said rotatable tube; means for supplying combustion air to the interior of said cylindrical metallic housing, but exteriorly of said rotatable tube; and means for rotating said rotatable tube.

3,203,768

APPARATUS OF ZONE REFINING AND CONTROLLING SOLUTE SEGREGATION IN SOLIDIFYING MELTS BY ELECTROMAGNETIC MEANS

William A. Tiller, Newlonsburg, and William C. Johnston, Penn Hills Township, Allegheny County, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 1, 1961, Ser. No. 128,446
9 Claims. (Cl. 23—273)



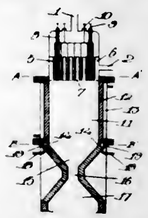
1. In apparatus for controlled solidification of molten material, in combination, means for heating at least a portion of the material to its melting temperature, a casing for retaining the material and dissipating heat from selected portions of the molten material to cause solidification thereof in a predetermined manner and forming a solidification interface, magnetic means comprising a plurality of coils capable of being energized with alternating current, means for connecting each of the coils to a source of polyphase alternating electrical current in a predetermined sequence such that the passage of the alternating current produces at least two variable magnetic fields, the magnetic means being so associated and shaped as to fit closely to at least that portion of the body of the molten material at which said solidification takes place so that a high proportion of the magnetic field penetrates into the molten material whereby to cause the molten material to be stirred in varying directions and with varying force adjacent the solidification interface.

3,203,769

FURNACE FOR CRACKING HYDROCARBONS HAVING A FLAME-ADJUSTABLE BURNER

Toru Sogawa, Ichikawa-shi, Chiba-ken, Hiroshi Akino and Toshio Kanai, Tokyo, Takuro Watanabe, Goi-machi, Ichihara-gun, Chiba-ken, Yutaka Izumi, Nishiki-machi, Nakoso-shi, Fukushima-ken, Hiroshi Sonobata, Tsurumi-ku, Yokohama-shi, and Kazuyuki Shiga, Taura-machi, Yokosuka-shi, Japan, assignors to Research Association of Polymer Raw Materials, Kanagawa-ken, Japan, an association of Japan

Filed Nov. 30, 1962, Ser. No. 241,443
Claims priority, application Japan, Dec. 6, 1961, 36/44,292, 36/44,293
9 Claims. (Cl. 23—277)



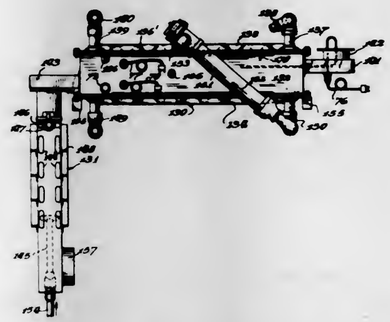
1. A furnace for the thermal cracking of hydrocarbons which comprises a combustion chamber which is provided with a lower part of a constricted cross-section area, a burner for fuel which is arranged at the top of the combustion chamber and which is provided with an inlet for the supply of fuel and with an inlet for the supply of oxidant, means in conjunction with said burner for supplying said fuel and said oxidant to said combustion chamber in a direction parallel to the longitudinal axis of said combustion chamber, a plurality of injection orifices for the introduction of the reactant to be cracked into the combustion chamber which are positioned in a portion of the wall of the combustion chamber just above said lower part of the constricted cross-section area of said chamber which communicates to said lower part of the combustion chamber, an outlet for withdrawing the cracked gases from the reaction chamber, the burner comprising a movable multi-perforated plate which has a flat face and a plurality of perforations therein for blowing out the gases, a plurality of tubes for the injection of a gas each of which terminates in a nozzle orifice opening in said perforations of the perforated plate, and a plurality of adjusting valve means each of which movably extends within each of said injection tubes in the axial direction of the tube wherein each is adjustable to vary the cross-section area of the nozzle orifice through which the gas to be injected passes.

3,203,770

ATMOSPHERE GENERATING APPARATUS

Rolf I. Ranum, St. Joseph, Mich., assignor to Whirlpool Corporation, a Delaware corporation

Filed July 30, 1962, Ser. No. 213,397
16 Claims. (Cl. 23—281)



1. A generator comprising: an enclosing frame; a catalyst bed means in said frame for the catalytic combustion of hydrocarbon fuel in said bed, said frame having a first chamber on one side of said bed and a second chamber on the opposite side of said bed; means for absorbing heat energy from said bed comprising first heat energy absorbing means adjacent said first chamber and second heat energy absorbing means adjacent said second chamber, both said heat energy absorbing means thereby cooling said catalytic combustion; and means for supporting both said heat energy absorbing means on said frame.

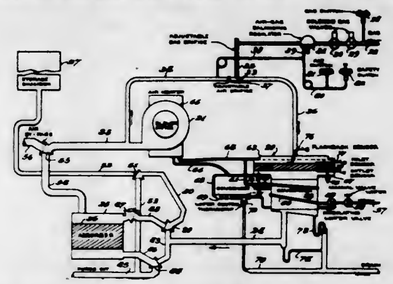
3,203,771

APPARATUS FOR CONTROLLING CARBON DIOXIDE CONTENT OF AN ATMOSPHERE

Joshua R. C. Brown, Chesterton, Ind., and Jess W. Thomas, St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware

Filed July 30, 1962, Ser. No. 213,520
6 Claims. (Cl. 23—281)

1. Apparatus for controlling the carbon dioxide content of a mixture of gases, comprising: means providing a source of gas containing carbon dioxide; retaining means for releasably retaining carbon dioxide; means for periodically directing said gas from said source through said retaining means for supplying low carbon dioxide gases to said mixture; means providing a source of regenerating fluid for effecting the removal of carbon dioxide from said retaining means; and means for directing said regen-



erating fluid from its source through said retaining means for effecting the removal of carbon dioxide therefrom.

3,203,772

ELECTRIC CONDUCTIVE ELEMENT BONDED TO THERMOELECTRIC ELEMENT

Josef Intrater, New York, N.Y., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 16, 1961, Ser. No. 145,491
10 Claims. (Cl. 29—195)

1. In combination, an electrical element comprising a lead-tellurium compound, a conductive element applied thereto, and a bonding medium between said electrical element and said conductive element comprising a homogeneous iron-tellurium intermetallic compound chemically bonded to said elements.

3,203,773

BORON-CONTAINING FUEL COMPOSITION

Herbert Landesman, Covina, Calif., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Oct. 25, 1960, Ser. No. 64,954
4 Claims. (Cl. 44—51)

1. A composition of matter suitable for use as a fuel consisting essentially of a finely-divided material selected from the group consisting of amorphous boron and active boron dispersed in n-propylpentaborane, the amount of said finely divided material being at least 15 percent by weight based on the total weight of the composition.

3,203,774

METHOD OF MAKING AN ABRASIVE CUT-OFF DISK

Willard R. Pratt, Rochester, N.Y., assignor to Vanguard Abrasive Corporation, Le Roy, N.Y., a corporation of New York

Original application May 8, 1959, Ser. No. 811,956, now Patent No. 3,028,710, dated Apr. 10, 1962. Divided and this application Dec. 1, 1961, Ser. No. 156,243
5 Claims. (Cl. 51—293)



1. The method of making an abrasive element having greater wear resistance at its lateral edges than in its central portion, which comprises the steps of mixing a first batch of powdered matrix metal with a sufficient quantity of diamond particles to provide a relatively high concentration of diamond particles in the mixture of the first batch, mixing a second batch of powdered matrix metal with a relatively lesser quantity of diamond particles

to provide a substantially lesser concentration of diamond particles in the mixture of the second batch, placing a layer of the mixture of the second batch between two layers of the mixture of the first batch in sandwich fashion, and compacting the three layers under heat accompanied by pressure applied approximately perpendicular to the lines separating the layers from each other, to form from the three layers an integrally united abrasive element having a lower concentration of diamond particles and lower wear resistance in its central layer as compared with the diamond particle concentration and wear resistance of its outer layers.

3,203,775
INORGANICALLY BONDED ABRASIVE ARTICLES

John Cantrell, Sale, England, assignor, by mesne assignments, to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 21, 1961, Ser. No. 154,042
Claims priority, application Great Britain, Nov. 30, 1960, 41,110/60
2 Claims. (Cl. 51—307)

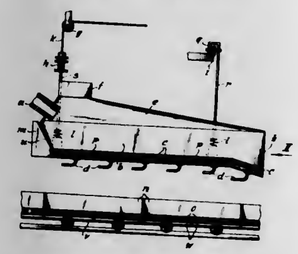
1. A hot pressed abrasive article consisting essentially of diamond granular abrasive material bonded together by a fused metallic powder bonding mixture containing by weight about 80% of copper and about 20% of tin, said bonding material incorporating about an equal amount by volume of pore-forming material consisting essentially of sodium pyrophosphate.

2. A hot pressed abrasive grinding wheel consisting essentially of diamond granular abrasive material bonded together by a fused metallic bonding mixture containing by weight about 10% of silver, about 20% of tin and about 70% of copper, said bonding mixture incorporating about an equal amount by volume of pore-forming material consisting essentially of sodium pyrophosphate.

3,203,776
PROCESS FOR PRODUCING A HIGHLY POROUS MASS FROM SHORT SLAG

Franz Rodis, deceased, late of Bad Hersfeld, Germany, by Hildegard Rodis nee Arend, heiress, Bad Hersfeld, Germany, Arnulf Hinz, Knapsack, near Cologne, and Friedrich Thomas, Hermulheim, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, a corporation of Germany

Filed Nov. 29, 1963, Ser. No. 327,879
2 Claims. (Cl. 65—20)

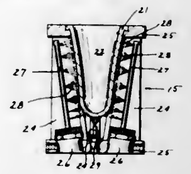


1. A process for producing a solid mass in which most of the pores are closed from a short type molten slag, obtained as waste product of phosphate reduction furnaces said slag consisting of about 90% calcium metasilicate, about 3% aluminum oxide, about 6% calcium fluoride and up to about 1% manganese and alkali metal oxides, the ratio of calcium oxide to silicon oxide in the foamed slag being about 47:43 parts by weight, said slag being liquid in the molten state and solidifying only within a narrow temperature range, which comprises cooling said molten slag to a temperature of between 1200–1600° C. the point where foaming will occur by constantly admixing said slag in a first expansion zone with water from below, introducing into the slag a further quantity of at least one substance selected from the group consisting of water, steam, and air, transferring the resulting expanded and still pulpy slag mass into a second expansion zone, uniformly distributing the mass in a thin layer in said second zone, and subjecting the mass to dosed quantities of water from below to bring about a second expansion until the solidification is complete.

3,203,777
GLASS FORMING METHOD

Virgil F. Berry and Delford A. McGraw, Toledo, and Thomas J. Naughton, Maumee, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio

Filed Nov. 20, 1961, Ser. No. 153,328
3 Claims. (Cl. 65—24)

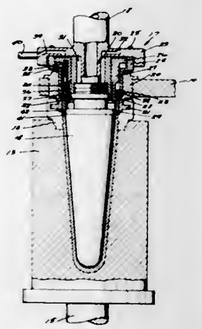


1. The method of cooling a glass working implement having two opposed surfaces, one of which is in contact with hot glass and heat is conducted to the other non-glass contacting surface, comprising spraying a water-air mist into direct contact with the non-glass contacting surface of said implement, wherein the mist is formed of water droplets having a size in the range of 10–80 microns.

3,203,778
PRESSING GLASS PARISONS

Robert R. Denman, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed Apr. 10, 1961, Ser. No. 101,749
4 Claims. (Cl. 65—68)

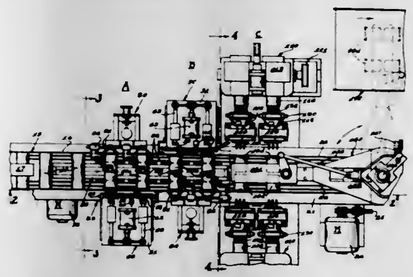


1. The method of forming pressed parisons comprising positioning a parison mold in contact with a relatively stationary neck mold, charging said parison mold, moving a plunger with a predetermined force through said neck mold and into pressing position within the parison mold, simultaneously holding a thimble against the neck mold with a predetermined force acting between the thimble and the plunger, increasing the force on said thimble during the dwell period an amount sufficient to balance the pressing force, then further increasing the force on said thimble in opposing relationship to the force on said plunger to initiate the retraction of said plunger out of the parison mold, and reversing the force on the plunger to complete the retraction of the plunger whereby a parison is formed and held in the neck mold.

3,203,779
METHOD FOR FORMING FLAT BOTTOM GLASS BEAKERS

Guy L. Reber, Newfield, N.J., assignor to Owens-Illinois Glass Company, a corporation of Ohio

Continuation of application Ser. No. 728,258, Apr. 14, 1958. This application July 1, 1963, Ser. No. 296,417
4 Claims. (Cl. 65—105)



4. The method of simultaneously producing a pair of flat-bottomed glass beakers from a single tubular glass blank comprising the steps of rotating the blank and simultaneously heating an intermediate portion thereof into heat-softened condition by a lineal series of burner fires, directing the fires toward the intermediate portion of the blank at a right angle to the axis of the blank, controllably separating the blank at its heated intermediate portions into separate sections during continued heating and rotation of the blank, drawing the separated sections fully apart to form irregular closed ends, and thereafter moving the separated sections axially toward and into close proximity with the right angularly directed burner fires while continuing rotation of the sections to form, solely by said rotation and heating, flat bottoms on the separated sections each disposed at a right angle to the axis of each separated section.

3,203,780
HERBICIDAL COMPOSITIONS AND METHOD FOR THE MANUFACTURE THEREOF

George W. Luvisi, Brookfield, and Thomas C. Noheji, Downers Grove, Ill., assignors to Nalco Chemical Company, a corporation of Delaware

No Drawing. Filed Jan. 28, 1959, Ser. No. 789,479
16 Claims. (Cl. 71—2.4)

1. A composition comprising a phytotoxic 1-alkyl-3-phenyl substituted urea which is normally a water insoluble dusty powder and a hydrated alkali metal borate, said composition being in the form of granules in which said substituted urea and said borate are intimately associated, said granules being further characterized by the fact that they contain a minimum of at least 2% by weight of said substituted urea, that they contain a predominating proportion of said borate, calculated as borax, as compared with said substituted urea, that they are nonpacking in spreaders, and are dustless and free-flowing, the weight ratio of said urea to said borate, calculated as its borax equilavent, being within the range of about 1:9 to 1:25.

3,203,781
METHOD OF PRODUCING DISPERSION-HARDENED METAL ALLOYS

Karl Bungardt, Krefeld, Germany, assignor to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany

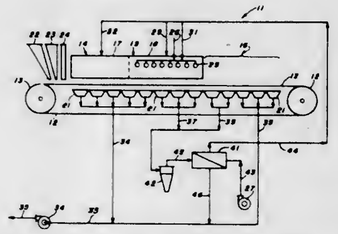
No Drawing. Filed Sept. 26, 1963, Ser. No. 311,621
Claims priority, application Germany, Oct. 2, 1962, D 39,955
12 Claims. (Cl. 75—.5)

1. A method of preparing a dispersion-hardened metal alloy which comprises preparing a first dispersion-hardened metal alloy including a metal matrix and hard non-metallic particles distributed throughout said matrix, said hard particles being insoluble in said matrix; melting said first metal alloy; and then solidifying said first alloy melt, said melting and solidification of said first alloy reducing the size and improving the distribution of the hard particles in the matrix to form a second alloy of increased strength.

3,203,782
METHOD OF AND APPARATUS FOR THE ENDOTHERMIC PROCESSING OF ORES

Kurt Meyer and Georg von Struve, Frankfurt am Main, and Walter Stieger, Offenbach, Germany, assignors to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 13, 1962, Ser. No. 179,364
Claims priority, application Germany, Mar. 28, 1961, M 48,865
8 Claims. (Cl. 75—5)



1. An ore sintering process comprising passing a layered charge of ore on a pervious grate through a preheating zone, a combustion zone, and a cooling zone while inducing a downdraft of gas through the charge in each zone; separating the exhaust gases in each of the combustion and cooling zones into low and high temperature exhaust gases; removing the preheating zone exhaust gases simultaneously with the low temperature exhaust gases from the combustion zone and the low temperature exhaust gases from the cooling zone by a single fan; transferring the heat from the high temperature exhaust gases of the combustion and cooling zones to a stream of atmospheric air and subsequently discharging these exhaust gases by the single fan; and forcing the warmed stream of atmospheric air to the combusion zone and to the preheating zone by another fan for endothermic reaction with the ore charge traveling through these zones.

3,203,783
PROCESS OF INCORPORATION OF CORRECTIVES IN THE MANUFACTURE OF IRON BY THE METHOD OF FUSION WITH A CONSUMABLE ELECTRODE

Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France

No Drawing. Filed Apr. 7, 1961, Ser. No. 101,357
Claims priority, application France, Apr. 14, 1960, 824,414
2 Claims. (Cl. 75—11)

1. A method for the production of electrode bars to be used in the electrosmelting of iron ore and steel,

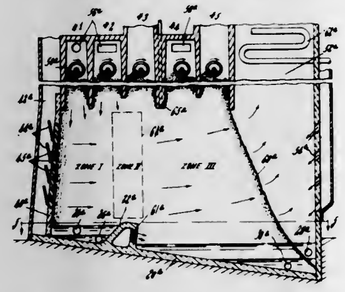
comprising the steps of reducing iron ore in a first stage to the monoxide state, crushing the reduced ore to powder form, adding slag-forming materials to this powdered reduced ore and then further reducing this ore in a second stage with a current of hot reducing gas, compressing and sintering the resultant metallic iron particles into electrode bars.

3,203,784

METHOD AND APPARATUS FOR PRODUCING GASEOUS PRODUCTS FROM SOLID FUEL AND USING SAME FOR THE REDUCTION OF IRON ORE

Ervin G. Bailey, Easton, Pa., assignor to Bailey Inventions, Inc., Easton, Pa., a corporation of Pennsylvania

Filed Oct. 10, 1960, Ser. No. 61,633
2 Claims. (Cl. 75—40)



1. A method for the reduction of iron ore comprising forming in a furnace a unitary porous bed constituted of free-burning solid carbonaceous fuel, iron ore and limestone in varying proportion across said bed, the fuel constituting a rear vertically extending zone of said bed overlaid with successive horizontally spaced vertically extending zones containing varying contents of ore, said bed having an off-gas surface extending upwardly from the bottom of said bed horizontally opposite said rear fuel zone, blowing oxygen-containing gas into the rear vertically extending surface of said bed and substantially horizontally through said bed as the materials descend in the furnace to reduce the iron contained in said ore and to drive the gaseous reaction products of said carbonaceous fuel out of said off-gas surface at a temperature above the liquid flowing point of the iron in said ore, liquefying the iron in the ore in said bed and the other incombustibles in said bed to cause them to flow downwardly in liquid form towards the bottom of said bed and maintaining said bed porous for the continued horizontal passage of gas therethrough, collecting the liquefied iron and other liquefied incombustibles as they flow out of the bottom of said bed, and replenishing at least a portion of said bed by feeding a mixture of fuel, iron ore and limestone in varying proportions at a plurality of separate horizontally spaced points along the top of the bed laterally in advance of said off-gas surface.

3,203,785

REFRACTORY LININGS FOR CHAMBERS FOR DEGASIFYING METALS

Helmut Knüppel, Dortmund-Lottringhausen, Germany, assignor to Dortmund-Horder Huttenunion Aktiengesellschaft, Dortmund, Germany

No Drawing. Filed Feb. 26, 1963, Ser. No. 261,231
Claims priority, application Germany, Mar. 3, 1962, D 38,284
9 Claims. (Cl. 75—49)

1. A method of increasing the durability of refractory linings covering the interior of vacuum chambers for degassing molten steel, the steps of, covering said lining with a pulverulent mixture of aluminum oxide and silicon dioxide which is viscous at the pouring temperature of molten steel, and heating said vessel to the pouring temperature of molten steel whereupon said coating becomes viscous.

3,203,786

METHOD FOR OBTAINING NICKEL AND COBALT OUT OF LOW-GRADE SILICATE ORES AND OF METALLURGICAL OFFALS

Kornelusz Kazimierz Wesolowski, Warsaw, Michal Wladyslaw Ryczek, Cracow, Stanislaw Tochowicz and Zbigniew Katra, Stalinograd, Witold Grabowski and Jerzy Godek, Zabkowice, Jan Michalski, Warsaw, and Stefan Kijak, Stettin, Poland, assignors to Politechnika Warszawski, a technical university of Warsaw, Poland, and Zaklady Gorniczo-Hutnicze Szklary, an enterprise of Poland

No Drawing. Filed July 20, 1962, Ser. No. 211,409
Claims priority, application Poland, July 21, 1961, P 97,002
2 Claims. (Cl. 75—82)

1. A method of recovering nickel and cobalt from low grade metallurgical materials comprising the steps of mixing particles of a low grade metallurgical material having a nickel content of less than 1% with a sulfur containing material and a metal halide selected from the group of alkaline metal chlorides and alkaline earth metal chlorides, roasting the mixed material at a temperature of from 250° C. to 600° C. in the presence of oxygen, leaching the roasted mixture with an agent selected from the group of water, weak acid, and ammonia to put nickel and cobalt into solution, and increasing the pH of the solution to at least 7 to form a sediment comprising nickel and cobalts, treating said sediment with an oxidizing agent to oxidize iron present in said sediment to the trivalent state, dissolving nickel and cobalt from the sediment with an agent selected from the group consising of weak sulfuric and weak hydrochloric acid to form a second solution having a pH of at least 4, and precipitating nickel and cobalt from said second solution at a pH of less than 6.

3,203,787

METHOD OF AND COMPOSITION FOR CHEMICALLY DISSOLVING ELECTROLESS METAL DEPOSITS

John J. Grunwald, New Haven, Conn., assignor to MacDermid, Incorporated, Waterbury, Conn., a corporation of Connecticut

No Drawing. Filed Nov. 1, 1961, Ser. No. 149,185
10 Claims. (Cl. 75—97)

1. An aqueous bath for selectively dissolving electroless nickel deposits for exposed surfaces of a basis metal, which bath comprises a ternary system consisting essentially in addition to water of a member selected from each of the following groups, (a), (b) and (c): (a) at least one alkali metal hydroxide providing in aqueous solution a hydroxyl ion concentration of from 0.20 to 2.0 moles per liter; (b) an aromatic compound selected from the group consisting of nitrobenzene and nitronaphthalene derivative having at least one water-solubilizing radical in addition to the nitro radical attached to the aromatic nucleus, and mixtures thereof, such compound being present in solution at concentrations of from about 0.1 to 1.0 mole per liter; (c) at least one aliphatic primary polyamine wherein the aliphatic radical contains from two to six carbons, said aliphatic amine having strong complexing ability for nickel ions and being present in amount of about 0.1 to 3.0 moles per liter.

3,203,788

FREE MACHINING STEELS OF IMPROVED TRANSVERSE MECHANICAL PROPERTIES AND METHOD OF MAKING SAME

Gustad P. Contractor and David E. C. King, Ottawa, Ontario, and Robert J. McClure, Bells Corners, Ontario, Canada, assignors, by direct and mesne assignments, to Her Majesty The Queen in right of Canada as represented by the Minister of Mines and Technical Surveys

No Drawing. Filed Sept. 27, 1961, Ser. No. 141,002
3 Claims. (Cl. 75—129)

1. A method of producing a free machining resulphurized steel which comprises adding uranium with sulphur to the steel melt in a percentage thereof approximately 1 to 9 times that of sulphur present to react with substantially all of the sulphur present and form uranium sulphides.

3,203,789

STABILIZATION OF CHROMIUM NICKEL STAINLESS STEELS

William A. Morgan, Ottawa, Ontario, Robert J. McClure, Bells Corners, Ontario, and David E. C. King, Ottawa, Ontario, Canada, assignors, by direct and mesne assignments, to Her Majesty The Queen in right of Canada as represented by the Minister of Mines and Technical Surveys

No Drawing. Filed Sept. 27, 1961, Ser. No. 141,005
2 Claims. (Cl. 75—130.5)

2. A method of improving the characteristics of a free machining chromium nickel stainless steel which comprises adding to a melt of said steel uranium in a percentage thereof corresponding to its stoichiometric proportion of carbon present in said melt plus its stoichiometric proportion of sulphur present in said melt to form therein uranium carbides and avoidance of the formation of chromium carbides and to form therein uranium sulphides and avoidance of the formation of manganese sulphides.

3,203,790

EXTRUDED FLINTS AND PROCESS FOR MAKING SAME

Walter Bungardt, Essen-Bredeney, Germany, assignor, by mesne assignments, to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 28, 1962, Ser. No. 183,923
Claims priority, application Germany, Nov. 22, 1955, G 18,429
12 Claims. (Cl. 75—152)

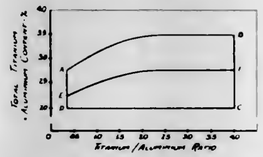
1. A pyrophoric alloy composition suitable for extrusion essentially consisting of about 4.5 to 40% of iron and 0.05 to 0.45% of copper, the remainder being cerium (misch metal).

3,203,791

NICKEL-CHROMIUM-IRON ALLOYS

Arthur William Franklin, Quinton, Ronald Alfred Smith, West Hagley, and Edward Gordon Richards, Small Heath, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 10, 1962, Ser. No. 216,125
Claims priority, application Great Britain, Aug. 11, 1961, 29,092/61
2 Claims. (Cl. 75—171)



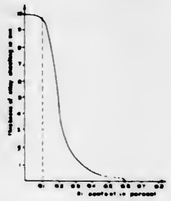
1. An alloy characterized by highly enhanced resistance to impact after a long-time exposure of 1000 hours to elevated temperatures up to about 750° C. and consisting essentially of, by weight, about 16% to about 17% chromium, about 0.04% to about 0.08% carbon, about 3% to about 3.5% molybdenum, about 0.7% to about 2.5% titanium, about 0.7% to about 1.5% aluminum, about 0.001% to about 0.009% boron, about 0.01% to about 0.1% zirconium, up to about 0.5% silicon, about 37% to about 50% nickel, up to about 0.5% manganese, up to about 1% cobalt with the balance being essentially iron, the sum of the said titanium percentage and said aluminum percentage being 2% to about 3.5% and the ratio of said titanium percentage to said aluminum percentage being about 0.5 to about 4 and said sum being correlated with said ratio so that when the values of said sum and said ratio are plotted, the resultant point lies within the area ABCDA set forth in the figure on the accompanying drawing.

3,203,792

HIGHLY CORROSION RESISTANT NICKEL-CHROMIUM-MOLYBDENUM ALLOY WITH IMPROVED RESISTANCE TO INTERGRANULAR CORROSION

Erich Scheil, deceased, late of Stuttgart, Germany, by Margarete Scheil, heir and legal representative of minor heirs, Stuttgart, Germany, and Immanuel Class and Hubert Graefen, Ludwigshafen, Rhineland, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen, Rhineland, Germany

Filed Aug. 31, 1964, Ser. No. 393,827
Claims priority, application Germany, Apr. 1, 1961, B 61,993
4 Claims. (Cl. 75—171)



1. A nickel-chromium-molybdenum alloy having high corrosion and heat resistance properties, said alloy consisting essentially of from 40 to 65% nickel; up to 20% cobalt, the total amount of nickel and cobalt being from 40 to 65%; from 14 to 26% chromium; from 3 to 18% molybdenum; up to 30% iron; up to 5% tungsten; up to 0.1% carbon; up to 3% manganese; and a combined phosphorus and sulfur content of up to 0.1%, said alloy containing less than 0.2% silicon.

3,203,793

POROUS COLUMBIUM AND TANTALUM MATERIALS

Robert B. Hand, Cincinnati, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 28, 1963, Ser. No. 254,403
4 Claims. (Cl. 75—174)

1. A porous metal product having a roughness factor which is at least 3 and remains substantially unchanged upon anodization of the product to 200 v., said product comprising a porous metal body having pores therein originating in cavities near the body surface, the cavities opening through channels to the outer periphery of the body, the surface of said body, including the surface of the pores therein, consisting essentially of a metal from the group consisting of columbium, tantalum, and combination thereof, the purity of said surface metal being such that when the body is anodized to 200 volts at 25° C.

by electrolyzing it in a .01% by weight solution of orthophosphoric acid in water, the concentration of contaminants in the anodic oxide film so formed on its surface is below about 1% by weight, constituents other than columbium, tantalum and oxygen being considered contaminants, and there being in regions of said porous body away from its surface, in addition to the metal of the group consisting of columbium, tantalum and combinations thereof, a metal of the group consisting of titanium, vanadium, and combinations thereof.

3,203,794
TITANIUM-HIGH ALUMINUM ALLOYS

Robert I. Jaffee, Worthington, and Horace R. Ogden and Daniel J. Maykuth, Columbus, Ohio, assignors, by mesne assignments, to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey

No Drawing. Filed Apr. 15, 1957, Ser. No. 652,697
2 Claims. (Cl. 75—175.5)

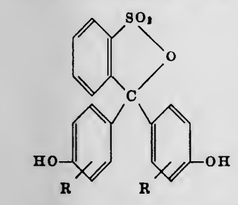
1. A titanium-base alloy containing about 34 to 46% of aluminum, and characterized in maintaining substantially its room temperature hardness at temperatures as high as about 1250° C., and in being highly resistant to oxidataion at elevated temperatures up to at least 1050° C.

3,203,795
PHOTOCONDUCTIVE LAYERS FOR ELECTROPHOTOGRAPHY

Gustav Schaum and Hildegard Haydn, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 25, 1959, Ser. No. 795,350
Claims priority, application Germany, Mar. 5, 1958, A 28,988
4 Claims. (Cl. 96—1)

1. A photoconductive sheet material for electrophotography comprising a photoconductive layer having dispersed in an insulating film-forming resinous binder a photoconductive zinc oxide, the latter being sensitized by a phenol sulfone phthalein having the formula



in which formula R represents a substitutent selected from the group consisting of hydrogen, halogen, alkyl, and alkoxy groups.

3,203,796
USE OF STARCH ETHER LAYERS IN DIFFUSION TRANSFER PROCESSES

Johan Lodewijk Verelst, Deurne-Antwerp, and José Thérèse Lemmerling, Edegem, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

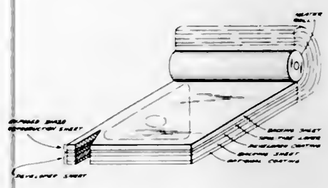
No Drawing. Filed Apr. 27, 1962, Ser. No. 193,046
4 Claims. (Cl. 96—29)

1. A method for obtaining an image according to the silver halide diffusion transfer process comprising the steps of image-wise exposing a multilayer material comprising successively a support, an image-receiving layer containing a member selected from the group consisting of development nuclei and substances capable of forming such nuclei, a layer essentially consisting of a starch ether and a light-sensitive silver halide emulsion layer, treating the exposed multi-layer material in the presence of a silver halide complexing agent with a developing solution and bringing the thus treated multi-layer material in an aqueous rinsing bath so that the silver halide emulsion layer detaches as a coherent membrane.

3,203,797
THERMAL DIAZOTYPE METHOD AND DEVELOPER SHEET FOR USE THEREIN

Peter Muller, Port Washington, N.Y., assignor to Andrews Paper & Chemical Co., Inc., Long Island, N.Y., a corporation of New York

Filed Oct. 16, 1962, Ser. No. 230,850
2 Claims. (Cl. 96—49)

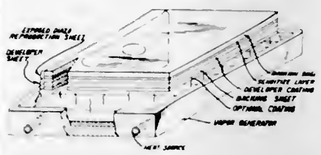


2. The method of making a thermal diazotype print which comprises first providing a sensitized sheet having a backing sheet and a sensitized coating including a diazo compound, a coupling compound, an acidic stabilizing agent, and a hygroscopic agent, then superimposing a master to be reproduced over the sensitized sheet and subjecting the superimposed sheet to actinic radiation to cause the decomposition of the diazo compound in the exposed portions of the sensitized sheet, thereafter superimposing over the sensitized sheet a developer sheet having applied thereto coating material which includes piperazine and a crystalline salt containing water of crystallization, said water of crystallization being released when subjected to temperatures in excess of 100° C., and subjecting said superimposed exposed sensitized sheet and developer sheet to an elevated temperature between 100° C. and 180° C. to volatilize the piperazine and release the water of crystallization to thereby cause the coupling compound to combine with the diazo compound to form a dye in the unexposed portions of the sensitized sheet.

3,203,798
DIAZOTYPE TRANSFER DEVELOPING METHOD

Peter Muller, Port Washington, N.Y., assignor to Andrews Paper & Chemical Co., Inc., Great Neck, N.Y., a corporation of New York

Filed Nov. 28, 1962, Ser. No. 240,575
2 Claims. (Cl. 96—49)



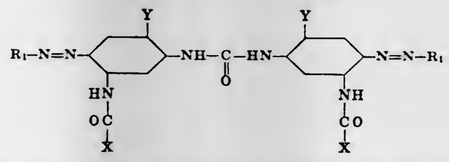
1. A developing method for developing a print on a diazo sensitized sheet of the type having a sensitized coating containing a diazo compound and a coupling compound and which has been previously exposed to actinic radiation behind a master, said developing method comprising placing in superimposed relationship the said exposed diazo sensitized sheet and a developer sheet containing piperazine which is non-volatile at normal ambient temperatures and atmospheric conditions and which volatilizes when subjected to an atmosphere containing steam at temperatures in excess of 70° C. and then generating steam exteriorly of said superimposed sheets and passing the steam through said developer sheet to the diazo sensitized sheet at a temperature in excess of 70° C. to volatilize said piperazine and so that said volatilized piperazine and steam penetrate the diazo sensitized coating to cause said coupling compound to couple with the diazo compound in the unexposed portion of the diazo reproduction sheet and thereby develop the image.

3,203,799
PHOTOGRAPHIC LAYERS SUITABLE FOR THE SILVER DYESTUFF BLEACHING METHOD

Walter Anderau, Aesch, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Nov. 17, 1961, Ser. No. 153,199
Claims priority, application Switzerland, Dec. 1, 1960, 13,515/60
9 Claims. (Cl. 96—53)

9. A process for the production of a yellow image in a photographic silver halide layer by the silver dyestuff bleaching process, which comprises using at least one dyestuff of the formula



in which R_1 represents the radical of a monocyclic diazo component of the benzene series containing at least one acid group imparting solubility in water, X represents a member selected from the group consisting of an aliphatic hydrocarbon radical and an aliphatic hydrocarbon radical containing a hydroxyl group, and Y represents a member selected from the group consisting of a hydrogen atom and a methyl group.

3,203,800
PHOTOGRAPHIC MATERIAL COMPRISING A SILVER HALIDE EMULSION CONTAINING AN ANTI-BRONZING AGENT

Jozef Frans Willems, Hendrik Adolf Pattijn, and Gerard Michiel Sevens, Wilrijk-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a company of Belgium

No Drawing. Filed Jan. 7, 1963, Ser. No. 249,615
Claims priority, application Belgium, Jan. 5, 1962, 41,269, Patent 612,311
4 Claims. (Cl. 96—67)

1. A photographic material comprising a support and at least one light-sensitive silver-halide emulsion layer and containing the silver salt of a member of the group consisting of α-mercapto butyric acid-p-toluidide, β-mercapto-propionic acid-p-toluidide, α-mercapto-acetanilide, α-mercaptobutyric acid-1-naphthalide, α-mercapto-acteic acid-2-naphthalide, N-phenyl-α-mercapto-butyric acid-anilide, α-mercapto-propionic acid-p-toluidide, and α-mercapto-isobutyric acid-p-toluidide in at least one water-permeable layer which is situated at the same side of the support as the light-sensitive silver-halide emulsion layer.

3,203,801
PHOTOPOLYMERIZABLE COMPOSITION AND ELEMENT

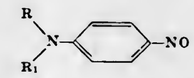
Robert Bernard Heiart, Middletown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 9, 1962, Ser. No. 186,221
25 Claims. (Cl. 96—87)

16. A photopolymerizable element capable of forming relatively high-contrast images when subjected to relatively low-contrast imagewise irradiation, which element comprises a support bearing a photopolymerizable layer of 0.00005 to 0.010 inch thickness of a photopolymerizable composition comprising:

(1) an addition polymerizable, non-gaseous, ethylenically unsaturated compound containing at least one terminal ethylenic group, having a boiling point above 100° C. at normal atmospheric pressure and being capable of forming a high polymer by free-radical initiated, chain-propagating addition polymerization,

(2) at least one N-substituted p-nitrosoaniline sensitometric modifier represented by the formula:



wherein R is a member selected from the group consisting of hydrogen, alkyl of 1 to 5 carbon atoms, hydroxyalkyl wherein the alkyl group is of 1 to 5 carbon atoms, phenyl, toluyl, xylyl and ethylphenyl; and R_1 is a member selected from the group consisting of alkyl of 1 to 5 carbon atoms, hydroxyalkyl wherein the alkyl group is of 1 to 5 carbon atoms, phenyl, toluyl, xylyl and ethylphenyl, acetamido, N'-alkyl and N',N'-dialkyl substituted acetamido and p-sulfophenoxybutyl, said sensitometric modifier being present in an amount from 0.001 to 3.0% by weight of constituent (1),

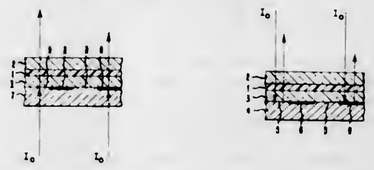
(3) a free-radical generating addition polymerization photoinitiator activatable by actinic radiation, and

(4) a viscosity modifying agent consisting of a thermoplastic compound solid at 50° C.

3,203,802
PHOTOPOLYMERIZABLE COMPOSITION AND ELEMENT

Marion Burg, Metuchen, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 9, 1962, Ser. No. 186,222
16 Claims. (Cl. 96—87)

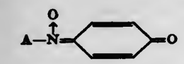


1. A photopolymerizable composition capable of forming relatively high-contrast images when subjected to relatively low-contrast imagewise irradiation, which composition comprises:

(1) an addition polymerizable, non-gaseous, ethylenically unsaturated compound containing at least one terminal ethylenic group, having a boiling point above 100° C. at normal atmospheric pressure and being capable of forming a high polymer by free-radical initiated, chain-propagating addition polymerization,

(2) at least one imine oxide sensitometric modifier selected from the group consisting of:

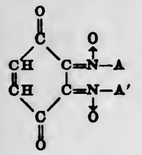
(a)



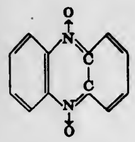
(b)



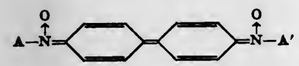
(c)



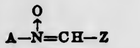
(d)



(e)



(f)



wherein: A and A' are substituted and unsubstituted hydrocarbon radicals selected from the group consisting of tertiary alkyl radicals of 1 to 6 carbon atoms and aryl radicals of 6 to 10 cyclic carbon atoms; and, Z is an aromatic ring system; said sensitometric modifier being present in an amount from 0.001 to 3 parts by weight per 100 parts by weight of constituent (1),

and (3) a free-radical generating addition polymerization photoinitiator activatable by actinic radiation.

3,203,803

LIGHT-SENSITIVE DIAZO HEXAFLUOROPHOSPHATE COMPOSITIONS

David P. Habib, West Springfield, and George R. Hodgins, South Hadley, Mass., assignors to Tecnifax Corporation, Holyoke, Mass., a corporation of Massachusetts

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,618
1 Claim. (Cl. 96—91)

A diazotype light-sensitive material comprising a sheet material sensitized with a composition consisting essentially of a daizonium hexafluorophosphate, a diazo coupling component, and an acidic coupling inhibitor, said diazonium hexafluorophosphate being a para substituted compound in which the para substituent is selected from the group consisting of dialkylamino, arylamino, aralkylamino, phenoxy, phenyl thio ether, N-(3 aza bicyclo 3.2.2 nonane), morpholino, piperidino, pyrrolidino, hexamethyleneimino and piperizino.

3,203,804

PHOTOGRAPHIC EMULSIONS

Abraham Bernard Cohen, Springfield, and Comer Drake Shacklett, Roselle, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 27, 1962, Ser. No. 176,140
12 Claims. (Cl. 96—114)

1. A gelatino-silver halide emulsion comprising, in addition to the silver halide grains,

(1) an aqueous phase containing as a part thereof (a) 20 to 85 parts by weight of gelatin and (b) 2.5 to 40 parts by weight of a water-soluble glycan selected from the group consisting of glycans of the empirical formulae

$$(C_6H_{10}O_5)_n \text{ and } (C_6H_8O_4)_n$$

where the monomeric units are naturally occurring units selected from the group consisting of aldose and ketose units and wherein n is 20 to 600, and

(2) 10 to 70 parts by weight of a non-aqueous phase dispersed in said aqueous phase and composed of water-dispersible colloidal particles of a substantially water-insoluble addition polymer of an ethylenically unsaturated monomer of molecular weight less than 250.

3,203,805

WAX-COATED PHOTOPOLYMERIZABLE ELEMENTS AND PROCESSES FOR USING SAME

Marion Burg, Metuchen, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 30, 1962, Ser. No. 234,214
22 Claims. (Cl. 96—115)

1. An image-yielding element comprising a support bearing a photopolymerizable stratum solid below 40° C., said stratum being thermally transferable by having a stick temperature above 40° C. and below 220° C., comprising (a) a viscosity-modifying agent, and (b) a non-gaseous ethylenically unsaturated compound containing at least one terminal ethylenic group, having a boiling point above 100° C. at normal atmospheric pressure, being capable of forming a high polymer by free-radical initiated, chain-propagating, addition polymerization, said constituents (a) and (b) being present in amounts from 3 to 97 and 97 to 3 parts by weight, respectively, said photopolymerizable stratum bearing a cover stratum having a thickness of 0.00001 to 0.004 inch comprising at least one wax, the cover stratum being characterized by having a melting point of at least 40° C., having low permeability to oxygen and being capable of transmitting actinic radiation.

3,203,806

FLAVORING FOR PET FOODS

Harland H. Young, Western Springs, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 8, 1962, Ser. No. 215,543
8 Claims. (Cl. 99—2)

1. A method for improving the palatability and acceptance of pet foods containing animal protein comprising: embodying in such pet foods a small amount sufficient to improve palatability of said foods of acetamide and acetic acid.

3,203,807

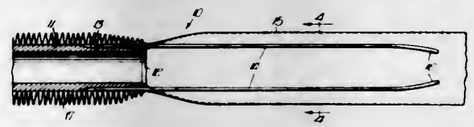
METHOD AND APPARATUS FOR FORMING A SAUSAGE MEAT PRODUCT

Edward C. Sloan, Sarasota, Fla., and Edward Schmook, Jr., William D. Paynter, and Elwood W. Kielsmeier, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois

Filed Mar. 12, 1962, Ser. No. 178,922
6 Claims. (Cl. 99—109)

1. The method of forming a sausage meat product of improved strength and texture, said method comprising extruding an emulsion containing comminuted fibrous meat into product shape at a rate of substantially less than 5 feet per second while embedding a plurality of spaced finger members into surface portions of the emulsion substantially throughout the entire surface thereof during said extrusion to obtain fibrous meat content orientation longitudinally of the product, whereby said product is of improved texture and of sufficient strength to resist against transverse breaking, shearing and crumbling under normal handling conditions.

5. Meat emulsion extrusion and orientation means for use in forming casing stuffed sausage products at low stuffing rates, said extrusion and orientation means comprising an extrusion nozzle of annular configuration through which meat emulsion is extruded into a casing, and an annular complement of circumferentially spaced



finger members fixed to said nozzle at least adjacent the discharge end thereof and projecting beyond the discharge end of said nozzle to constitute an annular extension of said nozzle parallel to the longitudinal axis of said nozzle with a diameter which is substantially equal to the diameter of said nozzle, whereby meat emulsion extruded from said nozzle into a casing received about said nozzle and finger members will move along and between said finger members which become substantially embedded in said emulsion to orient fibrous meat content longitudinally of the stuffed product.

3,203,808

FOOD PRODUCTS

Joseph John Thompson and Charles Albert Doan, Battle Creek, Mich., assignors to Kellogg Company, Battle Creek, Mich., a corporation of Delaware

No Drawing. Filed Aug. 23, 1962, Ser. No. 218,819
5 Claims. (Cl. 99—204)

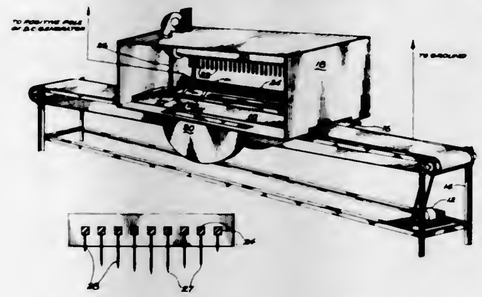
1. The method of preparing quick cooking, edible, hard, dry, whole, discrete legumes having moisture content of from about 10 to about 12 percent by weight, which comprises immersing raw legumes in said hard, dry, whole condition in water to soften their surfaces, perforating them at a plurality of points, then cooking them in the presence of added moisture, and then drying the cooked legumes with hot air to substantially the original dry moisture content.

3,203,809

ELECTROSTATIC SMOKING

Ronald D. Visness, Park Forest, and Robert H. Mroch, Glen Ellyn, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed May 2, 1962, Ser. No. 191,984
9 Claims. (Cl. 99—229)



1. A grid suitable for use in the electrostatic smoking of food products comprising: a series of spaced parallel bars, said bars being electrically connected to a remote source of electrical potential; and a plurality of electrode elements attached to each of said bars, said elements having varying lengths and terminating at points, with the locus of said points describing a convex parabolic surface.

4. A method for smoking food comprising: bringing the food to be smoked onto a given plane in a smoking area; establishing an ionizing field of corona discharge on a plurality of points describing an imaginary convex surface relative to said plane and spaced thereabove; and introducing a supply of smoke particles through said ionizing field towards said plane in a direction substantially normal thereto, whereby the smoke particles are ionized and attracted in the direction of the food.

8. An apparatus for the electrostatic smoking of foods comprising: conveying means for conveying food to be smoked in a given path, said conveying means having transverse limits; downwardly aimed smoke supplying means located above said conveying means for emitting smoke particles in a direction toward said conveying means; a series of parallel bars connected to a remote source of positive potential, said bars arranged parallel to the given path and spaced equally thereabove with a central bar centered over said conveying means and the outermost of said bars positioned substantially inwardly of the transverse limits of said conveying means; a plurality of electrode elements attached to each of said bars at spaced intervals thereon for ionizing said smoke particles, said elements having varying lengths and terminating at points, the lengths of said elements increasing as the distance between a central bar and the bar to which said elements are attached decreases and the locus of said points describing a parabolic curved surface; attracting means located below said path for attracting said particles in said direction, whereby said particles are intercepted by the mass of food on said conveying means; and exhausting means located adjacent to said conveying means for removing excess smoke particles from the vicinity of the conveying means.

3,203,810

BLEACHING YELLOW CORN FLOUR

Ross J. Carey, Evansville, Ind., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,680
7 Claims. (Cl. 99—232)

1. The method of preparing a white corn product, which comprises treating the endosperm portion of yellow corn with at least about 0.5% available chlorine per weight of said endosperm portion at a temperature and for a period of time sufficient to substantially completely chlorine bleach said portion while the endosperm portion-chlorine mixture is maintained in a superficially dry free flowing state, and then treating the chlorine-bleached portion with aqueous hydrogen peroxide solution in an amount, for a period of time and at a temperature sufficient to substantially completely peroxide-bleach said endosperm portion.

3,203,811

MOLTEN TRANSITION METAL PLATING BATHS CONTAINING ZINC AMMINE CHLORIDES

Ernest R. Boller, Marion, Ind., assignor to The Boller Development Corporation, Marion, Ind., a corporation of Indiana

No Drawing. Filed Oct. 20, 1960, Ser. No. 63,720
11 Claims. (Cl. 106—1)

1. A molten, anhydrous bath for the rapid galvanic deposition of a continuous and coherent plate of a transi-

tion metal on another metal which includes an element which stands above the selected transition metal in the applicable Electromotive Series, said bath consisting essentially of from 0.1% to 5% of a chloride of the selected transition metal, an ammonia derivative of a consistuent of the bath in an amount equivalent to 0.05% to 18% ammonia, and the balance of the bath being a solvent consisting essentially of at least two metal chlorides selected from the group consisting of the alkali metal chlorides, the alkaline earth metal chlorides and zinc chloride, no one of the components of such solvent constituting more than 90% by weight of the solvent.

3,203,812

ORGANIC ZIRCONIUM COMPOUNDS

Harold Garton Emblem and Albert Keith Harrison, Grappenhall, England, assignors to Unilever Limited, Port Sunlight, England, a corporation of Great Britain

No Drawing. Filed Aug. 29, 1962, Ser. No. 220,148
Claims priority, application Great Britain, Aug. 31, 1961, 31,437/61
15 Claims. (Cl. 106—38.35)

4. A liquid composition comprising an organic zirconium ester of the general formula $Zr(ORX)_4$ where R is an alkylene group having 2 to 4 carbon atoms and X is a halogen atom selected from the group consisting of chlorine, bromine and iodine atoms, and an aliphatic hydroxyamine having the general formula $R^1.NH.R^2$ where R^1 is a hydroxyalkyl group containing 2 to 4 carbon atoms and R^2 is a group selected from the class consisting of hydrogen, and alkyl and hydroxyalkyl groups containing up to 4 carbon atoms, the amount of the hydroxyamine being such that the composition is capable of forming a gel by hydrolysis.

3,203,813

THERMAL INSULATING MATERIAL, COMPOSITION AND PROCESS FOR MAKING THE SAME

Vincent H. Gajardo, Fairless Hills, and John S. Dennis, Yardley, Pa., assignors to United Clay Mines Corporation, Trenton, N.J., a corporation of New Jersey

No Drawing. Filed June 18, 1962, Ser. No. 203,020
6 Claims. (Cl. 106—40)

1. A thermal insulating material, having the property of forming ceramic bonds as its temperature is elevated from ambient temperature to about 1700° F., consisting essentially of

from about 4% to about 35% of an aluminum silicate clay of the non-swelling type selected from the group consisting of kaolinite, halloysite, illite and attapulgite,

from about 4% to about 25% on a dry weight basis of a water-soluble alkali metal silicate selected from the group consisting of potassium silicate and sodium silicate having a ratio of alkali to silicate from about 1 to 1.6 and to about 1 to 3.75,

from about 0.3% to about 3% of a foaming agent inert to the alkali metal silicate, and

from about 40% to about 90% of an expanded siliceous inorganic aggregate selected from the group consisting of expanded perlite, expanded clay, cellular glass, an expanded slag, expanded vermiculite, cellular diatomite and cellular pumice,

said siliceous material each contributing to the formation of said ceramic bonds of glass-like type and the alumina content of said clay producing said ceramic bonds of increased strength at elevated temperatures.

3,203,814

METHOD FOR INCREASING THE THERMAL ENDURANCE OF SILICON CARBIDE

Akinori Muta, Tokyo-to, and Tetuo Gejo, Kokubunji-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan

No Drawing. Filed Feb. 9, 1965, Ser. No. 431,472
Claims priority, application Japan, Oct. 13, 1960, 35/41,160
1 Claim. (Cl. 106—44)

A method of increasing the thermal endurance of silicon carbide products comprising: heating said products with phosphoric acid solution at a temperature of from 80° C. to 150° C., whereby phosphoric acid ions penetrate into silicon carbide crystals; removing any phosphoric acid from the surfaces of said products by washing the so-treated products with water; and then drying the washed products.

3,203,815

HIGH-TEMPERATURE PROTECTIVE COATING FOR METALS

Harold J. Michael, Columbus, Ohio, assignor to North American Aviation, Inc.

No Drawing. Filed Dec. 21, 1962, Ser. No. 246,374
8 Claims. (Cl. 106—49)

1. A ceramic and metallic protective coating composition for application to metals at a firing temperature of approximately 1250° F.–1600° F., said coating composition consisting of from 15 to 60 parts by weight of a homogeneous two-liquid-phase glass frit having included wetting and seal-forming glass systems, from 2 to 17 parts by weight of refractory oxide selected from the group consisting of the oxides of aluminum, barium, chromium, iron, manganese, nickel, titanium, and zirconium, and from 20 to 80 parts by weight of powdered alumium metal, said glass frit having a calculated oxide content of from 45% to 55% boric oxide, from 3% to 7% lead oxide, from 5% to 12% calcium oxide, from 5% to 12% barium oxide, from 0.5% to 5% silica, from 8% to 13% sodium oxide, and from 8% to 13% aluminum oxide.

3,203,816

GLASS MAKING BATCH AND METHOD

Fred Larry Bull, Edward M. Lobdell, and Joseph R. Monks, Jr., Toledo, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio

No Drawing. Filed Sept. 13, 1960, Ser. No. 55,728
3 Claims. (Cl. 106—54)

1. The method of making a colored glass comprising forming a batch, adding to the batch water and an aqueous solution of sodium dichromate and sodium nitrate, the sodium nitrate being present in an amount at least equal to the amount of sodium dichromate, and the water being present in an amount equal to from 50 to 120 pounds of water per ton of sand in the batch, thoroughly admixing the water and the aqueous solution of sodium dichromate and sodium nitrate with the remainder of the batch, and melting the batch to form a molten glass having a theoretical composition:

Oxide:	Percent by weight
SiO_2	60–75
Al_2O_3	0.1–10
CaO	6–14
BaO	0–1.0
B_2O_3	0–5
MgO	0–8
Na_2O	10–20
K_2O	0–3
Cr_2O_3	0.015–0.26

3,203,817

SOLUTION OF ACID CASEIN AND FILM FORMING POLYMERS IN DIMETHYLSULPHOXIDE

Jean Auguste Phelisse and Eric Brasset, Lyon, France, assignors to Societe des Usines Chimiques Rhone-Poulenc, Paris, France, a French body corporate

No Drawing. Filed May 12, 1960, Ser. No. 28,540
Claims priority, application France, May 14, 1959, 794,672
5 Claims. (Cl. 106—141)

3. As a new composition of matter, a solution in dimethylsulphoxide of acid casein and a film-forming polymer selected from the group consisting of polyacrylonitrile, cellulose acetate, a copolymer of vinylchloride and vinyl acetate, polyvinylchloride, polyvinylidene chloride, and polyethylene terephthalate which is soluble in dimethylsulphoxide, the concentration of the acid casein being at most 15% and below that of the said polymer.

4. A process for the production of readily dyeable, shaped articles, which comprises shaping a solution in dimethylsulphoxide of acid casein and a film-forming polymer selected from the group consisting of polyacrylonitrile, cellulose acetate, a copolymer of vinylchloride and vinyl acetate, polyvinylchloride, polyvinylidene chloride, and polyethylene terephthalate which is soluble in dimethylsulphoxide, in which solution the acid casein is the minor solute component and the said polymer is the major solute component.

3,203,818

PHOTOCHEMICALLY STABLE RUTILE PIGMENTS AND METHOD FOR PRODUCING SAME

Heinz Rechmann, Opladen, Friedrich W. Vial, Leichlingen, and Heinz Helmut Weber, Leverkusen, Germany, assignors to Titangesellschaft m.b.H., Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 31, 1961, Ser. No. 148,840
Claims priority, application Germany, Nov. 2, 1960, T 19,218
6 Claims. (Cl. 106—300)

3. A photochemically stable calcined rutile TiO_2 pigment having a calcined coating on said pigment consisting of silicon oxide and aluminum oxide in an amount, as SiO_2 and Al_2O_3 respectively, in the range of from 0.5 to 5.0% respectively on a TiO_2 weight basis and characterized by a superimposed dried hydrous metal oxide coating consisting of at least one hydrous metal oxide selected from the group consisting of the hydrous oxides of silicon, aluminum, and cerium the amount of hydrous metal oxides of silicon and aluminum being in the range from 0.5% to 5.0% by weight of TiO_2, and the amount of hydrous cerium oxide being in the range from 0.1% to 1.0%.

3,203,819

PROCESS FOR THE PRODUCTION OF GRANULES FROM MIXTURES OF CARBON BLACK AND LIGHT FILLERS

Gerhard Steenken, Berzbuir, near Duren, Albert Peters, Godorf, Kreis Cologne, and Johannes Pochert, Wesseling, Bezirk Cologne, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Dec. 6, 1962, Ser. No. 242,621
Claims priority, application Germany, Dec. 18, 1961, D 37,713
5 Claims. (Cl. 106—307)

1. In a process for the production of a mixed reinforcing filler for rubber from carbon black and wet precipitated light fillers selected from the group consisting of wet precipitated silicic acid and silicate fillers, the steps which comprise homogeneously mixing the carbon black in substantially dry non-pelletized form with the light filler in the form of a primary moist filter cake dough in the presence of a sufficient quantity of water to produce an aqueous shapeable mass, forming granules from such mass and drying such granules.

3,203,820

RHEOLOGICAL AGENT

Malcolm K. Smith and Temple C. Patton, Westfield, N.J., assignors to The Baker Castor Oil Company, Bayonne, N.J., a corporation of New Jersey

No Drawing. Filed May 23, 1962, Ser. No. 196,893

1. A rheological agent consisting essentially of finely divided glyceryl trihydroxystearate and from about 20% to about 60% of ethylene diamide of hydroxystearic acid based upon the total weight of the agent.

3,203,821

FLOCKS FOR THE PRODUCTION OF VELVET-LIKE OR PLUSH-LIKE MATERIALS AND PROCESS FOR THE PRODUCTION OF SUCH MATERIALS BY ELECTROSTATIC MEANS

Bernhard Josef Domin, Bonn (Rhine), Germany, assignor to Dr. Plate G.m.b.H., Bonn (Rhine), Germany

No Drawing. Filed May 18, 1962, Ser. No. 195,988
Claims priority, application Germany, May 25, 1961, P 27,217
9 Claims. (Cl. 117—17)

1. Fibre flocks for the production of velvet-like and plush-like materials by electrostatic means, said fibre flocks being coated with 0.1–2% of their weight of a preparation which comprises an organic anti-electrostatic agent, a ferro-electric-substance, and a member selected from the group consisting of boric acid and sodium sulphate.

3,203,822

PRODUCTION OF POLYAMIDE COATINGS

Heinrich Junker and Werner Lauer, Frankfurt am Main, Ernst Gauf, Eschborn, Taunus, Richard Weber, Oberursel, Taunus, and Wilhelm Würth, Frankfurt-Sossenheim, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

No Drawing. Filed May 31, 1962, Ser. No. 198,699
Claims priority, application Germany, Nov. 14, 1961, M 50,868
11 Claims. (Cl. 117—21)

1. A process for producing an adherent polyamide coating on a substrate which comprises in combination respectively applying a solution of butadiene-styrene copolymer in the ratio of about 80 to 20 and an organic solvent to form a thin intermediate coating on the substrate; predrying the resulting intermediate coating; heating the substrate and resulting butadiene-styrene copolymer coating at about 300°–350° C. for a few minutes and immersing the substrate with butadiene-styrene copolymer coating into a fluidized bed of polyamide powder for a few seconds; and cooling the resulting coatings, thereby producing a polyamide coating on the substrate which is resistant to loosening after extended periods of exposure to boiling wash solutions.

3,203,823

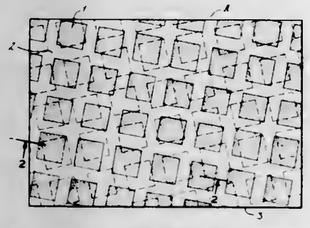
CELLULOSE WITH ADHESIVE SPOTS ON BOTH SIDES THEREOF IN NON-REGISTERING RELATIONSHIP AS INSULATING MATERIAL FOR ELECTRICAL APPARATUS

William S. Grimes, Olivette, Mo., assignor to Orchard Paper Company, St. Louis, Mo., a corporation of Missouri

Filed Dec. 4, 1961, Ser. No. 156,904
9 Claims. (Cl. 117—38)

1. Insulating material for electrical apparatus comprising a sheet of cellulosic material, areas of each side of said sheet being treated by having applied thereon a plurality of discrete adhesive units, the untreated areas

of each side of said sheet forming a grid having longitudinal and transverse portions, the longitudinal and transverse portions of said grid being at right angles to each



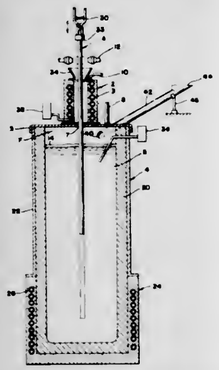
other, the longitudinal portions being at an acute angle to the longitudinal margins of said sheet and the transverse portions of said grid being at an acute angle to the transverse margins of said sheet.

3,203,824

METHOD AND APPARATUS FOR CLADDING METAL TUBES

Harry W. McQuaid, 2890 Van Aken Blvd., Cleveland 20, Ohio, and William L. Ulmer, 2480 Kenilworth Road, Cleveland 6, Ohio

Filed Feb. 1, 1962, Ser. No. 170,479
9 Claims. (Cl. 117—51)



1. A method of cladding a first metal in the form of an elongated bar-like member with a continuous, non-porous coating of a second metal comprised of the following steps: cleaning said member, heating said member to a temperature beyond the melting point of the second metal but below the melting point of the first metal, simultaneously subjecting said member to an atmosphere of gaseous boron base flux, providing a molten bath of said second metal, filling the space above said bath with gaseous boron base flux to exclude all corrosive gases and passing said member into said bath while all heated surface area of said member is in continuous contact with said gaseous boron base flux until said area is dipped into said bath.

3,203,825

NITROGEN-CONTAINING SILICON POLYMER, METHOD OF COATING THEREWITH AND COATED PRODUCT

George D. Stevens, Marinette, Wis., assignor to The Ansul Company, a corporation of Wisconsin

No Drawing. Filed Mar. 24, 1960, Ser. No. 17,253
10 Claims. (Cl. 117—62.1)

1. A nitrogen-containing silicone polymer consisting essentially of the product of the reaction between a partially hydrolyzed methyl hydrogen polysiloxane having between about 0.9 and about 1.1 hydrogen atoms per silicon atom and aliphatic amine having at least 2 terminal primary amine groups.

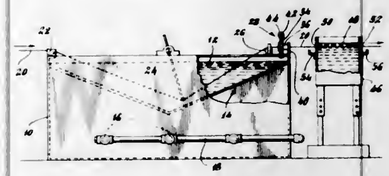
4. The nitrogen containing silicone polymer of claim 1 wherein the partially hydrolyzed methyl hydrogen polysiloxane has a molecular weight of 3,000 to 5,000.

3,203,826

METALLIC COATING OF WIRE

Michael J. Stobierski, 127 Rocky Rest Road, Shelton, Conn.

Filed Sept. 12, 1962, Ser. No. 223,041
9 Claims. (Cl. 117—102)



1. The method of applying a metallic coating to a wire which comprises: immersing said wire in a molten metal bath to deposit a molten metal coating thereon; smoothing said coating by passing the coated wire through a metallic die having a continuous rigid wire-engaging bearing surface therethrough having a length at least five times the diameter of said wire; rotating said metallic die to smooth said metal coating; passing the coated wire through a cooling liquid rinse; maintaining said wire in a substantially horizontal plane within said rinse; and removing the smooth coated rinsed wire therefrom.

3,203,827

CHROMIUM PLATING PROCESS

Fred N. Hill, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 26, 1962, Ser. No. 205,208
19 Claims. (Cl. 117—107.2)

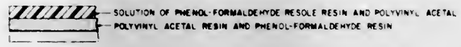
1. The process for producing a chromium plate on a platable solid substrate in an inert atmosphere, which process comprises: contacting said substrate over the area to be plated with (a) a bis(arene) chromium compound of the formula $(Ar)_2Cr$ wherein Ar designates an organic hydrocarbon selected from the group consisting of aromatic hydrocarbons containing an isolated benzene ring and aryl-substituted benzenes, in mutual contact with (b) a catalytic amount of a halogen-containing catalyst selected from the group consisting of the elemental halogens, the halogen-substituted aliphatic and aromatic hydrocarbons containing from 1 to 20 carbon atoms, the halogen-substituted aliphatic hydrocarbon ethers consisting of carbon, hydrogen, oxygen, and halogen atoms and containing from 2 to 12 carbon atoms, the tetraalkyl ammonium halides containing from 1 to 12 carbon atoms in each alkyl radical, the ammonium halides, the interhalogens, the hydrogen halides, and the alkali metal halides, the halogen moiety of said catalyst having an atomic number of from 17 to 53, said catalyst being present in an amount sufficient to catalytically lower the thermal decomposition of said bis(arene) chromium compound to below about 300° C.; and heating said bis(arene) chromium compound and said catalyst in contact with said substrate at a temperature of at least the decomposition temperature of said bis(arene) chromium compound in contact with said catalyst and below about 300° C.; thereby producing a chromium plate on said substrate.

3,203,828

FILM ADHESIVE CONSISTING OF POLYVINYL ACETAL RESIN AND PHENOL-FORMALDEHYDE RESIN

Edward William Garnish, Saffron Walden, England, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

Filed June 28, 1962, Ser. No. 205,857
Claims priority, application Great Britain, July 7, 1961, 24,729/61
3 Claims. (Cl. 117—122)



1. A film adhesive which comprises a substrate in film form consisting essentially of a polyvinyl acetal resin and a phenol-formaldehyde resin and coated on at least one side of said substrate a layer of a tacky substance comprising a mixture of a phenol-formaldehyde resole resin and a polyvinyl acetal in a plasticizer, wherein the weight ratio of phenol-formaldehyde resin to plasticizer is from about 2:1 to 1:2 and the weight of the polyvinyl acetal is from about 1 to about 10% of the combined weight of phenol-formaldehyde resin and plasticizer.

3,203,829

RAZOR BLADES

Frank H. Seyer, Weston, and Charles R. Weidman, Stratford, Conn., assignors to Eversharp, Inc., Milford, Conn., a corporation of Connecticut

No Drawing. Filed Sept. 25, 1962, Ser. No. 226,169
8 Claims. (Cl. 117—132)

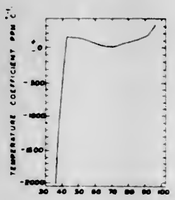
1. In the process for treating razor blades whereby a coating of polytetrafluoroethylene, polytrifluorochloroethylene, or fluoronated ethylenepropylene is applied to the cutting edge of the blade surface and the blade with said coating thereon is heated to cause the polytetrafluoroethylene, polytrifluorochloroethylene, or fluoronated ethylenepropylene to form an adhering film on said cutting edge of the blade, the improvement comprising maintaining the blades in a reducing atmosphere during the baking operation.

3,203,830

ELECTRICAL RESISTOR

William J. Ostrander, Barrington, N.J., and Carl H. Schenskie, Philadelphia, Pa., assignors to International Resistance Company, Philadelphia, Pa.

Filed Nov. 24, 1961, Ser. No. 154,578
4 Claims. (Cl. 117—227)



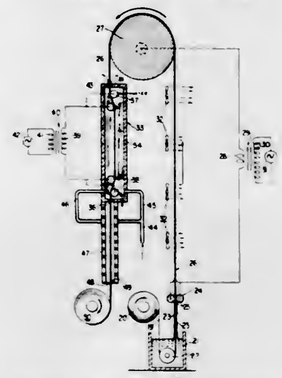
1. An electrical resistor having a relatively high resistance and low temperature coefficient of resistance comprising a base substrate of an electrical insulating material, and a layer of a resistance material on the surface of said base substrate, said resistance material layer consisting essentially of a homogeneous mixture of chromium and silicon oxide with at least 42% by volume of the mixture being chromium.

3,203,831

PROCESS AND APPARATUS FOR COATING AND SINTERING OF STRIP MATERIAL FOR ELECTRODES

Robert Achille Antoine Jeannin, Paris, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a company of France

Filed Nov. 21, 1961, Ser. No. 153,927
Claims priority, application France, Nov. 23, 1960, 844,770; Sept. 27, 1960, 839,632
7 Claims. (Cl. 117—230)



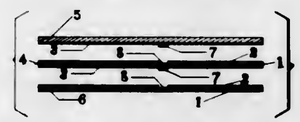
1. In the process of sintering a coating to a metal strip of material, the steps of applying a wet coating of sinterable material to said strip, regulating the thickness of the applied coating by passage of the coating bearing strip between ribbed rollers whose ribs penetrate the coating and make direct electrical contact with said strip, moving the coated strip along a path having an ascending portion and a descending portion by passage around a conductive reversing drum, drying the wet coating onto the strip in said ascending portion by the passage of an electric current therethrough of amperages sufficient to dry the wet coating utilizing the ribs and drum to establish electrical contact with the strip and its coating, blowing drying gas across the said ascending portion of the strip during its drying by said electric current, sintering the dried coating to the strip in its descending portion by passage through a selected length thereof of a second electric current of amperage sufficient to raise said length to the sintering temperature of said coating, surrounding said length with a protective atmosphere and thereafter cooling said sintered strip.

3,203,832

METHOD OF MANUFACTURING COPYING PAPERS AND A COPYING PAPER

Shozo Mino, Ikeda, and Sumio Otani, Yao, Japan, assignors to Carbon Paper Co. Ltd., Osaka, Japan

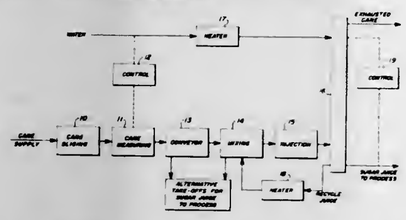
Filed May 3, 1963, Ser. No. 277,753
Claims priority, application Japan, May 25, 1962, 37/21,751; Feb. 5, 1963, 38/6,258
5 Claims. (Cl. 117—36.3)



1. A plurality of sheets of copying paper each consisting of a base sheet member having the face thereof colored with a dark color, a layer over said dark colored face of a different color than the color of the face of said base sheet member, the different color being a light color and said layer being of a material which can be ex-

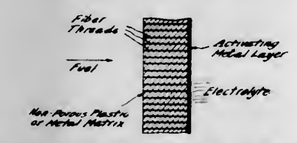
foliated from said colored face of said base sheet member and which will readily receive ink from conventional writing instruments, and a layer of pressure sensitive adhesive on the back of said base sheet member and having a light color substantially the same as said light colored layer on the face of said base sheet member, said sheets of copying paper being stacked with the colored layers on one sheet of copying paper against the adhesive layer on the back of the next adjacent sheet copying paper, whereby when pressure is exerted on the stack of sheets by a pen or typewriter or the like from the direction toward which said light colored layers are facing, the material in the layers of light colored material on the base sheet members is exfoliated and adheres to the layer of adhesive on the next adjacent sheet of copying paper and exposes the darker colored face of the base sheet member through the space left by the exfoliated material in the shape of the pattern of pressure exerted when the sheets of copying paper are separated.

3,203,833
CONTINUOUS DIFFUSION PROCESS
Robert Marshall Stewart, New Orleans, La., and Emory P. Boynton, Chicago, Ill., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 723,843, Mar. 25, 1958. This application Aug. 18, 1959, Ser. No. 834,472
10 Claims. (Cl. 127—45)



1. A method of extracting sugar cane juice from sugar cane by continuous diffusion which comprises cutting sugar cane into slices having a dimension substantially parallel to the fiber axis of the cane stalk not greater than one-half inch (13 millimeters) and not less than one-eighth inch (3 millimeters), forming a suspension of said cane pieces with hot sugar cane juice having a density of 10° to 17° Brix, introducing said suspension into an inlet of a countercurrent diffusion apparatus, transporting said cane pieces countercurrent to a stream of hot water, removing exhausted cane pieces from an outlet of the diffusion apparatus, collecting cane sugar juice near the said inlet of the diffusion apparatus, recycling a part of said juice to form the suspension of cane pieces and drawing off the excess of the collected cane sugar juice.

3,203,834
FUEL CELL
Alfred W. Breiner, Arlington, Va., assignor to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts
Filed July 26, 1961, Ser. No. 126,997
6 Claims. (Cl. 136—86)

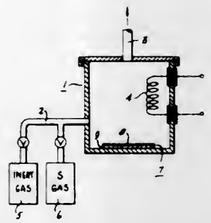


1. A fuel cell for the generation of electrical current directly from a fuel and oxidant comprising an electrolyte, at least one conductive oxidizing electrode, at least one conductive fuel electrode, said electrodes being in contact with said electrolyte, and means for providing fuel cell reactants to said electrodes including reactant compartments, at least one of said electrodes comprising a substantially non-porous matrix having a fibrous material pervious to gases and liquids extending from major surface to major surface thereof, said fibrous material being in contact with said electrolyte and a reactant compartment, said non-porous matrix being selected from the group consisting of plastic and malleable metals.

3,203,835
CHLORATE ACCELERATED ZINC PHOSPHATING BATHS WITH ADDED ARSENATE
William A. Blum, Fort Washington, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Oct. 25, 1962, Ser. No. 233,159
15 Claims. (Cl. 148—6.15)

1. The aqueous zinc phosphating solution for coating steel comprising at least 0.5 gram per liter of zinc ions, at least 2 grams per liter of phosphate ions, at least 0.5 gram per liter of chlorate ions and at least 0.01 gram per liter of arsenate ions.

3,203,836
METHOD FOR THE PREPARATION OF COPPER SULFIDE FILMS AND PRODUCTS OBTAINED THEREBY
Joseph Gaynor and James F. Burgess, Schenectady, and Bernard C. Wagner, Troy, N.Y., assignors to General Electric Company, a corporation of New York
Filed Aug. 29, 1961, Ser. No. 134,700
10 Claims. (Cl. 148—6.31)



1. A method for the preparation of a transparent electrically conducting copper sulfide film in situ which comprises contacting a supported previously deposited transparent film of a reactive copper compound which is capable of reacting with a sulfur containing gas to form copper sulfide with such a sulfur containing gas for a period of time sufficient to convert at least the surface portion of the film to copper sulfide having a higher degree of transparency to light in the visible spectrum than the previously deposited transparent film.

3,203,837
PROCESS FOR REMOVING FREE NITROGEN FROM STEEL
Wouter J. G. Mees, Driehuis, Netherlands, assignor to Koninklijke Nederlandsche Hoogovens en Staalfabrieken N.V., Ijmuiden, Netherlands, a Dutch corporation
No Drawing. Filed Nov. 27, 1962, Ser. No. 240,457
Claims priority, application Netherlands, Dec. 1, 1961, 272,081
14 Claims. (Cl. 148—16)

1. A process for reducing the nitrogen content of rimmed steel sheet by annealing the said steel sheet substantially in contact with a solid having a lower partial nitrogen pressure than the said steel, so as to promote migration from the said steel sheet to the said solid.

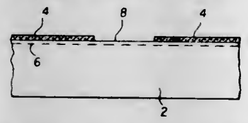
3,203,838
METHOD OF MANUFACTURING PERMANENT MAGNETS HAVING LARGE COERCIVE FORCE
Hakaru Masumoto, Sendai, Takeo Kobayashi, Natori, and Kiyoshi Watanabe, Sendai, Japan, assignors to The Foundation: The Research Institute of Electric and Magnetic Alloys, Sendai, Japan, an incorporated foundation of Japan
Filed Sept. 24, 1963, Ser. No. 311,003
Claims priority, application Japan, Sept. 28, 1962, 37/42,342
5 Claims. (Cl. 148—101)

1. A method of manufacturing high coercive force permanent magnets, comprising heating an alloy consisting essentially of about 20–92% cobalt, 7.9–26% aluminum, and an effective amount up to about 65% nickel to a temperature above the $\epsilon+\zeta$ binary region, quenching the alloy to a temperature below the upper boundary of the $\epsilon+\zeta$ binary region, heating the alloy in said binary region at a temperature sufficient to precipitate fine particles of ferromagnetic ζ in a matrix of nonmagnetic ϵ, and magnetizing the product thus obtained in a strong magnetic field to obtain a permanent magnet having high coercive force.

3,203,839
PROCESS FOR PRODUCING NONORIENTED SILICON STEEL SHEETS
Kenji Takahashi, Tsukita, Yawata, Japan, assignor to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Feb. 18, 1963, Ser. No. 259,190
Claims priority, application Japan, Feb. 23, 1962, 37/7,027
1 Claim. (Cl. 148—113)

A process for producing a non-oriented silicon steel sheet in which the crystal grains are in a state of random alignment and, when magnetized, has equal degree of magnetization in all directions, which comprises (1) hot-rolling an ingot to produce a steel sheet, said ingot consisting essentially of 1.5 to 3.5 wt. percent Si, 1.09 to 1.34 wt. percent Al, and Fe, the sum of Si and Al being from 2.5 to 4.5 wt. percent, and the amount of Si in said ingot being greater than the amount of Al, (2) cold-rolling the steel sheet to effect reduction of 50 to 80% in thickness, (3) intermediately annealing the cold-rolled sheet at a temperature of from 750 to 950° C. in a non-oxidizing atmosphere for 30 to 3 minutes, (4) cold-rolling the annealed sheet to effect a reduction of 50 to 80% in thickness, (5) and finally annealing the cold-rolled sheet at a temperature of 1000 to 1100° C. in a non-oxidizing atmosphere for 5 to 40 hours.

3,203,840
DIFFUSION METHOD
Ronald Eugene Harris, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 14, 1961, Ser. No. 159,215
5 Claims. (Cl. 148—187)



1. The method of selectively diffusing gallium into a silicon body comprising the steps of forming a layer of silicon dioxide on a surface of said body, diffusing gallium through said silicon dioxide and into said body to form a concentration of said gallium within said surface, removing said silicon dioxide from a selected portion of said surface, and subsequently oxidizing said selected portion of said surface.

3,203,841
SHAPED EXPLOSIVES CONTAINING FIBROUS POLYOXYMETHYLENE
Carroll F. Doyle, Ellicott City, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed June 24, 1963, Ser. No. 290,254
4 Claims. (Cl. 149—2)

1. An explosive composition which comprises (1) a normally solid non-initiating high explosive possessing a detonation rate of from about 1,000 to about 8,500 meters per second, and (2) from about 1% to about 15% by weight based on the weight of the high explosive of a fine size fibrous polyoxymethylene polymer, the fibers of which possess a length of under 50 microns, and a length to diameter ratio of at least 10:1, said fibrous polyoxymethylene being further characterized by possessing an identity distance of 14 A. units as measured along the fiber axis by X-ray diffraction pattern means.

3,203,842
LINEAR POLYESTER RESIN GAS-GENERATING COMPOSITIONS CONTAINING AMMONIUM NITRATE AND PERCHLORATE
John N. Godfrey, Alexandria, Va., assignor to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia
No Drawing. Filed Sept. 9, 1963, Ser. No. 307,311
15 Claims. (Cl. 149—19)

1. A gas-generating composition comprising between about 60% and about 70% of an oxidizer component and correspondingly between about 40% and about 30% of a binder component, said oxidizer component consisting essentially of between about 10% and about 30% ammonium perchlorate and correspondingly between about 60% and about 40% ammonium nitrate, each of the said percentages being based upon the total weight of said oxidizer component and said binder component, said binder component comprising a cured, substantially linear saturated polyester resin having an average of between about 2 and about 3 carboxyl groups per molecule, wherein said polyester is the reaction product of an acid component and a saturated alcohol component, said acid component being a member selected from the group consisting of saturated aliphatic polycarboxylic acid, its anhydride, and mixtures thereof, said alcohol component being a mixture of saturated dihydric alcohol and saturated polyhydric alcohol having at least three reactive hydroxyl groups.

3,203,843
CHARGE MATERIAL
Charles H. Jackson, Redondo Beach, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California
No Drawing. Filed Jan. 24, 1962, Ser. No. 168,555
1 Claim. (Cl. 149—19)

A charge material consisting essentially of an intimate mixture of: (a) titanium hydride 30.0% plus or minus 0.2% by weight, (b) potassium perchlorate 65.0% plus or minus 0.2% by weight, and, (c) a fluoroelastomer 5.0% plus or minus 0.1% by weight.

3,203,844
EXPLOSIVE COMPOSITIONS CONTAINING SORBITAN TETRANITRATE SENSITIZER
Joseph W. Lawrence, Tamaqua, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 26, 1963, Ser. No. 290,598
15 Claims. (Cl. 149—38)

1. An explosive composition consisting essentially of a sensitizer of sorbitan tetranitrate, an inorganic oxidizing salt and a fuel material.

10. A dynamite composition comprising ammonium ni-

trate, sodium nitrate, carbonaceous fuel material and a powdered metal selected from the group consisting of aluminum and magnesium, sensitized by sorbitan tetranitrate in an amount of at least about 8% of the total weight of the composition.

3,203,845
METHOD OF MAKING A REINFORCED HOLLOW ELEMENT

Robert J. Short, Cincinnati, Ohio, assignor to Justin Enterprises, Inc., Fairfield, Ohio, a corporation of Ohio

Filed Apr. 3, 1963, Ser. No. 270,388
16 Claims. (Cl. 156—175)



15. A method of forming a hollow element comprising the steps of:

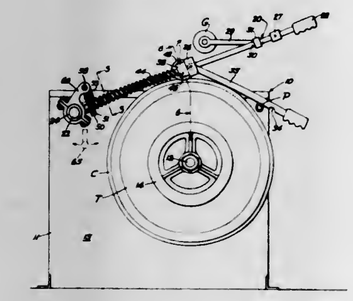
(a) winding a filament in a helical pattern about a form to produce a hollow unit having at least one enlarged end portion, and

(b) thereafter winding said filament in a helical pattern to produce a second hollow unit axially aligned with said first unit, said last named helical pattern overlapping said enlarged end portion of said first hollow unit, thereby producing an interlock between said first and second unit.

3,203,846
TIRE TREAD LAYING DEVICE

Elmer W. Robertson, Berkeley, Calif., assignor to Elrick Industries, Inc., Oakland, Calif.

Filed Oct. 1, 1962, Ser. No. 227,484
5 Claims. (Cl. 156—410)



1. In combination with the spring loaded presser rollers of a tread layer in which the presser rollers are rotatably mounted on spindle shafts extending toward each other from a pair of rigidly connected spaced lever arms extending in parallel relation from a sleeve shaft pivotally mounted for manual movement downwardly astride a tire having new tread rubber thereon and in which each presser roller is connected to one end of a torsion spring mounted on the respective lever arms; a pressure regulator comprising a sprocket mounted for free rotation one on each of such spaced arms and each said sprocket forming an anchor for the opposite end of the torsion spring engaging the same, a screw shaft supported in parallel relation to the sleeve shaft for hand crank turning, a rider on said screw shaft, and a chain having one end secured to said rider and trained in one direction around one of said sprockets and in an opposite direction around the other one of said sprockets and secured to the latter for tightening and loosening the tension of said torsion springs in unison.

3,203,847
PILL RESISTANT NON-WOVEN TEXTILE FABRIC

Melvin D. Hurwitz, Southampton, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

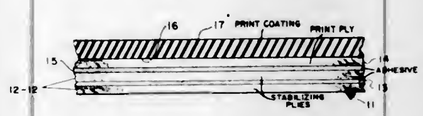
No Drawing. Filed Nov. 29, 1961, Ser. No. 155,850
6 Claims. (Cl. 161—82)

3. As an article of manufacture, a non-woven fabric formed of resilient synthetic hydrophobic fibers and cellulose fibers, a thin layer of cellulose fibers having a weight in the range of about one-half to three-fourths ounce per square yard being disposed on at least one face of the fabric and covering the hydrophobic fibers which form the main body of the fabric having a thickness of at least ¼ mil, fibers in the fabric being bonded by impregnation with 5 to 150% by weight, based on the dry weight of the fibers, of a thermosettable binder comprising a copolymer, with an apparent second order transition temperature not over 20° C., of monoethylenically unsaturated molecules comprising 0.5 to 20% by weight, based on the total weight of the molecules, of molecules containing functional groups by the reaction of which the bonded non-woven fabric has been converted to a condition in which it is resistant to laundering and drycleaning.

3,203,848
BLANKET FOR USE IN AUTOMATIC SCREEN PRINTING PROCESSES

William C. Ross, Winchester, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Oct. 26, 1961, Ser. No. 147,976
2 Claims. (Cl. 161—88)



1. A textile print blanket which includes

a stabilizing base comprising two plies of a woven cotton duck material which has an extensibility of about 8.0 percent under a load of 60 pounds per inch of width of the material, said plies being bonded together by a layer of elastomeric material,

a stretchable intermediate print ply of a woven cotton duck material which has an extensibility of about 30 percent under a load of 60 pounds per inch of width of the material, said print ply being adhesively secured to the said stabilizing base by a layer of elastomeric material,

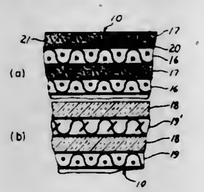
and as a print surface, a coating of elastomeric material on the exposed upper surface of the said print ply.

3,203,849
COMPOSITE HEAT SHIELD

Harry S. Katz, West Orange, and John V. Milewski, Saddle Brook, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Mar. 31, 1961, Ser. No. 99,908
1 Claim. (Cl. 161—96)

A composite heat shield comprising a plurality of alternately arranged, integrally united, layers of heat insulation and heat conducting material, said insulating layers being identical and each comprising a fibrous cloth coated with a synthetic resin film and said heat conducting layers being identical and each comprising a heat conductive, open mesh, woven cloth of graphite threads coated with



a second high temperature modifying synthetic resin film, said resins being curable upon heating to effect an adhesive bond between each of the layers.

3,203,850
METHOD OF FORMING CREPED AND EMBOSSED EXTENSIBLE PAPER

Eugene F. McCarty, Newburgh, N.Y., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York

Filed Jan. 12, 1965, Ser. No. 424,940
2 Claims. (Cl. 162—113)

1. The method of producing on a Fourdrinier wire paper machine, a continuous web of extensible paper, of high and uniform machine direction stiffness and elastic modulus, which comprises: progressively forming raw paper stock on said wire into a continuous wet web of substantial width; progressively removing excess moisture from said web to a greater extent along the medial portion thereof than along the outer edges; thereafter progressively drying said web to a greater extent along the outer edges thereof than along said medial portion and to a substantially uniform moisture content throughout its width and to a value within the range of about 40–59% and varying not more than about 2% in total amount across the width of the web, thereafter creping said web transversely of its length; thereafter embossing the so-creped web substantially longitudinally thereof and at spaced intervals transversely thereof; thereupon pulling out a portion of said creping; and thereupon progressively further demoisturizing said web to substantial dryness.

3,203,851
METHOD OF PRODUCING HIGHLY FILLED COMPRESSED MASSES OF FIBER-LIKE FILLER MATERIAL AND THERMOPLASTIC SYNTHETIC MATERIAL AND COMPRESSED BODIES MADE OF SUCH COMPRESSED MASSES, PARTICULARLY PLATES AND LAMINATIONS

Karl-Ludwig Blau, Ettlingen, Baden, and Alfons Herr, Karlsruhe, Germany, Josef Lintner, La Garenne-Colombes, France, and Otto Wilhelm, Karlsruhe, Germany, assignors to Vinypal S.A., a corporation of Luxembourg

No Drawing. Filed June 18, 1959, Ser. No. 821,094
Claims priority, application Germany, June 18, 1958, L 30,610
8 Claims. (Cl. 162—168)

1. A method of producing compressed bodies of polyvinylchloride reinforced with fibers, by

admixing an alkaline adjusted paste of said fibers with an aqueous dispersion of polyvinylchloride;

precipating said polyvinylchloride from said dispersion onto said fibers by adding an acid-forming salt and thereby acidifying said mixture causing said polyvinylchloride to adhere to said fibers;

said mixture being formed by dispersing a finely powdered polyvinylchloride together with a high molecular weight organic acid emulsifier in an alkaline adjusted fiber paste with agitation, and

adding to said mixture an aqueous emulsion of a plasticizer in an amount sufficient to cause swelling of the surface of said polyvinylchloride particles;

filtering water from said mixture and forming a mass of dry fibrous material loaded with said polyvinylchloride; and

then pressing said fibrous material under pressure at an elevated temperature.

3,203,852
NEMATOCIDAL AGENTS

Horst Werres, Berlin-Charlottenburg, and Ernst Albrecht Pieroh, Berlin-Hermsdorf, Germany, assignors to Schering, A.G., Berlin, Germany

No Drawing. Filed Nov. 21, 1961, Ser. No. 154,020
Claims priority, application Germany, Nov. 30, 1960, Sch 28,860
24 Claims. (Cl. 167—22)

1. A nematocidal composition containing a carrier free of significant nematocidal activity, and further containing as the active ingredient thereof in a nematocidally effective amount, a compound of the formula

$$R—NH—CS—S—CO—R'$$

wherein R is selected from the group consisting of lower alkyl, monohalogen-phenyl, nitrophenyl, and

$$—CH_2—CH_2—NH—CS—S—CO—R'$$

and R′ is selected from the group consisting of lower alkyl, phenyl, nitrophenyl, and

$$—(CH_2)_{2n}—CO—S—CS—NH—R$$

wherein n is an integer between 1 and 4.

3,203,853
SYNERGISTIC MIXTURES OF INSECTICIDES

Albert Jäger, Berlin-Hermsdorf, and Horst Peissker, Wolfenbuttel, Germany, assignors to Schering, A.G., Berlin, Germany

No Drawing. Filed Apr. 20, 1962, Ser. No. 188,952
Claims priority, application Germany, May 6, 1961, Sch 29,672
6 Claims. (Cl. 167—30)

1. An insecticidal composition containing as the effective agent a mixture of a carbamic acid ester selected from a first group consisting of 1-naphthyl-N-methylcarbamate, 3-methyl-5-isopropylphenyl-N-methylcarbamate, 3-methyl-5-pyrazolyl-N-dimethylcarbamate, 5-(3-methyl-1-phenylpyrazolyl)-N-dimethylcarbamate, 5-(1-isopropyl-3-methylpyrazolyl)-N-dimethylcarbamate, and a carbamic acid ester selected from a second group consisting of 3-methyl-5-isopropylphenyl-N-camphylcarbamate, bornyl-N-methylcarbamate, cyclopentyl-N-methylcarbamate, cyclohexyl - N - methylcarbamate, ethylmercaptoethyl - N - methylcarbamate, allyloxyethyl - N - methylcarbamate, phenyloxyethyl - N - methylcarbamate, O - butyl - S-2-(N-methylcarbamyl)-propyl dithiocarbonate, and 2-isopropyl-3-methylphenyl-N-diisopropylcarbamate, the ratio of said ester of said first group to said ester of said second group in said composition being between 25 to 1 and 1 to 50.

3,203,854
THE REACTION PRODUCT OF 2,4,5-TRICHLOROPHENOL AND BUTYL PHOSPHATE

Marie Adele Josephe Bouilienne-Walrand, Liege, Belgium, and Georges Wetroff, Le Thillay, and Jean Emile Khaladji, Paris, France, assignors to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France

No Drawing. Filed June 7, 1962, Ser. No. 200,635
6 Claims. (Cl. 167—31)

1. A composition adapted for use as a fungicide and as a bactericide comprising a non-toxic carrier and a reaction product formed from the reaction of 2,4,5-trichlorophenol with a phosphate selected from the group

consisting of tri-isobutyl phosphate and n-tributyl phosphate, said reaction product being present in an amount within the range of 0.01 to 10 percent by weight in the non-toxic carrier.

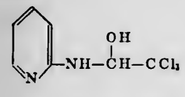
3,203,855

METHOD FOR COMBATING FUNGI WITH 2 - (2,2,2 - TRICHLORO - 1 - HYDROXYETHYLAMINO)PYRIDINE

Dieter Duerr, Basel, Hans Aebi, Riehen, and Ludwig Ebner, Stein, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed July 2, 1963, Ser. No. 292,441
Claims priority, application Switzerland, July 17, 1962, 8,600/62
1 Claim. (Cl. 167—33)

The method for combating phytopathogenic fungi which comprises applying to the area where the said effect is desired a microbiocidally effective amount of the compound of the formula



3,203,856

3,5-DIMETHOXY-4-BUTYLOXY-BENZAMIDE SEDATIVE ACTION METHOD

Roland-Yves Mauvernay, Riom, France, assignor to Centre Europeen de Recherches Mauvernay, Chateau de Bardon, Riom (Puy-de-Dome), France

No Drawing. Filed Sept. 27, 1962, Ser. No. 227,655
Claims priority, application France, July 3, 1962, 902,774
1 Claim. (Cl. 167—52)

The method of achieving a sedative action, which comprises administering to a patient requiring the same 3,5-dimethoxy-4-butyloxy-benzamide.

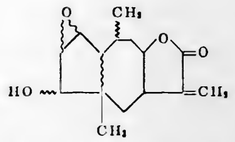
3,203,857

ANALGESIC COMPOSITIONS COMPRISING A LACTONE OBTAINED FROM HELENIUM

Robert Armistead Lucas, Mendham, and Harold Belding MacPhillamy, Madison, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 18, 1963, Ser. No. 252,392
5 Claims. (Cl. 167—55)

1. An analgesic composition containing from about 1 percent to about 50 percent of a member selected from the group consisting of the compound identified as Su-12334 being composed entirely of carbon, hydrogen and oxygen, and having the empirical formula $C_{15}H_{20}O_4$, its sublimed form analyzing for 67.98 percent of carbon and 7.64 percent of hydrogen, melting at 185–186°, and its infrared absorption spectrum, taken in chloroform, showing the following bands expressed in $cm.^{-1}$: strong bands at 1756, 990, 940 and 840; medium bands at 3630, 3490, 1460, 1410, 1385, 1330, 1160 and 1120; weak bands at 1663, 1090, 1070 and 875; and shoulders at 1630, 1470, 1310, 1260, 1050, 995 and 900, and its benzene-recrystallized form melting at 197–198°, having a specific rotation in chloroform of $[\alpha]_D^{25}=+3.4°$, analyzing for 68.71 percent of carbon and 7.85 percent of hydrogen, having a molecular weight of 264 as determined by mass spectroscopy and of 268 (±2 percent) as determined by single crystal X-ray diffraction, having a monoclinic crystalline system with the space group $P2_1$, the number of asymmetric units per unit cell $Z=2$, and the unit cell dimensions $a=10.02$ A.; $b=6.73$ A.; A.; $c=10.42$ A.; and $\beta=99°$; and having an $Rf=0.35-0.5$ on Whatman No. 1 paper impregnated with a 1:1-mixture of formamide adjusted to ph 5.6 with benzoic acid, and methanol, and a mobile phase consisting of a 1:1-mixture of xylene and methyl ethyl ketone, and being very soluble in chloroform and methylene chloride, soluble in benzene, ethyl acetate and pyridine, fairly soluble in methanol, sparingly soluble in water and virtually insoluble in hexane and petroleum ether, and having the structure of the following formula



with a theoretical molecular weight of 264.31, and the O-acyl-compounds thereof said acyl group being derived from an acid having from 1 to 20 carbon atoms and selected from the group consisting of an organic carboxylic acid and an organic sulfonic acid, as the active analgesic ingredient together with a pharmaceutically acceptable carrier.

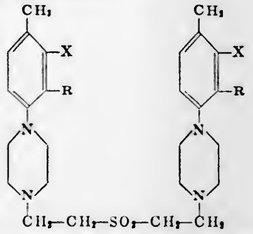
3,203,858

BIS-β-(4-ARYLPIPERAZINO)ETHYL SULFONES FOR TREATING SCHISTOSOMIASIS

Walter E. Buting, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

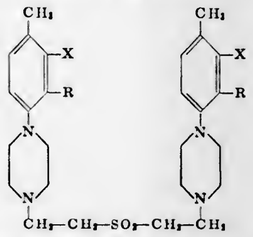
No Drawing. Filed Apr. 4, 1963, Ser. No. 270,546
13 Claims. (Cl. 167—53)

1. A compound selected from the group consisting of compounds of the formula



wherein X is halogen and R is selected from the group consisting of hydrogen and methyl, and the acid addition salts thereof with pharmaceutically acceptable acids.

6. The method of treating schistosomiasis which comprises administering to a parasitized host a therapeutically effective amount of a compound selected from the group consisting of compounds of the formula



wherein halogen and R is selected from the group consisting of hydrogen and methyl, and the acid addition salts thereof with pharmaceutically acceptable acids.

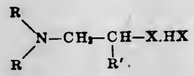
3,203,859

NEMATOCIDAL COMPOSITIONS AND METHOD

Kathel B. Kerr, Charles City, Iowa, assignor to Dr. Salsbury's Laboratories, a corporation of Iowa

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,122
9 Claims. (Cl. 167—53)

9. In the practice of controlling nematode infections in animals which comprises orally administering to animals afflicted with said infections and effective amount of a compound having the formula



in which R is a member selected from the group consisting of methyl, ethyl, isopropyl, and butyl, R′ is selected from the group of hydrogen and lower alkyl, and X is selected from the group of chlorine and bromine.

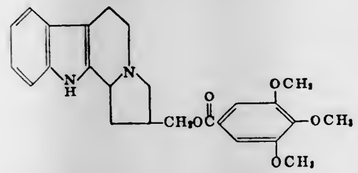
3,203,860

1,2,3,5,6,11b - HEXAHYDROINDOLO[3,2 - g]INDOLIZINYL-2-METHYL 3,4,5 - TRIMETHOXYBENZOATE AND SALTS THEREOF

Yao Hua Wu and Harold J. Rhodes, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

No Drawing. Filed Mar. 21, 1963, Ser. No. 266,802
8 Claims. (Cl. 167—55)

1. A compound selected from the group consisting of substances of the formula



and the pharmaceutically acceptable acid addition salts thereof.

5. A pharmaceutical composition in dosage unit form comprising from 10 mg. to 100 mg. of a compound as claimed in claim 1 and a pharmaceutical carrier therefor.

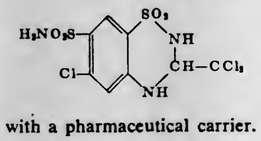
3,203,861

COMPOSITIONS HAVING HIGH DIURETIC ACTION AND A HIGH RATIO OF ELIMINATION OF SODIUM WITH RESPECT TO POTASSIUM

Charles Riviere, Neuilly-sur-Seine, France, assignor to Le Progress Scientifique, Paris, France, a French society

No Drawing. Filed Mar. 10, 1961, Ser. No. 94,939
2 Claims. (Cl. 167—65)

1. A pharmaceutical composition for the treatment of edematous conditions and for enhancing the rate of excretion of sodium ions while maintaining the rate of excretion of potassium ions, said composition comprising 0.025 to 0.200 gram of the potassium salt of 3-trichloromethyl-6-chloro - 7 - sulphonamido - 3,4 - dihydrobenzo-1,2,4-thiadiazine-1,1-dioxide of the formula



in admixture with a pharmaceutical carrier.

3,203,862

ORAL ANTI-HYPERCHOLESTEROL COMPOSITION

John Harris Jones, 3701-B W. Van Buren, Bellwood, Ill.

No Drawing. Filed Mar. 11, 1960, Ser. No. 14,181
2 Claims. (Cl. 167—65)

1. An anhydrous pharmaceutical composition for oral administration comprising about 9 parts of anhydrous unsaturated, edible vegetable oil and about 1 part of anhydrous phosphatides dissolved in the composition and in which the phosphatides cannot be removed by filtration.

3,203,863

PROCESS FOR PRODUCING PROTOANEMONIN PREPARATION

Akira Sakuma, Kamakura-shi, Kanagawa-ken, and Shiro Hirano, Tokyo, Japan, assignors to Lion Hamigaki Kabushiki Kaisha, Tokyo, Japan

No Drawing. Filed Jan. 22, 1963, Ser. No. 253,153
Claims priority, application Japan, Feb. 5, 1962, 37/4,351
2 Claims. (Cl. 167—65)

1. A process for preparing stabilized aqueous protoanemonin solution which comprises reacting ranunculin with a basic agent in the presence of water and in the presence of a solid buffer selected from the group consisting of primary potassium phosphate, primary sodium sulfate, crystals of crotonic acid, acetoacrylic acid, senecioic acid, sorbic acid, palmitic acid, stearic acid, dehydroacetic acid, lauroyl sarcosin, phthalic acid and salicylic acid.

3,203,864

ADRENOCORTICOTROPHIC PREPARATION AND METHOD OF MAKING SAME

Henry H. Freedman, Princeton, N.J., assignor to Princeton Laboratories, Inc., Princeton, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 1, 1961, Ser. No. 135,430
19 Claims. (Cl. 167—74)

1. The method of potentiating the available adrenocorticotrophic activity of an adrenocorticotrophin, which comprises heating directly together a reaction mixture wherein the reactants consist essentially of (a) the adrenocorticotrophin and (b) a glucide member of the class consisting of (i) a monosaccharide aldose having a chain of from four to seven carbon atoms and (ii) a uronic acid hexose at an elevated temperature sufficient to produce the amount of the adrenocorticotrophic derivative available under the reaction conditions from the respective quantities of the reactants (a) and (b) and below that which is detrimental to any of the reactants (a) and (b) and the adrenocorticotrophin derivative produced as their reaction product, said heating being performed in an inert liquid medium having some solvent action on the reactants (a) and (b) and being a solvent for said reaction product under the reaction conditions; said heating continuing for a time sufficient to produce the amount of said adrenocorticotrophin derivative available under the reaction conditions from the respective quantities of the reactants (a) and (b) used; and separating the resulting adrenocorticotrophin derivative so produced; said derivative manifesting significantly enhanced adrenocorticotrophin activity over that available from the same quantity of original adrenocorticotrophin used to produce the derivative.

3,203,865

HOG SERUM ANTIBODY CONCENTRATE

Alexander Koehler and William H. Dazey, Lebanon, Ind., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

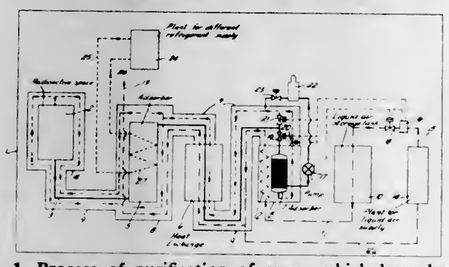
No Drawing. Filed Nov. 30, 1962, Ser. No. 241,152
7 Claims. (Cl. 167—80)

1. In a method for the production of a hog antibody concentrate wherein a protein fraction comprising said antibodies is precipitated from clarified hog serum by the action of ammonium sulfate, the improvement which comprises redispersing the precipitated antibody fraction in an aqueous medium by dialyzing against an aqueous 0.85 percent sodium chloride solution.

3,203,866
PROCESS AND MEANS FOR REMOVING RADIOACTIVE COMPONENTS FROM GASES AND GASEOUS MIXTURES

Wilhelm Lehmer and Wolfgang Baldus, Munich, and Walter Stich, Nurnberg, Germany, assignors to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft, Munich, Germany, a German company

Filed Nov. 27, 1959, Ser. No. 855,653
Claims priority, application Germany, Dec. 2, 1958, G 25,851, G 25,853, G 25,855
8 Claims. (Cl. 176—37)

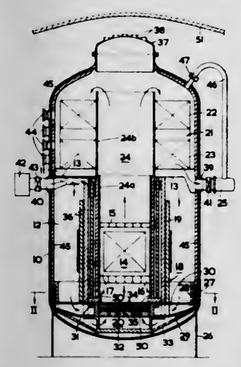


1. Process of purification of gases, which have been contaminated wtih radioactive substances, while being used as cooling or protecting gases for spaces contaminated with radioactive substances, by means of a purifying plant including at least one sorption device, which comprises passing the contaminated gas through said purifying plant thereby freeing the gas from radioactive substances, forming a buffer of protective gas about at least a part of said purifying plant by leading said gas freed from radioactive substances through an encasement about at least said part of said purifying plant containing radioactively contaminated gas, and then returning said gas freed from radioactive substances to said radioactively contaminated space for further use as cooling or protecting gas for said space contaminated with radioactive substances.

3,203,867
ORGANIC LIQUID MODERATED AND COOLED NUCLEAR REACTORS

Ronald Peter Williams and Peter Neil Munn, Culcheth, Warrington, England, and Thomas R. Duncan, Thurso, Caithness, Scotland, assignors to United Kingdom Atomic Energy Authority, London, England

Filed June 26, 1961, Ser. No. 119,401
4 Claims. (Cl. 176—61)



1. A nuclear reactor comprising an upright pressure vessel of a generally cylindrical form; an upright tubular barrier extending from the lower end of the pressure vessel to the upper end of the pressure vessel and defining with the side wall of the pressure vessel an annular space; a core structure disposed in the tubular barrier in the lower region of the pressure vessel; an annular baffle in the annular space between the pressure vessel and the tubular barrier dividing the annular space into an upper region and a lower region; a heat exchanger disposed in the upper region of the annular space; space layers of ferrous-based material enclosing the sides and bottom of the core structure, the layers being disposed transverse to paths of neutrons from the reactor core and defining with each other and the wall of the pressure vessel a plurality of flow paths within the lower region of the annular space; means defining flow path apertures in the layers of ferrous-based material for fluid communication with the flow paths; a mass of liquid functioning as a moderator and core coolant filling the pressure vessel; and pump means including means for introducing the liquid into the upper portion of said lower region and causing the liquid to flow downwardly to the lower region of the annular space and the flow paths in the spaces between the layers of ferrous-based material, through the apertures to the core structure, upwards through the core structure and along the interior of the tubular barrier to the upper part of the pressure vessel and to return in counterflow through the upper region of the annular space and said heat exchanger.

3,203,868
METHOD FOR PREPARING TANNABLE DEPILATED HIDES

Otto Grimm, Darmstadt, Germany, assignor to Röhm & Haas G.m.b.H., Darmstadt, Germany

No Drawing. Filed Oct. 16, 1962, Ser. No. 231,040
Claims priority, application Germany, Apr. 6, 1962, R 32,434
2 Claims. (Cl. 195—6)

1. A method for preparing tannable depilated hides which comprises treating animal hides with a proteolytic enzyme selected from the group consisting of bacterial enzymes and mold enzymes at a pH of from 5.5 to 10 in the presence of a carbohydrase selected from the group consisting of bacterial oligases and mold oligases, removing hair from said hides, and then directly treating the dehaired hides, without alkaline after-liming, with a proteolytic enzyme at a pH of from 3 to 5.5, said enzyme being selected from the group consisting of bacterial enzymes and mold enzymes.

3,203,869
11α - HYDROXYLATION OF 6-SUBSTITUTED-11-DESOXY STEROIDS WITH MICROORGANISMS OF THE GENUS FUSARIUM, LISEOLA SECTION

Carlos Casas-Campillo, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed June 17, 1963, Ser. No. 288,495
Claims priority, application Mexico, Oct. 11, 1962, 69,298
10 Claims. (Cl. 195—51)

1. A process for the conversion of an 11-desoxy steroid which is substituted at the 6-position with a member selected from the group consisting of a lower alkyl group and a halogen to the corresponding 11α-hydroxy steroid which comprises subjecting said 11-desoxy steroid to the oxygenating action of a microorganism of the genus Fusarium, Liseola Section.

3,203,870
MICROORGANISM SAMPLING DEVICE

John Philip Andelin, Los Angeles, Calif., assignor to B-D Laboratories, Inc., East Rutherford, N.J., a corporation of Delaware

Filed July 23, 1962, Ser. No. 211,745
2 Claims. (Cl. 195—139)

1. A microorganism sampling device for testing a surface for the presence of microorganisms comprising a culture dish having a base plate formed with an upstanding wall extending continuously therearound adjacent the periphery thereof to provide a receptacle for culture medium and having cover supporting channel means surrounding and projecting outwardly from the upstanding wall, a relatively stiff self-supporting culture medium disposed in the receptacle of said dish and projecting to a level above said upstanding wall, and a cover member formed with a top plate and a continuous depending side

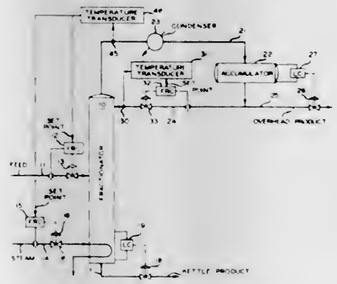


wall, said side wall being so constructed and arranged with respect to the culture dish such that it has a size and configuration to surround and overlap the upstanding wall on the culture dish and rest in the supporting channel when the cover member is assembled with the culture dish, the said depending side wall of the cover member being of a greater height than the upstanding wall of the culture dish so that the top plate of the cover member bridges over and is spaced above the upstanding wall and the culture medium.

3,203,871
PROCESS CONTROL FOR FRACTIONATION COLUMN

Merlin O. Clark and William B. Wyatt, Jr., Borger, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 3, 1960, Ser. No. 60,085
3 Claims. (Cl. 202—40)

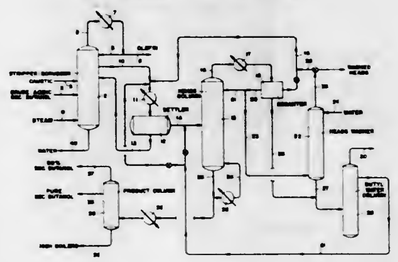


1. A fractionation system comprising a fractionation column, first conduit means communicating with said column to introduce a feed mixture, second conduit means communicating with a lower region of said column to withdraw a kettle product, an accumulator, a condenser, third conduit means communicating between an upper region of said column and said accumulator through said condenser, fourth conduit means communicating with said accumulator to remove an overhead product, fifth conduit means communicating between said accumulator and an upper region of said column to return liquid to said column as external reflux, first temperature sensing means disposed in said fifth conduit means adjacent said column, second temperature sensing means disposed in said third conduit means adjacent said column, means responsive to said first temperature sensing means to control the rate of flow through said fifth conduit means, and means responsive to said second temperature sensing means to control the rate of flow through said first conduit means.

3,203,872
SECONDARY BUTANOL PURIFICATION PROCESS

George P. Baumann, Sparta, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed June 23, 1961, Ser. No. 119,212
3 Claims. (Cl. 202—40)



1. In a continuous process for purifying a crude acidic secondary butyl alcohol mixture containing alcohol soluble impurities lower boiling than said secondary butyl alcohol, which comprises continuously introducing a stream of crude acidic secondary butyl alcohol into a stripper-scrubber, treating said crude acidic secondary butyl alcohol with caustic and said stripper-scrubber to remove the last trace of any acid and any hydrocarbon in the crude alcohol, withdrawing a crude secondary butyl alcohol liquid side stream from said stripper-scrubber, cooling and passing said side stream to a settler wherein it is separated into an upper alcohol phase containing said lower boiling impurities and a lower aqueous phase, continuously withdrawing the upper alcohol phase from said settler and introducing it into a heads column wherein vapors of the lower boiling impurities and water contained in said upper alcohol phase are taken overhead as an azeotrope, condensing and separating said azeotropic vapor from said heads column into an upper heads liquid layer comprising said lower boiling impurities and a lower aqueous liquid layer, passing a first portion of said heads liquid from said upper layer to the heads column as reflux, and washing a second portion of said heads liquid from said upper layer with water, withdrawing a liquid stream comprising secondary butanol contaminated with higher boiling impurities as bottoms from said heads column, introducing the bottoms stream into a distillation column wherein essentially pure secondary butanol is taken off overhead and as a side stream, and higher boiling impurities are removed as liquid from the bottom, the improvement which comprises continuously admixing a third portion of the heads liquid from said upper layer with the stripper-scrubber side stream.

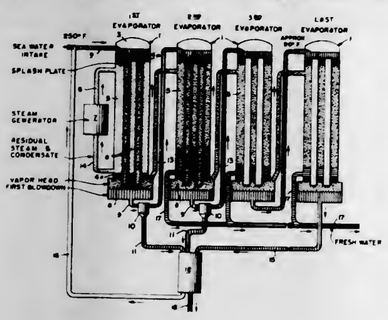
3,203,873
PROCESS FOR SCALE PREVENTION IN SALINE WATER EVAPORATOR

Louis F. Wirth, Jr., Western Springs, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

Filed Mar. 15, 1962, Ser. No. 179,922
5 Claims. (Cl. 202—45)

1. A continuous process for preventing the deposit of scale on the surfaces of the heat-exchangers of a multiple effect distillation unit which comprises: passing a cation-exchange material into the first effect of said distillation unit along with a saline water influent which in addition to sodium ions contains ions selected from the group consisting of calcium and magnesium ions; continuously removing said cation-exchange material and the nonvaporized fraction of said influent from said effect; separating said cation-exchange material from

said nonvaporized fraction; passing said nonvaporized fraction to the second and subsequent effects of said distillation unit; contacting said cation-exchange material with the nonvaporized fraction leaving the last effect of

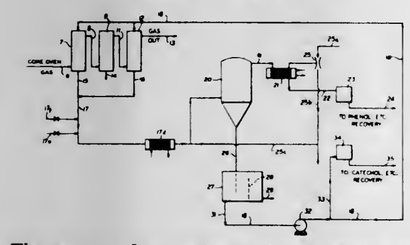


said distillation unit, whereby said cation-exchange material is regenerated; and returning said cation-exchange material to the first effect of said distillation unit along with additional influent.

3,203,874
RECOVERY OF VALUES FROM COKE OVEN LIKE GASES

Robert L. Somerville, R.R. 1, Box 256, Neshanic Station, N.J.

Filed July 6, 1962, Ser. No. 208,143
13 Claims. (Cl. 202—52)



1. The process of recovering a phenol fraction and a dihydroxybenzene fraction from coke oven gas which comprises:

(a) contacting hot coke oven gas containing a phenol fraction and a dihydroxybenzene fraction with water in a scrubbing zone to form a warm aqueous liquor containing said fractions,

(b) withdrawing the warm liquor from the scrubbing zone,

(c) introducing the liquor while warm into a vacuum distillation zone to separate therefrom the phenol fraction, as a vapor phase whereby heat from the coke oven gas imparted to the liquor in the scrubbing zone is utilized for the distillation in the vacuum distillation zone,

(d) and separating from the liquor a portion thereot as the dihydroxybenzene fraction,

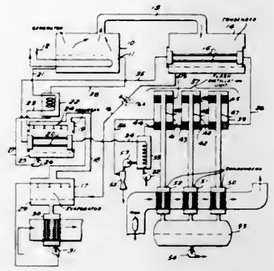
(e) returning the liquor to the scrubbing zone.

3,203,875
APPARATUS FOR DISTILLING WATER WITH WASTE HEAT

Harold V. Sturtevant, 173 Northwood Ave., North Plainfield, N.J.

Filed Aug. 20, 1962, Ser. No. 218,001
4 Claims. (Cl. 202—173)

1. In apparatus for the distillation of water, the combination comprising a closed generator containing a concentrated solution of refrigerant, means for heating said refrigerant disposed within said generator, a condenser, means effecting refrigerant vapor communication between said generator and said condenser, an evaporator, means establishing fluid flow communication between said condenser and said evaporator, first heat exchanger means disposed within said evaporator for lowering the temperature of a fluid medium to be cooled, an absorber containing a concentrated solution of cooled absorbent refrigerant, closed passage means interposed between said generator and said absorber, said passage means including a second heat exchanger means for cooling the concentrated solution of absorbent refrigerant received from said generator and being passed to said absorber, piping means for creating refrigerant vapor flow from the evaporator to the absorber, closed passage means for returning the diluted solution of absorbent refrigerant formed at the



bottom of the absorber to the generator, said last mentioned passage means including coil means for said second heat exchanger means, pumping means for circulating said water to be distilled, a third heat exchanger through which said water initially passes, a first cooling coil disposed within said absorber, a second cooling coil disposed within said condenser; a closed circuit interconnecting said third heat exchanger means, said first cooling coil and said second cooling coil for the flow of said water to be distilled; a flash distillation unit comprising an evaporating tank, means interconnecting said second cooling coil with said evaporating tank, an eductor in communication with said tank for maintaining a below atmospheric pressure therein, a final condenser operatively connected to said tank for condensing the water vapor formed in said evaporation tank, and means for collecting the condensate of the distilled water so formed.

3,203,876
PROCESS FOR PREPARING CHROMIUM FILM PRODUCTS

Alden J. Deyrup, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Original application Aug. 9, 1961, Ser. No. 130,317. Divided and this application Aug. 11, 1964, Ser. No. 388,755
5 Claims. (Cl. 204—13)

2. The process which comprises electroplating a metal taken from the group consisting of nickel, copper and iron to a thickness of about 3 to 60 micro-inches on a smooth chromium-containing metal base surface, electroplating chromium, from a chromium salt taken from the class consisting of divalent and trivalent chromium salts, to a thickness of ½ to 100 micro-inches on said metal plate, and removing said two electroplated films from said chromium-containing metal base with a self-sustaining adhesive film adhered to said chromium plate, and dissolving from the surface of said metal-chromium-adhesive film the outer metal surface plate.

3,203,877
ELECTROLYTIC NICKEL PLATING BATH

Louis Facquet, Vaucresson, Jacques Daboval, Clichy, and Guy Chauvin, Fontenay-aux-Roses, France, assignors to Commissariat a l'Energie Atomique, Paris, France

No Drawing. Filed Feb. 16, 1961, Ser. No. 89,629
Claims priority, application France, Mar. 22, 1960, 822,062
6 Claims. (Cl. 204—49)

1. A boron and carbon free electrolytic nickel plating bath for pit free nickel plating of uranium bars for use in nuclear reactors consisting of an aqueous solution of approximately 280 grams per liter of water soluble nickel salt and an aluminum alum at a concentration from 15 grams per liter to 460 grams per liter, said nickel plating bath having a pH of from 3 to 3.5, a temperature between 40° C. and 60° C. and a current density from 1–10 a./dm.^{2}.

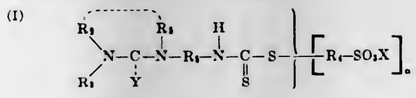
3,203,878
ACID METAL ELECTROPLATING BATH CONTAINING AN ORGANIC SULFONIC ACID-THIOUREA-DITHIOCARBAMIC ACID REACTION PRODUCT

Wolf-Dieter Willmund, Dusseldorf-Holthausen, and Gregor Michael and Alfred Kirstahler, Dusseldorf, Germany, assignors to Dehydag, Deutsche Hydriewerke G.m.b.H., Dusseldorf, Germany, a corporation of Germany

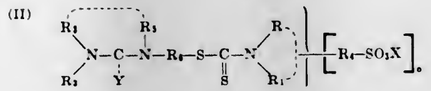
No Drawing. Filed Feb. 1, 1962, Ser. No. 170,522
Claims priority, application Germany, Feb. 2, 1961, D 35,328
34 Claims. (Cl. 204—52)

18. An electroplating bath for producing bright, smooth electrodeposits of metals capable of being electrodeposited selected from the group consisting of copper, zinc, lead, tin and cadmium comprising an aqueous solution of an inorganic salt of the metal to be deposited and an additive compound having a structural formula selected from the group consisting of:

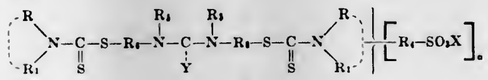
(I)



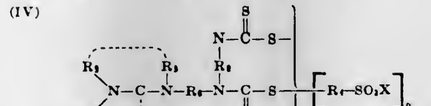
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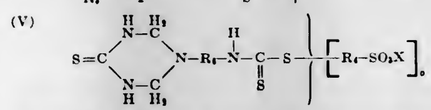
(III)



(IV)



(V)



wherein R and R_1 are selected from the group consisting of hydrogen, aliphatic, cycloaliphatic and taken together, heterocyclic radicals wherein R may be a free valence; R_2 and R_3 are selected from the group consisting of hydrogen, aliphatic, cycloaliphatic and aryl radicals; R_4 is a lower alkyl radical; R_5 is selected from the group consisting of hydrogen and aliphatic radicals wherein R_5 and R_2 may join to form a heterocyclic ring; R_6 is selected from the group consisting of aliphatic, dialkylamino, cycloaliphatic and heterocyclic radicals; Y is a member selected from the group consisting of =S and —S—R_4—SO_3X_n; X is selected from the group consisting of hydrogen and cations; and n is a number at least 1; said R_4 radical being joined to an atom selected from the group consisting of nitrogen and sulfur atoms having free valences; said additive compound being present in sufficient amount to effect said brightening and smoothing.

3,203,879
METHOD FOR PREPARING POSITIVE ELECTRODES

Gustav A. Mueller, St. Paul, Minn., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 17, 1961, Ser. No. 83,146
3 Claims. (Cl. 204—56)

1. A method of preparing a positive electrode for use in nickel-cadmium galvanic cells which comprises the steps of preparing a plating bath of molten nickel nitrate hydrate, immersing in said bath a sintered nickel plaque and at least one sheet of material chosen from the group consisting of nickel and nickel alloys, passing a current through said bath utilizing said sheet as an anode and said plaque as a cathode, and at the same time adding sufficient quantities of nitric acid to said bath to maintain the pH thereof in the range of from 0 to 1.5, thereby causing the formation of an active nickel material in the pores of said plaque, said plaque then being suitable for use as the positive electrode of a nickel-cadmium galvanic cell.

3,203,880
ELECTROLYTIC PRODUCTION OF TITANIUM TETRAHALIDES

Robert William Ancrum, Paris, France, and Arthur Wallace Evans, Nunthorpe, Middlesbrough, England, assignors to British Titan Products Company Limited, Billingham, England, a British company

No Drawing. Filed Dec. 4, 1957, Ser. No. 700,556
Claims priority, application Great Britain, July 16, 1952, 17,971/52
23 Claims. (Cl. 204—61)

1. A process for producing a volatile titanium tetrahalide which comprises electrolyzing a fused bath of at least one member of the group consisting of alkali metal halides and alkaline earth metal halides, said bath being substantially inert to elemental halogen, with an anode comprising a titanium compound which reacts with halogen to form titanium tetrahalide vapor at a temperature of 700 to 1400° C. while maintaining the temperature of the bath at between 700 to 1400° C., preventing metal evolved at the cathode from contacting the product evolved at the anode and thereby producing the titanium tetrahalide vapor, and removing the vapor from the bath.

3,203,881
PRODUCTION OF METALLIC HALIDES

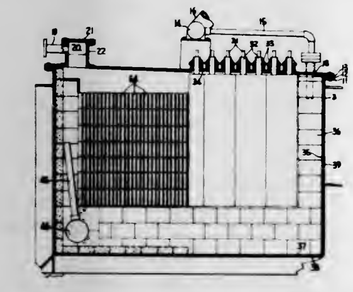
Robert William Ancrum, Saint-Germain-en-Laye, Paris, France, and Arthur Wallace Evans, Nunthorpe, Middlesbrough, England, assignors to British Titan Products Company Limited, Billingham, County Durham, England, a corporation of the United Kingdom

Filed Jan. 15, 1958, Ser. No. 709,155
Claims priority, application Great Britain, July 16, 1952, 17,971/52; Nov. 27, 1957, 37,034/57
7 Claims. (Cl. 204—61)

6. A process for producing a volatile halide of a tetravalent metal from the group consisting of silicon and zirconium which comprises electrolyzing a fused bath of at least one member of the group consisting of alkali metal halide and alkaline earth metal halide, said bath being substantially inert to said metal halide, with an anode comprising a mixture of carbon and an oxide of a tetravalent metal of the group consisting of silicon and zirconium, contacting halogen liberated from the

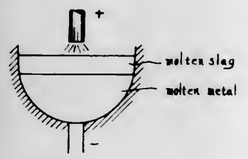
bath pursuant to the electrolysis with said tetravalent metal oxide while maintaining temperature of the bath at between 700° C. to 1400° C. and thereby producing volatile metal halide, and vaporizing and removing metal halide from the bath while preventing the metal evolved at the cathode from the contacting the evolved metal halide vapor.

3,203,882
METHOD OF OPERATING AN ALKALI CHLORATE CELL
Sydney Forbes, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 30, 1962, Ser. No. 183,974
5 Claims. (Cl. 204—95)



1. In a method of preparing alkali metal chlorates by electrolysis of aqueous alkali metal chloride solutions in an electrolytic cell having a bottom, side walls and a cover the improvement comprising maintaining the cell during electrolysis sufficient brine to maintain brine in contact with the cell cover, collecting gaseous products resulting from said electrolysis on said cover and transporting them to a gas collection zone of reduced cross sectional area in relation to the cross sectional area of said cell and recovering said gaseous products from said gas collection zone.

3,203,883
METHOD OF REFINING MOLTEN METALS BY ELECTROLYZING MOLTEN SLAG UNDER ARC DISCHARGE
Tohei Ototani, Masutaru Maruyama, Jiro Matsumoto, and Sumio Izumi, Sendai, Japan, assignors to The Research Institute for Iron, Steel and Other Metals of the Tohoku University, Sendai, Japan
Filed Mar. 6, 1962, Ser. No. 177,884
Claims priority, application Japan, July 1, 1961, 36/23,380
2 Claims. (Cl. 204—140)



2. A method of arc discharge electrolytic refining of a molten metal, wherein said metal is selected from the group consisting of steel, cast iron, ferro-alloys, and copper, which comprises covering said metal to be refined with a molten calcium silicate slag containing a compound selected from the group consisting of compounds of alkali metals, alkaline earth metals, iron and aluminum as an electrolyte, above the surface of said slag suspending an anode and applying a D.C. voltage between said anode and said metal to be refined at ambient pressure to electrolyze the molten slag by arc discharge and to effect electrochemical deoxidation and desulphurization refining.

3,203,884
BATH AND METHOD FOR ANODIC BRIGHTENING OF METALS
Heinz Grüss, Berlin-Wannsee, Willi Gilliwald, Nurnberg, Artur Kutzelnigg, Erlangen, and Hans Lauh, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a German corporation
No Drawing. Filed Nov. 18, 1960, Ser. No. 70,142
Claims priority, application Germany, Nov. 20, 1959, S 65,896
3 Claims. (Cl. 204—140.5)

1. Bath for anodic brightening of metals and alloys, particularly carbon steel, consisting of water-containing phosphoric acid and an addition of fluoboric acid in an amount of 1 to 200 grams per liter, the water content of the bath being 50 to 250 grams per liter.

3,203,885
OXIDIZED STARCH PRODUCT AND METHOD OF MAKING THE SAME
Alfred F. Meiners and Francis V. Morriss, Kansas City, Mo., assignors to Department of Agriculture and Inspection of the State of Nebraska, Lincoln, Nebr.
No Drawing. Filed Jan. 15, 1962, Ser. No. 166,364
7 Claims. (Cl. 204—158)

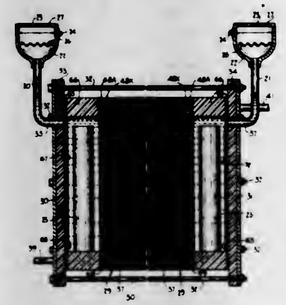
1. The method of making a high carbonyl content starch which comprises treating an aqueous starch suspension with dissolved chlorine at a pH not in excess of seven while irradiating the same with actinic light and at a temperature not in excess of about 60° C. until the carbonyl content of said starch is substantially increased, and recovering the product so produced.

3,203,886
PHOTODIMERIZATION OF MALEIC ANHYDRIDE
Gary Walter Griffin, New Orleans, La., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Original application Jan. 9, 1961, Ser. No. 81,224, now Patent No. 3,139,395, dated June 30, 1964. Divided and this application Mar. 12, 1964, Ser. No. 351,562
1 Claim. (Cl. 204—158)

A process for the preparation of the dianhydride of cis, trans, cis-1,2,3,4-cyclobutanetetracarboxylic acid comprising dimerizing by subjecting a solid state layer of maleic anhydride directly to light having a wave length between about 1750 A. and 4000 A.

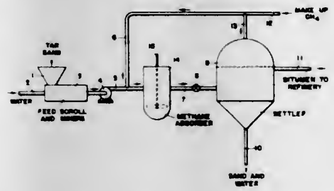
3,203,887
FLUID TREATMENT
William Kwo-Wei Chen and Milton Sheldon Mintz, Stamford, Conn., assignors to The American Machine and Foundry Company, a corporation of New Jersey
Filed July 20, 1960, Ser. No. 44,117
1 Claim. (Cl. 204—180)

The process of dispensing anions into the concentrating stream of an electrodialysis stack comprising the steps of:
(a) maintaining in a cathode compartment a solid material, comprising acid anions selected from solid acids and acid salts, in substantial equilibrium with a saturated aqueous solution of said solid material and
(b) diffusing said anions under electrical potential through an anion selective permeable membrane into an adjacent concentrating stream in an electrodialysis



stack, whereby said solid material is depleted in the operation of said stack.

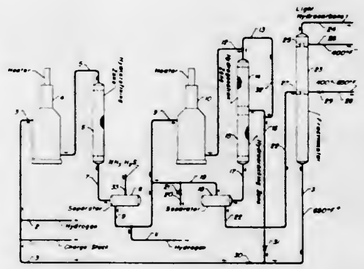
3,203,888
TREATING ATHABASKA SANDS UTILIZING A FLOTATION GAS
Roger M. Butler and John L. Tiedje, Sarnia, Ontario, and John A. Bichard, Point Edward, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Apr. 24, 1961, Ser. No. 105,135
9 Claims. (Cl. 208—11)



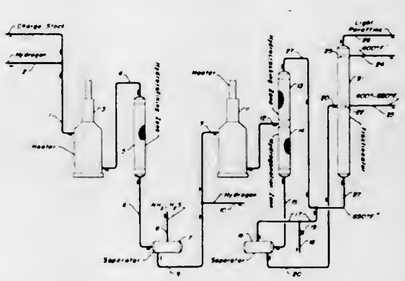
1. In a process for the removal of bitumen from tar sands wherein a liquid is mixed with natural tar sands and the bitumen later recovered by a flotation technique, the improvement which comprises adding to the mixture of liquid and tar sands a hydrocarbon gas wherein said gas is added in an initial stage at an elevated pressure, the mixture agitated at said elevated pressure and then introduced into a second settling stage maintained at a lower pressure.

3,203,889
CATALYTIC HYDROCRACKING PROCESS WITH THE PRELIMINARY HYDROGENATION OF THE AROMATIC CONTAINING FEED OIL
Ernest L. Pollitzer and Vladimir Haensel, Hinsdale, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Nov. 1, 1962, Ser. No. 234,703
14 Claims. (Cl. 208—57)

1. A process for converting hydrocarbonaceous material containing aromatic compounds into lower-boiling hydrocarbon products which comprises reacting said hydrocarbonaceous material with hydrogen in contact with a nonacidic hydrogenation catalyst, at hydrogenation conditions including a temperature of at least about 300° F., selected to provide a maximum catalyst temperature less than about 650° F. and to hydrogenate aromatic compounds without substantial hydrocracking of said hydrocarbonaceous material; thereafter reacting the total hydrogenated, substantially aromatic-free hydrocarbonaceous effluent from the first-mentioned step with hydrogen at hydrocracking conditions including a temperature within the range of from about 400° F. to about 950° F., and in contact with an acidic hydrocracking catalyst; the process being further characterized in that said hydrogenation catalyst comprises a platinum-group metallic component, a non-siliceous inorganic oxide and at least one metallic component from the group consisting of alkali metals and alkaline-earth metals, and said hydrocracking catalyst comprises at least one metallic component from the group consisting of the metals of Groups VI-A and VIII of the Periodic Table, and compounds thereof.



3,203,890
CATALYTIC HYDROCRACKING PROCESS WITH HYDROGENATION OF THE HYDROCRACKED PRODUCTS
Vladimir Haensel, Hinsdale, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Nov. 1, 1962, Ser. No. 234,683
13 Claims. (Cl. 208—58)



5. A process for converting an aromatic-containing hydrocarbonaceous charge stock into lower-boiling hydrocarbon products which comprises the steps of:
(a) commingling said charge stock with a previously hydrocracked product and hydrogen, reacting said charge stock in contact with a non-siliceous hydrogenation catalyst containing at least one metallic component from the platinum-group of the Periodic Table, and at hydrogenation conditions including a temperature from about 350° F. to about 650° F. and a liquid hourly space velocity of from about 1.0 to about 15.0 correlated to hydrogenate aromatic compounds without effecting a substantial degree of hydrocracking;
(b) separating the resulting substantially aromatic-free hydrogenated product effluent to provide a hydrogen-rich gaseous phase and a normally liquid hydrocarbon fraction having an initial boiling point of at least about 400 F.;
(c) commingling said gaseous phase and said hydro-

carbon fraction and reacting the same in contact with an alumina-silica hydrocracking catalyst containing at least one metallic component from the metals and compounds of Group VIII of the Periodic Table, and at hydrocracking conditions including a temperature within the range of from about 200° F. to about 800° F.; and

(d) commingling the total effluent from the hydrocracking step with said aromatic-containing charge stock as said previously hydrocracked product.

3,203,891

HYDROCARBON PURIFICATION PROCESS AND CATALYST THEREFOR

Donald L. Holden, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 15, 1963, Ser. No. 265,341
5 Claims. (Cl. 208—216)

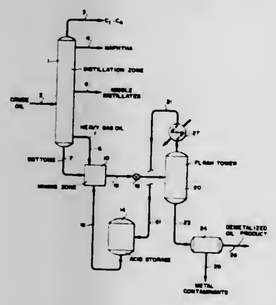
1. A process for the purification of hydrocarbons contaminated with sulfurous and nitrogenous compounds which comprises contacting the contaminated hydrocarbons in a hydrorefining reaction zone with a composite of gibbsite alumina, alumina-silica cracking catalyst containing 65% to about 90% by weight of silica and at least one metallic component selected from the metals of Groups VI–A and VIII of the Periodic Table and compounds thereof at a liquid hourly spaced velocity of from about 1.0 to about 20.0 under a hydrogen pressure of from about 100 to about 1000 pounds per square inch gauge and at an inlet temperature to said zone within the range of about 200° F. to about 750° F., removing a mixture of normally liquid hydrocarbons and normally gaseous material containing hydrogen sulfide and ammonia from said hydrorefining reaction zone and thereafter separating said normally gaseous material from said mixture to recover said normally liquid hydrocarbons substantially free from sulfurous and nitrogenous compounds.

3,203,892

DEMETALLIZATION WITH HYDROFLUORIC ACID

Charles Newton Kimberlin, Jr., Henry George Ellert, Clark Edward Adams, and Glen Porter Hamner, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Apr. 19, 1963, Ser. No. 274,236
18 Claims. (Cl. 208—252)



1. An improved process for the selective removal of metallic contaminants from a petroleum oil having constituents boiling above about 950° F. which comprises contacting said oil with concentrated HF, precipitating said metallic contaminants as an insoluble mass, and separating said HF from said precipitated metallic contaminants and said treated oil prior to withdrawing oil.

3,203,893

REMOVAL FROM SEWAGE OF SURFACTANTS RESISTANT TO BIODEGRADATION

Ralph House, San Pablo, Samuel H. Sharman, Berkeley, and Demetrios Kyriacou, San Pablo, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Oct. 19, 1962, Ser. No. 231,040
4 Claims. (Cl. 210—3)

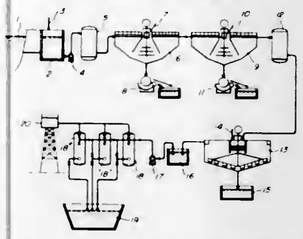
1. A method of removing surfactants which are resistant to biodegradation from sewage which comprises treating the sewage in an aeration tank with activated sludge, transferring the treated sewage to a sedimentation tank and allowing the solids to settle, transferring the supernatant liquid as effluent from the sedimentation tank to a foam-fractionating vessel, rapidly passing gas through said sedimentation tank effluent in said vessel for a period of time in the range of about 10 minutes to 24 hours producing foam in an upper portion of said vessel, returning the foam from the upper portion of the vessel to said aeration tank and collecting water having not more than about 1 p.p.m. of resistant surfactant from a lower portion of said foam-fractionating vessel.

3,203,894

METHOD FOR THE CONVERSION OF SEA WATER INTO FRESH WATER

Shigetoh Ikuno, 3571 Tateishi-cho, Ikeda, Osaka, Japan

Filed July 11, 1962, Ser. No. 209,058
1 Claim. (Cl. 210—53)



In the treatment of sea water by adding thereto calcium hydroxide to precipitate magnesium hydroxide, calcium sulfate and calcium carbonate, and simultaneously adding aluminum sulfate to promote the formation and precipitation of the hydroxide and sulfate, an improvement which comprises removing the precipitates, adding to the supernatant thus obtained a reagent selected from the group consisting of ammonium bicarbonate and a combination of ammonia and carbon dioxide to produce sodium bicarbonate and ammonium chloride, filtering off said sodium bicarbonate, and then treating the filtrate containing said ammonium chloride with activated carbon.

3,203,895

LUBRICATING OILS CONTAINING AMINE SALTS OF PHOSPHATES

Edwin J. Latos, Chicago, and Anthony J. Guarnaccio, Niles, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 22, 1962, Ser. No. 181,785
4 Claims. (Cl. 252—32.5)

1. Lubricating oil containing water and from about 0.01% to about 25% by weight of a mixture of (1) from about 5% to about 95% by weight of a salt of N-alkyl-1,3-diaminopropane having from about 8 to about 25 carbon atoms in the alkyl and polyoxyethylenated alkylphenol phosphate having from about 6 to about 15 carbon atoms in the alkyl and (2) from about 95% to about 5% by weight of a salt of N-alkyl-1,3-diaminopropane having from about 8 to about 25 carbon atoms in the alkyl and alkyl acid orthophosphate having at least one alkyl group of from about 5 to about 20 carbon atoms.

3,203,896

LUBRICATING COMPOSITION

Edwin J. Latos, Chicago, and Anthony J. Guarnaccio, Niles, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 28, 1962, Ser. No. 183,045
6 Claims. (Cl. 252—32.5)

1. Lubricating composition comprising a major proportion of lubricating oil and from about 0.01% to about 20% by weight of an additive mixture of (1) from about 5% to about 95% by weight of a salt of N-alkyl-1,3-diaminoalkane in which said alkyl contains at least 8 carbon atoms and dicarboxylic acid having at least 6 carbon atoms and (2) from about 5% to about 95% by weight of a salt of N-alkyl-diaminoalkane in which said alkyl contains at least 8 carbon atoms and alkyl acid phosphate in which at least 1 alkyl group contains at least 3 carbon atoms.

3,203,897

SODIUM SOAP GREASE CONTAINING A ZINC SALT OF A DIALKYL DITHIOPHOSPHATE

Henry A. Ambrose, Penn Township, Allegheny County, and Paul R. McCarthy, Allison Park, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Sept. 20, 1962, Ser. No. 225,130
3 Claims. (Cl. 252—32.7)

1. A grease composition having an improved performance life at a temperature above about 200° F. comprising a dispersion in about 50 to about 80 percent by weight of a lubricating oil base of about 15 to about 35 percent by weight of a sodium soap of a C_{18} fatty acid and about 5 to about 15 percent by weight of a zinc salt of a di-(C_6 to C_8 alkyl) dithiophosphoric acid, the weight ratio of the sodium soap to the zinc salt being between about 1:1 and about 4:1.

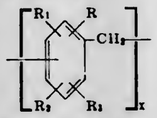
3,203,898

LUBRICATING COMPOSITIONS CONTAINING CONDENSATION POLYMERS OF CHLOROMETHYL AROMATICS

Edward E. Harris, Niagara Falls, N.Y., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Original application Feb. 8, 1960, Ser. No. 7,098, now Patent No. 3,105,054, dated Sept. 24, 1963. Divided and this application Mar. 22, 1962, Ser. No. 195,350
4 Claims. (Cl. 252—59)

1. A composition of matter comprising an oil of lubricating viscosity and 5 percent to 40 percent by weight, based on the weight of the composition, of a composition of matter having the formula:



wherein R and R_1 are each selected from the group consisting of hydrogen and alkyl of from 1 to 8 carbon atoms, R_2 is selected from the group consisting of aryl of from 6 to 7 inclusive carbon atoms and alkyl of from 1 to 8 carbon atoms, R_3 is selected from the group consisting of hydrogen and alkyl of from 1 to 8 carbon atoms.

3,203,899

MANUFACTURE OF MATERIALS CAPABLE OF AMPLIFYING WAVE ENERGY

Joseph V. Fisher, Ridge Road, R.D. 1, Valencia, Pa.

No Drawing. Filed Apr. 23, 1962, Ser. No. 189,302
4 Claims. (Cl. 252—62.5)

1. In the process for manufacturing single crystals of a material capable of amplifying wave energy by stimulated emission of radiation, the steps of mixing a fluoride host material with ammonium fluoride and about 0.005 to 3 mole percent of an element in compound form selected from the group consisting of the rare earths and transition elements, and heating said mixture to its melting point to permit the ammonium fluoride to combine with impurities and volatilize, leaving a pure mixture of the host material and an element selected from the rare earths and transition elements.

3,203,900

OPAQUE LIQUID DETERGENT COMPOSITIONS

Frank E. Carroll, Glen Rock, N.J., and Ralph R. Sepulveda, Bronx, N.Y., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Aug. 18, 1961, Ser. No. 132,289
2 Claims. (Cl. 252—110)

1. A stable opaque liquid detergent composition in the form of an aqueous solution consisting essentially of: (a) a water-soluble soap selected from the group consisting of sodium, potassium and ammonium salts of fatty acids having from 16 to 18 carbon atoms, (b) from about 5% to about 20% by weight of a complex inorganic polyphosphate selected from the group consisting of tetrapotassium pyrophosphate and pentapotassium tripolyphosphate, and (c) a synthetic nonionic detergent selected from the group consisting of lauric diethanolamide, lauric isopropanolamide, oleic diethanolamide, myristic diethanolamide, tallow diethanolamide and lauric monoethanolamide, the amount of soap and nonionic detergent taken together being from about 3.5% to about 14% weight of the total composition and the weight ratio of nonionic detergent to soap being from about 90:10 to about 20:80.

3,203,901

METHOD OF MANUFACTURING ZIRCONIUM-ALUMINUM ALLOY GETTERS

Paolo Della Porta, Via Gallarate 215, Milan, Italy

Filed Feb. 15, 1962, Ser. No. 173,503
3 Claims. (Cl. 252—181.6)

1. A method of producing a non-vaporizing getter comprising mixing and melting pulverulent zirconium and pulverulent aluminum and preparing a pulverulent alloy consisting of 72% by weight of zirconium and 28% by weight of aluminum, compressing said alloy into pellet form, mounting said pellet form in an enclosure, evacuating said enclosure, and subjecting said pellet form to heat at a temperature of 1000° C. for a period of thirty seconds for its activation.

3,203,902

RUBIDIUM - RARE EARTH TUNGSTATE AND MOLYBDATE OPTICAL MASER MATERIALS

Ralph R. Soden, Scotch Plains, and Le Grand G. Van Uitert, Morris Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 7, 1961, Ser. No. 129,791
7 Claims. (Cl. 252—301.5)

1. A composition of matter having the empirical formula $Rb_{0.5}A_{0.5-x}B_xC$, where A is selected from the group consisting of lutecium and yttrium, B is a trivalent rare earth ion selected from the group consisting of europium, terbium, and ytterbium, C is selected from the group consisting of WO_4 and MoO_4, and x has value of from 0.02 to 0.50.

3,203,903
PROCESS FOR PREPARING PHYSICALLY STRONG AEROGELS

Hendrik Van Olphen, Bellaire, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed June 27, 1960, Ser. No. 39,124
5 Claims. (Cl. 252—317)

1. A process for preparing physically stable, mechanically strong aerogel of colloidal clay comprising forming an aqueous gel of such colloidal clay uniformly admixed with an organic polymeric material having substantial solubility in the aqueous dispersion medium and subsequently replacing said aqueous dispersing medium with a gas under conditions which avoid substantial shrinkage of said gel and which produce a hard, chalk-like rigid aerogel.

3,203,904
CORROSION INHIBITION FOR FLOWING STEAM AND CONDENSATE LINES

James Kenneth Brown, Huntingdon Valley, Pa., assignor to Betz Laboratories, Inc., Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 24, 1962, Ser. No. 225,828
8 Claims. (Cl. 252—392)

1. A process of preventing corrosion in steam and condensate lines forming a flowing water system, which comprises maintaining in the flowing stream of such a water system as effectively the only corrosion inhibitor a dispersion of from 0.1 to 20 p.p.m. of a primary straight chain amine of 16 to 22 carbon atoms chain length condensed with 1 to 10 moles of ethylene oxide, the quantity of corrosion inhibitor being sufficient to form a protective film on the inside of said water system.

3,203,905
METHOD OF PREPARING A RANEY NICKEL-OPTICALLY ACTIVE HYDROXY ACID HYDROGENATION CATALYST

Shiro Akabori and Yoshiharu Izumi, Hyogo-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

Filed Mar. 7, 1963, Ser. No. 263,535
Claims priority, application Japan, Mar. 30, 1962, 37/12,043; Mar. 31, 1962, 37/12,146
3 Claims. (Cl. 252—430)

1. A method of preparing a hydrogenation catalyst which comprises contacting Raney nickel with an aqueous solution of an optically active form of an aliphatic hydroxy acid selected from the group consisting of malic acid and tartaric acid, the pH of said solution being between 3 and 10, and the temperature thereof being between 0° C. and the boiling point of the solution.

3,203,906
BITUMINOUS SHIELDING COMPOSITION

Arthur Evans, Ilford, and Walter Jacob Rosenfelder, Hendon, London, England, assignors to Borax Consolidated Limited, and Berry Wiggins & Co. Limited, both of London, England, both British companies

No Drawing. Filed July 22, 1960, Ser. No. 44,540
Claims priority, application Great Britain, Aug. 10, 1959, 27,224/59
10 Claims. (Cl. 252—478)

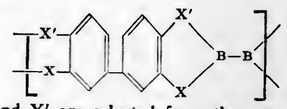
1. A composition consisting essentially of bitumen having a hydrogen content of at least about 8 percent by weight obtained as the end product of distillation of petroleum oil and an organic ester of boric acid dissolved in said bitumen.

3,203,907
POLYMERIC ORGANODIBORON COMPOUNDS AND METHOD OF PREPARING SAME

Robert J. Brotherton, Fullerton, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Nov. 30, 1961, Ser. No. 156,133
8 Claims. (Cl. 260—2)

1. Polymeric organoboron compounds of the recurring structural unit



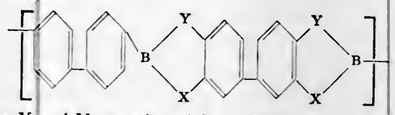
where X and X′ are selected from the group consisting of imino (NH) and oxygen, said units being bonded together through bonds selected from the group consisting of the boron-nitrogen and boron-oxygen bonds.

3,203,908
POLYMERIC ORGANOBORON COMPOUNDS

Kiyoshi Kitasaki, Garden Grove, and George W. Willcockson, Anaheim, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 4, 1961, Ser. No. 156,943
4 Claims. (Cl. 260—2)

1. Polymeric organoboron compounds of the recurring structural unit



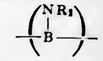
where X and Y are selected from the group consisting of oxygen and imino (NH), said units being bonded together through boron-carbon bonds of which the carbon atom is a nuclear carbon of a biphenyl group.

3,203,909
POLYMERIC BORON-BORON BONDED COMPOUNDS

Robert J. Brotherton and Howard Steinberg, Fullerton, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Mar. 20, 1962, Ser. No. 181,178
8 Claims. (Cl. 260—2)

1. Solid, polymeric boron-boron bonded compounds consisting of the recurring structural unit



where R is an alkyl radical of from 1 to 6 carbon atoms.

3,203,910
POLYMERIZATION OF ALKYLENIMINES

Billy W. Wilson, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Apr. 13, 1962, Ser. No. 187,345
16 Claims. (Cl. 260—2)

1. A method for preparing polyalkylenimines which comprises heating together at a temperature from about 50° C. to the boiling point of the solution an aqueous 5 to 75 weight percent solution of an alkylenimine and a polyhalo polymerization initiator selected from the group consisting of polyhaloalkanes and polyhaloalkylethers having from 2 to 6 halogen atoms per molecule wherein each alkane and alkyl group has from 1 to 4 carbon atoms, each halogen substituent thereon being independently selected from the group consisting of chlorine and bromine, in a ratio of from about 0.02 to 0.002 mole of initiator per mole of alkylenimine for a time sufficient to yield a resinous polyalkylenimine.

3,203,911
PROCESS FOR THE PRODUCTION OF FINELY DIVIDED PARTICLES OF SYNTHETIC INTERPOLYAMIDES

Pierre Goulloud, Ecully, Rhone, France, assignor to Societe Rhodiaceta, Paris, France, a corporation of France

No Drawing. Filed Mar. 1, 1962, Ser. No. 176,815
Claims priority, application France, Mar. 2, 1961, 854,364
6 Claims. (Cl. 260—2.5)

1. Process for the production of finely divided particles of interpolyamides having high water retentive power, said interpolyamides being formed by copolymerized at least one diamine, at least one dicarboxylic acid and at least one monoaminomonocarboxylic acid, which comprises swelling grains of the said interpolyamide with a swelling agent which under the conditions used does not dissolve the interpolyamide, mechanically disintegrating the resultant swollen grains, and then removing the swelling agent, the temperature throughout being below that at which the interpolyamide becomes molten.

3,203,912
PROCESS FOR WATERPROOFING OF CELLULOSIC MATERIALS

Jacob G. Mark, Chestnut Hill, Mass., and Rudolf Gabler, Zollikerberg, Switzerland, assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Sept. 23, 1960, Ser. No. 57,889
Claims priority, application Switzerland, Sept. 28, 1959, 78,743
8 Claims. (Cl. 260—9)

1. The process of rendering cellulose water repellent which comprises contacting the cellulose with a polyaryl polyepoxide selected from the group consisting of 4,4′-(epoxyethyl) - diphenyl; 4,4′ - bis-(epoxyethyl)-diphenyl-ether; 4,4′ - bis-(epoxyethyl)-diphenylmethane; 4,4′ - bis-(epoxyethyl) diphenylsulfide; 4,4′ - bis - (epoxyethyl)-diphenyl-(2,2) - propane; and 4,4′,4″ - tris-(epoxyethyl)-triphenylmethane; and curing the polyaryl polyepoxide-containing cellulose at a temperature ranging from about 60° C. to about 200° C.

3,203,913
CURED COMPOSITION PREPARED FROM MIXTURE OF POLYPROPYLENE GLYCOL ETHER, DIISOCYANATE, AROMATIC DIAMINE AND CELLULOSIC FILLER

Anthony F. Finelli, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Apr. 2, 1962, Ser. No. 184,400
6 Claims. (Cl. 260—9)

1. A cured polyurethane composition suitable for the wearing surface of a shoe resulting from the reaction of a fluid mixture comprising

(1) a polypropylene ether glycol containing less than 10 mole percent of ethylene ether group and having a molecular weight of 800 to 1600;
(2) an organo diisocyanate selected from the class consisting of diphenyl methane-4,4′-diisocyanate and the tolylene diisocyanates;
(3) a chlorinated aromatic diamine;
(4) a cellulosic flour selected from the class consisting of wood flours and nut shell flours;
(5) said diamine to excess diisocyanate ratio being from 0.5 to 1.0;
(6) said diisocyanate being present in 1.7 to 2.5 mols per mol of polypropylene ether glycol; and
(7) said cellulosic flours being present in an amount ranging from 60 to 100 parts by weight per hundred parts of polypropylene ether glycol and being characterized by the ability to form a pourable mixture when mixed with said polypropylene ether glycol in the above amounts.

3,203,914
OVERCOMING METAL SOAP INHIBITION OF HALOGENATED BUTYL RUBBER CURE

Delmer L. Cottle, Highland Park, Irwin J. Gardner, Reselle Park, Alfred L. Miller, Cranford, and Leon S. Minckler, Jr., Metuchen, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 8, 1960, Ser. No. 67,924
14 Claims. (Cl. 260—23.7)

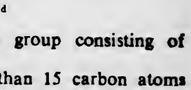
10. A process for overcoming the retardation of vulcanization of a halogenated copolymer of a major portion of a C_4 to C_8 isoolefin and a minor portion of a C_4 to C_{14} multiolefin admixed with carbon black and a vulcanization retarding amount of an alkaline earth metal salt of a C_8 to C_{30} monocarboxylic fatty acid, which process comprises, incorporating in the admixture a minor amount of zinc oxide and a halide of a heavy metal chosen from the group consisting of Group II-B, IV-B, V, and VIII metals.

3,203,915
OXYGEN CONVERTIBLE POLYMERIC COMPOSITIONS

Gaetano F. D'Alelio, South Bend, Ind., assignor, by direct and mesne assignments, to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed July 2, 1962, Ser. No. 207,013
33 Claims. (Cl. 260—23.7)

1. A polymer having the plurality of repeating units in the linear chain thereof having a formula



wherein R is selected from the group consisting of hydrogen and methyl;
Ar is a radical having no more than 15 carbon atoms selected from the class consisting of phenylene and the derivatives thereof in which each derivative group is selected from the class consisting of alkyl, aryl, cycoalkyl, alkoxy, aryloxy, cycloalkoxy, carbalkoxy, chlorine, bromine, fluorine, —$COOCH_3$, —$COOC_4H_9$; and amino groups;
Z is a divalent radical of no more than 22 carbon atoms connecting said R_d group to said Ar group and contains therein only groups selected from the class consisting of hydrocarbon, —C(O)O—, —O—, —NR— and —N< groups, in which latter four groups the unoccupied valencies are attached to carbon atoms of groups selected from the class consisting of Ar, R_d and a hydrocarbon group of said Z;
R_d is an unsaturated aliphatic radical containing no less than 16 and no more than 24 carbon atoms and consisting of a terminal —CH_3 group, at least 1 and no more than 4 —CH=CH— groups, and the remainder consisting of —CH_2— groups.

3,203,916
MASTERBATCHES MADE FROM POLYMER SOLUTIONS AND CARBON BLACK PELLETED WITH OLEAGINOUS MATERIALS

Andries Voet, Borger, Tex., assignor to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 21, 1963, Ser. No. 252,572
27 Claims. (Cl. 260—23.7)

1. A process of producing polymer-carbon black masterbatches comprising forming a polymer in an organic

solvent, introducing a carbon black pelletized with an oleaginous material in a liquid state, agitating the carbon black pellets in the solvent, disintegrating the carbon black pellets by dissolving the oleaginous material in the organic solvent, dispersing the carbon black throughout the polymer and recovering a polymer-carbon black masterbatch.

3,203,917

PIGMENT RESIN PRINTING PASTE COMPRISING A BROMINATED VINYL POLYMER

Seijiro Yoshida, Ashiya-shi, Shozo Naito, Toyonaka-shi, Shigeo Ito, Sakai-shi, and Shigeru Tajima, Ashiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Sept. 28, 1961, Ser. No. 141,306
Claims priority, application Japan, Sept. 30, 1960, 35/40,400
9 Claims. (Cl. 260—29.4)

1. A pigment resin printing paste comprising, as binder resin component, a vinyl polymer having active bromine atoms, and as cross-linking agent at least one polybasic compound selected from the group consisting of ethylene diamine, diethylene triamine, triethylene tetramine, tetraethylene pentamine, 3,3'-imino-bis-propylamine, tris-(3-aminopropyl) amine, 1,4-diaminobutane, 3,3'-methyl-imino-bis-propyl amine, N - (3 - hydroxypropyl) - aminopropyl amine, N-(2-hydroxyethyl) aminopropyl amine, a cationic melamine-formaldehyde resin, a polyol-modified melamine-formaldehyde resin and combination of the same, said polymer containing more than 50 mol percent of polymeric 1,3-diolefinic monomer units having the following general formula:



wherein X represents a member selected from the group consisting of hydrogen, chlorine and bromine atoms and a methyl radical, which has been partially brominated, and up to 50 mol percent of polymeric ethylenically unsaturated monomer units in the molecule, said brominated portion of the polymeric 1,3-diolefinic monomer units being in an amount of 3–25 mol percent, based on the total monomer units in the molecule and having the following structural formula:



wherein X represents a member selected from the group consisting of hydrogen, chlorine and bromine atoms and a methyl radical, and said polybasic compound being present in an amount effective to cross-link said vinyl polymer and up to a weight equal to the weight of said vinyl polymer present.

3,203,918

BETA HYDROXYALKYL ACRYLATE/VINYL ALCOHOL COPOLYMERS

Albert I. Goldberg, Berkeley Heights, and Victor Jasinski, North Plainfield, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 17, 1962, Ser. No. 168,306
10 Claims. (Cl. 260—29.6)

1. A composition consisting of a water-insoluble, linear, random copolymer of from 10 to 90 mol percent of vinyl alcohol and from 90 to 10 mol percent of beta-hydroxyethyl acrylate, said composition being capable of forming a flexible film in the absence of an added plasticizer.

3,203,919

ACRYLIC/SILOXANE COPOLYMER, POLYSILOXANE COMPOSITION CONTAINING SAME, AND ARTICLE COATED WITH THE COMPOSITION

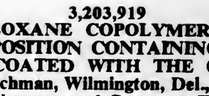
Armand E. Brachman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 19, 1962, Ser. No. 224,863
8 Claims. (Cl. 260—29.6)

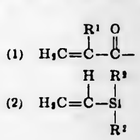
1. An interpolymer of a monomer mixture comprising

(A) about 20–80% of an ester selected from the group consisting of the alkyl esters of acrylic and methacrylic acids in which the alkyl groups contain 1–6 carbon atoms;

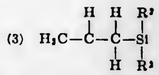
(B) about 10–40% of a monomer of the formula



where n is an integer having a value of 1–6, R is a radical selected from the group consisting of methyl, ethyl and phenyl, and Z is a radical selected from the group consisting of

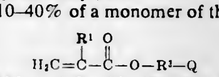


and

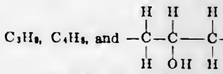


wherein R^1 is a radical selected from the group consisting of hydrogen and methyl, and R^2 is a radical selected from the group consisting of methyl and ethyl; and

(C) about 10–40% of a monomer of the formula



wherein R^1 is as defined in (B) above, R^3 is a divalent aliphatic radical selected from the group consisting of C_2H_4,



and Q is a nitrogenous radical selected from the group consisting of dialkylamine radicals containing a total of 2–26 carbon atoms and 5–6 membered heterocyclic radicals containing a secondary nitrogen atom; said percentages being based on the combined weight of monomers (A), (B) and (C).

3,203,920

CURABLE MIXTURES CONTAINING EPOXY RESINS, CURING AGENTS AND FLEXIBILIZERS

Erwin Nikles, Allschwil, Otto Ernst, Pfeffingen, Hans Batzer, Arlesheim, and Kurt Brugger, Munchenstein, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

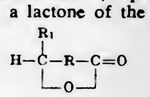
No Drawing. Filed Nov. 19, 1962, Ser. No. 238,721
Claims priority, application Switzerland, Nov. 20, 1961, 13,478/61
4 Claims. (Cl. 260—30.4)

1. A curable composition consisting essentially of

(1) a 1,2-epoxy compound having a 1,2-epoxy equivarency greater than 1;

(2) a curing agent for said 1,2-epoxy compound; and

(3) as flexibilizer a lactone of the formula



in which R is a member selected from the group consisting of straight chain alkylene radicals of 4 to 10 carbon atoms and branched alkylene radicals of 4 to 10 carbon atoms in which the side chains are methyl groups with the proviso that the lactone ring contains 7 to 13 atoms, and R_1 is a member selected from the group consisting of hydrogen atom and alkyl of 1 to 4 carbon atoms.

3,203,921

POLYOLEFIN COMPOSITIONS CONTAINING MINERAL OIL AND MINERAL FILLERS

William J. Rosenfelder, New York, N.Y., assignor to Dublon, Inc., Newark, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 16, 1962, Ser. No. 230,997
15 Claims. (Cl. 260—33.6)

1. A composition consisting essentially of

(1) 73 to 88% of a member of the group consisting of solid homopolymers of a monoolefin having 2 to 3 carbon atoms and solid copolymers of a monoolefin having 2 to 3 carbon atoms with up to 25% of a copolymerizable monoethylenically unsaturated compound,

(2) 2 to 7% of a predominantly aliphatic, paraffinic hydrocarbon mineral oil having a boiling point of at least 300° C., and

(3) 10 to 20% of a mineral filler.

3,203,922

PRODUCTION OF POLYMER-CARBON BLACK MASTERBATCH

Robert S. Hanmer, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 23, 1961, Ser. No. 84,435
9 Claims. (Cl. 260—41.5)

8. A method of incorporating carbon black into a solution polymer which comprises passing pelleted carbon black together with superheated vapor of normally liquid hydrocarbon which is a solvent for said polymer in a ratio of at least 3 parts by weight of solvent to 1 part of black to a fluid energy mill, grinding said pelleted carbon black in the presence of high velocity hydrocarbon vapors, passing a resulting stream of hydrocarbon vapor carrying carbon black from said mill to a vapor-liquid contacting zone, contacting said vapor and carbon black with a 2 to 20 weight percent solution of rubbery polymer of conjugated diene containing from 4 to 12 carbon atoms per molecule in a normally liquid hydrocarbon solvent thereby forming a dispersion of carbon black in polymer solution, adding water to said dispersion, steam stripping hydrocarbon solvent from the resulting water-dispersion mixture thereby coagulating said rubbery polymer, and recovering a rubbery polymer crumb containing from 30 to 80 parts by weight of carbon black per 100 parts of polymer.

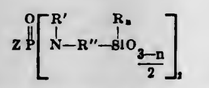
3,203,923

ORGANOSILICON COMPOUNDS CONTAINING PHOSPHORUS AND NITROGEN

Frank Fekete, Monroeville, Pa., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 25, 1960, Ser. No. 44,881
21 Claims. (Cl. 260—46.5)

8. A siloxane comprising groups represented by the formula:



wherein Z is a member selected from the group consisting of the monovalent hydrocarbon groups, the halogen-substituted monovalent hydrocarbon groups and the hydrocarbonoxy groups, R is a monovalent hydrocarbon group, R' is a member selected from the group consisting of the hydrogen atom and the monovalent hydrocarbon group, R'' is a divalent hydrocarbon group, n is an integer from 0 to 2 inclusive and each nitrogen atom is interconnected to silicon through at least three carbon atoms.

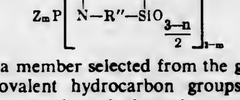
3,203,924

ORGANOSILICON COMPOUNDS CONTAINING PHOSPHORUS AND NITROGEN

Frank Fekete, Monroeville, Pa., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 25, 1960, Ser. No. 44,882
23 Claims. (Cl. 260—46.5)

8. A siloxane comprising groups represented by the formula:



wherein Z is a member selected from the group consisting of the monovalent hydrocarbon groups, the halogen-substituted monovalent hydrocarbon groups and the hydrocarbonoxy groups, R is a monovalent hydrocarbon group, R' is a member selected from the group consisting of the hydrogen atom and the monovalent hydrocarbon groups, R'' is a divalent hydrocarbon group, m is an integer from 0 to 2 inclusive, n is an integer from 0 to 2 inclusive and each nitrogen atom is interconnected to silicon through at least three carbon atoms.

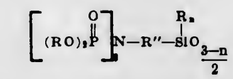
3,203,925

ORGANOSILICON COMPOUNDS CONTAINING PHOSPHORUS AND NITROGEN

Frank Fekete, Monroeville, Pa., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed July 25, 1960, Ser. No. 44,883
22 Claims. (Cl. 260—46.5)

9. A siloxane comprising groups represented by the formula:



wherein R is a monovalent hydrocarbon group, R'' is a divalent hydrocarbon group, n is an integer from 0 to 2 inclusive and the nitrogen atom is interconnected to silicon through at least three carbon atoms.

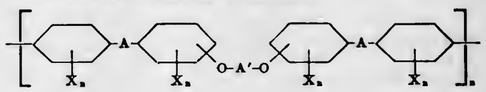
3,203,926

COPOLYCARBONATES OF DI-(BISPHENOL) ETHERS AND BISPHENOLS AND PROCESSES FOR THEIR PRODUCTION

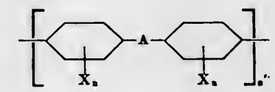
Rudolph D. Deanin, West Hartford Township, Hartford County, Conn., and Ann V. Pinter, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Sept. 12, 1961, Ser. No. 137,683
6 Claims. (Cl. 260—47)

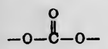
1. As a new composition of matter a copolycarbonate characterized by containing a random distribution of divalent radicals having the structures



and



linked through divalent carbonate radicals having the structure



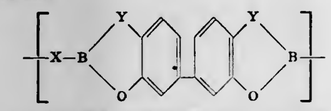
in which structures A is a radical selected from the group consisting of the divalent alkane, cycloalkane and aralkane radicals, A′ is a divalent radical derived by removal of the two halogen atoms from an organic dihalide from the group consisting of the dihaloalkanes, dihaloalkenes, dihalocycloalkanes, dihaloalkyl cycloalkanes, dihaloalkene cycloalkanes, aryl dihaloalkanes, aryl dihaloalkenes, and the dihaloalkane and dihaloalkene ethers and polyethers in which the ether-oxygen is separated by at least 2 carbon atoms from each of the two halogen atoms, X is a member of the group consisting of the halogen atoms and the alkane radicals, n is an integer from 0 to 4, n' and n'' are integers greater than 1 and n'' is at least 1% and no more than 99% of the value for $n'+n''$.

3,203,927
POLYMERIC ORGANOBORON COMPOUNDS

Kiyoshi Kitasaki, Garden Grove, and George W. Willcockson, Anaheim, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Dec. 4, 1961, Ser. No. 156,933
12 Claims. (Cl. 260—47)

1. Polymeric organoboron compounds of the recurring structural unit



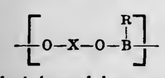
said units being linked through boron-carbon bonds of which said carbon atom is a nuclear carbon of a phenylene radical, where X is a radical selected from the group consisting of 1,3-phenylene and 1,4-phenylene and Y is selected from the group consisting of imino and oxygen radicals.

3,203,928
POLYMERIC ORGANOBORON COMPOUNDS AND METHOD OF MAKING SAME

George W. Willcockson, Anaheim, and Joseph G. Bower, Orange, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Dec. 4, 1961, Ser. No. 157,002
11 Claims. (Cl. 260—47)

1. A solid organoboron resin of the recurring structural unit



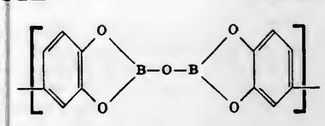
said units being linked through boron-oxygen bonds, where R is a radical selected from the group consisting of alkyls of from 1 to 6 carbon atoms, phenyl, and alkyl substituted phenyl, said substituents having from 1–4 carbon atoms and X is a radical selected from the group consisting of 1,3-phenylene, 1,4-phenylene and 4,4′-biphenylene, said resin being thermally stable at temperatures up to about 500° C.

3,203,929
ORGANOBORON COMPOUNDS AND POLYMERS THEREOF

Kiyoshi Kitasaki, Garden Grove, and George W. Willcockson, Anaheim, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed June 20, 1962, Ser. No. 203,722
12 Claims. (Cl. 260—47)

12. Organoboron polymers consisting essentially of the recurring structural unit

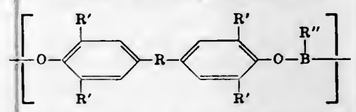


3,203,930
ORGANOBORON POLYMERS AND METHOD OF MAKING SAME

Joseph G. Bower, Orange, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed July 2, 1962, Ser. No. 207,049
8 Claims. (Cl. 260—47)

1. Solid, thermally stable organoboron resin consisting essentially of the recurring structural unit



where R is selected from the group consisting of methylene, 2,2-propylene and 2,2-butylene, R′ is selected from the group consisting of hydrogen, bromine, chlorine and alkyl of from 1 to 4 carbon atoms, and R″ is selected from the group consisting of alkyl of from 1 to 6 carbon atoms and phenyl, said resins being thermally stable at temperatures up to 400–500° C.

3,203,931
URETHANES MADE FROM 4-SUBSTITUTED TOLUENE DIISOCYANATE AND A POLYETHER OR POLYESTER

Gilbert H. Swart, Akron, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 5, 1959, Ser. No. 831,703
2 Claims. (Cl. 260—77.5)

1. A polyurethane composition comprising the reaction product of (1) at least one polymer selected from the group consisting of (A) a poly(alkylene ether) polyol having terminal hydroxy groups, (A–1) a polyester having terminal hydroxy groups and (A–2) a polyester having terminal carboxy groups, and (2) an organic polyisocyanate composition selected from the group consisting of (B) a mixture of organic polyisocyanates of a 4-substituted tolylene diisocyanate and a hydrocarbon polyisocyanate other than said diisocyanate, the organic polyisocyanate other than said 4-substituted diisocyanate being present in an amount not exceeding 25% of the total chemical equivalents of said polyisocyanate mixture, and (B–1) a 4-substituted tolylene diisocyanate, each of said 4-substituted tolylene diisocyanates being selected from the group consisting of 4-tert-butyl-2,6-tolylene diisocyanate, 4-isopropyl-2,6-tolylene diisocyanate, 4-methoxy-2,6-tolylene diisocyanate, N,N-dimethyl-2,6-diisocyanato-p-toluidine, and 4-cyano-2,6-tolylene diisocyanate, and the molar ratio of said polymer to said polyisocyanate composition being from about 1:0.5 to 1:12.

3,203,932
METALLO-ORGANIC CATALYZED ONE-SHOT PROCESS FOR PREPARING URETHANE-UREA ELASTOMERS

Kurt C. Frisch, Grosse Ile, and Seymour L. Axelrood, Trenton, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Mar. 10, 1961, Ser. No. 94,699
20 Claims. (Cl. 260—77.5)

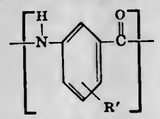
1. A process for preparing urethane-urea elastomers which comprises simultaneously interacting three reactants (1), (2) and (3) in the presence of a catalyst (4), said reactant (1) being selected from the group consisting of a polyoxyalkylene polyol and mixtures thereof having an equivalent weight from about 200 to 2,000, an oxygen/carbon atom ratio from about 1/2 to 1/4 and about 2 to 6 terminal hydroxyl groups; said reactant (2) being a chemically hindered, aromatic diamine, and said reactant (3) being an organic diisocyanate in the presence of said catalyst (4) a metallo-organic salt catalyst at a temperature from about 0° to 120° C. and curing the reaction mixture at a temperature from about 20° to 150° C., said diamine being employed in an amount to provide an NH_2/OH ratio from about 0.5:1.8/1, said diisocyanate being employed in an amount to provide an $NCO/(OH+NH_2)$ ratio from about 0.95:1.6/1, said catalyst being employed in an amount corresponding to 0.01 to 1.0 percent of the combined weight of polyol and diamine, and, providing further, that said reactants are substantially anhydrous and substantially free of entrapped gas.

3,203,933
PROCESS FOR PREPARING POLYAMIDES FROM AROMATIC AMINO ACIDS

William A. H. Huffman and Ralph W. Smith, Durham, and William T. Dye, Jr., Chapel Hill, N.C., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 18, 1961, Ser. No. 146,011
10 Claims. (Cl. 260—78)

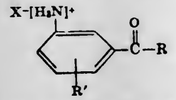
1. A process for the preparation of wholly aromatic polyamides having the recurring structural unit



wherein R′ is selected from the group consisting of hydrogen and alkyl containing 1 to 3 carbon atoms comprising the steps of:

(1) mixing at least 8 parts water, based on parts per part monomer, a proton acceptor and an emulsifying agent to form a basic emulsion,

(2) adding to said emulsion an aromatic monomer of the formula



wherein X is selected from the group consisting of chlorine, bromine, sulfate and arylsulfonate, R represents a halide, and R′ is selected from the group consisting of hydrogen and alkyl of 1 to 3 carbon atoms, in a suspension medium,

(3) and stirring until a polymer having an inherent viscosity of at least 1.0 as measured from a solution of 0.5 gram of polymer dissolved in 100 ml. of dimethylacetamide containing 5 percent dissolved lithium chloride at 25° C. and a melting point of at least 350° C. is obtained.

3,203,934
PROCESS FOR PREPARING INSOLUBLE, SULFUR-CONTAINING POLYAMIDES

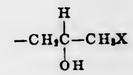
Heino Wellens and Ludwig Orthner, Frankfurt am Main, and Karl Horst, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 24, 1962, Ser. No. 197,272
Claims priority, application Germany, May 27, 1961, F 34,034
6 Claims. (Cl. 260—78)

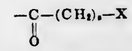
1. A process for preparing insoluble, resinous, polysulfide cross-linked polycondensation products which comprises condensing (A) a member selected from the group consisting of saturated aliphatic, aromatic, and cycloaliphatic dicarboxylic acids having a molecular weight of from 146 to 650, and the esters, anhydrides, and dihalides thereof, with (B) a polyalkylene polyamine of the formula

$$H_2N-[(CH_2)_o-NH]_r-[(CH_2)_n-NH]_q-[(CH_2)_m-NH]_p-H$$

wherein n, m, and o are each an integer from 1 to 4, p is an integer from 1 to 6, and q and r are each an integer from 0 to 6, the sum of p, q, and r being at least 2, to form a basic polyamide, substituting at least 3 hydrogen atoms present on nitrogen atoms of said basic polyamide by radicals containing an interchangeable halogen atom and of a formula selected from the group consisting of



and



wherein X is a halogen atom and s is an integer from 1 to 3, by reacting said polyamide with a member selected from the group consisting of epihalohydrins, dihalohydrins, and α-, β-, and γ-halogeno-carboxylic acid halides, contacting the substituted compound thus obtained with an inorganic water soluble thiosulfate in aqueous solution at a temperature of from 40° to 100° C., whereby said halogen atoms are replaced by thiosulfate groups to form an organic polythiosulfate, and then cross-linking said organic polythiosulfate by heating with an alkaline condensation agent at a temperature of from 0° to 130° C.

3,203,935
POLYMERIC COMPOSITIONS OF TERPOLYMERS REACTED WITH AMINOHYDROXY COMPOUNDS

Thomas J. Miranda, Granger, Herbert R. Herman and Thomas F. Marcotte, South Bend, Ind., assignors to The O'Brien Corporation, South Bend, Ind., a corporation of Indiana

No Drawing. Filed May 7, 1962, Ser. No. 192,982
14 Claims. (Cl. 260—78.5)

1. The process for the preparation of a polymeric composition of improved flexibility comprising the steps of

Reacting a copolymer prepared by polymerizing by free radicals to a molecular weight of at least 3000, a monomeric composition comprising

(a) 20–85% by weight of a vinyl aromatic hydrocarbon,

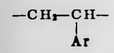
(b) 1–15% by weight of an unsaturated acid selected from the class consisting of acrylic, methacrylic, maleic, fumaric, itaconic and tetrahydrophthalic acids and the monoamid and the alkyl monoester derivatives of maleic, fumaric, itaconic and tetrahydrophthalic acids, and

(c) 10–75% of an unsaturated ester selected from the class consisting of acrylates methacrylates, maleates, fumarates, itaconates and tetrahydrophthalates; the ester group in each of the aforesaid monesters and diesters being an alkyl group having no more than 10 carbon atoms therein, and in said acrylates and methacrylates, said alkyl ester group having at least 4 carbon atoms therein, and

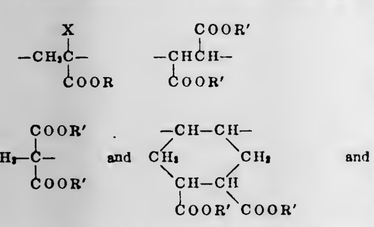
under conditions suitable for removal of water of condensation resulting from amidification with an aminohydroxy compound having one amino group and at least one and no more than three hydroxy groups therein, said amino group having at least one hydrogen atom attached to the nitrogen, each said hydroxy group of said aminohydroxy compound being at least 2 carbon atoms removed from said amino group, said amino hydroxy compound having a hydrocarbon nucleus with no more than 10 carbon atoms therein and being selected from the class consisting of aliphatic, aromatic and cycloaliphatic hydrocarbons which have no substituent groups thereon other than said amino and said hydroxy groups, and said reaction being conducted until the proportion of amide groups attached by said reaction represents at least 1% by weight of the resultant copolymer but said reaction being stopped before water of condensation removed from the reaction substantially exceeds the theoretical amount for forming said amide.

11. A copolymer consisting essentially of:

(a) 20–85% by weight of a plurality of repeating units selected from the class consisting of the formula



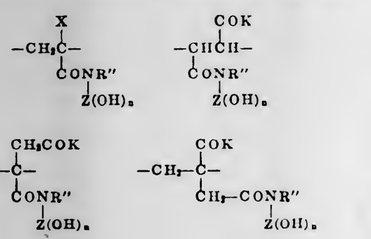
(b) 10–75% by weight of a plurality of repeating units having a formula selected from the class consisting of



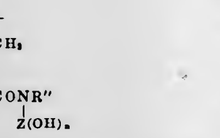
and

and

(c) 1–20% by weight of a plurality of repeating units having a formula selected from the class consisting of



and



in which above formulas, Ar represents an aromatic hydrocarbon radical having no more than 20 carbon atoms, X is a radical selected from the class consisting of hydrogen and methyl, R is an alkyl group having no less than 4 and no more than 10 carbon atoms, R' is an alkyl group having no more than 10 carbon atoms, R'' is a radical selected from the class consisting of hydrogen and alkyl groups having no more than 10 carbon atoms; *n* is an integer having a value of at least 1 and no more than 3, and Z is a polyvalent radical selected from the class consisting of polyvalent aliphatic, cycloaliphatic and aromatic hydrocarbon radicals having no more than 10 carbon atoms therein and having a valency of *n* plus 1 and having at least 2 carbon atoms between each OH group and the N of said formula, said copolymer being prepared by copolymerizing the monomeric composition recited in claim 1 and the product of said copolymerization being subsequently reacted to produce amidification in accordance with claim 1.

3,203,936
CROSS-LINKING ETHYLENE POLYMERS

David S. Breslow and Harold M. Spurlin, Wilmington, Del., assignors to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 15, 1961, Ser. No. 95,820
The portion of the term of the patent subsequent to Oct. 16, 1979, has been disclaimed
10 Claims. (Cl. 260—79.3)

1. A process of cross-linking a polymer containing at least about 25 mole percent of ethylene which comprises heating said polymer in the presence of an aliphatic polysulfonazide having the formula

$$R(—SO_2N_3)_x$$

where *x* is an integer from 2 to 20 and R is an organic radical containing from about 5 to about 30 carbon atoms selected from the group consisting of aliphatic and aryl aliphatic radicals, said sulfonazide groups being attached to aliphatic carbon atoms.

6. A polymer containing at least about 25 mole percent of ethylene cross-linked with an aliphatic polysulfonazide having the formula

$$R(—SO_2N_3)_x$$

where *x* is an integer from 2 to 20 and R is an organic radical containing from about 5 to about 30 carbon atoms selected from the group consisting of aliphatic and aryl aliphatic radicals, said sulfonazide groups being attached to aliphatic carbon atoms.

3,203,937
CROSS-LINKING ETHYLENE POLYMERS

David S. Breslow and Harold M. Spurlin, Wilmington, Del., assignors to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 15, 1961, Ser. No. 95,821
The portion of the term of the patent subsequent to October 16, 1979, has been disclaimed
12 Claims. (Cl. 260—79.3)

1. A process of cross-linking a polymer containing at least about 25 mole percent of ethylene which comprises heating said polymer in the presence of an aromatic polysulfonazide having a solubility of at least about 1% by weight in n-heptane at a temperature of 95° C. and having all of its sulfonazide groups attached directly to the aromatic nucleus.

3,203,938
PROCESS FOR COPOLYMERIZING AN ALKALI METAL ETHYLENE SULFONATE IN LOWER SATURATED ALCOHOLS WITH FREE RADICAL POLYMERIZATION CATALYSTS

Robert L. Baechtold, West Orange, N.J., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Nov. 10, 1961, Ser. No. 151,451
5 Claims. (Cl. 260—79.3)

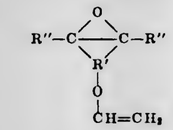
1. A process for preparing low molecular weight water-soluble polymers which comprises copolymerizing an alkali metal ethylenesulfonate and a monomer of the group consisting of acrylamide and acrylic acid in a lower saturated aliphatic alcohol in the presence of free radical initiating polymerization catalyst selected from the group consisting of inorganic catalyst, organic catalyst, and mixtures thereof.

3,203,939
UNSATURATED EPOXIDES AND METHOD FOR MAKING SAME

Samuel W. Tinsley, Jr., and Edward A. Rick, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

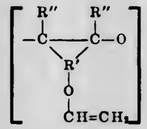
No Drawing. Filed Feb. 8, 1962, Ser. No. 171,814
18 Claims. (Cl. 260—88.1)

5. Vinyl vic-epoxycycloalkyl ethers of the formula:



wherein R' is a trivalent saturated hydrocarbon group which together with the R'-bonded carbon atoms forms a member of the group consisting of saturated monocyclic and polycyclic rings, and wherein R'' is selected from the group consisting of hydrogen and alkyl.

9. A homopolymer having pendant vinyl groups containing repeating units of the formula:



wherein R' is a trivalent saturated hydrocarbon group which together with the R''-bonded carbon atoms forms a member of the group consisting of saturated monocyclic and polycyclic rings, and wherein R'' is selected from the group consisting of hydrogen and alkyl.

3,203,940
OLEFIN COPOLYMERIZATION PROCESS

Wendell P. Long, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 4, 1962, Ser. No. 228,225
5 Claims. (Cl. 260—88.2)

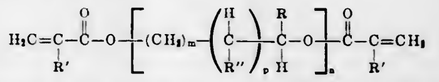
1. In the process for copolymerizing ethylene with at least one other ethylenically unsaturated hydrocarbon in carbon tetrachloride in the presence of a catalyst formed from a vanadium compound soluble therein and an alkylaluminum compound, the improvement which comprises carrying out the copolymerization in the presence of, per liter of carbon tetrachloride, about 0.0005 to about 0.05 mmole of said vanadium compound and about 0.1 to about 100 mmoles of said alkylaluminum compound, and in the presence of an electron donor compound selected from the group consisting of ammonia, amines, amides, nitriles, pyridines, phosphines, phosphites, phosphorous halides, arsines, arsenic halides, stibines, antimony halides, bismuthines, bismuth halides, ethers, esters, aldehydes, ketones, acids, acid halides, phenols, sulfoxides, sulfones, sulfates, sulfonates, sulfonamides, sulfoximes, sulfides, selenides, and tellurides, said electron donor compound being chemically reactive with the alkylaluminum compound by sharing electrons therewith and being present in an amount sufficient to activate said catalyst but insufficient to complex all of said alkylaluminum compound.

3,203,941
ACCELERATED ANAEROBIC CURING COMPOSITIONS CONTAINING A CATALYST SYSTEM OF PEROXIDES AND POLYAMINO COMPOUNDS

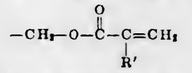
Vernon K. Krieble, Hartford, Conn., assignor to Loctite Corporation, a corporation of Connecticut

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,525
17 Claims. (Cl. 260—89.5)

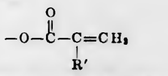
1. A single phase organic sealant system having accelerated anaerobic curing properties comprising an anaerobic curing sealant component having extended shelf life when exposed to oxygen but capable of setting up in a relatively brief time when excluded from contact with oxygen and a shelf stable accelerator component for admixture with said sealant component to thereby effectuate said single phase system, said anaerobic curing sealant component comprising a monomer corresponding to the general formula:



wherein R is a member selected from the class consisting of hydrogen, —CH_3, —C_2H_5, —CH_2OH and



radicals, R' is a member selected from the class consisting of hydrogen, chlorine and methyl and ethyl radicals, R'' is a member selected from the class consisting of hydrogen, —OH radical and



radical, *m* is an integer equal to at least 1, *n* is an integer equal to at least 1, and *p* is one of the following: 0, 1; and 0.01 to 20 percent by weight of a catalyst selected from the group consisting of hydrogen peroxide and organic hydroperoxides, said catalyst being present in an amount sufficient to polymerize said monomer at room temperature upon the exclusion of oxygen; said accelerator component comprising 0.01 to 10 percent by weight of a polyamino compound in a substantially volatile organic vehicle therefor, said polyamino compound corresponding to the general formula:



wherein *n* is an integer equal to from 2 to 3 inclusive, R^1 is a member selected from the class consisting of hydrogen and alkyl groups and R^2 is a member selected from the class consisting of hydrogen, alkyl, hydroxy alkyl and amino alkyl groups, said amino alkyl group being represented by the formula: $—(R^3—NH)_xH$ wherein R^3 is an alkylene radical and *x* is an integer from 1 to 3 inclusive.

3,203,942
METHOD FOR PURIFYING OLEFIN POLYMERS

Cornelio Caldo, Terni, Italy, assignor to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy

No Drawing. Filed Apr. 3, 1961, Ser. No. 99,985
Claims priority, application Italy Apr. 8, 1960, 6,207/60
4 Claims. (Cl. 260—93.7)

1. A method of purifying polymers of mono-olefins having from 2 to 6 carbon atoms per molecule which comprises treating a slurry of the polymerized olefin

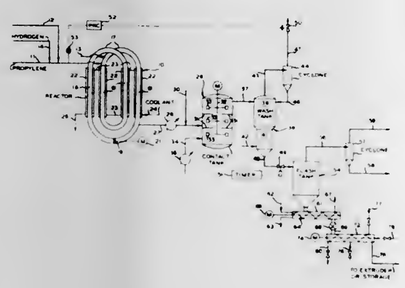
with succinic dialdehyde as a purifying agent and subsequently washing the treated polymer with water; said purifying agent being added to the slurry of polymer in an amount ranging from about 10% to 1000% by weight of the catalyst used in the polymerization reaction; said catalyst consisting of triethyl aluminum and titanium trichloride.

3,203,943

TREATMENT OF OLEFIN POLYMERS

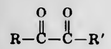
Clarence G. Houser, John Mitacek, Raymond G. Rohlfing, and William E. Payne, all of Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 26, 1962, Ser. No. 247,041
12 Claims. (Cl. 260—93.7)



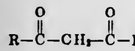
1. In a mass polymerization process wherein a liquid mono-1-olefin is contacted in a polymerization zone with a catalyst capable of polymerizing said olefin under polymerization conditions so as to form a solid polymer, said solid polymer is contacted with a diketone selected from the group consisting of compounds having the following formulas:

(1)



and

(2)



wherein R and R′ are hydrocarbon radicals to remove catalyst residues therefrom, and a solid polymer product substantially free of catalyst residues is recovered, the improvement which comprises: contacting said polymer product with a sufficient amount of water vapor at a temperature within the range of from 220 to 275° F. for a period of time sufficient to yield a polymer product which when extruded into film will produce a substantially streak-free film.

3,203,944

METHOD OF TERMINATING BUTADIENE POLYMERIZATION

Henry L. Hsieh, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed July 9, 1962, Ser. No. 208,620
11 Claims. (Cl. 260—94.3)

1. In a process for polymerizing 1,3-butadiene in the presence of a catalyst system selected from the group consisting of (1) a catalyst comprising an organometal compound having the formula R_mM, wherein R is alkyl, cycloalkyl, aryl, alkaryl, aralkyl, alkylcycloalkyl or cycloalkylalkyl containing up to 20 carbon atoms, M is aluminum, mercury, zinc, beryllium, cadmium or magnesium, and *m* is equal to the valence of the metal M, and titanium tetraiodide, (2) a catalyst comprising an organometal compound having the formula R_nM', wherein R is an organo radical as defined above, M′ is aluminum, magnesium or lead, and *n* is equal to the valence of the metal M′, titanium tetrachloride and titanium tetraiodide, (3) a catalyst comprising an organometal compound having the formula R_aM'', wherein R is an organo radical as defined above, M″ is aluminum or magnesium and *a* is equal to the valence of the metal M″, a compound having the formula TiX_b, wherein X is chlorine or bromine and *b* is an integer from 2 to 4, inclusive, and elemental iodine, (4) a catalyst comprising an organometal compound having the formula R_xM''', wherein R is an organo radical as defined above, M‴ is aluminum, gallium, indium or thallium, and *x* is equal to the valence of the metal M‴, a titanium halide having the formula TiX_4, wherein X is chlorine or bromine, and an inorganic halide having the formula $M^{IV}I_c$, wherein M^{IV} is beryllium, zinc, cadmium, aluminum, gallium, indium, thallium, silicon, germanium, tin, lead, phosphorus, antimony, arsenic, and bismuth, and *c* is an integer from 2 to 5, inclusive, and (5) a catalyst comprising an organo compound having the formula R_xM''', wherein R, M‴ and *x* are as defined above, titanium tetraiodide, and an inorganic halide having the formula M^vX_d, wherein M^v is aluminum, gallium, indium, thallium, germanium, tin, lead, phosphorus, antimony, arsenic or bismuth, X is chlorine or bromine, and *d* is an integer from 2 to 5, inclusive, the improvement which comprises adding to the polymerization mixture a shortstopping agent selected from the group consisting of mono- and polyisocyanates and mono- and polyisothiocyanates of the formula $R(NCO)_m$ and $R'(NCS)_n$ where R and R′ are selected from the group consisting of aliphatic, cycloaliphatic, and aromatic radicals of 2 to 30 carbon atoms, and *m* and *n* are integers from 1 to 4.

3,203,945

POLYMERIZATION OF CONJUGATED DIOLEFINS WITH A COBALTOUS COMPOUND-ALUMINUM ALKYL DIHALIDE-AMINE OR AMMONIA CATALYST

Robert P. Zelinski, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 5, 1960, Ser. No. 73,505
9 Claims. (Cl. 260—94.3)

1. A process for polymerizing a monomeric material comprising a conjugated diene containing from 4 to 8, inclusive, carbon atoms per molecule which comprises contacting said monomeric material with a catalyst formed by mixing (1) a compound having the formula $RAlX_2$, wherein R is an alkyl radical and X is a halogen, and (2) the reaction product obtained by reacting a cobaltous compound with an amine-type compound selected from the group consisting of ammonia, pyridine, piperidine, and alkyl secondary and tertiary amines, the mole ratio of said $RAlX_2$ compound to said cobaltous compound being in the range of 2:1 to 400:1 and the mole ratio of said amine-type compound to said cobaltous compound being in the range of 0.5:1 to 8:1, provided that the mole ratio of amine-type compound to alkylaluminum dihalide does not exceed 0.6 when the level of the alkylaluminum dihalide which is used is below 10 millimoles per 100 parts of conjugated diene, said contacting occurring in the presence of a hydrocarbon diluent, at a temperature in the range of −100 to 250° F. and under pressure sufficient to maintain the reaction mixture in the liquid phase; and recovering the rubbery polymer so produced.

3,203,946

POLYMERIZATION OF ETHYLENE IN THE PRESENCE OF AMMONIUM HALIDE

Isidor Kirshenbaum, Westfield, Peter Luccheni, Newark, and Erik Tornqvist, Roselle, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Feb. 23, 1962, Ser. No. 175,305
9 Claims. (Cl. 260—94.9)

1. In a process for preparing solid crystalline polyethylene, having a molecular weight in the range of about 200,000 to 400,000, by polymerizing ethylene with a catalyst of aluminum, $AlCl_3$ and $TiCl_4$, at a temperature in the range of 70° to 110° C. and a pressure in the range of 50 to 500 p.s.i.g., the improvement which comprises carrying out the polymerization in the presence of a minor amount of an ammonium halide.

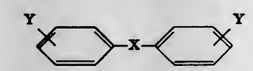
3,203,947

PROCESS FOR REDUCING AROMATIC NITROGEN COMPOUNDS

William von E. Doering, New Haven, and Adnan A. R. Sayigh, North Haven, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Jan. 31, 1963, Ser. No. 255,176
20 Claims. (Cl. 260—143)

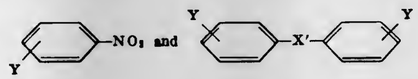
1. In a process for the preparation of a compound having the formula



wherein X is a divalent radical selected from the class consisting of



—N=N—, and —NH—NH— and Y is selected from the group consisting of hydrogen, alkyl, alkoxy, carboxy, sulfonic, amino and halo, by reduction, using an alkali metal alcoholate solution as the reducing agent, of a correspondingly substituted compound selected from the class consisting of



wherein Y is as hereinbefore defined and X′ is selected from group consisting of



and —N=N— provided that X′ in the starting material is in a lower state of oxidation than X in the end product the improvement which comprises carrying out the reduction in the presence of a catalytic amount of a hydrogen transfer agent having an oxidised form and a reduced form which provides in the reduction mixture a ketone-carbinol oxidation-reduction system, said hydrogen transfer agent in its oxidised form being a member of the group consisting of benzophenone, 9-fluorenone, anthrone, xanthone, and benzanthrone and in its reduced form a member of the group consisting of benzhydrol, 9-fluorenol, hydranthranol, xanthhydrol and benzanthrol.

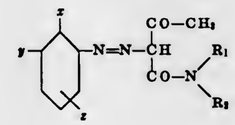
3,203,948

METAL COMPLEX AZO DYES

Reinhard Neier, Basel, Switzerland, assignor to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed Aug. 3, 1962, Ser. No. 214,525
Claims priority, application Switzerland, Aug. 22, 1961, 9,794/61
7 Claims. (Cl. 260—145)

1. A member selected from the group consisting of the 1:1-copper, 1:1-nickel, 1:2-chromium and 1:2-cobalt complex compounds of dyes of the formula



(I)

wherein

R_1 is a member selected from the group consisting of hydrogen and lower alkyl,

R_2 is an alkyl radical containing from 6 to 12 carbon atoms,

x represents a substituent capable of metal complex formation selected from the group consisting of hydroxy, methoxy and carboxy,

y is a member selected from the group consisting of the carboxylic and sulfonic acid group, and

z is a member selected from the group consisting of chlorine, bromine, lower alkyl, and nitro.

3,203,949

4-HALO-2-BUTYNYL CARBAMATES

Thomas R. Hopkins, Johnson County, and Joe W. Pullen, Overland Park, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 14, 1959, Ser. No. 786,674
The portion of the term of the patent subsequent to Sept. 28, 1976, has been dedicated to the Public
17 Claims. (Cl. 260—207.1)

7. 4-chloro-2-butynyl N-(4-phenylazophenyl)carbamate.

13. 4-halo-2-butynyl N-(lower alkoxy substituted phenyl)carbamate.

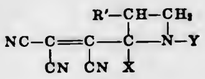
3,203,950

SELECTED AZETIDINES AND THEIR PREPARATION

Harris D. Hartzler, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 8, 1963, Ser. No. 250,017
20 Claims. (Cl. 260—239)

1. An azetidine of the formula



wherein

X is a member of the group consisting of chlorine and bromine;

Y is a member of the group consisting of hydrogen and —SR;

R is a polyhaloalkyl group of up to 10 carbons; and R' is a member of the group consisting of alkoxy, alkenyloxy, aryl, alkoxyaryl and alkylthio of up to 10 carbons, 2-oxopyrrolidyl and acetyloxy.

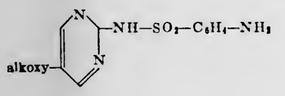
3,203,951

NEW LONG LASTING SULFA DRUGS

Paul Diedrich, Berlin-Spandau, Germany, assignor to Schering AG, Berlin, Germany

No Drawing. Filed June 30, 1960, Ser. No. 39,770
Claims priority, application Germany, July 8, 1959, Sch 26,329
3 Claims. (Cl. 260—239.75)

1. A compound of the formula



wherein the alkoxy group is of from 1–2 carbon atoms.

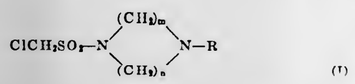
3,203,952

CHLOROMETHYLSULFONAMIDES OF CYCLIC DIAMINES

Leo A. Paquette, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 4, 1962, Ser. No. 242,073
10 Claims. (Cl. 260—239)

1. A member of the group consisting of a compound of the formula:



(I)

wherein *m* and *n* are integers of from 2 to 3 and R is hydrocarbon free of olefinic and acetylenic unsaturation of not more than 10 carbon atoms and the acid addition salts, the alkyl quaternary ammonium salts wherein the alkyl has not more than 18 carbon atoms, and the N-oxides thereof.

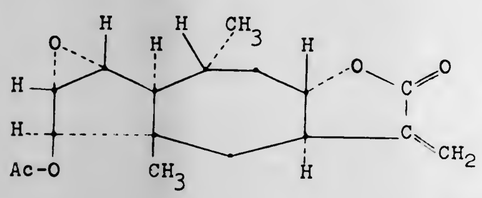
3,203,953

LACTONE OBTAINED FROM HELENIUM SP. AND DERIVATIVES THEREOF

Robert Armistead Lucas, Mendham, and Harold Belding MacPhillamy, Madison, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

Filed May 28, 1963, Ser. No. 283,924
5 Claims. (Cl. 260—240)

2. An O-acyl-compound of Su-12334 having the structure of the formula



in which Ac is the acyl radical of a member selected from the group consisting of an aryl carboxylic acid and a hydrocarbon sulfonic acid.

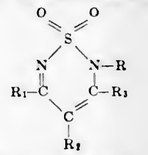
3,203,954

NOVEL 3,5-DISUBSTITUTED-1,2,6-(2H)-THIADIAZINE-1,1-DIOXIDES

John B. Wright, Kalamazoo Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed July 15, 1963, Ser. No. 295,192
12 Claims. (Cl. 260—243)

1. A compound of the structural formula



wherein R is selected from the group consisting of hydrogen and lower-alkyl; R_1 is selected from the group consisting of phenyl, methylphenyl, halophenyl, lower-alkoxyphenyl, pyridyl, benzyl, and phenethyl; R_2 is selected from the group consisting of hydrogen and carbalkoxy of from 2 to 5 carbon atoms, inclusive; and R_3 is selected from the group consisting of lower-alkyl, phenyl, methylphenyl, halophenyl, lower-alkoxyphenyl, pyridyl, benzyl, and phenethyl.

3,203,955

SURFACE ACTIVE MIXTURES OF POLYOXYALKYLENE COMPOUNDS HAVING A SINGLE HETERIC POLYOXYPROPYLENE - POLYOXYETHYLENE CHAIN

Donald R. Jackson, Southgate, and Lester G. Lundsted, Grosse Ile, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Continuation of application Ser. No. 704,351, Dec. 23, 1957. This application Oct. 9, 1962, Ser. No. 229,478
3 Claims. (Cl. 260—247.7)

1. A surface active mixture of conjugated polyoxyalkylene compounds consisting of oxypropylene groups, oxyethylene groups and the nucleus of morpholine as a reactive hydrogen compound having only a single reactive hydrogen atom, said compounds being characterized by having a heteric polymeric chain of oxypropylene and oxyethylene groups attached at one end thereof to said nucleus of morpholine at the site of its reactive hydrogen atom and by having a chain of oxyethylene groups attached to the other end of said heteric chain, said heteric polyoxypropylene - polyoxyethylene chain having from five to 40 weight percent of oxyethylene groups, based on the weight of said heteric chain, and having an average molecular weight of at least about 400 and up to about 25,000 and the oxyethylene groups in said oxyethylene chain being sufficient in weight so as to constitute from about 20 to 80 weight percent of the mixture of surface active compounds.

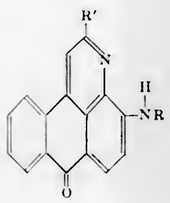
3,203,956

FLUORESCING DYES OF THE PYRIDINO ANTHRONE SERIES

John W. Orelup, Short Hills, N.J.

No Drawing. Filed May 31, 1963, Ser. No. 284,339
18 Claims. (Cl. 260—272)

1. A fluorescent dye of the pyridino anthrone series of the formula



wherein R' is alkyl consisting of up to 30 carbon atoms in the alkyl chain and R is selected from the group consisting of alkyl of from 2 to 30 carbon atoms in the alkyl chain, hydroxyalkyl wherein the alkyl radical consists of up to 30 carbon atoms in the alkyl chain and cycloalkyl consisting of 6 carbon atoms in the ring.

3,203,957

PRODUCTION OF HALOPYRIDINE OXIDES

Jack R. Kirchner, Grand Island, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 5, 1963, Ser. No. 262,847
5 Claims. (Cl. 260—290)

1. The method of preparing 2-chloropyridine oxide comprising reacting at a temperature in the range 30 to 90° C. (a) aqueous hydrogen peroxide containing at least 65% H_2O_2 by weight, (b) 2-chloropyridine and (c) maleic anhydride, said aqueous hydrogen peroxide and 2-chloropyridine being employed in approximately equimolar proportions and said maleic anhydride being employed in an amount substantially equal, on a molal basis, to the hydrogen peroxide and water present in the aqueous hydrogen peroxide used.

3,203,958

PROCESS FOR THE PRODUCTION OF 2-HALOGENATED AROMATIC THIAZOLE CARBOXYLIC ACID HALIDES

Istvan Hari and Walter Jenny, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed May 31, 1962, Ser. No. 198,728
Claims priority, application Switzerland, June 9, 1961, 6,747/61; Apr. 13, 1962, 4,595/62
2 Claims. (Cl. 260—304)

1. A process for the production of 2-halogenated-arylene-4-,5-thiazol-carboxylic acid halide, wherein arylene-4,5-thiazol-carboxylic acid which contains a member selected from the group consisting of a mercapto and a hydroxyl group in the 2-position is reacted with an acid-halogenating agent in the presence of at least one equivalent of a member selected from the group consisting of N,N-di-lower alkyl formamides, N,N-di-lower alkyl thioformamides and N-lower alkyl-pyrrolidones.

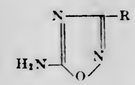
3,203,959

PROCESS FOR PREPARING 5-AMINO-1,2,4-OXADIAZOLES

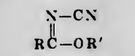
Kenneth Robert Huffman, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 5, 1963, Ser. No. 262,843
6 Claims. (Cl. 260—307)

1. A process for preparing a 5-amino-1,2,4-oxadiazole of the formula:



in which R is selected from the group consisting of alkyl, halo-, carbalkoxy- and aryl-substituted alkyl, aryl and halo-, nitro- and alkyl-substituted aryl which comprises bringing into reactive contact at a temperature of from about 0° C. to about 50° C. in an inert reaction medium an N-cyanoimidate of the formula:



in which R is as defined hereinabove and R' is lower alkyl with hydroxylamine.

3,203,960

METHOD OF PREPARING HALOGENATED DERIVATIVES OF ACETYLENE-DIUREINE AND ITS SUBSTITUTION PRODUCTS

Louis Gandon, Petit-Quevilly, and Paul Henri Williame, Asnieres, France, assignors to Nobel-Bozel, Paris, France, a joint-stock company of France

No Drawing. Filed Apr. 9, 1963, Ser. No. 271,583
Claims priority, application France, Oct. 29, 1962, 913,801
5 Claims. (Cl. 260—309.7)

1. A process, comprising the steps of:
(a) suspending in water a compound of the acetylene diurene class selected from the group consisting of acetylene diureine; 1,5 - dimethyl-acetylene-diureine; 1,5-diphenyl-acetylene-diureine; and 1-methyl-5-phenyl-acetylene-diureine;
(b) vigorously stirring the aqueous suspension;
(c) introducing a gaseous halogen selected from the group consisting of chlorine and bromine into the said stirred aqueous suspension in an amount to form a final calculated concentration of hydrogen halide by the reaction in the reaction medium of greater than 2% by weight with respect to the weight of the reaction medium but lower than 19% by weight of the said medium;
(d) maintaining the introduction of said gaseous halogen over a reaction period of from 1 to 2 hours to obtain a halogenation yield of 94 to 97%;
(e) maintaining said vigorous stirring during said reaction period so that esentially the total gaseous halogen introduced is integrally absorbed by the reaction medium during the entire time period; and
(f) separating the filtrate from the reaction mixture of the solid halogenated derivative formed, corresponding to a member selected from the group consisting of
tetrachloro-acetylene-diureine;
tetrabromo-acetylene-diureine;
1,5-dimethyl-2,4,6,8-tetrachloro-acetylene-diureine;
1,5-dimethyl - 2,4,6,8 - tetrabromo-acetylene-diureine;
1,5-diphenyl - 2,4,6,8 - tetrachloro-acetylene-diureine;
1,5-diphenyl - 2,4,6,8 - tetrabromo-acetylene-diureine;
1-methyl-5-phenyl - 2,4,6,8 - tetrachloro-acetylene-diureine; and
1-methyl-5-phenyl - 2,4,6,8 - tetrabromo-acetylene-diureine.

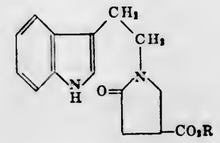
3,203,961

INDOLYLETHYLPYRROLIDONE COMPOUNDS

Yao Hua Wu, Evansville, Ind., assignor to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

No Drawing. Filed Mar. 21, 1963, Ser. No. 266,823
The portion of the term of the patent subsequent to May 11, 1982, has been disclaimed
4 Claims. (Cl. 260—319)

1. A compound of the formula:



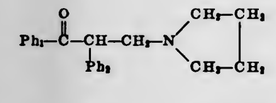
wherein R is lower alkyl of 1 to 4 carbon atoms.

3,203,962
ALPHA-PHENYL-BETA PYRROLIDINO-PROPIOPHENONES

Charles Ferdinand Huebner, Chatham, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 11, 1962, Ser. No. 230,003
4 Claims. (Cl. 260—326.5)

1. A member selected from the group consisting of a compound of the formula



in which each of the groups Ph_1 and Ph_2 is a member selected from the group consisting of (lower alkyl)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl and (trifluoromethyl)-phenyl, and an acid addition salt thereof.

3,203,963
METHOD OF PURIFYING DEHYDROMUCIC ACID

Ralph A. Hales, West Chester, Pa., and Baak W. Lew, Wilmington, Del., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 18, 1963, Ser. No. 273,850
8 Claims. (Cl. 260—347.3)

1. A process of producing a purified dehydromucic acid product which comprises the steps of

treating an aqueous solution of an alkali metal salt of dehydromucic acid, with a mineral acid

until a dehydromucic acid alkali salt product containing from about 5 to about 30% by weight of the mono alkali metal salt and from about 70% to about 95% of the di alkali metal salt is obtained,

treating said aqueous solution with particulate activated carbon, and

separating a decolorized dehydromucic acid alkali salt product.

3,203,964
PREPARATION OF LEVULINIC ACID ESTERS FROM FURFURYL ALCOHOL

George W. Huffman, Crystal Lake, and Earl K. Stigger, Arlington Heights, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed Nov. 6, 1961, Ser. No. 150,138
5 Claims. (Cl. 260—347.4)

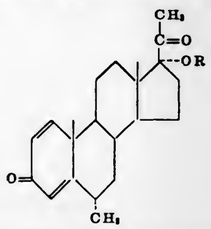
1. In a process for the manufacture of levulinic acid esters which comprises heating furfuryl alcohol at a temperature within the range of 64° C. to 220° C. with a second alcohol selected from the group consisting of tetrahydrofurfuryl alcohol, cyclohexanol, and unsubstituted saturated primary and secondary carbon chain and oxygen-carbon chain aliphatic monohydric alcohols containing from 1 to 10 carbon atoms in the presence of a catalyst selected from the group consisting of hydrogen chloride and hydrogen bromide and gradually adding the furfuryl alcohol to the second alcohol at a rate that at no time does the amount of unreacted furfuryl alcohol exceed about 2 percent by volume of the second alcohol, and using not less than about two to not more than about four; molecular proportions of the said second alcohol per molecular proportion of the furfuryl alcohol used, the improvement which consists in carrying out said process in the presence of water with the amount of water employed being more than about 0.5 percent and not substantially in excess of about 4 percent by weight of said second alcohol.

3,203,965
6α-METHYL-$\Delta^{1,4}$-PREGNADIEN-17α-OL-3,20-DIONE AND ESTERS THEREOF

Howard J. Ringold and George Rosenkranz, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed June 25, 1958, Ser. No. 744,347
Claims priority, application Mexico, May 14, 1958, 50,998
4 Claims. (Cl. 260—397.4)

1. A compound having the following formula:



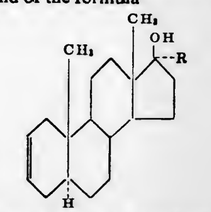
wherein R is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms.

3,203,966
17α-(HYDROCARBON - SUBSTITUTED)-5α-ANDROST-2-EN-17β-OLS AND ESTERS THEREOF

Raymond E. Counsell, Skokie, and Paul D. Klimstra, Northbrook, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 25, 1961, Ser. No. 140,199
5 Claims. (Cl. 260—397.5)

1. A compound of the formula



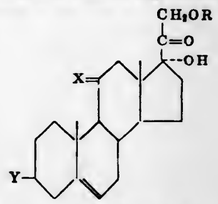
wherein R is a lower aliphatic hydrocarbon radical.

3,203,967
3β-HALO-Δ^5 AND 3-DESOXY-Δ^5 CORTICAL HORMONES

John A. Zderic, Palo Alto, Calif., and Otto Halpern and Jose Iriarte, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,231
24 Claims. (Cl. 260—397.45)

1. A compound of the following formula:



wherein X is a member of the group consisting of keto and β-hydroxy, Y is selected from the group consisting of hydrogen, fluorine, chlorine and bromine and R is a member of the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms.

3,203,968
ION FLOTATION METHOD

Felix Sebba, Dept. of Chemistry, University of the Witwatersrand, Johannesburg, Transvaal, Republic of South Africa

No Drawing. Filed June 3, 1959, Ser. No. 818,501
7 Claims. (Cl. 260—429.1)

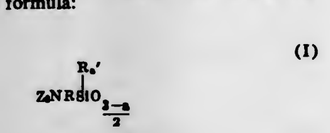
1. A process for the recovery of inorganic ions from a polar solution thereof by a technique wherein a unique floatable reaction product is formed and separated by froth flotation comprising contacting said inorganic ions while in said poplar solution with an oppositely-charged, ion-producing, surface-active collector having at least one hydrophilic and one aerophilic center of activity, said collector being selected from the group consisting of alkyl, aryl, arylalkylamines and the corresponding amine and quaternary halogen salts, and a triglyceride derivative selected from the group consisting of plant and animal triglycerides having from 5 to 24 carbon atoms in each of its aerophilic centers of activity at collector concentrations below the critical micelle concentration of said collector, to form a reaction product, said reaction product being of a monomolecular nature capable of adsorption at the interface of an air bubble by reason of the aerophilic activity of said collector, buoying the reaction product with air bubbles to form a froth on the surface of the solution while maintaining said surface substantially quiescent, and recovering the reaction product from the froth by removal of the froth from solution.

3,203,969
AMINO SILICONE-SILICATE POLYMERS

Arthur N. Pines, Snyder, and Eugene A. Zientek, Kenmore, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 26, 1961, Ser. No. 105,537
10 Claims. (Cl. 260—448.2)

1. An organosilicon polymer that consists essentially of: (A) from 10 to 90 parts by weight of siloxane groups represented by the formula:



(I)

wherein Z is a member selected from the group consisting of the hydrogen atom, the unsubstituted monovalent hydrocarbon groups, and substituted monovalent hydrocarbon groups containing from 0 to 1 hydroxy group as a substituent and from 0 to 1 amino group as a substituent; R is a divalent hydrocarbon group free of olefinic and acetylenic unsaturation and containing at least three carbon atoms; the Z_2N group is attached to at least the third carbon atom removed from the silicon atom; R′ is a monovalent hydrocarbon group and *a* has a value from 0 to 2 inclusive and (B) from 10 to 90 parts by weight of groups represented by the formula:



(II)

wherein M is a cation that forms a water soluble silicate selected from the group consisting of sodium, potassium, lithium, rubidium and the tetraorgano ammonium cations; *b* is the valence of the cation represented by M and has a value of at least one and *c* has a value from 1 to 3 inclusive, said parts by weight of said groups being based on 100 parts by weight of the organosilicon polymer.

3,203,970
ADAMANTANE ISOCYANATE AND ISOTHIOCYANATE

Marvin Paulshock and John C. Watts, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 19, 1963, Ser. No. 274,325
3 Claims. (Cl. 260—453)

1. A compound selected from the group consisting of adamantane isocyanate and adamantane isothiocyanate.

3,203,971
GLYCOL BORATE AMINE SALTS

Richard J. De Gray, South Euclid, and Lawrence N. Killian, Cedarville, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Original application Feb. 21, 1961, Ser. No. 90,650, now Patent No. 3,133,800, dated May 19, 1964. Divided and this application May 28, 1963, Ser. No. 283,708
1 Claim. (Cl. 260—462)

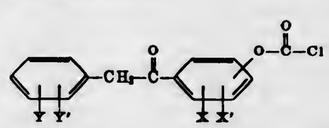
As a composition of matter, the product of the reaction of a 1:1 (molar) glycol borate containing 3 to 6 carbon atoms with a stoichiometric amount of an aliphatic amine selected from the group consisting of primary, secondary and tertiary alkyl amines wherein the alkyl contains from 3 to 18 carbon atoms, said product containing a minimum of 14 carbon atoms.

3,203,972
ARYLACETYLPHENYL CHLOROFORMATES

Edward L. Schumann, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

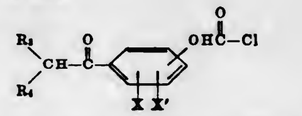
No Drawing. Original application Mar. 18, 1963, Ser. No. 266,089. Divided and this application Apr. 29, 1964, Ser. No. 363,617
3 Claims. (Cl. 260—463)

1. A compound selected from the group consisting of compounds of the formula:



(I)

and of the formula:



(I)

wherein each of X and Y is from zero to 3 alkoxys of from 1 to 2 carbon atoms, inclusive; X′ is selected from the group consisting of from zero to 2 halogens and from zero to 2 alkyls of from 1 to 3 carbon atoms, inclusive; Y′ is selected from the group consisting of from zero to 1 halogen, from zero to 1 nitro, and from zero to 1 methyl; and R_3 and R_4 are selected from the group consisting of phenyl, tolyl, and methoxyphenyl.

3,203,973
PHOTODIMERIZATION OF FUMARONITRILE

Gary Walter Griffin, New Orleans, La., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Jan. 9, 1961, Ser. No. 81,224, now Patent No. 3,139,395, dated June 30, 1964. Divided and this application Mar. 12, 1964, Ser. No. 351,509
2 Claims. (Cl. 260—464)

2. Cis, trans, cis-1,2,3,4-tetracyanocyclobutane.

3,203,974

PURIFICATION OF ACETONITRILE AND PROPIONITRILE

Seymour Sobel, Cedar Grove, Vincent J. Iappelli, Lodi, N.J., and Marcia K. Snavely, Mayfield Heights, Ohio, assignors of one-half each to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware, and the Standard Oil Company (Ohio), Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 5, 1962, Ser. No. 221,442
5 Claims. (Cl. 260—465.1)

1. A process for the removal of at least one nitrogen-containing basic compound selected from the group consisting of ammonia, pyridine and pyridine bases from an organic compound selected from the group consisting of acetonitrile and propionitrile, said organic compound containing not more than about 15% by weight of water which comprises treating said organic compound at a temperature of from about 50° C. to about 150° C. with from about 2% to about 5% by weight of an inorganic acidic compound selected from the group consisting of boric acid, boric anhydride, phosphoric acid, phosphorous trioxide, phosphorous tetraoxide, phosphorous pentoxide, arsenious acid and stannic acid, and recovering the resultant purified organic compound.

3,203,975

PURIFICATION OF ACETRONITRILE AND PROPIONITRILE

Seymour Sobel, Cedar Grove, and Vincent J. Iapelli, Lodi, N.J., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Sept. 5, 1962, Ser. No. 221,453
2 Claims. (Cl. 260—465.1)

1. A process for the removal of water and at least one nitrogen-containing basic compound selected from the group consisting of ammonia, pyridine and pyridine bases from an organic compound selected from the group consisting of acetonitrile and propionitrile which comprises treating said organic compound simultaneously with calcium chloride and an inorganic acid selected from the group consisting of hydrochloric, sulfuric and phosphoric acids at a temperature of from atmospheric to about 100° C., a pressure of from atmospheric to about 50 atmospheres, a time period of from about 1 to about 5 hours and a pH of less than 5, separating the resultant oil layer from the calcium chloride and acid, further treating the separated oil layer with additional calcium chloride, and recovering the purified nitrile.

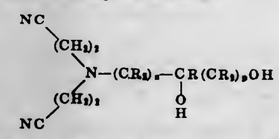
3,203,976

DIHYDROXY ALKYL BIS-(2-CYANOETHYL) AMINES AND PROCESSES FOR THE PREPARATION THEREOF

Adolph E. Oberth, Fairoaks, and Rolf S. Bruenner, Orangevale, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed Jan. 24, 1963, Ser. No. 254,857
19 Claims. (Cl. 260—465.5)

1. Compounds having the formula



wherein R is selected from the group consisting of hydrogen and lower alkyl, z and p are positive whole integers ranging from 1 to about 6, and the molecular weight of said compounds ranges from about 198 to about 1000.

3,203,977

PROCESS FOR REACTING NITRILES AND DECABORANE IN THE PRESENCE OF LEWIS ACIDS

Marvin M. Fein, Westfield, Chester J. Grelecki, Denville, and George J. Donovan, Morristown, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Oct. 21, 1960, Ser. No. 64,215
5 Claims. (Cl. 260—465.6)

1. A method for the preparation of solid reaction products of nitriles and decaborane which comprises reacting from 0.01 to 14 moles of a nitrile selected from the group consisting of acetonitrile, propionitrile, butyronitrile, isobutyronitrile, dimethylpropionitrile, valeronitrile, acrylonitrile, 3-butenenitrile, 4-pentenenitrile, succinonitrile, maleonitrile, adiponitrile and B,B'-oxydipropionitrile per mole of decaborane while the rectants are in admixture with a catalytic amount of a Lewis acid selected from the group consisting of boron trifluoride, boron trichloride, boron tribromide, boron triiodide, aluminum trichloride, aluminum tribromide, ferric chloride, ferric bromide, zinc chloride, stannic chloride, antimony pentachloride, titanium tetrachloride and boron trifluoride etherate.

3,203,978

PROCESS FOR PREPARING THE METHYL ESTER OF 2,5-HEXADIENOIC ACID

Gian Paolo Chiusoli, Novara, and Sergio Merzoni, Milan, Italy, assignors to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

No Drawing. June 6, 1962, Ser. No. 200,328
Claims priority, application Italy, June 6, 1961, 10,255/61
3 Claims. (Cl. 260—486)

1. A process for preparing methyl ester of 2,5-hexadienoic acid,, comprising reacting methyl allyl ether, acetylene and carbon monoxide in the presence of nickel carbonyl, methyl alcohol and hydrochloric acid in the molar ratios: methyl allyl ether:hydrochloric acid from 1 to 10; carbon monoxide:acetylene from 0.5 to 1; nickel carbonyl:hydrochloric acid from 0.5 to 1 at a temperature between 20° and 60° C.

3,203,979

REACTION PRODUCTS OF DECABORANES AND ACETYLENIC ESTERS AND THEIR PREPARATION

John W. Ager, Jr., Buffalo, and Theodore L. Heying, Tonawanda, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Mar. 6, 1959, Ser. No. 797,809
18 Claims. (Cl. 260—488)

1. A method for the production of an organoboron compound useful as a fuel which comprises reacting with the formation of hydrogen a borane selected from the group consisting of decaborane and alkyl decaboranes having from one to two alkyl groups containing from one to five carbon atoms in each alkyl group with an acetylenic compound which is an ester of a monocarboxylic acid having from 1 to 6 carbon atoms and an acetylenic alcohol selected from the class consisting of monohydric alcohols and dihydric alcohols containing from 3 to 10 carbon atoms at a temperature within the range from 25° to 180° C. and at a pressure of from 0.2 to 20 atmospheres while the reactants are in admixture with a material selected from the group consisting of lower dialkyl ethers, dioxane, tetrahydrofuran, ethylene glycol dialkyl ethers, hydrogen cyanide, nitriles of the saturated and unsaturated aliphatic mono- and dicarboxylic acids containing 2 to 5 carbon atoms, B,B'-oxydipropionitrile, the lower alkyl, dialkyl and trialkyl amines, alkyl diamines containing 2 to 8 carbon atoms, lower dialkyl sulfides and diphenyl sulfide, the molar ratio of said borane to said acetylenic compound being within the range of 0.05:1 to 20:1 and the molar ratio of said material to said borane being within the range of from 0.001 to 100:1.

14. $RR'B_{10}H_8(CR''CR''')$ wherein R and R' are each selected from the class consisting of hydrogen and an alkyl radical containing from one to five carbon atoms, wherein R'' and R''' are each selected from the class consisting of hydrogen, an alkyl radical, and radicals of the class



wherein R_1 is a bivalent saturated hydrocarbon radical containing 1 to 8 carbon atoms at least one radical of the class



being present, and R_2 is selected from the class consisting of a benzyl radical and alkyl radicals containing 1 to 6 carbon atoms, the total number of carbon atoms in the R_1 radical portion of R'' and R''' taken together not exceeding eight.

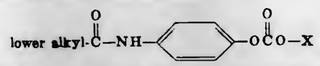
3,203,980

BROMO- AND CHLOROALKYL 4-ACETAMIDOPHENYL CARBONATES

Joseph V. Swintosky, Perkiomenville, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,727
5 Claims. (Cl. 260—463)

1. A compound of the formula:



wherein X is selected from the group consisting of chlorinated lower alkyl and brominated lower alkyl.

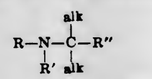
3,203,981

OXYGENATED TERTIARY-ALKYLAMINES

William W. Hargrove, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,250
5 Claims. (Cl. 260—501)

1. An amine base of the formula:



wherein R is a tertiary alkyl group, R' is a member of the class consisting of hydrogen, methyl, and ethyl, R'' is a member of the group consisting of —CH_2OH and CHO, and alk is a lower alkyl group.

2. A non-toxic acid addition salt of a compound according to claim 1.

3,203,982

PROCESS FOR HYDROGENATING DIARYLKETONE CARBOXYLIC ACIDS

John H. McCracken, Monroeville, and Johann G. D. Schulz and Arthur C. Whitaker, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Nov. 30, 1960, Ser. No. 72,581
4 Claims. (Cl. 260—515)

1. A process for hydrogenating a benzophenone carboxylic acid having from one to two carboxylic acid groups on each of the rings of said benzophenone carboxylic acid, said carboxylic acid groups being symmetrically arranged on said rings, at least one of said carboxylic acid groups on each of said rings being in the 4 position relative to the carbonyl of said benzophenone carboxylic acid, which comprises heating an aqueous solution of a salt of said acid wherein said salt is selected from the group consisting of the sodium, potassium, lithium, rubidium, cesium, beryllium, magnesium and ammonium salts of said benzophenone carboxylic acid in the presence of hydrogen and a hydrogenation catalyst selected from the group consisting of cobalt, nickel and copper chromite at a temperature of about 100° to about 200° C., a pressure of about 300 to about 1000 pounds per square inch gauge for about 15 minutes to about 10 hours to obtain a compound selected from the group consisting of the corresponding salt of a diarylcarbinol carboxylic acid and the corresponding salt of a diarylmethane carboxylic acid.

3,203,983

CERTAIN SUBSTITUTED NORBORNENES AND NORBORNANES

George Ireland Poos, Ambler, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed June 2, 1961, Ser. No. 114,289
11 Claims. (Cl. 260—518)

1. A member selected from the group consisting of 7-R_1,R_2-Y-2-R_3-3-R_4-5-norbornene and the corresponding norbornanes, wherein R_1 and R_2 each is phenyl; R_3 and R_4 each is a member selected from the group consisting of carboxamide, mono-loweralkyl-aminocarbonyl, di-loweralkyl-aminocarbonyl, N-β-phenethyl-aminocarbonyl and carboxyl, wherein when one of R_3 and R_4 is a carboxamide, the other is carboxyl, and when one of R_3 and R_4 is carboxyl, the other is a carboxamide; and Y is a member selected from the group consisting of methyl and methylene wherein when Y is methyl, the 7-position carbon atom is further substituted with hydroxyl.

2. 7 - diphenylmethylene - 2 - methyl-carboxamido-5-norbornene-3-carboxylic acid.

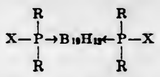
3,203,984

BIS(HALODIARYLPHOSPHINE)DECABORANES AND THEIR PREPARATION

Theodore L. Heying, North Haven, and Hansjuergen A. Schroeder, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

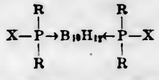
No Drawing. Filed June 28, 1962, Ser. No. 205,859
9 Claims. (Cl. 260—543)

1. Bis(halodiarylphosphine) decaboranes of the general formula:

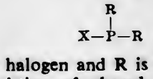


wherein X is a halogen and R is an aryl radical selected from the group consisting of phenyl, tolyl, xylyl, naphthyl, and biphenyl.

3. A method for the preparation of bis(halodiarylphosphine) decaboranes of the formula:



wherein X is a halogen and R is a radical selected from the group consisting of phenyl, tolyl, xylyl, naphthyl, and biphenyl, which comprises reacting decaborane at a temperature within the range of about 0° C. to about 150° C. with a compound of the formula:



wherein X is a halogen and R is a radical selected from the group consisting of phenyl, tolyl, xylyl, naphthyl, and biphenyl.

3,203,985
POLYMERIC PRODUCTS PREPARED BY THE REACTION OF DIISOCYANATES AND BIS AMINO DECABORANES

Marvin M. Fein, Westfield, N.J., and Barney Groten, West Lafayette, Ind., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Nov. 15, 1960, Ser. No. 69,519
10 Claims. (Cl. 260—553)

1. A process for the preparation of solid polymeric reaction products of a borane and a diisocyanate which comprises reacting a borane selected from the class consisting of a bis(diamino) decaborane and a bis(diamino) alkyldecaborane with a diisocyanate of the formula

$$O{=}C{=}N{-}R{-}N{=}C{=}O$$

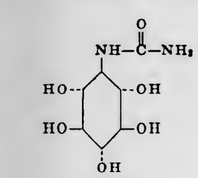
wherein R is a radical selected from the class consisting of alkylene, cycloalkyl, unsubstituted aromatic radicals and hydrocarbon substituted aromatic radicals.

3,203,986
BLUENSUREA AND ITS PREPARATION

Alexander D. Argoudelis and Brian Bannister, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application Nov. 15, 1962, Ser. No. 238,047. Divided and this application Aug. 31, 1964, Ser. No. 393,406
3 Claims. (Cl. 260—553)

1. Bluensurea, a compound having the structural formula:



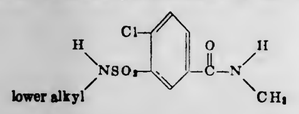
(V)

3,203,987
4-HALO-3-SULFAMOYLBENZAMIDES AND METHODS OF PREPARING THE SAME

Milton L. Hoefle, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed May 28, 1962, Ser. No. 197,893
3 Claims. (Cl. 260—556)

1. A 4-halo-3-sulfamoylbenzamide of the formula

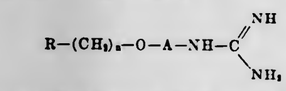


3,203,988
CYCLOALKYLOXYALKYL GUANIDINE COMPOUNDS

Alfred Campbell, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Nov. 23, 1962, Ser. No. 239,799
9 Claims. (Cl. 260—564)

1. A member of the class consisting of cycloalkyloxyalkylguanidines of the formula



and non-toxic acid-addition salts thereof, where R is chosen from the class consisting of a cycloalkyl group of 3 to 8 carbon atoms and a cycloalkyl group of 3 to 8 carbon atoms substituted by a member of the class consisting of lower alkyl of fewer than 4 carbon atoms and lower alkoxy of fewer than 4 carbon atoms; *n* is chosen from between 0 and 1; and A represents a lower alkylene radical of 2 to 4 carbon atoms inclusive, separating the groups to which it is attached by at least 2 carbon atoms.

3,203,989
PROCESS FOR THE PRODUCTION OF PHENYLHYDRAZINE HYDROCHLORIDE

Heinz Hupfer, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

Filed Aug. 14, 1962, Ser. No. 216,880
Claims priority, application Germany, Aug. 17, 1961, F 34,710
7 Claims. (Cl. 260—569)

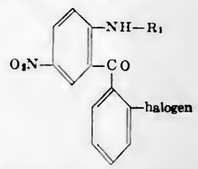
1. A process for preparing phenylhydrazine hydrochloride which comprises A) rapidly and intimately mixing, at a temperature within the range of 0 to 30° C., phenyldiazonium chloride with an amount of a mixture of sodium sufite and sodium bisulfite sufficient to give the resulting reduction mixture, when heated to 80 to 85° C., a pH of 5.0 to 7.0, B) heating said reduction mixture to a temperature within the range of 80 to 85° C. to reduce the phenyldiazonium chloride to phenylhydrazine hydrochloride, C) adding concentrate hydrochloric acid thereto to precipitate the phenylhydrazine hydrochloride so formed, and D) isolating the precipitated phenylhydrazine hydrochloride from the reaction mixture.

3,203,990
2-AMINO-2'-HALO-5-NITRO BENZOPHENONES

Oscar Keller, Clifton, Norbert Steiger, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 21, 1962, Ser. No. 181,443
6 Claims. (Cl. 260—570)

1. A compound of the formula



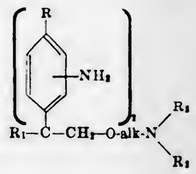
wherein R_1 is selected from the group consisting of hydrogen and lower alkyl.

3,203,991
BASIC ETHERS OF BIS-(AMINOPHENYL)-ALCOHOLS

Benjamin Blank, Trevose, and James F. Kerwin, Broomall, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 29, 1962, Ser. No. 241,054
9 Claims. (Cl. 260—570)

1. A compound selected from the group consisting of bases, their nontoxic pharmaceutically acceptable acid addition and quaternary ammonium salts, said bases being of the structure:



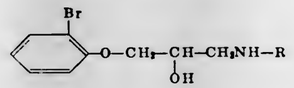
in which:
R is a member selected from the group consisting of methyl and ethyl;
R_1 is a lower alkyl of 1–5 carbon atoms;
R_2 and R_3 are members selected from the group consisting of lower alkyl of 1–5 carbon atoms and, when taken together with the nitrogen atom to which they are attached, pyrrolidinyl, piperidinyl, morpholinyl, N-lower alkylpiperazinyl and thiomorpholinyl; and
Alk is an alkylene chain of from 2–5 carbon atoms.

3,203,992
DERIVATIVES OF 1-(o-BROMOPHENOXY)-2-HYDROXY-3-AMINOPROPANE

Wilhelm Kunz and Haireddin Jacobi, Monheim, Rhineland, Germany, assignors to Sanol-Arzneimittel Dr. Schwarz G.m.b.H., Monheim, Germany, a corporation of Germany

No Drawing. Filed Jan. 25, 1963, Ser. No. 253,972
Claims priority, application Germany, Feb. 14, 1962, S 78,034
5 Claims. (Cl. 260—570.7)

1. A compound of the formula:



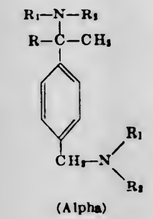
in which R is lower alkyl of from 1 to 8 carbon atoms.

3,203,993
p-(AMINOALKYL)BENZYLAMINES

John G. Abramo, Wilmington, Del., and Earl C. Chapin, Springfield, Mass., assignors to Monsanto Company, a corporation of Delaware

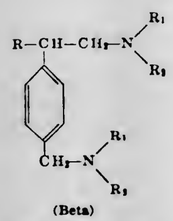
No Drawing. Filed June 17, 1963, Ser. No. 288,430
4 Claims. (Cl. 260—570.8)

1. A p-(aminoalkyl)benzylamine selected from the group consisting of:



(Alpha)

and



(Beta)

wherein, in each of the above formulae, R is selected from the class consisting of hydrogen and methyl, R_1 is selected from the class consisting of hydrogen, alkyls of from 1 to 10 carbon atoms in the longest continuous chain and aryls of from 6 to 20 carbon atoms in their basic cyclic structure, and R_2 is selected from the class consisting of alkyl radicals and aryl radicals.

3,203,994
PURIFICATION OF META-PHENYLENEDIAMINE

Louis Spiegler, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,511
6 Claims. (Cl. 260—582)

1. A purification process for m-phenylenediamine, which process comprises contacting m-phenylenediamine at about 60–80° C. with a non-polar, water immiscible solvent, said solvent having a solvent power for m-phenylenediamine of less than 5% and having a boiling point between the melting point of m-phenylenediamine and 200° C., separating the solvent layer from the m-phenylenediamine layer, and distilling the m-phenylenediamine layer to recover an improved, stable m-phenylenediamine.

3,203,995
PROCESS FOR REACTING LOWER ALKYL DECABORANE WITH ALKYL DI-AMINES AND PRODUCTS THEREOF

Joseph Green, Dover, N.J., and Barney Groten, West Lafayette, Ind., assignors, by mesne assignments, to Thiokol Chemical Corporation, a corporation of Delaware

No Drawing. Filed Nov. 7, 1957, Ser. No. 695,179
8 Claims. (Cl. 260—583)

1. A process for the preparation of solid reaction products of amines and alkyl decaboranes which comprises reacting from 0.05 to 20 moles of a lower alkyl decaborane with an amine selected from the group consisting of primary and secondary alkyl di-amines containing from 1 to 8 carbon atoms at a temperature of about 80° C. to 150° C. for from one to fifty hours with the elimination of hydrogen.

3,203,996
POLYHALOALKYLPOLYTHIO ALKANOLS

Joseph E. Moore, Richmond, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Oct. 23, 1962, Ser. No. 232,583
4 Claims. (Cl. 260—608)

1. Compound of the formula

$$HOXS_mR'$$

wherein X is an alkylene of from 1 to 4 carbons, *m* is an integer from 2 to 3, and R' is polyhalo(lower)alkyl, having at least 3 halogens, wherein said halogens are of atomic number 17 through 35.

3,203,997
SUBSTITUTED POLYPHENYL ETHERS

Clarence L. Mahoney, Berkeley, and Karl J. Sax, Orinda, Calif., assignors to Shell Oil Company, a corporation of Delaware

No Drawing. Filed Dec. 9, 1957, Ser. No. 701,295
4 Claims. (Cl. 260—613)

1. Bis[p-(o-phenyl-p-tert-butylphenoxy)phenyl]ether.

3,203,998
SELECTIVE HYDROGENATION

William Thomas House, Baton Rouge, La., and Rhea N. Watts, deceased, late of St. Francisville, La., by Beulah Smith Watts, legal representative and sole heir, St. Francisville, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Feb. 6, 1963, Ser. No. 257,365
8 Claims. (Cl. 260—617)

1. A process for selectively hydrogenating a mixture of C_1 to C_{30} primary monohydric alcohols and C_3 to C_{30} secondary monohydric alcohols which comprises contacting a mixture with hydrogen in the presence of 1 to 60

volume percent, based on said alcohols, of a molybdenum catalyst at a pressure in the range of 1,000 to 4,000 p.s.i.g. and a temperature in the range of 400 to 600° F. for a period of 1 to 15 hours and recovering a mixture of products consisting essentially of primary alcohols and paraffins.

3,203,999

FLUORINATED CHEMICAL COMPOUND

David Milton Gardner, North Wales, Pa., Robert Edward Oesterling, Silver Spring, Md., and Murray Hauptschein, Glenside, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 28, 1962, Ser. No. 207,157

1 Claim. (Cl. 260—633)

The compound 2,2-difluoro-2-nitroethanol.

3,204,000

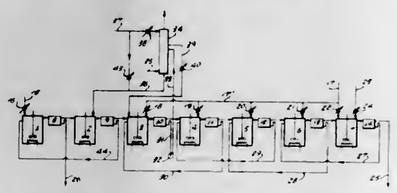
MANUFACTURE OF NITROTOLUENES

Eirik Samuelsen, Gullaug, Norway, assignor to Aktiebolaget Chematur, Stockholm, Sweden, a corporation of Sweden, and Norsk Spraengstofindustri A/S, Oslo, Norway, a corporation of Norway

Filed Dec. 20, 1961, Ser. No. 160,831

Claims priority, application Sweden, Dec. 22, 1960, 12,410/60

7 Claims. (Cl. 260—645)



1. In a process for the nitration of toluene by countercurrent contact with a nitration acid reactant including nitric acid, the steps which comprise passing said nitration acid reactant through a plurality of reaction stages in counter-current flow with said toluene for nitration thereof to dinitrotoluene and trinitrotoluene progressively in said stages, producing water and nitrous acid in at least one of said stages where dinitrotoluene is present and resulting from reactions therein, the proportions of water and nitrous acid in said nitration acid reactant increasing as said reactant proceeds through said successive stages, withdrawing from said reaction between two of said successive stages where dinitrotoluene is present said nitration acid reactant with said nitrous acid therein, removing said nitrous acid from said withdrawn reactant and converting it to nitric acid, and returning said thus treated nitration acid reactant to said process for further nitration of said toluene therein substantially free of nitrous acid.

3,204,001

METHOD FOR PREPARING 2,6-DICHLORO-PHENYLNITROMETHANE

Johannes Thomas Hackmann, Herne Bay, Derek Alexander Wood, Sittingbourne, and Paulus Adriaan Hartkoorn, Herne Bay, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 12, 1962, Ser. No. 209,291

Claims priority, application Great Britain, Apr. 6, 1962, 17,800/61

3 Claims. (Cl. 260—646)

1. A process for the preparation of 2,6-dichlorophenylnitromethane comprising reacting 2,6-dichlorobenzyl chloride with an alkali metal nitrite of the group consisting of sodium, lithium and potassium nitrites, at a temperature of from about 20° C. to about 90° C. in the presence of a solvent of the group consisting of dimethylformamide-urea and dimethylsulfoxide and in the presence of an amine containing from 1 to 8 carbon atoms of the group consisting of monoalkyl- and dialkylamines.

3,204,002

PROCESS FOR PURIFYING TRICHLORO-MONOFLUOROETHYLENE

Eugene G. Teach, Lafayette, and Attila E. Pavlath, Berkeley, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 16, 1962, Ser. No. 173,814

6 Claims. (Cl. 260—653.3)

1. The process for purifying trichloromonofluoroethylene containing an oxidation reaction contaminant comprising: treating said contaminated $CCl_2=CClF$ with a tertiary amine selected from the group consisting of pyridine and tetramethylethylenediamine and washing the resultant liquid with aqueous hydrochloric acid.

3,204,003

PHOSPHORUS TRICHLORIDE RECOVERY OPERATION

Gardner C. Ray, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 10, 1960, Ser. No. 61,460

14 Claims. (Cl. 260—666)

1. A method for the separation of a phosphorus halide from a hydrocarbon toward which said halide is chemically inert containing the same which comprises contacting the mixture of said halide and hydrocarbon with a sulfolane in a liquid-liquid solvent extraction operation said sulfolane being effective to remove said halide from the mixture of said halide and hydrocarbon by forming an extract with said halide.

13. As a selective solvent especially suited to the separation of a phosphorus halide and a hydrocarbon from a mixture containing said halide and said hydrocarbon by forming an extract containing said phosphorus halide which comprises a mixture of a substantial amount of tetramethylene sulfone and a substantial amount of gamma butyrolactone.

3,204,004

PROCESS FOR PREPARATION OF PHENYLACETYLENE

Arthur R. Sexton, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 2, 1961, Ser. No. 114,297

4 Claims. (Cl. 260—668)

1. A method for preparing phenylacetylene which comprises reacting α,β-dibromoethylbenzene in a non-primary aliphatic alcohol having from 3 to 5 carbon atoms which can contain up to 50% by weight of water and in the presence of an alkali metal hydroxide at between about 100° to 175° C. and under at least the autogenous pressure.

3,204,005

HYDROCARBON CONVERSION PROCESS AND CATALYST THEREFOR

William G. Nixon, Westchester, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 13, 1963, Ser. No. 280,093

19 Claims. (Cl. 260—671)

1. A conversion process which comprises alkylating an alkylatable aromatic hydrocarbon with an olefin-acting compound in the presence of a catalyst comprising an oxide of nitrogen selected from the group consisting of nitric acid, nitrous acid, ammonium nitrate, ammonium nitrite and metallic oxides of nitrogen composited on a substantially anhydrous solid support having a surface area in excess of 25 square meters per gram.

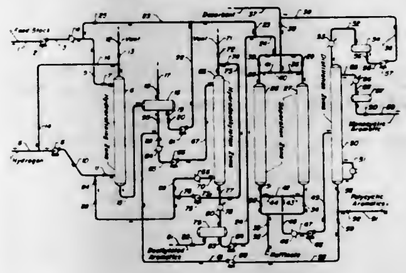
3,204,006

HYDROTREATMENT OF HYDROCARBON STOCKS AND SEPARATION OF AROMATIC COMPONENTS

Donald B. Broughton, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed May 14, 1962, Ser. No. 194,376

8 Claims. (Cl. 260—672)



1. The process for recovering an aromatic hydrocarbon from a mixture of hydrocarbons containing nuclearly alkyl-substituted homologs of the benzene and polycyclic aromatic series together with sulfur- and nitrogen-containing impurities, which comprises initially subjecting said mixture to a hydrorefining treatment in the presence of hydrogen and at hydrorefining reaction conditions whereby the sulfur- and nitrogen-containing compounds present in the feed mixture are converted to volatile nitrogen- and sulfur-containing compounds and the nitrogen and sulfur content of the normally liquid portion of the feed stock is substantially reduced, thereafter contacting the resulting hydrorefined product with a solid adsorbent under conditions whereby the alkyl aromatic hydrocarbon components present in the hydrorefined product are selectively recovered from the nonaromatic components of the mixture and subjecting the recovered alkyl aromatic hydrocarbons to hydrodealkylation in the presence of hydrogen and a hydrodealkylation catalyst at a temperature and pressure sufficient to remove the nuclear alkyl substituents from the alkyl aromatic components of the feed stock to the hydrodealkylation reaction.

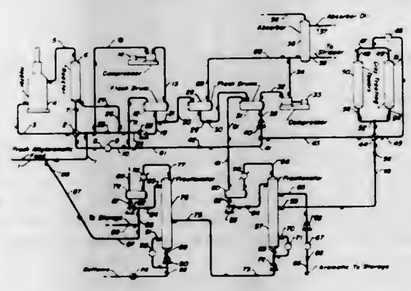
3,204,007

DEALKYLATION OF ALKYL AROMATIC COMPOUNDS

Taro Mukai, Des Plaines, and James E. Gantt, Elmwood Park, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Nov. 12, 1963, Ser. No. 324,167

9 Claims. (Cl. 260—672)



1. A process for the catalytic hydrodealkylation of an alkyl aromatic hydrocarbon which comprises passing said hydrocarbon to a reaction zone containing a dealkylation catalyst, hydrodealkylating said hydrocarbon at hydrodealkylating conditions in the presence of an excess of hydrogen, passing the reactor effluent to a separation zone, separating said effluent into a hydrogen-rich gaseous phase and a liquid hydrocarbon phase, recycling said gaseous phase to combine with said alkyl aromatic hydrocarbon, recycling a portion of the liquid hydrocarbon phase to the outlet end portion of the reaction zone to effect a quench of the reactor effluent prior to its withdrawal from said reaction zone, passing the remaining portion of said liquid hydrocarbon phase to another separation zone, separating light hydrocarbons from said liquid hydrocarbon phase, and recovering the desired product from said liquid hydrocarbon phase.

3,204,008

PROCESS FOR THE PREPARATION OF AROMATIC COMPOUNDS FROM ACETYLENICALLY UNSATURATED COMPOUNDS

Walter Scheller, Munchenstein, and Gustav Daendliker, Birsfelden, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Dec. 11, 1962, Ser. No. 243,735

Claims priority, application Switzerland, May 17, 1960, 5,622/60; Oct. 28, 1960, 12,106/60; June 19, 1962, 7,379/62

9 Claims. (Cl. 260—673)

1. A process for the manufacture of aromatic hydrocarbons by cyclizing acetylenically unsaturated hydrocarbons, containing as polymerizable unsaturated bonds at most two triple bonds and being selected from the group consisting of acetylene, diacetylene, dimethylacetylene, diethylacetylene, diphenylacetylene, methylacetylene, ethylacetylene and mixtures thereof, in which process said acetylenically unsaturated hydrocarbons are introduced, at a temperature, ranging from −10° to 200° C. and under a pressure ranging from 100 to 2000 mm. Hg, into an anhydrous organic solvent containing in suspension 2 to 40 grams of a cyclization catalyst per liter of solvent, said catalyst being a unitarily acting catalyst consisting essentially of a halide of a heavy metal selected from the group consisting of tantalum pentachloride, tantalum pentabromide, niobium pentachloride, niobium pentabromide, niobium oxychloride, mixtures thereof, and adducts thereof with a nucleophilic compound selected from the group consisting of a phosphorus chloride, a phosphorus oxychloride, ammonia, a primary amine, a secondary amine, a tertiary amine, an alkali metal halide and an alkaline earth metal halide, the aromatic hydrocarbons produced are separated by distillation after filtering off the cyclization catalyst.

3,204,009

PROCESS FOR THE ISOMERIZATION OF OLEFINS

Willis C. Keith, Lansing, Ill., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 23, 1959, Ser. No. 854,563

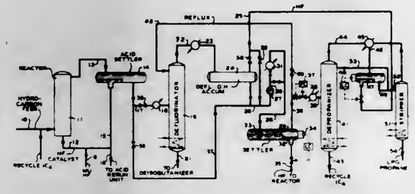
10 Claims. (Cl. 260—683.2)

1. A method for the selective carbon to carbon double bond isomerization without substantial cracking or skeletal isomerization of aliphatic monoolefin of 4 to 8 carbon atoms which comprises contacting said olefin under isomerization conditions at an elevated temperature of about 200–1100° F. and at an olefin partial pressure of 15 to 300 p.s.i.a. with an anionic catalyst prepared by calcining at a temperature of about 600 to 1300° F. a composition consisting essentially of alumina and about 1 to 7.6 milliequivalents per gram of said alumina of an alkali metal oxide, said oxide being sufficient to give an anionic catalyst.

3,204,010
DEFLUORINATION PROCESS

Joe Van Pool, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 18, 1961, Ser. No. 160,069
11 Claims. (Cl. 260—683.42)



1. A process for treating hydrocarbon materials to remove therefrom organically combined fluorine comprising:

(1) passing a hydrocarbon material saturated with HF and containing a minor quantity of organically combined fluorine to a distillation zone to produce a vaporized overhead product;

(2) condensing the overhead product from the distillation zone to form a liquid having a hydrocarbon phase containing an alkylatable material and a HF phase;

(3) admixing additional liquid HF with the liquid having the hydrocarbon phase and the HF phase;

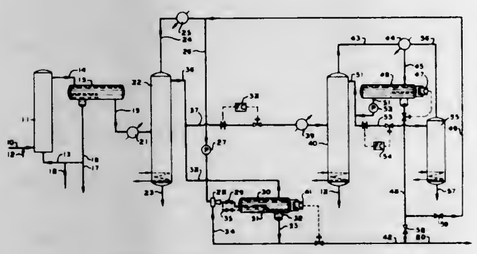
(4) separating the mixture of liquid hydrocarbon and liquid HF into a liquid hydrocarbon phase and a liquid HF phase; and

(5) withdrawing liquid hydrocarbon having a reduced quantity of organically combined fluorine from the liquid hydrocarbon phase.

3,204,011
DEFLUORINATION PROCESS

George R. Hettick, Joe Van Pool, and Charles C. Chapman, all of Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 25, 1963, Ser. No. 260,530
6 Claims. (Cl. 260—683.42)



1. A process for treating hydrocarbon materials to remove therefrom organically combined fluorine comprising:

(1) passing a liquid hydrocarbon material containing an alkylatable material, free HF, and a minor quantity of organically combined fluorine to a contactor to separate the liquid into a liquid hydrocarbon phase and a liquid HF phase;

(2) withdrawing liquid HF from said liquid HF phase in said contactor;

(3) intimately admixing at least one volume of said withdrawn liquid HF with each volume of said liquid hydrocarbon material passing to said contactor; and

(4) withdrawing liquid hydrocarbon of reduced organically combined fluorine content from the liquid hydrocarbon phase in said contactor.

3,204,012
METHOD OF POLYMERIZATION OF FORMALDEHYDE

Tamotsu Eguchi and Takatoshi Fujiwara, Kurashiki, Japan, assignors to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan

No Drawing. Filed Oct. 3, 1961, Ser. No. 142,505
Claims priority, application Japan, Mar. 29, 1961, 36/10,545
7 Claims. (Cl. 260—857)

1. A method for the preparation of high molecular weight formaldehyde polymers comprising contacting substantially anhydrous gaseous formaldehyde with a solid high polymer selected from the group consisting of polyamides, polyureas, and polyurethanes.

3,204,013
LIGHT STABILIZED COMPOSITIONS COMPRISING POLYVINYL CHLORIDE, POLYURETHANE AND ETHYLENE OXIDE

Carroll H. Osborn, Waynesville, and Doyle V. Haren, Clyde, N.C., assignors to Dayco Corporation, Dayton, Ohio, a corporation of Ohio

No Drawing. Filed May 23, 1961, Ser. No. 111,930
10 Claims. (Cl. 260—859)

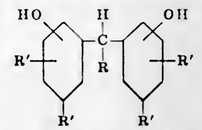
1. A composition of matter comprising a mixture of polyvinyl chloride and a thermoplastic polyurethane elastomer and about 2 to 5 parts by weight of ethylene oxide per 100 parts of said mixture; said polyurethane being the reaction product of diphenyl-methane-p,p'-diisocyanate, adipic acid, and butanediol-1,4, and having an average molecular weight of about 36,000.

3,204,014
STABILIZATION OF POLYACETALS

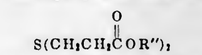
Richard Green, Livingston, N.J., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Sept. 20, 1962, Ser. No. 225,114
15 Claims. (Cl. 260—895)

1. A thermally stable polyacetal composition comprising a high molecular weight polymer of formaldehyde and containing from about 0.1% to about 10% by weight of a stabilizer system comprising (a) a copolymer resulting from the polymerization of a mixture of 30% to 90% by weight of N-vinylpyrrolidone and 10% to 70% by weight of a monoolefinic monomer copolymerizable therewith; (b) a phenolic antioxidant having the fomula



wherein R represents a member selected from the group consisting of a hydrogen atom and alkyl groups having from 1 to 3 carbon atoms and each R' represents an alkyl group having from 1 to 4 carbon atoms; and (c) a diester of 3,3'-thiodipropionic acid having the formula



wherein R'' represents a member selected from the group consisting of alkyl groups having 8 to 20 carbon atoms, cyclo-alkyl groups, and hydroxyalkyl groups having to 1 to 4 carbon atoms in the amounts of approximately 5 to 30 parts by weight of said polyvinylpyrrolidone copolymer and 1 to 20 parts by weight of said phenolic antioxidant per part by weight of said thiodipropionic acid ester, all percentages except those designating the composition of the vinylpyrrolidone copolymer being based on the weight of the formaldehyde polymer in the polyacetal composition.

3,204,015
SPHERICAL PARTICLES

Paulus H. de Ruyter, Breda, and Jean T. B. Winia, Velp, Netherlands, assignors to Algemene Kunstzijde Unie N.V., Arnhem, Netherlands, a corporation of the Netherlands

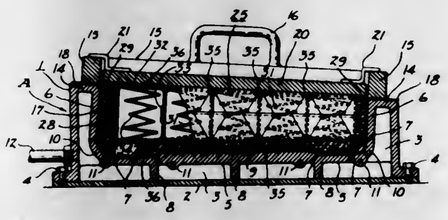
No Drawing. Filed Nov. 9, 1964, Ser. No. 409,943
Claims priority, application Netherlands, Feb. 23, 1962, 275,218
2 Claims. (Cl. 264—11)

1. In a process for the manufacture of spherical particles of a hydrogel of carboxymethylcellulose, which gel contains up to about 2% by weight of carboxymethylcellulose by adding to an aluminum ions-containing hardening bath a hydrosol, consisting essentially of an aqueous solution of a water-soluble alkali metal salt of carboxymethylcellulose having an average molecular weight greater than 200,000 and a degree of substitution in the range 0.4 to 1.0, in the form of drops, in which bath the hydrosol is converted into a hydrogel, and thereafter recovering the spherical hydrogel particles, the improvement comprising employing a hardening bath consisting essentially of an aqueous solution of a water-soluble aluminum salt in a concentration of 0.06 to 0.35 gram of aluminum ions per liter.

3,204,016
METHOD FOR MAKING A COMBINATION FOAM-SPRING CUSHION

Merle J. Sanger, Akron, and Donald van Wagenen, Alliance, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed July 18, 1961, Ser. No. 124,841
4 Claims. (Cl. 264—45)

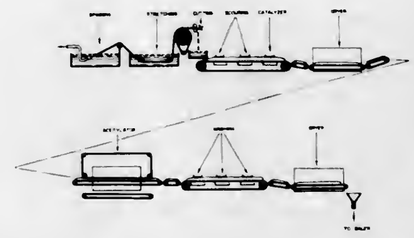


1. A process of the character described for making a symmetrical spring-reinforced elastomeric foam cushion for seats and backs comprising the steps of inserting liquid foam-forming ingredients into a generally rectangular mold cavity of substantially uniform depth, thereafter placing a generally rectangular fabric enclosed coil-spring unit of uniform height at the center of said mold cavity parallel to and out of contact with the walls of said cavity, allowing said ingredients to react and expand while limiting the expansion of the foam beyond the medial plane of said spring unit to form a continuous homogeneous elastomeric foam enclosing half of said spring unit and penetrating the interstices of the fabric at the top, sides and ends of said unit, removing the resulting intermediate product from the mold cavity, inserting liquid foam-forming ingredients into a mold cavity of the same shape as said first-named mold cavity, inverting said intermediate product and placing the other projecting half of said spring unit into said last-named mold cavity, and allowing said last-named ingredients to react and expand to form a continuous homogeneous elastomeric foam enclosing said other half of the spring unit and penetrating the interstices of said fabric, whereby the foam completely encloses the coil-spring unit.

3,204,017
PROCESS FOR THE MANUFACTURE OF BULKY FIBROUS WADDING MATERIALS

Kazuo Kawamura, Gifu, Japan, assignor to Toho Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Aug. 29, 1962, Ser. No. 220,151
Claims priority, application Japan, June 19, 1962, 37/24,708
1 Claim. (Cl. 264—51)



A process for the manufacture of bulky, low specific gravity and high resilient wadding material of hollow, structurally crimped rayon staple fibers comprising the steps of

(a) mixing 1 to 3% sodium carbonate with conventionally manufactured viscose,

(b) spinning the mixture in a spinning bath solution consisting of a conventional concentration of Na_2SO_4, $ZnSO_4$ and H_2SO_4 to effect crimping and foaming of the mixture,

(c) stretching the crimped and foamed product in a hot water bath,

(d) cutting and souring the stretched product to form hollow and crimped rayon staple fibers,

(e) impregnating said staple fibers in an aqueous solution of salt selected from the group consisting of sodium acetate and zinc chloride at a temperature of 30° for a period of ten minutes, and

(f) drying and acetylating the impregnated staple fibers in an acetic anhydride vapor for a period of fifty minutes.

3,204,018
METHOD OF FORMING HOLLOW PLASTIC ARTICLES

Reinold Hagen, Hangelar uber Siegburg, Rhineland, Germany

Filed Nov. 18, 1964, Ser. No. 414,494
Claims priority, application Germany, May 18, 1960, K 40,752
10 Claims. (Cl. 264—98)

1. A method of forming hollow plastic articles, comprising

(1) providing a continuous hollow preform of plastic material in condition of plasticity to permit expansion and setting in predetermined form,

(2) placing a length of said preform into the space between open opposing sections of a mold, said length having a longitudinal axis, said placing being done

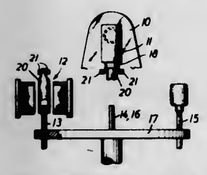
so that said axis extends vertically, said mold defining, when closed, a cavity conforming in shape to the article to be formed,

(3) closing the open mold, thereby forming an inflatable embryo article within the closed mold,

(4) admitting a fluid pressure medium to said embryo article, thereby expanding said embryo article into molding contact with said cavity,

(5) opening the closed mold at a time when the expanded or blown article has reached a self-supporting but still incompletely solidified state, the incompletely solidified article having an axis coinciding with said first named axis,

(6) having said incompletely solidified article supported by a first core, withdrawing said first core together with said incompletely solidified article from the open mold, the axis of said incompletely solidified article moving during said withdrawing parallel to itself and, thus, remaining vertical,

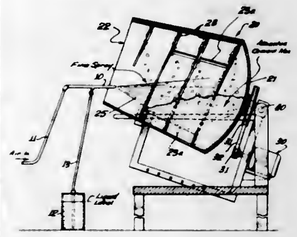


(7) allowing the withdrawn incompletely solidified article to solidify to completion in vertical condition outside the mold,

(8) placing a fresh length of said preform into the open mold, repeating the steps leading to the conversion of said fresh length over a fresh embryo article into a freshly blown incompletely solidified article and to the completion of the solidification of said fresh incompletely solidified article, thereby having said fresh incompletely solidified article supported by a second core, and

(9) taking a completely solidified article off said first core.

3,204,019
PROCESS FOR FORMING CEMENT AND ASBESTOS ARTICLES
Herbert C. Schulze, 3690 Highland Drive, Carlsbad, Calif.
Filed Nov. 15, 1962, Ser. No. 238,053
2 Claims. (Cl. 264—122)



1. A process for forming an article from initially dry particulate cement material and asbestos fiber materials, that includes:

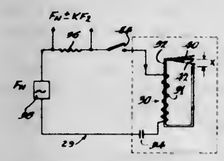
tumbling said initially dry materials together in a mixing zone while spraying water into said mixing zone, with said materials dropping freely through the air whereby each individual particle of said materials is given a coating of water to thereby produce a non-cohesive, particulate mass;

compressing said mass so as to increase the density thereof and configure said mass to the shape of said article;

and curing said configured mass.

ELECTRICAL

3,204,020
APPARATUS FOR GENERATING ELECTRICAL OSCILLATIONS
Adolf Michel, Dietramszellerstrasse 2, Munich 25, Germany
Filed Mar. 24, 1961, Ser. No. 98,104
1 Claim. (Cl. 84—1.04)



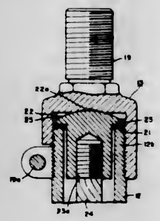
A device for producing electrical oscillations of a desired stable frequency from a source of audio frequency alternating current which has a frequency having any relationship with the desired frequency comprising said source of audio frequency alternating current, a series resonant circuit energized by said source and consisting of a resistor, a single fixed capacitor and a single inductor and a vibratory magnetic member having a natural resonant frequency substantially lower than the frequency of said source and positioned adjacent said inductor for vibratory movement in a plane in which the varying position of said magnetic member varies the value of the inductance of the inductor and in which the magnetic field of the inductor applies a force of attraction to said member, said series resonant circuit having a resonant frequency approximating said source frequency and the resonant frequency of the said series circuit fluctuating above and below said source frequency in synchronism with the motion of said vibratory member, the vibratory member being excited into oscillation at substantially its natural resonant frequency incident to energization of the resonant circuit by said source, said series circuit current being amplitude modulated thereby within the modulation frequency being the same as the natural frequency of the vibratory members.

3,204,021
VIBRATIONLESS CABLE CONSTRUCTION
Harold W. Adams, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed May 17, 1960, Ser. No. 29,640
18 Claims. (Cl. 174—42)



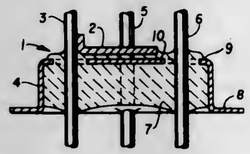
1. A cable construction that is substantially vibrationless when suspended in the wind, said cable construction having resilent mass added thereto throughout its length said mass having a mechanical hysteresis characteristic to absorb energy of movement of said cable and dissipate said energy in the form of heat, said cable construction having a randomly varying weight per unit length thereof and a varying outer peripheral diameter throughout its length.

3,204,022
TERMINAL CONNECTOR FOR TERMINAL BUSHINGS
Otto H. Soles, North Huntingdon Township, Westmoreland County, and Carl G. Lentjes, Churchill, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 20, 1962, Ser. No. 189,090
3 Claims. (Cl. 174—75)



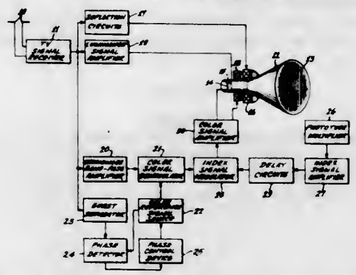
1. In a terminal bushing adaptable for interchangeable transformer and circuit-breaker use having a tubular conductor stud for transmitting the current therethrough when in circuit-breaker use, the combination therewith of a unitary plug-like insertable terminal cap having a cavity provided therein for the reception of the end of a transformer lead, said unitary terminal cap having a radially outwardly extending end flange portion seated upon the end extremity of the tubular conductor stud and having an integrally-formed tubular shank portion surrounding said cavity inserted within the extremity of the tubular conductor stud, and an outer enveloping terminal cap enclosing the end of the tubular conductor stud and pressurally engaging the outer end of the unitary insertable terminal cap to form an electrical connection between said unitary terminal cap and said enveloping terminal cap.

3,204,023
SEMICONDUCTOR DEVICE HEADER WITH SEMICONDUCTOR SUPPORT
Larry A. Harmon, Dallas, and Yung Tao, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 1, 1963, Ser. No. 262,029
1 Claim. (Cl. 174—52)



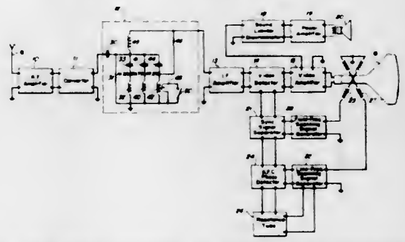
A header for a semiconductor device comprising a metallic shell having a plurality of openings in the top thereof to accommodate lead wires therethrough, a continuous mass of insulating material within said shell and extending through said openings coating a portion of the top of said shell, a plurality of lead wires each of which passes through a different one of said openings and is insulated from said shell by said insulating material which extends through such opening, and a flat metallic plate attached to one of said lead wires and partially embedded in and insulated from the top of said shell by the part of said continuous mass of insulating material which coats said portion of the top of the shell.

3,204,024
COLOR TELEVISION INDEXING CONTROL UTILIZING INTENSITY AND VELOCITY MODULATION TECHNIQUES
Eugene O. Keizer, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 7, 1961, Ser. No. 129,807
9 Claims. (Cl. 178—5.4)



1. In a color television image-reproducing system including a cathode ray tube having a luminescent screen comprising a plurality of vertically oriented phosphor strips capable of emitting light of different colors when impinged by an electron beam, and a plurality of index strips aligned with said phosphor strips and capable of producing signals when impinged by an electron beam from which an indexing wave may be derived, and in which an electron beam is deflected horizontally in a series of vertically spaced substantially parallel lines transverse to said phosphor and index strips, a system for controlling said electron beam comprising: means for horizontally deflecting said beam transversely of said phosphor and index strips normally at a substantially uniform rate; means for varying the intensity of said beam; means for modulating said indexing wave in phase and amplitude by color representative signals to produce a color control wave; means for impressing a first given amplitude of said color control wave upon said beam intensity varying means to vary said beam intensity, thereby tending to produce a phase shift of said indexing wave in a first sense; and means for impressing a second given amplitude of said color control wave upon said deflecting means to vary the horizontal beam deflection rate, thereby tending to produce a phase shift of said indexing wave in a second sense opposite to said first sense, said first and second given amplitudes of said color control wave being so related that substantially no resultant phase shift of said indexing wave is produced.

3,204,025
TELEVISION RECEIVER WITH ADJACENT SOUND TRAP CONTROL
Adam W. Przybyszewski, Niles, Ill., assignor to Zenith Radio Corporation, a corporation of Delaware
Filed Oct. 27, 1961, Ser. No. 148,180
5 Claims. (Cl. 178—5.8)



1. A television receiver for reproducing information from adjacent channel transmitted signals each having a

sound-signal-component frequency and a picture-signal-component frequency, said receiver comprising:

(a) circuit means for selecting one of said transmitted signals;

(b) means coupled to said circuit means for translating said selected signal and for rejecting the sound-signal-component frequency of the adjacent one of said transmitted signals;

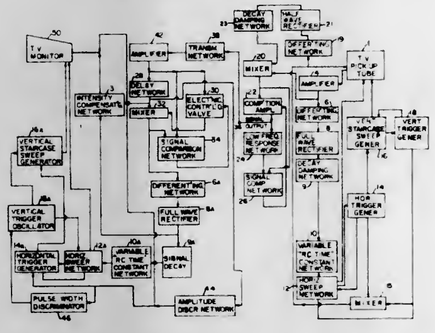
(c) and means, including a switch, for selectively rendering said sound-signal-component frequency rejecting means at least partially ineffective.

3,204,026

NARROW BANDWIDTH SCANNING SYSTEM

George J. Doundoulakis, North Bellmore, N.Y., assignor to William J. Casey, Long Island, N.Y.

Filed Apr. 30, 1962, Ser. No. 190,973
16 Claims. (Cl. 178—6.8)



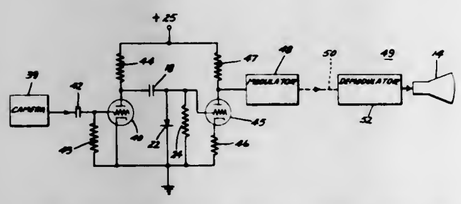
1. A signal transmission system comprising a television camera, means for deriving picture video signals from said camera, deflection voltage generating means for controlling the scanning speed of said camera in an inverse relationship to the variation of the light intensity of the portion of the picture being scanned, transmission means for transmitting said video signals and synchronization signals, means for delaying the received video signals, reproducing means, means for supplying the video signals and the delayed video signals to the reproducing means, said reproducing means including scanning means and means for controlling the scanning speed thereof in response to the difference between the video signals and the delayed video signals.

3,204,027

CONTRAST CONTROL CIRCUIT

Louis E. Clements, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Dec. 20, 1962, Ser. No. 246,198
1 Claim. (Cl. 178—7.3)



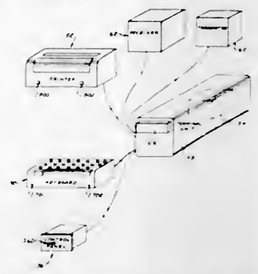
In a television system having a video signal with a maximum white level which is negative with respect to its maximum dark level, said white and dark levels being independently variable in amplitude: an automatic contrast control circuit comprising means for inverting said video signal whereby said white level is positive with respect to said dark level, valve means having rectifying elements and a current controlling element coupled to said inverting means by a coupling capacitor, a source of direct current potential one side of which is at a reference potential, said valve means rectifying elements being coupled across said source, rectifying means coupled across said control element and said one side of said source for conducting when the level of inverted signal tends to become positive with respect to said reference potential thereby clamping the white level of the inverted signal to said reference potential, and means including a resistor coupled across said control element and said one side of said source and having a voltage developed thereacross responsive to said inverted signal when the same is negative with respect to said reference potential for biasing said valve means out of conduction when the amplitude of said inverted video signal reaches a predetermined potential which is negative with respect to said reference potential.

3,204,028

COMMUNICATIONS EQUIPMENT PRINTER

Edward F. Kleinschmidt, Wilmette, and John W. Ehrlich, Glenview, Ill., and Edward E. Podwojski, Santa Barbara, Calif., assignors to SCM Corporation, New York, N.Y., a corporation of New York

Original application Nov. 16, 1955, Ser. No. 547,265, now Patent No. 3,009,988, dated Nov. 21, 1961. Divided and this application July 26, 1961, Ser. No. 127,037
21 Claims. (Cl. 178—32)



1. In combination, a printing unit having a rotatable typewheel selectively positionable for imprinting a series of characters, a plural electrical channel input to said printer for receiving multiple unit code signal combinations indicative of characters to be printed, means controlled by the permutative energization of said channels for positioning said typewheel with the character thereof corresponding to the character represented by the permutative energization of said channels in printing position, and means for energizing said channels comprising a keyboard and a plurality of keyboard actuated switches permutatively actuated upon depression of a key to control permutative energization of said channels.

3,204,029

HIGH SPEED SYNCHRONOUS DIGITAL DATA TRANSMISSION

William M. Groff, Silver Spring, Earl D. Gibson, West Hyattsville, and Richard C. Powers, Silver Spring, Md., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Feb. 21, 1962, Ser. No. 174,910
17 Claims. (Cl. 178—68)

1. A digital data transmission system comprising:

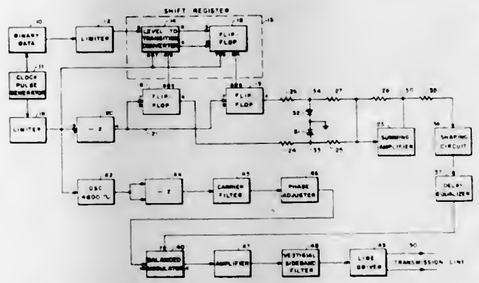
(a) a transmitter and a receiver adapted to be coupled to a communication medium; said transmitter including;

(b) means for receiving binary digital data,

(c) means for generating a carrier wave and synchronizing the carrier wave and the digital data with each other,

(d) converting means connected to said data receiving means for producing a wave in which one binary value of the data is represented by a transition from one voltage level to another and the other binary value is represented by no transition,

(e) modulating means connected to said converting means and carrier generating means for generating a suppressed-carrier vestigial-sideband modulated wave and



(f) means for impressing said modulated wave on the communication medium;

(g) said receiver including

(h) means for coupling to the communication medium for receiving and amplifying the modulated wave,

(i) demodulating means including a demodulator connected to said amplifying means and

(j) carrier recovery means connected to the demodulator for deriving from the received modulated wave an unmodulated carrier frequency wave and impressing it on the demodulator,

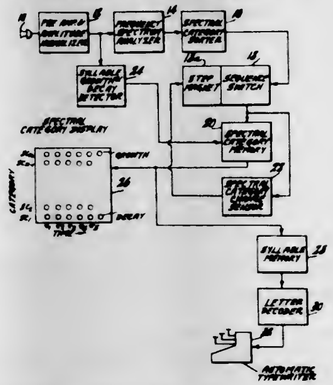
(k) and digital data output means connected to the output of the demodulator.

3,204,030

ACOUSTIC APPARATUS FOR ENCODING SOUND

Harry F. Olson, Princeton, and Herbert Belar, Palmyra, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Jan. 23, 1961, Ser. No. 84,229
20 Claims. (Cl. 179—1)



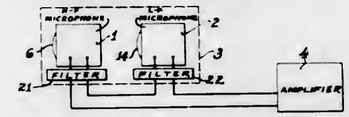
1. Acoustic apparatus for encoding into digital form sound which is separable into a plurality of components, said components being sortable into categories of which at least one includes a plurality of said components, which apparatus comprises means for separating said sound into said plurality of components and translating said components into a binary number having a separate binary digit for each of said plurality of components, and means for comparing said binary number with a plurality of defined binary numbers each corresponding to at least one category of said components and deriving an output when said components binary number corresponds to any of said defined binary numbers, said output being a binary digit representing said sound.

3,204,031

MOVING-COIL MICROPHONE ARRANGEMENT

Rudolf Görike and Karl Schuster, both of Vienna, Austria, assignors to Akustische U. Kino-Gerate Gesellschaft m.b.H., Vienna, Austria, a firm

Filed Aug. 29, 1961, Ser. No. 134,669
11 Claims. (Cl. 179—1)



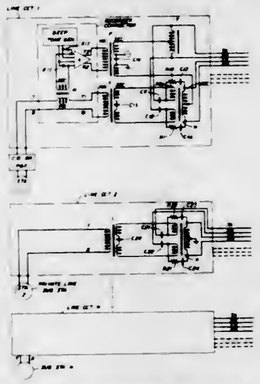
1. A microphone arrangement comprising at least two mechanically independent directional moving-coil microphones separated from each other by a fraction of a wavelength at a predetermined acoustic frequency, each of said microphones having a housing with an open front end and a partly open rear end, each of said microphones further having a vibratory system in said housing including an exposed diaphragm spanning said front end and an air mass adjacent the rear surface of said diaphragm, said diaphragms facing in the same direction, the vibratory system of one of said microphones having a natural frequency above said predetermined frequency, the vibratory system of the other of said microphones having a natural frequency below said predetermined frequency, and a common output circuit for said microphones.

3,204,032

APPARATUS FOR INDICATING THAT TELEPHONE CONVERSATION IS BEING RECORDED

John E. Pitts, Jr., Redwood City, Calif., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

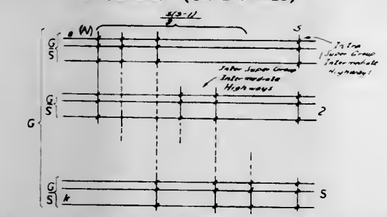
Filed Sept. 27, 1961, Ser. No. 141,153
12 Claims. (Cl. 179—6)



1. In combination, an atendant position, a private line subscriber station, a public telephone system subscriber station, a switching system selectively operable to inter-

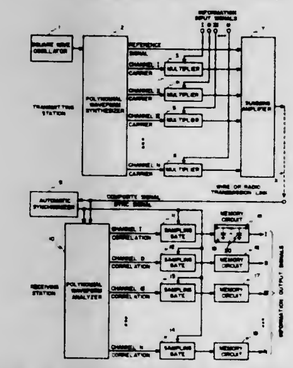
connect said position with any selected one of said stations, recording means automatically operable to record all calls served by said position, and automatic means effective upon the interconnection of said position with any station for impressing beep tones on only the calls between said position and said public station.

3,204,033
INTERCONNECTING NETWORK FOR A TELECOMMUNICATION SYSTEM
Hans Helmut Adelaar, Antwerp, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 17, 1960, Ser. No. 63,203
Claims priority, application Netherlands, Oct. 20, 1959, 244,500
9 Claims. (Cl. 179—15)



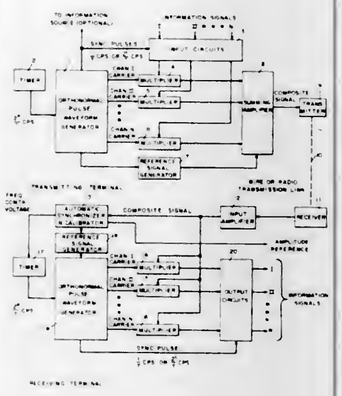
1. A time division multiplex network comprising a group of main communication highways divided into a number of super-groups of said main highways, means comprising a first plurality of intermediate highways for providing communication paths between the main highways in pairs of said super-groups, said first plurality of intermediate highways being restricted in number so that a single intermediate highway runs between each pair of said super-groups, there being enough of said first plurality of intermediate highways to make connections between each possible pair of said super-groups, and means comprising a second plurality of intermediate highways for providing communication paths between the main highways within said super-groups, the number of said second plurality of highways being equal to the number of said super-groups.

3,204,034
ORTHOGONAL POLYNOMIAL MULTIPLEX TRANSMISSION SYSTEMS
Arthur H. Ballard, 2001 N. Adams St., Arlington 1, Va., and Bernard R. Boymel, 5730 26th St. NW., Washington 15, D.C.
Filed Apr. 26, 1962, Ser. No. 190,294
9 Claims. (Cl. 179—15)



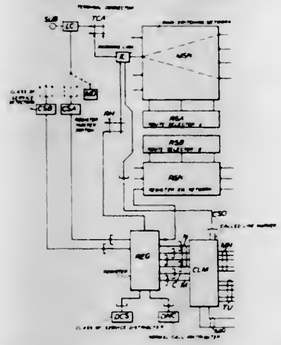
4. The method of multiple channel intelligence communication which comprises generating a plurality of waveforms bearing a mutually orthogonal polynomial relation to each other, amplitude modulating said waveforms with a plurality of intelligence signals, combining said modulated waveforms for transmission, receiving said combined modulated waveforms, deriving a synchronizing signal therefrom, correlating the composite signal with the orthogonal polynomial waveform for each channel, sampling the correlation waveform in each channel, and smoothing the sampled correlation waveform in each channel for derivation of the original intelligence signals for utilization.

3,204,035
ORTHONORMAL PULSE MULTIPLEX TRANSMISSION SYSTEMS
Arthur H. Ballard, 5803 Osceola Road, Bethesda, Md., and Bernard R. Boymel, 5730 26th St. NW., Washington 15, D.C.
Filed Nov. 26, 1962, Ser. No. 239,928
18 Claims. (Cl. 179—15)



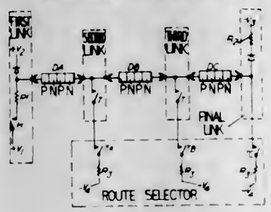
1. A multiplex channel intelligence communication system comprising in combination:
(a) a transmitting station and a remotely located receiving station with a transmission link therebetween,
(b) means at said transmitting station for generating a plurality of rectangular, overlapping, pulse waveforms bearing a mutually orthonormal relation to each other,
(c) input circuits for intelligence signals,
(d) means for multiplying said waveforms with said intelligence signals,
(e) means for combining said multiplied waveforms by linear addition to obtain a composite signal for transmission along said transmission link,
(f) means at said receiving station for deriving synchronizing signals from said composite signal when received at said receiving station,
(g) means at said receiving station for generating a plurality of orthonormal pulse waveforms corresponding to those generated at the transmitting station,
(h) means for correlating said composite signal with said orthonormal pulse waveform for each channel, and
(i) output circuits for deriving the original intelligence signals from the correlation waveforms for each channel.

3,204,036
AUTOMATIC TELEPHONE EXCHANGES
Frederick Harry Bray and John Malcolm Ridler, London, England, assignors to International Standard Electric Corporation, New York, N.Y.
Filed June 23, 1960, Ser. No. 38,247
Claims priority, application Great Britain, July 9, 1959, 23,608/59
8 Claims. (Cl. 179—18)



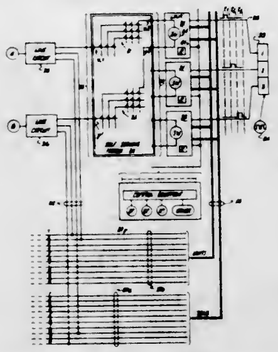
1. An automatic telecommunication exchange system comprising: a plurality of lines and stations thereon, line circuits associated with each of said lines, register means, class-of-service indicator means common to a plurality of said line circuits, means responsive to a calling condition on any of said lines for establishing a line-register connection between said calling line and said register means, means responsive to the establishment of said line-register connection for transmitting an interrogating signal from said register means to said indicator means over said line-register connection, and an independent indicator-register connection means acting responsive to said interrogation signal for transmitting a class indication signal independent of said line-register connection to said register.

3,204,037
AUTOMATIC TELECOMMUNICATION EXCHANGES
George Clifford Hartley, Aldwych, London, England, assignor to International Standard Electric Corporation, New York, N.Y.
Filed Aug. 30, 1960, Ser. No. 52,937
Claims priority, application Great Britain, Oct. 2, 1959, 33,481/59
6 Claims. (Cl. 179—18)



1. An electronic switching network having a plurality of inputs and outputs interconnected by a plurality of series-connected bistable PNPN devices each having a high impedance state and a low impedance state, means for applying an input marking potential and a holding potential to any desired input, means including a clamping circuit for masking said holding potential and maintaining said desired input at said input marking potential, means for applying an output marking potential to any desired output, test means for selecting a path between said marked input and said marked output, which path includes a plurality of series-connected devices in their high impedance state, means for sequentially applying an operating potential to each of the said devices in said selected path to switch the last-said devices to their low impedance state and for removing said operating potential from each device responsvie to the said switching operation, and means responsive to the said removal of said operating potentials for disabling said clamping circuit to automatically render said holding potential effective.

3,204,038
ELECTRONIC SWITCHING TELEPHONE SYSTEM
Donald F. Seemann and Edward R. Haskins, Lockport, Ill., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed May 29, 1961, Ser. No. 113,178
15 Claims. (Cl. 179—18)

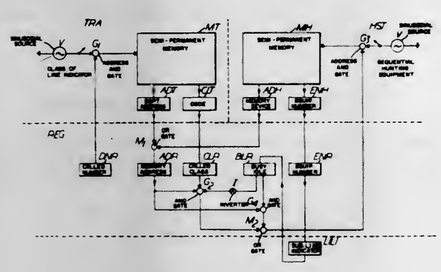


1. An electronic switching telephone system comprising a plurality of subscriber lines, each of said lines being terminated by an individual line circuit, a self-seeking matrix for extending connections between subscriber lines, a plurality of links for controlling the extension of calls through the matrix, marker means for sequentially applying cyclically recurring time frame pulses successively to enable each of the links during time frames which individually identify said links, means including a plurality of digital buses for selectively extending stored directory information from the links to the line circuits, means for simultaneously energizing said buses and marking one side of said matrix during one time frame which identifies a particular one of said links, means in the one of said line circuits associated with the line identified by said directory information on said digital buses for extending a marking to the other side of said matrix during said one time frame, and means for extending a connection through the matrix between said marked sides during the time frame which identifies said one link.

3,204,039
SELECTION SYSTEM
Hans Helmut Adelaar, Frans Clemens, and Jean Louis Masure, all of Antwerp, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 31, 1961, Ser. No. 128,151
Claims priority, application Belgium, Aug. 12, 1960, 39,988, Patent 594,016
6 Claims. (Cl. 179—18)

1. A group hunting selection system comprising groups of similar circuits, control means for hunting over said

groups of circuits for a circuit in a desired condition, a memory means having at least temporary storage capacity accessible to said control means, means for causing said control means to sequentially address said memory means responsive to a first code identifying one of said circuits, means responsive to each of said sequential addressings and comprising said memory means for individually

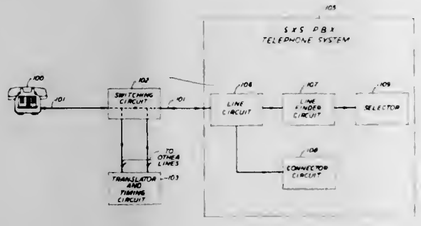


reading out second codes for sequentially identifying each of said circuits, means for causing said control means to test each of said circuits for said desired condition when said circuits are identified by said second codes read out of said memory, and means for stopping said read out and said testing when a circuit in said desired condition is found.

3,204,040
SWITCHING CIRCUIT

John A. Hackett, Old Bridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 29, 1961, Ser. No. 163,261
14 Claims. (Cl. 179—18)

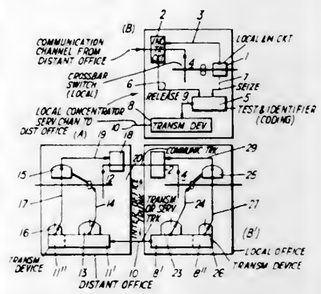


1. In a telephone system, a switching office responsive to direct current signals, a subset, a line circuit located at said switching office, a line connecting said subset to said line circuit, means in said subset for applying alternating current signals to said line, translating means for converting said alternating current signals to corresponding direct current signals, means in said subset operable to indicate a request for service to said switching office, first means operative in response to a signal from said switching office to indicate that said switching office has responded to a request for service from said subset, second means including said first means and operative in response to said service request indication from said subset to bid for seizure of said translating means, and third means controlled by said first and second means for releasing said first means and for inhibiting said second means.

3,204,041
CONTROL OF REMOTE TELEPHONE AND LIKE EQUIPMENT

André Jean Henquet, Robert Victor Cavin, and Marcel Feuillepain, all of Boulogne-Billancourt, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 21, 1962, Ser. No. 174,760
Claims priority, application France, Mar. 1, 1961, 854,302, Patent 1,294,150
11 Claims. (Cl. 179—18)

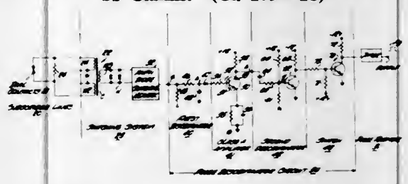


1. In a telephone system, the combination comprising local and remote equipments interconnected by at least one communication channel, means at each end of said channel for identifying lines connected thereto via said equipments, said identifying means comprising at least one matrix of vertical and horizontal conductors interconnected at pre-selected crosspoints in a manner such that input signals appearing at any matrix inlet also appear at a distinctively coded number of matrix outlets, means at least in part responsive to said identifying means comprising a service channel interconnecting said local and remote equipment for transmitting signals to said remote equipment, and means responsive to signals received over said service channel for operating said remote equipment.

3,204,042
DISCRIMINATOR AND PULSE FORMING CIRCUIT

Peter E. Osborn, Chicago, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Mar. 22, 1962, Ser. No. 181,699
11 Claims. (Cl. 179—18)

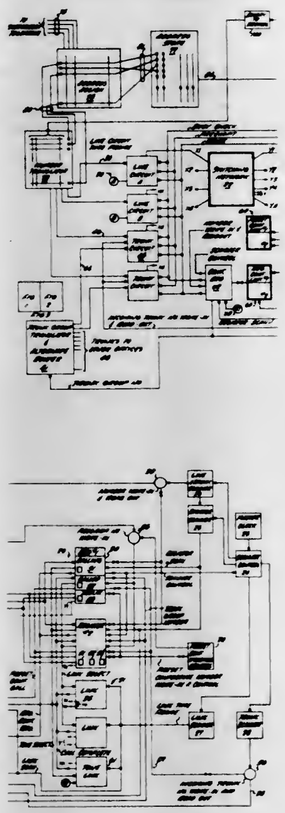


7. A telephone system comprising at least one subscriber line having resistivity shunted dial pulsing contacts at one end for transmitting D.C. pulses over said line and a line transformer at the other end, a discriminator and pulse forming circuit, a switching network for interconnecting said transformers and said discriminating and forming circuit, said transformer limiting all signals occurring on said line to less than a threshold voltage which can pass through said network, and means in said discriminating circuit for separating said D.C. dial pulses from voice signals passing through said network according to the frequency of said signals and duration of said dial pulses.

3,204,043
HIGH SPEED ELECTRONIC SWITCHING TELEPHONE SYSTEM

Roger E. Arseneau, Elk Grove Village, and John Berezniak, Oak Lawn, Ill., assignors to International Telephone and Telegraph Corporation

Filed Dec. 19, 1962, Ser. No. 245,728
15 Claims. (Cl. 179—18)



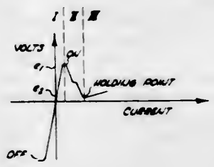
1. An electronic switching system comprising a plurality of subscriber lines, a plurality of link control circuits including voice gates for completing connections, a switching network for selectively connecting any of said lines with an assigned one of said links, means comprising a source of relatively short high speed time frames for identifying each of said lines to detect a request for a switch path from a line through said network to a link, and means responsive to the detection of a request for a switch path for momentarily slowing said source to provide a relatively long low speed time frame during which said requested path is completed.

3,204,044
ELECTRONIC SWITCHING TELEPHONE SYSTEM

Virgle E. Porter, Country Club Hills, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 17,003, Mar. 23, 1960. This application Aug. 10, 1964, Ser. No. 389,826
45 Claims. (Cl. 179—18)

1. A telephone system comprising a plurality of cascaded matrices, each of said matrices including first and second multiples arranged to provide intersecting cross-points, means for identifying each first multiple in a first matrix of said cascaded matrices by an individually associated time frame, means responsive to simultaneous marking of multiples in first and last of said cascaded matrices during the time frame which identifies said marked

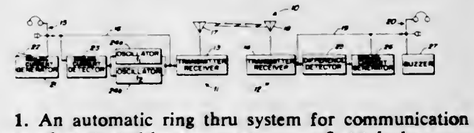


multiple in said first matrix for initiating a race over randomly selected idle crosspoints to establish a connection between said marked multiples, and means responsive to the completion of said connection for releasing all of said randomly selected crosspoints which are not included in said connection.

3,204,045
AUTOMATIC RING THRU SYSTEM

Edward G. Tuthill, Marion, and Ray C. Fuller, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Oct. 30, 1962, Ser. No. 234,064
12 Claims. (Cl. 179—41)



1. An automatic ring thru system for communication networks actuated by an operator on a first telephone remotely located from a communication center for automatically ringing another operator on a second remotely located telephone including: operator actuated means; two frequency signal generating means connected to said operator actuated means; signal transmission means; means connecting said first telephone to said signal transmission means, and means connecting said second telephone to said signal transmission means for transmission of messages between said first and second telephones; a two frequency difference signal detector; said signal transmission means connected to said two frequency signal generating means and said detector, and providing a signal path for transmission of the frequencies generated by said two frequency signal generating means; and an attention attracting device located at said second remotely located telephone; means connecting said two frequency difference signal detector and said attention attracting device for activation of the attention attracting device when a predetermined two frequency difference is detected by the two frequency difference signal detector; said said two frequency difference signal detector being provided with a high-pass signal input filter having a low threshold frequency passing level above the frequency equal to the difference between the two frequencies.

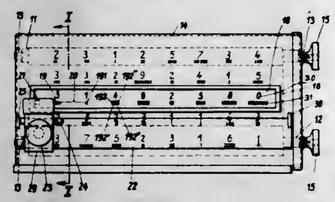
3,204,046
DIALING APPARATUS FOR TELEPHONE APPARATUS

Hermann Ries, 15 Brahmstrasse, Bremen, Germany

Filed Dec. 26, 1961, Ser. No. 162,175
Claims priority, application Germany, Dec. 27, 1960, R 29,353
5 Claims. (Cl. 179—90)

1. A dialing apparatus for impulse controlled telephone apparatus, comprising, in combination, a flexible band mounted for movement in longitudinal direction

thereof between a plurality of positions and having a plurality of series of transversely spaced control means representing subscriber telephone numbers and each control means representing an order of the respective telephone number, said plurality of series being arranged in parallel transverse rows so that all said control means of each series move together to represent the same telephone number in any longitudinal position of said band, each control means having a number of mechanical actuating elements corresponding to a digit; indicia means for designating the respective telephone numbers; feeler means including electrical contact means having an impulse creating condition and an inoperative condition; means guiding said feeler means with said electrical contact means for movement along a path across said band; circuit means for connecting said electrical contact means

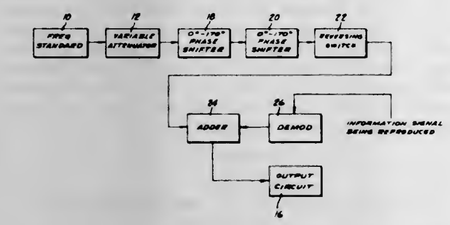


with the telephone apparatus; take-up and let-off means for moving said band in longitudinal direction thereof between said positions for positioning a selected series of control means corresponding to a selected telephone number along said path; and operating means for moving said feeler means with said electrical contact means along said guide means and said path so that said electrical contact means passes successively over said mechanical actuating elements of each of said control means of the selected series, said mechanical actuating elements placing said electrical contact means in said impulse creating condition whereby an electric pulse is created whenever said electrical contact means passes over one of said mechanical actuating elements so that electric pulses corresponding to the selected telephone number are created and transmitted to the telephone apparatus.

3,204,047
SIGNAL REPRODUCING SYSTEM WITH PHASE CANCELLATION OF UNDESIRED SIGNAL COMPONENT

Allen J. Trost, Santa Clara, and Erhard K. Kietz, Menlo Park, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Mar. 19, 1962, Ser. No. 180,617
6 Claims. (Cl. 179—100.2)



1. A method for providing compensation of an interference signal developed in a magnetic tape apparatus that employs a pilot signal having a fixed frequency for time base correction of a data signal that has been demodulated and is being reproduced comprising the steps of:

supplying a sine wave signal having a fixed frequency the same as that of the pilot signal;

controlling the amplitude of such fixed frequency signal by means of a variable attenuator;

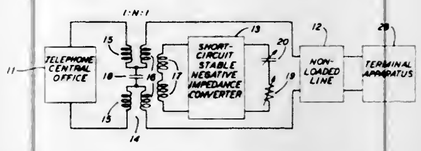
providing a phase shift to such fixed frequency signal by a variable phase shift means capable of providing a total phase shift exceeding 360 degrees; and

adding such attenuated and phase shifted signal to the data signal that is being reproduced to cancel undesirable interference signals.

3,204,048
NEGATIVE IMPEDANCE REPEATERS FOR NON-LOADED LINES

Robert W. De Monte, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 29, 1961, Ser. No. 141,654
7 Claims. (Cl. 179—170)

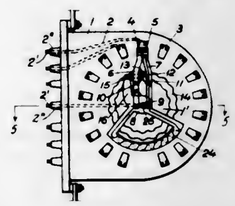


3. In combination with a two-wire transmission line carrying a predetermined band of frequencies, a two-terminal impedance device, a transformer having at least three mutually coupled windings, means connecting a pair of said windings in series with one side of said line, means connecting a third of said windings across said impedance device, and a capacitor connected from the junction between said pair of windings to the other side of said line, whereby the impedance presented to said third winding by said impedance device appears effectively in series with said line for frequencies at the low frequency end of said band and effectively in shunt across said line for frequencies at the high frequency end of said band.

3,204,049
TAP CHANGING APPARATUS WITH WAVE-SHAPED CONTROL MEANS AND ROLLER SELECTOR ARM STRUCTURE

Sivert Norman, Ludvika, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Feb. 4, 1963, Ser. No. 256,054
Claims priority, application Sweden, Feb. 9, 1962, 1,419/62
2 Claims. (Cl. 200—11)



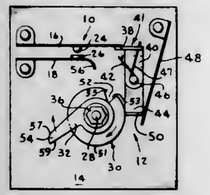
1. A transformer tap changing structure, comprising a selector board, a plurality of fixed contacts arranged along a circular path on said selector board and electrically insulated from each other to be connected to terminals of a tapped transformer, a carrier mounted to turn about the centre of said circular path, two selector arms pivoted on said carrier, two contact sections, one carried by each of said two selector arms, engageable with said fixed contacts, said selector board having a wave-shaped control means arranged concentrically to said circular path,

roller means, said roller means engaging said wave-shaped control means, means operatively connecting said carrier to said roller means to cause said roller means to move around the center of the circular path with the carrier, and links connected to each of said selector arms and to the axis of said roller means.

3,204,050
TIMER WITH ADJUSTABLE CAM-OPERATED SWITCH

Ralph L. Berg, Crystal Lake, Ill., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware

Filed Nov. 19, 1962, Ser. No. 238,691
3 Claims. (Cl. 200—38)



1. A motor driven timer comprising:

a switch having a first and a second contact means, said first contact means being biased towards said second contact means, and said switch being closed when said first and second contact means are in contact with each other and being open when said first and second contact means are in a spaced relationship in respect to each other;

first cam means having a drop surface, a rise surface and a dwell surface;

second cam means having a drop and a rise surface, both of said cam means being connected to the motor for rotational movement in respect to said switch;

cam follower means engaging said first cam means and including latching means which, when said switch is open, engages said first contact means and retains said first contact means in said spaced relationship in respect to said second contact means, said follower means being maintained in a position in which said latching means is capable of engaging said first contact means while said follower means engages said dwell surface of said first cam means, said follower means moving said latching means out of engagement with said first contact means when said follower means encounters said drop surface of said first cam and thereby causing said first contact means to move to a contacting position with said second contact means, upon encountering said rise surface of said first cam means said follower means moving said latching means to a position in which said latching means is capable of engaging said first contact means;

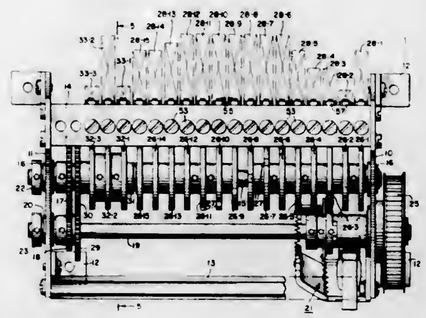
said rise surface of said second cam means moving said first and second contact means from one position to another position while said contact means are in said contacting position in respect to each other, said drop surface of said second cam means causing said second contact means to move back to said one position and causing said first contact means to engage said latching means to permit said first and second contact means to assume a spaced relationship in respect to each other; and

means to vary the relative angular position of said first cam means in respect to said second cam means to thereby vary the length of switch-open and switch-closed time during one revolution of said first and second cam means.

3,204,051
ELECTRICAL SEQUENTIAL-CIRCUIT CONTROLLER

Edwin O. Blodgett, Rochester, N.Y., assignor, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware

Filed Jan. 30, 1963, Ser. No. 254,990
10 Claims. (Cl. 200—38)



4. An electrical sequential-circuit controller comprising support means providing spaced opposed walls, a first shaft rotationally supported by said support means, a plurality of cam elements fixedly secured in longitudinally spaced relation on said shaft and including cam lobes which with respect to each element are angularly displaced by a preselected angular increment from the cam lobe of an adjacent element, a cam element rotationally supported on said shaft and including plural cam lobes equally spaced around the periphery thereof by an angular spacing value equal to twice said angular increment, a plurality of electrical contact assemblies supported by said support means for operational actuation by individual ones of said cam elements, a second shaft rotationally supported by said support means in parallel spaced relation to said first shaft, means for mechanically driving said first shaft at preselected angular velocity from said second shaft and for mechanically driving said rotationally supported cam element at twice said preselected angular velocity from said second shaft, and cycle-control means on said second shaft and adapted drivingly to rotate said second shaft through angles corresponding to complete cyclic rotations of said first shaft and controllably to halt said second shaft at angles corresponding to the completion of each said cyclic rotation.

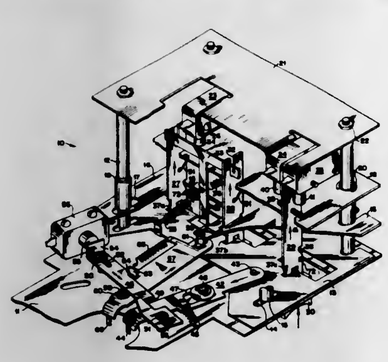
3,204,052
MOTOR-DRIVEN CAM-ACTUATED ELECTRICAL TIME SWITCH MECHANISM

Joseph E. Wiser and James B. Putterbaugh, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed July 23, 1963, Ser. No. 296,974
10 Claims. (Cl. 200—38)

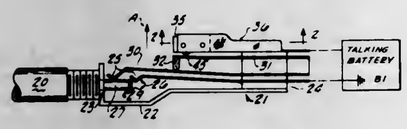
1. In a mechanism for establishing a starting point of a selected program within a cycle of a timer: an apertured mounting means; a shaft rotatably journalled to said mounting means; a plurality of post means fixedly coupled to said mounting means; a slidable and apertured plate means maintained in spaced parallel relationship with said mounting means by said post means; a displaceable means interfitting with said apertures of said mounting means and said plate means, said displaceable means including camming surface, said camming surface for deflecting said slidable plate in response to a displacement of said displaceable means; a discrete stop member

coupled to said plate and displaceable into an interference path when said displaceable means is displaced; and a rotatable control means carried by said shaft, said control means including a stop projection, said control means



introducing said stop projection into said interference path with said discrete projection when said control means is rotated, engagement of said two projections establishing a starting point for said timer.

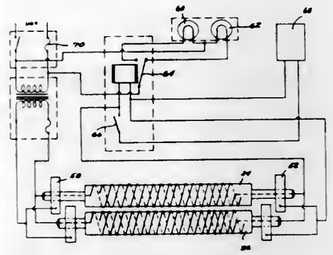
3,204,053
MINIATURE PLUG AND JACK EXPLOSION PROOF CONNECTOR
Frank Thomas Bilek, Downers Grove, Ill., assignor to International Telephone and Telegraph Corporation
Filed Dec. 20, 1962, Ser. No. 246,214
7 Claims. (Cl. 200—51.09)



1. An explosion proof telephone switchboard-type connector comprising a plug and jack combination for completing a connection between two telephone circuits, said plug having at least tip and sleeve contacts, said jack having at least one spring contact for mating with one of said plug contacts, means for precluding energization of said jack spring when said plug and jack first meet, and means comprising an explosion proof miniature snap switch operated responsive to movement of said jack spring caused by plug motion for energizing said jack spring from the talking battery of a telephone system after an arc is no longer possible.

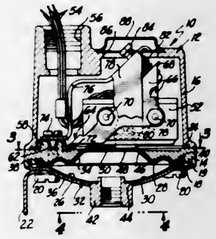
3,204,054
APPARATUS FOR DETECTING METAL BODIES IN FABRICATED MATERIALS
Rene Joseph Ouellette, Salmon Falls, N.H., assignor to American Twine & Fabric Corporation, Salmon Falls, N.H., a corporation of New Hampshire
Filed Aug. 18, 1960, Ser. No. 50,460
4 Claims. (Cl. 200—61.09)

1. A device for detecting a metal object in a moving web of material comprising a frame having bearing means supported at opposite ends thereof, a pair of rotatable roll members supported in the bearing means to receive the web therebetween in rolling engagement, electrical contact members located in the bearing means adjacent the ends of each of the rolls and connected to an electrical circuit and power source, a pair of electrical conductor members supported on each of said roll members, said electrical conductor members being rotatable with the rolls and engageable with respective electrical contact members, said pairs of electrical conductor means comprising helically arranged pairs of insulation covered



wires wound around the rolls to constitute normally open electrical circuits, said wires having outer peripheral portions of their insulation removed to provide exposed helical wire surfaces in which helical turns of exposed conductive material occurs in spaced apart relationship thereby to receive a metal object in the web in bridging relationship.

3,204,055
DIAPHRAGM TYPE PRESSURE SWITCH WITH ADJUSTABLE LEAF SPRING MOUNTING
Lilburn S. Barksdale, Los Angeles, Calif., assignor to General Metals Corporation, San Francisco, Calif., a corporation of California
Filed Dec. 12, 1961, Ser. No. 158,851
4 Claims. (Cl. 200—83)

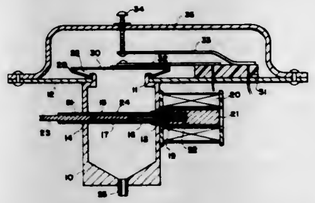


3. In a switch assembly, the combination of
(a) a support;
(b) a switch having an actuator;
(c) a leaf spring having a first portion connected to said support, a second portion to which said switch is connected, and an intermediate, third portion of generally V-shaped cross section acting as a flexible hinge means permitting pivotal movement of said switch relative to said support; and
(d) adjustment means interconnecting said support and said switch for pivoting said switch relative to said support about said flexible hinge means.

3,204,056
AIR PULSE SWITCH HAVING INHERENT HOLDING PERIOD
Clinton T. Cooper, 327 Melbourne Ave., Youngstown, Ohio
Filed July 25, 1963, Ser. No. 297,646
8 Claims. (Cl. 200—83)

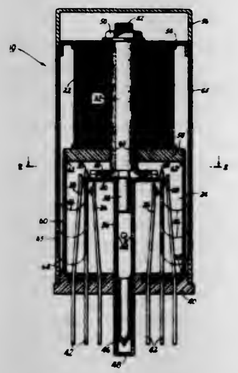
1. In combination, a pneumatically operated switch, an air-pulse generator, means establishing communication between said switch and generator comprising a passage,

a bleed port in a wall of said passage whereby the standby air pressure in said passage is continuously equalized



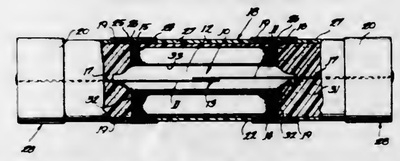
with the atmospheric air pressure, and means to automatically close said port simultaneously with the closing of said switch.

3,204,057
MULTICONTACT EVACUATED MAGNETIC REED RELAY
Nathan H. Magida, Westport, Conn., assignor to Thermosen, Incorporated, Stamford, Conn.
Filed Sept. 11, 1961, Ser. No. 137,395
6 Claims. (Cl. 200—87)



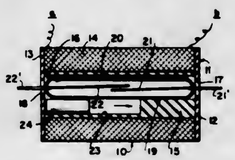
1. A multi-polar transfer relay comprising, in combination, an annular magnetizable pole member presenting a series of relatively small area pole faces spaced circumferentially therearound, a coil and magnetic core associated therewith for magnetizing said pole member, an array of magnetic-responsive contact-carrying reeds spaced circumferentially around said pole member with one side of each reed facing a respective one of said pole faces to define a relatively small area air gap therebetween, at least one contact-carrying support arm associated with and adjacent to each of said reeds whereby the contacts of each may open and close with respect to each other, magnetic flux conductor means presenting a surface of relatively large area facing an opposite side of each reed to define a relatively large air gap therebetween, said reeds being mounted for movement toward or away from said pole member and said flux conductor means being in magnetic communication with said core, whereby upon energization of said coil flux flows along a series of closed paths sequentially including, for each reed, said pole member, the related small area air gap, said reed, the related large area air gap, said flux conductor means, said core, and said pole member again, and said reeds are drawn toward said pole member to perform switching operations with respect to external electrical circuits including said reeds.

3,204,058
ELECTRICAL REED RELAY HAVING PLUG-IN FEATURES
William Forbes Barton, Winnetka, Ill., assignor to Standard Grigsby Inc., a corporation of Delaware
Filed Sept. 19, 1962, Ser. No. 224,779
7 Claims. (Cl. 200—87)



1. An electrical relay cartridge having, in combination, a first elongated tube of insulating material open at opposite ends and having two radial openings spaced therealong from each other and from the ends thereof, a hollow spool of insulating material disposed within said first tube and having flanges engaging the interior thereof to locate a central bore of the spool in coaxial relation with said first tube, a reed relay element comprising a second tube of insulating material lying coaxially within said central bore of said spool and a pair of reeds of conducting material projecting toward each other in cantilever fashion from opposite ends of the second tube and overlapping at adjacent ends therewithin, a coil wrapped around and supported by said spool between said flanges and encircling said overlapping ends of said reeds, said coil and portions of said flanges being spaced from the interior of said first tube to provide clearance for the flow of liquid filling material past said spool, cups of conducting material closing and secured around said open ends of said first tube and having central apertures, the other ends of said reeds extending outwardly away from each other and said second tube and through said apertures in said cups, means securing each of said other reed ends to the adjacent one of said cups, rings of conducting material encircling and secured to said first tube adjacent said radial openings therein and spaced along said first tube from each other and said cups, said coil having terminals each connected to a different one of said rings through the adjacent one of said radial openings, and a body of insulating material filling the spaces within said first tube and around said relay element, said spool and said coil.

3,204,059
MAGNETICALLY LATCHED RELAY
Theodore N. Saaty, Providence, R.I., assignor to Wheelock Signals Inc., Long Branch, N.J., a corporation of New Jersey
Filed Nov. 15, 1962, Ser. No. 237,864
12 Claims. (Cl. 200—87)

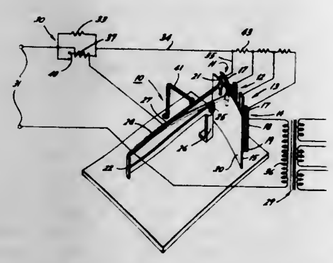


1. A relay comprising at least one magnetic reed contact, means for producing a magnetic field which, when rendered operative, latches said contact in one condition of operation, and means for producing a reed-actuating magnetic field which is magnetically coupled with said contact and said first-mentioned means for producing a latching magnetic field said reed-actuating magnetic field actuating the magnetic reed contact and rendering operative the means for producing said latching magnetic field.

3,204,060
SNAP-ACTION MAGNETIC SWITCH EMPLOYING A FLEXIBLE BIMETAL SWITCH ARM

Robert E. Mentzer, Philadelphia, Pa., assignor, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Dec. 29, 1959, Ser. No. 862,526
4 Claims. (Cl. 200—88)

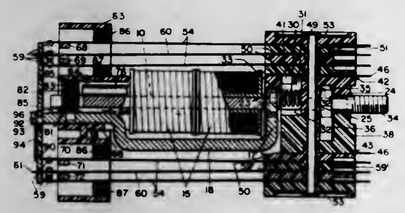


1. A snap-action electrical switch, comprising: means defining a plurality of individual switching stations each including a magnetically actuatable switching element mounted for switching movement with respect to a cooperating contact; magnetic means for actuating said element; temperature-sensitive means constructed and arranged for flexural movement on heating thereof, and adapted to carry said magnetic means into actuating proximity with said switching elements successively as a result of such movement; and motive means for heating said temperature-sensitive means to provide such flexural movement, the spacing between said magnetic means and said magnetically actuatable switching element at individual switching stations being such that movement of said magnetic means past a switching station is temporarily retarded by the force of magnetic attraction between said magnetic means and its associated switching element to permit flexure of said temperature-sensitive means by said motive means and an elastic force build-up sufficient to overcome said force of magnetic attraction, whereby to provide snap-action advance of said magnetic means between successive switching stations.

3,204,061
ELECTROMAGNETIC RELAY STRUCTURE

Wheeler D. Maynard, Mendon, N.Y., assignor to General Signal Corporation, a corporation of New York

Filed Nov. 28, 1962, Ser. No. 240,637
18 Claims. (Cl. 200—104)



1. A relay comprising, an elongated core substantially rectangular in cross-section,

(a) an energizable coil assembly mounted on said core and positioned to have a forward portion of the core extend outwardly of the coil;

(b) an armature hingedly connected adjacent one end of the core and disposed to have a forward portion of the armature attracted to the forward portion of the core upon energization of the coil;

(c) a frame of insulative material on the forward portion of the core having an internal dimension to receive the forward portions of the core and armature;

(d) said frame having inwardly extending integrally formed shoulders in engagement with the core to position precisely the frame on the core;

(e) means engaging the forward portion of the core and the frame to secure the frame in the precise position;

(f) said frame having a first integral cross member extending spaced from the core and engageable by the forward portion of the armature when the coil is deenergized to precisely fix the travel of the armature;

(g) a plurality of movable contact blades insulatively attached adjacent said one end of the core and positioned to extend through the frame;

(h) an insulative card affixed to the armature and the opposite ends of said movable contact blades to precisely position the extending opposite ends of said movable contact blades relative to the armature;

(i) a plurality of fixed contact blades insulatively attached at said one end of the core and extending in vertical spaced alignment from the movable contact blades through said frame to be engaged and disengaged at their opposite ends by their associated movable blades in accordance with the operation of the armature;

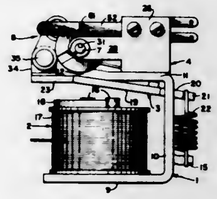
(j) said frame also having other integral cross members each having a surface opposing that portion of each respective fixed contact blade in the frame and so positioned to limit the position of each fixed contact blade when disengaged by its aligned movable contact blade; and

(k) spring means positioned in the frame disposed to engage a portion of each fixed contact blade in aligned spaced relation to the forward portion of the core constantly urging each fixed contact blade toward said opposing surface of its respective cross member.

3,204,062
RELAYS WITH IMPROVED ORGANIZATION OF RATCHET AND CONTACT ASSEMBLY

Jack V. Foster and Paul A. Hanold, Fort Branch, Ind., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed June 15, 1962, Ser. No. 202,852
8 Claims. (Cl. 200—105)



1. In a ratchet relay, the combination of frame means including

a first portion,

a second portion spaced from said first portion, and

means rigidly interconnecting said first and second portions;

an electromagnet comprising a core and an energizing winding disposed about said core,

said core being fixed to said first frame portion and projecting generally toward said second portion but terminating short of the location of said second portion,

said core having a longitudinal axis and said second portion of said frame means lying in a plane transverse to said axis,

the end of said core adjacent said second portion presenting a pole face directed toward the plane occupied by said second portion;

two support members rigidly carried by said second portion of said frame means and projecting away from said electromagnet,

said support members being spaced apart in a direction transverse to said axis;

an armature extending between said electromagnet and said second portion of said frame means,

said armature being mounted on said frame means for pivotal movement toward and away from said pole face about an axis extending parallel to that in which said support members are spaced apart;

a contact structure fixed to at least one of said support members;

a shaft extending parallel to said pivotal axis of said armature,

said shaft being rotatably mounted on said support members;

a ratchet wheel fixed to said shaft;

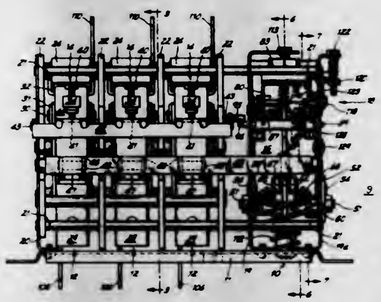
pawl means connected to said armature and arranged to rotatably advance said ratchet wheel upon each cycle of actuation of said armature toward and away from said pole face; and

means actuated by said shaft for operating said contact structure.

3,204,063
THERMAL CURRENT RESPONSIVE CIRCUIT BREAKER

William H. Nash and Edward W. Kaminsky, South Milwaukee, Wis., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Sept. 19, 1962, Ser. No. 224,636
8 Claims. (Cl. 200—116)

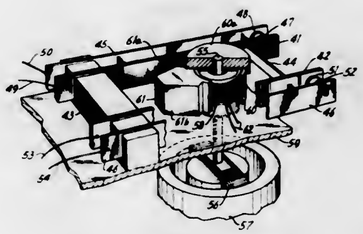


6. A three-pole circuit breaker, each pole including overcurrent responsive means and fixed and movable contact means, a single latching assembly common to all of said poles, said latching assembly including first and second independent pivotal latching members, first and second independent pivotal holding members for respectively maintaining said first and second latching members in a latched position, biasing means resiliently urging said second latching member into resilient engagement with said first holding member for resiliently urging said first holding member toward pivotal movement in a latch releasing direction when said second latch member is released from its latched position and allowing said first holding member to return to its holding position when said second latching member is in its latched position, an overcenter assembly coupled to said first latching member and to each of said movable contacts for simultaneously moving said contacts between open and closed positions, an operating member movable from a first position to a second position to latch each of said latching members on its associated holding member, movement of said operating member from said second position to its first position placing said overcenter means in a rigid condition to close said movable contacts, common trip means coupled to said second holding member and to each of said overcurrent responsive means so that the occurrence of an overload current through any of said poles will pivot said second holding member to release said second latching member for rotation by said biasing means to rotate said first holding member out of latching engagement with said first latching member whereby said overcenter means is released for simultaneous opening of said movable contacts.

3,204,064
THERMAL RELAY HAVING MOVABLE HEAT TRANSFER DEVICE

Jakob Giger, Zug, Switzerland, assignor to Landis & Gyr, A.G., Zug, Switzerland, a body corporate of Switzerland

Filed Oct. 22, 1962, Ser. No. 231,905
Claims priority, application Switzerland, July 18, 1962, 8,650/62
6 Claims. (Cl. 200—122)



1. A thermal relay for providing an output indication in response to an applied electrical signal, comprising bimetallic contact means for providing said output indication; electromechanical means connectable for response to said applied electrical signal and operative to assume a position which is a function of said applied signal; heating means; and a thermally conductive control member positioned by said electromechanical means and mounted for movement into and out of engagement with said contact means, said control member being in heat conducting relationship with said heating means and selectively operable to transfer heat to said bimetallic contact means by direct contact therewith.

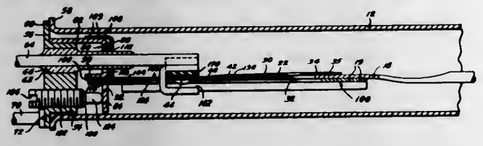
3,204,065
THERMALLY RESPONSIVE ELECTRICAL SWITCH WITH OVERSTRESS PROTECTION MEANS

Henry J. McCarrick, Middleboro, and Harry E. Shaw, Seekonk, Mass., and Carlton E. Sanford, Riverside, R.I., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Jan. 2, 1963, Ser. No. 249,021
9 Claims. (Cl. 200—137)

1. A thermally responsive electrical switch comprising a snap-acting element; a pair of electrical contacts, said element being operatively connected with one of said contacts for movement of the latter into and out of engagement with the other of said contacts; a housing; first and second frame members in said housing each

connected to a respective one of a pair of spaced portions of said element; limiting means connected with said housing; said limiting means comprising a lever member mounted on said housing for pivotal movement relative thereto; said first frame member being fixed to said limiting means for movement in unison therewith; said second frame member being interconnected with said limiting means for movement relative thereto and for movement in unison therewith in at least one direction after a predetermined amount of relative movement therebetween;



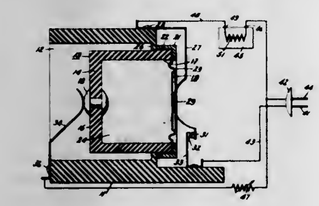
the portion of said element connected with said first frame and said first frame being interconnected with thermally responsive means for causing relative movement between said first and second frames in response to temperature change to stress said element to cause snapping thereof and actuation of said contacts; said limiting means cooperating with said first and second frames to limit relative movement between said frames in at least one direction after snapping of said element to prevent overstressing of said element.

3,204,066

THERMAL-ELECTRICAL CONTROL DEVICE HAVING THERMALLY EXPANSIVE MATERIAL AS A SWITCH ACTUATOR

Walter H. Gordon, Jr., Asheboro, N.C., assignor to General Electric Company, a corporation of New York

Filed Oct. 24, 1961, Ser. No. 147,312
5 Claims. (Cl. 200—140)



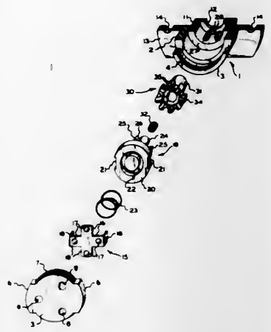
1. An electrical conrtol device comprising a housing of insulative material closed at one end by a fixed wall, a mixed material within said housing, a first constituent of said material being electrically conductive, a second constituent of said material being electrically insulative and thermally expansive whereby said material expands in response to current flow through said material, a pair of spaced current contacts in engagement with said material and adapted to be connected to a source of power, one of said current contacts comprising a flexible diaphragm positioned over the open end of said housing and being movable upon expansion and contraction of said material, the other of said current contacts being positioned through an oepning in said fixed wall of said housing a resilient contact arm positioned in mechanical and electrical engagement with said flexible diaphragm, an electrical contact secured to said arm, and a fixed contact arranged to be engaged by said last-named contact when said material is in a nonexpanded condition.

3,204,067

PUSH ROTARY SWITCH CONSTRUCTION WITH LOST MOTION CONTACT COUPLING

William L. Brown, Dearborn, Mich., assignor to Boyne Products, Inc., Boyne City, Mich., a corporation of Michigan

Filed Dec. 26, 1962, Ser. No. 247,110
12 Claims. (Cl. 200—156)



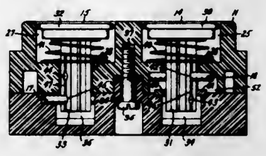
1. In a rotary switch construction: a hollow casing; electrical contacts fixed to said casing; a rotatable conductor mounted in said casing adjacent said contacts for engagement therewith and disengagement therefrom; a rotor; means mounting said rotor in said casing for rotation and for axial movements along a path from a first position to a second position and return; means coupling said conductor to said rotor for rotation therewith and for axial movements of said rotor independently of said conductor; means for moving said rotor axially; and means for rotating said rotor.

3,204,068

ELECTRIC SWITCH HAVING CONTACTS CONVERTIBLE BETWEEN NORMALLY OPEN AND NORMALLY CLOSED CONDITIONS

John E. Keyser, Bloomington, and Roy E. Wheeler, Champaign, Ill., assignors to General Electric Company, a corporation of New York

Filed Nov. 8, 1962, Ser. No. 236,255
7 Claims. (Cl. 200—159)



1. In an electric switch, a base formed of insulating material and having an opening extending entirely therethrough between its opposite sides, a contact carrier on said base reciprocable relative to said base between extended and depressed positions, said contact carrier having an actuating part on one side of said base and having a stem attached to the actuating part and extending through said opening with the free end of the stem on the other side of said base, resilient means acting between said base and said contact carrier urging the contact carrier to an extended position, a pair of spaced fixed contacts detachably mounted on said other side of said base, said fixed contacts being of generally planar configuration each having a contact part in the general plane thereof, the stem of said movable contact carrier having

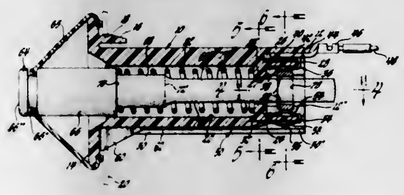
a pair of axially spaced passages extending entirely therethrough generally perpendicular to the stem axis, and a movable contact comprising an electroconductive rod detachably received within a selected one of said passages with the ends of said rod projecting externally of the selected passage, said rod when in the passage nearer the stem free end normally engaging the contact parts of said fixed contacts when said contact carrier is extended and being moved out of engagement with the contact parts of said fixed contacts in response to depression of said contact carrier, said rod when in the passage remote from the stem free end normally being spaced from the contact parts of said fixed contacts when said contact carrier is extended and being moved into engagement with the contact parts of said fixed contacts in response to depression of said contact carrier said fixed contact parts being in a common plane which extends parallel to and lies between said axially spaced passages and which has the same axial position for either selected position of said rod.

3,204,069

DOOR SWITCH ASSEMBLY

Wilson H. West, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 3, 1962, Ser. No. 241,654
12 Claims. (Cl. 200—159)



1. A switch assembly comprising a cylindrical switch housing having a bore extending therethrough and defining internal spring seat means intersecting said bore and closely spaced from one end thereof, a plunger having opposite end portions reciprocably supported within said housing bore and spring seat means and projecting longitudinally therefrom, spring means compressively interposed between said seat means and said plunger and resiliently acting to bias the plunger longitudinally of said spring seat means and outwardly of the other end of said housing bore, angularly spaced contact means mounted within and extending longitudinally of said one end of the housing bore outwardly of said spring seat means, contact means mounted on the end portion of said plunger projecting outwardly of the spring seat means and engageable with the spaced-housing-mounted contact means within said bore to complete an electrical circuit therethrough, and abutment means carried by the contact mounting end of the plunger and engageable with the adjacent end of the housing to limit spring biased contact engaging movement of the plunger outwardly of said housing.

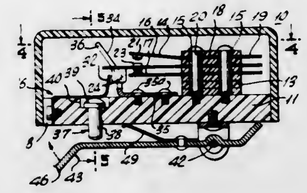
3,204,070

MOMENTARY SWITCH USING RESILIENT LEAF SPRING ACTUATOR

Herbert W. Marano, Summit, N.J., assignor to Consolidated Cigar Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 22, 1963, Ser. No. 303,890
9 Claims. (Cl. 200—160)

1. An electric switch comprising a contact element, an elongated resilient switch blade supported at a trailing end thereof and alternatively movable into first and second positions into and out of electrical engagement with said contact element and resiliently biased to said first position, and an actuating member including an arm swingably supported adjacent an end thereof at a fixed point forward of the leading end of said switch blade for movement between an advanced and a retracted position and directed toward said switch blade and terminating at a point transversely spaced from said switch blade in a resiliently supported leg angularly extending from said



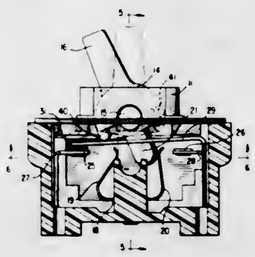
arm toward the free end of said switch blade, said arm being resiliently biased toward said retracted position whereby upon advance of said actuating member said leg is in engagement with and moves said switch blade momentarily to said second position and moves forwardly of and releases said switch blade to return to said first position and upon retraction of said actuating member said leg is urged forwardly to by-pass said switch leading end.

3,204,071

CENTER-BIASED DOUBLE-THROW MOMENTARY CONTACT SWITCH

Henry A. Passarelli, Jr., East Providence, and Earl F. Reihman, Warwick, R.I., assignors to General Electric Company, a corporation of New York

Filed Dec. 11, 1962, Ser. No. 243,770
2 Claims. (Cl. 200—165)



1. A double-throw, momentary contact switch comprising:
   (a) a housing;
   (b) first and second fixed contacts mounted within said housing on opposite ends thereof;
   (c) first and second movable resilient contact arms mounted on said opposite ends of said housing and extending across said housing, each of said contact arms having its free end disposed adjacent to a cordesponding one of said fixed contacts;
   (d) a trigger mounted on said housing for pivotal movement about an axis transverse to said contact arms comprising:
      (aa) first and second cams disposed on opposite sides of the axis each adjacent a corresponding one of said contact arms whereby pivoting of said trigger in a first direction depresses said

first contact arm against said first fixed contact and pivoting of said trigger in a second direction depresses said second contact arm against said second fixed contact, and

(bb) a tongue extending along the longitudinal axis of said trigger into said housing; and

(e) a pair of resilient members disposed on opposite sides of said detent and engaging said detent upon the pivoting of said trigger in either of said directions for providing a biasing force urging said trigger to a central position;

(f) said contact arms when depressed providing a second biasing force to urge said trigger to a central position.

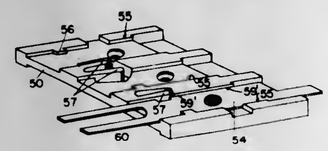
3,204,072

CONTACT BLADE MOUNTING FOR RELAYS HAVING AN INTEGRAL RESILIENT MEANS FOR BIASING SAID BLADE IN POSITION

Wheeler D. Maynard, Mendon, N.Y., assignor to General Signal Corporation, a corporation of New York

Original application Nov. 28, 1962, Ser. No. 240,637. Divided and this application Mar. 30, 1965, Ser. No. 444,001

9 Claims. (Cl. 200—166)



1. In a relay including a plurality of elongate contact blades,

(a) an insulating assembly for fastening the plurality of elongate contact blades in precise position insulatively spaced from one another;

(b) said assembly comprising a plurality of molded wafers of insulating material each having integral portions that mate when stacked atop one another in proper assemblage;

(c) each said wafer comprising a plurality of integrally formed grooves in one surface thereof of sufficient width to receive a contact blade;

(d) each said groove having one precisely positioned side wall against which each contact blade is referenced when inserted therein; and

(e) an integral resilient member normally extending into each said groove positioned to engage against a contact blade when inserted in its groove to constantly urge the contact blade against the precisely positioned side wall.

3,204,073

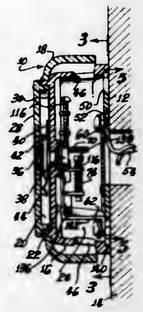
WALL THERMOSTAT HOUSING UNIT

Albert E. Baak, 640 Ocampo Drive, Pacific Palisades, Calif.

Filed Dec. 14, 1960, Ser. No. 75,784

3 Claims. (Cl. 200—168)

1. In an improved wall thermostat, the improvement comprising: a circular mounting plate having a thin disc configuration and formed of insulating material and designed for independent connection to the wall, said plate being provided with a set of terminal connections and terminal arms connected to said terminal connections, said mounting plate upon connection to the wall having said terminal arms exposed; a thermostat housing removably held to the mounting plate and having adjacent said mounting plate a hollow rear portion with a wall possessing an inner diameter slightly larger than the diameter of said circular mounting plate placed about said mounting plate; and a second set of terminal arms supported within said housing with their outer ends removably interlocked with



corresponding arms of the mounting plate, said corresponding terminal arms of the mounting plate and housing having complementary structures that engage with relative rotation of the housing and mounting plate.

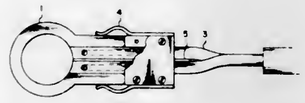
3,204,074

INDUCTION HEATING DETACHABLE WORK COIL

Harold B. Hunting, Jr., Van Nuys, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Apr. 25, 1963, Ser. No. 275,716

2 Claims. (Cl. 219—10.79)



1. A work coil for induction heating said coil having at least one turn comprising a loop portion, a pair of parallel members spaced apart a distance approximating the dimensions of a work piece which is to be heated and intersecting said loop portion and integral therewith, a pair of electrical conductors positioned between said members and in intimate electrically conductive contact therewith, insulation between said conductors, the ends of said conductors being shaped so as to have the same curvature as the internal curvature of the loop portion, the ends of said conductors together with said loop portion defining substantially a full electrical turn of said coil and means for maintaining said extensions in electrical contact with said conductors.

3,204,075

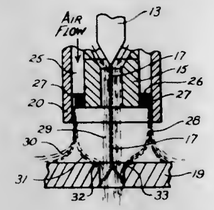
ELECTRIC ARC TORCH

James A. Browning, Hanover, N.H., assignor to Thermal Dynamics Corporation, Lebanon, N.H., a corporation of New Hampshire

Filed Oct. 4, 1962, Ser. No. 228,298

2 Claims. (Cl. 219—75)

1. An electric arc torch adapted to cut a workpiece comprising an electrode; a nozzle having an arc passageway extending from said electrode; electrical power means for establishing an arc from said electrode; means providing a plasma-forming gas stream under pressure into said nozzle to stabilize and carry said arc through said passageway together with said stream and against said workpiece; and means providing a stream of reactive gas against said workpiece in a direction generally parallel to the axis of said passageway and displaced therefrom,



such that said gas stream and said reactive gas remain substantially distinct, with said reactive gas impinging the work surface adjacent the kerf zone of said cut, said reactive gas stream being of sufficient magnitude said reactive gas is air.

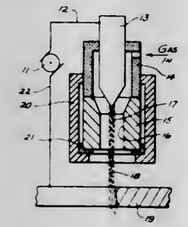
3,204,076

ELECTRIC ARC TORCH

James A. Browning, Hanover, N.H., assignor to Thermal Dynamics Corporation, Lebanon, N.H., a corporation of New Hampshire

Original application Oct. 4, 1962, Ser. No. 228,298. Divided and this application Dec. 23, 1964, Ser. No. 425,996

4 Claims. (Cl. 219—75)



1. An electric arc torch comprising at least one electrode, a nozzle having an arc passageway extending from said electrode, means for establishing an arc from said electrode, gas stabilizing means to carry said arc through said passageway, a protective shell surrounding said nozzle, a spacer ring electrically insulating said shell from said nozzle, a plurality of apertures in said ring and around the circumference thereof communicating with the space within said shell, and means for providing a flow of gas through said apertures.

3,204,077

WELDING AND CASTING PROCESS

Roman F. Arnoldy, Houston, Tex., assignor to R.I. Patents, Inc., Houston, Tex., a corporation of Texas

Filed Jan. 31, 1963, Ser. No. 255,395

7 Claims. (Cl. 219—76)

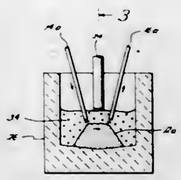
1. A method of producing a weld or casting comprising,

depositing a measured quantity of electrically-conductive, granular weldable material,

positioning a first electrode in closely-spaced relation to a portion of the electrically-conductive, granular weldable material,

positioning a second electrode in spaced relation to the first electrode and in closely-spaced relation to another portion of the electrically-conductive, granular weldable material,

melting the deposited electrically-conductive, granular weldable material and portions of the first electrode and the second electrode by flowing an electric current in series through the first electrode, then through the weldable material and then through the second electrode, and



feeding both of the electrodes at a measured rate while continuing to deposit coordinated measured quantities of the weldable material during melting thereof thereby obtaining a predetermined alloy composition formed of the portions of the first and second electrodes and the weldable material.

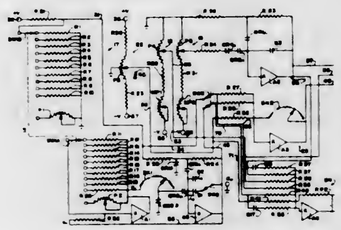
3,204,078

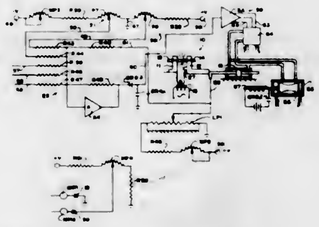
ELECTRO-HYDRAULIC CONTROL FOR FLASH WELDERS

Daniel A. Cavanagh, Willowdale, Ontario, Canada, assignor to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio

Filed June 27, 1960, Ser. No. 39,029

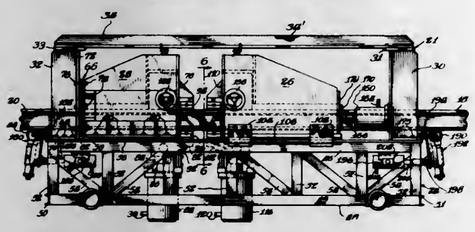
15 Claims. (Cl. 219—97)





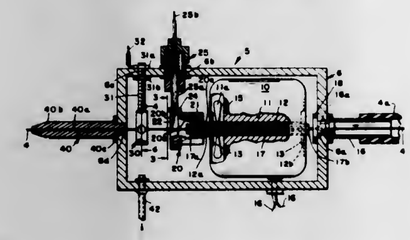
1. In flash welding apparatus comprising a pair of welding platens adapted to receive and hold workpieces and means to effect relative movement between said platens; the improvement comprising means to generate a first signal corresponding to the desired instantaneous relative spacing between said welding platens over a predetermined time-position pattern, means to generate a second signal corresponding to the actual instantaneous relative spacing between said welding platens, means to compare said signals to an output control signal, and said output control signal actuating said means to effect relative movement.

3,204,079
WELDING MACHINE FOR RAILS OR THE LIKE
Earle F. Cox, Western Springs, Ill., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed May 2, 1962, Ser. No. 191,949
5 Claims. (Cl. 219—101)



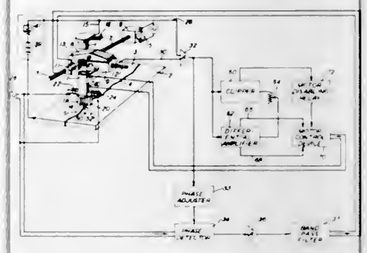
1. A device for welding rails wherein the welding operation is characterized by urging adjacent rail ends into end-to-end pressure engagement, comprising in combination:
a base;
first and second columns rigidly supported upon said base in relative spaced relation thereon;
a fixed head rigidly mounted on said base and affixed to said first column, said fixed head being disposed on said base between the first and second columns, said fixed head having vertical and lateral clamping means adapted to engage and to position said rail with respect to said head;
a movable head slidably supported on said base and adapted to be movable along said base toward and away from fixed head, said movable head being disposed on said base between said second column and said fixed head, said movable head having vertical and lateral clamping means adapted to engage and to position said rail with respect to said head;
hydraulic means interconnected between said movable head and said second column, said hydraulic means adapted to urge said movable head along said base; and
means rigidly interconnecting the upper and lower terminals of said first and second columns, respectively, to define force absorbing means effective to absorb forces developed in urging said rails in end-to-end pressure welding relation.

3,204,080
ELECTRICAL CLEANING APPARATUS
James R. Spencer, Cartersville, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed June 3, 1963, Ser. No. 285,019
7 Claims. (Cl. 219—121)



6. An electrical cleaning apparatus for cleaning a length of wire, comprising:
a hollow shaft member through which a length of wire to be cleaned can be passed,
said hollow shaft member being mounted for rotation;
means connected to said hollow shaft member for imparting rotation thereto;
an electrode holding means mounted on said hollow shaft member for rotation therewith;
at least one electrode mounted in said electrode holding means,
said electrode being in spaced apart relationship from said hollow shaft member and extending inwardly toward the axial centerline of said hollow shaft member;
electric circuit means for connecting said electrode to a source of electrical energy; and
contact means disposed adjacent the path of travel of the length of wire being cleaned,
said contact means including a member mounted for resiliently biased contact with a portion of the length of wire so that there can be established an electric circuit comprising said electrode, at least a portion of the length of wire being cleaned, and an electric arc established between said electrode and the wire.

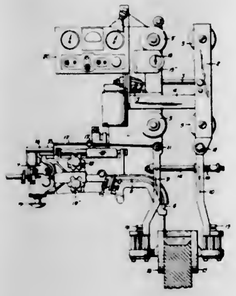
3,204,081
SEAM FOLLOWER WITH ARC SCANNING
William F. Iceland, Metuchen, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 16, 1962, Ser. No. 238,186
20 Claims. (Cl. 219—125)



1. In a seam tracking device, in combination, means for producing an ionized stream and for maintaining an electric current along at least a portion of the path of said stream, means to apply said stream to the surface of an electrically conductive workpiece having a seam therein to be followed, means to cause a repetitive scanning motion of said stream transversely of the seam, means to detect variations in said electric current in said stream as the stream crosses the seam, and means to utilize the detected variations to cause said repetitive scanning motion to be maintained substantially centered relatively to the seam.

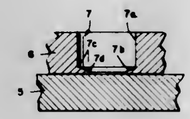
3,204,082
DEVICE FOR ELECTRIC WELDING OF VERTICAL AND INCLINED SEAMS
Daniil Andreevich Dudko, Roman Mikhailovich Gordon, Oskar Osipovich Rozenberg, and Meilikh Gdal-Gershovich Beljfor, all of Kiev, U.S.S.R., assignors to Institute Elektrosvarki "E. O. Paton"
Filed July 29, 1963, Ser. No. 298,061
7 Claims. (Cl. 219—126)

1. A device for the electric flux welding of vertical and inclined seams in metal work comprising driving and idler carriages adapted to be positioned at both sides of the work, a spring-mounted rod coupling the driving and idler carriages passing through the gap between the edges being welded, support rollers mounted on the idler carriage, guide rollers mounted on the driving carriage, forming shoes located on said driving and idler carriages, an electrode feed mechanism carried by the driving carriage, an electric oscillating mechanism, said electrode oscillating



mechanism and the electrode feed mechanism being mounted on the driving and idler carriages, rods for coupling the forming shoes with the driving and idler carriages, and a spring-mounted rod coupling the rods passed through the gap between the edges being welded.

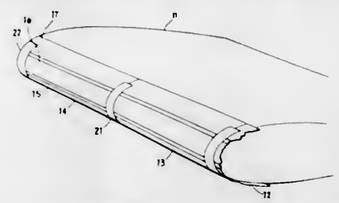
3,204,083
LOW HEAT PLUG WELD METHOD AND APPARATUS
Frederick W. Fromm, Dunwoody, and Robert H. Kilpatrick, Smyrna, Ga., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Mar. 25, 1963, Ser. No. 267,575
7 Claims. (Cl. 219—127)



1. In a member having a pair of opposed surfaces a plug weld hole extending through said member between said surfaces for permitting welding of said member to another member, said plug weld hole having a first cross-sectional area intersecting the first surface of said member, and a flange proximate the other surface of said member forming a reduced cross-sectional area of the plug weld hole thereat with respect to said first cross-sectional area.

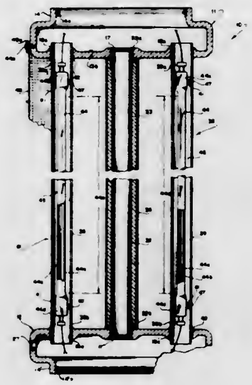
3,204,084
ELECTRICAL DEICER
Jessie H. Spencer, Jr., El Cajon, and Dean T. Bowden, San Diego, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed May 7, 1963, Ser. No. 278,659
3 Claims. (Cl. 219—202)

1. Electrical aircraft deicing apparatus comprising:
a plurality of elongated heating panels on an aerodynamic surface, said panels including
a first layer of electrical insulating material fastened to said aerodynamic surface,
a second layer of electrical insulating material overlying said first layer,
a cyclically energized resistance heating element between said first and second layers of electrical insulating material,



a continuously energized expanded metal parting strip at the end of each of said panels, said parting strips being of a substantially smaller size than said elongated heating panels, and
means enabling uniform distribution of electrical energy to said heating element and to said parting strip.

3,204,085
HEATING DEVICE
John P. Busby, Sr., Buena Vista, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Aug. 15, 1962, Ser. No. 217,141
9 Claims. (Cl. 219—346)

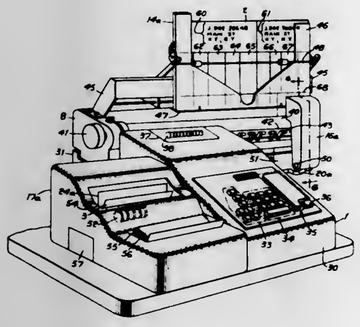


1. A heater comprising: spaced apart hollow explosion proof support members; a plurality of quartz tubes connected in sealed relation to said support members; an infrared lamp mounted in each of said tubes with the ends of said lamp spaced inwardly from the ends of said tube at the connection of said tubes to said support members; electrical leads connecting said lamps in electrical circuit within said support members; and an explosion proof electrical connector connected to one of said support members and to the electrical leads therein.

3,204,086
DATA PROCESSING SYSTEMS
Hans K. Flesch, Glen Cove, N.Y., and Fredrick T. Gutmann, Caldwell, and Robert Lieber, West Orange, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Apr. 27, 1961, Ser. No. 106,090
16 Claims. (Cl. 235—61.9)

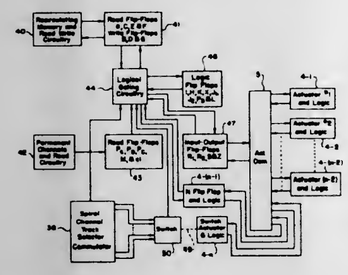
1. A data processing system comprising means for posting, on a selected secondary element, a primary data representation derived from a selected primary element,

means associated with said positing means for deriving and storing a secondary representation corresponding to account number identifying indicia on said selected secondary element, and means operatively associated with



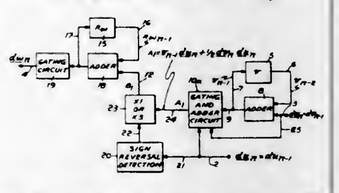
said posting and said deriving and storing means for transferring an indication of said stored representation to said selected primary element in association with said primary data posting.

3,204,087
GENERAL PURPOSE PARALLEL SEQUENCING COMPUTER
Hugh L. Millis, Jr., 1056 Newkirk Drive, La Jolla, Calif.
Filed Oct. 14, 1959, Ser. No. 846,280
18 Claims. (Cl. 235—151)



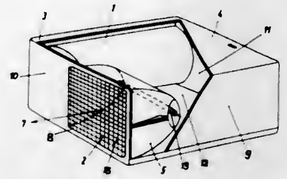
17. A general purpose sequencing computer for controlling the sequence of actuations of a series of actuators, each of said actuators having at least two normal states and responsive to an applied signal for changing from one to another of its normal states, said general purpose sequencing computer comprising: a series of control means corresponding to said series of actuators, respectively, each of said control means including counting means for counting applied input signals and responsive to a predetermined count in said counting means for producing an output signal commutating means for serially coupling said series of control means to said series of actuators, respectively, whereby each output signal produced by each of said control means is applied to its actuator during its associated coupling interval; and means responsive to each completion of change of state of each of said actuators for applying input signals to the counting means of predetermined control means of said series of control means whereby a sequence of actuations of said series of actuators is produced.

3,204,088
CUMULATIVE DIGITAL COMPUTING SYSTEMS
Paul R. Adams, Upper Montclair, N.J., and Joseph A. Fingerett, Pacoima, and Robert von Buelow, Encino, Calif., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Apr. 9, 1962, Ser. No. 185,886
12 Claims. (Cl. 235—152)



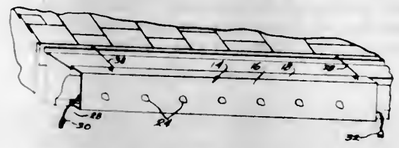
3. A digital integrator comprising first and second sources of signals representing respective first and second time displaced sequences of successive numerical increments of determinable sign in respective first and second related variables, computing means coupled to the outputs of said first and second sources for producing signals representing numerical values of successive increments in the definite integral of one of said variables taken with respect to the other of said variables, means coupled to said first source for detecting reversals in said sign of said increments in said first variable, and means coupled between the output of said sign reversal detecting means and an input of said computing means for applying correction factor signals to said computing means following each said sign reversal to prevent the accrual of cumulative sign reversal errors in said definite integral.

3,204,089
ELECTRONIC FLASH UNIT
Walter Schmidt, Berlin-Lichterfelde, Germany, assignor to Loewe Opta A.G., Berlin, Germany, a company of Germany
Filed Oct. 22, 1962, Ser. No. 232,923
Claims priority, application Germany, Oct. 26, 1961, L 30,583, Reg. No. (utility model) 1,845,695
1 Claim. (Cl. 240—1.3)



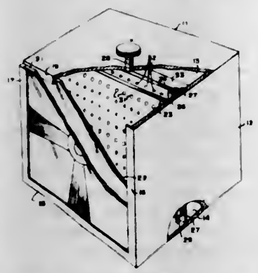
An electronic flash unit comprising a cuboid hollow case having front and rear walls, top and bottom walls, and side walls; the height of said case being substantially less than the width and length thereof; an opening in the front wall of said case adjacent one side thereof; a concave reflector having its open end mounted on said front wall within said case in registry with said front wall opening; an electronic flash lamp mounted within said reflector for emitting a flash of light through said front wall opening; an elongated cylindrical storage condenser being mounted intermediate said reflector and the opposite side wall of said case with the longitudinal axis of said condenser parallel to said side walls; said storage condenser being mounted adjacent said opposite side wall and extending from the front wall to the rear wall of said case; and means for mounting said electronic flash unit to a camera being fixed to said case at said opposite side wall adjacent said condenser.

3,204,090
CHRISTMAS LIGHT HOLDER
Charles Kvarda, Jr., 10437 King Coe Lane, Strongsville, Ohio
Filed July 11, 1962, Ser. No. 209,129
1 Claim. (Cl. 240—10)



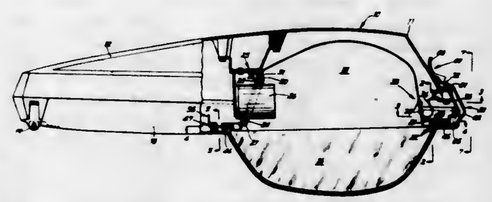
An apparatus for holding a string of decorative lights spaced apart in a line and connected by a wiring circuit comprising an elongated thin-wall channel, said channel having a web and a pair of legs, a bent portion formed on the end of said legs throughout their length and parallel to the web, said bent portions confronting each other respectively to provide hooks for use in supporting said apparatus, said web being perforated to provide spaced openings throughout its length intermediate said legs, said perforations receiving electrical lamps secured in sockets, one of said legs being perforated proximate to each end respectively, fittings in engagement with said perforations in the leg, and hooks in engagement with the fittings, said hooks supporting the apparatus, said lamps being exterior of said channel and said wiring and sockets being retained in said channel means on the opposite side of said web from said lamps.

3,204,091
LIGHT SOURCE OF CONTROLLABLE INTENSITY
Albert J. Baracket, Cedar Grove, N.J., assignor to Diamond Power Specialty Corporation, Lancaster, Ohio, a corporation of Ohio
Filed Sept. 5, 1962, Ser. No. 221,464
3 Claims. (Cl. 240—20)



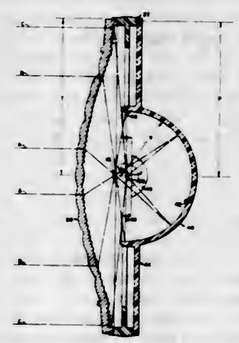
1. A light source comprising: a flat diffusing plate: a luminous element spaced from one surface thereof to direct light therethrough; opaque means extending from the edges of said plate and enclosing a volume that includes said luminous element, the inner surface of said opaque means being reflective to increase the apparent intensity of said luminous element; a pair of foraminous sheets of opaque material located across the light path between said luminous element and said diffusing plate so that the light travelling along said path strikes said sheets, one of said sheets having foraminations with varying space-size parameters substantially complementing the intensity of light reaching said sheet from said luminous element; and means to move one of said sheets with respect to the other to vary the relative alignment of foraminations in said sheets thereby to vary the overall intensity of light passing through said sheets without varying the relative intensity of various color components of the light.

3,204,092
STREET LIGHTING LUMINAIRE
Edward R. Jablonski, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Jan. 28, 1963, Ser. No. 254,071
11 Claims. (Cl. 240—25)



1. A luminaire comprising an inverted dished housing having a bottom opening, lamp holding means mounted in said housing for supporting a light source, an inverted dished reflector having a bottom opening, an aperture in one end of said reflector and slidably engaging said lamp holding means, resilient spring latch means for releasably supporting the other end of said reflector in said housing, said resilient spring latch means and said lamp holding means supporting said reflector in spaced relation from said housing, said spring latch means also resiliently biasing said reflector toward limited movement outwardly of said housing, a peripheral flange around said bottom opening of said reflector, a closure assembly hingedly mounted on said housing, releasable latch means for securing said closure member to said housing in a closed position, and a refractor having a peripheral flange mounted in said closure assembly with said refractor flange engaging said reflector flange when said closure assembly is in its closed position, said engagement moving said reflector inwardly of said housing and against the biasing force of said spring latch means so that said flanges are urged into sealing engagement and misalignment between said refractor and said reflector is corrected.

3,204,093
WARNING LIGHT REFLECTOR
Sidney A. Heenan, Park Ridge, Ill., assignor to Elastic Stop Nut Corporation of America, Union, N.J., a corporation of New Jersey
Filed Apr. 4, 1963, Ser. No. 270,655
11 Claims. (Cl. 240—41.3)



1. A reflector for providing a mono-directional visual signal in a warning light assembly, the warning light assembly having a lens fixed therein diametrically opposed to the reflector for accepting light from a focal point, and

a lamp fixed between the lens and the reflector, the filament of the lamp being located at a fixed point coincident with the focal point of the lens, said reflector comprising:

(A) a semi-spherical reflecting surface having a relatively small radius in comparison to the radius of the lens; and

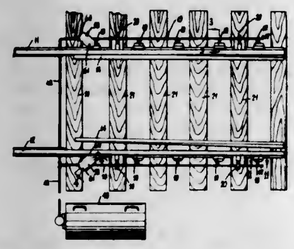
(B) means cooperating with said reflecting surface and having a portion corresponding to the diameter of the lens for fixing said reflector in the assembly and locating said reflecting surface in the assembly relative to the lamp and the lens with the origin of said relatively small radius displaced a relatively short distance from the fixed point, said short distance being great enough to induce a condition which precludes the projection of a shadow of the lamp filament upon the lens by defeating the tendency for all of the light emanating from the filament and reflected by said reflecting surface to be concentrated at the fixed point and to intercept the filament, and small enough to maintain the optical error arising from such a condition at a minimum compatible with said condition.

3,204,094

RADIANT GAS-FUELED RAILWAY SWITCH HEATER

Christiaan Jurriaan Johannes Huisinga, Joll Nld, Gilon, Montreux, Switzerland

Filed Apr. 3, 1964, Ser. No. 357,231
Claims priority, application Netherlands, Mar. 15, 1957, 215,415; Oct. 28, 1957, 221,930
17 Claims. (Cl. 246—428)



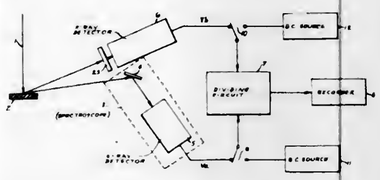
8. In a railway switch incorporating a rail embodying a flanged foot connected to the rail head through a web and mounted on sleepers, a switch heater comprising a plurality of burner housings open only along one vertical side thereof, a pipe inter-connecting each of said burner housings through which pipe a gas-and-air mixture is fed to the interior of said housings, each of said burner housings at their open sides having a vertical depth less than the height of the rail web and being each elongated in a direction along the length of the railway rail to be heated, means supporting said pipe from the sleepers, said pipe mounting each of said burner housings between longitudinally adjacent sleepers with their open sides directed toward the rail web and with their upper and lower sides respectively extending beneath the rail head and above the rail foot with their lower sides sloping downwardly toward the rail web, a thick ceramic burner plate disposed within each of said housings and formed with a plurality of passages extending therethrough between two opposite faces of the plate one of which faces is directed toward the open side of the associated housing and in which passages the combustion of the gas-and-air mixture occurs to heat to incandescence the surrounding mass of the burner plate including the face thereof directed to the open side of the associated housing, each of said burner plates being elongated in a direction along the length of the adjacent rail, a single gas-and-air mixing device disposed adjacent to one of said burner housings and operatively connected to each of said burner housings by said pipe, said mixing device having an upwardly directed air intake opening, a hood extending over said air intake opening, said hood being adapted to deflect into said opening air currents flowing in the vicinity of said mixing device and said hood extending over the burner housing which is adjacent to said mixing device to receive heat from said adjacent burner housing and direct said heat to the vicinity of said air intake opening.

3,204,095

ELECTRON PROBE MICROANALYZER WITH MEANS TO ELIMINATE THE EFFECT OF SURFACE IRREGULARITIES

Hiroshi Watanabe, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Dec. 11, 1961, Ser. No. 158,326
Claims priority, application Japan, Dec. 21, 1960, 35/49,460
2 Claims. (Cl. 250—49.5)



1. An electron probe micro-analyser for the X-ray emission analysis of the specimen, said apparatus comprising means for projecting an electron beam onto a portion of the surface of said specimen to cause the simultaneous emission of X-rays of a characteristic wave length from the element of interest in said specimen and X-rays of a continuous wave length from said specimen, first detector means for detecting said X-rays of a characteristic wave length and producing a signal the intensity of which varies in accordance with the amount of said element in said specimen and with surface irregularities, second detector means for detecting said X-rays of a continuous wave length and producing a signal the intensity of which varies in accordance with surface irregularities, and means for determining the ratio between the signals produced by said first and second detectors to thereby eliminate the effect of surface irregularities and obtain a signal that varies only in accordance with the variation of said element in said specimen.

3,204,096

APPARATUS FOR PROJECTING AN ELECTRON BEAM ALONG A CURVED PATH HAVING VARIABLE IMPEDANCE

Emmett R. Anderson, Berkeley, and Charles W. Hanks, Orinda, Calif., assignors, by mesne assignments, to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

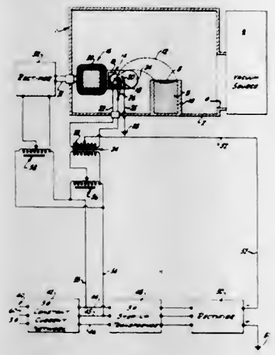
Filed July 9, 1962, Ser. No. 208,504
4 Claims. (Cl. 250—49.5)

1. Apparatus for projecting an electron beam to a target along a curved path having variable impedance, comprising:

(a) an electron gun including a thermionic cathode and accelerating means projecting an electron beam into the desired path;

(b) an electromagnet arranged to provide a magnetic field transverse to the beam for guiding it along the curved path;

(c) a constant current source and means connecting the source between said cathode and target, whereby the source voltage tends to vary as the impedance of the path varies; and



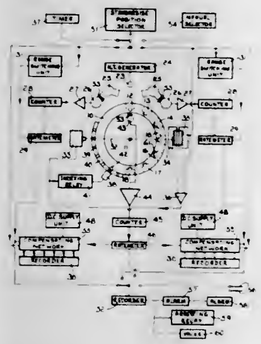
(d) means energizing said electromagnet with said source voltage to vary magnetic field strength in opposition to variations in beam voltage for maintaining the path of the beam substantially constant.

3,204,097

METHOD OF X-RAY SPECTOGRAPHIC ANALYSIS OF A MIXTURE OF SOLID PARTICLES AND LIQUID

Walter G. Moffat and Robert Carson, Kitwe, Northern Rhodesia, assignors to Rhoanglo Mine Services Limited, Salisbury, Southern Rhodesia

Filed Oct. 4, 1962, Ser. No. 228,318
Claims priority, application Rhodesia and Nyasaland, Oct. 11, 1961, 492/61
1 Claim. (Cl. 250—51.5)



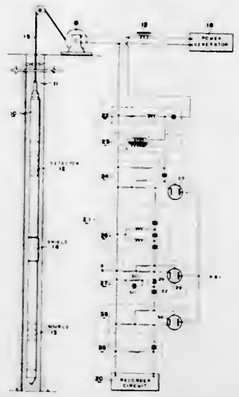
A method of analyzing, by X-ray spectrographic techniques, the concentration of a given element in the solid particles of a mixture of solid particles and liquid, comprising the steps of irradiating with X-rays a sample of a mixture of solid particles and liquid in which the solid particles contain a plurality of different elements and in which the solid particles have a greater degree of radiopacity than the liquid, detecting the secondary emission from the sample to provide a first signal whose value varies as the concentration of said given element in the mixture as a whole, detecting rays that have passed through the sample to provide a second signal whose value varies at the concentration of solid particles in the liquid, employing said second signal to correct said first signal for departures of the concentration of solid particles in the liquid from a reference concentration, and displaying the thus-corrected first signal in terms of the concentration of said given element in said solid particles.

3,204,098

RADIOACTIVE WELL LOGGING SYSTEM WITH SURFACE CIRCUIT DESIGNED TO ISOLATE A.C. POWER SIGNALS FROM LOGGING SIGNALS

Wilmer A. Hoyer and Donald H. Britton, Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed Dec. 13, 1960, Ser. No. 75,600
6 Claims. (Cl. 250—83.3)



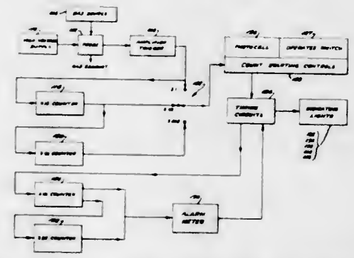
1. In a radioactivity well logging system which includes a down-the-hole radiation detector suspended on an electrical conductor cable the improvement comprising a surface circuit which includes means for obtaining a monopolarized pulse signal output from a bipolarized pulse logging signal input representative of radiation emanating from subsurface formations detected by said detector while maintaining temperature and voltage stability and while preserving the relative amplitude of each pulse signal.

3,204,099

ALPHA PARTICLE COUNTER AND INTEGRATING CIRCUIT ARRANGEMENT

Donald G. Ludlum, Santa Fe, N. Mex., assignor to Eberline Instrument Corporation, Santa Fe, N. Mex., a corporation of New Mexico

Filed May 10, 1961, Ser. No. 117,252
18 Claims. (Cl. 250—83.6)



1. A monitor for measuring outputs from a probe, said monitor comprising an electrical circuit including a trigger for receiving signals from the probe and converting

them to pulses of equal magnitudes, a meter, circuit connections between the trigger and the meter to advance the reading on the meter in proportion to the number of pulses delivered by the trigger, an alarm signal under control of the meter and operative when the meter reading reaches a predetermined value, a timing motor and circuit connections operated thereby to disconnect the connections between the trigger and the meter, means causing said alarm signal to operate when the count on the meter reaches the predetermined value prior to the timing motor operating to disconnect said connections, a safe signal, and circuit connections under control of the timer to operate said safe signal when the meter does not reach the predetermined value prior to the timing motor disconnecting said connections.

3,204,100
INFRARED RADIOMETER WITH BACKGROUND ELIMINATION

Eric M. Wormser, Stamford, Conn., Abe L. Pogoda, Paramus, N.J., and Robert W. Astheimer, Westport, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed Oct. 5, 1961, Ser. No. 143,219
10 Claims. (Cl. 250—83.3)



1. An instrument for detecting radiation from a target in the presence of intense radiation from a background in a different spectral region which comprises in combination and in optical alignment,

(a) means for collecting radiation, said means including an entrance pupil,

(b) a composite selective differential detector system including two detector elements one of which responds to the target radiation and the other to a portion of the background radiation,

(c) means for imaging the entrance pupil of the radiation collecting means into the plane of the differential detector system, and

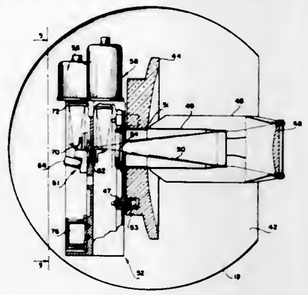
(d) means for balancing detector outputs from the background only by varying the relative cross-section of the incoming radiation beam encountering each detector element, said means causing at balance a very large portion of the incoming beam to encounter the detector system element responding to target radiation and a relatively very small and minor part of the beam to encounter the detector element responding to background radiation.

3,204,101
INFRARED SPECTROMETER FOR TARGET DETECTION AND TRACKING

Elvin S. Brumfield, Temple City, Oliver La Plant, Northridge, and Edgar W. Kutzscher, Sherman Oaks, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Sept. 4, 1962, Ser. No. 221,010
17 Claims. (Cl. 250—83.3)

1. An infrared spectrometer comprising: collecting optics for receiving radiation from an emissive target and focusing said rays into a beam, monochromator means responsive to said beams for dispersing the infrared energy in said beam into a spectrum, said monochromator means comprising first and second monochromators, said first monochromator being responsive to long wave lengths and said second monochromator being responsive to short wave lengths for dispersing said beam into a pair of

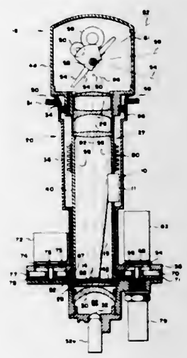


spectra, a multiple channel detector for each spectrum having a plurality of infrared responsive cells, each of said cells being disposed to receive light of a corresponding wavelength in said spectrum.

3,204,102
ELEVATION FINDER FOR INFRARED DEVICE

Ross L. Hand, Jr., Sun Valley, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Jan. 24, 1963, Ser. No. 253,572
12 Claims. (Cl. 250—83.3)



4. In combination with an infrared search device including a diagonal mirror for receiving target energy from a predetermined elevational sector, an infrared detector cell positioned subjacent said mirror for receiving reflected target energy therefrom, and a reticle located between said mirror and said cell, said reflected energy striking said cell after passing through a reticle at points determined by the elevation of said target energy within said predetermined sector, said cell emitting a signal when target energy strikes any point thereon, an elevation finder comprising:

(a) a wand positionable with respect to said reticle to block said energy from said cell;

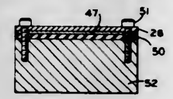
(b) means for positioning said wand at a location with respect to said reticle at which said wand blocks the energy directed to said cell from said target; and

(c) means for indicating the position of said wand to provide an indication of the elevation of said target.

3,204,103
BETA RADIATION SOURCE IN A CERAMIC CARRIER

James R. Johnson, White Bear Lake, Thomas N. Lahr, Roseville, and Richard N. Walz, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 4, 1961, Ser. No. 142,914
10 Claims. (Cl. 250—106)

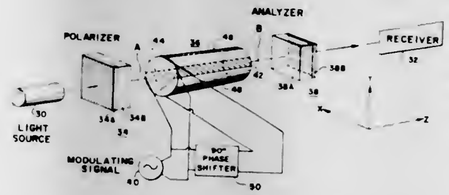


1. A radiation source comprising, in combination, a solid radioisotope forming part of a ceramic carrier, and a corrosion-resistant external ceramic shield therefor which is substantially permeable to the radiation of said isotope, the said radioisotope being separated from the said shield by an occluding barrier layer which is substantially permeable to the radiation from the said radioisotope and which is impermeable to the said radioisotope and radioactive decay products, the said barrier layer being substantially non-reactive with the said external shield and the said radioiosotope at temperatures of the order of those at which the shield is applied, said shield and barrier being bonded together so as to form an integral construction.

3,204,104
SINGLE-SIDEBAND LIGHT MODULATOR

Donald H. Baird, Great Neck, and Carl F. Buhrer, Hempstead, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed July 2, 1962, Ser. No. 206,982
20 Claims. (Cl. 250—199)



1. Apparatus for modulating an incident polarized beam of electromagnetic radiation comprising

(a) an electro-optic crystal having a 3-fold rotation axis in its point group, said beam being directed through said crystal parallel to said axis, and

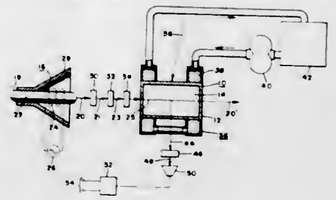
(b) means for producing an electric field which rotates with respect to said crystal, said electric field rotating about said axis in a plane perpendicular thereto, the beam emerging from said electro-optic crystal having a component at a frequency differing from the frequency of the incident beam by the frequency of rotation of said electric field.

3,204,105
INFRARED DETECTOR USING A RAMAN SCATTERING MEDIUM

Wesley A. Robinson, El Segundo, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio

Filed Jan. 23, 1961, Ser. No. 84,233
23 Claims. (Cl. 250—211)

1. In combination: a Raman scattering medium having a first quantum energy level and a second quantum energy level higher than said first quantum energy level; wall means coupled to said Raman scattering medium for receiving incident electromagnetic radiation having energy in at least one frequency corresponding to the energy separation between said first and said second quantum energy levels of said Raman scattering medium; said wall means associated with said Raman scattering medium causing said incident electromagnetic radiation to traverse said Raman scattering medium; lamp means for generating a beam of electromagnetic radiation; filter means coupled to said lamp means for filtering said electromagnetic radiation to transmit substantially only energy concentrated in a preselected frequency; collimating means coupled to said filter means for collimating said filtered beam of electromagnetic radiation; polarizing means coupled to said collimating means for polarizing said collimated beam of electromagnetic radiation;

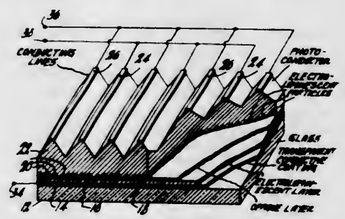


means for directing said polarized beam of electromagnetic radiation to traverse said Raman scattering medium in a preselected direction; cooling means coupled to said Raman scattering medium for maintaining said Raman scattering medium at a preselected temperature; detection filter means connected to said Raman scattering medium to filter electromagnetic radiation emitted from said Raman scattering medium in a direction substantially perpendicular to said preselected direction to transmit substantially only energy concentrated in a frequency corresponding to the anti-Stokes frequency of said preselected frequency; detection means coupled to said detection filter means for selectively detecting the intensity of said anti-Stokes frequency; and signal generating means coupled to said detection means for generating a signal having a magnitude proportional to the intensity of said detected anti-Stokes frequency.

3,204,106
STORAGE-TYPE ELECTROLUMINESCENT IMAGE AMPLIFIER

John Murr, Jr., Allentown, and Harvey O. Hook, Princeton, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Dec. 28, 1960, Ser. No. 78,892
7 Claims. (Cl. 250—213)



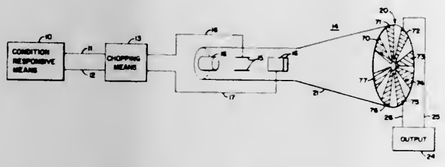
1. An image amplifier comprising a conductive layer, an electroluminescent layer, an opaque layer, a discontinuous electroluminescent layer, and a continuous photoconductive layer, said layers being substantially coextensive and being in electrical contact with each other in the order named, and at least one electrode on said photoconductive layer.

3,204,107

SIGNAL RESOLUTION INCREASING MEANS

Joseph E. Killpatrick, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed July 5, 1961, Ser. No. 121,892
12 Claims. (Cl. 250—217)



1. Apparatus of the class described comprising: a cathode ray tube, the face of said tube being divided into a plurality of substantially equal portions each containing in a radial pattern a plurality of alternating non-conducting and conducting sector-shaped sections; input chopping means connected to said cathode ray tube having a plurality of input signals of substantially different phase applied thereto and operable to periodically reverse the phase of said input signals at a frequency higher than that of said input signals; and output means connected to said conducting sections having signals thereon of substantially higher frequency than said input signals.

3,204,108

SENSING HEAD DEVICE FOR THE SENSING OF ROLLED STOCK

Marcel Charles Pfister, 2 Rue de Pres, Eckbolsheim, near Strasbourg, France

Filed Oct. 5, 1961, Ser. No. 143,249
4 Claims. (Cl. 250—219)



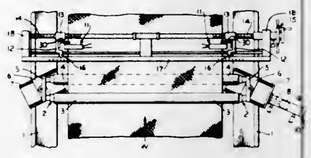
3. A radiation detection apparatus for rolled stock moving along a path and emitting radiant energy, said apparatus including: means for detecting said radiant energy and producing an electrical signal when radiant energy is received by said means; a scanning device proximate to the detecting means to periodically scan a line transverse to said path and of greater length than the width of said stock as measured along the line of scan and to direct any radiant energy present along the line of scan to said detecting means, whereby when said line of scan includes rolled stock emitting radiant energy said detecting means produces an electrical signal pulse with the pulses being produced periodically so long as the line of scan includes said rolled stock emitting energy; and control means connected to said detecting means to respond to a sequence of periodical pulses, said control means including a saw-tooth generator triggered by said pulses to produce a pulsed, saw-tooth signal.

3,204,109

PHOTOSENSITIVE ASSEMBLY FOR WEB POSITIONING SYSTEM

Winchel J. Goodwin, Akron, Ohio, assignor, by mesne assignments, to The Akron Standard Mold Company, Akron, Ohio, a corporation of Ohio

Filed Oct. 24, 1961, Ser. No. 147,346
4 Claims. (Cl. 250—239)



1. In a photoconductive sensor assembly, the combination comprising an elongated housing; an elongated window in the housing; an elongated lid on the housing; an elongated photoconductive detector assembly on the lid; and, aligned with the window and the photoconductive detector assembly, elongated shutter means supported from the housing in juxtaposition to the photoconductive detector assembly, said shutter means comprising two like shutter halves, a return spring urging them toward each other, and a cam for separating them.

3,204,110

OCEAN WAVE ELECTRIC GENERATOR

Yoshio Masuda, 31–1 Kodanjutaku, 540 Ueda, Hinomachi, Minamitamagun, Tokyo, Japan

Filed June 26, 1962, Ser. No. 205,427
Claims priority, application Japan, July 7, 1961, 36/23,718; Mar. 20, 1962, 37/10,404
7 Claims. (Cl. 290—42)



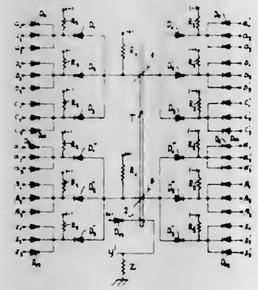
1. An electric generator actuated by wave motion comprising, in combination, a buoyant body adapted to float in the sea; a submerged inertia body downwardly spaced from said buoyant body; flexible means connecting said submerged inertia body to said buoyant body at one side of the center of gravity of the latter; a counterweight fixed to said buoyant body on the other side of the center of gravity, said inertia body having a volume considerably greater than that of said counterweight and said counterweight and inertia body being connected to said buoyant body to maintain the same in a state of balance when the sea is still, whereby during a wavy sea said buoyant body will tend to move up and down with the waves while said inertia body located below the rising and falling waves will remain substantially at standstill so that said buoyant body will rock about the point at which said flexible means is connected to said buoyant body; rotary electric generator means carried by said buoyant body; and means carried by said buoyant body and operatively connected to said rotary electric generator means to rotate the latter in one direction during rocking of said buoyant body.

3,204,111

LOGIC DEVICE

Claude Chemla, Saint-Cloud, and Claude Manus, Gif-sur-Yvette, France, and Marcel Etter, Carouge, Geneva, Switzerland, assignors to Normacem, Paris, France, a company of France

Filed Dec. 23, 1959, Ser. No. 861,632
Claims priority, application France, Dec. 29, 1958, 783,037
20 Claims. (Cl. 307—88)



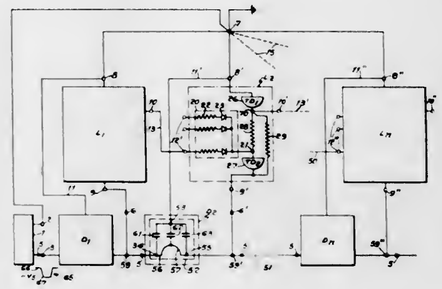
3. In a logical computer for the evaluation of complex functions, in combination, at least one first logical circuit arrangement including at least one OR-circuit and at least one AND-circuit in series arrangement and having at least a first input and a first output and being adapted to furnish at said first output a first output signal upon application of an input signal to said first input thereof, said first input constituting a first input of the computer; at least one second logical circuit arrangement including at least one OR-circuit and at least one AND-circuit in series arrangement and having at least a second input and a second output and being adapted to furnish at said second output a second output signal upon application of an input signal to said second input thereof, said second input constituting a second input of the computer; at least one bistable device adapted to assume two different stable conditions; control pulse input means for introducing control pulses of predetermined polarity; state-changer means associated with said bistable device for changing the condition of said bistable device between said different stable conditions, said state-changer means being connected to said first and second outputs of said first and second logical circuit arrangements, respectively, and to said control pulse input means and constructed so as to change the condition of said bistable device between said different stable condition thereof when simultaneously with application of one of said control pulses one of said first and second output signals is furnished through the respective output, but not when simultaneously both said first and second output signals are furnished through first and second outputs; and output means associated with said bistable device and having a third input for receiving electric pulses of predetermined polarity and a third output and being adapted to furnish at said third output a third output signal when at the moment of application of one of said electric pulses said bistable device is in one predetermined one of its different stable states, said third output constituting the output of the computer.

3,204,112

LOGIC CIRCUITS EMPLOYING NEGATIVE RESISTANCE ELEMENTS

Raymond C. P. Hinton, West Englewood, and Ernest H. P. Bigo, Nutley, N.J., and Peter Pleshko, Bronx, N.Y., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Aug. 18, 1960, Ser. No. 50,485
9 Claims. (Cl. 307—88.5)



6. A logic circuit unit for performing a single logical operation on binary-valued input signals, said unit comprising a series combination including first and second elements each having corresponding first and second electrodes and each exhibiting negative incremental resistance for a given range of voltages across said electrodes, said combination further including a substantially constant impedance element connected in series between said second electrode of one of said elements and said first electrode of the other of said elements, means for applying a voltage across said series combination to produce a unidirectional flow of current through said series combination, an input terminal coupled to said substantially constant impedance, an output terminal coupled to said substantially constant impedance, and means for simultaneously applying a plurality of input signals to said input terminal to vary reciprocally the relative conductivities of said elements as a logical function of said input signals, said substantially constant impedance element being a resistor having a value approximately equal to

$$\frac{V_v - 2V_p}{I_p} \text{ ohms}$$

where V_v and V_v are respectively voltage values which define the negative-incremental-resistance operating regions of said elements, and where I_p is the current in amperes associated with V_p.

3,204,113

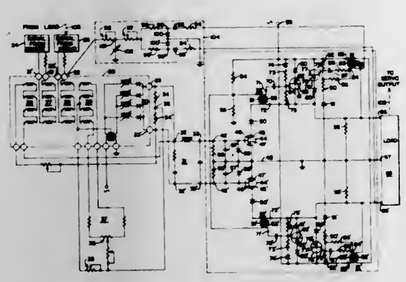
CONTROL APPARATUS EMPLOYING A SEMICONDUCTOR DEVICE CONNECTED IN INVERSE PARALLEL

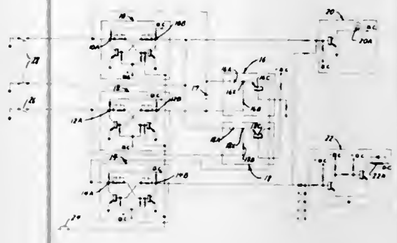
Arnold J. Snygg, Bettendorf, Iowa, assignor to Honeywell Inc., a corporation of Delaware

Filed Nov. 29, 1960, Ser. No. 72,423
6 Claims. (Cl. 307—88.5)

2. Apparatus of the class described comprising: means for producing an electrical signal potential; control means, said control means comprising in combination; semiconductor means having a collector electrode, a base electrode and an emitter electrode, a source of alternating signal, transformer means having first and second windings, means connecting the first winding of said transformer means intermediate said source of alternating signals and the collector electrode of said semi-conductor means, means connecting the emitter electrode of said

semi-conductor means to a common conductor, a first and second discharge devices each having an input electrode, output electrode, and a control electrode, first capacitive means, means connecting said first capacitive means and the second winding of said transformer means in series relationship with the output and control electrode of said first discharge device, first diode means connecting said source of alternating signals to the input electrode of said first discharge device and being poled to present an easy current-flow path when said alternating signal source is of a first polarity, further transformer means having first and second windings, said first winding connected intermediate the output electrode of said first discharge device and said common conductor, second capacitive means, means connecting the second winding of said further transformer means and said second capacitive means in series relationship with the output and control electrodes of said second discharge device, means connecting the output electrode of said second discharge device to said





source of alternating signals, load means having first and second terminals said first terminal being connected to the output electrode of said first discharge device and said second terminal being connected to said common conductor, and second diode means connected intermediate the first terminal of said load means and the input electrode of said second discharge device, said second diode means being poled to present an easy current-flow path when said alternating signal source is of a second polarity; amplifier means having an input and output; means connecting the output of said amplifier to the base electrode of the semi-conductor device of said control means; means connecting the input of said amplifier to said signal potential so that said amplifier is normally responsive to said potentials for energizing said control means in accordance therewith; and feedback means responsive to said control means for rendering said amplifier means unresponsive to said potential when said control means is energized, thereby causing intermittent operation of said control means.

3,204,114

BISTABLE CONTROL DEVICES CONTROLLING GATES TO EFFECT MACHINE CONTROL

James F. Bamberger and Charles E. Harper, Carmel, Ind., assignors, by mesne assignments, to Electro Products Laboratories, Inc., Chicago, Ill., a corporation of Illinois

Filed July 5, 1961, Ser. No. 121,951
1 Claim. (Cl. 307—88.5)

An automatic machine control of the character described for a cylically operating machine, comprising: control means normally maintaining a machine in operative condition; a first bistable circuit having first and second conditions; condition sensing means responsive to parts on which said machine operates for actuating said first bistable circuit from the first to the second condition; a second bistable circuit having first and second output conditions; each of said bistable circuits having a first and a second output terminal, said first terminal carrying a first output signal level and said second terminal carrying a second output signal level when said each bistable circuit is in its first condition, and said first terminal carrying said second output signal level and said second terminal carrying said first output signal level when said each bistable circuit is in its second condition; means actuating said second bistable circuit in accordance with operation of said machine from the first to the second condition thereof upon initiation of a cycle of operation and from the second condition to the first condition on completion of a cycle of operation; means connecting said first output terminal of said second bistable circuit with said first bistable circuit to actuate the first bistable circuit from the second condition to the first condition thereof upon actuation of the second bistable circuit from the first condition to the second condition thereof; a first gate circuit having a first control element connected to said second output terminal of the first bistable circuit, said gate circuit having open and closed conditions, and being open only in the first condition of said first bistable circuit wherein said second output signal level is applied to said first control element, said first gate circuit having an input connected to the first output terminal of said second bistable circuit, to transmit, when open, a pulse signal on actuation of the second bistable circuit from the first condition to the second condition, a second gate circuit having a second control element connected to said first output terminal of said first bistable circuit said gate circuit having open and closed conditions, and being open only in the second condition of said first bistable circuit wherein said second output signal level is applied to said second control element, said second gate circuit having an input connected to the second output terminal of said second bistable circuit to transmit, when open, a pulse signal on actuation of the second bistable circuit from the second condition to the first condition; and means connecting the outputs of each of said gates with said control means to render said machine inoperative on passage of a pulse signal through one of said gates.

3,204,115

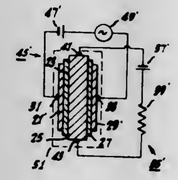
FOUR-TERMINAL SOLID STATE SUPERCONDUCTIVE DEVICE WITH CONTROL CURRENT FLOWING TRANSVERSE TO CONTROLLED OUTPUT CURRENT

Robert H. Parmenter, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed July 31, 1961, Ser. No. 128,248
2 Claims. (Cl. 307—88.5)

1. An electronic device comprising a base of a superconductor, an emitter selected from the group consisting of normal materials and superconductors having an energy gap smaller than the energy band gap of said base and spaced from said base by a first thin electrically-insulating layer having a thickness in the range of between 6 and 100 Angstrom Units, a collector selected from the group consisting of normal materials and superconductors having an energy band gap smaller than the

energy band gap of said base and spaced from said base by a second thin electrically-insulating layer having a thickness in the range between 6 and 100 Angstrom Units, said emitter and collector defining the ends of a current path of normal charge carriers through said base and said layers, the thickness of said base between said layers being in the range between 50 and 200 Angstrom



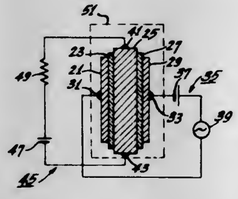
Units, and a pair of low resistance connections to said base defining the ends of a current path of superconducting charge carriers through said base a bias means, a signal means, said bias means and said signal means being connected in series across said emitter and said collector, and a bias voltage source and a load connected in series across said low resistance connections.

3,204,116

SOLID STATE SUPERCONDUCTOR SWITCHING DEVICE WHEREIN EXTRACTION OF NORMAL CARRIERS CONTROLS SUPERCONDUCTIVITY OF SAID DEVICE

Robert H. Parmenter, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed July 31, 1961, Ser. No. 128,249
15 Claims. (Cl. 307—88.5)



1. An electronic device comprising a base composed of a superconductor, means in contact with said base for extracting normal electrons from said base, means in contact with said base for extracting normal holes from said base, means for maintaining said base at temperatures at which said base is superconducting, and means connecting said electron-extracting means and said hole-extracting means operative to reduce simultaneously the densities of normal electrons and normal holes in said base below the densities existing at thermal equilibrium.

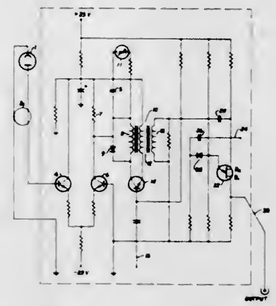
3,204,117

DIFFERENTIAL AMPLIFIER AND LEVEL DETECTOR

Richard A. Wood, Sunnyvale, Calif., assignor to Illumitronic Systems Corporation, a corporation of California

Filed Sept. 17, 1962, Ser. No. 224,142
2 Claims. (Cl. 307—88.5)

1. A level detector and memory circuit comprising in combination a transistorized blocking oscillator circuit, said blocking oscillator circuit having a transformer with primary secondary and tertiary windings thereon, an input circuit to said blocking oscillator comprising a connection through the primary of said transformer to the collector of said transistor and a feed-back circuit from the primary to the secondary of said transformer to the emitter of said transistor, said tertiary winding having means to connect it to an output circuit, said transistor having means associated therewith to normally bias said transistor to cut off and said tertiary winding being connected to a unijunction transistor having a base one and a base two, means for applying a pulse through the base of the transistor of the blocking oscillator circuit whereby the



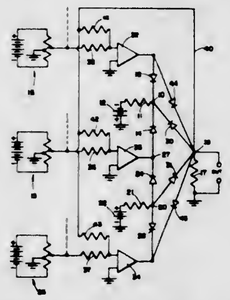
pulse is produced in the tertiary of said transformer proportional to a voltage applied through said input circuit, means for applying said pulse from the tertiary winding to base two of said unijunction transistor, said unijunction transistor having a voltage divider circuit connected thereto to normally bias said transistor off, said transistor serving as a level detector and memory device whereby said unijunction transistor is caused to conduct or not conduct depending upon the level of the pulse produced in the tertiary of said transformer and means for applying a pulse to cause said unijunction transistor to cease to conduct.

3,204,118

VOLTAGE CONTROL APPARATUS

Donald J. Rotier, Crystal, Minn., assignor to Honeywell Inc., a corporation of Delaware

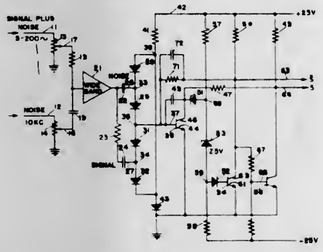
Filed Oct. 17, 1961, Ser. No. 145,643
7 Claims. (Cl. 307—88.5)



1. In combination: an output device for supplying an electrical signal which must not exceed a range of values extending betwen a least negative value and a least positive value; means supplying a first input signal which may vary through a wider range of values; and means supplying first and second control means which are always less negative and less positive respectively than the most nega-

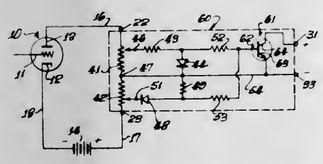
tive and most positive possible values of said input signal; first and second biased diode circuits; means connecting said circuits to receive said input signal and said control signals, so that said first diode circuit gives an output determined by the least positive of said input signal and said first control signal, while said second diode circuit gives an output determined by the least negative of said input signal and said second control signal, and means connecting said diode circuits to said output device.

3,204,119
SIGNAL-TO-NOISE RATIO DETECTOR
John W. Gray, Pleasantville, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Dec. 27, 1961, Ser. No. 162,345
13 Claims. (Cl. 307—88.5)



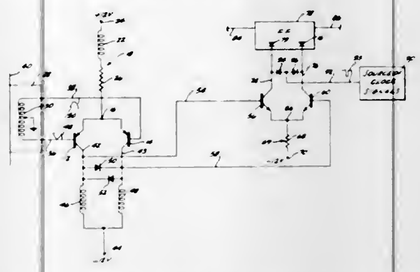
1. A signal-to-noise ratio detector comprising, subtracting means having signal and noise quantities applied thereto and producing therefrom an electrical quantity of one sign when signal quantity predominates over noise quantity and of the opposite sign when noise quantity predominates over signal quantity, an integrator means having said electrical quantity impressed on its input and producing an increasing output terminating at an upper level when the electrical quantity is of one sign and a decreasing output terminating at a lower level when the electrical quantity is of the opposite sign, switch means having first and second states of operation, and means interconnecting said integrator and said switch means for operating said switch means to its first state as long as the output of said integrator is above an intermediate level.

3,204,120
SWITCHING CIRCUIT
William Naken, 1107 S. Burnside, Los Angeles 19, Calif.
Filed Apr. 5, 1962, Ser. No. 185,450
1 Claim. (Cl. 307—88.5)



In an electrical amplifier stage including an electrical translating element powered from a source of direct current operating potential: load resistance means coupling said electrical translating element to said source of direct current operating potential; the series combination of a first resistor and a first Zener diode connected across a first predetermined portion of said load resistance, the voltage normally appearing across said first Zener diode being in excess of its breakdown voltage; the series combination of a second resistor and a second Zener diode connected across a second predetermined portion of said load resistance, the voltage normally appearing across said second Zener diode being slightly less than its breakdown voltage; a transistor having an input electrode and output electrode and a common electrode; first and second output terminals, said first output terminal being electrically connected to the output electrode of said transistor and said second output terminal being electrically connected to the common electrode of said transistor; first resistance means electrically coupling said first Zener diode across the input and common electrodes of said transistor to normally reverse bias said transistor; and second resistance means electrically coupling said second resistor across the input and common electrodes of said transistor for selectively overriding the reverse bias voltage from said first Zener diode upon application of a predetermined electrical pulse to said electrical translating element to thereby forward bias said transistor.

3,204,121
READ AMPLIFIER INCLUDING DIFFERENTIAL TRANSISTOR CIRCUIT WITH INDUCTIVE AND UNIDIRECTIONALLY CONDUCTIVE LOAD ARRANGEMENT
Ray L. Riley, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed May 2, 1962, Ser. No. 193,647
9 Claims. (Cl. 307—88.5)



1. A read amplifier circuit comprising a source of input signals, first and second transistors each having a control electrode coupled to said source of signals and each having a load current path, a source of substantially constant current coupled to first ends of the load current paths of said first and second transistors, a point of potential, first and second inductors respectively coupled between the second ends of the load current paths of said first and second transistors and said point of potential, a first diode having an anode to cathode path coupled respectively between the second ends of the load current paths of said first and second transistors, a second diode having an anode to cathode path coupled respectively between the second ends of the load current paths of said second and first transistors, and differential means coupled to the second ends of the load current paths of said first and second transistors.

3,204,122
TWO-WAY CURRENT STEERING SWITCHING CIRCUIT
Charles C. Ih, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 13, 1962, Ser. No. 223,403
1 Claim. (Cl. 307—88.5)

A switching circuit comprising:

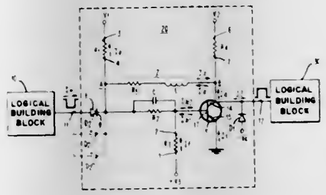
(a) a current conducting device having input, output and control elements;

(b) first, second, and reference voltage potentials, said input element of said current conducting device being connected to said reference potential;

(c) a first resistor having first and second terminals said first terminal being connected to said first source of potential and second terminal being connected to said output element of said current conducting device;

(d) a second resistor having first and second terminals, said first terminal connected to said second source of potential and said second terminal connected to said control element of said current conducting device;

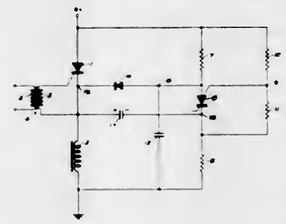
(e) feedback means, comprising a third resistor and an inductor in series connection, connected to said respective second terminals of said first and second resistors;



(f) input circuit means having first and second terminals, said second terminal being connected to said control element of said current conducting device and said first terminal adapted to be connected to an input signal source having first and second voltage levels, said feedback means conducting current in a first direction through said first resistor and to said first source of potential when said input signal source is at said first voltage level, said current being transmitted to said input element of said current conducting device when said input signal source changes from a first to a second voltage level, said current in said feedback means changing direction and flowing in said second direction to said second source of potential via said second resistor after said current has been transmitted to said control element, said current which is being conducted in said feedback means in said second direction being transmitted to said control element of said current conducting device when said input signal source returns to said first voltage level from said second voltage level after which said current in feedback means again conducts in said first direction.

3,204,123
MONOSTABLE PULSE GENERATING CIRCUIT UNRESPONSIVE TO POWER SUPPLY FLUCTUATIONS AND HAVING FAST RESET TIME
William J. Mahoney, Darien, and John L. Lorenzo, Sandy Hook, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Jan. 9, 1963, Ser. No. 250,439
7 Claims. (Cl. 307—88.5)

1. In a monostable pulse generating circuit, the combination of a first normally nonconductive semiconductor device which remains conductive once triggered into a conductive state, circuit means for selectively triggering said first semiconductor device into a conductive state, a capacitor, a source of potential, charging circuit means to commence charging said capacitor from said source of potential when said first semiconductor device becomes conductive and to charge said capacitor at a rate dependent upon the magnitude of potential at the source, a second normally nonconductive semiconductor device characterized by having a turn-on potential effective, when exceeded, to cause said second semiconductor device to conduct, means for applying a selected proportion of the potential from said source to said second semiconductor device, discharging circuit means including said capacitor connected to said second semiconductor device and effective, when the charging potential appearing across said



capacitor exceeds said selected proportion of said source of potential by an amount at least as great as said turn-on potential, to cause said second semiconductor device to become conductive and discharge said capacitor, and circuit means connected between said first semiconductor device and said discharging circuit means to return said first semiconductor device to the nonconductive state a predetermined time after said second semiconductor device becomes conductive.

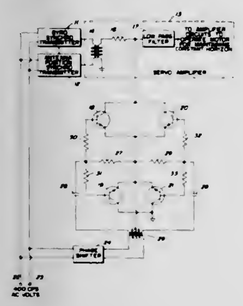
3,204,124
MEANS FOR PRODUCING CLOCK PULSES WHOSE WIDTHS VARY AS THEIR REPETITION RATE
John R. Durio, Jr., Costa Mesa, Calif., asignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Mar. 18, 1963, Ser. No. 265,825
6 Claims. (Cl. 307—88.5)



1. Pulse generating circuit means comprising:
an input pulse source,
first circuit means constructed to respond to the pulses from said input pulse source to produce a D.-C. voltage whose magnitude varies as the frequency of the input pulses,
and second circuit means connected in parallel with said first circuit means with respect to said input pulse source and including a one-shot multivibrator constructed to respond to each input pulse to complete a cycle of operation,

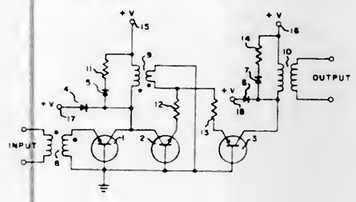
said second circuit means further constructed to vary its operating cycle time in response to the magnitude of the said D.-C. voltage produced by said first circuit means, and to produce output signal pulses whose time length is determined by the said operating cycle time of said multivibrator.

3,204,125
PHASE SYNCHRONIZED SIGNAL SAMPLER
John F. Beckerich, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Apr. 1, 1963, Ser. No. 269,530
3 Claims. (Cl. 307—88.5)



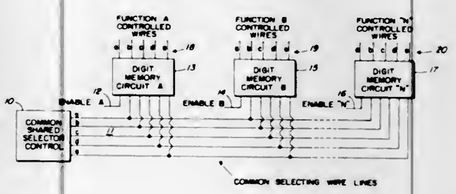
3. In a servo system having first and second alternating-current synchro transmitters connected in series, a servo amplifier, a resistive element, and means for coupling said series synchro transmitters through said resistive element to said amplifier, said synchro transmitters normally supplying signal voltages that differ in phase by an amount that is near as practical to 180 degrees, said signal voltages being subject to slight inaccuracies in desired phase so that an undesired quadrature component exists to prevent null input voltage to said amplifier; a voltage sampling control circuit for controlling application of the combined voltages of said first and second transmitters to said servo amplifier comprising first, second, third, and fourth transistors each having an emitter-collector circuit and a base control circuit, said first and second transistors having their said respective emitter-collector circuits connected in series across the input of said servo amplifier and said third and fourth transistors also having their said respective emitter-collector circuits connected in series across said input, a first capacitive-resistive timing circuit connected to said base control circuits of said first and second transistors, a second capacitive-resistive timing circuit connected to said base control circuit of said third and fourth transistors, means to apply alternating-current voltages differing in phase by 180 degrees to said first and second timing circuits respectively, the voltages applied to said timing circuits being substantially in quadrature phase with said signal voltages supplied by said synchro transmitters, said transistors functioning as diode rectifiers with respect to said respective timing circuits to provide a direct-current voltage for biasing said transistors beyond cut-off except for a portion of each of the crests of said alternating-current voltage that is applied to said respective charging circuits, each of said series emitter-collector circuits becoming conductive in response to said last mentioned alternating current voltage exceeding said direct-current voltage to short circuit the input of said servo amplifier while said undesired quadrature component is maximum.

3,204,126
BLOCKING OSCILLATOR EMPLOYING NON-SATURATING GROUNDED BASE TRANSISTOR
Alan V. White, Houston, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Apr. 9, 1963, Ser. No. 271,678
14 Claims. (Cl. 307—88.5)



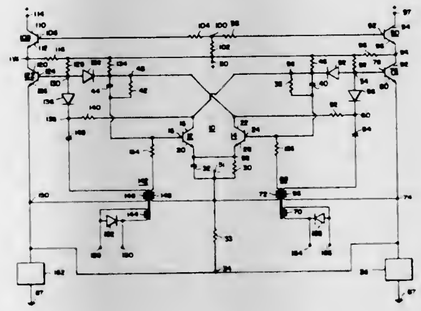
1. A blocking oscillator comprising a grounded-base transistor having at least base, emitter and collector electrodes, a transformer having primary and secondary windings, a potential source, means serially connecting said potential source, said primary winding and said collector electrode, resistance means, means serially connecting said base electrode, said secondary winding, said resistance means and said emitter electrode, said transistor being normally in one state of conduction, means for applying a trigger to said primary winding for switching said transistor into an opposite state of conduction, and means for deriving an output from the junction between said secondary winding and said resistance means.

3,204,127
DIGIT MEMORY CIRCUIT
James C. Meier, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed July 12, 1963, Ser. No. 294,492
6 Claims. (Cl. 307—88.5)



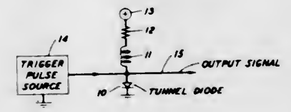
1. A digit memory circuit for regenerating and storing digital input information defined by predetermined permutations of momentarily grounded ones of a plurality m of input select lines, where m is an integer comprising a plurality m of voltage controlled logic switching means each of which is associated with one of said input select lines and one of a plurality m of output control lines, a source of enabling voltage applied in common to each of said switching means as a first input, each of said switching means receiving one of said input select lines as a second input, an erase control line connected in common to each of said switching means as a third input, each of said output control lines being connected to ground through the associated one of said switching means upon said associated one of said switching means being activated, each of said switching means being activated and thereby connecting to ground the associated one of said output control lines in response to the simultaneous application of said first and second inputs, wherein the application of said second input is defined as the grounding of the associated input select line, each of said switch-means being deactivated in response to application of said first input in the absence of the application of said second input, means developing said third erase control line input as the output generated by further logic switching circuitry, said further logic switching circuitry receiving said enabling voltage as a first input and said input select lines as paralleled second inputs, said further logic switching means being responsive to the simultaneous application of its first input and any one of its second inputs to provide an erase voltage output.

3,204,128
HIGH SPEED TURNOFF GATE DRIVEN BY A GATING MEANS
Marvin E. Petersen, Clearwater, Fla., assignor to Honeywell Inc., a corporation of Delaware
Filed Sept. 23, 1963, Ser. No. 310,583
6 Claims. (Cl. 307—88.5)



1. In apparatus utilizing solid state switches for providing high speed turnoff of current to a load while maintaining low leakage current through the load when the apparatus is in an OFF condition comprising, in combination:
- first transistor means including base, emitter and collector means;
- second transistor means including base, emitter and collector means, said first transistor means being of a different type from said second transistor means, said first transistor means having a low leakage current as compared to said second transistor means, and said second transistor means having a lower internal capacitance than said first transistor means and therefore being adapted to turn OFF faster than said first transistor means;
- current source means including first and second terminal means;
- load means;
- means connecting the collector means and emitter means of said first and second transistors in series with each other and in series with said load means between said first and second terminal means of said current source means;
- flip-flop means including first and second control means, first and second output means and power input means;
- biasing means connected to said first and second transistor means and to said power input means of said flip-flop means, said first and second transistor means being biased so that immediately after said second transistor means changes from a first state of conductivity to a second state, the first transistor means changes from the first state of conductivity to the second state;
- first and second diode means each including first and second terminal means, said first terminal means of each of said diode means being connected to said base means of said second transistor means;
- transformer means including primary winding means and first and second secondary winding means, said primary winding means being connected for receiving input signal pulses;
- means connecting said first secondary winding to said first output means of said flip-flop means and also connecting said first secondary winding between said second terminal means of said first diode means and said emitter means of said second transistor means for applying signal pulses thereto, a signal pulse between said base and emitter means of said second transistor means changing said second transistor means from a conductive state to a nonconductive state;
- means connecting said second secondary winding to said first control means of said flip-flop means;
- means connecting said first output means of said flip-flop means to said second terminal means of said first diode means, said flip-flop means being adapted for providing a first output signal at said first output means after receipt of the signal pulse from said transformer means, the first output signal being for holding said second transistor means in the nonconductive state;
- means connecting said second output means of said flip-flop means to said second terminal means of said second diode means; and
- triggering means connected to said second control means of said flip-flop means for applying a control signal thereto, said flip-flop means being adapted for providing a second output signal at said second output means to change said second transistor means from the nonconductive to the conductive state upon receipt of the control signal from said triggering means.

3,204,129
NEGATIVE RESISTANCE DIODE TRIGGER CIRCUIT
Reginald A. Kaenel, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 10, 1960, Ser. No. 68,401
10 Claims. (Cl. 307—88.5)

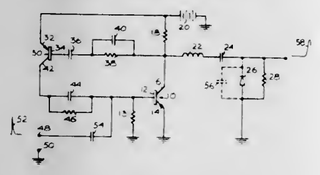


10. In combination in a trigger circuit, a tunnel diode whose voltage-current characteristic curve exhibits a peak point and a valley point, an inductor connected in series with said diode, means for biasing said diode for bistable operation at relatively low and relatively high voltage stable operating points, trigger source means connected in parallel with said diode for supplying thereto identical bipolar pulses each of which comprises a first excursion of one polarity and a contiguous second excursion of the opposite polarity to switch said diode from one to the other of said stable points in respective response to the application thereto of each of said pulses.

3,204,130
FAST ACTING TIME DELAY UTILIZING REGENERATIVELY COUPLED TRANSISTORS

John J. Hickey, Hawthorne, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio

Filed Oct. 1, 1962, Ser. No. 227,401
6 Claims. (Cl. 307—88.5)

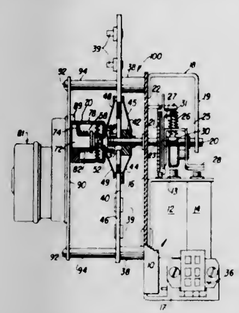


1. A time delay circuit, comprising:
a transistor having an input circuit and an output circuit;
a first circuit including an inductor, a capacitor, and a unidirectional current conducting device connected in series in the output cirucit of said transistor, said capacitor and said inductor being series resonant at a predetermined frequency;
a second circuit including a unidirectional current source and a resistor connected in series in the output circuit of said transistor;
circuit means connected to initially prevent current flow in the output circuit of said transistor;
and circuit means connected to apply a trigger pulse to the input circuit of said transistor and to cause current to flow in the output circuit thereof for a time only slightly greater than the half period of said predetermined frequency.

3,204,131
PURCHASE-CHANGE DEVICE

Joseph E. Wright, Jr., Rockford, Ill., assignor, by mesne assignments, to Reed Electromech Corporation, Rockford, Ill., a corporation of Delaware

Filed Feb. 24, 1961, Ser. No. 91,538
17 Claims. (Cl. 307—112)

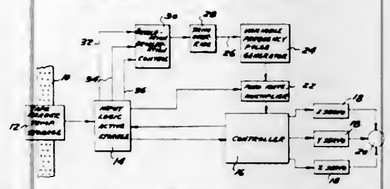


17. A coin change maker for use in a vending machine having articles of various values and adapted to operate a test brush structure to a position corresponding to the total coin deposit preparatory to vending one of said articles, the improvement comprising means operated for engaging with and repositioning said test brush structure to another position corresponding to the difference between said coin deposit and the value of said article and for thereafter disengaging from said test brush structure, said means comprising a rotatable clutch arranged for axial movement in one direction to engage said brush structure, means normally urging said clutch to move axially in another direction, means for driving said clutch in said one direction responsive to its rotation, and means operated for rotating said test brush structure in another direction responsive to it being in said other position whereupon said normally urging means is operated to move said clutch in said other direction.

3,204,132
CONTOURING SYSTEM ACCELERATION-DECELERATION CONTROL

Reno Victor Benaglio, Birmingham, and Robert F. Bourke, Taylor, Mich., assignors to The Bendix Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 7, 1962, Ser. No. 171,602
6 Claims. (Cl. 307—149)

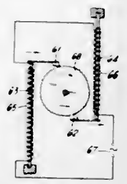


4. A numerical control system, comprising, in combination: a record containing numerical information; means for accepting said record and creating electrical representations of various segments of information contained on said record; a source of electrical pulses controllable as to frequency; a controller operative to receive pulses from said source and information from said record and to simultaneously generate a plurality of pulse trains of varying frequencies; and a control circuit connected to said pulse generator having a first, normal, state wherein it causes said pulse generator to emit pulses of a constant frequency, a second, decelerating, state wherein it causes said pulse generator to emit pulses of a continuously creasing frequency, and a third, decelerating, state wherein it causes said pulse generator to emit pulses of a continuously increasing frequency; and means, responsive to information contained on said record for switching said control circuitry into its second or third states from its normal state.

3,204,133
ELECTRIC RECIPROCATING DRIVE WITH MOTION CONVERSION

Oswald Tschudin, Oberdorf, Basel-Land, Switzerland, assignor to Institut Dr. Ing. Reinhard Straumann A.G., Waldenburg, Basel-Land, Switzerland, a Swiss firm

Filed Jan. 29, 1963, Ser. No. 254,673
Claims priority, application Switzerland, Jan. 31, 1962, 1,188/62
12 Claims. (Cl. 310—22)



1. A mechanical converter, for converting oscillatory or reciprocatory motion into a continuously unidirectional motion, said mechanical converter comprising, in combination, a rotatably mounted ratchet wheel; a pair of pawls operatively associated with said wheel and comprising the only elements operable on said wheel; and oscillatory means conjointly operating said pawls in unison with each other but in opposite directions relative to the teeth of said wheel; the amplitude movement A of each pawl relative to the teeth of said wheel, with a tooth spacing Z and a distance B between the two pawls in the rest position, having a value such that

$$\left(1/2-\left[\frac{\alpha}{z}\right]\right)Z<A<\left(1/2+\left[\frac{\alpha}{z}\right]\right)Z$$

$$B=(n+\alpha)Z$$

wherein $n=0$ or a whole number

and

$$-\tfrac{1}{2}\leq\alpha\leq+\tfrac{1}{2}$$

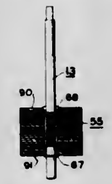
said pawls acting in alternation and sequentially, during each cycle of oscillation of said oscillatory means, to advance said wheel by a distance equal to Z.

6. A mechanical converter, as claimed in claim 1, in which said oscillatory means comprises a pair of magnetostrictive oscillatory elements; each of said pawls being mounted upon a respective one of said oscillatory magnetostrictive elements; a pair of exciter windings, each wound on a respective magnetostrictive oscillatory element; and a source of A.C. potential commonly connected to both of said exciter windings.

3,204,134
ROTOR AND SHAFT ASSEMBLY

Emmor V. Schneider, Alliance, Ohio, assignor to The Alliance Manufacturing Company, Division of Consolidated Electronics Industries Corporation, a corporation of Delaware

Filed Jan. 13, 1959, Ser. No. 786,560
3 Claims. (Cl. 310—42)



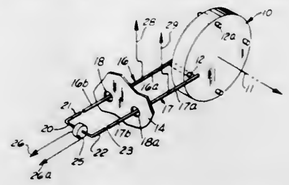
1. In combination with a motor stator, the provision of first and second bearings connected to said stator, a metal motor shaft journalled in said bearings, said shaft being straight within first given limits, a roughened circumferential portion on said shaft between said bearings, a laminated metal rotor having a hole with a slip fit with said roughened portion and magnetically cooperating with said stator, said hole being oversize relative to said shaft to establish a void therebetween and being straight throughout its length within second given limits to establish said slip fit of said rotor and at least one end of said shaft to and including said roughened portion, a drive portion extending outboard beyond said first bearing for an output having a lateral force, an adhesive set up from a liquid retained in a said void by capillarity securing said laminated rotor on said roughened portion, and said slip fit and adhesive securing of said rotor and shaft assembly permitting dynamic balancing thereof within .0002 ounce inch and a motor shaft drive portion run out of less than .0002 inch.

3,204,135
GYRO SPIN MOTOR ROTATION DETECTOR

Robert J. Cohen, Wyckoff, Walter M. Carow, West Orange, and Rolf K. Brodersen, Orange, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Jan. 10, 1962, Ser. No. 165,355
9 Claims. (Cl. 310—46)

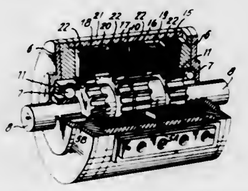
1. A rotor velocity detecting mechanism for a gyro having a motor comprising a substantially cylindrical gyro rotor rotatively driven by said motor, a plurality of inserts fitted to and attached to the gyro rotor, said inserts projecting beyond the end faces of the gyro rotor, a multiple section header having a pair of spaced leg sections consisting of magnetic flux conducting material located adjacent the gyro rotor, a portion of each leg section of the header being located adjacent one end of each of the gyro rotor inserts, means operative to transmit magnetic lines of force through said leg sections, means mounted adjacent the ends of the header leg sections, opposite the portion thereof located adjacent the rotor inserts, adapted to complete a magnetic circuit through the header leg sections, a plurality of flexible leads connected to the leg sections of the header operative to transmit voltage through the header leg sections to the motor, and coil means fitted to the detecting mechanism, said coil means adapted to sense a change in magnetic flux in the circuit and to generate and transmit an electrical signal indicating the rotational movement of the gyro rotor to an external point.



3,204,136
TWO-PHASE STEPPING MOTOR

Toshimasa Kaiwa, Kawasaki-shi, and Rinzo Iwai, Tokyo, Japan, assignors to Fuji Tsushinki Seizo Kabushiki Kaisha, Kawasaki, Japan, a corporation of Japan

Filed June 2, 1961, Ser. No. 114,460
Claims priority, application Japan, June 6, 1960, 35/27,283
4 Claims. (Cl. 310—49)

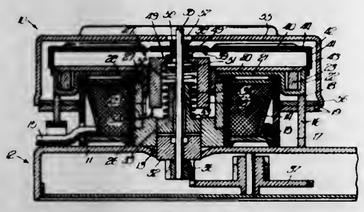


1. A two-phase stepping motor comprising coaxial stator and rotor members each having circular circumferences and one of which has two sets of circumferentially-spaced poles, the rotor member being axially shiftable relative to the stator member so as to take two different positions, means for alternately energizing alternate circumferentially-spaced poles of both sets of poles of one of said members, each pole on the one of said members including two flat overlying pieces having respective edges transverse to the circumference of the members, the edges of pieces of a first set of said sets of poles coinciding with one another at one edge and those of pieces belonging to a second set of said sets of poles coinciding with one another at their respective other edges, poles on the other of said members at one of the said rotor member positions confronting alternate one of the first set of the poles of said one of said members so as to rotate the rotor member exclusively in the direction determined by the arrangement of the pole pieces of the first set of said sets of poles, said poles on the other of said members confronting the second set of poles on said one of said members at the other rotor member position so as to rotate said rotor members in the reverse direction determined by the arrangement of the pole pieces of the second set of said sets of poles.

3,204,137
ELECTRIC MOTOR CONSTRUCTION

Alfred W. Gardes, Evanston, and Ted N. Svarnias, Chicago, Ill., assignors to International Register Company, Chicago, Ill., a corporation of Illinois

Filed Feb. 20, 1963, Ser. No. 259,837
17 Claims. (Cl. 310—164)



16. In an electric motor construction in which the magnetic attraction on the rotor on generation of its operating magnetic field is effective to move said rotor from a non-operating position to which it is biased to an operating position where it is in driving relation to a load in combination:

(a) a magnetic circuit in which said magnetic field is generated operatively associated with said rotor,

(b) said magnetic circuit having an air gap,

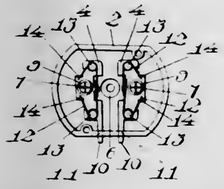
(c) an armature coupled to said rotor and movable on generation of said magnetic field to shunt said air gap and assist in moving said rotor from said non-operated position to said operative position, and

(d) non-magnetic spacing means interposed between said armature and said magnetic circuit when said armature is moved to operated position with respect to said magnetic circuit to minimize the effects of remanent magnetism.

3,204,138
BRUSH MOUNTING FOR ELECTRIC MOTORS

Takaichi Mabuchi, 262 Honden-cho, Katsushika-ku, Tokyo, Japan

Filed Feb. 28, 1963, Ser. No. 261,768
9 Claims. (Cl. 310—239)

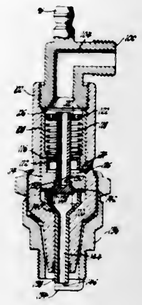


1. A brush mounting construction for an electric motor comprising a motor housing having a wall with a terminal opening defined therethrough, a securement projection defined on the interior of said housing, a brush attachment plate of conductive material having an opening through which said securement fitting extends for fastening said brush attachment plate in position within said housing, said brush attachment plate having an elongated portion extending through the terminal opening forming a brush terminal, and an electrical contact brush carried by said brush attachment plate.

3,204,139
MEANS FOR INTRODUCING A PRESSURIZED FLUID INTO AN INTERNAL COMBUSTION ENGINE COMBUSTION CHAMBER THROUGH THE SPARK PLUG OPENING

Alfred Candelise, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Application May 24, 1961, Ser. No. 112,449, which is a division of application Ser. No. 12,857, Mar. 4, 1960, now Patent No. 3,073,298, dated Jan. 15, 1963. Divided and this application Feb. 4, 1963, Ser. No. 255,749
3 Claims. (Cl. 313—120)



1. A spark plug assembly for an internal combustion engine having means for introducing compressed air into the combustion chamber of the engine, said spark plug assembly comprising a hollow insulation shell,

a spark plug terminal for receiving the spark plug electrical lead and having an air inlet passage formed therein, said spark plug terminal being mounted within the upper portion of said hollow insulation shell,

a hollow center electrode extending into the lower end of said insulator shell,

a check valve assembly between said terminal and said electrode comprising a check valve, a hollow valve stem connected to said check valve whereby air pressure passing from said terminal through said stem is applied against the check valve at the base of said stem,

an annular check valve chamber positioned adjacent said hollow valve stem and immediately above said check valve, said hollow stem having a plurality of orifices through the walls thereof in communication with said check valve chamber, said chamber being adapted to receive air through said orifices for applying air pressure against said check valve within said chamber,

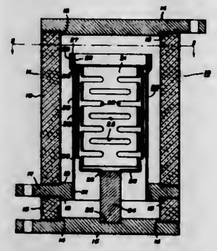
said check valve assembly being adapted to be opened in response to air pressure supplied through said terminal air inlet passage whereby air is injected in the combustion chamber through said center electrode.

3,204,140
HOT CATHODE ELECTRON TUBE

William J. Kearns, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed July 10, 1961, Ser. No. 123,023
10 Claims. (Cl. 313—239)

1. A ceramic and metal gaseous discharge device adapted for operating at a normally high ambient temperature range comprising an envelope including a pair of coaxial ceramic insulators, a pair of metal end caps sealed across the outer ends of said insulators, one of said end caps comprising an anode and the other a cathode contact, an annular contact member sealed between said insulators and including an inner rim portion disposed in said envelope, a tubular metallic shield supported and directly attached to said rim portion of said annular contact member and extending concentrically in said envelope, a directly-heated nickelate cathode disposed

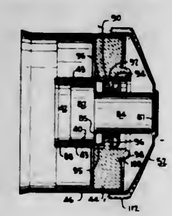


in said shield, and said cathode having one end supported by and electrically connected to said annular contact member and the other end supported by and electrically connected to said end cap comprising a cathode contact.

3,204,141
ELECTRON GUN

Jay H. Johnson, Owensboro, Ky., assignor to Kentucky Electronics, Inc., Owensboro, Ky., a corporation of Kentucky

Filed Aug. 20, 1962, Ser. No. 217,790
4 Claims. (Cl. 313—337)



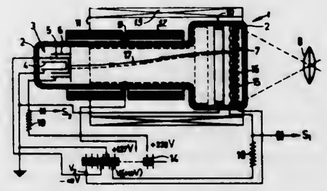
1. An electron gun comprising in combination, a cathode assembly including an annular ceramic disc with a central aperture, a cathode sleeve assembly having an end portion mounted in said aperture comprising an inturned shoulder abutting the ceramic on one side and a deformed edge portion contacting the ceramic on the other side in a limited contact surface with the intermediate areas of the end portion spaced from the inner circumference surface of the ceramic ring, and a cathode cylinder affixed to said cathode sleeve on one side of said disc holding the cathode cylinder concentrically within said aperture with the cathode cylinder spaced from the said end portion of the sleeve.

3,204,142
PICKUP TUBE HAVING PHOTOCONDUCTIVE TARGET

Edward Fokko de Haan, Antonius Johannes de Rooy, and Piet Gerard Joseph Barten, all of Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 14, 1960, Ser. No. 55,946
Claims priority, application Netherlands, Sept. 17, 1959, 243,461
21 Claims. (Cl. 315—11)

1. An image signal generating tube comprising a source of an electron beam, a target electrode in spaced relationship to said source and arranged in the path of said beam, said target electrode comprising a first electrode comprising a plurality of conductive portions spaced apart in a plane, a second electrode spaced from said first electrode, at least one of said electrodes having a surface exposed to said electron beam, and variable resistance means interposed between said electrodes and comprising a first component having a relatively fixed resistance value and a second component in series circuit relationship to said first component, said second component having a variable resistance value and comprising a photoconductive material at least a portion of which is aligned with the spaces between adjacent portions of said first electrode, said photo-conductive component undergoing localized changes in electrical conductivity upon impingement of electro-

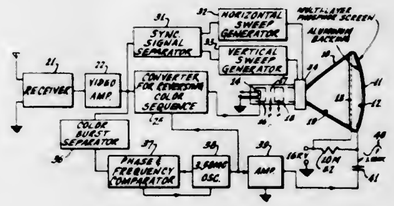


magnetic radiation thereby to produce a charge pattern on the surface of said target electrode facing said electron beam source, means for supplying an operating voltage to said exposed electrode thereby to bias said electrode to prevent the passage of beam electrons, means for scanning said beam over the surface of said target electrode thereby to produce current variations to said target electrode and modify the intensity of said beam as determined by variations of the charge pattern over the surface of said target, and output signal means for producing an output signal as determined by the variations of the charge pattern.

3,204,143
PENETRATION COLOR SCREEN, COLOR TUBE, AND COLOR TELEVISION RECEIVER

Dalton H. Pritchard, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

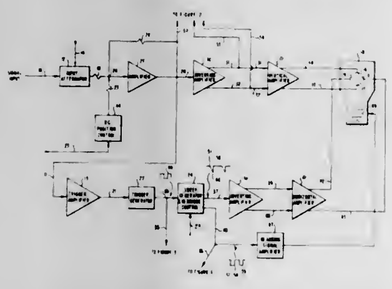
Filed May 8, 1961, Ser. No. 108,565
30 Claims. (Cl. 315—13)



24. A single-gun cathode ray tube having a color screen designed to be operated by penetration of electron beams of three different voltage ranges and where the beams are to be modulated by a color television signal that includes a color subcarrier, means including said gun for producing successively an electron beam of a certain lowest voltage range, an electron beam of a higher middle voltage range, and an electron beam of a highest voltage range, means for producing said three different voltage range beams during one cycle of said subcarrier and in a predetermined phase relation thereto, said screen comprising a multitude of fractional areas each comprising a back or gunside phosphor layer that emits light of a

certain color when excited by electrons, a middle phosphor layer that emits light of a different color when excited by electrons, and a base phosphor layer that emits light of a still different color when excited by electrons, layers of inert material between said phosphor layers and said base phosphor, said layers having a mass thickness such that when penetrated by said electron beam of highest voltage range the base phosphor is penetrated by said electron beam but with less of the electron energy absorbed in it than in the screen between said base phosphor and the gun-side surface of said screen, the screen layers between the middle phosphor layer and the gun-side surface of the screen having a mass thickness such that the middle phosphor layer is penetrated by said electron beam of middle voltage range but with less electron energy absorbed in it than in the layers between the middle phosphor layer and the gun-side surface of the screen, and the screen layers between the middle phosphor layer and the gun-side surface of the screen also having a mass thickness such that no more than a small part of the energy of said electron beam of lowest voltage range is absorbed in the middle phosphor layer, the conversion efficiency of the base phosphor and of the middle phosphor layer both being enough greater than the effective conversion efficiency of the gun-side phosphor layer so that when there is screen penetration only by said electron beam of highest voltage range there is produced a color that subjectively is said still different color, and so that when there is screen penetration only by said electron beam of the middle voltage range there is produced a color that subjectively is said different color, the relative conversion efficiencies of said phosphors also being such that during the cycle of producing successively said electron beams of the three different voltage ranges the three phosphor layers emit light in the correct relative proportions to give a white light mix in the absence of color modulation of said electron beams.

3,204,144
OSCILLOSCOPE CONTROL CIRCUITRY
Joe E. Deavenport, San Diego, Calif., assignor to California Instrument Corporation, San Diego, Calif., a corporation of California
Filed Feb. 5, 1963, Ser. No. 256,415
20 Claims. (Cl. 315—24)



1. In an oscilloscope for displaying the waveforms of a plurality of input signals having different magnitudes and frequencies,

vertical deflection circuitry means for selectively increasing and decreasing said magnitudes of said input signals providing vertical deflection output signals to said oscilloscope,

vertical detecting circuit means for detecting said magnitudes of said input signals and providing vertical output signals when said magnitudes of said input signals are outside a given range of magnitudes,

vertical correction circuit means being responsive to said vertical output signals for providing vertical correction signals to said vertical deflection circuitry means that selectively increase or decrease said magnitudes of said input signals in said vertical deflection circuitry means bringing said magnitudes within said given range of magnitudes,

horizontal sweep circuit means being responsive to said input signals for providing horizontal sweep control voltages having selected sweep speeds to said oscilloscope,

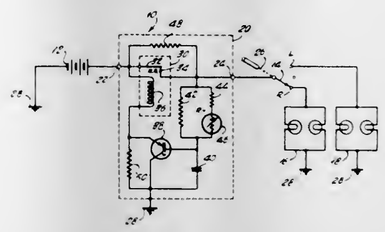
horizontal detecting circuit means for detecting said sweep speeds of said horizontal sweep control voltages and said frequencies of said input signals and for providing horizontal output signals when the number of cycles of said input signals occurring during a given sweep are outside a given range of cycles,

horizontal correction circuit means responsive to said horizontal output signals for providing horizontal correcting voltages to said horizontal sweep circuit means adjusting the sweep speed of said horizontal sweep control voltage to a given sweep speed in which the number of cycles of said input signal occurring during said given sweep speed are within said given range of cycles.

3,204,145
CIRCUIT ARRANGEMENT FOR OPERATING A PERIODICALLY ACTIVATABLE SWITCHING TRANSISTOR
Hans-Dieter Schneider, Gross-Gerau, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany
Filed Mar. 21, 1963, Ser. No. 267,889
Claims priority, application Germany, Mar. 24, 1962, F 36,371
9 Claims. (Cl. 315—27)

1. A circuit arrangement for operating a periodically activatable switching transistor controlling an inductive load, particularly the deflector coils of a cathode ray tube, comprising, in combination, transistor means having a base, a collector and an emitter electrode; control means for furnishing to said transistor means a control impulse comprising a blocking period with a blocking voltage of predetermined amplitude and an unblocking period with an unblocking voltage of predetermined amplitude; damping diode means connected in parallel with the load across the emitter-collector circuit of said transistor means; and transformer means coupling said control means with said transistor means and comprising a secondary winding in circuit with said emitter and base electrodes of said transistor means, the parameters of said control means and of said transistor means being so chosen that said blocking voltage amplitude of said control impulse is substantially equal to the maximum permissible blocking potential of said transistor means, and that said unblocking voltage amplitude of said control impulse is a time function of the voltage required for saturating said transistor means, the product of said blocking period and said maximum permissible blocking voltage being substantially equal to the integral of said time funtion of said unblocking voltage over the duration of said unblocking period.

3,204,146
RELAY-TRANSISTOR FLASHER
Harry Kratochvil, Fords, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 243,497
3 Claims. (Cl. 315—209)



1. A flasher that is used to flash a lamp load in a series circuit which includes the flasher, the lamp load, an electrical source of energy and a manually operable switch for making and breaking said series circuit, said flasher comprising:

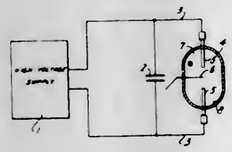
(a) a relay having a winding and an armature, said armature when the winding is energized closing a connection between one terminal of said source and said switch and when the winding is deenergized opening such connection;

(b) a transistor connected in series with said winding across said source;

(c) a capacitor coupled to the transistor, said capacitor when charged rendering said transistor nonconducting and when discharged permitting the transistor to conduct;

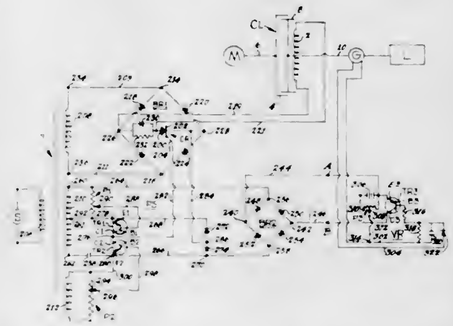
(d) resistive means connecting said capacitor to said source through said armature when the winding is energized for charging the capacitor and connecting said capacitor to said switch for discharging the capacitor through the load when said switch is closed and said winding is deenergized, whereby when said switch is closed the capacitor is alternately charged and discharged to render said semiconductor alternately non-conductive and conductive to alternately deenergize and energize said winding and flash the lamp load.

3,204,147
SPARK DISCHARGE LAMP HAVING A PREDETERMINED RATIO BETWEEN THE CROSS-SECTION OF THE ELECTRODES AND THE INNER SURFACE OF THE TUBE
Frank Früngel, Herwigredder 105a, Hamburg-Rissen, Germany
Filed July 10, 1961, Ser. No. 122,843
Claims priority, application Germany, July 8, 1960, F 31,616
8 Claims. (Cl. 315—241)



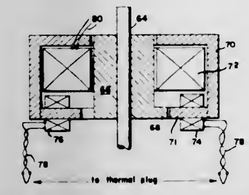
8. A spark light system, comprising, in combination, a transparent wall discharge vessel filled with a gaseous medium and having a predetermined inner surface area; spark gap means arranged within said vessel and including electrodes of predetermined cross-section and spaced from each other to form a spark gap of a predetermined starting dimension which gradually increases due to disintegration of said electrodes under the action of repeated spark discharges, said electrodes being made of a material chemically unaffected by said gaseous medium; discharge circuit means including a discharge condenser connected with said spark gap means, the inductance of said discharge circuit means in combination with said spark gap means establishing a predetermined discharge characteristic causing emission of non-oscillating light flashes when said condenser is discharged across said spark gap means, said discharge characteristic being so chosen that the ratio between the discharge energy of said discharge condenser and said inner surface area of said vessel predetermines the rate of formation, on said inner surface area, of a layer of electrode material resulting from said electrode disintegration and thus causing a gradually decreasing light permeability of said vessel, the ratio between said cross-section of said electrodes and said inner surface area of said vessel being such that the reduction of light permeability of said vessel by the deposited layer of electrode material is compensated by the increase in light output of the spark discharge caused by said increase of said spark gap dimension; and source means of high voltage electric energy for charging said discharge condenser and having a hyperbolic characteristic determining a constant wattage output irrespective of voltage or current variations.

3,204,148
CONTROL FOR ELECTROMAGNETIC COUPLING
Joseph N. Urbanik, Kenosha, Wis., assignor to Eaton Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed May 1, 1961, Ser. No. 106,650
8 Claims. (Cl. 317—5)



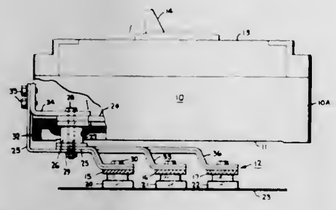
1. A full wave electrical control for an electromagnetic coupling apparatus having a driven member, a driving member, a rotating shaft and a D.C. field coil, comprising a full wave bridge circuit including a solid state controlled rectifier, an A.C. voltage source connected to said bridge circuit, conductors connecting said field coil in series with said solid state controlled rectifier, means responsive to rotation of said shaft to supply a D.C. potential proportional to the angular velocity of said shaft, means including a variable resistance circuit responsive to said D.C. potential, a plurality of gate circuits each having a common path connected to said rectifier, said path connected to separate triggering means in each gate circuit for alternately applying gate signals to said rectifier, a phase shift circuit connected to said gate circuits and said resistant circuit means, whereby full wave rectification and energization of said field coil is responsive to activation of said rectifier.

3,204,149
THERMAL PULSE IGNITION SYSTEM
Arthur W. Vance, Palos Verdes Estates, Calif.
(424 Mendoza Terrace, Corona Del Mar, Calif.)
Filed May 24, 1962, Ser. No. 197,439
12 Claims. (Cl. 317—83)



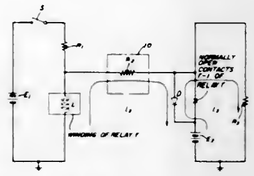
1. An ignition system for an internal combustion engine having a combustion chamber for receiving an air-fuel mixture comprising: a low resistivity thermal element for igniting the air-fuel mixture, said element mounted in the combustion chamber, and adapted to receive electric currents in excess of one hundred amperes for less than one millisecond and to respond immediately thereto by changing temperature in accordance with said currents; and electric current providing means electrically coupled to said thermal element for providing electrical pulses of less than one millisecond duration at low voltages of the order of ten volts and high currents in excess of 100 amperes.

3,204,150
TERMINAL CONNECTIONS FOR CIRCUIT PROTECTIVE DEVICES
George E. Gauthier, Plainville, Conn., assignor to General Electric Company, a corporation of New York
Filed Oct. 7, 1963, Ser. No. 314,239
4 Claims. (Cl. 317—119)



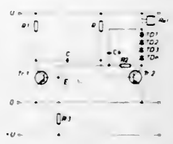
1. In combination:
(a) an electrical device having a generally rectangular insulating enclosure having back and end surfaces;
(b) terminal means carried by said enclosure having a first portion connected to a conductor extending within said device and having a second portion extending to said back surface of said enclosure;
(c) an elongated electrical conductor having one end connected to said first portion of said terminal means and having an intermediate portion connected to said second portion of said terminal means, said conductor having its other end adapted for connection externally of said device;
(d) the portion of said elongated electrical conductor between said one end and said intermediate portion extending beyond said end surface of said enclosure and being disposed and arranged to radiate heat from said device without obstruction by said enclosure.

3,204,151
FAST-ACTING RELAY CONTROLLED CIRCUIT
George E. Kersey, Millington, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 17, 1962, Ser. No. 244,992
12 Claims. (Cl. 317—141)



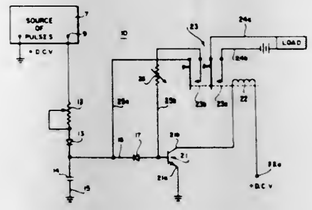
1. Apparatus comprising
a relay having a pair of normally open contacts, and a control winding characterized by electrical inertia,
a source connectable to a load through said contacts,
means for energizing said control winding to close said contacts and establish a conduction path therethrough after a delay interval governed by the electrical inertia of said control winding,
a unidirectionally conductive diode connected in shunt with said contacts and poled in its direction of non-conduction with respect to said source, and
a path, whose impedance is greater than that of said load, interconnecting said diode with said winding, whereby energy applied to said winding by said energizing means is able to establish a conduction path from said source to said load through said diode before the closure of said contacts.

3,204,152
TIMING CIRCUIT FOR DEFINING LONG INTERVALS OF TIME
Friedrich Ulrich, Stuttgart-Bad Cannstatt, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 11, 1962, Ser. No. 165,555
Claims priority, application Germany, Jan. 19, 1961, St 17,368
9 Claims. (Cl. 317—142)



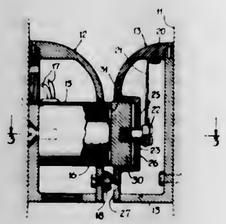
1. A timing circuit for defining long intervals of time comprising a monostable trigger circuit; triggering means for receiving external signals to said monostable circuit to cause said circuit to assume an unstable condition for a predetermined period of time before returning to its stable state; second means internal to said monostable circuit to produce voltage impulses causing said monostable circuit to switch between stable and unstable conditions a predetermined number of times wherein said second means includes an arrangement of n tunnel diodes, having different peak currents, which are switched in association with current fluctuations to produce voltage impulses, said arrangement of tunnel diodes coupled to the output of the said monostable trigger circuit producing $(n+1)$ cycles of reversal in said trigger circuit before assuming a permanent stable condition; and signal means indicating the permanent resumption of the stable condition after said circuit has switched states a predetermined number of times.

3,204,153
RELAXATION DIVIDER
William H. Tygart, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 15, 1962, Ser. No. 194,807
11 Claims. (Cl. 317—148.5)



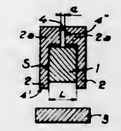
1. A relaxation divider comprising: a controlling circuit portion including a storage capacitor for storing input voltage pulses; a voltage reference device breaking down in the reverse direction upon receipt of a voltage of predetermined magnitude connected at one side to the discharge circuit of said capacitor for preventing premature discharge thereof; a switching circuit portion connected to the other side of said voltage reference device including means producing an output voltage pulse during the time said switching circuit portion receives a pulse from said controlling circuit portion; and means connecting a circuit in shunt around said voltage reference device during the time said switching circuit portion receives a pulse from said controlling circuit portion.

3,204,154
ELECTROMAGNETIC DOOR HOLDER AND STOP
Roy L. Crandell, Anaheim, Calif., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio
Filed Dec. 10, 1962, Ser. No. 243,400
5 Claims. (Cl. 317—159)



1. In a magnetic holder, a first casing adapted to be secured to a wall and having an electromagnetic core, a second casing adapted to be secured in position on a door to move into juxtaposed relation to the first casing when the door opens, an armature movably mounted on the second casing, yielding means normally pressing said armature to a predetermined inward position on its mounting relatively to said second casing, said armature being movable outwardly from said predetermined position, said electromagnetic core being effective when energized to pull said armature outwardly and against said core as the casings become juxtaposed, so as to hold the door open while a closing pressure applied to the door, as by a door closer, will stress said yielding means to hold the armature projected outwardly of the second casing.

3,204,155
MAGNETIC STRUCTURE HAVING A FIXED AND VARIABLE AIR GAP
Roger Charpentier, 27 bis Ave. des Lilas, Pau, Basses-Pyrenees, France
Filed July 31, 1961, Ser. No. 128,098
Claims priority, application France, July 29, 1960, 834,372, Patent 1,272,074; Dec. 22, 1960, 847,671
10 Claims. (Cl. 317—201)



1. A magnet composed of an aluminum-nickel-cobalt-copper-iron base composition, and having a length L between $\sqrt{S}/2$ and $\sqrt{S}$, the magnet being combined with pole pieces arranged to provide a double non-magnetic gap of which one is fixed and the other variable, the dimensions of the fixed gap satisfying the following conditions:

$$\frac{L}{15} \leqq e \leqq \frac{L}{3}$$

$$\frac{5S}{12} \leqq s'' \leqq 3S$$

where

S is the area of contact of the magnet with the pole pieces,
L is the length of the magnet between the surfaces of contact with the pole pieces,
e is the length of the fixed gap,
s'' the surface area of each of those parts of the pole pieces which form the fixed air gap.

3,204,156
VENTED ELECTROLYTIC UNIT
Joseph A. Moresi, Jr., and Ralph D. Boisjolie, North Adams, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed May 1, 1961, Ser. No. 106,683
10 Claims. (Cl. 317—230)

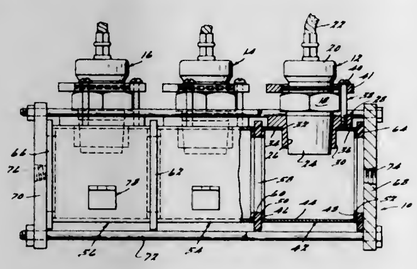


1. A vented can for an electrolytic unit comprising a lengthwise cut in and along the inner surface of the side wall of the can, said side wall having a thickness of at least 0.01 inch, and said cut leaving a wall thickness of approximately .004 inch.

3,204,157
CRYSTAL DIODE HEAT DISSIPATING MOUNTING
Allen R. Peterson, Dearborn, Mich., assignor to Welduction Corporation, Southfield, Mich., a corporation of Michigan
Filed Aug. 30, 1960, Ser. No. 52,934
13 Claims. (Cl. 317—234)

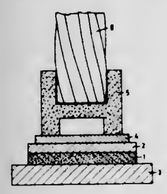
1. In combination, a unitary, hermetically sealed high-current crystal diode having an integral smooth frusto-conical base portion and a heat dissipating mounting therefor comprising a hollow metal body having a plurality of walls defining a cavity therewithin, one of said walls

having an aperture therein, port means for flowing coolant through said cavity in said hollow body, a metallic diode holder separate from said hermetically sealed diode and separate from said body and having an enlarged peripheral flange, means for mounting said diode holder with a side wall portion thereof seated in the aperture in said one



wall and with the peripheral flange thereof in abutment with said one wall adjacent the aperture therein, and a frusto-conical socket in said separate diode holder conforming in taper and size to that of the frusto-conical base of the crystal diode, said integral base portion of said hermetically sealed diode being removably inserted in said frusto-conical socket in said separate diode holder.

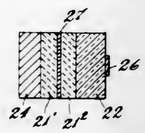
3,204,158
SEMICONDUCTOR DEVICE
Horst Schreiner, Nurnberg, and Hans Schering, Berlin-Haselhorst, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed June 16, 1961, Ser. No. 117,618
Claims priority, application Germany, June 21, 1960, S 69,028
11 Claims. (Cl. 317—234)



1. An electronic semiconductor device having an elevated temperature during normal operation, comprising a semiconductor plate, a metallic contact body having an area in face-to-face relation to a surface of said plate, and an intermediate member disposed between said plate and said body and conductively bonded to both, said member consisting substantially of a sintered porous plate structure of metal more readily deformable plastically than said plate and body.

3,204,159
RECTIFYING MAJORITY CARRIER DEVICE
Jenny Bramley and Arthur Bramley, Passaic, N.J. (both of 1514 Strathmore St., Falls Church, Va.)
Filed Sept. 14, 1960, Ser. No. 55,970
7 Claims. (Cl. 317—235)

1. In a high speed responsive current control device, an emitter contact extending in a plane, a first insulating layer having a thickness not in excess of 100 A. extending in electrical contact with one side of the emitter contact, a metallic film having a thickness not in excess of 100 A. in electrical contact with the side of the insulating layer remote from the emitter contact, said metallic film comprising a control grid terminal, a second insulating layer having a thickness not in excess of 100 A. extending in electrical contact with the side of the metallic



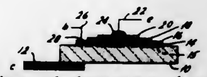
film remote from the first insulating layer, a semiconductor layer in electrical contact with the side of the second insulator layer remote from the metallic film, and a collector contact in electrical conducting relation with the side of the semiconductor layer remote from the second insulating layer.

3,204,160
SURFACE-POTENTIAL CONTROLLED SEMICONDUCTOR DEVICE
Chih-Tang Sah, Mountain View, Calif., assignor, by mesne assignments, to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Apr. 12, 1961, Ser. No. 102,515
3 Claims. (Cl. 317—235)



3. A silicon semiconductor device comprising a body of semiconductor having a collector region of one conductivity type, a diffused base region of opposite conductivity type disposed within said collector region and extending inwardly from a surface of said collector region, a diffused emitter region of the same conductivity as said collector region disposed within said base region and extending inwardly from said surface, an emitter-base junction between said emitter region and said base region having an edge extending to said surface, a base-collector junction between said base region and said collector region extending to said surface, an integral silicon oxide insulating layer over said edge of said emitter-base junction on said surface, a control electrode on said insulating layer in capacitively coupled relation to said edge of said emitter-base junction, and electrode means for making electrical contact to said emitter, base and collector regions, the emitter and base contacts being attached to areas of the emitter and base regions at said surface.

3,204,161
THIN FILM SIGNAL TRANSLATING DEVICE UTILIZING EMITTER COMPRISING: CdS FILM, INSULATING LAYER, AND MEANS FOR APPLYING POTENTIAL THEREACROSS
Walter Witt, Philadelphia, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 29, 1962, Ser. No. 206,499
9 Claims. (Cl. 317—235)



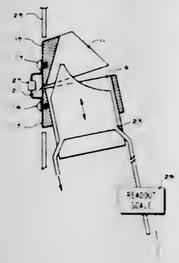
1. In an emitter of elementary charged particles, the structure which comprises:

a film of normally insulating material about twenty angstroms or less in thickness through which a current will flow due to quantum mechanical tunnelling in response to a suitable potential applied thereacross;

a layer of cadmium sulphide having a thickness of about one micron over at least a portion of one side of said film; and

means for applying a difference in potential between the other side of said film and a portion of said cadmium sulphide layer spaced from said film.

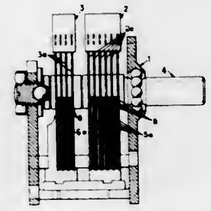
3,204,162
ULTRA-HIGH FREQUENCY VARIABLE REACTANCE
Bernard D. Loughlin, Centerport, N.Y., and Charles G. Gorss, Cedar Grove, N.J., assignors, by mesne assignments, to Hewlett-Packard Company, a corporation of California
Filed Nov. 21, 1961, Ser. No. 153,945
3 Claims. (Cl. 317—251)



1. A variable capacitor comprising first and second stator sections, each section having a plurality of stator plates mounted thereon, said stator sections being electrically insulated from each other, the first and second stator sections having surfaces which form a reference plane, connecting means on said surfaces of the first and second stator sections, a translator having at least one plate mounted thereon, mounting means supporting said translator for slidable movement thereof between the first and second sets of stator plates along an axis which is tilted at an acute angle with respect to the reference plane and which is disposed in a direction from the first set toward the second set of stator plates, the movement of said translator along said axis providing a signal path between the surfaces of said stator sections which has a mean path length that decreases as the distance traversed by said translator increases, a readout scale, a reference indicator for said scale which is selectably positionable along said scale, and means coupling said readout scale to said translator for transmitting the movement thereof to said readout scale, the reference indicator for the readout scale being adapted to provide an adjustable indication of the capacitance of said capacitor.

3,204,163
VARIABLE CONDENSER
René Halftermeyer, 35 Ave. Faidherbe a, Montreuil-sous-Bois, France
Filed June 13, 1963, Ser. No. 287,686
Claims priority, application France, Oct. 23, 1962, 913,173, Patent 1,345,072; Dec. 21, 1962, 919,561, Patent 1,351,510
4 Claims. (Cl. 317—254)

1. A variable condenser comprising a rotor shaft member, a set of axially spaced rotor plate members mounted on said rotor shaft member, a set of stator plate members, mounting means on which said stator plate members are positioned so that said rotor plate members may be meshed therewith, and a solid dielectric having a dielectric constant greater than one, said dielectric comprising thin sheets which are folded along their axes of symmetry into sheaths comprising two leaves, each leaf being positioned to separate a rotor plate member from a stator plate member when said rotor and stator sets are meshed,



at least two of said members having surfaces which engage only certain portions of said sheaths located along the peripheries of said leaves and mechanically block any movement of those leaves in any direction parallel to said plates, said sheaths being free from said plates except at said engaged portions.

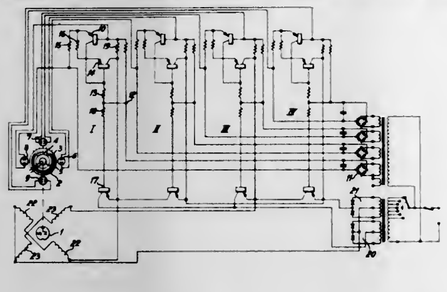
3,204,164
ENCASED ELECTRICAL CAPACITOR
Earl J. Burke, Stamford, Vt., and Norman H. Bond, Williamstown, and William A. Mausert, North Adams, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed June 21, 1961, Ser. No. 118,710
3 Claims. (Cl. 317—260)

3. An electrical capacitor comprising a convolutely wound capacitance section housed in a rigid container, an element having the radial cross-section of said section and said container, said element encompassing said section and located between said section and said container and having major portions of relatively stiff composition and spaced minor portions of less stiff compositions, said minor portions being distorted and providing folds bearing outwardly against said container and folds bearing inwardly against said section.

3,204,165
SELF-COMMUTATING DIRECT CURRENT ELECTRIC MOTOR
Otto Kreutzer, Constance, Germany, assignor to Airotor Vertriebsgesellschaft m.b.H., Constance, Germany, a German company
Filed Dec. 14, 1961, Ser. No. 159,210
Claims priority, application Germany, Dec. 21, 1960, A 36,343
9 Claims. (Cl. 318—138)

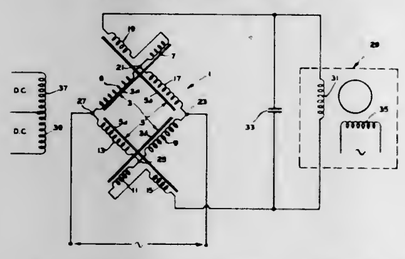
1. A self-commutating direct current motor comprising a rotor, a stator having at least two windings thereon, respective power transistors connected to the windings for passing energizing current therethrough, respective independent preamplifier transistor switching sets connected to the power transistors for ensuring that each power transistor is conductive when the transistor switching set connected thereto is in a first conductive state and is non-con-

ductive when that transistor switching set is in a second conductive state, and commutating means operable by movement of said rotor to produce low energy signals which vary cyclically as the rotor turns and connected to apply said signals to said transistor switching sets in sequence whereby they are changed each in its turn from



one of said states to the other and each in its turn back to said one state, the changes occurring at a frequency dependent upon the speed of the rotor, said transistor switching sets each comprising two transistors with feedback means from one to the other for ensuring that in each transistor switching set each of the changes from one state to the other will take place rapidly.

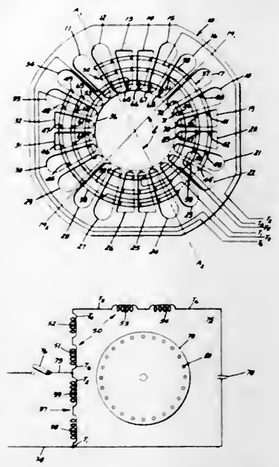
3,204,166
SATURABLE REACTOR MOTOR CONTROL CIRCUIT
Stephen J. Polcyn, Jr., Hasbrouck Heights, and Arnold Unger, Totowa, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Nov. 3, 1961, Ser. No. 149,968
18 Claims. (Cl. 318—207)



13. A control circuit comprising a saturable reactor having a pair of cores with gate windings and booster windings on each core and with the booster windings inductively coupled to the gate windings, a bridge circuit including the gate windings and adapted to be energized by a power source, a two-phase motor having its fixed phase adapted to be energized by the power source and having its variable phase connected to the bridge circuit in series with the booster windings, and means for magnetizing the cores to unbalance the bridge circuit to operate the motor.

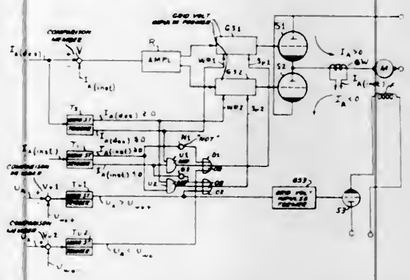
3,204,167
ELECTRIC MOTOR WINDING ARRANGEMENT
Robert V. Zigler, Holland, Mich., assignor to General Electric Corporation, a corporation of New York
Filed Feb. 25, 1963, Ser. No. 260,682
2 Claims. (Cl. 318—225)

1. In a single phase single speed induction type motor, a stator member having a plurality of slots, a main winding positioned in slots to form at least two primary magnetic poles and permanently connected to provide the same magnetic poles for all operating conditions, each of said poles having coils disposed about a main pole axis, and an auxiliary winding associated with said main winding, said auxiliary winding comprising of a main axis section and a quadrature section associated with each of said primary magnetic poles, each of said sections being comprised of a group of coils, the coils of said direct axis sections being positioned symmetrically with



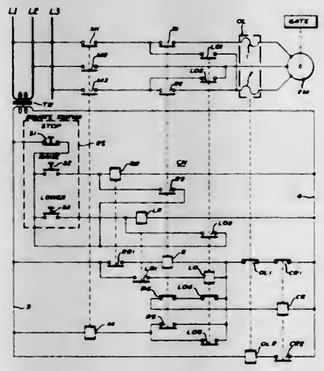
respect to said main pole axis, each of said quadrature sections being positioned in quadrature relation with respect to said direct axis sections, and the effective turns of said direct axis sections and of said quadrature sections being selected to provide an effective axis having a predetermined angular relation of approximately 116 electrical degrees with respect to said main pole axis whereby copper losses of said windings occurring during operation of the motor are minimized.

3,204,168
CURRENT CONVERTER POWER SUPPLY SYSTEM FOR REVERSIBLE MOTOR
Manfred Depenbrock, Mannheim-Almendorf, Walter Berens, Mannheim-Kafertal, and Hans Kielgas, Mannheim, Germany, assignors, by mesne assignments, to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company of Switzerland
Filed June 28, 1961, Ser. No. 129,930
Claims priority, application Germany, June 29, 1960, B 58,391
3 Claims. (Cl. 318—261)



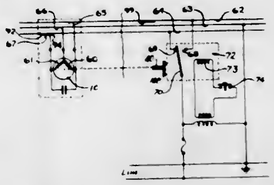
1. In a converter plant, the combination comprising a pair of converters each having anode, cathode and control grid elements, means reversely connecting the anode-cathode circuits of said converters between an alternating current supply line and a direct current load circuit containing the armature of a reversible motor, one of said converters being normally conductive and acting as a rectifier to supply direct current to the motor armature while the other converter is normally blocked, dependent upon the desired direction of current flow through the motor armature, a grid voltage impulse former for and connected to the grid of each converter and including at least two inputs thereto, a first such input being varied in accordance with the deviation between the desired and instantaneous values of the armature current to effect a corresponding variation in phase of the grid voltage and variation in the current rectified by the then conductive converter, a second such input being controlled in accordance with a desired reversal in the direction of the armature current to effect a corresponding variation in phase of the grid voltage to change over the then conducting converter from rectifier to full inverter operation feeding back energy into said alternating current supply line, and means controlled in accordance with the instantaneous value of the armature current to block further conduction of the converter then operating as an inverter when said armature current reaches a zero value, said other converter which had up to then been blocked now being rendered conductive to carry the armature current of the reversed direction.

3,204,169
REMOTE CONTROL SYSTEM
Richard R. Ranson, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 13, 1962, Ser. No. 179,313
5 Claims. (Cl. 318—264)



1. A remote control system comprising:
(a) a power supply source;
(b) an electroresponsive load;
(c) and means for connecting said load to said source to cause energization thereof comprising:
(d) a control circuit;
(e) a remote station connected for controlling said control circuit;
(f) protective means responsive to an abnormal electrical condition in said system for operating said control circuit to cause disconnection of said load from said source, said protective means having a tripped condition which it assumes in response to such abnormal condition and an alternative reset condition wherein said control circuit is operable to control energization of the load;
(g) said remote station comprising switch means effective upon first switch-on operation thereof when said protective means is in its reset condition to cause operation of said connecting means and thereby to energize said load;
(h) and means in said control circuit effective when said protective means is in its tripped condition for causing operation of said protective means to its reset condition in response to a similar first switch-on operation of said switch means without energizing said load thereby to indicate to the operator that an abnormal condition has occurred.

3,204,170
TRAVELING MOTOR DOOR OPERATOR
Victor G. Monks, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Oct. 1, 1962, Ser. No. 227,210
2 Claims. (Cl. 318—267)

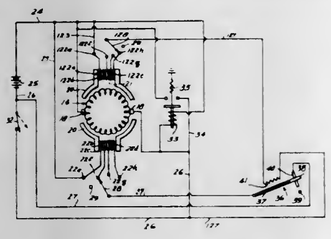


1. A power actuator of the character described having, in combination, a carriage mounted for back and forth movement along a predetermined path between spaced limit positions, a reversible electric motor having a tubular shaft fixed to said carriage with its axis extending along said path, means coupling said carriage and motor to a part to be reciprocated, an elongated screw extending through said hollow shaft along said path, two bodies of resiliently yieldable material enclosing and secured to opposite ends of said screw, stationary means supporting said bodies to permit some degree of axial yielding of said screw when said actuated part encounters an obstruction, switch mechanism controlling the operation of said motor in opposite directions to move said motor and carriage back and forth along said screw and stop the motor with the actuated part in the respective limit positions, selectively operable means to initiate successive cycles of said motor to move the actuated part toward said limit positions, and means responsive to endwise shifting of said screw when an obstruction is encountered by said actuated part in traveling in one direction and operable through said switch mechanism to reverse said motor and transfer the control thereof to said switch mechanism for continuing operation of the motor in such reverse direction until said part reaches one of said limit positions.

3,204,171
DIRECT CURRENT MOTOR
Per Folke Alm, Johanneshov, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 23, 1963, Ser. No. 253,433
Claims priority, application Sweden, Jan. 26, 1962, 869/62
5 Claims. (Cl. 318—379)

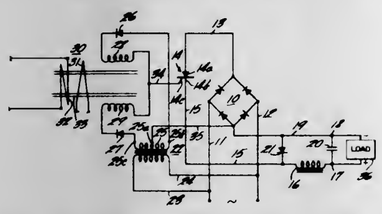
4. A direct current motor having a stator comprising a frame formed of magnetic material having at least two gaps, a first magnetic member bridging one of the gaps and a second magnetic member bridging the other of the gaps, said first and second magnetic members having unidirectional polarity and poled for operation in the same direction, said first magnetic member comprising a first

electromagnet having a first core and a first coil therefor and said second magnetic member comprising a second electromagnet having a second core and a second coil therefor, said first and second coils forming parts of an electrical circuit adapted to be connected to a direct current source of electrical supply, first control means in



said circuit for independently controlling the energization of said second coil to vary the total magnetic flux produced in said stator, and second control means in said circuit for delaying the de-energization of one of said coils after the electrical supply to the other of said coils is interrupted.

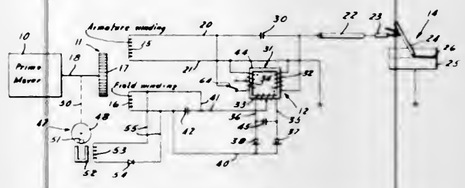
3,204,172
SEMICONDUCTOR CONTROLLED RECTIFIER CIRCUITS
Horace E. Darling, North Attleboro, Mass., and Holton E. Harris, New York, N.Y., assignors to Harrel, Incorporated, New York, N.Y., a corporation of Delaware
Filed Dec. 14, 1959, Ser. No. 859,454
4 Claims. (Cl. 321—8)



1. Semiconductor controlled rectifier circuits comprising a full wave rectifier including input and output circuits, a semiconductor controlled rectifier including an anode, a cathode and a gate, means connecting the anode and cathode of the controlled rectifier in series in the full wave rectifier output circuit, output terminals in series in the full wave rectifier output circuit adapted to be connected to a load, means to supply timed current pulses to the controlled rectifier gate to initiate conduction of the controlled rectifier, means responsive to conduction of the controlled rectifier to cut off the current pulse that initiated said conduction, and means to reduce current flow through the controlled rectifier substantially to zero at the end of each half cycle of operation.

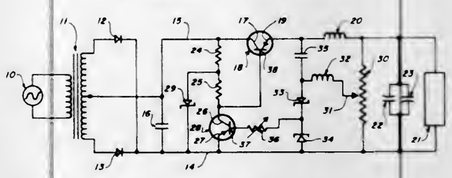
3,204,173
ARC WELDER LOAD CONTROL
Robert Vernon Jackson, Los Angeles, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed July 26, 1962, Ser. No. 212,558
23 Claims. (Cl. 322—28)

1. In an arc welder, the combination comprising:
(a) a prime mover;
(b) an inductor alternator having an armature winding and a field winding, said armature winding providing a first reactance element;
(c) a substantially resistive load;
(d) a compensating capacitor connected in series between said armature winding and said load, said compensating capacitor providing a second reactance, the reactance of said compensating capacitor at the operating frequency of said alternator being no more than the reactance of said armature winding at said operating frequency;
(e) a control system for regulating the output voltage of said inductor alternator under varying load impedance conditions and including impedance means connected across one of said reactance elements and responsive to variations of the voltage across said one of said reactance elements;



(f) a feedback circuit coupled between said impedance means and said field winding; and
(g) rectifier means included in said feedback circuit for impressing directly on said field winding a direct current which increases with a decrease of the impedance of said load.

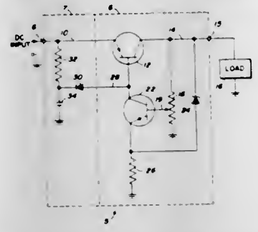
3,204,174
TUNNEL DIODE VOLTAGE REGULATOR
Milton C. Clerc, Houston, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 15, 1961, Ser. No. 131,516
5 Claims. (Cl. 323—22)



1. A voltage regulator comprising a voltage source, a transistor having base, emitter and collector electrodes, a series circuit connected across said source and including a load and the emitter and collector electrodes of said transistor, means for biasing said transistor in a conductive condition, a tunnel diode and a Zener diode connected together in an opposing relationship and across said load, and control means having an input connected across said tunnel diode and having an output connected to said base electrode of said transistor, said control means being adapted to bias said transistor to a cutoff condition when said tunnel diode is in the high voltage condition.

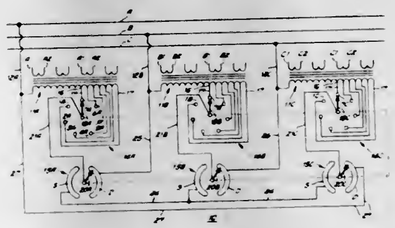
3,204,175
AUTOMATIC SELF-STARTING VOLTAGE REGULATING DEVICE
William L. Kuriger, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Sept. 25, 1961, Ser. No. 140,428
3 Claims. (Cl. 323—22)

1. An automatic self-starting voltage regulating device, comprising: input terminal means adapted to be connected to a source of unregulated D.C. power; output terminal means for coupling output D.C. power from said device; power amplifier means having an input electrode connected with said input terminal means, an output electrode connected with said output terminal means, and a control electrode; control means connected to said control electrode and responsive to output D.C. power produced by said device for varying the applied bias to said control electrode during normal operation to thereby maintain the output D.C. power coupled from said output terminal means at a substantially constant predetermined value; and network means connected with said power amplifier means and responsive to application of unregulated input power thereto to cause said power amplifier means to be conductive for a predetermined short



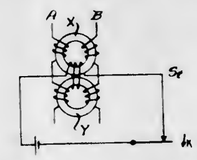
period of time prior to said normal operation whereby output D.C. power is produced by said device to automatically start the same, said network means including a capacitor and resistor serially connected across said input terminal means, and wherein said electron control device is a diode the anode of which is connected to the control electrode of said power amplifier means and the cathode of which is connected to the junction of said resistor and capacitor whereby applied unregulated voltage is coupled through said diode during said predetermined short period of time to charge said capacitor, said capacitor being maintained charged through said resistor to bias said diode to cutoff after said predetermined short period of time.

3,204,176
TAP CHANGING FURNACE TRANSFORMER
Gordon A. Wilson, Jr., Washington, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Apr. 26, 1961, Ser. No. 105,625
8 Claims. (Cl. 323—43.5)



2. A three phase tap changing transformer having three phase windings provided with taps and a multiple position switch and a delta star switch associated with each phase and drive means for said switches, said multiple position switch having a plurality of spaced apart stationary contacts arranged in a circle and connected to said taps and a rotary contact adapted to sequentially engage said stationary contacts, means operated by said drive means for intermittently indexing said rotary contacts of all three multiple position switches between said stationary contacts, said delta star switch having first and second arcuate stationary contacts and a movable contact electrically connected to said rotary contact and adapted to alternately engage said first and second contacts and to be wiped across each said arcuate contact in a series of steps while remaining in continuous electrical engagement therewith, said first arcuate contacts of all of said delta star switches being electrically commoned, said second arcuate contact of each delta star switch being connected to said winding associated with another phase, means operated by said drive means for simultaneously actuating said movable contacts of all three delta star switches and for indexing each said movable contact one step across one of said arcuate contacts each time said rotary contacts are indexed to a succeeding stationary contact, whereby said movable contact engages a new point on said arcuate contact each time said multiple position switch is indexed and erosion of said arcuate contacts is minimized, and means operated by said drive means for simultaneously actuating said movable contacts of all three delta star switches between said first and second arcuate contacts once for each revolution of said rotary contacts and when said intermittent indexing means steps said rotary contacts of said multiple position switches between predetermined stationary contacts.

3,204,177
KEYING DEVICES, PARTICULARLY FOR ELECTRICAL MUSICAL INSTRUMENTS
Adolf Michel, Dietramszellerstrasse 2, Munich 25, Germany
Filed Nov. 2, 1961, Ser. No. 149,736
2 Claims. (Cl. 323—56)

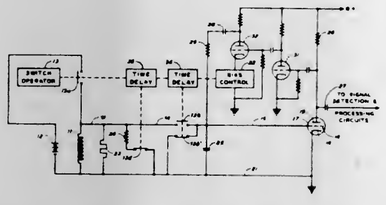


1. A device for varying the coupling between an input and an output circuit comprising a pair of toroidal cores in close tangential juxtaposition with their axes subtantially parallel, a control coil wound around both of said cores where they are in juxtaposition, a primary coil wound partly on one of said cores and partly on the other of said cores, a secondary coil wound partly on one of said cores and partly on the other of said cores, the two parts of said primary being wound in the same direction and the two parts of said secondary being wound in the same direction, and circuit means including a key for varying the current density in said control coil to vary the degree of saturation of said cores, said cores being of the signal type for transmitting musical signals, the said transmission depending on a continual change of permeability which results in the change of the amplitudes of the signals, said last-named means including contacts normally closed and means for breaking said contacts by means of said key.

3,204,178
AMPLIFIER INPUT CONTROL CIRCUITS
Robert J. S. Brown, Fullerton, and John E. Coolidge, Anaheim, Calif., assignors, by direct and mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois, and California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed Sept. 26, 1961, Ser. No. 140,807
3 Claims. (Cl. 324—.5)

1. In a nuclear magnetism well logging precession signal detection amplifier circuit, a voltage transient dissipation circuit in said detection circuit comprising a feedback

circuit between the output of said amplifier circuit and the input of said amplifier circuit for lowering the Q of the input network to said amplifier, said feedback circuit including a resistance element having an electrical size determined by the inductance and capacitance in said input



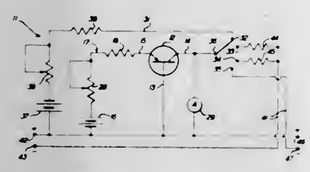
network and the gain of said amplifier to reflect into the input network an effective resistance for critically damping transient voltages in said network, and means in said feedback circuit for controlling the reflected electrical size of said resistance element into said input network to vary the Q of said network.

3,204,179

TEST CIRCUIT FOR DETERMINING IMPEDANCE AND RELATED CHARACTERISTICS OF AN ELECTRICAL ELEMENT INCLUDING TRANSISTOR MEANS OPERATED WITH ZERO COLLECTOR-TO-BASE VOLTAGE

Evander K. Fuller, Greensboro, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 25, 1959, Ser. No. 855,459
9 Claims. (Cl. 324—57)



8. In a test circuit for determining a characteristic of an electrical element, a semiconductor, means for biasing the semiconductor to conduct only a predetermined current and for setting the operating characteristics of the semiconductor to present zero resistance for said predetermined current flow, a current indicating means connected in parallel with said semi-conductor means connected to the electrical element for developing a test current, and means for applying the test current to the semiconductor whereby said test current in excess of said predetermined current will flow through said current indicating means.

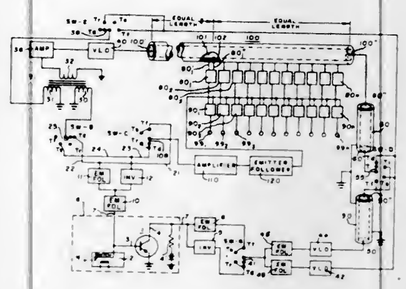
3,204,180

TIME MEASURING APPARATUS USING A TAPPED DELAY LINE

William E. Bray, Houston, and Robert S. Foote, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Feb. 28, 1962, Ser. No. 176,392
26 Claims. (Cl. 324—68)

1. Means for measuring the storage time of an electrical switching device following termination of a signal pulse to its input terminals comprising, means responsive to the change in voltage of the input signal as it decreases from its peak value to generate a first pulse as the input signal reaches a value slightly below the peak value, means responsive to the change in voltage of the output signal at the output terminals of the device for generating a second pulse as the signal at the output terminals decreases from its peak value to a value slightly below the peak



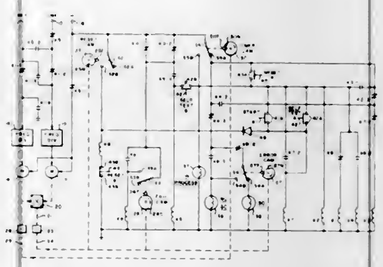
value, a delay line, means for applying the first and second pulses to respective opposite ends of the delay line, and means coupled to the line at spaced points therealong for detecting pulse coincidence and providing an indication of the time interval between the applications of the first and second pulses to the line.

3,204,181

ELECTRO-MECHANICAL FREQUENCY COMPARATOR UTILIZING CAMS FOR TIMING

Jameson A. Cooper, Pleasantville, and Richard Saylor, Monsey, N.Y., assignors to General Precision, Inc., a corporation of Delaware

Filed Jan. 23, 1963, Ser. No. 253,396
6 Claims. (Cl. 324—79)



1. A frequency comparison circuit for providing indications when two frequencies compared fall within a predetermined percentage of each other comprising,

a first frequency dividing means responsive to a reference frequency for dividing the frequency by a predetermined amount,

a second frequency dividing means responsive to an unknown frequency for dividing the unknown frequency by the same predetermined amount,

first movable means responsive to the first frequency dividing means producing a mechanical movement corresponding in amplitude to the frequency supplied by said first frequency dividing means,

second movable means responsive to the second frequency dividing means producing a mechanical movement corresponding in amplitude to the frequency supplied by said second frequency dividing means,

means responsive to the mechanical movement of said first and second movable means producing a bidirectional mechanical difference movement having an amplitude and direction corresponding to the amplitude and sign, respectively, of the difference between the mechanical movements of said first and second movable means,

a first displaceable element responsive to said difference movement,

first bistable means coupled thereto whereby said first bistable means resides in its first stable state when the first displaceable element occupies a predetermined position and its second stable state when said first displaceable element is located in any other position,

a second displaceable element responsive to said difference movement,

second bistable means coupled thereto including actuating means whereby said second bistable means resides in its first stable state when said actuating means is located between two predetermined fixed points located on said second displaceable element and is in its second stable state at all other times,

a third displaceable element responsive to said difference movement,

third bistable means coupled thereto whereby said third bistable means resides in its first stable state as long as a predetermined point on said third displaceable element does not attain a selected position with respect to said third bistable means and shifts to and remains in its second stable state whenever said selected position is attained, and

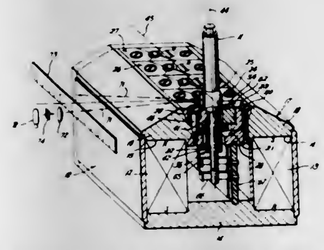
means responsive to said first, second and third bistable means for providing a first indication during a comparison when said first bistable means resides in its second stable state, a second indication at the end of a comparison provided said second and third bistable means are both in their first bistable states, and a third indication at the end of a comparison whenever either of said second and third bistable means occupies its second stable state.

3,204,182

ADJUSTABLE SUPPORT FOR MIRROR-TYPE GALVANOMETER UNITS INCLUDING ADJUSTABLE MAGNETIC MEANS FOR VARYING THE SENSITIVITY

Maxime Felix Benoit Picard, Felix Leon Hilaire Barreteau, and Jacques Fernand Moulin, all of Paris, France, assignors to Societe de Prospection Electrique, Procedes Schlumberg, Paris, France, a corporation of France

Filed May 8, 1961, Ser. No. 108,502
Claims priority, application France, May 12, 1960, 827,010, Patent 1,264,619
8 Claims. (Cl. 324—97)



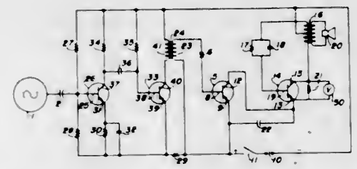
1. Mounting apparatus for holding an elongated cylindrical barrel-type mirror galvanometer unit comprising: a magnetic frame structure including magnet means for producing magnetic flux; and magnetic pole piece means secured to the frame structure for completing the magnetic circuit and having a cylindrical passageway therethrough which forms a gap in the magnetic circuit and which is adapted to receive the galvanometer unit, this pole piece means including an adjustable magnetic means located in the magnetic circuit adjacent to and in series magnetic circuit relationship with the galvanometer gap for modifying the magnetic reluctance of such pole piece means thereby to provide for an adjustment of the sensitivity of the galvanometer unit.

3,204,183

HOT LINE INDICATOR USING A CAPACITIVE PROBE WHOSE OUTPUT CONTROLS SWITCHING CIRCUIT MEANS FOR AN OSCILLATOR OUTPUT CIRCUIT

Ernest L. Hasenzahl, 6609 Lochinvar Drive, Baltimore 20, Md.

Filed Nov. 10, 1960, Ser. No. 68,511
2 Claims. (Cl. 324—133)



1. An alternating current voltage potential tester circuit free from external conductor connection comprising a capacitive probe adapted for placement in the electrostatic field of a conductor under test and spaced therefrom, said probe being connected through a capacitor to a transistor amplifier whose output is connected to a transformer primary, the secondary thereof having one end connected through a half wave diode to the base of a first transistor and the other end connected to the positive side of a battery, the emitter of said first transistor being connected to the positive side of the said battery and through a capacitor to the emitter of a second transistor, a direct connection between the collector of the first transistor and the emitter of the second transistor, a speaker having a transformer primary with one end connected through a resistor and capacitor in parallel with the base of said second transistor and the other end connected to the collector of said second transistor, a resistor load connected between the emitter and collector of said second transistor, and a conductor leading from a tap on said speaker transformer primary back to the negative side of said battery, whereby input signals picked up by the probe cause said speaker to be activated at the frequency of said input signal to indicate the presence of potential in said conductor under test.

3,204,184

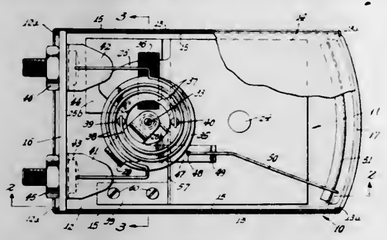
FLAT ECCENTRICALLY PIVOTED COIL TYPE METER MOVEMENT AND HOUSING THEREFOR

Charles G. Roper, Fairfield, Conn., assignor, by mesne assignments, to C. Garland Roper, Fairfield, Conn.

Filed July 6, 1961, Ser. No. 122,274
10 Claims. (Cl. 324—150)

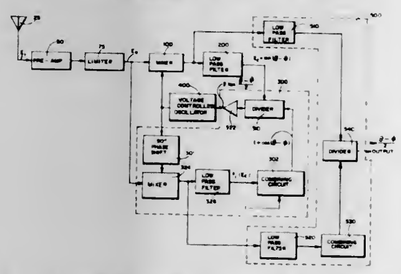
1. A meter unit comprising a wafer of permanent magnet material having pole pieces secured thereto and projecting therefrom, the projecting part of at least one of the pole pieces having an arcuate portion, an armature having opposed pivots and a wound coil thereon, mounting means pivotally mounting the armature with the coil surrounding said arcuate portion and portions of said coil passing through the magnetic field between the pole pieces,

said mounting means comprising a sleeve having shoulders at the ends thereof, bearings slidable in said sleeeve and having bearing portions for engaging said pivots, a spring between the bearings urging the bearings toward said shoulders, and a bracket having a curled end embracing the sleeve for supporting the sleeve between said pivots and



at the center for said arcuate portion and supporting the coil for bodily orbital movement around said sleeve, means normally urging the armature to a predetermined position, means electrically connected to said coil to cause said armature to move in accordance with the current supplied to the coil, and means operable in response to the amount of movement of the coil.

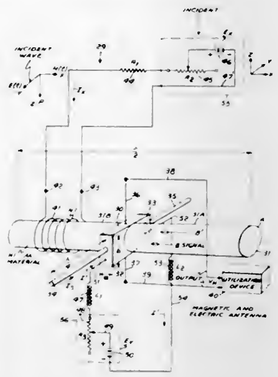
3,204,185
PHASE-LOCK RECEIVERS
Lorne M. Robinson, Garden Grove, Calif., assignor to North American Aviation, Inc.
Filed Apr. 19, 1961, Ser. No. 104,172
16 Claims. (Cl. 325—419)



2. In a receiver system wherein the operation of a multiplier stage producing a signal *Eb* is controlled by an oscillator having a variable frequency output which may be changed in frequency in response to a variable signal level input, the improvement in phase control comprising: phase shift means for receiving a signal *Ec* corresponding to the information portion of signal *Eb* and for producing a first translated signal bearing a predetermined relationship to signal *Eb*; second means for receiving an input signal *Ee* and for combining signal *Ee* with said first translated signal to produce a second translated signal *Ef*; and divider means responsive to signals *Ec* and *Ef* for producing a signal for controlling said oscillator.

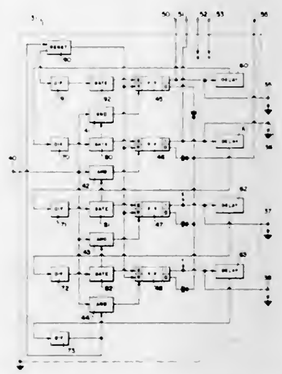
3,204,186
ANTENNA UTILIZING THE HALL EFFECT
Harold Norman Capen, Cedar Grove, and Fred A. Modavis, Wayne, N.J., and Lucio M. Vallese, Brooklyn, N.Y., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Feb. 14, 1961, Ser. No. 89,167
3 Claims. (Cl. 325—448)

1. A magnetic and electric antenna for detecting both the magnetic component and the electric component of incident electromagnetic radiation comprising material exhibiting the Hall effect, first focusing means to focus the electric component of the incident electromagnetic radiation in said material, first sampling means for providing a sampling magnetic field in said material disposed in orthogonal relationship with said first focusing means, second focusing means in orthogonal relationship with said first focusing means for focusing the magnetic component of the incident electromagnetic radiation in said



material, second sampling means connected to said material for providing a sampling electric current in said material disposed in orthogonal relationship with said second focusing means, and output means connected to said material and disposed in orthogonal relationship with said first focusing means and said second focusing means whereby the output of said antenna is proportional to both the electric component and the magnetic component of said incident electromagnetic radiation.

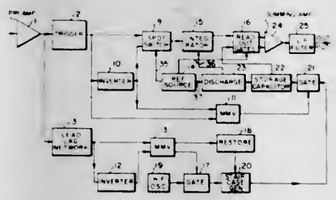
3,204,187
REGISTER EMPLOYING PLURALITY OF SEQUENTIALLY OPERATED BISTABLE ELEMENTS PROVIDING DIGITAL OUTPUTS REPRESENTATIVE OF ANALOG INPUT
Nicholas Yashin, Philadelphia, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed Feb. 20, 1962, Ser. No. 174,419
5 Claims. (Cl. 328—105)



1. A register comprising a plurality of bistable means arranged in an operative sequence, each of said means having a first and a second input circuit and a first and

a second output circuit, a plurality of delay circuits, each of said delay circuits having an input circuit and an output circuit, means connecting each of said first output circuits of said bistable means with a respective one of said input circuits of said delay circuits, a plurality of "and" circuits, each of said "and" circuits having two input circuits and an output circuit, means connecting each of said output circuits of said delay circuits with a respective one of said input circuits of said "and" circuits and to a respective one of said first input circuits of a bistable means following in said operative sequence a bistable means connected to the input circuit of the corresponding one of said delay circuits, selective energization input means arranged to provide a connection to a source of selective energizing signals, said energization means being connected to all of the other of said input circuits of said "and" circuits, means connecting said output circuit of each of said "and" circuits to a respective one of said second input circuits of said bistable means, and reset means connecting a delayed output signal from said first output circuit of the last one of said bistable means in said operative sequence to said second input circuits of all of said bistable means.

3,204,188
SCANNING PROCESSING CIRCUITS ELIMINATING DETECTOR TIME CONSTANT ERRORS
Thomas Falk, Norwalk, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Nov. 2, 1961, Ser. No. 149,730
6 Claims. (Cl. 328—111)



1. Processing circuits for accurate measurements of a quantity selected from the group consisting of signal pulse width and pulse position which comprise in combination an input circuit for the said signal pulse, an amplifier having an output connected to

(a) lead and lag network and a trigger circuit with inputs in parallel, said trigger circuit having a predetermined but relatively low triggering level not greatly in excess of normal noise amplitude, and producing a first electrical quantity in its output,

(b) means actuated by the lead and lag network for producing a second electrical quantity proportional to the time between the start of the leading edge of the signal pulse and the instant at which the trigger circuit firing level is reached,

(c) means, including storage means, for combining the first electrical quantity with the second electrical quantity produced by the trigger circuit output,

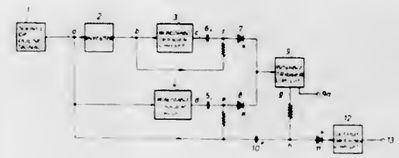
(d) means for generating three reference pulses, the first reference pulse being generated at a predetermined point during the signal pulse, means actuated by said first reference pulse to reverse the polarity of the trigger means output,

(e) a summing readout means, means actuated by the second reference pulse to connect the quantities produced by the said trigger circuit output and the means actuated by said lead and lag network to the readout means,

(f) means actuated by the third reference pulse for resetting the storage means of (c), and

(g) means for restoring the circuits actuated by the lead and lag network and the circuit actuated by the trigger circuit to their initial conditions after the quantity at the output of the readout circuit has been measured, the restoring means for the circuit actuated by the lead and lag network producing restoration after the trigger circuit has been actuated and before the start of the trailing edge of the signal pulse.

3,204,189
ERROR DETECTING SYSTEM FOR PULSE COMMUNICATION SYSTEMS
Gustav Trautwein, Pforzheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 19, 1962, Ser. No. 224,643
Claims priority, application Germany, Oct. 4, 1961, St 18,394
8 Claims. (Cl. 328—120)



1. An error detecting system for a pulse communication system comprising:

a source of pulse signal including an information conveying pulse signal having a predetermined intermixed sequence of pulses and intervals each of a first given duration and at least one identification signal for said information conveying pulse signal having a predetermined sequence of a pulse of second given duration greater than said first duration and an interval of duration equal substantially to said second given duration;

first means coupled to said source to provide an output signal indicative of the presence or absence of an error in said pulse signal as determined by the presence or absence of said predetermined sequence of said identification signal;

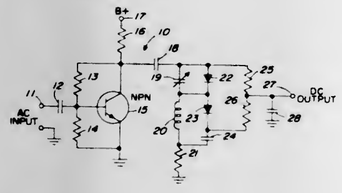
second means coupled to said source to generate a control signal indicative of the presence or absence of said predetermined sequence of said identification signal; and

third means coupled between said first means and said second means, said third means being responsive to said control signal to control the operation of said first means.

3,204,190
FREQUENCY DISCRIMINATOR CIRCUIT
Samuel L. Broadhead, Jr., Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Apr. 22, 1963, Ser. No. 274,740
9 Claims. (Cl. 329—119)

1. A frequency discriminator circuit having a series resonant inductive-capacitive tuned subcircuit connected at one end to a voltage potential reference and including a first capacitor and a coil; signal input coupling means for applying input A.C. signals to the other end of said inductive-capacitive tuned subcircuit; two diodes and a second capacitor connected serially between said input coupling means and said voltage potential reference with

the cathode of one diode connected to the anode of the other diode, and with the common junction of the two diodes connected to the common junction between the

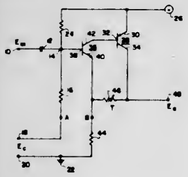


capacitor and coil of said inductive-capacitive tuned subcircuit; and an impedance circuit connected across both diodes and having a D.C. output contact for application of the discriminator output as desired.

3,204,191
TRANSISTOR AMPLIFIER INCLUDING GAIN CONTROL AND TEMPERATURE SENSITIVE MEANS

Richard C. Redwood, Jr., Los Angeles, Calif., assignor to Honeywell Inc., a corporation of Delaware

Filed Oct. 24, 1962, Ser. No. 232,749
6 Claims. (Cl. 330—17)

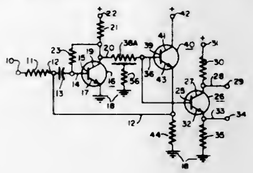


1. In variable gain amplifier apparatus comprising, in combination:
reference potential means;
first and second resistance means;
input signal means;
NPN transistor means including base, collector and emitter means;
PNP transistor means including base, collector and emitter means;
capacitive means connected between said input means and said base means of said NPN transistor means;
means connecting one end of said first resistance and one end of said second resistance means to said base means of said NPN transistor means;
control signal means conected to the other end of said first resistance means;
power terminal means connected to the other end of said second resistance means and to said emitter means of said PNP transistor means;
output means connected to said collector means of said PNP transistor means;
means connecting said collector means of said NPN transistor means to said base means of said PNP transistor means;
third resistance means connected between said reference potential means and said emitter means of said NPN transistor means; and
temperature sensitive resistance means connected between said emitter means of said NPN transistor means and said output means, said temperature sensitive resistance means changing resistance as a function of a control signal being applied to said control signal means, the control signal changing the bias currents for said transistor means and thereby changing the current through said temperature sensitive resistance means to change the voltage gain from said input means of the amplifier to said output means.

3,204,192
LOW INSERTION LOSS UNILATERALIZATION STRUCTURE

Irving F. Barditch, Baltimore, Md., Robert Bento, Tiverton, R.I., and William Freeman, Baltimore, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 15, 1961, Ser. No. 89,499
4 Claims. (Cl. 330—27)

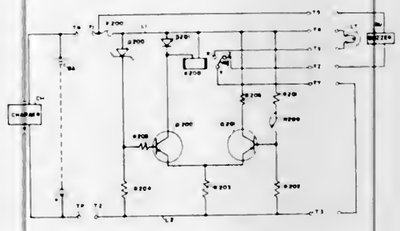


1. A unilateralization device comprising, in combination, input circuit means including a ground terminal, first transistor means connected as a grounded emitter operatively connected to the input circuit means for amplifying a signal applied to the input circuit means and shifting the phase of said signal substantially 180°, second transistor means connected as an emitter follower and having the emitter thereof connected to the input circuit means, other circuit means including phase shift means operatively connecting the output of the first transistor means to the input of the second transistor means, and third transistor means constituting an output isolation device, said third transistor means being operatively connected to said other circuit means whereby signals leaking through the third transistor means in a reverse direction are effectively offered a low impedance to ground and are thereby attenuated and do not appear in any substantial amplitude in said input circuit means.

3,204,193
TRANSISTORIZED LOW-VOLTAGE RESPONSIVE ALARM

Earl C. Rhyne, Jr., Millis, Mass., assignor to The Warren Manufacturing Company, Inc., Littleton, Mass., a corporation of Massachusetts

Filed Apr. 6, 1962, Ser. No. 185,678
4 Claims. (Cl. 330—30)



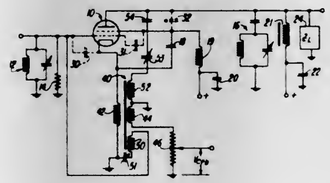
2. A transistor low-voltage alarm relay for connection across a source to be measured comprising:
first and second leads connected to the source;

a pair of transistors having emitters and collectors forming respective emitter-collector circuits connected in parallel between said leads and having respective bases;
a common-emitter resistor connected in series with both of said emitter-collector circuits between said emitters and the first of said leads;
switching means connected in series between one of said collectors and said second lead to be controlled by current therethrough;
a diode connected across said switching means;
constant potential means connected between the second lead to one of said bases; and
voltage divider means across said leads having a potential point between said leads, said potential point being connected to the other of said bases.

3,204,194
AMPLIFIER NEUTRALIZATION BY R.F. FEEDBACK

Francis R. Steel, Northbrook, and George J. Niman, Chicago, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Dec. 17, 1962, Ser. No. 245,150
8 Claims. (Cl. 330—79)



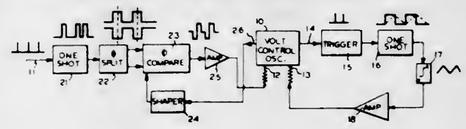
7. A tuned radio frequency amplifier stage including in combination, an electron tube having anode, cathode and control electrodes, means for applying operating voltages to said electrodes, a tuned input circuit connected to said control electrode, and an output circuit connected between said anode and cathode electrodes, said output circuit including tuned circuit means across which a radio frequency signal is developed, and a current sampling transformer having a primary winding series connected in the anode to cathode current path of said tube, said transformer having a secondary winding in which is developed a feedback signal proportional to the current in said anode current path, and means to introduce reactive current in said transformer in a sense opposing reactive current in the anode to cathode current path of said tube so that said secondary winding of said transformer provides a feedback signal proportional to anode to cathode current and which is substantially independent of impedance variations of said output circuit and wherein reactive current components introduced by said tube are substantially removed.

3,204,195
OSCILLATOR FREQUENCY STABILIZATION DURING LOSS OF AFC SIGNAL

Neil E. Maestre, Levittown, N.J., assignor, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware

Filed July 23, 1962, Ser. No. 211,537
10 Claims. (Cl. 331—10)

9. A voltage controlled variable frequency oscillator having frequency stabilizing means effective at each different frequency comprising: an electronic oscillator circuit, an external feedback path responsive to the existing frequency of the oscillator for producing a feedback signal of variable amplitude proportional to the frequency and applying said feedback signal to the oscillator to stabilize its frequency, and external biasing circuit for applying a variable bias signal to said oscillator at a different point in the oscillator circuit than the application of said feedback signal to synchronize the oscillator

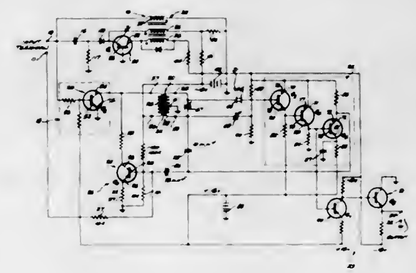


with an external signal source, said biasing circuit responsive to the frequency and phase of said oscillator and to an external signal source to produce said variable bias signal proportional to the deviation of said external signal from the oscillator signal.

3,204,196
GATED CRYSTAL OSCILLATOR

Raymond A. Polizzi, Anaheim, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 4, 1961, Ser. No. 142,983
6 Claims. (Cl. 331—54)

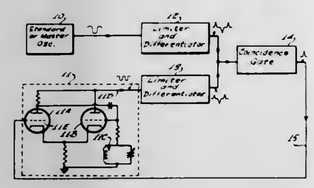


6. A gated oscillator apparatus comprising first and second input terminals responsive to first and second bi-level gating signals, respectively, each of said first and second gating signals defining a common interval; means coupled to said first input terminal for differentiating said first gating signal thereby to produce first and second trigger pulses of opposite polarity; a blocking oscillator responsive to said first trigger pulse for generating a pulse of predetermined duration; a bridge network including a crystal capable of being shocked into oscillation at a frequency having a period equal to substantially four times said predetermined duration; a resonant transformer coupled to said bridge network and responsive to said pulse of predetermined duration for shocking said crystal into oscillation in response thereto thereby to provide control oscillations; means including a transistor amplifier stage responsive to said control oscillations and having an output coupled back to said crystal for applying a regenerative feedback signal thereto, said control oscillations being of sufficient magnitude to saturate said transistor amplifier stage whereby said regenerative feedback signal has a substantially constant amplitude; and means having an input coupled to said second input terminal and being responsive to said control oscillations and having an output coupled across said resonant transformer for developing a degenerative feedback signal thereacross at the termination of said common interval.

3,204,197
CONTROL SYSTEM FOR STABILIZING THE FREQUENCY OF AN OSCILLATOR

Peter R. Marzan, New City, N.Y., assignor to Westrex Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 28, 1960, Ser. No. 79,035
9 Claims. (Cl. 331—55)

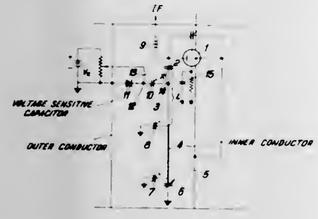


2. A frequency control system, comprising a master oscillator of fixed frequency, a slave oscillator of a frequency differing from that of said master oscillator, means including differentiation means to derive pulses from wave transitions of both oscillators, a coincidence detector upon which said pulses are impressed to produce an output consisting of pulses spaced in time and generated only in response to coincident pulses at the input of the detector, and means to apply said output to trigger said slave oscillator.

3,204,198
CIRCUIT ARRANGEMENT FOR CHANGING THE OSCILLATOR FREQUENCY OF UHF TUNERS

Werner Bachnick, Gruneplan uber Alfeld (Leine), Germany, assignor to Telefunken Aktiengesellschaft, Berlin, Germany

Filed Dec. 5, 1960, Ser. No. 73,574
Claims priority, application Germany, Dec. 11, 1959, T 17,580
3 Claims. (Cl. 331—101)

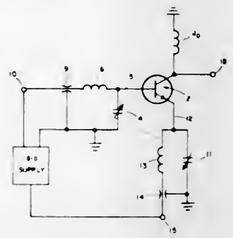


1. In a UHF tuner incorporating (a) a tank circuit having an outer wall and a central conductor, (b) an oscillator tube having first, second and third electrodes, said first electrode being connected to said outer wall of said tank circuit and said second electrode being connected to a reference potential, and (c) a connector leading from the central conductor to said third electrode of the oscillator tube, the improvement which comprises fine tuning means for changing the oscillator frequency by using the variable barrier layer capacitance of a controlled diode, said tuning means being a series circuit composed of said diode and a condenser, which series circuit is interposed between the wall of the tank circuit and a point of the connector located approximately at the midpoint thereof, in consequence of which the frequency deviation is substantially constant over the entire tuning range of the UHF tuner.

3,204,199
SOLID STATE MICROWAVE SOURCE UTILIZING THREE TUNING MEANS

Drew R. Lance, San Jose, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware

Filed Feb. 17, 1964, Ser. No. 345,264
7 Claims. (Cl. 331—117)

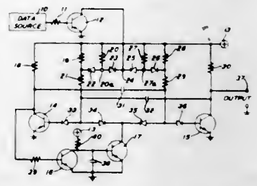


1. A solid-state microwave generator, comprising:
(a) a transistor having an emitter, a base, a collector, and a low collector-base time constant;
(b) a first tuning means coupling said base to a point of substantially zero R.-F. potential, said first tuning means being adapted to tune the base circuit including said base and said first tuning means to parallel resonance at a predetermined frequency, and at the same time adapted to tune said base circuit to substantially zero R.-F. impedance at at least one integral multiple of said predetermined frequency;
(c) a second tuning means coupling said emitter to a point of substantially zero R.-F. potential, said second tuning means being adapted to tune the emitter circuit including said emitter and said second tuning means to parallel resonance at said predetermined frequency;
(d) a third distributed tuning means coupling said collector to a point of substantially zero R.-F. potential, said third distributed tuning means being adapted to tune the collector circuit including said collector and said third tuning means to parallel resonance at said integral multiple of said predetermined frequency;
(e) input terminals for applying a fixed D.-C. operating voltage to said transistor; and
(f) an output terminal coupled to said collector from which substantial power may be derived at said integral multiple of said predetemined frequency.

3,204,200
SELF-STARTING ASTABLE MULTIVIBRATOR MODULATOR

Herbert J. White, Freehold, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 23, 1963, Ser. No. 253,375
9 Claims. (Cl. 332—14)



1. A frequency-shift modulator comprising
a two-stage transistor multivibrator,
each stage of said multivibrator having an input and an output circuit and being in a conducting condition while the other stage is in a nonconducting condition,

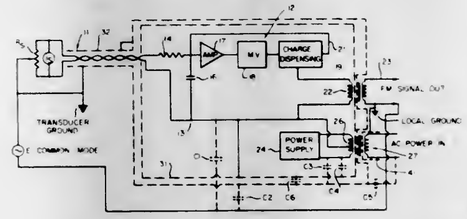
a capacitor cross-coupling the input circuit of each multivibrator stage to the output circuit of the other,
a pair of resistors in the input circuit only of each multivibrator stage,
a common junction for one end of all of each pair of resistors,
a connection for one resistor of each said pair of resistors in common to one of said capacitors and to the input circuit of one of said transistors,
a diode connecting the other ends of the resistors of each said pair and placing the resistors of each pair effectively in parallel when forward biased and effectively removing from the circuit one resistor of each said pair when reverse biased, and
means for forward and reverse biasing said diodes in accordance with the state of a binary encoded intelligence signal.

7. In combination,
an astable multivibrator having two stages, each stage having an input and an output circuit capacitively cross-coupled to the output and input circuits of the other stage and being normally in a conducting condition while the other stage is in a nonconducting condition, and
means insuring that both multivibrator stages cannot simultaneously lock in the conducting condition comprising
a feedback path between the output circuit of one multivibrator stage and the input circuit of both stages, said feedback path including a capacitor which charges responsive to prolonged conduction in said one multivibrator stage and switching means operative responsive to a charge on said capacitor to force at least one of the multivibrator stages into the nonconducting condition.

3,204,201
SHIELDED CIRCUIT

George S. Bahrs, Palo Alto, Calif., assignor to Vidar Corporation, Mountain View, Calif., a corporation of California

Filed May 18, 1960, Ser. No. 29,874
9 Claims. (Cl. 332—16)



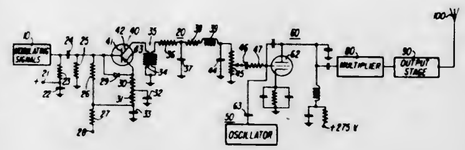
1. A circuit of the type adapted to operate on signals from and coupled to a transducer having a predetermined ground, said circuit including a common point, a first shield substantially surrounding the circuit and electrically connected to the common point, and a second shield surrounding the first and electrically connected to transducer ground.

3,204,202
AMPLIFIER CONTROL CIRCUIT

John W. Battin, Addison, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed June 10, 1960, Ser. No. 35,346
4 Claims. (Cl. 332—18)

1. A combined amplifying and limiting transistor stage for audio signals including in combination, a transistor having base, emitter, and collector electrodes, a semiconductor diode connected between said base and emitter electrodes and poled for conduction from said base electrode to said emitter electrode, input signal means coupled to said base electrode for applying audio frequency signals thereto, means including an unbypassed resistor connected between said emitter electrode and a reference potential, the audio frequency current through

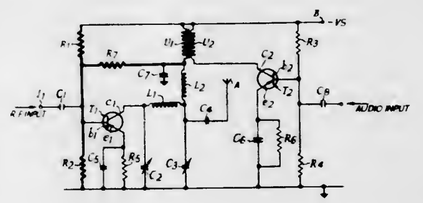


said emitter electrode flowing through said resistor to provide negative feedback action in said transistor stage for audio frequency signals, means providing operating potentials to said electrodes, and an output circuit including a transformer having a primary winding connected to said collector electrode, said transformer providing voltage step-up and impedance matching from said collector electrode for a high impedance output.

3,204,203
TRANSISTORIZED MODULATORS

Jan Leszczynski, Little Chalfont, England, assignor to The Plessey Company Limited, Ilford, England, a British company

Filed Jan. 10, 1962, Ser. No. 165,457
Claims priority, application Great Britain, Jan. 12, 1961, 1,366/61
6 Claims. (Cl. 332—31)

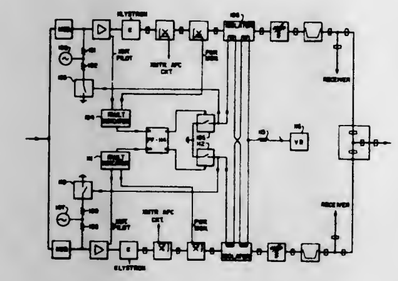


1. An amplitude modulated radio-frequency transmitter circuit, comprising a transistor having a base, an emitter, and a collector, a D.C. power input line, a first and a second impedance member connected in series to form a voltage divider network, the first impedance member interconnecting said line and the base, and the second impedance member interconnecting the base and emitter, means for applying an R.F. voltage of constant frequency between the base and the emitter, a tunable circuit connected to the emitter and collector, an audio-frequency voltage-divider network comprising said second impedance member and an audio-frequency impedance member interconnecting the base and collector of the transistor, R.F. isolating means being interposed between the collector and said audio-frequency impedance member, and means for applying an audio-frequency modulating voltage waveform between the emitter and the junction of said audio-frequency impedance member with said radio-frequency isolating means.

3,204,204
FAST-SWITCHING ARRANGEMENT FOR THE TRANSFER OF COMMUNICATION CHANNELS

Alan J. Buxton, Saratoga, Richard A. Heine, Redwood City, and Robert G. Mannas, Palo Alto, Calif., assignors, by mesne assignments, to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Sept. 26, 1962, Ser. No. 226,279
6 Claims. (Cl. 333—1.1)



1. In combination, first and second devices respectively coupling first and second input signal paths to a common output signal path, each device having a first and second inductive winding;
- a direct-current supply source;
- an inductor;
- a first circuit path comprising the first winding of the first device, the second winding of the second device, and first switching means in series;
- a second circuit path comprising the first winding of the second device, and the second winding of the first device, and second switching means in series;
- each said circuit path including the supply source and the inductor;
- current-flow in the first circuit path providing minimum attenuation to said first input path by means of the first winding of said first device and maximum attenuation to said second input path by means of the second winding of said second device;
- current-flow in the second circuit path providing minimum attenuation to said second input path by means of the second winding of said second device and maximum attenuation to said first input path by means of the first winding of said first device;
- means controlling said first and second switching means to close the circuit paths selectively with each circuit path being opened upon the closing of the other;
- the self-induced voltage of the inductor responsive to the opening of one circuit path upon closure of the other circuit path being effective to aid the voltage of the supply source and oppose the voltage induced in the closed circuit path, to thereby increase the rate of rise of output current flow.

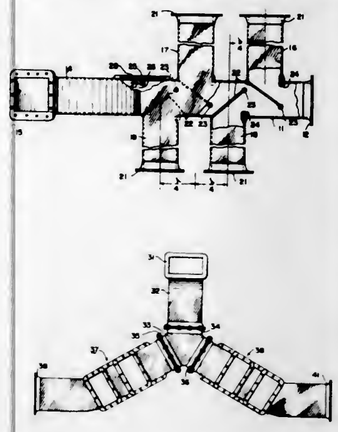
3,204,205
SIMULTANEOUS RECEIVING AND TRANSMITTING DIPLEXER EMPLOYING STAGGER TUNED STUBS

Howard J. Rowland, Egypt, Mass., assignor to Electronic Specialty Co., a corporation of California

Filed Nov. 9, 1960, Ser. No. 70,871
7 Claims. (Cl. 333—9)

1. A microwave filter comprising a section of rectangular waveguide, a plurality of rectangular waveguide tuning stubs coupled to the broad wall of said section at approximately one-quarter wave length intervals and a plurality of conductive vanes each joined to one broad wall of said section and extending completely across the broad dimension and partially across the narrow dimension of said section from the respective regions of intersection of said section with one wall of each of said stubs, said vanes being of such size and inclined at an angle to project substantially beyond the center line of said section and entirely across the projected area of said stubs.

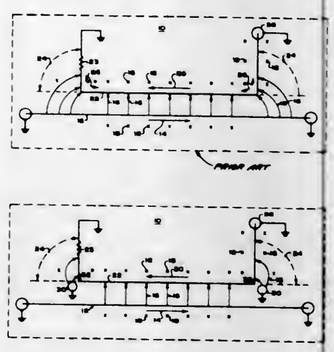
4. A microwave filter comprising a section of waveguide, a plurality of transverse conductive vanes alternately extending from opposite interior walls of said section at approximately quarter-wavelength intervals at the frequency of operation, said vanes being inclined at an angle to the longitudinal axis of said section, and an adjustable tuning stub projecting from the broad walls of said section at each position on said section at which one of said vanes extends within said section.



3,204,206
HIGH DIRECTIVITY TEM MODE COUPLER

Richard C. Harmon, Mountain View, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Aug. 12, 1963, Ser. No. 301,450
12 Claims. (Cl. 333—10)

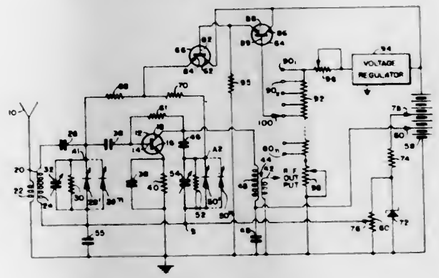


11. A TEM mode coupler for coupling energy over a broad frequency range with high directivity comprising:
- an outer conductor,
- a first transmission line positioned within said outer conductor,
- a second transmission line positioned within said outer conductor adjacent to said first transmission line and in electric and magnetic field coupling relationship therewith,
- said second transmission line having a portion which diverges from said transmission line, and
- means included within said outer conductor for altering one of the electric and magnetic fields coupling between the diverging portions of said first and second transmission lines to increase the directivity of said coupler.

3,204,207
VOLTAGE CONTROLLED CAPACITANCE DIODE TUNER WITH TEMPERATURE COMPENSATION

Gerhard B. Denker, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Nov. 30, 1962, Ser. No. 241,272
5 Claims. (Cl. 334—15)



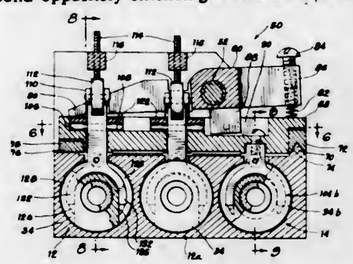
1. A temperature-compensating network for a variable-capacity semiconductor diode having a temperature coefficient of one polarity, comprising:
- first and second transistors each having a base, an emitter, and a collector, the diode junction between the base and emitter of each of said transistors having a temperature coefficient of compensating polarity to said variable-capacity diode, said collectors being interconnected, the emitter of said first transistor being connected to the base of the second transistor, and said diode being connected between the emitter of the second transistor and a point of reference potential;
- a two-terminal source of unregulated biasing voltage for said transistors, one of said terminals being connected to said collectors, the other being connected to said point;
- a two-terminal source of regulated voltage, one of said terminals being connected to the base of said first transistor, the other of said terminals being connected to said point;
- whereby said variable-capacity diode, said transistor diode junctions, and said regulated two-terminal source are effectively connected in a series loop.

3,204,208
TUNER DRIVING MECHANISM

Harold T. Lyman, Milford, Francis G. Mason, Weston, and Frederick D. Bogardus, Fairfield, Conn., assignors to Aladdin Industries, Incorporated, Nashville, Tenn., a corporation of Illinois

Filed Oct. 12, 1961, Ser. No. 144,638
3 Claims. (Cl. 334—73)

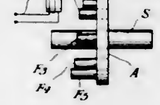
3. In a tuner, the combination comprising a movable tuning element, a movable carriage having means thereon engaging said tuning element for propelling it along its path of movement, guide means guiding said carriage along a path parallel to the path of said tuning element, a lead screw extending generally parallel to the path of movement of said carriage, a traveling nut having a threaded bore therein screwed onto said lead screw, said nut and said carriage having interengaging thrust members thereon for transmitting thrust therebetween, said nut having first and second oppositely extending lateral arms, and spring means acting between said second arm and said carriage and urging said second arm and said carriage away from each other for biasing said first arm against said carriage while biasing said nut against said lead screw, said spring means biasing said carriage against said guide means, said spring means and said arms preventing rotation of said nut on said screw.



3,204,209
VARIABLE-INDUCTANCE TUNER

Masamitsu Kawakami and Maboki Onoda, Tokyo-to, Japan, assignors to Kabushiki Kaisha Toko Radio Coil Kenkyusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed May 3, 1963, Ser. No. 277,835
6 Claims. (Cl. 336—131)



1. A variable inductance tuner comprising a rotor shaft which is shiftable in its axial direction, a rotor plate fixed to the said rotor shaft, a plurality of rod-shaped variable members made of a magnetic material which are secured to one surface of the said rotor plate in such a manner as to protrude in the same direction parallel to the said shaft from the said surface at a certain radial distance from the centerline of the said shaft and in such a manner that the length of protrusion of each of said variable members are made to be different from those of other variable members, and a hollow bobbin which supports a coil wound therearound, and which is disposed to confront one of the said variable members so as to enable the said one variable member to be moved into and out of the hollow interior of the said bobbin by the axial shifting of the said rotor shaft.

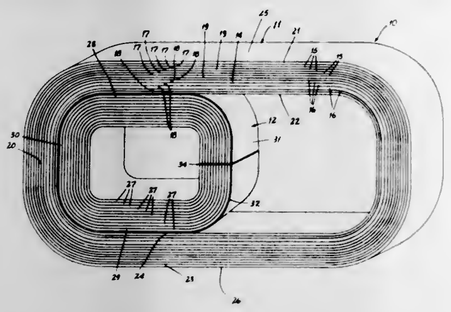
3,204,210
HIGH REACTANCE TRANSFORMER

Clarence G. Duenke, St. Louis, Mo., assignor to Core Manufacturing Company, Washington, Mo., a corporation of Missouri

Filed Dec. 28, 1962, Ser. No. 248,067
3 Claims. (Cl. 336—165)

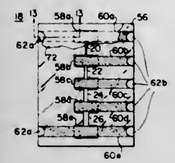
2. A core for a high reactance transformer comprising two core loops including an inner and an outer core loop each comprising a plurality of concentric metal strip

laminations, the inner core loop being positioned within the outer core loop and having a yoke extending between opposite legs of the outer core loop with an air gap thereacross, the laminations of the outer core loop comprising a plurality of separate groups with the laminations



of each group having staggered butt joints, a locking lamination between each group of laminations on the outer core loop, and locking laminations on the inner and outer sides of the outer core loop, the locking laminations having butt joints located a substantial distance from the staggered joints of the lamination groups.

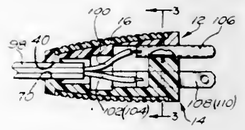
3,204,211
SUPERCONDUCTIVE DEVICE
E. C. Crittenden, Jr., Monterey, John N. Cooper, Carmel, and Arthur J. Learn and Fred W. Schmidlin, Inglewood, Calif., assignors, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Original application Sept. 22, 1959, Ser. No. 841,572, now Patent No. 3,084,339, dated Apr. 2, 1963. Divided and this application Apr. 21, 1961, Ser. No. 107,616
6 Claims. (Cl. 338—32)



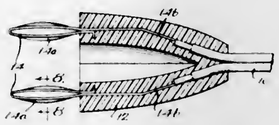
1. A superconductive device comprising: an insulating support, a linear arrangement of series connected thin film superconductive elements on said support, each of said elements including a relatively narrow body portion connecting a pair of relatively wide end portions, said body portions being dissimilarly dimensioned to have mutually different critical current and resistance values, and a plurality of strip conductors extending across said elements and in electrical contact with said end portions.

3,204,212
ELECTRICAL CONNECTOR
Leonard Broder, Providence, R.I.; Peter Lawson Kennedy, administrator of said Leonard Broder, deceased, assignor to Theodore W. Becker, Jr., Bridgeport, Conn.
Filed Aug. 20, 1962, Ser. No. 217,862
4 Claims. (Cl. 339—14)

4. In an electrical connector, a pair of elements that are molded of a relatively resilient plastic material, and define complementary half sections, each element including a hollowed-out portion that is bordered by flat marginal side edges and end portions, a projection formed on an end portion of one of said elements, slots formed in the end portion of said one element and on opposite sides of said projection, said other element including a groove that is formed in an end portion thereof and receives said projection therein, a conductor being secured between said groove and projection, additional conductors disposed in said slots and secured therein when said elements are located in complementary relation, a cable extending between said elements into the hollowed-out portions thereof, said cable having exposed wires that are interconnected to said conductors and are insulated from each other, the insulated portion of said cable extending between the flat end portions of said elements that are opposite said conductors, and a flexible sleeve enveloping said elements and clamping them together such that the flat side edges and end portions thereof abut in engaging relation, the flat ends of said elements between which said cable extends being compressed against said cable so as to be deformed thereby and conforming to the configuration of said cable to impart a molded appearance to said connector.

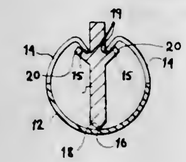


3,204,213
UNIVERSAL PLUG CONNECTOR
Charles L. Bauer, Wheaton, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 24, 1962, Ser. No. 232,717
4 Claims. (Cl. 339—31)



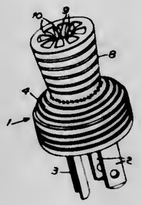
1. A universal plug connector for use with any conventional power receptacles having round and flat terminal pin receiving openings comprising a resilient body member, a flexible conductor connected to said body member, a pair of terminal pins having bowed portions extending in spaced substantially parallel relation from said body member, said terminal pins including resilient connecting portions supported within said body member and connected to said conductor, said pins being insertable into round and flat terminal pin openings with the bowed portions being deformed urging them into good electrical conducting engagement with said openings, and an elongated recess formed in said body member extending centrally of said pins from the end of said body member from which said bowed portions extend to a point beyond the ends of said connecting portions, said connecting portions extending parallel from said bowed portions within said body member on either side of said recess, said body member being deformable transversely of said recess to vary the spacing of said pins while maintaining their parallel relationship.

3,204,214
ELECTRICAL CONNECTOR
Josef Eisert, am Ruhrstein 37, Essen, Germany
Filed Apr. 26, 1963, Ser. No. 275,949
3 Claims. (Cl. 339—95)



1. An electrical connector comprising a female member having the configuration of a sleeve, said sleeve being provided with resilient inwardly turned clamping portions symmetrically disposed on opposite sides of an axial plane and separated by an axially extending gap; and an elongated male member axially insertable in said sleeve, said male member having a blade-shaped body extending generally in said axial plane and provided with a linear contact edge and with retaining ledges, extending outwardly away from said edge along opposite sides of said plane, said clamping portions engaging said ledges of said body and urging said edge of said male member against said female member along a line of contact, said members being conductive at least along said line of contact.

3,204,215
ELECTRICAL PLUGS
Paul P. Danesi, Attleboro, Mass., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Feb. 27, 1963, Ser. No. 261,324
3 Claims. (Cl. 339—103)



1. An electrical plug for connecting a wire to a source of electricity comprising: an insulating body having a tubular channel formed therein, blades retained by said insulating body and electrically insulated from each other, means for connecting the conductors of the wire to said blades, and means including longitudinally disposed flexible ribs disposed within said tubular channel, along the length of said channel which will flex toward the wall of the channel when gripping said wire.

3,204,216
CONNECTOR
William S. Ausherman, 3500 N. Topeka, Wichita, Kans.
Filed Apr. 12, 1962, Ser. No. 187,010
1 Claim. (Cl. 339—237)

A connector for detachably coupling a battery cable to a battery terminal comprising a body member having a vertical opening extending therethrough, said opening being horizontally elongated with the horizontal periphery thereof being defined by the bounding portions of the body member comprising a pair of opposed first and second side walls that extend in the direction of the major horizontal dimension of the opening and which are generally parallel in horizontal section for at least a portion of such extent, such side walls being connected at one end by a concave wall having a surface that is at least in part conformable in horizontal section to a substantially circular arc and such side walls being connected at their other end by an end wall, a slide clamp disposed in the opening having opposite generally parallel sides slidingly engaging the portions of the side walls of the body member that are generally parallel in horizontal section and such slide clamp being horizontally reciprocable toward and away from the concave wall of the body member, said slide clamp having a clamping side adjacent the concave wall of the body member that is at least in part conformable in horizontal section to a generally circular arc, a first screw threaded through the end wall of the body and engageable with a side of the slide clamp opposite the clamping side thereof for urging the slide clamp toward the concave wall of the body member, said first and second side walls of the body member being respectively provided with first and



second horizontal slots that extend in the direction of the major horizontal dimension of the vertical opening, with the first slot having a bottom and the second slot opening entirely through the second side wall, said slide clamp being provided with a pair of oppositely extending rigid projections with each of such projections being slideable in a respective one of said slots in an arrangement such that the slide clamp is prevented from vertical displacement from within the opening, said slide clamp having a circular opening therethrough, a circular pin fixedly retained in the circular opening and having its opposite ends extending from the slide clamp and constituting said projections with the latter being of circular transverse section, means adapted for securing the body member to a battery cable, said last means comprising the body member having a recess therein adapted to receive an end of a battery cable, with the bottom of the first slot constituting a partition separating the recess from the vertical opening, and a second screw threaded in the body member and into the recess for engaging a battery cable therein, said first and second screws being parallel to each other and oppositely extending from the body member.

3,204,217
SYSTEM FOR TRANSFERRING DATA FROM WELL LOGS
John S. Hutchison, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed June 7, 1960, Ser. No. 34,450
6 Claims. (Cl. 340—15.5)

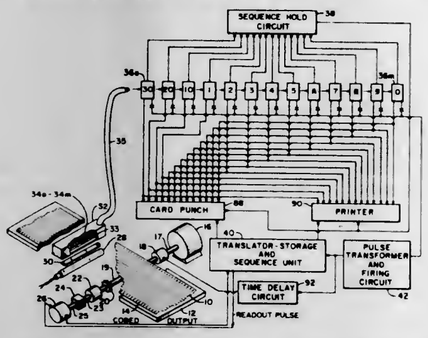
6. An apparatus for extracting information from a translucent overlay having individual columns for different parameters and light interrupting marks placed laterally across the columns at positions indicating the top of certain parameters as interpreted from a well log, said apparatus comprising:

a support means adapted to receive said overlay;

driving means to move said overlay along said support means;

a line light source of a character to direct a line beam of light through said overlay perpendicular to the columns thereon;

a photoelectric detector for each column on said overlay, such detectors arranged in a row perpendicular and adjacent the columns of said overlay, said detector being of a character having one magnitude current flowing therethrough when struck by said beam of light, and a second distinguishable magnitude of current flowing therethrough when said light source is blocked by said mark;



delay means for momentarily stopping the movement of said overlay a fixed period of time after a light interrupting mark has been detected by a photoelectric detector;

recording means adapted to record the relative position of said interrupting mark upon its detection and the parameter such marks represent;

a trigger circuit connected to each said photoelectric detector; and

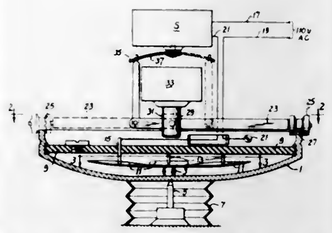
means connected to the trigger circuits and of a character to render the recording means inoperative in the event any interrupting marks are simultaneously detected in two columns in a selected group of columns.

3,204,218
GUIDANCE APPARATUS FOR AIRCRAFT IN LANDING
William James Fillery, Holywood, County Down, Northern Ireland, assignor to Short Brothers & Harland Limited, Belfast, Northern Ireland, a British company
Filed Feb. 25, 1963, Ser. No. 260,373
4 Claims. (Cl. 340—25)



1. Landing-guidance apparatus for aircraft pilots, comprising two sets or arrays of a plurality of light sources, respectively disposed on opposite sides of the runway or glide path, the individual light sources of each set or array being spaced apart along a substantially horizontal line athwart the runway so as to be separately visible at the commencement of a final approach, and individually shrouded so that each is visible only before reaching a position in a predetermined sector of the landing area, whereby a pilot may establish his distance from a touchdown position.

3,204,219
ELECTRICAL SWITCH
Graham D. Bogel, 240 Rosemont, Webster Groves, Mo.
Filed Oct. 28, 1963, Ser. No. 319,138
16 Claims. (Cl. 340—37)



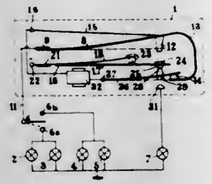
1. An electrical switch comprising a circular pan, a support for said pan permitting universal tilting movement thereof, an arm mounted on an axis concentric with said pan for rotation relative thereto and engaging the periphery of said pan, said arm being tiltable on an axis normal to its rotatable axis for imparting a wobbling movement in said pan as it rotates, a mass of conductive liquid in said pan movable in accordance with wobbling movements thereof, and conductive surfaces in said pan spaced above the inner surface thereof less than the normal free height of said liquid mass, said surfaces being separated from each other, whereby said conductive surfaces are adapted to be contacted by said liquid mass during movements thereof.

9. The combination with a switch according to claim 1 of a source of electric power, a pair of traffic signals each having stop, caution, and proceed indications, the inner surface of said pan and said conductive surfaces forming the contacts of said switch, one of said contacts being connected to said power source, the other of said contacts comprising segments insulated from each other and connected respectively to the stop indication of one of said signals and the proceed indication of the other signal, to the caution indications of both signals, and to the proceed indication of said one signal and the stop indication of said other signal, a traffic counter having its output connected to said arm for varying tilting of said arm and of said pan in accordance with traffic conditions and thereby varying the displacement of said liquid mass from the center of the pan and thus varying the length of the signal cycle.

3,204,220
DIRECTIONAL SIGNAL FLASHER
Nicole Renaud, née Richomme, Paris, France, assignor to Jean Michel Vernhes, Paris, France
Filed Dec. 3, 1963, Ser. No. 327,593
Claims priority, application France, Dec. 3, 1962, 917,342, Patent 1,349,321
6 Claims. (Cl. 340—81)

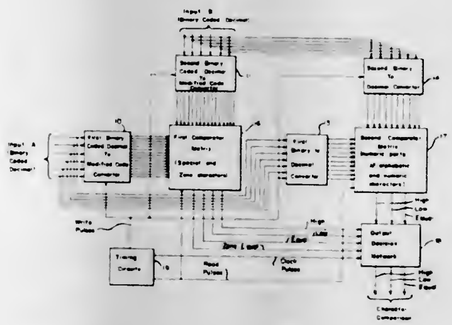
1. A directional signal flasher notably for automotive vehicles, fed from a source of electrical energy and delivering intermittent electrical directional signals to a luminous load system, which comprises an expansible member having a relatively high electrical resistance

which is mounted in series with said luminous load system, a first blade, a second blade and a third blade carrying separate contact studs, said blades being substantially parallel to each other and constantly urged to their positions of static equilibrium, said first blade being held away from its position of equilibrium by said expansible member and connected to said luminous load system, said second blade being connected to said source of electrical energy, said third blade being normally held away from its position of equilibrium by said first blade, whereby said third blade follows at least partially the movement of said first blade, the contact between said first and second



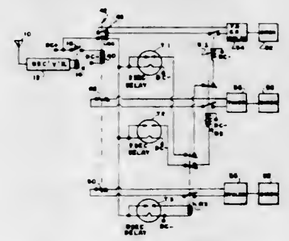
blades being normally open while the contact between said second and third blades is normally closed in the inoperative position of the flasher, and relay means comprising a movable armature, said relay being connected across said third contact-carrying blade and said expansible resistant member, and having its movable armature aforesaid constituted by said second blade, the relative arrangement of said first, second and third contact-carrying blades and of said relay being such that said first and third blades are resiliently urged to their positions of equilibrium in the same direction as that in which said second blade is attracted when said relay is energized.

3,204,221
CHARACTER COMPARATORS
Huberto M. Sierra, Santa Clara, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 24, 1959, Ser. No. 829,370
11 Claims. (Cl. 340—146.2)



2. A system for sorting input characters comprising means for providing the input characters in binary coded decimal form, first and second binary coded decimal to modified code converters for providing individual signals on different lines representative of special and zone characters, a first magnetic core plane including a plurality of magnetic core elements, each of which elements is threaded by lines from each of the first and second converters and coincidently operated thereby, a first group of sensing circuits coupled in selected patterns to the magnetic core elements of the first plane for providing different priority indications from the magnetic cores which have been operated, first and second binary to decimal converter circuits, each responsive to a binary part of a different one of the input characters and providing decimal indications on one of a number of different lines, a second magnetic core plane consisting of a number of magnetic core elements, each of which elements is threaded by lines from each of the binary to decimal converters and coincidently operated thereby, a second group of sensing circuits coupled in selected patterns to the magnetic core elements in the second plane for providing different priority indications from the magnetic cores which have been operated, and decision circuits coupled to the sensing circuits of the first and second planes and providing signals indicative of the priority relationship between the input characters.

3,204,222
ALL RELAY WARNING SYSTEM
Kenneth Montroy, Morristown, N.Y., and Lawrence E. Cotter, 232 Washington St., Ogdensburg, N.Y.
Filed May 23, 1962, Ser. No. 197,080
5 Claims. (Cl. 340—167)

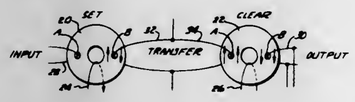


1. A system operative upon receipt of predetermined length input signals to provide predetermined warning signals comprising a receiver for receiving transmitted signals, a relay coupled to said receiver for producing a relay output signal of length corresponding to the duration of the transmitted signal, a warning device, and means coupled between said relay and warning device for effectively rejecting relay output signals of less than a predetermined duration including means operative in response to cessation of each longer relay output signal to effect a connection to and operation of said warning device.

3,204,223
MAGNETIC CORE STORAGE AND TRANSFER APPARATUS
Hewitt D. Crane, Palo Alto, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 20, 1959, Ser. No. 854,290
The portion of the term of the patent subsequent to Jan. 24, 1978, has been dedicated and disclaimed
26 Claims. (Cl. 340—174)

2. Apparatus comprising at least two storage elements, each element including a magnetic core having a substantially rectangular hysteresis loop, the core of each storage element having at least three openings therethrough, the openings separating the core into four separate core legs, the closed flux path linking the first and second of the core legs and the flux path linking the third and fourth of the core legs being substantially

shorter than any other flux paths linking the respective legs of the core, an input winding linking the core through a first one of said openings and being wound on a first one of said legs, an output winding linking the core through a second one of said openings and being wound on a second one of said legs, a clearing winding linking the core through a third one of said openings and wound on a portion of the core of larger cross-sectional area than any of said legs, means for pulsing a unidirectional current through the third winding of sufficient magni-



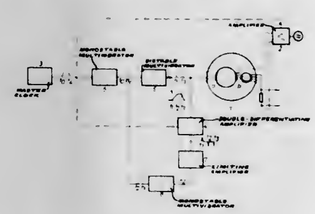
tude to saturate the flux in each of said legs, the output winding of one core being directly connected across the input winding of the other core in parallel whereby the two windings form a closed loop conductive path, and means for applying a transfer pulse through the two windings, the transfer pulse being of predetermined magnitude to bring the cores when saturated by the clearing winding to the threshold level at which flux starts to reverse in the cores, whereby the pulse does not materially alter the flux condition of the cores when they are both saturated by the respective clearing windings.

3,204,224

CIRCUIT ARRANGEMENT AND A METHOD OF ADJUSTING THE PERMANENT FLUX IN A MAGNETIZABLE ELEMENT

Heinz Wollmann, Stuttgart-Zuffenhausen, Theodor Grewe, Eckernforde, and Otmar Kolb, Stuttgart-Weilimdorf, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 18, 1960, Ser. No. 70,272
Claims priority, application Germany, Dec. 2, 1959, St 15,862
5 Claims. (Cl. 340—174)



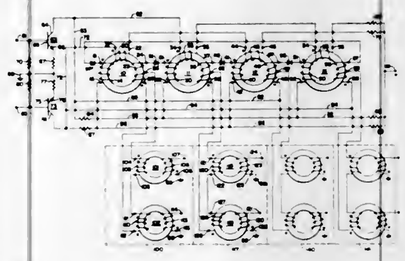
1. In a circuit arrangement for providing a series of successive permanent flux storage steps in a magnetic element having rectangular hysteresis loop characteristics, an adjusting winding on said element, means for generating a series of timed impulses, gate means for passing each of said impulses to said adjusting winding to change the state of magnetization of said element, means for detecting the change in said element from a reversible magnetization to an irreversible magnetization, and control means operable responsive to said detection for controlling said gate means to terminate each said impulse a predetermined time after said detection, said control means includes means for generating a start pulse in response to said change detection and for generating a stop pulse a predetermined time interval thereafter, and wherein said stop pulse operates said gate means to terminate each said impulse.

3,204,225

CONTROL APPARATUS

John T. Branley, Pinellas Park, Fla., and Robert D. Smith, Hamilton, Ohio, assignors to Honeywell Inc., a corporation of Delaware

Filed July 13, 1961, Ser. No. 123,694
6 Claims. (Cl. 340—174)



3. Apparatus of the class described comprising: a plurality of substantially rectangular hysteresis loop magnetic cores each having an input winding, a shift winding and a center tapped output winding; means for serially connecting said first and each succeeding alternate shift winding to a first source of pulses; means for serially connecting said second and each succeeding alternate shift winding to a second source of pulses; circuit means connecting the extremities of the output winding of each core to the input winding of the next succeeding core, said circuit means including diode means; means for connecting said first and each succeeding alternate input winding, and said second and each succeeding alternate input winding, in circuit with said first and second pulse sources respectively so as to prevent a voltage from being induced in said input windings when a pulse is applied to the respective core shift windings; a plurality of storage circuits each having an input and an output and comprising in combination, first and second further magnetic cores, said first further substantially rectangular hysteresis loop magnetic core having an input winding and an output winding and said second further magnetic core having a control winding and a gate winding, said input winding and said gate windings being wound so that a signal applied to these windings will magnetize said first and second magnetic cores in opposite directions, means serially connecting the input winding of said first further magnetic core and the gate winding of said second further magnetic core to the input of said storage circuit, means connecting the output winding of said first further core to the output of said storage circuit, and means for connecting the control winding of said second further core to a source of control pulses; and means connecting the inputs of said plurality of storage circuits to the center taps of the output windings of said plurality of magnetic cores.

3,204,226

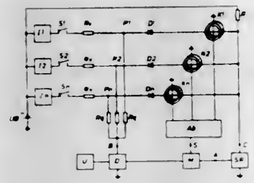
ARRANGEMENT FOR STORING AND SCANNING INFORMATION IN FERRITE-CORE STORAGE DEVICES

Friedrich Ulrich, Stuttgart-Bad Cannstatt, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 27, 1961, Ser. No. 141,121
Claims priority, application Germany, Oct. 4, 1960, St 16,970
11 Claims. (Cl. 340—174)

1. A magnetic core memory device comprising means for storing data information in said core memory device responsive to electrical conditions occurring on any of a plurality of lines, said lines normally being separated

from said device, means comprising a plurality of scanning leads associated with said lines for normally scanning said device cyclically to detect the storage of said data, common detector means for detecting an occurrence of said electrical conditions on any of said lines, means responsive to the detection of said condition and



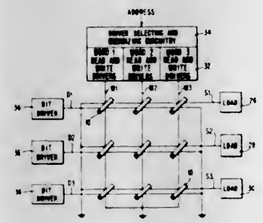
effective after a period of time following the detection for temporarily connecting a line marked with said condition to said device, and means for stopping said scanner during the interval while said temporary connection is maintained to prevent mutilation of said stored information by signals from said scanning means.

3,204,227

MAGNETIC MEMORY

Victor T. Shahan, Wappingers Falls, and Wilbert L. Shevel, Jr., Peekskill, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 27, 1962, Ser. No. 190,641
4 Claims. (Cl. 340—174)



1. A magnetic memory comprising,

a plurality of cores arranged in columns and rows, each said core exhibiting opposite limiting remanence states and a plurality of intermediate remanence states and having a switching threshold associated with each remanence state which must be exceeded by a magnetizing field before the core can be switched from the associated remanence state, each said core having a characteristic that a sensitizing field sufficient to switch the core from any remanence state to saturation in one of the limiting remanence states produces a transitory sensitized condition which exists for a finite time after termination of the sensitizing field and during which a magnetizing field less than the static threshold of the core in the limiting remanence state to which it is driven by said sensitizing force can irreversibly switch said core to an intermediate remanence state,

a plurality of column conductors each coupling all the cores in a respective column,

a plurality of row conductors each coupling all the cores in a respective row,

first means including a selected one of said column conductors for applying a first magnetizing field to each core of the selected column to saturate the cores in a datum limiting remanence state and sensitize each core of the selected column,

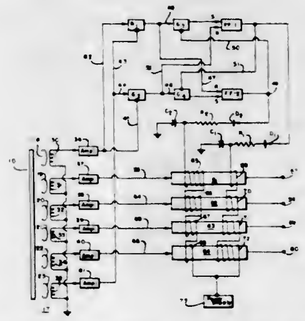
and means comprising row drive lines for applying during the existence of said sensitized condition, a second magnetizing field of opposite polarity to selected cores in said selected column having a magnitude less than the static switching threshold value associated with a limiting remanence state of said core but greater than the reduced threshold to irreversibly switch the selected cores in said selected column to one of said intermediate remanence states.

3,204,228

SIGNAL SYNCHRONIZER

John Presper Eckert, Jr., Gladwyne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 547,124, Nov. 16, 1955. This application May 3, 1961, Ser. No. 107,555
15 Claims. (Cl. 340—174.1)



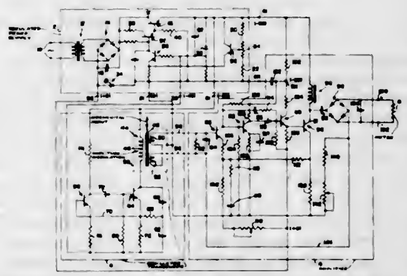
1. In a skew compensated reproducing system, an information storage member having a pair of spaced control tracks for supplying control signals and a plurality of information signal tracks, logical means responsive to the relative time occurrence of corresponding ones of said control signals from said control tracks for deriving a correction signal proportional in duration to the mechanical skew of said member, and delay line means responsive to said correction signal for variably delaying the propagation of information signals from each of said information signal tracks.

3,204,229

SIGNAL TRANSMITTER

Leon H. Dülberger, New York, N.Y., assignor to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania

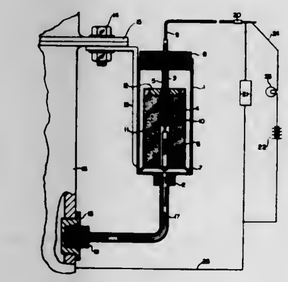
Filed Sept. 9, 1960, Ser. No. 55,001
1 Claim. (Cl. 340—196)



In combination, transformer transducer means for converting mechanical movements into amplitude modulated alternating electrical signals, a high gain multistage

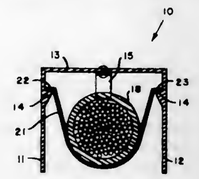
transistor amplifier having an input terminal connected to said transducer to receive said signals and an output terminal, a diode bridge having a first pair of terminals and a second pair of terminals, a load connected between the terminals of said second pair, said bridge being of a type providing a full wave rectified current to said load when an alternating current is applied between the terminals of said first pair, and connections from the output terminal of the amplifier to said input terminal thereof through the first pair of bridge terminals providing a negative alternating feedback in subtractive relationship with the first mentioned signals so that the resulting input to said amplifier input terminal is the difference of said alternating signals and said alternating feedback and so that the direct component of current through said load is proportional to said alternating feedback.

3,204,230
FLUID LEVEL INDICATOR
Harry W. Hosford, Jr., 2565 Stratford Road, Cleveland Heights, Ohio
Filed Jan. 29, 1962, Ser. No. 169,474
3 Claims. (Cl. 340—244)



1. In a fluid level indicator system for the oil sump of an internal combustion automotive vehicle and the like, a switch device comprising a vertical cylindrical metal can, a fluid inlet tube having one end connected to the bottom of said can and the other end in communication with said oil sump, a cover of insulating material for said can, the upper part of said can being vented to permit rise and fall of the oil level therein corresponding to that in said sump, a conductive spider inside the lower end of said can, a central vertical conductive stud mounted on said spider spaced upwardly thereby from the bottom of said can, an electric switch comprising an elongated sealed non-conductive tube having a pair of magnetizable contact elements extending longitudinally inwardly from the respective ends of said tube with normally resiliently spaced overlapping end portions adapted to be drawn into contact with each other by a magnetic field surrounding said overlapping end portions, the lower end of said tube being mounted on said stud with the corresponding said contact element electrically connected with the latter, the upper end of said tube being received in a recess in said cover, a float within said can having a vertical bore through which said tube passes, said float being adapted to rest upon said spider in lowermost position and being of a length less than the distance between said spider and said cover to permit substantial vertical reciprocation of said float as the fluid level within said can rises and falls, an annular permanent magnet supported by said float and encircling said tube, said magnet positioned on said float to lie in the same horizontal plane as the overlapping end portions of said contact elements when said float is in engagement with said spider to provide said magnetic field, and an electric battery and signal means in circuit with said switch, said signal means being adapted to be actuated by said battery when said switch is closed to signal that the fluid in said oil sump has dropped to a predetermined level.

3,204,231
TEMPERATURE RESPONSIVE INDICATOR FOR CABLES AND THE LIKE
Wilhelm K. Kolster, Michigan City, Ind., assignor, by mesne assignments, to The Swiss Colony, Inc., Monroe, Wis., a corporation of Wisconsin
Filed Aug. 9, 1962, Ser. No. 215,847
3 Claims. (Cl. 340—253)



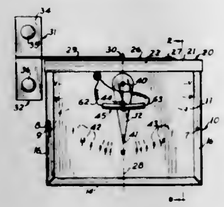
1. In a thermal indicator for power transmission cables and the like, a non-metallic member adapted to cover, and to lie in close proximity to a joint between two sections of a cable that are spliced together; resilient means connected to said member and acting against said cable to force said member off said cable; means for loosely connecting said member to said cable; and thermal responsive clip means having a substantial area in contact with the joint between said two spliced sections, and including flange means adapted to cooperate with restraining means on said member for holding said clip means in contact with said cable and such that when said joint reaches a predetermined temperature, said clip means releases said member and said resilient means dislodges said member from said cable, said member then being suspended from said cable by said means for loosely connecting said member thereto.

3,204,232
ALARM FOR SWIMMING POOL
George C. Meyer, North Highlands, Calif. (4419 Las Encinitas Drive, Fair Oaks, Calif.)
Filed Nov. 5, 1963, Ser. No. 321,481
5 Claims. (Cl. 340—261)



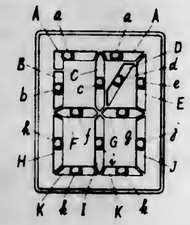
1. An alarm device for a swimming pool or the like comprising in combination, a supporting float including a top portion having a bottom face and depending leg portions adapted to be positioned in a swimming pool, said top and leg portions being comprised of buoyant material, the buoyancy of said legs being sufficient to maintain the bottom face of said top portion a spaced distance from the surface of the water in said pool, a supplementary float having an upper face normally positioned beneath said top portion and floatable on the surface of water of the swimming pool in spaced relation to the bottom face of said top portion, first contact means carried by said bottom face, and second contact means carried by the upper face of said supplementary float, an electrical circuit including an alarm, and a source of electricity and including said first and second contact means, engagement of said first and said second contact means upon excessive agitation of the surface of the swimming pool energizing the alarm means.

3,204,233
SLOPE INDICATOR
William F. Olliff, 3165 Ardley Road SW., Atlanta, Ga.
Filed Oct. 18, 1961, Ser. No. 145,883
2 Claims. (Cl. 340—282)



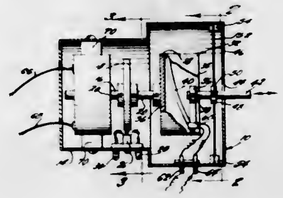
1. A slope indicator comprising a box-like casing, a battery within said casing, an on-off switch mounted on said casing, a circuit for said battery and connected to said on-off switch, a mercury switch carrying arm pivotally mounted on said casing, a mercury switch mounted transversely on the central portion of said carrying arm, said mercury switch including a U-shaped tubular member formed of conducting material, mercury within said U-shaped tubular member, plugs closing the ends of said tubular member, a pair of electrodes respectively carried by said plugs and insulated from said tubular member, said tubular member being connected in series with said switch and said battery in said circuit, a pair of lights electrically connected respectively to said electrodes and to said battery, a plate removably carried by said casing, an arm pivotally mounted on the central portion of said plate, said arm selectively protruding beyond the ends of said plate, and light mounting brackets at the end of said arm, said lights being respectively carried by said mounting brackets.

3,204,234
MATRIX CONTROLLED NUMERAL DISPLAY
Shunsaku Nakauchi, Mitaka, Tokyo, Japan, assignor to Tohoku Oki Electric Company Limited, Oaza-Sasagino, Japan, a corporation of Japan
Filed July 27, 1962, Ser. No. 212,969
Claims priority, application Japan, Aug. 8, 1961, 36/27,949
1 Claim. (Cl. 340—336)



A coplanar indicator device comprising a stencil plate having formed therein a rectangle having each side defined by a pair of spaced aligned slots, one of said slots having a leg aligned with the slots of an adjacent side to form a corner, pairs of spaced aligned slots along the perpendicular bisectors of each side, and a diagonal slot along a line joining the intersection of the perpendicular bisectors and a corner of the rectangle, the aforementioned corners being at the opposite ends of the same side of the rectangle, light bulbs supported adjacent each slot, means for preventing leakage of light from each bulb to an adjacent slot, and means for simultaneously lighting selected bulbs.

3,204,235
POSITION MEASURING APPARATUS
Adrian L. De Rosa, Las Cruces, N. Mex., assignor of one-half to Richard M. Schwartz, Las Cruces, N. Mex.
Filed Oct. 23, 1962, Ser. No. 232,443
1 Claim. (Cl. 340—347)

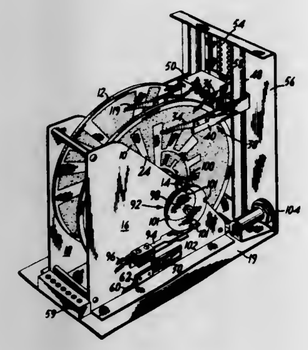


A position measuring apparatus comprising a rotatable shaft, a disc mounted on said shaft for rotation therewith, a magnetic element carried on the periphery of said disc, a first transducer in registry with the path of said element, said transducer being adapted to generate a first pulse responsive to rotation of said disc, a drum mounted on said shaft for rotation therewith, an endless helically arranged magnetic member extending about said drum, a second transducer carried by a second shaft and disposed so as to intercept a portion of said magnetic member and being adapted to generate a second pulse responsive to movement of said second shaft, a gate generator connected to said transducers for producing an output signal initiated in response to said first pulse and terminated in response to said second pulse, and means mounting said shaft for linear movement relative to the axis of said drum.

3,204,236
PERSONNEL LOCATING DEVICE
Rudolph M. Duris, South Norwalk, and Vladimir Ignatjev, Norwalk, Conn., assignors to Edwards Company Inc., a corporation of New York
Filed Apr. 20, 1962, Ser. No. 189,131
5 Claims. (Cl. 340—357)

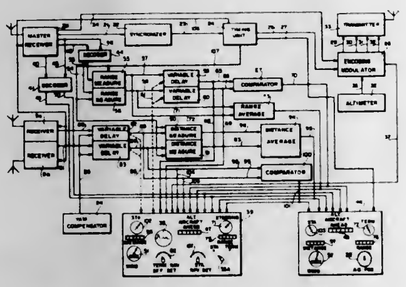
1. Signaling apparatus comprising at least one signal wheel having an circuit on at least one surface thereof adapted to provide a plurality of different code sequences, an index line arranged along a radius of said signal wheel to mark the start of the different code sequences, an electric motor for rotating the signal wheel, first electric circuit means for feeding electric current to the circuit on the signal wheel for generating code signals and for feeding current to said motor for rotating the signal wheel, said first electric circuit means having a first switch therein for controlling the flow of electric current, second electric circuit means for feeding electric current to said motor for rotating the signal wheel independently of said first electric circuit means, said second electric circuit means having a cam switch therein for controlling the flow of electric current to said motor, means for rotating said cam switch when the signal

wheel is caused to rotate, said cam switch being adapted to feed electric current to said motor when said first switch is open to cause the motor to continue to rotate



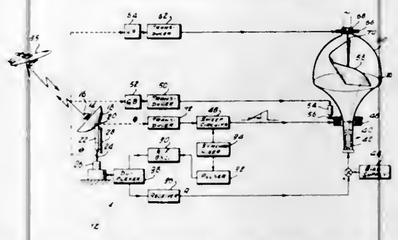
the signal wheel until the said index line reaches a predetermined position and to discontinue the supply of electric current to said motor when the index line reaches the said predetermined position.

3,204,237
AIRCRAFT STATION KEEPING AND TERMINAL NAVIGATION SYSTEM
Frank J. Overcash, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Apr. 8, 1963, Ser. No. 271,445
9 Claims. (Cl. 343—6.5)



1. An aircraft navigation system for indicating a relative station relationship between two aircraft in flight formation comprising in combination:
an aircraft;
a transponder on said aircraft for transmitting an interrogation signal to a leading aircraft and a distance reply signal to a trailing aircraft upon interrogation thereby;
first and second receiver units spaced apart on said aircraft and operative to receive a distance reply signal from a leading aircraft interrogated transponder;
and a comparator connected to said receiver units operative to measure and compare the time relationship of any distance reply signal received by said receiver units from a leading aircraft interrogated transponder.

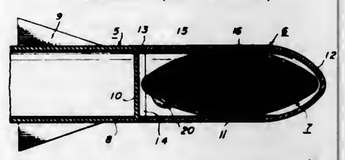
3,204,238
CATHODE RAY TUBE FOR THREE-DIMENSIONAL PRESENTATIONS
Albert M. Skellett, Madison, N.J., assignor to Tung-Sol Electric Inc., a corporation of Delaware
Filed July 13, 1962, Ser. No. 209,721
12 Claims. (Cl. 343—7.9)



1. A device for producing light spots at any point within a defined portion of space comprising:
(a) a screen rotatable about an axis and which is the locus generated by a line one end of which remains fixed at a point along the axis of the screen and the other end of which defines a path which extends around the said axis, the angle of inclination of the line with the axis varying with the position around the axis;
(b) a means for directing a beam at any selected point on the screen to produce a light spot at that point; and
(c) a means for rotating the screen relative to the means for directing a beam to sweep out a three dimensional figure defined by the periphery of said screen so that light spots can be produced at any point in that portion of space in said three dimensional figure by the means for directing the beam as the screen passes through that point.

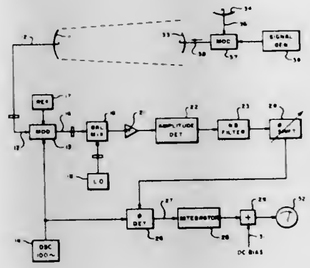
9. In a cathode ray tube to be used as an indicator in a radar set with an antenna positionable in elevation and azimuth, where said radar set is adapted to rotate the electron flow within the cathode ray tube with the rotation of the antenna of the radar set in azimuth and to deflect the electron flow radially in proportion to the propagation of signals to and from the antenna, the improvement comprising a phosphor screen rotated around an axis in substantial alignment with the flow of undeflected electrons from the electron gun of the cathode ray tube to generate a three dimensional figure within which light spots produced on the screen by the electrons are positioned in accordance with the range, azimuth and elevation of echo producing objects within the range of the radar set by controlling the rotation of the screen relative to the rotation of the electrons with the rotation of the antenna in azimuth.

3,204,239
AERONAUTICAL DEVICE ADAPTED TO BE DISCHARGED FROM AN AIRBORNE CARRIER
Harold S. Young, 315 Kimball Terrace, Chula Vista, Calif.
Filed Mar. 8, 1961, Ser. No. 94,338
12 Claims. (Cl. 343—18)



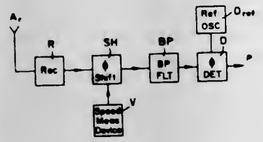
3. In an aerial device, a relatively thin wall inflatable envelope formed of synthetic plastic material which is air and gas tight, and a multi-cellular honeycomb core structure enclosed by said envelope, said core structure being provided with connected parallel cell walls, said honeycomb core structure being adapted to be collapsed and expanded in a direction normal to the parallel cell walls with the envelope when the same is inflated.

3,204,240
PASSIVE COMMUNICATION SYSTEM
Michael W. McKay, Tarrytown, and Thomas W. Odell, Pearl River, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,422
4 Claims. (Cl. 343—100)



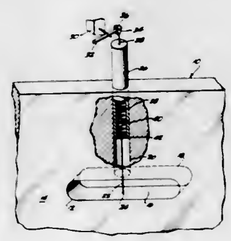
1. A passive communication system comprising,
a radiometer having input and output terminals,
a first radiant electromagnetic energy sensing member connected to said input terminal, said member sensing radiation from a selected delimited terrestrial area,
transmitting means,
a second radiant electromagnetic energy sensing member therein, said second member being directed toward a selected celestial area emitting a low level of electromagnetic radiation,
an electromagnetic energy radiating member in said transmitting means,
an electromagnetic energy transfer path interconnecting said second sensing member and said radiating member and transmitting energy therebetween,
and modulating means inserted in said transfer path having an intelligence signal applied thereto.

3,204,241
RADIO NAVIGATION APPARATUS
Bengt Harry Björkman, Sollentuna, Sweden, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 25, 1963, Ser. No. 260,434
Claims priority, application Sweden, Feb. 28, 1962, 2,217/62
16 Claims. (Cl. 343—112)



1. A method of navigating a vehicle comprising the steps of, computing by dead reckoning techniques the relative velocity between the vehicle and a positionally fixed radio transmitter, generating a local signal on the vehicle which is frequency coherent with the transmitted signal from the positionally fixed radio transmitter, receiving the transmitted signal, shifting the relative phase of the transmitted signal as received on the vehicle and the locally generated signal as a function of the computed relative velocity between the vehicle and the transmitter, and comparing the phase difference between the relatively shifted transmitted signal and the locally generated coherent signal to determine the phase shift therebetween which shift corresponds to the error in the computation.

3,204,242
MECHANICAL SLOT SWITCH
Frank J. Goebels, Jr., Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Continuation of application Ser. No. 261,964, Mar. 1, 1963. This application Mar. 25, 1965, Ser. No. 445,841
9 Claims. (Cl. 343—768)

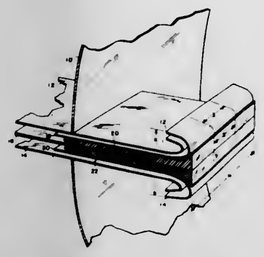


1. Switching apparatus for microwaves within a waveguide having a radiating slot, said apparatus comprising: a section of rectangular waveguide microwave carrier having a wall with a radiating slot therein; a stub-length of a coaxial transmission line physically mounted within the same waveguide wall as the radiating slot and extending transverse to said radiating slot, including a center conductor electromagnetically connected to the wall of said radiating slot; a movable stub coaxial tuning means physically mounted within said waveguide wall and electromagnetically connected to said waveguide wall for varying the impedance in shunt across said radiating slot; and an electrically isolated actuating means for moving said tuning means between two predetermined positions within said waveguide wall relative to said slot wall, at the first position of said tuning means waveguide microwave energy couples to said radiating slot, and at the second position of said tuning means waveguide microwave energy returns to said waveguide.

3,204,243
MAIN REFLECTOR AND FEED SYSTEM WITH APERTURE BLOCKING CORRECTION
Richard Rubin, Natick, Dominic Ferrante, Wayland, and Augustine R. Stratoti, Westwood, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed May 29, 1961, Ser. No. 113,447
4 Claims. (Cl. 343—778)

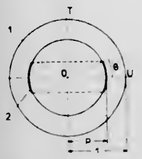
1. A directive antenna comprising, a curved reflector having an axis of propagation, a pair of feed lines disposed about said axis of propagation and arranged to direct a portion of the signal from a transmitting source toward said reflector, a horn antenna interposed between said feed lines for radiating energy directly into the media of transmission, and means coupled between said feed

lines and said horn antenna for coupling a portion of the signal from said source to said horn antenna and including means for shifting the phase of the signal propa-



gated therein whereby the horn and reflector component signals form a wavefront of substantially uniform phase for propagation into the media of transmission.

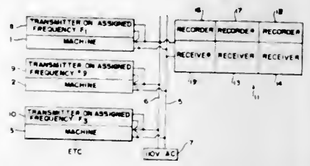
3,204,244
LUNEBERG LENS WITH REFLECTING BAND LOCATED AT INTERNAL FOCUS
Marie-Pierre Prache, Versailles, France, assignor to Lignes Telegraphiques et Telephoniques, Paris, Seine, France, a joint-stock company of France
Filed June 25, 1963, Ser. No. 290,496
Claims priority, application France, June 27, 1962, 902,115
6 Claims. (Cl. 343—911)



1. A spherical reflector for high-frequency electro-magnetic waves comprising a sphere of low-loss dielectric material, the permittivity or dielectric constant of which is the same at all points located at the same distance from the centre of said sphere and varies in accordance with a law such that the image of a point at infinity is formed practically in a point located on a spherical surface concentric with and within said sphere, the radius of said surface being less than that of said sphere; and a reflecting belt opaque to said waves, and having the form of a spherical zone concentric with said sphere and constituting a portion of said spherical surface, said spherical zone being limited by two lines parallel to an equatorial plane of the sphere and located on each side of this plane whereby for effective reflector action the distance between said two parallel lines limiting said spherical zone is less than the corresponding distance would be with said spherical surface coinciding with said sphere.

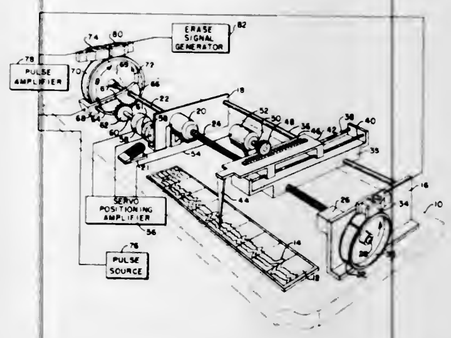
3,204,245
DATA PROCESSING APPARATUS
David E. Dyknar, 212—23 16th Ave., Bayside 60, N.Y.
Filed Mar. 6, 1961, Ser. No. 94,119
1 Claim. (Cl. 346—33)

Processing apparatus comprising a plurality of electrically operated machines; a common electrical power source supplying power at a relatively low frequency; power lines connecting said source to all of said machines to supply power therefor; at least one sensor connected to each of said machines to be controlled by the operation thereof; a separate transmitter connected to said power lines to derive operating power therefrom and connected to each of said sensors, respectively, to be controlled only by the respective sensor to produce a relatively high frequency electrical signal in accordance with the operation of the respective one of said machines,



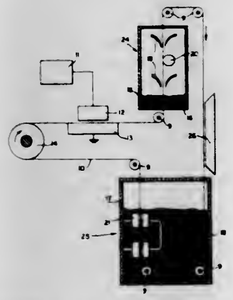
each of said transmitters producing an electrical signal of a different frequency from that produced by any of the other of said transmitters; a connection from each of said transmitters to said power lines to supply transmitter signals thereto; and recording means connected to said power lines to derive operating power therefrom and to receive simultaneously all of said transmitter signals from said lines and to record, simultaneously and independently, each of said signals.

3,204,246
SEISMIC TRANSCRIBING SYSTEM
Wallace L. Ikard and Kay N. Burns, Tulsa, Okla., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Apr. 20, 1962, Ser. No. 189,083
7 Claims. (Cl. 346—33)



1. An apparatus for transcribing conventional "wiggly-trace" seismic records into frequency modulated recording magnetic medium records which comprises: mounting means for holding said "wiggly-trace" seismic records; a magnetizable medium; a magnetic recording head arranged adjacent to said magnetizable medium in a manner to impress a signal thereon; scanning means capable of lateral and longitudinal movement with respect to said mounting means; means to effect relative movement between said magnetic recording head and said medium with said movement being proportional to the longitudinal movement between said scanning means and said mounting means; pulse generating means; first control means for modulation of the rate of pulses generated by said pulse generating means responsive to the rate of longitudinal movement of said scanning means; second control means to modify said first control means to provide further modulation to the rate of pulses of said pulse generating means responsive to the lateral position of said scanning means; and means connecting said recording head with the output of said pulse generating means.

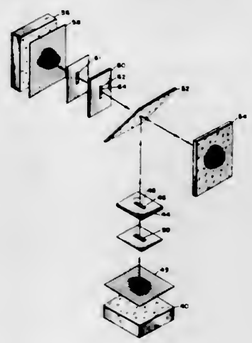
3,204,247
ELECTROSTATIC DATA DISPLAY
Percy J. Barnes, Wilmington, Del., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 24, 1959, Ser. No. 861,906
14 Claims. (Cl. 346—74)



1. A message display device comprising: a dielectric film medium forming a continuous loop, means for supporting said dielectric medium and for moving it in a circuit past an electrical recording station, a developing station, a viewing station, and an erasing station, wherein said electrical recording station comprises a multiplicity of discharge electrodes and an anvil electrode, means for presenting said discharge electrodes in proximity to one face of said dielectric film medium and said anvil electrode in abuting relationship to the opposite face of said medium in said recording station and, under the influence of recording potentials applied to said electrodes, depositing electric charge patterns on said medium, said developing station comprises a reservoir adapted to contain a quantity of conductive developing ink and adapted to permit the passage through said reservoir of the charged surface of said dielectric medium in intimate contact with and immersed in said developing ink whereby said conductive ink is caused to adhere to said electric charge patterns and thereby render them visible, said viewing station comprises means superimposed adjacent to a portion of the path of the said dielectric film medium adapted to enable direct viewing by an observer, and said erasing station comprises means for removing from said dielectric medium the static electrical charges and the said adherent conductive developing ink; a signal source; means for receiving signals from said signal source and for applying recording potentials in accordance with the received signals to the said discharge electrodes of the said electrical recording station; and control means for controlling the means for moving the said dielectric film medium.

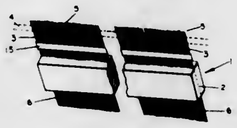
3,204,248
FILTERING SYSTEM
Warren A. Alexander, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed May 1, 1963, Ser. No. 277,192
12 Claims. (Cl. 346—108)

1. A device for optically obtaining the convolution of a first function and a second function which comprises:
(a) a first area light source;
(b) a second area light source spaced from said first light source and essentially parallel thereto;
(c) means for holding a photosensitive film between said first light source and said second light source and parallel to such sources;
(d) a first light shield having an opening and placed between said first light source and said means for holding said photosensitive recording medium;



(e) a first cylindrical lens placed in the opening in said first light shield;
(f) a second light shield having an opening and placed between said second light source and said means for holding a photosensitive film.
(g) and a cylindrical lens in the opening of said second light shield.

3,204,249
MULTI-STYLI ASSEMBLY FOR A RECORDER
David Shaler, Waldwick, N.J., and Joseph R. Columbo, Brooklyn, N.Y., assignors to Hogan Faximile Corporation, New York, N.Y.
Filed Dec. 6, 1962, Ser. No. 242,828
6 Claims. (Cl. 346—139)



1. A multi-styli assembly comprising a mounting member, a plurality of styli extending from the mounting member and forming a styli array, and yieldable means carried by the styli spaced from the mounting block and maintaining the styli in alignment yet allowing movement of individual styli in a direction normal to the plane of the styli array.

3,204,250
CONTAINER WITH DISPENSING SPOUT
William H. Poole, 312 Grand Ave., Ashburn, Ga., and James H. Shands, 2971 Lookout Place NE., Atlanta, Ga.
Filed May 20, 1963, Ser. No. 284,279
1 Claim. (Cl. 229—17)

A paper board container comprising a rectangular folded box formed from a single blank including front and back sides, intermediate sides, a top and a bottom, said top being formed by mutually overlapping folded flaps extending from said front, back and intermediate sides, said top including a spout formed by:

(A) An inner flap formed by the flaps of the intermediate sides folded inwardly with their outer edges in abutment,

(a) said inner flap having a U-shaped cut with the legs of the U sloping slightly outward from its base,

(b) said inner flap having a score line extending between the ends of the legs of said U-shaped cut so as to render the cut portion of said inner flap foldable along said score line to form an inner portion of said spout,

(B) An intermediate flap formed by the flap of said back side,

(a) said intermediate flap having U-shaped score lines with the legs of the U sloping slightly inward from its base,

(b) said intermediate flap overlapping said inner flap in a manner such that the base of the U-shaped score lines of the intermediate flap is juxtaposed the score line of said inner flap,

(c) said intermediate flap having a horizontal cut extending between and slightly beyond each side of the ends of the legs of said U-shaped score lines and being juxtaposed the base of said U-shaped cut of said inner flap,

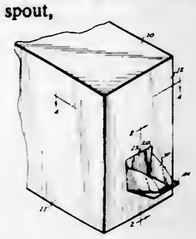
(d) said intermediate flap having extending cuts extending slightly beyond the legs of said U-shaped score lines on the side opposite the base of said U,

(e) said intermediate flap having curved cuts joining the extended ends of each said extending cuts to the extended ends of said horizontal cut,

(1) said curved cuts curving outwardly from the U-shaped score lines of said intermediate flaps,

(f) said intermediate flap having score lines extending between the corners of said U-shaped score lines and a point on said curved cuts,

(g) said intermediate flap having its area within the U-shaped score line foldable along the base thereof and attached to the said inner portion of said spout to form an intermediate portion of said spout,



(C) An outer flap formed by the flap of said front side,

(a) said outer flap having a U-shaped cut with the legs of said U sloping slightly outward from its base, and a score line extending between the ends of the legs thereof so as to render the cut portion of said outer flap foldable along said score line,

(1) said cut portion of said outer flap having its score line in juxtaposition with the base of the U-shaped score lines of said intermediate portion of said spout, said cut portion of said outer flap being attached to said intermediate portion of said spout to form an outer portion of said spout,

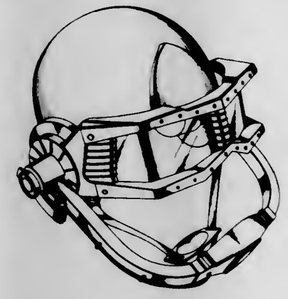
(2) the distance between the score line and the base of the U-shaped cut of the outer portion of said spout being larger than the distance between the base of the U-shaped score lines and the horizontal cut of the intermediate portion of said spout,

(b) said score line of said outer portion of said spout being positioned nearest to and parallel with the fold line between the front side of said container and the flap of said front side.

DESIGNS

AUGUST 31, 1965

202,097
TOY COMMUNICATION HELMET
Felix Gilbert, New York, N.Y., assignor to De Luxe Reading Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed Aug. 3, 1964, Ser. No. 81,108
Term of patent 3½ years
(Cl. D3—13)



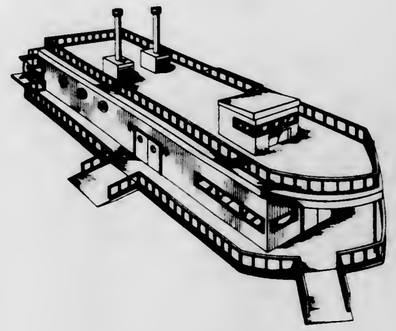
202,098
SWIM SUIT
Irene Galitzine, 155 Via Vittorio Veneto, Rome, Italy
Filed Oct. 21, 1964, Ser. No. 82,274
Term of patent 3½ years
(Cl. D3—17)



202,099
SASH LOCK
Robert K. Unter, Roscoe, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 81,412
Term of patent 14 years
(Cl. D10—11)



202,100
RESTAURANT
Jewel B. Hance, 715 Ave. Q, Lubbock, Tex.
Filed Sept. 29, 1964, Ser. No. 81,933
Term of patent 3½ years
(Cl. D13—1)



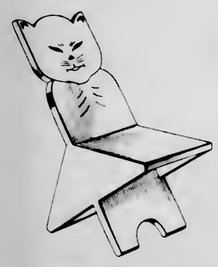
202,101
FENDER FLAP
Morley Markson, Toronto, Ontario, Canada, assignor to National Rubber Company Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Oct. 12, 1964, Ser. No. 82,127
Term of patent 14 years
(Cl. D14—6)



202,102
AUTOMOBILE DISK WHEEL
Erwin B. Kolt, Birmingham, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 3, 1964, Ser. No. 80,262
Term of patent 14 years
(Cl. D14—30)



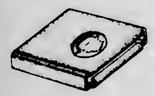
202,103
CONVERTIBLE CHAIR
Thomas H. Papworth, 552 Honore Drive, New Orleans 22, La.
Filed July 16, 1964, Ser. No. 80,906
Term of patent 3½ years
(Cl. D15—1)



202,104
CHAIR
Merle C. Melchior, Los Angeles, Calif., assignor of one-half to Sidney Galper, Los Angeles, Calif.
Filed Sept. 29, 1964, Ser. No. 81,922
Term of patent 14 years
(Cl. D15—1)



202,105
SAFETY BELT BUCKLE
Robert C. Fisher, 580 E. Long Lake Road, Bloomfield Hills, Mich.
Filed May 28, 1964, Ser. No. 80,200
Term of patent 14 years
(Cl. D17—1)



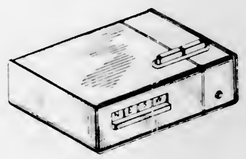
202,106
COMBINED HANGER AND BRACKET
William J. Thompson, 1414 8th St., Wichita Falls, Tex.
Filed Sept. 16, 1964, Ser. No. 81,745
Term of patent 7 years
(Cl. D17—12)



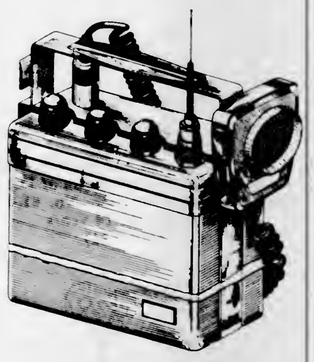
202,107
ELECTRICIAN'S FLEXIBLE CONDUIT PULLER ATTACHMENT
Harold L. Moldt, Jr., 1809 Rhomberg Ave., Dubuque, Iowa
Filed Apr. 15, 1964, Ser. No. 79,507
Term of patent 14 years
(Cl. D26—1)



202,108
ANTENNA ROTATOR CONTROL HOUSING
Joseph M. Parriott, Westport, Conn., and Douglas A. Long, New York, N.Y., assignors to Cornell-Dubilier Electric Corporation, a corporation of Delaware
Filed May 25, 1964, Ser. No. 80,128
Term of patent 14 years
(Cl. D26—13)



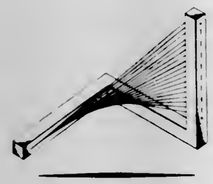
202,109
PORTABLE RADIO OR SIMILAR ARTICLE
Cornelius T. de Kam, Edgewood, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed May 26, 1964, Ser. No. 80,157
Term of patent 14 years
(Cl. D26—14)



202,110
COMBINED SWITCHBOARD AND MESSAGE CENTER DESK UNIT
Richard H. Wann, P.O. Box 514, Barrington Heights, Ill.
Filed July 8, 1964, Ser. No. 80,761
Term of patent 14 years
(Cl. D26—14)



202,111
MOBILE
Willis W. Weber, 26 68th Place, Long Beach, Calif.
Filed Dec. 2, 1963, Ser. No. 77,636
Term of patent 7 years
(Cl. D29—1)

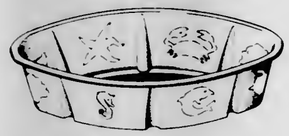


202,112
FISHING LURE
William D. Storm, 625 N. Finalay, Norman, Okla.
Filed Aug. 14, 1964, Ser. No. 81,286
Term of patent 14 years
(Cl. D31—4)





202,113
CHILDREN'S POOL OR SIMILAR ARTICLE
John G. Bowes and John N. Rosekrans, Jr., San Francisco, Calif., assignors to Kransco Manufacturing, Inc., San Francisco, Calif., a corporation of California
Filed Dec. 18, 1964, Ser. No. 83,079
Term of patent 14 years
(Cl. D34—5)



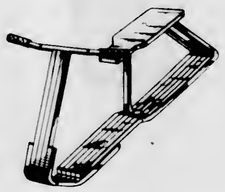
202,114
GOLF PUTTER
Robert J. Mader, 1607 Hickory St., Torrance, Calif.
Filed Jan. 21, 1965, Ser. No. 83,510
Term of patent 14 years
(Cl. D34—5)



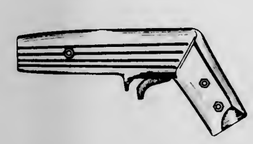
202,115
PLAYING CARD
Andrew M. Hemmert, 2007 S. 65 St., Philadelphia, Pa., and Charles L. Becker, Cherry Hill, N.J.; said Becker assignor to said Hemmert
Filed Sept. 25, 1964, Ser. No. 81,871
Term of patent 7 years
(Cl. D34—13)



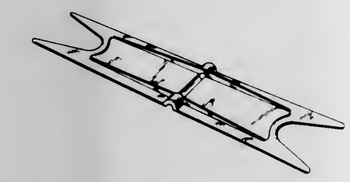
202,116
SKI SCOOTER
Morton I. Thomas, Bakertown Road, Monroe, N.Y., and Bertrand R. Lesser, 24 Stonewell Lane, Mamaroneck, N.Y.
Filed Mar. 19, 1965, Ser. No. 84,369
Term of patent 14 years
(Cl. D34—15)



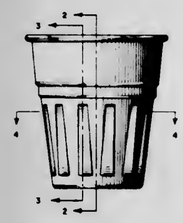
202,117
HANDLE FOR LAWN TRIMMER-EDGER AND THE LIKE
Marnie Carlton Averitt, Timonium, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Nov. 20, 1964, Ser. No. 82,713
Term of patent 14 years
(Cl. D40—1)



202,118
HOLDER FOR HAND LINES
Tyko K. Finneman, 3226 SE. 25th Place, Portland, Oreg.
Filed Oct. 5, 1964, Ser. No. 82,036
Term of patent 14 years
(Cl. D41—1)



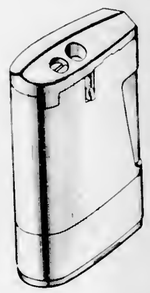
202,119
CUP
Richard K. Shelby, 1145 Hickory Trail, Downers Grove, Ill.
Filed July 6, 1964, Ser. No. 80,705
Term of patent 14 years
(Cl. D44—9)



202,120
STOCKING
Curt Seifart, Charlotte, and Avery D. May, Shelby, N.C., assignors to Hudson Hosiery Company, Charlotte, N.C., a corporation of North Carolina
Filed Nov. 23, 1964, Ser. No. 82,749
Term of patent 14 years
(Cl. D47—7)



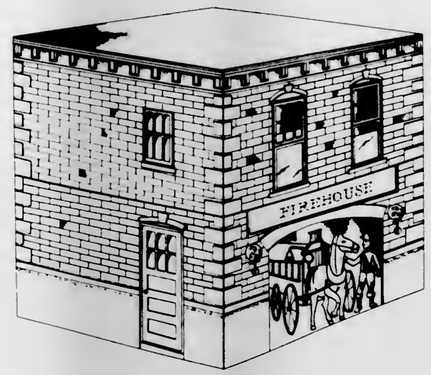
202,121
LIGHTER OR SIMILAR ARTICLE
Seymour Rappoport, Rumson, N.J., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Mar. 18, 1964, Ser. No. 79,064
Term of patent 14 years
(Cl. D48—27)



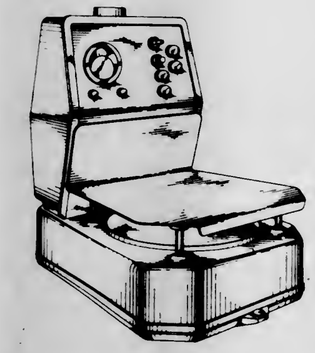
202,122
CIGARETTE LIGHTER
John Erskine Ayres, 1563 Coles Ave., Mountainside, N.J.
Filed Nov. 24, 1964, Ser. No. 82,764
Term of patent 14 years
(Cl. D48—27)



202,123
MATCH BOX
Oswald M. Picco, 445 E. 86th St., New York, N.Y.
Filed June 15, 1964, Ser. No. 80,392
Term of patent 3½ years
(Cl. D48—28)



202,124
WEIGHING SCALE FOR A COMPUTING SYSTEM
Edward C. Karp, 1001 Lincoln Ave., Belvidere, Ill.
Filed Feb. 14, 1964, Ser. No. 78,636
Term of patent 14 years
(Cl. D52—10)



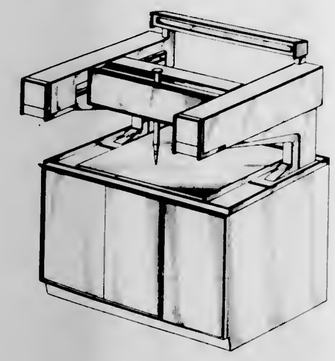
202,125
COMBINED HOLE CUTTER AND SHARPENING TOOL OR THE LIKE FOR REPAIRING SEWN-IN BICYCLE TIRES
Philip Quartararo, 2309 Avenue Y, Brooklyn, N.Y.
Filed June 24, 1964, Ser. No. 80,566
Term of patent 3½ years
(Cl. D54—13)



202,126
COMBINED BOOT AND FILLER INSERTING TOOL FOR SEWN-IN BICYCLE TUBE TIRES OR THE LIKE
Philip Joseph Quartararo, 2309 Avenue Y, Brooklyn, N.Y.
Filed Aug. 27, 1964, Ser. No. 81,474
Term of patent 3½ years
(Cl. D54—13)



202,127
INSPECTION MACHINE
Gaeton J. De Phillips, Franklin Square, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Feb. 11, 1964, Ser. No. 78,596
Term of patent 14 years
(Cl. D55—1)



202,128
CONVEYOR
Courtney A. Leubner, Oak Brook, Ill., assignor to Unarco Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed May 25, 1964, Ser. No. 80,123
Term of patent 7 years
(Cl. D55—1)



202,129
PAIR OF SPECTACLES
Vitalino Marchi, Concord, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Dec. 12, 1963, Ser. No. 77,767
Term of patent 14 years
(Cl. D57—1)



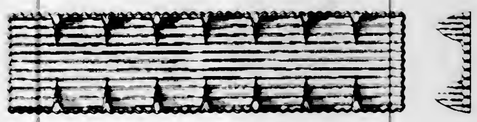
202,130
PAIR OF SPECTACLES
Atherton Mitchell, San Francisco, Calif., assignor, by mesne assignments, to Renauld International, Inc., Reading, Pa., a corporation of Pennsylvania
Filed July 7, 1964, Ser. No. 80,736
Term of patent 14 years
(Cl. D57—1)



202,131
BOTTLE
Melvin Earl St. Clair, Punch Brook Road, Burlington, Conn.
Filed June 17, 1964, Ser. No. 80,437
Term of patent 14 years
(Cl. D58—8)



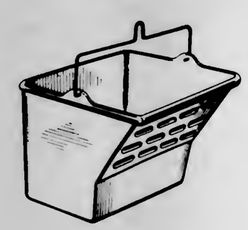
202,132
COMPARTMENTED PACKAGING TRAY
James Raymond Loney, Cote St. Luc, Quebec, Canada, assignor to Plastic Packaging Products Limited, Montreal, Quebec, Canada
Filed Nov. 27, 1964, Ser. No. 82,817
Term of patent 14 years
(Cl. D58—13)



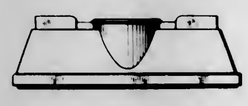
202,133
PACKAGING CONTAINER FOR MEDICINES OR THE LIKE
Paul A. Marchant, Kansas City, Mo., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Mar. 26, 1964, Ser. No. 79,199
Term of patent 14 years
(Cl. D58—17)



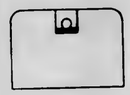
202,134
PAINT ROLLER PAIL
Thomas Bryan, 699 E. Main St., Rochester, N.Y.
Filed May 15, 1964, Ser. No. 79,991
Term of patent 14 years
(Cl. D58—17)



202,135
TOP FOR A CARTON OR THE LIKE
Richard Sisco, 470 Knollwood Road, Ridgewood, N.J.
Filed Sept. 4, 1964, Ser. No. 81,601
Term of patent 14 years
(Cl. D58—26)



202,136
DISPENSING TOP
Woodrow S. Wilson, Altadena, Calif., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts
Filed July 22, 1963, Ser. No. 75,896
Term of patent 14 years
(Cl. D58—26)



202,137
DISPENSING TOP
Woodrow S. Wilson, Altadena, Calif., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts
Filed July 22, 1963, Ser. No. 75,897
Term of patent 14 years
(Cl. D58—26)



202,138
DISPENSING TOP
Woodrow S. Wilson, Altadena, Calif., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts
Filed July 22, 1963, Ser. No. 75,898
Term of patent 14 years
(Cl. D58—26)



202,139
DISPENSING TOP
Woodrow S. Wilson, Altadena, Calif., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts
Filed July 22, 1963, Ser. No. 75,899
Term of patent 14 years
(Cl. D58—26)



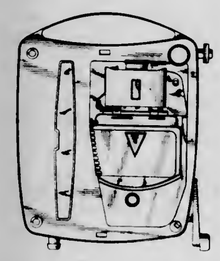
202,140
DISPENSING TOP
Woodrow S. Wilson, Altadena, Calif., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts
Filed July 22, 1963, Ser. No. 75,900
Term of patent 14 years
(Cl. D58—26)



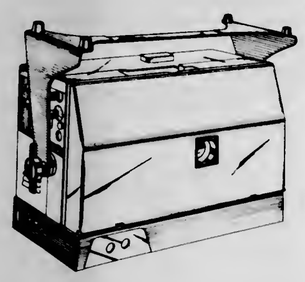
202,141
ROTARY SLIDE TRAY
Walter J. Hall, 1408 Jonquil Terrace, Chicago, Ill.
Filed Feb. 25, 1963, Ser. No. 73,711
Term of patent 14 years
(Cl. D61—1)



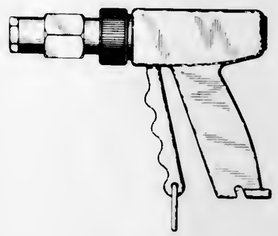
202,142
MOTION PICTURE PROJECTOR
Raymond Herman, Brooklyn, N.Y., assignor to Richmond Research Corporation, Richmond Hill, N.Y., a corporation of New York
Filed Dec. 17, 1963, Ser. No. 77,829
Term of patent 14 years
(Cl. D61—1)



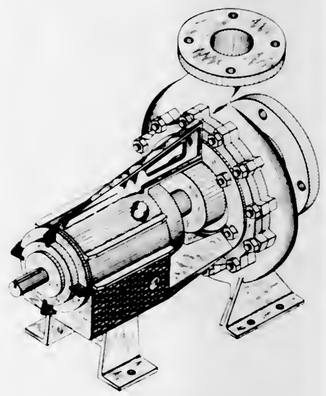
202,143
PHOTOGRAPHIC PROJECTION APPARATUS
André Victor Leon Clement Debrie, 111 Rue Sain Maur, Paris, France
Filed Mar. 17, 1964, Ser. No. 79,037
Claims priority, application France Sept. 25, 1963
Term of patent 14 years
(Cl. D61—1)



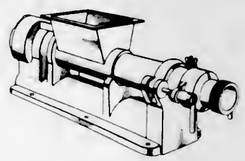
202,144
SPRAY GUN
Richard G. Thompson, 823 S. 5th St., Stillwater, Minn.
Filed Nov. 6, 1964, Ser. No. 82,501
Term of patent 14 years
(Cl. D62—2)



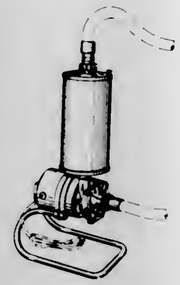
202,145
CENTRIFUGAL PUMP
Earle E. Schroeder, Norwood, Ohio, and Leonard H. Smeltzer, Jr., South Fort Mitchell, Ky., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis., a corporation of Delaware
Filed Jan. 8, 1963, Ser. No. 73,087
Term of patent 14 years
(Cl. D65—1)



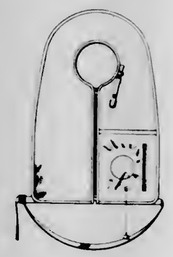
202,146
COMBINED OPEN HOPPER PUMP AND BASE OR SIMILAR ARTICLE
Frank W. Fernholtz, Van Nuys, Calif., assignor to Fernholtz Manufacturing Company, Los Angeles, Calif., a corporation of California
Filed Sept. 8, 1964, Ser. No. 81,623
Term of patent 14 years
(Cl. D65—1)



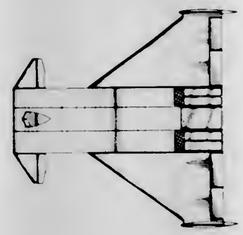
202,147
WATER FILTER UNIT
Eugene M. Peters, Tenafly, N.J., assignor to Metalmaster Corporation, Newark, N.J., a corporation of New Jersey
Filed Nov. 10, 1964, Ser. No. 82,598
Term of patent 14 years
(Cl. D65—1)



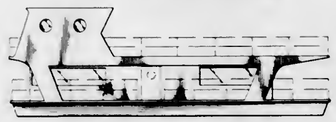
202,148
LIFE PRESERVER
John J. Geiszler, Costa Mesa, Calif., assignor to U.S. Divers Co., Inc., Santa Ana, Calif., a corporation of California
Filed Feb. 24, 1964, Ser. No. 78,746
Term of patent 3½ years
(Cl. D71—1)



202,149
AIRCRAFT
Vincent J. Burnelli, Silver Spring, Md.; Hazel G. Burnelli, executrix of said Vincent J. Burnelli, deceased
Filed Feb. 27, 1964, Ser. No. 78,813
Term of patent 14 years
(Cl. D71—1)



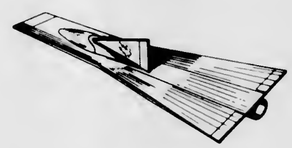
202,150
HOUSEBOAT
Howard M. Wilson, 4138 Wade St., Los Angeles, Calif.
Filed Apr. 21, 1964, Ser. No. 79,633
Term of patent 3½ years
(Cl. D71—1)



202,151
PROPELLER BRACKET
Gene C. Craig, Galesburg, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed June 10, 1964, Ser. No. 80,343
Term of patent 14 years
(Cl. D71—1)



202,152
AIRPLANE
Mike Tecton, Oklahoma City, Okla. (5101 45th St., Washington, D.C.)
Filed June 24, 1964, Ser. No. 80,551
Term of patent 14 years
(Cl. D71—1)



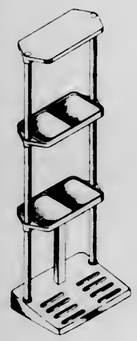
202,153
WRITING INSTRUMENT
Hans Reinhard Fehling, Zug, Switzerland, and Alfred Dennis Street, Pinner, England, assignors to I.R.C. Limited, London, England, a company of Great Britain
Continuation of design applications Ser. Nos. 73,843 and 73,844, Mar. 6, 1963. This application Dec. 15, 1964, Ser. No. 83,117
Term of patent 14 years
(Cl. D74—17)



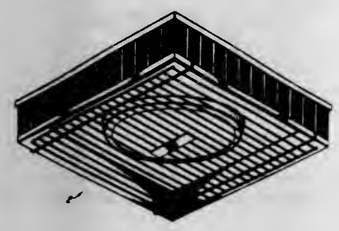
202,154
ILLUMINATING STAND
Harvey N. Bliss, 106 Preston St., Windsor, Conn., assignor to The Britton Corporation, Newington, Conn., a corporation of Connecticut
Filed Sept. 29, 1964, Ser. No. 81,937
Term of patent 14 years
(Cl. D80—9)



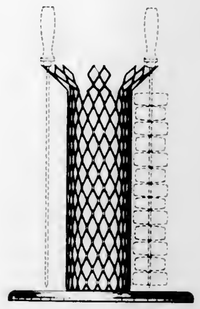
202,155
VENDING MACHINE STAND
Harold T. Probasco, 6531 Noble Ave., Van Nuys, Calif.
Filed Nov. 25, 1964, Ser. No. 82,843
Term of patent 14 years
(Cl. D80—9)



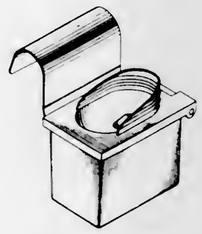
202,156
CEILING HEATER
Harold L. Herman, 7319 Lankershim Blvd., Burbank, Calif.
Filed June 22, 1964, Ser. No. 80,513
Term of patent 14 years
(Cl. D81—10)



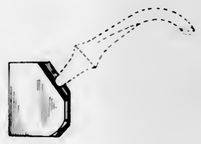
202,157
CABOB GRILLE
James Headberg, 10250 SW. 156 St., Miami, Fla.
Filed Oct. 16, 1964, Ser. No. 82,195
Term of patent 14 years
(Cl. D81—10)



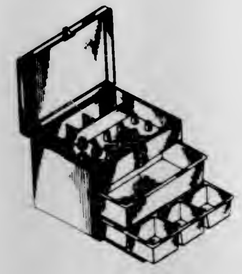
202,158
ASH TRAY
Robert J. Brown, 19336 Gulf Blvd., Indian Rocks Beach, Fla.
Filed Aug. 27, 1964, Ser. No. 81,477
Term of patent 14 years
(Cl. D85—2)



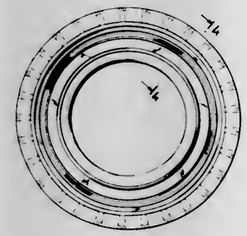
202,159
SMOKING PIPE
Ben Woodcock, Fort Benton, Mont. (P.O. Box 387, Great Falls, Mont.)
Filed Feb. 14, 1964, Ser. No. 78,637
Term of patent 14 years
(Cl. D85—8)



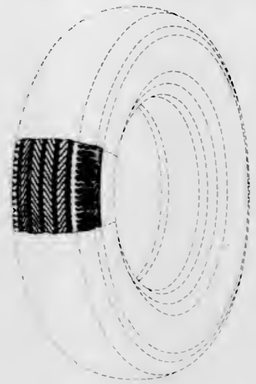
202,160
COSMETIC CASE
John J. Territo, 1707 E. Missouri, Phoenix, Ariz.
Filed Apr. 23, 1965, Ser. No. 84,940
Term of patent 14 years
(Cl. D87—5)



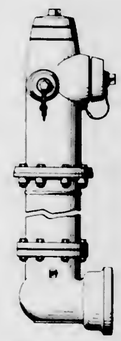
202,161
TIRE
William C. Loughley, Vanlue, Howard F. Boorn, Bucyrus, and Charles W. Mabey, Carey, Ohio, assignors to Amerace Corporation, New York, N.Y., a corporation of Delaware
Filed May 11, 1964, Ser. No. 79,925
Term of patent 14 years
(Cl. D90—20)



202,162
TIRE
Arthur E. Benson, Geneva, Switzerland, assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 29, 1964, Ser. No. 82,381
Term of patent 14 years
(Cl. D90—20)



202,163
FIRE HYDRANT
Earl W. Claus, St. Louis, Mo., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Sept. 11, 1964, Ser. No. 81,413
Term of patent 14 years
(Cl. D91—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 31ST DAY OF AUGUST, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: *See*—
Forney, Edgar W., Jr. Re. 25,847.

Ansul Co., The: *See*—
Zellner, Robert J. Re. 25,844.

Baker Oil Tools, Inc.: *See*—
Campbell, Don G. Re. 25,846.

Campbell, Don G., to Baker Oil Tools, Inc. Well packer apparatus. Re. 25,846, 8–31–65, Cl. 166—122.

D'Alello, Gaetano F., and R. W. Voedisch, to Lawter Chemicals Inc. Daylight fluorescent compositions. Re. 25,845, 8–31–65, Cl. 252—301.2.

Forney, Edgar W., Jr., to AMP Inc. Method of making an electrical connection. Re. 25,847, 8–31–65, Cl. 29—155.55.

Holley Carburetor Co.: *See*—
Karpiej, Chester. Re. 25,848.

Karpiej, Chester, by Holley Carburetor Co. Fuel control for spark ignition internal combustion engines. Re. 25,848, 8–31–65, Cl. 123—139.

Lawter Chemicals Inc.: *See*—
D'Alello, Gaetano F., and Voedisch. Re. 25,845.

Voedisch, Robert W.: *See*—
D'Alello, Gaetano F., and Voedisch. Re. 25,845.

Zellner, Robert J., to The Ansul Co. Means for operating a fire extinguisher. Re. 25,844, 8–31–65, Cl. 169—31.

LIST OF PLANT PATENTEES

Boerner, Eugene S., to Jackson & Perkins Co. Rose plant. 2,549, 8–31–65, Cl. 22.

Corey, Howard: *See*—
Spring, Otto. 2,551.

Houchin, Al: *See*—
Spring, Otto. 2,551.

Jackson & Perkins Co.: *See*—
Boerner, Eugene S. 2,549.
Kordes, Reimer. 2,550.

Kordes, Reimer, to Jackson & Perkins Co. Rose plant. 2,550, 8–31–65, Cl. 16.

Spring, Otto, to Howard Corey and Al Houchin. Variety of crepe myrtle. 2,551, 8–31–65, Cl. 54.

LIST OF DESIGN PATENTEES

Allis Chalmers Mfg. Co.: *See*—
Schroeder, Earle E., and Smeltzer. 202,145.

Amerace Corp.: *See*—
Loughley, William C., Boorn, and Mabey. 202,161.

Averitt, Marnie C., to The Black and Decker Mfg. Co. Handle for lawn trimmer-edger and the like. 202,117, 8–31–65, Cl. D40—1.

Ayres, John E. Cigarette lighter. 202,122, 8–31–65, Cl. D48—27.

Becker, Charles L.: *See*—
Hemmert, Andrew M., and Becker. 202,115.

Benson, Arthur E., to United States Rubber Co. Tire. 202,162, 8–31–65, Cl. D90—20.

Black and Decker Mfg. Co., The: *See*—
Averitt, Marnie C. 202,117.

Bliss, Harvey N. Illuminating stand. 202,154, 8–31–65, Cl. D80—9.

Boorn, Howard F.: *See*—
Loughley, William C., Boorn, and Mabey. 202,161.

Bowes, John G., and J. N. Rosekrans, Jr., to Kransco Mfg., Inc. Children's pool or similar article. 202,113, 8–31–65, Cl. D34—5.

Brown, Robert J. Ash tray. 202,158, 8–31–65, Cl. D85—2.

Bryan, Thomas. Paint roller pail. 202,134, 8–31–65, Cl. D58—17.

Budd Co., The: *See*—
Kolt, Erwin B. 202,102.

Burnelli, Hazel G.: *See*—
Burnelli, Vincent J. 202,149.

Burnelli, Vincent J. (deceased), H. G. Burnelli, executrix. Aircraft. 202,149, 8–31–65, Cl. D71—1.

Claus, Earl W., to Dresser Industries, Inc. Fire hydrant. 202,163, 8–31–65, Cl. D91—3.

Cornell-Dubilier Electric Corp.: *See*—
Parriott, Joseph M., and Long. 202,108.

Craig, Gene C., to Outboard Marine Corp. Propeller bracket. 202,151, 8–31–65, Cl. D71—1.

Debrie, Andre V. L. C. Photographic projection apparatus. 202,143, 8–31–65, Cl. D61—1.

De Kam, Cornelius T., to Westinghouse Air Brake Co. Portable radio or similar article. 202,109, 8–31–65, Cl. D26—14.

De Luxie Reading Corp.: *See*—
Gilbert, Felix. 202,097.

De Phillips, Gaeton J., to Potter Instrument Co., Inc. Inspection machine. 202,127, 8–31–65, Cl. D55—1.

Dresser Industries, Inc.: *See*—
Claus, Earl W. 202,163.

Fehling Hans R., and A. D. Street, to I.R.C. Ltd. Writing instrument. 202,153, 8–31–65, Cl. D74—17.

Fernholtz, Frank W., to Fernholtz Mfg. Co. Combined open hopper pump and base or similar article. 202,146, 8–31–65, Cl. D65—1.

Fernholtz Mfg. Co.: *See*—
Fernholtz, Frank W. 202,146.

Finneman, Tyko K. Holder for hand lines. 202,118, 8–31–65, Cl. D41—1.

Fisher, Robert C. Safety belt buckle. 202,105, 8–31–65, Cl. D17—1.

Foster Grant Co., Inc.: *See*—
Marchi, Vitalino. 202,129.

Galitzine, Irene. Swim suit. 202,098, 8–31–65, Cl. D3—17.

Galper, Sidney: *See*—
Melchior, Merle C., and Galper. 202,104.

Geiszler, John J., to U.S. Divers Co., Inc. Life preserver. 202,148, 8–31–65, Cl. D71—1.

Gilbert, Felix, to De Luxie Reading Corp. Toy communication helmet. 202,097, 8–31–65, Cl. D3—13.

Hall, Walter J. Rotary slide tray. 202,141, 8–31–65, Cl. D61—1.

Hance, Jewel B. Restaurant. 202,100, 8–31–65, Cl. D13—1.

Headberg, James. Cabob grille. 202,157, 8–31–65, Cl. D81—10.

Hemmert, Andrew M., and C. L. Becker; said Becker assor. to said Hemmert. Playing card. 202,115, 8–31–65, Cl. D34—13.

Herman, Harold L. Ceiling heater. 202,156, 8–31–65, Cl. 81—10.

Herman, Raymond, to Richmond Research Corp. Motion picture projector. 202,142, 8–31–65, Cl. D61—1.

Hudson Hosiery Co.: *See*—
Selfart, Curt, and May. 202,120.

I.R.C. Ltd.: *See*—
Fehling, Hans R., and Street. 202,153.

Karp, Edward C. Weighing scale for a computing system. 202,124, 8–31–65, Cl. D52—10.

Kolt, Erwin B., to The Budd Co. Automobile disk wheel. 202,102, 8–31–65, Cl. D14—30.

Kransco Mfg., Inc.: *See*—
Bowes, John G., and Rosekrans. 202,113.

Lesser, Bertrand R.: *See*—
Thomas, Morton I., and Lesser. 202,116.

Leubner, Courtney A., to Unarco Industries, Inc. Conveyor. 202,128, 8–31–65, Cl. D55—1.

Loney, James R., to Plastic Packaging Products Ltd. Compartmented packaging tray. 202,132, 8–31–65, Cl. D58—13.

Long, Douglas A.: *See*—
Parriott, Joseph M., and Long. 202,108.

Loughley, William C., H. F. Boorn, and C. W. Mabey, to Amerace Corp. Tire. 202,161, 8–31–65, Cl. D90—20.

Mabey Charles W.: *See*—
Loughley, William C., Boorn, and Mabey. 202,161.

Mader, Robert J. Golf putter. 202,114, 8–31–65, Cl. D34—5.

Marchant, Paul A., to Rexall Drug and Chemical Co. Packaging container for medicines or the like. 202,133, 8–31–65, Cl. D58—17.

Marchi Vitalino, to Foster Grant Co., Inc. Pair of spectacles. 202,129, 8–31–65, Cl. D57—1.

Markson, Morley, to National Rubber Co. Ltd. Fender flap. 202,101, 8–31–65, Cl. D14—6.

May, Avery D.: *See*—
Selfart, Curt, and May. 202,120.

Melchior, Merle C., ½, to Sidney Galper. Chair. 202,104, 8–31–65, Cl. D15—1.

Metalmaster Corp.: *See*—
Peters, Eugene M. 202,147.

Mitchell, Atherton, to Renauld International, Inc. Pair of spectacles. 202,130, 8–31–65, Cl. D57—1.

Moldt, Harold L., Jr. Electrician's flexible conduit puller attachment. 202,107, 8–31–65, Cl. D26—1.
National Lock Co.: *See*—
Unter, Robert K. 202,099.
National Rubber Co. Ltd.: *See*—
Markson, Morley. 202,101.
Outboard Marine Corp.: *See*—
Craig, Gene C. 202,151.
Papworth, Thomas H. Convertible chair. 202,103, 8–31–65, Cl. D15—1.
Parriott, Joseph M., and D. A. Long, to Cornell-Dubilier Electric Corp. Antenna rotator control housing. 202,108, 8–31–65, Cl. D26—13.
Peters, Eugene M., to Metalmaster Corp. Water filter unit. 202,147, 8–31–65, Cl. D65—1.
Picco, Oswald M. Match box. 202,123, 8–31–65, Cl. D48—28.
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Polytop Corp.: *See*—
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Wilson, Woodrow S. 202,137.
Wilson, Woodrow S. 202,138.
Wilson, Woodrow S. 202,139.
Wilson, Woodrow S. 202,140.
Potter Instrument Co., Inc.: *See*—
De Phillips, Gaeton J. 202,127.
Probasco, Harold T. Vending machine stand. 202,155, 8–31–65, Cl. D80—9.
Quartararo, Philip. Combined hole cutter and sharpening tool or the like for repairing sewn-in bicycle tires. 202,125, 8–31–65, Cl. D54—13.
Quartararo, Philip J. Combined boot and filler inserting tool for sewn-in bicycle tube tires or the like. 202,126, 8–31–65, Cl. D54—13.
Rappoport, Seymour, to Ronson Corp. Lighter or similar article. 202,121, 8–31–65, Cl. D48—27.
Renauld International, Inc.: *See*—
Mitchell, Atherton. 202 130.
Rexall Drug and Chemical Co.: *See*—
Marchant, Paul A. 202,133.
Richmond Research Corp.: *See*—
Herman, Raymond. 202,142.
Ronson Corp.: *See*—
Rappoport, Seymour. 202,121.
Rosekrans, John N., Jr.: *See*—
Bowes, John G., and Rosekrans. 202,113.
St. Clair, Melvin E. Bottle. 202,131, 8–31–65, Cl. D58—8.
Schroeder, Earle E., and L. H. Smeltzer, Jr., to Allis Chalmers Mfg. Co. Centrifugal pump. 202,145, 8–31–65, Cl. D65—1.
Seifart, Curt, and A. D. May, to Hudson Hosiery Co. Stocking. 202,120, 8–31–65, Cl. D47—7.
Shelby, Richard K. Cup. 202,119, 8–31–65, Cl. D44—9.
Sisco, Richard. Top for a carton or the like. 202,135, 8–31–65, Cl. D58—26.
Smeltzer, Leonard H., Jr.: *See*—
Schroeder, Earle E., and Smeltzer. 202—145.
Storm, William D. Fishing lure. 202,112, 8–31–65, Cl. D31—4.
Street, Alfred D.: *See*—
Fehling, Hans R., and Street. 202,153.
Tecton, Mike. Airplane. 202,152, 8–31–65, Cl. D71—1.
Territo, John J. Cosmetic case. 202 160, 8–31–65, Cl. D87—5.
Thomas, Morton I., and B. R. Lesser. Ski scooter. 202,116, 8–31–65, Cl. D34—15.
Thompson, Richard G. Spray gun. 202,144, 8–31–65, Cl. D62—2.
Thompson, William J. Combined hanger and bracket. 202,106, 8–31–65 Cl. D17—12.
Unarco Industries, Inc.: *See*—
Leubner, Courtney A. 202,128.
U.S. Divers Co., Inc.: *See*—
Geiszler, John J. 202,148.
United States Rubber Co.: *See*—
Benson, Arthur E. 202,162.
Unter, Robert K., to National Lock Co. Sash lock. 202,099, 8–31–65, Cl. D10—11.
Wann, Richard H. Combined switchboard and message center desk unit. 202,110, 8–31–65, Cl. D26—1.
Weber, Willis W. Mobile. 202 111, 8–31–65, Cl. D29—1.
Westinghouse Air Brake Co.: *See*—
De Kam, Cornelius T. 202,109.
Wilson, Howard M. Houseboat. 202,150, 8–31–65, Cl. D71—1.
Wilson, Woodrow S., to Polytop Corp. Dispensing top. 202,136, 8–31–65, Cl. D58—26.
Wilson, Woodrow S. to Polytop Corp. Dispensing top. 202,137, 8–31–65, Cl. D58—26.
Wilson, Woodrow S., to Polytop Corp. Dispensing top. 202,138, 8–31–65, Cl. D58—26.
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Wilson, Woodrow S., to Polytop Corp. Dispensing top. 202,140, 8–31–65, Cl. D58—26.
Woodcock, Ben. Smoking pipe. 202,159, 8–31–65, Cl. D65—8.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 31ST DAY OF AUGUST, 1965

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A. C. E. Machinery Ltd.: *See*—
Cummins, Peter A. 3,203,506.
ACF Industries, Inc.: *See*—
Groff, William M., Gibson, and Powers. 3,204,029.
§ Stein, Arnold P. 3,203,235.
Abramo, John G., and E C Chapin, to Monsanto Co. p-(Aminoalkyl)benzylamines. 3,203,993, 8–31–65, Cl. 260—570.8.
Accumulateurs Fixes et de Traction (Societe Anonyme) Societe des: *See*—
Jeannin, Robert A. A. 3,203,831.
Ackelman, Seymour: *See*—
Moore, Nathaniel N., Perez, and Ackerman. 3,203,261.
Acme Visible Records, Inc.: *See*—
Shaw, John S., Dostal, and White. 3,203,116.
Toms, Lloyd M. 3,203,748.
Adams, Clark E.: *See*—
Kimberlin, Charles N., Jr., Ellert, Adams, and Hamner. 3,203,892.
Adams, Harold W., to Reynolds Metals Co. Vibrationless cable construction. 3,204,021, 8–31–65, Cl. 174—42.
Adams, Paul R., J. A. Fingerett, and R. von Buelow, to International Telephone and Telegraph Corp. Cumulative digital computing systems. 3,204,088, 8–31–65, Cl. 235—152.
Adams, Samuel T., and B. P. Zober, to West Virginia Pulp and Paper Co. Process for manufacturing bags. 3,203,323, 8–31–65, Cl. 93—35.
Addressograph-Multigraph Corp.: *See*—
Liller, Richard F. 3,203,395.
Scranton, Robert J. 3,203,626.
Adelaar, Hans H., to International Standard Electric Corp. Interconnecting network for a telecommunication system. 3,204,033, 8–31–65, Cl. 179—15.
Adelaar, Hans H., F. Clemens, and J. L. Masure, to International Standard Electric Corp. Selection system. 3,204,039, 8–31–65, Cl. 179—18.
Adler, Alfred W. System for demonstrating electrical science. 3,203,114, 8–31–65, Cl. 35—19.
Aebi, Hans: *See*—
Duerr, Dieter, Aebi, and Ebner. 3,203,855.
Aerojet-General Corp.: *See*—
Oberth, Adolph E., and Bruenner. 3,203,976.
Aeroprojects Inc.: *See*—
Jones, James B. 3,203,215.
Aeroquip Corp.: *See*—
Eisner, Edwin C. 3,203,067.
Ager, John W., Jr., and T. L. Heying, to Olin Mathieson Chemical Corp. Reaction products of decaboranes and acetylenic esters and their preparation. 3,203,979, 8–31–65, Cl. 260—488.
Agfa Aktiengesellschaft: *See*—
Hofmann, Wilfried. 3,203,331.
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Schaum, Gustav, and Haydn. 3,203,795.
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Iceland, William F. 3,204,081.
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Axelsson, Folke A. 3,203,042.
Ajinomoto Co., Inc.: *See*—
Akabori, Shiro, and Izumi. 3,203,905.
Akabori, Shiro, and Y. Izumi, to Ajinomoto Co., Inc. Method of preparing a Raney nickel-optically active hydroxy acid hydrogenation catalyst. 3,203,905, 8–31–65, Cl. 252—430.
Akino, Hiroshi: *See*—
Sogawa, Toru, Akino, Watanabe, Zumi, Sonohata, and Shiga. 3,203,769.
Akron Standard Mold Co., The: *See*—
Goodwin, Winchel J. 3,204,109.
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Gorike, Rudolf, and Schuster. 3,204,031.
Aladdin Industries, Inc.: *See*—
Lyman, Harold T., Mason, and Bogardus. 3,204,206.
Alden, Elijah A. Combined live bait trap and pail. 3,203,134, 8–31–65, Cl. 43—100.
Alexander, Warren A., to Esso Production Research Co. Filtering system. 3,204,248, 8–31–65, Cl. 346—106.
Alfieri, Giuseppe, to Fabbrica Italiana Magneti Marelli S.p.A. Cleaning device for piston port means in a pressure regulator. 3,203,320, 8–31–65, Cl. 92—87.
Alfieri, Giuseppe, to Fabbrica Italiana Magnetti Marelli S.p.A. Supply and exhaust valve with piston type inlet. 3,203,449, 8–31–65, Cl. 137—627.5.
Alford, Muriel M. Controllably openable and closable holder for a disposable liquid container. 3,203,598, 8–31–65, Cl. 222—183.
Algemene Kunstzijde Unie N.V.: *See*—
De Ruyter, Paulus H., and Winia. 3,204,015.
Alinari, Carlo. Depth meter for diving purposes. 3,203,244, 8–31–65, Cl. 73—300.
Allen, Earle F., ½ to V. E. Macy, Jr. Braking means for a hydraulic drive cylinder. 3,203,513, 8–31–65, Cl. 188—170.
Allen, Robert L., to Georgia Tech Research Institute. Apparatus for controlling the air taken into the combustion chambers of a spark ignition internal combustion engine. 3,203,409, 8–31–65, Cl. 123—75.
Alliance Mfg. Co., The, Division of Consolidated Electronics Industries Corp.: *See*—
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Deanin, Rudolph D., and Pinter. 3,203,926.
Penley, Benjamin S. 3,203,147.
Allis-Chalmers Mfg. Co.: *See*—
Hannauer, Louis. 3,203,505.
Roubal, Alexander J. 3,203,548.
Allison, Jack I. Poultry head chopper construction. 3,203,036, 8–31–65, Cl. 17—12.
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Bergström, Erik. 3,203,068.
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Norman, Sivert. 3,204,049.
Alm, Per F., to Electrolux, Aktiebolaget. Direct current motor. 3,204,171, 8–31–65, Cl. 318—379.
Alpha Research Corp.: *See*—
Crane, Samuel P., and Kent. 3,203,381.
Altieri, Joseph R., to Litton Industries, Inc. Precision winding machines and apparatus. 3,203,633, 8–31–65, Cl. 242—9.
Alvarez-Calderon, Alberto. High lift flaps for aircraft wings. 3,203,647, 8–31–65, Cl. 244—42.
Amberg, Stephen W., and D. L. St. Clair, to Lily-Tulip Cup Corp. Tray for receptacles. 3,203,583, 8–31–65, Cl. 220—102.
Ambrose, Henry A., and P. R. McCarthy, to Gulf Research & Development Co. Sodium soap grease containing a zinc salt of a dialkyl dithiophosphate. 3,203,897, 8–31–65, Cl. 252—32.7.
American Can Co.: *See*—
Bolt, Richard R., and Wobbe. 3,203,218.
American Cyanamid Co.: *See*—
Baechtold, Robert L. 3,203,938.
Griffin, Gary W. 3,203,886.
Griffin, Gary W. 3,203,973.
Hansen, Lloyd F., and Bott. 3,203,347.
Huffman, Kenneth R. 3,203,959.
Schaefer, Frederic C. 3,203,550.
American Machine and Foundry Co.: *See*—
Chen, William K.-W., and Mintz. 3,203,887.
Foster, Jack V., and Hanold. 3,204,062.
Mahoney, William J., and Lorenzo. 3,204,123.
American Mfg. Co., Inc.: *See*—
Farris, William A. and T. D. 3,203,670.
American Seal-Kap Corp. of Delaware: *See*—
Soddy, Thomas C. 3,203,149.
American Twine & Fabric Corp.: *See*—
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Buss, Benjamin A. 3,203,013.
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Trost, Allen J., and Kietz. 3,204,047.
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Poncelet, Jules V. 3,203,207.
Ancrum, Robert W., and A. W. Evans, to British Titan Products Co. Ltd. Electrolytic production of titanium tetrahalides. 3,203,880, 8–31–65, Cl. 204—61.
Ancrum, Robert W., and A. W. Evans, to British Titan Products Co. Ltd. Production of metallic halides. 3,203,881, 8–31–65, Cl. 204—61.
Andelin, John P., to B-D Laboratories, Inc. Microorganism sampling device. 3,203,870, 8–31–65, Cl. 195—139.
Anderau, Walter, to Ciba Ltd. Photographic layers suitable for the silver dyestuff bleaching method. 3,203,799, 8–31–65, Cl. 96—53.
Andersen, James A. Hydraulic method of mining coal and the like. 3,203,736, 8–31–65, Cl. 299—17.
Anderson, Emmett R., and C. W. Hanks, to Stauffer Chemical Co. Apparatus for projecting an electron beam along a curved path having variable impedance. 3,204,096, 8–31–65, Cl. 250—49.5.
Anderson, Eri A., to Electrolux, Aktiebolaget. Collapsible manipulating handle for floor treating machine. 3,203,707, 8–31–65, Cl. 280—47.37.
Anderson, James E., to Jackson Vibrators, Inc. Tamping machine drive. 3,203,359, 8–31–65, Cl. 105—27.
Anderson, John L. Hoist control mechanism. 3,203,671, 8–31–65, Cl. 254—141.
Anderson, Ralph F., and L. K. Ploughman, to National Lock Co. Counterbalancing lid support. 3,203,575, 8–31–65, Cl. 220—35.
Anderson, Thomas F., D. C. Trimble, D. H. Storey, and E. B. Hoffman, to Haveg Industries, Inc., a wholly-owned subsidiary of Hercules Powder Co. Insulated nestable container and method of making the same. 3,203,611, 8–31–65, Cl. 229—1.5.
Andrews, James B., and J. C. Fischer, to St. Regis Paper Co. Shipping wrapper. 3,203,618, 8–31–65, Cl. 229—40.

Andrews Paper & Chemical Co.: *See*—
Muller, Peter. 3,203,797.

Andrews Paper & Chemical Co., Inc.: *See*—
Muller, Peter. 3,203,798.

Anhanger, Norvald, and O. Anhanger. Machine for portioned extruding of chopped meat, or of a similar plastic mass. 3,203,037, 8–31–65, Cl. 17—32.

Anhanger, Odd: *See*—
Anhanger, Norvald and O. 3,203,037.

Ansul Co.: *See*—
Stevens, George D. 3,203,825.

Antonious, Anthony J., 25% to L. A. Rheaume. Golf tee. 3,203,700, 8–31–65, Cl. 273—202.

Applied Science Laboratories, Inc.: *See*—
Pelick, Nicholas. 3,203,021.

Archer, Virgil L., to Haut's Development Co., Inc. Dough dropper for cookie making machines. 3,203,369, 8–31–65, Cl. 107—29.

Argoudelis, Alexander D., and B. Bannister, to The Upjohn Co. Bluensurea and its preparation. 3,203,986, 8–31–65, Cl. 260—553.

Armentrout, Everett C., and F. L. Pansing, to General Motors Corp. Refrigerating apparatus. 3,203,195, 8–31–65, Cl. 62—156.

Armstrong, S. A., Ltd.: *See*—
Ruby, Clair J. 3,203,353.

Arnoldy, Roman F., to R. I. Patents, Inc. Welding and casting process. 3,204,077, 8–31–65, Cl. 219—76.

Arrigo, Frank E. Leg aligner. 3,203,416, 8–31–65, Cl. 128—80.

Arseneau, Roger E., and J. Bereznak, to International Telephone and Telegraph Corp. High speed electronic switching telephone system. 3,204,043, 8–31–65, Cl. 179—18.

Ashby, John H., to Frigistor Laboratories Ltd., formerly known as Semiconductor Thermoelements Ltd. Microtomes. 3,203,290, 8–31–65, Cl. 83—171.

Aske, Leonard E., to Honeywell Inc. Control apparatus. 3,203,224, 8–31–65, Cl. 73—1.

Astheimer, Robert W.: *See*—
Wormser, Eric M., Pogoda, and Astheimer. 3,204,100.

Atlanta Grotnes Machine Co.: *See*—
Grotnes, Eugene R. 3,203,213.

Atlantic Research Corp.: *See*—
Godfrey, John N. 3,203,842.

Atlas Chemical Industries, Inc.: *See*—
Hales, Ralph A., and Lew. 3,203,963.
Lawrence, Joseph W. 3,203,844.
Sherburne, Edwin C. 3,203,753.

Ausherman, William S. Connector. 3,204,216, 8–31–65, Cl. 339—237.

Ausherman, William S. Threshing cylinder bar. 3,203,428, 8–31–65, Cl. 130—27.

Ausnit, Steven. Double hinged fastener. 3,203,062, 8–31–65, Cl. 24—201.

Automatic Electric Laboratories, Inc.: *See*—
Buxton, Alan J., Heine, and Mannas. 3,204,204.

Automatic Poultry Feeder Co.: *See*—
Kurtz, John S. 3,203,435.

Axelrood, Seymour L.: *See*—
Frisch, Kurt C., and Axelrood. 3,203,932.

Axelsson, Folke A., to Airspace, Inc. Injection foam molding system. 3,203,042, 8–31–65, Cl. 18—4.

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Denker, Gerhard B. 3,204,207.

Ayers, Peter, to The British Aluminum Co. Ltd. Method of rapidly cooling solid bodies. 3,203,470, 8–31–65, Cl. 165—1.

Aziz, Rahmat A.: *See*—
Rayfield, Harry F., Wilkinson, and Aziz. 3,203,635.

B-D Laboratories, Inc.: *See*—
Andelin, John P. 3,203,870.

Baak, Albert E. Wall thermostat housing unit. 3,204,073, 8–31–65, Cl. 200—168.

Bachnick, Werner, to Telefunken Aktiengesellschaft. Circuit arrangement for changing the oscillator frequency of UHF tuners. 3,204,198, 8–31–65, Cl. 331—101.

Badger Meter Mfg. Co.: *See*—
Genthe, William K. 3,203,241.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
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Baechtold, Robert L., to American Cyanamid Co. Process for copolymerizing an alkali metal ethylene sulfonate in lower saturated alcohols with free radical polymerization catalysts. 3,203,938, 8–31–65, Cl. 260—79.3.

Bahrs, George S., to Vidar Corp. Shielded circuit. 3,204,201, 8–31–65, Cl. 332—16.

Bailey, Edwin F.: *See*—
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Bailey, Ervin G., to Bailey Inventions, Inc. Solid fuel furnace. 3,203,684, 8–31–65, Cl. 266—25.

Bailey, Ervin G., to Bailey Inventions, Inc. Blast furnace. 3,203,685, 8–31–65, Cl. 266—30.

Bailey, Ervin G., to Bailey Inventions, Inc. Method and apparatus for producing gaseous products from solid fuel and using same for the reduction of iron ore. 3,203,784, 8–31–65, Cl. 75—40.

Bailey Inventions, Inc.: *See*—
Bailey, Ervin G. 3,203,684.
Bailey, Ervin G. 3,203,685.
Bailey, Ervin G. 3,203,784.

Baird, Donald H., and C. F. Buhrer, to General Telephone and Electronics Laboratories, Inc. Single-sideband light modulator. 3,204,104, 8–31–65, Cl. 250—199.

Baker Castor Oil Co., The: *See*—
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Baker, William J.: *See*—
Willis, Robert S., and Baker. 3,203,266.

Baldus, Wolfgang: *See*—
Lehmer, Wilhelm; Baldus, and Stich. 3,203,866.

Ballard, Arthur H., and B. R. Boymel. Orthogonal polynomial multiplex transmission systems. 3,204,034, 8–31–65, Cl. 179—15.

Ballard, Arthur H., and B. R. Boymel. Orthonormal pulse multiplex transmission systems. 3,204,035, 8–31–65, Cl. 179—15.

Bamberger, James F., and C. E. Harper, to Electro Products Laboratories, Inc. Bistable control devices controlling gates to effect machine control. 3,204,114, 8–31–65, Cl. 307—88.5.

Banks, Harry H. Animal-run device. 3,203,399, 8–31–65, Cl. 119—120.

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Argoudelis, Alexander D., and Bannister. 3,203,986.

Banse, George, to National Mfg. Co. Livestock pen structures. 3,203,033, 8–31–65, Cl. 16—176.

Baracket, Albert J., to Diamond Power Specialty Corp. Light source of controllable intensity. 3,204,091, 8–31–65, Cl. 240—20.

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Barditch, Irving F., R. Bento, and W. Freeman, to Westinghouse Electric Corp. Low insertion loss unilateralization structure. 3,204,192, 8–31–65, Cl. 330—27.

Bard-Parker Co., Inc.: *See*—
Birch, Richard W. 3,203,597.

Barksdale, Lilburn S., to General Metals Corp. Diaphragm type pressure switch with adjustable leaf spring mounting. 3,204,055, 8–31–65, Cl. 200—83.

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Wormser, Eric M., Pogoda, and Astheimer. 3,204,100.

Barnes, John A., and N. M. Clark, to Power Jets (Research & Development) Ltd. Pressure exchanger plant. 3,203,198, 8–31–65, Cl. 62—402.

Barnes, Percy J., to Burroughs Corp. Electrostatic data display. 3,204,247, 8–31–65, Cl. 346—74.

Barnes, Vincent H. Adjustable mounting hinge for screen printing frames. 3,203,030, 8–31–65, Cl. 16—129.

Barreteau, Felix L. H.: *See*—
Picard, Maxime F. B., Barreteau, and Moulin. 3,204,182.

Barten, Piet G. J.: *See*—
De Haan, Edward F., De Rooy, and Barten. 3,204,142.

Barth, Hans, and J. Schmuck, to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft. Balance weight arrangement for reciprocating engines. 3,203,274, 8–31–65, Cl. 74—604.

Barton, William F., to Standard Grigsby Inc. Electrical reed relay having plug-in features. 3,204,058, 8–31–65, Cl. 200—87.

Bartz, Gunter. Dial test indicator holder. 3,203,656, 8–31–65, Cl. 248—124.

Basham, James F., J. F. Wages, and G. T. Reid. Eviscerating device. 3,203,663, 8–31–65, Cl. 251—25.

Batke, Leonard A., and D. R. Bowes, to Ethicon, Inc. Cabinet assembly unit. 3,203,744, 8–31–65, Cl. 312—111.

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Battin, John W., to Motorola, Inc. Amplifier control circuit. 3,204,202, 8–31–65, Cl. 332—18.

Bauder, Marshall. Heat exchange unit. 3,203,478, 8–31–65, Cl. 165—106.

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Bauer, Charles L., to Sunbeam Corp. Universal plug connector. 3,204,213, 8–31–65, Cl. 339—31.

Baumann, George P., to Esso Research and Engineering Co. Secondary butanol purification process. 3,203,872, 8–31–65, Cl. 202—40.

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Bransford, Ernest O., Jr. 3,203,151.

Becher, Friedrich: *See*—
Uhrmeister, Hans, and Becher. 3,203,313.

Becker, Arnold F., to Bemis Bro. Bag Co. Bags with pinch-type end closure. 3,203,620, 8–31–65, Cl. 229—57.

Becker, Charles H., to United-Carr Inc. Fastener clip member. 3,203,059, 8–31–65, Cl. 24—73.

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Beckman Instruments, Inc.: *See*—
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Beekley, Francis C. 3,203,289.

Beekley, Francis C., to The Beekley Corp. Apparatus for grooving cards and the like. 3,203,289, 8–31–65, Cl. 83—134.

Beckwith, Sterling, to Dual Jet Refrigeration Co. Refrigerated display case and elements thereof. 3,203,337, 8–31–65, Cl. 98—36.

Beer, Emanuel E., to General Precision, Inc. Limited multiple turn rotary mechanism. 3,203,262, 8–31–65, Cl. 74—10.2.

Beisheim, James W., and O. F. Gerry, to General Electric Co. Electric slicing knife. 3,203,096, 8–31–65, Cl. 30—272.

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Hackett, John A. 3,204,040.
Kaenel, Reginald A. 3,204,129.
Kersey, George E. 3,204,151.
Pitts, John E., Jr. 3,204,032.
Reck, Frank. 3,203,081.
Soden, Ralph R., and Van Uitert. 3,203,902.
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Belsinger, Samuel P. 3,203,539.

Belsinger, Samuel P., to Belsinger, Inc. Wardrobe container. 3,203,539, 8–31–65, Cl. 206—7.

Belsky, Fred J.: *See*—
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Bemis Bro. Bag Co.: *See*—
Becker, Arnold F. 3,203,620.
Fox, Harold K. 3,203,622.
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Benaglio, Reno V., and R. F. Bourke, to The Bendix Corp. Contouring system acceleration-deceleration control. 3,204,132, 8–31–65, Cl. 307—149.

Benbenek, Jules E., to Radio Corp. of America. Glass-to-metal seal. 3,203,715, 8–31–65, Cl. 285—238.

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Benson, Gustav E. V. Closing device for containers filled with pastes or liquids. 3,203,603, 8–31–65, Cl. 222—494.

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Bergonzo, Pierre. Control station for an automatic lathe. 3,203,287, 8–31–65, Cl. 82—21.

Bergström, Erik, to Allmanna Brandredskapsaffaren AB. Hose clamps. 3,203,068, 8–31–65, Cl. 24—274.

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Berry Wiggins & Co.: *See*—
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Berzatzy, Paul G. Stable grip tennis racket handle. 3,203,697, 8–31–65, Cl. 273—75.

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Beuter, Clyde R., and J. W. Brightman, to United Shoe Machinery Corp. Device for cutting and inserting locking elements into threaded fasteners. 3,203,041, 8–31–65, Cl. 18—1.

Bialick, Jay A. Incontinence clamp device. 3,203,421, 8–31–65, Cl. 128—346.

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Biermann, Arnold E.: *See*—
Breisch, John H., and Biermann. 3,203,161.

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Bilek, Frank T., to International Telephone and Telegraph Corp. Miniature plug and jack explosion proof connector. 3,204,053, 8–31–65, Cl. 200—51.09.

Bindschedler, Pierre E. Closure cap for containers. 3,203,570, 8–31–65, Cl. 215—39.

Birch Brothers, Inc.: *See*—
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Birch, Richard W., to Bard-Parker Co., Inc. Surgical soap dispenser. 3,203,597, 8–31–65, Cl. 222—179.

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Bitter, James E. Composing stick. 3,203,725, 8–31–65, Cl. 294—64.

Bjorkman, Bengt H., to North American Philips Co., Inc. Radio navigation apparatus. 3,204,241, 8–31–65, Cl. 343—112.

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Blank, Benjamin, and J. F. Kerwin, to Smith Kline & French Laboratories. Basic ethers of bis-(aminophenyl)-alcohols. 3,203,991, 8–31–65, Cl. 260—570.

Blatchford, Gale W. Load-supporting bunks for vehicles. 3,203,563, 8–31–65, Cl. 214—84.

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Blum, William A., to Pennsalt Chemicals Corp. Chlorate accelerated zinc phosphating baths with added arsenate. 3,203,835, 8–31–65, Cl. 148—6.15.

Blumer, Hans. Machine for cutting and/or creasing sheets of thin materials such as paper and cardboard and metal or plastic foils. 3,203,288, 8–31–65, Cl. 83—92.

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Bolt, Richard R., and D. E. Wobbe, to American Can Co. Method and apparatus for forming metal containers. 3,203,218, 8–31–65, Cl. 72—349.

Bolton, Clay P., and M. E. Holy, said Bolton assors. to Carnation Co., and said Holy assor. to Rockford Paper Mills, Inc. Pour spout carton construction. 3,203,616, 8–31–65, Cl. 229—17.

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Booth, William M. Steering for marine craft. 3,203,270, 8–31–65, Cl. 74—517.

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Brekelbaum, Erwin C., R. J. Bushong, J. F. Krueck, and E. B. Williams, to Koehring Co. Front end and overshot loader. 3,203,564, 8–31–65, Cl. 214—140.
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Breslow, David S., and H. M. Spurlin, to Hercules Powder Co. Cross-linking ethylene polymers. 3,203,937, 8–31–65, Cl. 260—79.3.
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Ancrum, Robert W., and Evans. 3,203,881.
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Broder, Leonard, deceased, by P. L. Kennedy, administrator, to T. W. Becker, Jr. Electrical connector. 3,204,212, 8–31–65, Cl. 339—14.
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Broughton, Arthur E., to A. E. Broughton & Co., Inc. Liquid spraying apparatus and system for cleaning the same. 3,203,630, 8–31–65, Cl. 239—116.
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Brown, Joshua R. C., and J. W. Thomas, to Whirlpool Corp. Apparatus for controlling carbon dioxide content of an atmosphere. 3,203,771, 8–31–65, Cl. 23—281.
Brown, Robert J. S., and J. E. Coolidge, to Borg-Warner Corp., and California Research Corp. Amplifier input control circuits. 3,204,178, 8–31–65, Cl. 324—.5.
Brown, Terence J., R. D. E. Eldred, and W. A. North, to United Shoe Machinery Corp. Machines for vulcanizing soles onto shoe bottoms. 3,203,049, 8–31–65, Cl. 18—17.
Brown, William L., to Boyne Products, Inc. Push rotary switch construction with lost motion contact coupling. 3,204,067, 8–31–65, Cl. 200—156.
Browning, James A., to Thermal Dynamics Corp. Electric arc torch. 3,204,075, 8–31–65, Cl. 219—75.
Browning, James A., to Thermal Dynamics Corp. Electric arc torch. 3,204,076, 8–31–65, Cl. 219—75.
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Bungardt, Karl, to Deutsche Edelstahlwerke Aktiengesellschaft. Method of producing dispersion-hardened metal alloys. 3,203,781, 8–31–65, Cl. 75—5.
Bungardt, Walter, to Ronson Corp. Extruded flints and process for making same. 3,203,790, 8–31–65, Cl. 75—152.
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Burg, Marion, to E. I. du Pont de Nemours and Co. Wax-coated photopolymerizable elements and processes for using same. 3,203,805, 8–31–65, Cl. 96—115.
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Coggeshall, Norman D., and O. K. Doolen, to Gulf Research & Development Co. Sampling apparatus. 3,203,250, 8–31–65, Cl. 73—422.

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Contractor, Gustad P., D. E. C. King, and R. J. McClure, to Her Majesty the Queen of Canada, in right of, as represented by the Minister of Mines and Technical Surveys. Free machining steels of improved transverse mechanical properties and method of making same. 3,203,788, 8–31–65, Cl. 75—129.

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Craig, Burnie J. Adjustable injector razor. 3,203,092, 8–31–65, Cl. 30—62.

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D'Alelio, Gaetano F., to Dal Mon Research Co. Irradiated polymers and propulsion process. 3,203,170, 8–31–65, Cl. 60—35.4.

D'Alelio, Gaetano F., to Dal Mon Research Co. Oxygen convertible polymeric compositions. 3,203,915, 8–31–65, Cl. 260—23.7.

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Dauhenfeld, Jean J. G. Cylinder presses, especially for working up synthetic substances. 3,203,048, 8–31–65, Cl. 18—14.

Daulton, Arthur G., and R. H. Laing, to Magnetic Controls Co. Batch weighing control unit. 3,203,591, 8–31–65, Cl. 222—2.

Davidson, Isaac F. Holder and dispenser for collapsible tube. 3,203,596, 8–31–65, Cl. 222—103.

Davies, James M., and W. G. Johnson, to Caterpillar Tractor Co. Turbocharger brake. 3,203,514, 8–31–65, Cl. 188—170.

Davies-Young Soap Co., The: *See*—
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Davis, Harry E., and F. B. Pfeiffer. Method and apparatus for making drinking straw. 3,203,325, 8–31–65, Cl. 93—80.

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Dennin, Rudolph D., and A. V. Pinter, to Allied Chemical Corp. Copolycarbonates of di-(bisphenol)ethers and bisphenols and processes for their production. 3,203,926, 8–31–65, Cl. 260—47.

Deavenport, Joe E., to California Instrument Corp. Oscilloscope control circuitry. 3,204,144, 8–31–65, Cl. 315—24.

Dedmon, George D. Apparatus for and method of feeding yarns at varying rates. 3,203,378, 8–31–65, Cl. 112—79.

Dedmon, George D., and J. C. Robinson. Tufting machine with retractable loopers. 3,203,379, 8–31–65, Cl. 112—79.

De Gray, Richard J., and L. N. Killian, to The Standard Oil Co. Glycol borate amine salts. 3,203,971, 8–31–65, Cl. 260—462.

De Haan, Edward F., A. J. de Rooy, and P. G. J. Barten, to North American Philips Co., Inc. Pickup tube having photoconductive target. 3,204,142, 8–31–65, Cl. 315—11.

De Havilland Aircraft Co. Ltd., The: *See*—
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Dehydag, Deutsche Hydriewerke G.m.b.H.: *See*—
Willmund, Wolf-Dieter, Michael, and Kirstahler. 3,203,878.

Delle, Otto, and K. A. Wehlmann, to Keuffel & Esser Co. Method for measuring photographic exposure time. 3,203,332, 8–31–65, Cl. 95—73.

Della Porta, Paolo. Method of manufacturing zirconium-aluminum alloy getters. 3,203,901, 8–31–65, Cl. 252—181.6.

De Long, Horace J., to Gainesville Machine Co., Inc. Poultry picking apparatus. 3,203,035, 8–31–65, Cl. 17—11.1.

Delorme, Jacques E. A. Pumps. 3,203,357, 8–31–65, Cl. 103—153.

De Monte, Robert W., to Bell Telephone Laboratories, Inc. Negative impedance repeaters for non-loaded lines. 3,204,048, 8–31–65, Cl. 179—170.

Denker, Gerhard B., to Avco Corp. Voltage controlled capacitance diode tuner with temperature compensation. 3,204,207, 8–31–65, Cl. 334—15.

Denman, Robert R., to Owens-Illinois Glass Co. Pressing glass parisons. 3,203,778, 8–31–65, Cl. 65—68.

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Hollander, Julius, and Sabreen. 3,203,097.

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Meiners, Alfred F., and Morriss. 3,203,885.

Depenbrock, Manfred, W. Berens, and H. Kielgas, to Aktiengesellschaft Brown, Boveri & Cie. Current converter power supply system for reversible motor. 3,204,168, 8–31–65, Cl. 318—261.

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De Rooy, Antonius J.: *See*—
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De Rosa, Adrian L., ½ to R. M. Schwartz. Position measuring apparatus. 3,204,235, 8–31–65, Cl. 340—347.

De Ruyter, Paulus H., and J. T. B. Winia, to Algemene Kunstzijde Unie N.V. Spherical particles. 3,204,015, 8–31–65, Cl. 264—11.

De Saint Hardouin, Alain T., J. Martin, and A. Valentin. Coating apparatus. 3,203,044, 8–31–65, Cl. 18—5.

Dettwiler, Georges. Rotary engine. 3,203,406, 8–31–65, Cl. 123—13.

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Diehl, Karl, to C. Bauer. Apparatus for driving bolts into masonry, structural parts and the like. 3,203,609, 8–31–65, Cl. 227—8.

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Dole Valve Co., The: *See*—
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Domin, Bernhard J., to Dr. Plate G.m.b.H. Flocks for the production of velvet-like or plush-like materials and process for the production of such materials by electrostatic means. 3,203,821, 8–31–65, Cl. 117—17.

Dominy, Olin O. Magnetic slide tray. 3,203,123, 8–31–65, Cl. 40—78.

Doniger, Jerry, and F. J. Belsky, to The Bendix Corp. Aircraft flight control apparatus. 3,203,652, 8–31–65, Cl. 244—77.

Donnell, Conard K., to Sun Oil Co. Liquid stream boiling point analyser. 3,203,227, 8–31–65, Cl. 73—17.

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Dostal, John J.: *See*—
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Dry, John P. Magnetic ventilator support. 3,203,338, 8–31–65, Cl. 98—114.

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Dudko, Daniil A., R. M. Gordon, O. O. B. Rosenberg, and G.-G. Mellikh, to Institute Elektrosvarki E. O. Paton. Device for electric welding of vertical and inclined seams. 3,204,082, 8–31–65, Cl. 219—126.

Duenke, Clarence G., to Core Mfg. Co. High reactance transformer. 3,204,210, 8–31–65, Cl. 336—165.

Duerr, Dieter, H. Aebi, and L. Ebner, to Ciba Ltd. Method for combating fungi with 2-(2,2,2-trichloro-1-hydroxyethylamino)pyridine. 3,203,855, 8–31–65, Cl. 167—33.

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Ancrum, Robert W., and Evans. 3,203,881.

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Everett, Milton C. Hinge linkage. 3,203,032, 8–31–65, Cl. 16—163.

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Fekete, Frank, to Union Carbide Corp. Organosilicon compounds containing phosphorus and nitrogen. 3,203,924, 8–31–65, Cl. 260—46.5.

Fekete, Frank, to Union Carbide Corp. Organosilicon compounds containing phosphorus and nitrogen. 3,203,925, 8–31–65, Cl. 260—46.5.

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Fiske, Augustus H., Jr., to Fiske Associates, Inc. Apparatus and method for measuring the freezing points of liquids. 3,203,226, 8–31–65, Cl. 73—17.

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Jasinski, Victor: *See*—
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Jeannin, Robert A. A., to Accumulateurs Fixes et de Traction (Societe Anonyme) Societe des. Process and apparatus for coating and sintering of strip material for electrodes. 3,203,831, 8–31–65, Cl. 117—230.

Jennings Machine Corp.: *See*—
Fleming, Raymond E., and Reichert. 3,203,047.

Jenny, Walter: *See*—
Hari, Istvan, and Jenny. 3,203,958.

Jentet, Maxime L., to Chausson, Societe Anonyme des Usines. Device for the thermic treatment of gases required to undergo a sudden rise and then an abrupt drop in temperature. 3,203,190, 8–31–65, Cl. 62—5.

Jentzsch, Dietrich, and H. Weber, to Bodenseewerk Perkin-Elmer & Co. G.m.b.H. Gas chromatography valving apparatus. 3,203,249, 8–31–65, Cl. 73—422.

Jepsen, Henry E. Pump. 3,203,356, 8–31–65, Cl. 103—148.

Jepson, Ivar, and J. P. Wied, to Sunbeam Corp. Cleaning attachment for vacuum cleaner. 3,203,023, 8–31–65, Cl. 15—371.

Jepson, Ivar, and S. R. Kukulski, to Sunbeam Corp. Electrically operated hair clipping and shaving device. 3,203,090, 8–31–65, Cl. 30—34.1.

Jetco, Inc.: *See*—
Evans, Clifford J. 3,203,188.

Jewell, Donald K.: *See*—
Hensgen, Bernard T., and Jewell. 3,203,038.

Joa, Curt G. Sanitary napkin. 3,203,419, 8–31–65, Cl. 128—290.

Johansson, Rolf G., to Byggforbattring, AB. Climbing jack. 3,203,669, 8–31–65, Cl. 254—107.

Johns-Manville Corp.: *See*—
Carter, David C. 3,203,146.

Johnson, James R., T. N. Lahr, and R. N. Walz, to Minnesota Mining and Mfg. Co. Beta radiation sources in a ceramic carrier. 3,204,103, 8–31–65. Cl. 250—106.

Johnson, Jay H., to Kentucky Electronics, Inc. Electron gun. 3,204,141, 8–31–65, Cl. 313—337.

Johnson, Lloyd E., to Caterpillar Tractor Co. Brake and reverse drive for gas turbine engines. 3,203,177, 8–31–65, Cl. 60—39.16.

Johnson, William G.: *See*—
Davies, James M., and Johnson. 3,203,514.

Johnston, Charles A. Ear swabs. 3,203,418, 8–31–65, Cl. 128—269.

Johnston, William C.: *See*—
Tiller, William A., and Johnston. 3,203,768.

Jones, Alvin J., and P. E. Forster, to The Motch & Merryweather Machinery Co. Tool path control mechanism. 3,203,281, 8–31–65, Cl. 77—1.

Jones, Fulton J. Odor-control spray device. 3,203,594, 8–31–65, Cl. 222—70.

Jones, James B., to Aeroprojects Inc. Ultrasonic extrusion apparatus. 3,203,215, 8–31–65, Cl. 72—253.

Jones, John H. Oral anti-hypercholesterol composition. 3,203,862, 8–31–65, Cl. 167—65.

Jones, John W.: *See*—
Cooper, Noel R., Flanigan, Jones, Mavis, and Wegner. 3,203,368.

Jones, Kenneth G.: *See*—
Shelton, Leonard, Jones, and Bush. 3,203,458.

Joy Mfg. Co.: *See*—
Doperalski, Eugene J. 3,203,705.
Norrick, Robert F. 3,203,284.

Junker, Heinrich, W. Lauer, E. Gauf, and W. Wurth, to Metallgesellschaft Aktiengesellschaft. Producton of polyamide coatings. 3,203,822, 8–31–65, Cl. 117—21.

Justin Enterprises, Inc.: *See*—
Short, Robert J. 3,203,845.

Jutila, Alex O. Abrasive type roof coating apparatus. 3,203,631, 8–31–65, Cl. 239—124.

Kabushiki Kaisha Hitachi Seisakusho: *See*—
Muta, Akinor, and Gejo. 3,203,814.
Watanabe, Hiroshi. 3,204,095.

Kabushiki Kaisha Toko Radio Coil Kenkyusho: *See*—
Kawakami, Masamitsu, and Onoda. 3,204,209.

Kaenel, Reginald A., to Bell Telephone Laboratories, Inc. Negative resistance diode trigger circuit. 3,204,129, 8–31–65, Cl. 307—88.5.

Kaepernik, William A., to Ethicon, Inc. Surgical staple applicator. 3,203,220, 8–31–65, Cl. 72—410.

Kaiser, Robert H., and A. N. Neilands, to Burroughs Corp. Tape take-up means. 3,203,637, 8–31–65, Cl. 242—71.8.

Kaiwa, Toshimasa, and R. Iwai, to Fuji Tsushinki Seizo Kabushiki Kaisha. Two-phase stepping motor. 3,204,136, 8–31–65, Cl. 310—49.

Kalt, Charles J., and P. J. Mesi, to Miles Laboratories, Inc. Test kit. 3,203,540, 8–31–65, Cl. 206—12.

Kaminsky, Edward W.: *See*—
Nash, William H., and Kaminsky. 3,204,063.

Kampert, Keith W., and R. F. Zimmerman, to The Frank G. Hough Co. Tractor fork loader. 3,203,566, 8–31–65, Cl. 214—147.

Kaplan, Fanny. Brassiere and shoulder strap. 3,203,425, 8–31–65, Cl. 128—510.

Karl, Josef S. Luggage rack. 3,203,605, 8–31–65, Cl. 224—42.07.

Katra, Zbigniew: *See*—
Wesolowski, Korneliuss K., Ryczek, Tochowicz, Katra, Grabowski, Godek, Michalski, and Kijak. 3,203,786.

Katz, Harry S., and J. V. Milewski, to Thiokol Chemical Corp. Composite heat shield. 3,203,849, 8–31–65, Cl. 161—96.

Kawakami, Masamitsu, and M. Onoda, to Kabushiki Kaisha Toko Radio Coil Kenkyusho. Variable-inductance tuner. 3,204,209, 8–31–65, Cl. 336—131.

Kawamura, Kazuo, to Toho Rayon Kabushiki Kaisha. Process for the manufacture of bulky fibrous wadding materials. 3,204,017, 8–31–65, Cl. 264—51.

Kearns, William J., to General Electric Co. Hot cathode electron tube. 3,204,140, 8–31–65, Cl. 313—239.

Kehn, Calvin H.: *See*—
Parker, Fred D. 3,203,695.

Kehn, I. T.: *See*—
Parker, Fred D. 3,203,695.

Keith, Willis C., to Sinclair Research, Inc. Process for the isomerization of olefins. 3,204,009, 8–31–65, Cl. 260—683.2.

Keizer, Eugene O., to Radio Corp. of America. Color television indexing control utilizing intensity and velocity modulation techniques. 3,204,024, 8–31–65, Cl. 178—5.4.

Keller, Oscar, N. Steiger, and L. H. Sternbach, to Hoffmann-La Roche Inc. 2-amino-2'-halo-5-nitro benzophenones. 3,203,990, 8–31–65, Cl. 260—570.

Kellogg Co.: *See*—
Thompson, Joseph J., and Doan. 3,203,808.

Kellogg, Hosford D., Jr. Gyroscopic inertial space drive. 3,203,644, 8–31–65, Cl. 244—1.

Kelsey-Hayes Co.: *See*—
Stelzer, William. 3,203,516.

Kennedy, Peter L.: *See*—
Broder, Leonard. 3,204,212.

Kent Engineering Consultants: *See*—
Van Noord, Andrew J. 3,203,060.

Kent, Stephen D.: *See*—
Crane, Samuel P., and Kent. 3,203,381.

Kentucky Electronics, Inc.: *See*—
Johnson, Jay H. 3,204,141.

Kerin, Joseph J. Open hearth furnace. 3,203,682, 8–31–65, Cl. 263—46.

Kerr, Kathel B., to Dr. Salsbury's Laboratories. Nematocidal compositions and method. 3,203,859, 8–31–65, Cl. 167—53.

Kersey, George E., to Bell Telephone Laboratories, Inc. Fast-acting relay controlled circuit. 3,204,151, 8–31–65, Cl. 317—141.

Kervin, Willis D., to Carbonic Development Corp. Valve control mechanism. 3,203,441, 8–31–65, Cl. 137—309.

Kerwin, James F.: *See*—
Blank, Benjamin, and Kerwin. 3,203,991.

Keskitalo, Howard O., to Caterpillar Tractor Co. Vehicle mounted loader. 3,203,565, 8–31–65, Cl. 214—140.

Keuffel & Esser Co.: *See*—
Delle, Otto, and Wehlmann. 3,203,332.

Keyser, John E., and R. E. Wheeler, to General Electric Co. Electric switch having contacts convertible between normally open and normally closed conditions. 3,204,068, 8–31–65, Cl. 200—159.

Khaladji, Jean E.: *See*—
Bouillenne-Walrand, Marie A., Josephe, Wetroff, and Khaladji. 3,203,854.

Kidd, Robert C., to Mississippi Valley Structural Steel Co. Work clamp for automatic structural bar punching machines and the like. 3,203,692, 8–31–65, Cl. 269—152.

Kiekhaefer Corp.: *See*—
Boda, Robert A. 3,203,390.

Kielgas, Hans: *See*—
Depenbrock, Manfred, Berens, and Kielgas. 3,204,168.

Kielsmeier, Elwood W.: *See*—
Sloan, Edward C., Schmook, Paynter, and Kielsmeier. 3,202,807.

Kietz, Erhard K.: *See*—
Trost, Allen J., and Kietz. 3,204,047.

Kijak, Stefan: *See*—
Wesolowski, Korneliuss K., Ryczek, Tochowicz, Katra, Grabowski, Godek, Michalski, and Kijak. 3,203,786.

Killian, Lawrence N.: *See*—
De Gray, Richard J., and Killian. 3,203,971.

Kilpatrick, Joseph E., to Honeywell Inc. Signal resolution-increasing means. 3,204,107, 8–31–65, Cl. 250—217.

Kilpatrick, Robert H.: *See*—
Fromm, Frederick W., and Kilpatrick. 3,204,083.

Kimberlin, Charles N., Jr., H. G. Ellert, C. E. Adams, and G. B. Hamner, to Esso Research and Engineering Co. Demetallization with hydrofluoric acid. 3,203,892, 8–31–65, Cl. 208—252.

Kimberly-Clark Corp.: *See*—
Neuville, Stewart M. 3,203,761.

King, Arthur S., to M. W. Maxwell, S. D. Capper, and N. Fergusson. Ironing board. 3,203,373, 8–31–65, Cl. 108—138.

King, David E. C.: *See*—
Contractor, Gustad P., King, and McClure. 3,203,788.
Morgan, William A., McClure, and King. 3,203,789.

King, Paul F.: *See*—
Hope, William D., Snelling, and King. 3,203,394.

Kingma, Wouter G., to Werkspoor N.V. Flash evaporator. 3,203,464, 8–31–65, Cl. 159—2.

Kiper, Gerd, to Agfa Aktiengesellschaft. Camera capable of being manually and automatically operated. 3,203,330, 8–31–65, Cl. 95—64.

Kipp, Karl F., and J. A. Santangini, to Western Electric Co., Inc. Chemical polishing machine. 3,203,434, 8–31–65, Cl. 134—57.

Kirchner, Jack R., to E. I. du Pont de Nemours and Co. Production of halopyridine oxides. 3,203,957, 8–31–65, Cl. 260—290.

Kirk, Hugh A.: *See*—
Gast, Dwight. 3,203,004.

Kirschey, Gerhard. Continuously controllable friction wheel gear drive. 3,203,280, 8–31–65, Cl. 74—796.

Kirshenbaum, Isidor, P. Lucchesi, and E. Tornqvist, to Esso Research and Engineering Co. Polymerization of ethylene in the presence of ammonium halide. 3,203,946, 8–31–65, Cl. 260—94.9.

Kitasaki, Kiyoshi, and G. W. Willcockson, to United States Borax & Chemical Corp. Polymeric organoboron compounds. 3,203,908, 8–31–65, Cl. 260—2.

Kitasaki, Kiyoshi, and G. W. Willcockson, to United States Borax & Chemical Corp. Polymeric organoboron compounds. 3,203,927, 8–31–65, Cl. 260—47.

Kitasaki, Kiyoshi, and G. W. Willcockson, to United States Borax & Chemical Corp. Organoboron compounds and polymers thereof. 3,203,929, 8–31–65, Cl. 260—47.

Klatchko, George A., to Tinius Olsen Testing Machine Co. Materials testing machine. 3,203,231, 8–31–65, Cl. 73—93.

Klein, Robert. Apparatus for steam treating the uppers of shoes. 3,203,018, 8–31–65, Cl. 12—1.

Kleinschmidt, Edward F., J. W. Ehrlich, and E. E. Podwojski, to SCM Corp. Communications equipment printer. 3,204,028, 8–31–65, Cl. 178—32.

Klimstra, Paul D.: *See*—
Counsell, Raymond E., and Klimstra. 3,203,960.

Knape and Vogt Mfg. Co.: *See*—
Knape, Herbert F. 3,203,028.

Knape, Herbert F., to Knape and Vogt Mfg. Co. Adjustable hanger. 3,203,028, 8–31–65, Cl. 16—105.

Knapsack-Griesheim Aktiengesellschaft: *See*—
Rodis, Frans, Hinz, and Thomas. 3,203,776.

Knuppel, Helmut, to Dortmund-Horder Huttenunion Aktiengesellschaft. Refractory linings for chambers for degasifying metals. 3,203,785, 8–31–65, Cl. 75—49.

Kobashikawa, Gary K. Simulated porpoise aquatic device. 3,203,694, 8–31–65, Cl. 272—1.

Kobayashi, Takeo: *See*—
Masumoto, Hakaru, Kobayashi, and Watanabe. 3,203,838.

Koch, Jakob, to Svenska Rotor Maskiner Aktiebolag. Regenerative air preheater with stationary heat retaining mass and revolving connections. 3,203,471, 8–31–65, Cl. 165—4.

Koehler, Alexander, and W. H. Dasey, to The Dow Chemical Co. Hog serum antibody concentrate. 3,203,865, 8–31–65, Cl. 167—80.

Koehring Co.: *See*—
Brekelbaum, Erwin C., Bushong, Krueck, and Williams. 3,203,564.
Roberts, Howard C. 3,203,494.

Kohlswa Jernverks Aktiebolaget: *See*—
Schonberg, Nils E. 3,203,349.

Kolakowski, Thaddeus M., and J. Peres. Mortar jig. 3,203,070, 8–31–65, Cl. 25—118.

Kolk, Otmar: *See*—
Wollmann, Heinz, Grewe, and Kolk. 3,204,224.

Kolster, Wilhelm K., to The Swiss Colony, Inc. Temperature responsive indicator for cables and the like. 3,204,231, 8–31–65, Cl. 340—253.

Koninklijke Nederlandsche Hoogovens En Staalfabrieken N.V.: *See*—
Mees, Wouter J. G. 3,203,837.

Kotis, Richard J. Artificial fish lure. 3,203,132, 8–31–65, Cl. 43—42.24.

Koupil, Zdenek: *See*—
Rous, Josef, Petr, Sečkář, Koupil, and Novak. 3,203,681.

Kramer Trenton Co.: *See*—
Malkoff, Hyman. 3,203,196.

Kratochvil, Harry, to Tung-Sol Electric Inc. Relay-transistor flasher. 3,204,146, 8–31–65, Cl. 315—209.

Kreer, John B.: *See*—
Carter, Earl C., Ellison, and Kreer. 3,203,501.

Kreutzer, Otto, to Airotor Vertriebsgesellschaft m.b.H. Self-commutating direct current electric motor. 3,204,165, 8–31–65, Cl. 318—138.

Krieble, Vernon K., to Loctite Corp. Accelerated anaerobic curing compositions containing a catalyst system of peroxides and polyamino compounds. 3,203,941, 8–31–65, Cl. 260—89.5.

Krueck, John F.: *See*—
Brekelbaum, Erwin C., Bushong, Krueck, and Williams. 3,203,564.

Krueger, Allison F., to Krueger Metal Products, Inc. Multiple seating including stackable chairs with folding backs. 3,203,731, 8–31–65, Cl. 297—239.

Krueger, Clifford H. Trailer equipped pontoon yacht. 3,203,014, 8–31–65, Cl. 9—1.

Krueger Metal Products, Inc.: *See*—
Krueger, Allison F. 3,203,731.

Kruse, Willard E., to E. I. du Pont de Nemours and Co. Production of metal oxides through oxidation of metal halides. 3,203,763, 8–31–65, Cl. 23—202.

Kryser, Benjamin H., to Union Tank Car Co. Line pressure operated metering device for water conditioning system. 3,203,602, 8–31–65, Cl. 222—442.

Kubik, Paul P.: *See*—
Check, Mathias M., and Kubik. 3,203,210.

Kuhne, Gerhard, to Deutsche Erdol-Aktiengesellschaft. Means for locking a screw-threaded connection between two complementary screw-threaded members. 3,203,460, 8–31–65, Cl. 151—14.

Kuhnl, Leopold K., to Eversharp, Inc. Safety razor with adjustable guard. 3,203,093, 8–31–65, Cl. 30—63.

Kukulski, Sigmund R.: *See*—
Jepson, Ivar, and Kukulski. 3,203,090.

Kuna, Wilhelm, and H. Jacobi, to Sanol-Arzneimittel Dr. Schwars G.m.b.H. Derivatives of 1-(α-bromophenoxy)-2-hydroxy-3-aminopropane. 3,203,992, 8–31–65, Cl. 260—570.7.

Kurashiki Rayon Co. Ltd.: *See*—
Eguchi, Tamotsu, and Fujiwara. 3,204,012.

Kuriger, William L., to Collins Radio Co. Automatic self-starting voltage regulating device. 3,204,175, 8–31–65, Cl. 323—22.

Kuritza, Oleh M., and E. V. Havel, to Motorola, Inc. Ignition system. 3,203,412, 8–31–65, Cl. 123—148.

Kurts, John S., to Automatic Poultry Feeder Co. Egg washing apparatus. 3,203,435, 8–31–65, Cl. 134—58.

Kutzelnigg, Artur: *See*—
Grüss, Heinz, Gilliwald, Kutzelnigg, and Laub. 3,203,884.

Kutzscher, Edgar W.: *See*—
Brumfield, Elvin S., La Plant, and Kutzscher. 3,204,101.

Kvarda, Charles, Jr. Christmas light holder. 3,204,090, 8–31–65, Cl. 240—10.

Kyriacou, Demetrios: *See*—
House, Ralph, Sharman, and Kyriacou. 3,203,893.

Lahr, Thomas N.: *See*—
Johnson, James R., Lahr, and Wals. 3,204,103.

Laing, Robert H.: *See*—
Daulton, Arthur G., and Laing. 3,203,591.

Laisy, Rudyard E., to The National Screw & Mfg. Co. Blind fastener. 3,203,303, 8–31–65, Cl. 85—77.

Lamb, George F.: *See*—
Lane, Ralph G., and Lamb. 3,203,053.

Lamp, Benson J., to Massey-Ferguson Inc. Hay wafering apparatus having air separator. 3,203,367, 8–31–65, Cl. 107—14.

Lance, Drew R., to Fairchild Camera and Instrument Corp. Solid state microwave source utilising three tuning means. 3,204,199, 8–31–65, Cl. 331—117.

Landesman, Herbert, to Olin Mathieson Chemical Corp. Boron-containing fuel composition. 3,203,773, 8–31–65, Cl. 44—51.

Landis & Gyr, A.G.: *See*—
Giger, Jakob. 3,204,064.

Landis-Gendron S.A.: *See*—
Favrot, Paul. 3,203,273.

Lane, Ralph G., and G. F. Lamb, to Frank B. Miller Mfg. Co., Inc. Multiple window construction. 3,203,053, 8–31–65, Cl. 20—56.5.

Lannen, Robert J., to Micro-Poise Engineering and Sales Co. Connecting rod and pivot pin connection. 3,203,716, 8–31–65, Cl. 287—93.

La Plant, Oliver: *See*—
Brumfield, Elvin S., La Plant, and Kutzscher. 3,204,101.

La Plante, James F.: *See*—
Rahrig, Donald D., and La Plante. 3,203,279.

Laporte Chemicals Ltd.: *See*—
Hilldon, Anthony M. 3,203,756.

Larson, Louis P., and W. C. George, to Riegel Paper Corp. Container. 3,203,614, 8–31–65, Cl. 229—17.

Lassiter, Rush E. Steam heating device. 3,203,414, 8–31–65, Cl. 126—369.

Last, Bernard: *See*—
Whittaker, Alex R., Last, and Edwards. 3,203,238.

Lather-Stik, Inc.: *See*—
Hawkins, Robert E., and Van Zile. 3,203,024.

Latos, Edwin J., and A. J. Guarnaccio, to Universal Oil Products Co. Lubricating composition. 3,203,896, 8–31–65, Cl. 252—32.5.

Latos, Edwin J., and A. J. Guarnaccio, to Universal Oil Products Co. Lubricating oils containing amine salts of phosphates. 3,203,895, 8–31–65, Cl. 252—32.5.

Lau, Erwin M., to Black Products Co. Sleeve valve. 3,203,662, 8–31–65, Cl. 251—5.

Lauh, Hans: *See*—
Grüss, Heinz, Gilliwald, Kutzelnigg, and Laub. 3,203,884.

Laudig, David J., to Callaway Mills Co. Stabilizers for railway journal bearing assemblies. 3,203,741, 8–31–65, Cl. 308—40.

Lauer, Werner: *See*—
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Lawrence, Joseph W., to Atlas Chemical Industries, Inc. Explosive compositions containing sorbitan tetranitrate sensitizer. 3,203,844, 8–31–65, Cl. 149—38.

Lead and Micallef: *See*—
Micallef, Lewis A. 3,203,454.

Lear Seigler, Inc.: *See*—
Hartzell, Donald W., and Yoos. 3,203,413.

Learn, Arthur J.: *See*—
Crittenden, E. C., Jr., Cooper, Learn, and Schmidlin. 3,204,211.

Le Clear, Robert L., to T & S Equipment Co. Manually operated dockboard construction. 3,203,019, 8–31–65, Cl. 14—71.

Lee, Richard G. Strip cutter with photoelectric control means. 3,203,293, 8–31–65, Cl. 83—365.

Lefferts, Peter. Optical ray concentrator. 3,203,306, 8–31–65, Cl. 88—1.

Lehner, Wilhelm, W. Baldus, and W. Stich, to Gesellschaft fur Linde's Eismaschinen Aktiengesellschaft. Process and means for removing radioactive components from gases and gaseous mixtures. 3,203,866, 8–31–65, Cl. 176—37.

Lehnig, Paul C., Jr., to Tinius Olsen Testing Machine Co. Testing machines. 3,203,232, 8–31–65, Cl. 73—93.

Lemmerling, Jose T.: *See*—
Verelst, Johan L., and Lemmerling. 3,203,796.

Lemmerman, Harold H. P., to General Electric Co. Viscous damped sensing device. 3,203,259, 8–31–65, Cl. 74—5.5.

Lemont, Harold E.: *See*—
Jacobsen, Edward H., and Lemont. 3,203,485.

Lentjes, Carl G.: *See*—
Soles, Otto H., and Lentjes. 3,204,022.

Lepelletier, Pierre A., to Societe Anonyme Francaise du Ferodo. Hydraulic drum brake. 3,203,512, 8–31–65, Cl. 188—152.

Lessona Corp.: *See*—
Breiner, Alfred W. 3,203,834.

Leszczynski, Jan, to The Plessey Co. Ltd. Transistorized modulators. 3,204,203, 8–31–65, Cl. 332—31.

Lever Bros. Co.: *See*—
Carroll, Frank E., and Sepulveda. 3,203,900.

Levinrad, Maxim D.: *See*—
Priest, Norman F., and Levinrad. 3,203,733.

Lew, Baak W.: *See*—
Hales, Ralph A., and Lew. 3,203,963.

Libbey-Owens-Ford Glass Co.: *See*—
Rahrig, Donald D., and La Plante. 3,203,279.

Lich, Richard L., to General Steel Industries, Inc. Adjustable bulkhead. 3,203,362, 8–31–65, Cl. 105—376.

Lichte, Carl L., to Dresser Industries, Inc. Large hole earth boring drill bit. 3,203,492, 8–31–65, Cl. 175—355.

Lieber, Robert: *See*—
Flesch, Hans K., Gutmann, and Lieber. 3,204,086.

Lightner, Leon J., and M. Link, to Union Bag-Camp Paper Corp. Blister card package. 3,203,542, 8–31–65, Cl. 206—45.31.

Lignes Telegraphiques et Telephoniques: *See*—
Prache, Marie-Pierre. 3,204,244.

Liller, Richard F., to Addressograph-Multigraph Corp. Apparatus for developing electrostatic images. 3,203,395, 8–31–65, Cl. 118—637.

Illiston Implement Co.: *See*—
Whitesides, Jack C. 3,203,487.

Lilly, Eli, and Co.: *See*—
Buting, Walter E. 3,203,858.
Hargrove, William W. 3,203,981.

Lily-Tulip Cup Corp.: *See*—
Amberg, Stephen W., and St. Clair. 3,203,583.
Mount, Keith B., and Sims. 3,203,587.

Limberger, Walter, to Lumoprint Zindler KG. Copying apparatus. 3,203,336, 8–31–65, Cl. 95—89.

Limpouch, Bohuslav: *See*—
Michalicka, Ladislav, and Limpouch. 3,203,175.

Lindberg, Nils E., and O. H. Lundblad. Weight-recording weighing machines. 3,203,495, 8–31–65, Cl. 177—2.

Link, Martin: *See*—
Lightner, Leon J., and Link. 3,203,542.

Linn, Carl B., and G. L. Hervert, to Universal Oil Products Co. Process for recovery of boron halides. 3,203,764, 8–31–65, Cl. 23—205.

Lintner, Josef: *See*—
Blau, Karl-Ludwig, Herr, Lintner, and Wilhelm. 3,203,851.

Lion Hamigaki Kabushiki Kaisha: *See*—
Sakuma, Akira, and Hirano. 3,203,863.

Lipe-Rollway Corp.: *See*—
Root, Robert S. 3,203,520.

Liston, James F.: *See*—
Presunka, Peter, and Liston. 3,203,709.

Litchard, Alexander. Carton making, filling and closing machine. 3,203,154, 8–31–65, Cl. 53—75.

Litton Industries, Inc.: *See*—
Altieri, Joseph R. 3,203,633.

Litton Systems, Inc.: *See*—
Monaghan, Hugh M. 3,203,074.

Lobdell, Edward M.: *See*—
Bull, Fred L., Lobdell, and Monks. 3,203,816.

Lockhart, Hervey D. Urinary appliance. 3,203,420, 8–31–65, Cl. 128—295.

Lockheed Aircraft Corp.: *See*—
Brumfield, Elvin S., La Plant, and Kutzscher. 3,204,101.
Busby, John P., Sr. 3,204,085.
Calvert, Rodney K., and Wohar. 3,203,219.
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Daetwyler, Richard E. 3,203,527.
Fromm, Frederick W., and Kilpatrick. 3,204,083.
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Long, John R., to Shuford Mills, Inc. Traverse and tension control for winding machines. 3,203,163, 8–31–65, Cl. 57—98.

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Long, Paul J., Jr., to General Motors Corp. Rod seal for shock absorber. 3,203,511, 8–31–65, Cl. 188—100.

Long, Wendell P., to Hercules Powder Co. Olefin copolymerization process. 3,203,940, 8–31–65, Cl. 260—88.2.

Long, William R., to Long Mfg. Co. Bulk rack tobacco harvester. 3,203,562, 8–31–65, Cl. 214—5.5.

Lorant, George J., M. L. Rollins and D. C. Guterman, to General Foods Corp. Apparatus for producing dehydratable baby foods. 3,203,111, 8–31–65, Cl. 34—85.

Lorensen, Coby, I. J. Saluka, and F. L. Hill, to The Regents of the University of California. Separating conveyor for a tomato harvester. 3,203,430, 8–31–65, Cl. 130—30.

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Lorrin, Jean, to M. Berliet Automobiles. Anti-buck-jump coupling gears for tractor and semi-trailer vehicles. 3,203,712, 8–31–65, Cl. 280—438.

Loughlin, Bernard D., and C. G. Gorss, to Hewlett-Packard Co. Ultra-high frequency variable reactance. 3,204,162, 8–31–65, Cl. 317—251.

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Lucas, Robert A., and H. B. MacPhillamy, to Ciba Corp. Analgesic compositions comprising a lactone obtained from helenium. 3,203,857, 8–31–65, Cl. 167—55.

Lucas, Robert A., and H. B. MacPhillamy, to Ciba Corp. Lactone obtained from helenium SP. and derivatives thereof. 3,203,953, 8–31–65, Cl. 260—240.

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Ludlum, Donald G., to Eberline Instrument Corp. Alpha particle counter and integrating circuit arrangement. 3,204,099, 8–31–65, Cl. 250—83.6.

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Lupoli, Paul H. Fastening means for a swimming pool cover. 3,203,066, 8–31–65, Cl. 24—257.

Lupton, Elliott G., and E. M. Murphy. Portable tape punch. 3,203,625, 8–31–65, Cl. 234—39.

Luvisi, George W., and T. C. Nohejl, to Nalco Chemical Co. Herbicidal compositions and method for the manufacture thereof. 3,203,780, 8–31–65, Cl. 71—2.4.

Lyles, Cecil R. Pressure recording depth gauge. 3,203,243, 8–31–65, Cl. 73—300.

Lyles, Cecil R. Jarring devices. 3,203,482, 8–31–65, Cl. 166—178.

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Lucas, Robert A., and MacPhillamy. 3,203,953.

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Maestre, Neil E., to United Aircraft Corp. Oscillator frequency stabilisation during loss of AFC signal. 3,204,195, 8–31–65, Cl. 331—10.

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Maki, William M., to Fansteel Metallurgical Corp. Universal parts feeder. 3,203,590, 8–31–65, Cl. 221—175.

Malkoff, Hyman, to Kramer Trenton Co. Air conditioning system with frost control. 3,203,196, 8–31–65, Cl. 62—173.

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Mark, Jacob G., and R. Gabler, to W. R. Grace & Co. Process for waterproofing of cellulosic materials. 3,203,912, 8–31–65, Cl. 260—9.

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Maruyama, Masuteru: *See*—
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Masterson, Melvin L., Jr., to Wallboard Tool and Equipment Co. Carrying rod for wallboard panel. 3,203,606, 8–31–65, Cl. 224—45.

Masuda, Yoshio. Ocean wave electric generator. 3,204,110, 8–31–65, Cl. 290—42.

Masumoto, Hakaru, T. Kobayashi, and K. Watanabe, to The Foundation: The Research Institute of Electric and Magnetic Alloys. Method of manufacturing permanent magnets having large coercive force. 3,203,838, 8–31–65, Cl. 148—101.

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Matsumoto, Jiro: *See*—
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Matz, William H.: *See*—
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Matzer, Rudolph F., and E. Seidel. Material handling apparatus. 3,203,034, 8–31–65, Cl. 17—2.

Mausert, William A.: *See*—
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Maynard, Wheeler D., to General Signal Corp. Electromagnetic relay structure. 3,204,061, 8–31–65, Cl. 200—104.

Maynard, Wheeler D., to General Signal Corp. Contact blade mounting for relays having an integral resilient means for biasing said blade in position. 3,204,072, 8–31–65, Cl. 200—166.

McCarrick, Henry J., H. E. Shaw, and C. E. Sanford, to Texas Instruments Inc. Thermally responsive electrical switch with overstress protection means. 3,204,065, 8–31–65, Cl. 200—137.

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McCarty, Eugene F., to St. Regis Paper Co. Method of forming creped and embossed extensible paper. 3,203,850, 8–31–65, Cl. 162—113.

McCarty, George W., and H. O. Short, to The Black and Decker Mfg. Co. Compact rotary hammer. 3,203,490, 8–31–65, Cl. 173—109.

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McClure, Robert J.: *See*—
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McCracken, John H., J. G. D. Schula, and A. C. Whitaker, to Gulf Research & Development Co. Process for hydrogenating diarylketone carboxylic acids. 3,203,982, 8–31–65, Cl. 260—515.

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McElfresh, William G., and W. A. Ross, to Dura Corp. Universal torsion spring gauge. 3,203,103, 8–31–65, Cl. 33—181.

McFarline, Arthur H., and E. H. Spouge, to Pacific Scientific Co. Safety harness. 3,203,641, 8–31–65, Cl. 242—107.4.

McGaw Laboratories, Inc.: *See*—
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McGow, Thomas C.: *See*—
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McGrath, John M., and M. H. Gaertner, to Fischer & Porter Co. Flowmeter. 3,203,240, 8–31–65, Cl. 73—209.

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Sieckman, Walter, Wooding, and Wynne. 3,203,688.
Wilson, Gordon A., Jr. 3,204,176.
Wooding, Patrick J., Wynne, and Sieckman. 3,203,686.
Wynne, Peter J., Wooding, and Sieckman. 3,203,687.

McGregor, James D., and A. A. Osgood, to J. M. Huber Corp. Carbon black collecting systems. 3,203,156, 8–31–65, Cl. 55—223.

McKay, Michael W., and T. W. Odell, to General Precision, Inc. Passive communication system. 3,204,240, 8–31–65, Cl. 343—100.

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McMahan, Robert D. Air diffuser and dispenser for automotive vehicles. 3,203,476, 8–31–65, Cl. 165—42.

McNeil Laboratories, Inc.: *See*—
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Mead Corp., The: *See*—
Forrer, Homer W. 3,203,584.
Gentry, Hermond G. 3,203,324.
Wilcox, Richard T. 3,203,152.
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Mead Johnson & Co.: *See*—
Wu, Yao H. 3,203,961.
Wu, Yao H., and Rhodes. 3,203,860.

Mees, Wouter J. G., to Koninklijke Nederlandsche Hoogovens En Staalfabrieken N.V. Process for removing free nitrogen from steel. 3,203,837, 8–31–65, Cl. 148—16.

Meier, James C., to Collins Radio Co. Digit memory circuit. 3,204,127, 8–31–65, Cl. 307—88.5.

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Meiners, Alfred F., and F. V. Morriss, to Department of Agriculture and Inspection of the State of Nebraska. Oxidized starch product and method of making the same. 3,203,885, 8–31–65, Cl. 204—158.

Mejiso, George M., to United-Carr Inc. Cable holding device. 3,203,655, 8–31–65, Cl. 248—068.

Mentzer, Robert E., to Philco Corp. Snap action magnetic switch employing a flexible bimetal switch arm. 3,204,060, 8–31–65, Cl. 200—88.

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Merkel, Adolf. Shoe cleaning device in the form of an endless belt. 3,203,020, 8–31–65, Cl. 15—36.

Merzoni, Sergio: *See*—
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Mesi, Philip J.: *See*—
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Metallgesellschaft Aktiengesellschaft: *See*—
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Met-Chem, Inc.: *See*—
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Mette, Herbert B., Jr.: *See*—
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Meyer, George C. Alarm for swimming pool. 3,204,232, 8–31–65, Cl. 340—261.

Meyer, Kurt, G. von Struve, and W. Stieger, to Dravo Corp. Method of and apparatus for the endothermic processing of ores. 3,203,782, 8–31–65, Cl. 75—5.

Micale, Angelo. Three way goods guide for sewing machines. 3,203,365, 8–31–65, Cl. 112—152.

Micale, Angelo. Hook and eye attachment for sewing machines. 3,203,380, 8–31–65, Cl. 112—114.

Micale, Angelo. Trimming device with finger guard and anti-curling device. 3,203,382, 8–31–65, Cl. 112—122.

Micale, Angelo. Combination shirring foot. 3,203,383, 8–31–65, Cl. 112—134.

Micale, Angelo. Combination finger guard and goods guide for sewing machines. 3,203,384, 8–31–65, Cl. 112—151.

Micallef, Lewis A., to Lead and Micallef. Measuring cup attachment for pressure containers. 3,203,454, 8–31–65, Cl. 141—113.

Michalicka, Ladislav, and B. Limpouch. System of operation of a steam-gas circuit or of a gas circuit for gas turbines comprising a combustion chamber for solid fuel. 3,203,175, 8–31–65, Cl. 60—39.02.

Michael, Gregor: *See*—
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Michael, Harold J., to North American Aviation, Inc. High-temperature protective coating for metals. 3,203,915, 8–31–65, Cl. 106—49.

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Michel, Adolf. Apparatus for generating electrical oscillations. 3,204,020, 8–31–65, Cl. 84—1.04.

Michel, Adolf. Keying devices, particularly for electrical musical instruments. 3,204,177, 8–31–65, Cl. 323—56.

Micro-Balancing, Inc.: *See*—
Frank, Karl F. 3,203,233.
Frank, Karl F. 3,203,521.

Micro-Poise Engineering and Sales Co.: *See*—
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Middlebrooks, Ollie, to Continental Carbon Co. Apparatus for producing carbon black. 3,203,767, 8–31–65, Cl. 23—259.5.

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Miles Laboratories, Inc.: *See*—
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Milewski, John V.: *See*—
Katz, Harry S., and Milewski. 3,203,849.

Miller, Albert G. Finger nail cleaner. 3,203,433, 8–31–65, Cl. 132—75.6.

Miller, Alfred L.: *See*—
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Miller, Avy L. Water heater with heat insulating coating on tubes. 3,203,404, 8–31–65, Cl. 122—236.

Miller, Earle C., to Riley Stoker Corp. Burner. 3,203,468, 8–31–65, Cl. 158—1.5.

Miller, Frank B., Mfg. Co., Inc.: *See*—
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Miller, LeRoy: *See*—
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Miller, Merle J., and H. J. Petty. Locking means for movable support plate. 3,203,016, 8–31–65, Cl. 9—310.

Miller, Samuel J.: *See*—
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Millis, Hugh L., Jr. General purpose parallel sequencing computer. 3,204,087, 8–31–65, Cl. 235—151.

Mills, Walter P., W. A. O'Neill, and R. Price, to Imperial Chemical Industries Ltd. Aftertreatment of dyed polypropylene fibers containing a metal compound with metal complexes. 3,203,752, 8–31–65, Cl. 8—75.

Mimnaugh, Henry W., and T. Dragomir. Rubber hopper for grain loader. 3,203,532, 8–31–65, Cl. 198—64.

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Cottle, Delmar L., Gardner, Miller, and Minckler. 3,203,914.

Minet, Albert, to Braun Aktiengesellschaft. Comminuting apparatus. 3,203,457, 8–31–65, Cl. 146—76.

Minnesota Mining and Mfg. Co.: *See*—
Johnson, James R., Lahr, and Wals. 3,204,106.

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Miranda, Thomas J., H. R. Herman, and T. F. Marcotte, to The O'Brien Corp. Polymeric compositons of terpolymers reacted with aminohydroxy compounds. 3,203,935, 8–31–65, Cl. 260—78.5.

Mississippi Valley Structural Steel Co.: *See*—
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Mitacek, John: *See*—
Houser, Clarence G., Mitacek, Rohling, and Payne. 3,203,943.

Modavis, Fred A.: *See*—
Capen, Harold N., Modavis, and Vallese. 3,204,186.

Moffat, Walter G., and R. Carson, to Rhoanglo Mine Services Ltd. Method of X-ray spectographic analysis of a mixture of solid particles and liquid. 3,204,097, 8–31–65, Cl. 250—51.5.

Mogolis, Bruce W., to Bruce Machining & Engineering, Inc. Stock handling apparatus. 3,203,608, 8–31–65, Cl. 226—124.

Moiroux, Auguste, and E. Salel, to Societe d'Etudes et de Participations Eau, Gaz, Electricite, Energie S.A. Starting device for autogenerators. 3,203,164, 8–31–65, Cl. 60—14.

Molins Machine Co. Ltd.: *See*—
Pembroke, George F., and Hillman. 3,203,431.

Monaghan, Hugh M., to Litton Systems, Inc. Sheet clamping arrangements. 3,203,074, 8–31–65, Cl. 29—118.

Monk, Clarence B., Jr.: *See*—
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Monks, Joseph R., Jr.: *See*—
Bull, Fred L., Lobdell, and Monks. 3,203,816.

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Abramo, John G., and Chapin. 3,203,993.
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Montecatini Societa Generale per L'Industria Minerarta e Chimica: *See*—
Caldo, Cornelio. 3,203,942.
Chiusoli, Gian P., and Merzoni. 3,203,978.

Montenare, Anthony. Pneumatically cushioned bumper. 3,203,723, 8–31–65, Cl. 293—89.

Montroy, Kenneth, and L. E. Cotter. All relay warning system. 3,204,222, 8–31–65, Cl. 340—167.

Morgan, William A., R. J. McClure, and D. E. C. King, to Canada, Her Majesty the Queen in right of, as represented by the Minister of Mines and Technical Surveys. Stabilisation of chromium nickel stainless steels. 3,203,789, 8–31–65, Cl. 75—130.5.

Moore, Austin T. Vibrator. 3,203,415, 8–31–65, Cl. 128—33.

Moore, Francis J. Simplified construction for door latch operating mechanism. 3,203,719, 8–31–65, Cl. 292—167.

Moore, George A. Carton having a dispensing facility, and carton blank therefor. 3,203,615, 8–31–65, Cl. 229—17.

Moore, James G., to Blaw-Knox Co. Apparatus for making paste flakes. 3,203,109, 8–31–65, Cl. 34—62.

Moore, Joseph E., to California Research Corp. Polyhaloalkylpolythio alkanols. 3,203,996, 8–31–65, Cl. 260—608.

Moore, Nathaniel N., M. Peres, Jr., and S. Ackerman, to The Bendix Corp. Gyro erection control system. 3,203,261, 8–31–65, Cl. 74—5.47.

Moresi, Joseph A., Jr., and R. D. Boisjolie, to Sprague Electric Co. Vented electrolytic unit. 3,204,156, 8–31–65, Cl. 317—230.

Morgan, Cyril O. B., to Love, Marden and Wilson Ltd. Valve with supplemental repair check valve. 3,203,443, 8–31–65, Cl. 137—329.3.

Morriss, Francis V.: *See*—
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Kuritza, Oleh M., and Havel. 3,203,412.
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Mudd, James F., and E. H. Casey, to Phillips Petroleum Co. Apparatus for the recovery of solids from pressure vessels. 3,203,766, 8–31–65, Cl. 23—252.

Mueller, Gustav A., to Union Carbide Corp. Method for preparing positive electrodes. 3,203,879, 8–31–65, Cl. 204—56.

Mueller, Peter A., to Mueller Seal Co. Rotary mechanical seal. 3,203,704, 8–31–65, Cl. 277—42.

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Mukai, Taro, and J. E. Gantt, to Universal Oil Products Co. Dealkylation of alkyl aromatic compounds. 3,204,007, 8–31–65, Cl. 260—672.

Muller, Ernst. Machine for incasing cables and the like. 3,203,216, 8–31–65, Cl. 72—258.

Müller, Gerhard: *See*—
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Muller, Peter, to Andrews Paper & Chemical Co. Thermal diasotype method and developer sheet for use therein. 3,203,797, 8–31–65, Cl. 96—49.

Muller, Peter, to Andrews Paper & Chemical Co., Inc. Diazotype transfer developing method. 3,203,798, 8–31–65, Cl. 96—49.

Multi/Chek, Inc.: *See*—
Nixon, Albert L., and Hardy. 3,203,627.

Munn, Peter N.: *See*—
Williams, Ronald P., Munn, and Duncan. 3,203,867.

Murcott, Charles E. Swingable seat structure for bathtubs. 3,203,008, 8–31–65, Cl. 4—185.

Murphy, David W.: *See*—
Smith, Roy J., Seamount, and Murphy. 3,203,503.

Murphy, Edward M.: *See*—
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Murphy, Merrill M., Sr., to Irving Air Chute Co., Inc. Safety belt buckle. 3,203,064, 8–31–65, Cl. 24—230.

Murr, John, Jr., and H. O. Hook, to Radio Corp. of America. Storage-type electroluminescent image simplifier. 3,204,-106, 8–31–65, Cl. 250—213.

Musser, C. Walton. Insistor. 3,203,141, 8–31–65, Cl. 52—1.

Muta, Akinor, and T. Gejo, to Kabushiki Kaisha Hitachi Seisakusho. Method for increasing the thermal endurance of silicon carbide. 3,203,814, 8–31–65, Cl. 106—44.

Myers, Claude J. Self-propelled trolling device. 3,203,131, 8–31–65, Cl. 43—26.1.

Myers, Louis. Juice extractor. 3,203,343, 8–31–65, Cl. 100—98.

Naeser, Gerhard, O. Wessel, and H. Ern, to Mannesmann Aktiengesellschaft. Rolling mills for metal powder rolling. 3,203,045, 8–31–65, Cl. 18—9.

Nager, Urs F.: *See*—
Burke, Oliver W., Jr., Davis, and Nager. 3,203,171.

Naito, Shozo: *See*—
Yoshida, Seijiro, Naito, Ito, and Tajima. 3,203,917.

Nakauchi, Shunsaku, to Tohoku Oki Electric Co. Ltd. Matrix controlled numeral display. 3,204,234, 8–31–65, Cl. 340—336.

Naken, William. Switching circuit. 3,204,120, 8–31–65, Cl. 307—88.5.

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Wirth, Louis F., Jr. 3,203,873.

Naphtali, Leonard M.: *See*—
Polinski, Leon M., and Naphtali. 3,203,252.

Narmore, James I. Mirror mounting means and method. 3,203,142, 8–31–65, Cl. 50—22.

Nash, William H., and E. W. Kaminsky, to McGraw-Edison Co. Thermal current responsive circuit breaker. 3,204,-063, 8–31–65, Cl. 200—116.

National Industrial Products Co.: *See*—
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National Lock Co.: *See*—
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National Mfg. Co.: *See*—
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National Research Development Corp.: *See*—
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National Screw & Mfg. Co., The: *See*—
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National-Standard Co.: *See*—
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National Starch and Chemical Corp.: *See*—
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Naughton, Thomas J.: *See*—
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Neier, Reinhard, to Sandoz Ltd. Metal complex azo dyes. 3,203,948, 8–31–65, Cl. 260—145.

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Neuville, Stewart M., to Kimberly-Clark Corp. Process for production of lime. 3,203,761, 8–31–65, Cl. 23—186.

Newman, Douglas A., to Columbia Ribbon and Carbon Mfg. Co., Inc. Lithographic printing plate imaging process. 3,203,344, 8–31–65, Cl. 101—149.2.

Newman, John P. Impact wrench. 3,203,283, 8–31–65, Cl. 81—52.3.

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Nicoll, Leslie C. Printing. 3,203,054, 8–31–65, Cl. 22—5.5.

Nikles, Erwin, O. Ernst, H. Batzer, and K. Brugger, to Ciba Ltd. Curable mixtures containing epoxy resins, curing agents and flexibilizers. 3,203,920, 8–31–65, Cl. 260—30.4.

Niman, George J.: *See*—
Steel, Francis R., and Niman. 3,204,194.

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Nixon, William G., to Universal Oil Products Co. Hydrocarbon conversion process and catalyst therefor. 3,204,005, 8–31–65, Cl. 260—671.

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Luvisi, George W., and Nohejl. 3,203,780.

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Normacem: *See*—
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Norman, Sivert, to Allmanna Svenska Elektriska Aktiebolaget. Tap changing apparatus with wave-shaped control means and roller selector arm structure. 3,204,049, 8–31–65, Cl. 200—11.

Norrick, Robert F., to Joy Mfg. Co. Power wrench and power slip. 3,203,284, 8–31–65, Cl. 81—54.

Norris, Fred H., and N. C. Zeter, to Caterpillar Tractor Co. Cable control system having tension controlling means including means to automatically clutch and declutch cable winch. 3,203,873, 8–31–65, Cl. 254—173.

North American Aviation, Inc.: *See*—
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North American Philips Co., Inc.: *See*—
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Northrop Corp.: *See*—
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Norton, Robert K., and H. A. Pritchard, to Harris-Intertype Corp. Three cylinder convertible printing press. 3,203,346, 8–31–65, Cl. 101—217.

Novak, Jaroslav: *See*—
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Nuclear Corp. of America: *See*—
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Obenhaus, Robert E., to Texas Instruments Inc. Method of manufacturing a hermetically sealed semiconductor capsule. 3,203,083, 8–31–65, Cl. 29—470.1.

Obenshain, David N., to West Virginia Pulp and Paper Co. Single web sheet cutter and stacker. 3,203,326, 8–31–65, Cl. 93—93

Oberth, Adolph E., and R. S. Bruenner, to Aerojet-General Corp. Dihydroxy alkyl bis-(2-cyanoethyl) amines and processes for the preparation thereof. 3,203,976, 8–31–65, Cl. 260—465.5.

O'Brien Corp., The: *See*—
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Odell, Thomas W.: *See*—
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Oderman, Samuel, to Sta-Hi Corp. Apparatus for drying stereotype mats. 3,203,106, 8–31–65, Cl. 34—48.

Oesterling, Robert E.: *See*—
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Ohman, Thor. Sliding door support. 3,203,027, 8–31–65, Cl. 16—105

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Friend, Harvey H. 3,203,128.
Harris, Edward E. 3,203,898.
Heying, Theodore L., and Schroeder. 3,203,984.
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Olliff, William F. Slope indicator. 3,204,233, 8–31–65, Cl. 340—282.

Olree, Adrian R.: *See*—
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Olsen, Poul J., and P. F. Ahl, to Culligan, Inc. Hydraulically-actuated valve. 3,203,450, 8–31–65, Cl. 137—630.19.

Olson, Donald M. Portable-collapsible toilet. 3,203,007, 8–31–65, Cl. 4—116.

Olson, Harry F., and H. Belar, to Radio Corp. of America. Acoustic apparatus for encoding sound. 3,204,030, 8–31–65, Cl. 179—1.

O'Neal, Wilbert O., to L. W. Menzimer. Cam operated article releasing means. 3,203,588, 8–31–65, Cl. 221—67.

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Kawakami, Masamitsu, and Onoda. 3,204,209.

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Orelup, John W. Fluorescing dyes of the pyridino anthrone series. 3,203,956, 8–31–65, Cl. 260—272.

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Orwin, Olaf J. B., to Fisher & Ludlow Ltd. Overload or torque limiting clutches. 3,203,524, 8–31–65, Cl. 192—56.

Osborn, Carroll H., and D. V. Haren, to Dayco Corp. Light stabilized compositions comprising polyvinyl chloride, polyurethan and ethylene oxide. 3,204,013, 8–31–65, Cl. 260—859.

Osborn, Peter E., to International Telephone and Telegraph Corp. Discriminator and pulse forming circuit. 3,204,042, 8–31–65, Cl. 179—18.

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Ototani, Tohei, M. Maruyama, J. Matsumoto, and S. Izumi, to The Research Institute for Iron, Steel and Other Metals of the Tohoku University. Method of refining molten metals by electrolyzing molten slag under arc discharge. 3,203,883, 8–31–65, Cl. 204—140.

Oury Engineering Co.: *See*—
Oury, John F. 3,203,538.

Oury, John F., to Oury Engineering Co. Conveyor construction. 3,203,538, 8–31–65, Cl. 198—208.

Overcash, Frank J., to Lockheed Aircraft Corp. Aircraft station keeping and terminal navigation system. 3,204,237, 8–31–65, Cl. 343—6.5.

Owen, James R., to Honeywell Inc. Electrical apparatus. 3,203,636, 8–31–65, Cl. 242—55.12.

Owens, James L., and A. J. Vrsecky, to Western Electric Co., Inc. Apparatus for machining selected areas of the surface of an article. 3,203,137, 8–31–65, Cl. 51—50.

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Berry, Virgil F., McGraw, and Naughton. 3,203,777.
Bull, Fred L., Lobdell, and Monks. 3,203,816.
Denman, Robert R. 3,203,778.
Holladay, Alfred C., and Houghton. 3,203,537.
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Reber, Guy L. 3,203,779.
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Pacific Research Laboratory: *See*—
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Pacific Scientific Co.: *See*—
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Pacific States Steel Corp.: *See*—
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Paige, Richard E. Carton-type container for electric light bulbs. 3,203,617, 8–31–65, Cl. 229—39.

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Vincent, Renie P. 3,203,483.

Pangburn, James H., and C. Trigg. Auxiliary drill collar connection. 3,203,713, 8–31–65, Cl. 285—18.

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Parker, Fred D., ¼ each to I. T. and C. H. Kehn, and E. H. Waltner. Occupant propelled merry-go-round. 3,203,695, 8–31–65, Cl. 272—33.

Parker, Joseph W., to Pharma Plastics Inc. Container cap. 3,203,577, 8–31–65, Cl. 220—42.

Parker, Kenneth O. and J. P. Boland, to United Aircraft Products, Inc. Valve and heat exchanger assembly. 3,203,-474, 8–31–65, Cl. 165—39.

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Parlin, David B., and H. G. Gallagher, to Bigelow-Sandford, Inc. Tufted fabric and method of making the same. 3,203,-388, 8–31–65, Cl. 112—410.

Parmenter, Robert H., to Radio Corp. of America. Four-terminal solid state superconductive device with control current flowing transverse to controlled output current. 3,204,115, 8–31–65, Cl. 307—88.5.

Parmenter, Robert H., to Radio Corp. of America. Solid state superconductor switching device wherein extraction of normal carriers controls superconductivity of said device. 3,204,116, 8–31–65, Cl. 307—88.5.

Parr, James R., to The New York Air Brake Co. Hydraulic device. 3,203,165, 8–31–65, Cl. 60—16.

Passarelli, Henry A., Jr., and E. F. Reihman, to General Electric Co. Center-biased double-throw momentary contact switch. 3,204,071, 8–31–65, Cl. 200—165.

Pattijn, Hendrik A.: *See*—
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Paulick, David R., to General Motors Corp. Dry cleaning apparatus. 3,203,209, 8–31–65, Cl. 68—207.

Paulshock, Marvin, and J. C. Watts, to E. I. du Pont de Nemours and Co. Adamantane isocyanate and isothiocyanate. 3,203,970, 8–31–65, Cl. 260—453.

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Pedersen, Haakon O., to Thiokol Chemical Corp. Pump. 3,203,354, 8–31–65, Cl. 103—113.

Peickii, Vasalie L., R. C. Lund, and G. D. Rhoads, to Federal-Mogul-Bower Bearings, Inc. Bearing seal. 3,203,740, 8–31–65, Cl. 308—187.2.

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Pembroke, George F., and J. G. E. Hillman, to Molins Machine Co. Ltd. Apparatus for conveying cigarettes. 3,203,431, 8–31–65, Cl. 131—27.

Pendergrast, John B., Jr., and I. J. Silberman, to Southern Spring Bed Co. Reversible gravity feed can rack. 3,203,553, 8–31–65, Cl. 211—49.

Pendergrast, John B., Jr., and R. H. Zisethann; said Pendergrast assor. to Southern Spring Bed Co. Can carton rack. 3,203,554, 8–31–65, Cl. 211—49.

Penley, Benjamin S., to Allied Chemical Corp. Devices for closing the joints of prefabricated wall panels. 3,203,147, 8–31–65, Cl. 52—461.

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Peras, Lucien, to Regie Nationale des Usines Renault. Devices for controlling electric clutches of vehicles. 3,203,518, 8–31–65, Cl. 192—.052.

Peras, Lucien, to Regie Nationale des Usines Renault. Process of incorporation of correctives in the manufacture of iron by the method of fusion with a consumable electrode. 3,203,763, 8–31–65, Cl. 75—11.

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Perry, Forbes G. de B., to National Research Development Corp. Infinitely variable change speed gears. 3,203,267, 8–31–65, Cl. 74—200.

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Peterson, Allen R., to Welduction Corp. Crystal diode heat dissipating mounting. 3,204,157, 8–31–65, Cl. 317—234.

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Petraitis, Benedict J. Orthodontic appliance. 3,203,098, 8–31–65, Cl. 32—14.

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Pfeiffer, Fred B. Machine for making screws. 3,203,315, 8–31–65, Cl. 90—11.54.

Pfister, Marcel C. Sensing head device for the sensing of rolled stock. 3,204,108, 8–31–65, Cl. 250—219.

Pfleger, Frederick W., to Radio Corp. of America. Document handling system. 3,203,693, 8–31–65, Cl. 271—10.

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Phelisse, Jean A., and E. Brasset, to Societe des Usines Chimiques Rhone-Poulenc. Solution of acid casein and film forming polymers in dimethylsulphoxide. 3,203,817, 8–31–65, Cl. 106—141.

Philco Corp.: *See*—
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Hettick, George R., Van Pool, and Chapman. 3,204,011.
Houser, Clarence G., Mitacek, Rohling, and Payne. 3,203,943.
Hsieh, Henry L. 3,203,944.
Mudd, James F., and Casey. 3,203,766.
Ray, Gardner C. 3,204,003.
Scott, John N., Jr., and Boeke. 3,203,572.
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Picard, Maxime F. B., F. L. H. Barreteau, and J. F. Moulin, to Societe de Prospection Electrique. Adjustable support for mirror-type galvanometer unit including adjustable magnetic means for varying the sensitivity. 3,204,182, 8–31–65, Cl. 324—97.

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Werres, Horst, and Pieroh. 3,203,852.

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Pines, Arthur N., and E. A. Zientek, to Union Carbide Corp. Amino silicone-silicate polymers. 3,203,969, 8–31–65, Cl. 260—448.2.

Pinter, Ann V.: *See*—
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Plastino, Mario A. Head protecting head gear. 3,203,003, 8–31–65, Cl. 2—3.

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Riviere, Charles, to Le Progress Scientifique. Compositions having high diuretic action and a high ratio of elimination of sodium with respect to potassium. 3,203,861, 8–31–65, Cl. 167—65.

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Robbins, Richard J., D. F. Winberg, and J. Galgoczy, to James S. Robbins & Associates Inc. Rock drilling machine. 3,203,737, 8–31–65, Cl. 299—31.

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Robinson, Lorne M., to North American Aviation, Inc. Phase-lock receivers. 3,204,185, 8–31–65, Cl. 325—419.

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Rodis, Frans, deceased (by H. Rodis, nee Arend, heiress); A. Hins, and F. Thomas, to Knapsack-Griesheim Aktiengesellschaft. Process for producing a highly porous mass from short slag. 3,203,776, 8–31–65, Cl. 65—20.

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Rohr Corp.: *See*—
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Roubal, Alexander J., to Allis-Chalmers Mfg. Co. Gib and cotter bolt assembly. 3,203,548, 8–31–65, Cl. 209—399.

Rowe, Donald C. Food containers. 3,203,573, 8–31–65, Cl. 220—23.6.

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Ruby, Clair J., to S. A. Armstrong, Ltd. Motor pump unit. 3,203,353, 8–31–65, Cl. 103—87.

Ruggiero, Fabrizio. Portable fire extinguishing device. 3,203,484, 8–31–65, Cl. 169—32.

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Saaty, Theodore N., to Wheelock Signals Inc. Magnetically latched relay. 3,204,059, 8–31–65, Cl. 200—87.

Sabatino, Anthony, to Globe-Union Inc. Battery flaming device. 3,203,677, 8–31–65, Cl. 263—6.

Sabet, Huschang. Rotary engine. 3,203,405, 8–31–65, Cl. 123—11.

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Sakuma, Akira, and S. Hirano, to Lion Hamigaki Kabushiki Kaisha. Process for producing protoanemonin preparation. 3,203,863, 8–31–65, Cl. 167—65.

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Samuelsen, Eirik, to Chematur, Aktiebolaget, and Norsk Spraengstofindustri A/S. Manufacture of nitrotoluenes. 3,204,000, 8–31–65, Cl. 260—645.

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Sanger, Merle J., and D. van Wagenen, to The General Tire & Rubber Co. Method for making a combination foam-spring cushion. 3,204,016, 8–31–65, Cl. 264—45.

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Sawyer, Hermon R. Game apparatus. 3,203,696, 8–31–65, Cl. 273—29.

Sawyer, Willard C., and G. Forrester, to S. D. Warren Co. Temperature control system for rolls. 3,203,678, 8–31–65, Cl. 263—6.

Sax, Karl J.: *See*—
Mahoney, Clarence L., and Sax. 3,203,997.

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Doering, William von E., and Sayigh. 3,203,947.

Saylor, Richard: *See*—
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Schaefer, Frederic C., to American Cyanamid Co. Method for the preparation of substituted s-triazine compounds. 3,203,550, 8–31–65, Cl. 210—248.

Schafranek, Gustav. Multiple pump assembly. 3,203,352, 8–31–65, Cl. 103—87.

Schaum, Gustav, and H. Haydn, to Agfa Aktiengesellschaft. Photoconductive layers for electrophotography. 3,203,795, 8–31–65, Cl. 96—1.

Scheid, Ernst. Apparatus for the testing of bituminous building materials. 3,203,253, 8–31–65, Cl. 73—432.

Scheil, Erich, deceased, by M. Scheil, heir and legal representative of minor heirs, I. Claas and H. Graefen, to Badische Anilin-& Soda-Fabrik Aktiengesellschaft. Highly corrosion resistant nickel-chromium-molybdenum alloy with improved resistance to intergranular corrosion. 3,203,792, 8–31–65, Cl. 75—171.

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Wood, Prentice J., to The Mead Corp. Packaging machine. 3,203,153, 8–31–65, Cl. 53—48.

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Wright, Donald J., to Tompkins Label Service, Inc. Resealable bag-top closures. 3,203,621, 8–31–65, Cl. 229—62.

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Young, John R., R. B. Trusler, A. X. Hiltgen, and W. H. Matz; said Young and Trusler assors. to The Davies-Young Soap Co., and said Hiltgen and Matz assors. to Pittsburgh Chemical Co. Dry cleaning apparatus and method. 3,203,754, 8–31–65, Cl. 8—142.

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Zelinski, Robert P., to Phillips Petroleum Co. Polymerization of conjugated diolefins with a cobaltous compound-aluminum alkyl dihalide-amine or ammonia catalyst. 3,203,945, 8–31–65, Cl. 260—94.3.

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Zumi, Yutaka: *See*—
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CLASSIFICATION OF PATENTS

ISSUED AUGUST 31, 1965

NOTE.—First number, class; second number, subclass; third number, patent number

2– 3	3,203,003	29– 36	3,203,071	55–223	3,203,156	73–228	3,203,241	90– 15	3,203,316	112–114	3,203,380
128	3,203,004	105	3,203,072	495	3,203,157	231	3,203,242	91– 4	3,203,317	122	3,203,381
158	3,203,005	113	3,203,073	505	3,203,158	300	3,203,243	45	3,203,319		3,203,382
159	3,203,006	118	3,203,074	56– 1	3,203,159		3,203,244	186	3,203,318	134	3,203,383
4–116	3,203,007	155.5	3,203,075	24	3,203,160	322.5	3,203,245	92– 87	3,203,320	151	3,203,384
185	3,203,008		3,203,076	295	3,203,161	419	3,203,246	223	3,203,321	152	3,203,385
5– 81	3,203,009		3,203,077	297	3,203,162	421	3,203,247	93– 1.1	3,203,322	203	3,203,386
86	3,203,010	155.55	RE.25,847	57– 98	3,203,163	421.5	3,203,248	35	3,203,323	218	3,203,387
94	3,203,011		3,203,078	60– 14	3,203,164	422	3,203,249	37	3,203,324	410	3,203,388
120	3,203,012	163.5	3,203,079	18	3,203,165		3,203,250	80	3,203,325	114– 66.5	3,203,389
8– 4	3,203,750	177	3,203,080	23	3,203,166	425.6	3,203,251	93	3,203,326	116– 31	3,203,390
39	3,203,751	195	3,203,772	26	3,203,167	432	3,203,252	94– 31	3,203,327	135	3,203,391
75	3,203,752	203	3,203,081	30	3,203,168		3,203,253	95– 15	3,203,328	117– 17	3,203,821
83	3,203,753	469	3,203,082	35.4	3,203,169	466	3,203,254	63	3,203,329	21	3,203,822
142	3,203,754	470.1	3,203,083		3,203,170	484	3,203,255	64	3,203,330	36.3	3,203,832
158	3,203,013	473.1	3,203,084		3,203,171	517	3,203,256		3,203,331	38	3,203,823
9– 1	3,203,014	498	3,203,085		3,203,172	74– 1.5	3,203,257	73	3,203,332	51	3,203,824
6	3,203,015	528	3,203,086	35.5	3,203,173	3.5	3,203,258	77.5	3,203,333	62.1	3,203,825
310	3,203,016	30– 1.5	3,203,087	35.6	3,203,174	5.47	3,203,261	79	3,203,334	102	3,203,826
10–138	3,203,017	10	3,203,088	39.02	3,203,175	5.5	3,203,259	89	3,203,335	107.2	3,203,827
12– 1	3,203,018		3,203,089	39.16	3,203,176	5.7	3,203,260		3,203,336	122	3,203,828
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15– 36	3,203,020	62	3,203,091	39.28	3,203,178	44	3,203,263	29	3,203,796	227	3,203,830
236	3,203,021		3,203,092		3,203,179	61	3,203,264	49	3,203,797	230	3,203,831
340	3,203,022	63	3,203,093	39.29	3,203,180	124	3,203,265		3,203,798	118–115	3,203,392
371	3,203,023	250	3,203,094	39.51	3,203,181	128	3,203,266	53	3,203,799	412	3,203,393
555	3,203,024	272	3,203,095	39.75	3,203,182	200	3,203,267	67	3,203,800	637	3,203,394
563	3,203,025		3,203,096	51	3,203,183	411	3,203,268	87	3,203,801		3,203,395
566	3,203,026	32– 2	3,203,097	52	3,203,184	424.8	3,203,269		3,203,802	119– 15.5	3,203,396
16–105	3,203,027	14	3,203,098	53	3,203,185	517	3,203,270	91	3,203,803	53	3,203,397
	3,203,028		3,203,099	54.5	3,203,186	519	3,203,271	114	3,203,804	119	3,203,398
114	3,203,029	33– 76	3,203,101	54.6	3,203,187	527	3,203,272	115	3,203,805	120	3,203,399
129	3,203,030	141	3,203,102	61– 72.6	3,203,188	573	3,203,273	98– 36	3,203,337	157	3,203,400
145	3,203,031	174	3,203,100	62– 3	3,203,189	604	3,203,274	114	3,203,338	120– 38	3,203,401
163	3,203,032	181	3,203,103	5	3,203,190	665	3,203,275	99– 2	3,203,806	42.03	3,203,402
176	3,203,033	189	3,203,104	9	3,203,191	687	3,203,276	109	3,203,807		3,203,403
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11.1	3,203,035	34– 48	3,203,106	13	3,203,193	690	3,203,278	229	3,203,809	123– 11	3,203,405
12	3,203,036		3,203,107	114	3,203,194	722	3,203,279	232	3,203,810	13	3,203,406
21	3,203,040	58	3,203,108	156	3,203,195	796	3,203,280	240	3,203,339	27	3,203,407
32	3,203,037	62	3,203,109	173	3,203,196	75– .5	3,203,781	289	3,203,340	41.74	3,203,408
45	3,203,038	80	3,203,110	277	3,203,197	5	3,203,782	330	3,203,341	75	3,203,409
	3,203,039	85	3,203,111	402	3,203,198	11	3,203,783	100– 27	3,203,342	119	3,203,410
18– 1	3,203,041	104	3,203,112	414	3,203,199	40	3,203,784	98	3,203,343	139	RE.25,848
4	3,203,042	218	3,203,113	63– 5	3,203,200	49	3,203,785	101–149.2	3,203,344	146.5	3,203,411
5	3,203,043	35– 19	3,203,114	64– 23	3,203,201	82	3,203,786	216	3,203,345	148	3,203,412
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9	3,203,045	48	3,203,116	26	3,203,203	129	3,203,788	219	3,203,347	369	3,203,414
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13	3,203,047	37– 53	3,203,118	27	3,203,205	152	3,203,790	102– 52	3,203,349	128– 33	3,203,415
14	3,203,048	90	3,203,119	65– 20	3,203,776	171	3,203,791	103– 4	3,203,350	80	3,203,416
17	3,203,049	155	3,203,120	24	3,203,777		3,203,792	46	3,203,351	136	3,203,417
46	3,203,050	38– 77	3,203,121	68	3,203,778	174	3,203,793	87	3,203,352	269	3,203,418
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70	3,203,056	152	3,203,127	70–340	3,203,210	177	3,203,285	203	3,203,358	492	3,203,424
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121	3,203,757	43– 26.1	3,203,131	82	3,203,213	134	3,203,289	376	3,203,362	27	3,203,428
167	3,203,758	42.24	3,203,132	182	3,203,214	171	3,203,290		3,203,363		3,203,429
182	3,203,759	44.9	3,203,133	253	3,203,215	210	3,203,291	458	3,203,364	30	3,203,430
	3,203,760	100	3,203,134	258	3,203,216	341	3,203,292	106– 1	3,203,811	131– 27	3,203,431
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73	3,203,059	81	3,203,144	40	3,203,229	83	3,203,304	15	3,203,368	329.3	3,203,443
77	3,203,060	234	3,203,145	70	3,203,230	88– 1	3,203,305	29	3,203,369	390	3,203,444
81	3,203,061	328	3,203,146	93	3,203,231		3,203,306	30	3,203,370	493.4	3,203,445
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3,203,492
3,203,581
3,203,594
3,203,601
3,203,659
3,203,765
3,203,767
3,203,840
3,203,871
3,203,903
3,203,910
3,203,916
3,204,023
3,204,077
3,204,098
3,204,125

42	3,204,126	45	3,203,834	46	3,203,573	47	3,203,939	48	3,203,515	48	3,203,731
	3,204,174		3,203,842		3,203,670	48	3,203,014		3,203,548		3,203,761
	3,204,180		3,204,021		3,203,736		3,203,023		3,203,586		3,203,825
43	3,203,448		3,204,034		3,203,737		3,203,118		3,203,612		3,204,063
44	3,204,164	46	3,203,039	47	3,203,117		3,203,241		3,203,629		3,204,092
45	3,203,161		3,203,082		3,203,501		3,203,263		3,203,665		3,204,148
	3,203,600		3,203,098		3,203,668		3,203,265		3,203,677		3,204,169
	3,203,733		3,203,172		3,203,747		3,203,390		3,203,722	50	3,203,694
	3,203,748		3,203,174		3,203,827		3,203,467				

DESIGN PATENTS

2	202,160	4	202,146	12	202,099	19	202,149	29	202,135	32	202,120
4	202,104		202,148		202,110	20	202,129		202,147	34	202,145
	202,111		202,150		202,119	21	202,102	31	202,097		202,161
	202,113		202,155		202,124		202,105		202,116	35	202,112
	202,114		202,156		202,128	22	202,144		202,123		202,152
	202,130	6	202,108		202,141	24	202,133		202,125	36	202,118
	202,136		202,131		202,151		202,163		202,126	37	202,109
	202,137		202,154	14	202,107	25	202,159		202,127		202,115
	202,138	9	202,157	17	202,103	29	202,121		202,134	42	202,100
	202,139		202,158	19	202,117		202,122		202,142		202,106
	202,140										

PLANT PATENTS

31	2,549	35	2,551

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

August 31, 1965 Volume 817 Number 5

TRADEMARKS

NOTICES

International Convention for the Protection of Industrial Property

Adherence of Uganda to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence of the Government of Uganda to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect June 14, 1965.

EDWARD J. BRENNER,
Commissioner of Patents.

July 20, 1965.

International Convention for the Protection of Industrial Property

Adherence of Kenya to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland, of the adherence of the Republic of Kenya to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958. The adherence took effect June 14, 1965.

EDWARD J. BRENNER,
Commissioner of Patents.

July 20, 1965.

CONDITION OF TRADEMARK APPLICATIONS AS OF JUNE 30, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	16,698
Date of oldest new application	Jan. 2, 1965
Date of oldest amended application	Jan. 4, 1965

J. H. MERCHANT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	1-2-65	1-4-65
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-4-65	1-4-65
Renewals (All Classes)	6-8-65	6-28-65
Sec. 12 (c) Publications (All Classes)	6-16-65	-------

Applications filed during the month of June 1965—2,486

Registrations Issued ---------- 404—No. 794,962 to No. 795,365
Renewals Issued ---------- 70

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Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 88,745 (THE FLORSHEIM SHOE), The Florsheim Shoe Company, Cloth and leather boots and shoes; **Reg. No. 146,727** (THE FLORSHEIM SHOE AND DESIGN), same, Boots and shoes made of leather; **Reg. No. 268,292** (FLORSHEIM FREETURE ARCH AND DESIGN), same, Men's leather shoes; **Reg. No. 240,767** (FOR THE MAN WHO CARES THE FLORSHEIM SHOE AND DESIGN), same, Shoes made of leather; **Reg. No. 292,745** (THE FLORSHEIM SHOE AND DESIGN), same, Shoes made of leather and/or cloth; **Reg. No. 500,165** (THE FLORSHEIM SHOE), same, Cloth and leather boots and shoes; **Reg. No. 525,511** (THE FLORSHEIM SHOE AND DESIGN), same, Men's and women's shoes, sport shoes, and boots; **Reg. No. 550,429** (FLORSHEIM in script), same, Men's and women's shoes and boots; **Reg. No. 650,959**, same, International Shoe Company, Shoes, filed Apr. 27, 1965, D.C., M.D. Tenn. (Nashville), Doc. 4077, *International Shoe Company* v. *J. W. Carter & Company, Inc.*

Reg. No. 112,240 (Z AND DESIGN), Wm. Zinsser & Co., Inc., Certain named paints and painters' materials; **Reg. No. 230,000** (BULLS-I-NAMEL), same, Shellac enamel; **Reg. No. 727,169** (TARGET), same, Floor finishes; **Reg. No. 764,545** (ZINSSER AND DESIGN), same, Flatted shellac, gloss finish shellac, a pigmented white primer sealer, and a floor finish; **Reg. No. 774,390** (BULLS EYE), same, All types of liquid shellacs, flat pigmented primer, pigmented gloss enamel, etc., filed Apr. 20, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C-433, *William Zinsser & Co., Inc.* v. *Target Stores Corp.*

Reg. No. 146,727. (See Reg. No. 88,745.)

Reg. No. 268,292. (See Reg. No. 88,745.)

Reg. No. 230,000. (See Reg. No. 112,240.)

Reg. No. 240,767. (See Reg. No. 88,745.)

Reg. No. 292,745. (See Reg. No. 88,745.)

Reg. No. 500,165. (See Reg. No. 88,745.)

Reg. No. 530,027 (SLUMBERTOGS AND DESIGN), Slumbertogs, Inc., Misses', girls', and children's one-piece pajamas, two-piece pajama suits, slips, etc., filed Aug. 14, 1962, D.C., S.D.N.Y., Doc. 62/2816, *Slumbertogs, Inc.* v. *Jiggs, Inc. et al.* Judgment enjoining defendants Apr. 23, 1965.

Reg. No. 525,511. (See Reg. No. 88,745.)

Reg. No. 550,429. (See Reg. No. 88,745.)

Reg. No. 592,539 (HOLIDAY INN in script), Holiday Inn Hotel Courts, Inc., Motel services—namely, providing lodgings and meals in motels; **Reg. No. 592,540**, same, Holiday Inns of America, Inc., same; **Reg. No. 592,541** (HOLIDAY INN AND DESIGN), same; **Reg. No. 706,521**, same; **Reg. No. 742,490** (MOTEL DESIGN), same, filed Apr. 28, 1965, D.C., S.D. Calif. (Fresno), Doc. 2640-ND, *Holiday Inns of America, Inc.* v. *Holiday House Motel.*

Reg. No. 592,540. (See Reg. No. 592,539.)

Reg. No. 592,541. (See Reg. No. 592,539.)

Reg. No. 615,230 (KIRBY (in script) AND DESIGN), The Scott & Fetzer Company, Electric vacuum cleaners and parts and attachments therefor, including grinding and buffing attachments for electric vacuum cleaners, and power polishing attachments for electric vacuum cleaners; **Reg. No. 748,701** (SANITRONIC), same, Vacuum cleaners and parts and accessories therefor; **Reg. No. 758,046** (KIRBY AND DESIGN), same, Electric vacuum cleaners and parts and accessories therefor, filed Apr. 23, 1965, D.C., M.D. Fla. (Tampa), Doc. 65-120, *Scott and Fetzer Company, Incorporated*, v. *State Vacuum of Tampa, Incorporated.*

Reg. No. 615,712 (THE MECHANICAL MAID), Mechanical Servants, Vending machines for dispensing notions and toiletries; **Reg. No. 663,233** (THE MECHANICAL SERVANT), Mechanical Servants, Incorporated, Vending machines, filed June 24, 1963, D.C.N.J. (Newark), Doc. 524-63, *Mechanical Servants, Inc.* v. *Mechanical Vendors, Inc. et al.* Order of dismissal Apr. 23, 1965.

Reg. No. 663,499 (CREDIT UNION ETC. AND DESIGN), Cuna Supply Cooperative, Partially blank contract, accounting and bookkeeping forms, order forms, etc.; **Reg. No. 720,474**, same, Credit Union National Association, Inc., doing business as Cuna Insurance Services Department, Cuna Bonding Service, and Credit Union National Association, Insurance services including research, promotion, information and advisory services to credit union organizations and their members in the fields of casualty, fidelity, etc., filed Apr. 16, 1965, D.C., S.D.N.Y., Doc. 65/1171, *Credit Union National Association, Inc. et ano.* v. *David J. Ross, also known as David J. Rosenzweig.*

Reg. No. 650,959. (See Reg. No. 88,745.)

Reg. No. 680,877 (CRAZY CONES), Safe-T Pacific Baking Company, Ice cream cones and cups; **Reg. No. 758,513** (CRAZY PACK), Safe-T Pacific Company, by change of name from Safe-T Pacific Baking Company, Bakery products—namely, ice cream cones, filed Apr. 23, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c635, *Safe-T Pacific Company* v. *Illinois Baking Corporation.*

Reg. No. 683,233. (See Reg. No. 615,712.)

Reg. No. 692,017 (FLAMING SWORD AND DESIGN), John D. Stoddard, Barbecue and rotisserie cooking equipment including spits, swords and baskets, filed July 16, 1965, D.C., N.D. Okla. (Tulsa), Doc. 6232, *Hickory Pit, Inc.* v. *James G. Watts.*

Reg. No. 706,521. (See Reg. No. 592,539.)

Reg. No. 720,474. (See Reg. No. 623,499.)

Reg. No. 727,169. (See Reg. No. 112,240.)

Reg. No. 731,038 (PORTALLOY), The Portland Chain Manufacturing Co., Chains, chain rivets, chain attachments and flights, filed Apr. 14, 1965, D.C. Oreg. (Portland), Doc. 65-175. *The Portland Chain Manufacturing Co.* v. *Pacific Chain & Manufacturing Co.*

Reg. No. 742,490. (See Reg. No. 592,539.)

Reg. No. 743,912 (K MART); S. S. Kresge Company, Retail variety store services; **Reg. No. 774,794**, same, Anti-freeze; **Reg. No. 783,902** (K MART AND DESIGN), same, Interior and exterior paints, enamels, varnishes, roof coatings, exterior primers, and primer sealers; **Reg. No. 784,920** (K MART), same, Cole slaw dressing; **Reg. No. 787,715**, same, Propane fuel; **Reg. No. 787,797**, same, Propane torch kit containing a flame spreader, burner assembly, soldering tips, lighter and fuel tank for general use, filed July 7, 1965, D.C., S.D. Calif. (San Diego), Doc. 3344-SD-C, *S. S. Kresge Company* v. *J-Mart Stores, Inc. et al.*

Reg. No. 748,701. (See Reg. No. 615,220.)

Reg. No. 758,046. (See Reg. No. 615,220.)

Reg. No. 758,513. (See Reg. No. 680,877.)

Reg. No. 764,545. (See Reg. No. 112,240.)

Reg. No. 774,390. (See Reg. No. 112,240.)

Reg. No. 774,765 (REPUBLIC PACKAGING AND DESIGN), Republic Packaging Corporation, Custom designed packaging made of various materials for the shipment and storage of manufactured articles, filed Apr. 29, 1965, D.C., S.D.N.Y., Doc. 65/1304, *Republic Packaging Corp.* v. *Republic Packaging Co., Inc.*

Reg. No. 774,794. (See Reg. No. 743,912.)

Reg. No. 775,149 (THE LAST ROSARY), Faster-Form Corporation, Rosaries utilising floral beads, filed Apr. 29, 1965, D.C., S.D.N.Y., Doc. 65/1305, *Faster-Form Corp.* v. *Lion Ribbon Co., Inc.*

Reg. No. 779,887 (CARRY-CORDER), North American Philips Company, Inc., Tape recorders; **Reg. No. 781,774** (NORELCO), same, filed Apr. 27, 1965, D.C., S.D.N.Y., Doc. 65/1271, *North American Philips Co., Inc.* v. *Continental Telephone Supply Co., Inc.*

Reg. No. 781,774. (See Reg. No. 779,887.)

Reg. No. 783,902. (See Reg. No. 743,912.)

Reg. No. 784,920. (See Reg. No. 743,912.)

Reg. No. 787,715. (See Reg. No. 743,912.)

Reg. No. 787,797. (See Reg. No. 743,912.)

Reg. No. 789,317 (DURAVALS), Drug Guild Co-Operative, Inc., Vitamin and mineral preparation in capsule form, filed July 15, 1965, D.C., E.D. Pa. (Philadelphia), Doc. 38510, *Drug Guild Co-Operative, Inc.* v. *E. J. Korvette, Inc.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 164,400. Synthomer Corporation, Washington, D.C. Filed Mar. 11, 1963.

SYNTHOMER

Owner of Reg. No. 690,384.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Chemical Process Equipment—Namely, Solvent Extraction Apparatus.

First use on or about Mar. 8, 1963.

Class 100—Miscellaneous

For Research and Development Services—Namely, Analysis of Materials for Others.

First use July 12, 1961.

Class 106—Material Treatment

For Processing and Treatment of Vegetable Matter by Solvent Extraction Processes.

First use July 12, 1961.

SN 172,546. Tobler & Cie. Ltd. Chemical Works, Altstatten, St. Gall, Switzerland. Filed July 3, 1963.

TOKO

Class 16—Protective and Decorative Coatings

For Lacquers for Skis.

Class 22—Games, Toys, and Sporting Goods

For Ski Waxes.

First use June 1958; in commerce June 1958.

SN 176,021. Popper & Sons, Inc., New York, N.Y. Filed Aug. 29, 1963.

PERFEKTUM

Owner of Reg. Nos. 441,994, 566,876, and others.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pharmaceutical and Cosmetic Packaging and Washing Equipment—Namely, Tablet and Capsule Counting Machines, Washing Machines and Filling Machines.

Class 44—Dental, Medical, and Surgical Appliances

For Medical and Surgical Products and Laboratory Equipment—Namely, Syringes, Needles, Stopcocks, Observation Tubes, Adapters, Thermometers, Bandages, Ampule Files, Finger Cots, Microscope Slides, Cover Glasses, Ethylchloride, Pipettes, Health Supports and Orthopedic Specialties, Crutches and Canes, Crutch Accessories, Invalid Rings and Cushions.

First use Dec. 3, 1924.

SN 181,055. Nicolet Industries, Inc., Ambler, Pa. Filed Nov. 13, 1963.

K·M BEST IN ASBESTOS

Owner of Reg. Nos. 359,222, 774,187, and others.

Class 12—Construction Materials

For Asbestos Cements, Asbestos Papers, Asbestos Shingles, Composition Shingles, Asbestos Mill Board, Wool Felt Insulation, Furnace Coverings, Asbestos Boards, Slabs, Tiles, Sheets and Sidings; Wall Boards, Pipe Coverings, Block Insulation, Asbestos Lumber, Mineral Wool, Hair Felt, Magnesia Insulation Comprising Magnesium and Asbestos Fiber, Composition Boards and Miscellaneous Building Products and Materials Composed of Asbestos Cement Composition Such as Doors, Studding, Partitions, and Roofing; Asbestos Packings and Gaskets, Such as Rod, Plunger, Piston, Stuffing Box, and Valve Stem Packings, Sheet Packings, Seamless Tube Plate Gaskets, Boiler Gaskets, Asbestos Gasketing Tapes, Woven Asbestos Gasketing Tapes, Tubular Gasketing and Hydraulic and Steam Pressure Packings and Gaskets of All Types and Forms.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Asbestos Packings, Especially Adapted for Use in Pumps, Pistons, and Locomotives, Stuffing Boxes, Valve Stems, and as Pressure Glands, Flax Packings, Brake Linings, Clutch Facings, Textile Packings, Gaskets, Asbestos Wick and Asbestos Rope.

First use June 1937; about Mar. 1, 1875, as to "K·M."

SN 183,645. Ypsilon-Werk Wienke & Michels KG, Troisdorf, near Cologne, Germany. Filed Dec. 26, 1963.

Y YPSILON

Owner of German Reg. No. 672,897, dated June 25, 1954.

Class 18—Medicines and Pharmaceutical Preparations

For Drugs.

Class 44—Dental, Medical, and Surgical Appliances

For Bandaging Material and Bandaging Plaster.

SN 189,075. IMC Magnetics Corp., Westbury, N.Y. Filed Mar. 19, 1964.

imc

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Motors, Electrically Operated Fans and Blowers, Solenoids and Solenoid Switch Assemblies, Electrical Actuators, and Pressure-Responsive Electrical Switches.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Precision Gears and Gearheads, Hydraulic Cylinders, Valves, Fuel Atomizers and Filters, and Electromechanical Assemblies Including the Foregoing.

Class 26—Measuring and Scientific Appliances

For Electric Motor Tachometers, Function Generators, Electrical Synchros and Resolvers, and Electromagnetic Signal and Indicating Devices.

First use February 1962.

SN 189,928. Optiks, Inc., Dallas, Tex. Filed Mar. 30, 1964.

INTERNATIONAL OPTICAL COMPANY

Class 26—Measuring and Scientific Appliances

For Eyeglass Frames, Equipment and Optical Accessories.

Class 106—Material Treatment

For Services in Filling Optical Prescriptions.

First use January 1960.

SN 190,208. Kabushiki Kaisha Satin Onkyo, Kita-ku, Kyoto-shi, Japan. Filed Aug. 4, 1964.

SATIN

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio and Television Speakers, Microphones, Amplifiers, Tuners, Radio and Television Receivers, Mixing Amplifiers, and Television Transmitting Apparatus—Namely, Modulators, Carrier Amplifiers, Synchronizing and Basic Generators and Frequency Doublers.

Class 36—Musical Instruments and Supplies

For Phonograph Record Players, Needles and Pick-Up Cartridges Therefor, Tape Recorders, Video Tape Recorders, Tapes for Sound and Video Tape Recorders, Phonograph Record Cutters and Electronic Organs.

First use Mar. 18, 1957; in commerce Dec. 1, 1960.

SN 200,556. Andrew L. Driscoll, d.b.a. Andy's Tire Mart, Wisconsin Rapids, Wis. Filed Aug. 25, 1964.

Andy's TIRE MART Jet TIRES

No claim is made to the words "Tire Mart" or "Tires" apart from the mark.

Class 19—Vehicles

For Vehicle Wheels.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Vehicle Tires.

First use May 1, 1964.

SN 202,203. Sybil Ives Incorporated, White Plains, N.Y. Filed Sept. 21, 1964.

The monogram consists of the letters "S" and "I."

Class 51—Cosmetics and Toilet Preparations

For Cream Waveset.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Dec. 11, 1963.

SN 202,204. Sybil Ives Incorporated, White Plains, N.Y. Filed Sept. 21, 1964.

sybil ives

Class 51—Cosmetics and Toilet Preparations

For Hair Spray, Cream Waveset, and Milky Neutralizer.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Jan. 15, 1964.

SN 206,975. Shampaine Industries, Inc., St. Louis, Mo. Filed Nov. 25, 1964.

ACADEMY

Class 32—Furniture and Upholstery

For Physicians' Examining Room Furniture—Namely, Tables, Desks, Chairs, Instrument Cabinets, and Accessory Tables.

Class 44—Dental, Medical, and Surgical Appliances

For Patient Examining Tables.

First use Sept. 9, 1964.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 178,030. Pioneer Hi-Bred Corn Company, Des Moines, Iowa. Filed Sept. 30, 1963.

Hy-Line

The drawing is lined for yellow and blue. Applicant disclaims the representation of the chick apart from the mark as shown. Owner of Reg. No. 387,198.

For Live Poultry Chicks and Poultry Hatching Eggs.

First use on about Sept. 6, 1963, on live poultry chicks.

SN 178,215. National Superior Fur Dressing and Dyeing Co., Chicago, Ill. Filed Oct. 2, 1963.

DUCHESSA

For Fur Pelts.

First use on or about Sept. 18, 1963.

SN 181,966. Cromwell Leather Company, Inc., New York, N.Y. Filed Nov. 27, 1963.

JEWEL-TONE

For Leather.

First use on or about May 17, 1963.

SN 183,380. Corbin Manufacturing Co., Inc., Willow Grove, Pa. Filed Dec. 23, 1963.

CORBINITE

For High-Heat Resistant, Water Soluble, Ceramic-Like Material Especially Adapated for the Manufacture of Precision Mold Forms and Hollow Castings.

First use Nov. 22, 1963.

SN 186,038. Great Lakes Nursery Corp., Waukesha, Wis. Filed Dec. 23, 1963.

SANTA'S FOREST

Applicant disclaims the word "Forest" apart from the entire mark as shown. The black background is merely for display and is not a part of the mark.

For Christmas and Nursery Trees.

First use June 1, 1963.

SN 195,710. Herman H. Rapaport, d.b.a. Rapaport Furs, New York, N.Y. Filed June 15, 1964.

Maharani Chinchilla

Applicant disclaims the word "Chinchilla" separate and apart from the mark.

For Chinchilla Fur Pelts.

First use Jan. 27, 1964.

SN 214,404. Armour and Company, Chicago, Ill. Filed Mar. 18, 1965.

CUMULUS

For Leather.

First use on or prior to Jan. 4, 1965.

SN 214,405. Armour and Company, Chicago, Ill. Filed Mar. 18, 1965.

ROGUE

For Leather.

First use on or prior to Sept. 30, 1964.

SN 214,406. Armour and Company, Chicago, Ill. Filed Mar. 18, 1965.

MONTEREY

For Leather.
First use on or prior to Aug. 20, 1964.

SN 214,407. Armour and Company, Chicago, Ill. Filed Mar. 18, 1965.

CUTLASS

For Leather.
First use on or prior to Sept. 23, 1964.

SN 214,410. Armour and Company, Chicago, Ill. Filed Mar. 18, 1965.

TARTAN

For Leather.
First use on or prior to Sept. 24, 1964.

SN 216,440. Rayonier Incorporated, New York, N.Y. Filed Mar. 31, 1965.

ACETANIER

Owner of Reg. No. 684,491.
For Wood Pulp.
First use Mar. 10, 1965.

SN 216,407. Fruehauf Corporation, Fairless Hills, Pa. Filed Apr. 13, 1965.

LAMICOR

For Plastic Sheets, Rods, Bars, and Plates Adapted for General Industrial Use.
First use on or about July 21, 1953.

SN 219,310. H. A. Astlett & Company, Incorporated, New York, N.Y. Filed May 20, 1965.

NATCOM

For Crude Rubber.
First use Feb. 19, 1965.

SN 219,414. Erving's Hatcheries, Inc., Winlock, Wash. Filed May 21, 1965.

V.I.P.

For Started Pullets, Day-Old Chicks, and Eggs.
First use Dec. 5, 1964.

SN 219,597. Nixon-Baldwin Chemicals Inc., Nixon, N.J. Filed May 24, 1965.

MIRREX

For Rigid Vinyl Sheeting Material.
First use Feb. 19, 1965.

Class 2 — Receptades

SN 172,930. Multi-Pak, Inc., Cincinnati, Ohio. Filed July 12, 1963.

MULTI-PAK

For Folding Cartons for Use, for Example, in Carrying Cans and Bottles.
First use Nov. 23, 1960.

SN 180,284. C.M.P. Corporation, Old Forge, Pa. Filed Nov. 1, 1963.

STONEWOOD

For Dinnerware Composed of Wood Fibre and Resin.
First use Jan. 15, 1963.

SN 209,489. Carlisle Manufacturing Co., Inc., Newark, N.J. Filed Jan. 7, 1965.

DURATUF

For Plastic Material Made Into Plant and Flower Dishes, Vases, Planters, Tubs, Trays, and Similar Containers.
First use on or about Sept. 3, 1964.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 207,983. Polk Miller Products Corporation, Richmond, Va. Filed Dec. 11, 1964.

SENTRY

For Plastic Dog Collars Incorporating an Insecticide, Which Vaporizes and Kills Fleas and Ticks.
First use Oct. 21, 1964.

SN 209,659. Big Kernel Pet Foods, Inc., Chicago, Ill. Filed Jan. 11, 1965.

K

For Accessories for Animal Pets—Namely, Perch Covers for Bird Cages, Bird Cage Gravel Paper, and Animal Pet Toys.
First use Jan. 31, 1962.

SN 212,708. Swank, Inc., Attleboro, Mass. Filed Feb. 24, 1965.

LADY SWANK

Owner of Reg. No. 339,920.
For Wallets and Billfolds.
First use June 1945.

Class 6 — Chemicals and Chemical Compositions

SN 166,499. The Plastic Coating Corporation, Holyoke, Mass. Filed Apr. 10, 1963.

Owner of Reg. No. 706,624.
For Prewetting Solutions for the Treatment of Photoelectrostatic Masters To Convert Them to Offset Printing Plates.
First use Nov. 19, 1958.

SN 176,016. Petrolite Corporation, St. Louis, Mo. Filed Aug. 29, 1963.

CERATHANE

Owner of Reg. No. 537,080.
For Wax or Wax-Polymer Composition Used in the Manufacture of Polishes.
First use Aug. 8, 1963.

SN 198,366. Merck & Co., Inc., Rahway, N.J. Filed July 22, 1964.

GENMAG

For Magnesium Oxide.
First use on or about June 1, 1906.

SN 199,937. West Virginia Pulp and Paper Company, New York, N.Y. Filed Aug. 14, 1964.

POLYSECT

For Lignin Used as a Dispersant for Insecticides.
First use June 30, 1964.

SN 200,840. Gabriel Chemicals Limited, New York, N.Y. Filed Aug. 28, 1964.

PYTOXIDE

For Insecticides and Chemical Concentrates for the Manufacture of Insecticides, Formulated of Synergized Pyrethrins.
First use June 15, 1964.
Subj. to Intf. with SN 207,756.

SN 201,917. Atracta Wax Corporation, Chicago, Ill. Filed Sept. 15, 1964.

SPRA-DED

For Insect Killer.
First use Feb. 27, 1962.

SN 202,308. Purex Corporation, Ltd., Lakewood, Calif. Filed Sept. 21, 1964.

PUREX-TRA

Owner of Reg. Nos. 155,699, 770,180, and others.
For Liquid Bleach.
First use Aug. 17, 1964.

SN 202,565. Erdölchemie G.m.b.H., Dormagen, Germany. Filed Sept. 24, 1964.

ERDÖLCHEMIE

The word "Erdölchemie" is disclaimed apart from the mark as shown. The design portion of the mark is a representation of a gas storage tank. Owner of German Reg. No. 786,172, dated Feb. 19, 1964.
For Petrochemicals for Use in the Production of Detergents, Resins, Plasticizers, Emulsifiers, Plastics, Textile Auxiliaries, Polyester Fibers, Solvents, and Synthetic Rubber.

SN 203,016. The Matheson Company, Inc., East Rutherford, N.J. Filed Sept. 30, 1964.

CURAGEN

For Nitric Oxide Gas.
First use Feb. 18, 1964.

SN 203,232. Abco, Inc., McKeesport, Pa. Filed Oct. 5, 1964.

GLY-DAIR

For Spray Sanitiser and Deodorant for Controlling Air-Borne Bacteria.
First use at least as early as Mar. 20, 1961.

SN 205,897. Whitmoyer Laboratories, Inc., Myerstown, Pa. Filed Nov. 9, 1964.

HYDROL

For Disinfectant and Insecticide for Use in Farm Buildings.
First use on or about Mar. 22, 1934.

SN 211,147. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Feb. 2, 1965.

PALANIL

For Textile Auxiliaries—Namely, Chemical Products Which Increase the Uptake of Dyes by Synthetic Fibers, Used in the Dyeing and Printing of Textiles.
First use Sept. 29, 1950; in commerce Sept. 1, 1964.

SN 211,150. The R. H. Bogle Company, Alexandria, Va. Filed Feb. 2, 1965.

ADKIL

For Surfactant.
First use May 20, 1964.

SN 211,152. Car-Freshner Corporation, Watertown, N.Y. Filed Feb. 2, 1965.

MAGIC TREE

For Absorbent Body Impregnated With a Perfumed Air Deodorant.
First use June 6, 1963.

SN 212,819. Rohm & Haas Company, Philadelphia, Pa. Filed Feb. 25, 1965.

FORE

For Fungicide.
First use on or about Feb. 1, 1965.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 202,987. The Ensign-Bickford Company, Simsbury, Conn. Filed Sept. 30, 1964.

PRIMADET

Owner of Reg. Nos. 345,773 and 754,868.
For Non-Electric Delay Unit Consisting of a Detonating Cord and a Pyrotechnic Assembly Which Allows for a Delay in the Velocity of Detonation.
First use June 26, 1964.

Class 10 — Fertilizers

SN 198,675. J. R. Simplot Company, Boise, Idaho. Filed July 28, 1964.

SIMPLOT

Owner of Reg. Nos. 435,430, 612,448, and others.
For Fertilizers.
First use at least as early as Jan. 15, 1945.

SN 208,932. Indian Point Farm Supply, Inc., Athens, Ill. Filed Dec. 28, 1964.



The term "Liquid Plant Food" is disclaimed as a part of the mark. The drawing is lined for the colors orange and green, but no claim is made to color as a feature of the mark.
For Fertilizer.
First use Oct. 1, 1960.

Class 11 — Inks and Inking Materials

SN 194,655. Rainbow Printing Inks, Lemon Grove, Calif. Filed June 1, 1964.



The words "Printing" and "Inks" are disclaimed apart from the mark as shown. The drawing is lined for the colors yellow, red, and blue.
For Printing Inks.
First use May 2, 1964.

SN 207,391. Higgins Ink Co., Inc., Brooklyn, N.Y., by assignment and change of name from Higgins Ink Co., Inc., Brooklyn, N.Y. Filed Dec. 3, 1964.

HIGGINS

For Inks and Inking Materials—Namely, Writing, Drawing and Printing Inks, Ink for Ink Pads and Ribbons.
First use 1880.

Class 12 — Construction Materials

SN 173,587. Miracle Adhesives Corporation, Bellmore, N.Y. Filed July 23, 1963.

PROMENARD

For Non-Slip Walking Deck Surfacing Composition Containing Aggregates and Rubber.
First use Apr. 19, 1963.

SN 189,801. The Parker Pen Company, Janesville, Wis. Filed Mar. 27, 1964.

MIRACHEM

For Simulated Marble and Onyx Slabs, Sheets and Mouldings for Use as Countertops, Panels, Tiles, Sills, and the Like.
First use Aug. 28, 1963.

SN 192,202. Pope & Talbot, Inc., San Francisco, Calif. Filed Apr. 28, 1964.

CHECKMATE

For Plywood Siding and Panels.
First use Oct. 17, 1963.

SN 196,935. American Metal Climax, Inc., d.b.a. Hunter Engineering Co., New York, N.Y. Filed July 2, 1964.

HUNTER-BUILT

Owner of Reg. Nos. 736,666, 763,963, and others.
For Aluminum Siding.
First use Mar. 18, 1964.

SN 198,342. H. B. Fuller Company, St. Paul, Minn. Filed July 22, 1964.

tuff-Lite

For Epoxy Bonding Agent for Use in Terrazzo Floor, Mosaic Wall and Precast Panel Construction and the Like.
First use in or about April 1962.

SN 198,343. H. B. Fuller Company, St. Paul, Minn. Filed July 22, 1964.

tuff-Lite

For Epoxy Bonding Agent for Use in Terrazzo Floor, Mosaic Wall and Precast Panel Construction and the Like.
First use in or about April 1962.

SN 198,445. Union Tank Car Company, Chicago, Ill. Filed July 23, 1964.

GRAVER-GRID

Owner of Reg. Nos. 607,513 and 674,407.
For Prefabricated Components of Roofs for Storage Tanks.
First use April 1964.

SN 199,363. Granite City Steel Company, Granite City, Ill. Filed Aug. 6, 1964.

TWIN-DRAIN

For Corrugated Galvanized Steel Roofing and Siding Sheets.
First use January 1961.

SN 199,714. AA Wire Products Company, Chicago, Ill. Filed Aug. 12, 1964.

AA-LOK

For Wire Masonry Wall Reinforcements.
First use June 14, 1963.

SN 201,692. International Paper Company, New York, N.Y. Filed Sept. 11, 1964.



The mark consists of a fanciful design of the letters "IP" within a circle. Owner of Reg. Nos. 744,083 and 771,492.
For Wood Structural Products—Namely, Plywood, Composition Board, Particle Board, Flakeboard, and Millwork Cabinets.
First use July 1963.

SN 202,836. The L. R. Oatey Company, Cleveland, Ohio. Filed Sept. 28, 1964.

BOND TITE

Owner of Reg. No. 680,644.
For Vehicle Body Repair Materials—Namely, Plastic Composition Fillers, Glazing Putties, and Body Solders, Sold Together With Hand Tools and Accessory Items for Applying, Working, and Finishing Such Repair Materials.
First use Sept. 26, 1957, on body solders.

SN 205,043. The Dayton Sure Grip and Shore Company, Miamisburg, Ohio. Filed Oct. 29, 1964.

SURE-GRIP

For Concrete Specialties for Use in Concrete Construction—Namely, Anchors, Bridging, Clamps, Clips, Column Clamps, Cones, Form Ties (Snap-In, Rod), Frames, Hangers and Hanger Inserts, Hinges, Joint Seals, Loops, Plaks, Riser Frames, Rod Pullers, Rod Sleeves, Screed Chairs, Seat Brackets, Shores, Slab Bolsters and Inserts, Slab Graders, Spacers, Strapping, Studs, Void Tube Accessories, Wall Reinforcements, Washers, Wedges, and Wrenches.
First use at least as early as 1924, on form ties.

SN 205,500. The General Tire & Rubber Company, Akron, Ohio. Filed Nov. 4, 1964.

GENERAL TIRE

Owner of Reg. Nos. 752,967, 775,040, and others.
For Dock and Wharf Fender Bumpers.
First use Sept. 20, 1963.

SN 206,435. Fritz Mannewitz K.G., Ehlershausen uber Lehrte, Germany. Filed Nov. 18, 1964.



Owner of German Reg. No. 747,644, dated Apr. 15, 1961.
For Colored Glass Building Blocks.

SN 206,525. DBA Products Co., Inc., Deerfield, Ill. Filed Nov. 19, 1964.

SILISOL

For Silicone Based Water-Proofing Compound for Application to Masonry Surfaces.
First use October 1962.

SN 207,057. Johns-Manville Corporation, New York, N.Y. Filed Nov. 27, 1964.

SPANGLAS

Owner of Reg. No. 755,324.
For Acoustical Panels.
First use Oct. 6, 1961.

SN 207,087. Shakertown Corporation, Cleveland, Ohio. Filed Nov. 27, 1964.

SURF-PLY

For Shingle Panels.
First use Nov. 18, 1964.

SN 207,107. Boise Cascade Corporation, Boise, Idaho. Filed Nov. 30, 1964.

SPAN-DEK

For Plywood Roof and Floor Decking With a Solid Lumber Core.
First use Oct. 15, 1963.

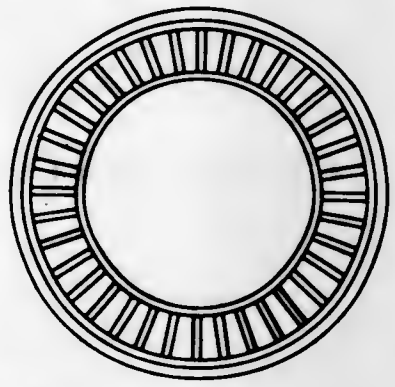
SN 215,690. Armstrong Cork Company, Lancaster, Pa. Filed Apr. 5, 1965.

INSULCORK

For Resinous Composition With Cork Filler for Use as a Trowelling Mastic.
First use Mar. 23, 1964.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 179,753. The Water Master Company, Highland Park, N.J. Filed Oct. 24, 1963.



For Toilet Tank Balls.
First use September 1947.

SN 199,250. Applied Power Industries, Inc., West Allis, Wis. Filed Aug. 5, 1964.



For Valves for Controlling the Flow of Fluids Through Conduits, Pipes and Tubing, and Pipe, Tube and Hose Couplings.
First use on or about July 20, 1964.

SN 203,306. The Lamson & Sessions Co., Cleveland, Ohio. Filed Oct. 5, 1964.

GOLD STANDARD

For Nuts.
First use February 1964.

SN 213,418. Dennison Manufacturing Company, Framingham, Mass. Filed Mar. 5, 1965.

SWIFTACHMENTS

For Fastener for Attaching Tags to Merchandise.
First use May 9, 1963.

Class 16—Protective and Decorative Coatings

SN 160,174. The Farboil Company, Baltimore, Md. Filed Jan. 4, 1963.

BALLASTITE

For Industrial and Marine Coatings, Such as for Use on Tank Interiors for Salt Water Ballast, Potable or Feed Water or Oil Free Bulk Cargoes; Equipment; Exposed Structural Steel; Pipes; Cooling Towers and Ventilators; Steel Lintels; Galvanized Ducts; Undersides of Steel Bridges; Overheads in Food Processing Plants; and Other Surfaces Subject to Chemical or Corrosive Attack.
First use Jan. 24, 1962.

SN 184,104. Lee Potter, d.b.a. The Lee Potter Company, Glendale, Calif. Filed Jan. 6, 1964.

CORRO WEAR

For Protective Coatings—Namely, Metal Coating on Steel, Brass, Iron, Aluminum or Other Metals Which Provides Corrosion Resistance of Stainless Steel, Hardness Approaching that of Chrome Plating, Applied to the Inside and/or Outside of Metal Surfaces Such as to the Surfaces of Plate, Pipe, Structural Steel, Tubing, Castings, Forgings and the Like, and to To Replace Stainless Steel for Pumps, Tanks, Piping, Food Equipment, Missile Parts, Aircraft Parts, Laboratory Equipment, Processing Equipment and/or Architectural Metal.

First use Aug. 15, 1963.

SN 194,803. Hysan Products Company, Chicago, Ill. Filed June 3, 1964.

FLOOR PLATE

Applicant disclaims the exclusive rights to the word "Floor" apart from the mark as shown.

For Strippable Clear Anti-Slip, Heavy Duty, Gloss Coating To Protect All Types of Floors.

First use Mar. 13, 1964.

SN 199,353. DeWoody-Cross Corp., Houston, Tex. Filed Aug. 6, 1964.

AUTO PLAK

Without waiving its common law rights, applicant disclaims the exclusive right to use the word "Auto" apart from the mark as shown.

For Protective Coating for Automobiles Which Cleans and Shines, Protects Against Rust, Corrosion, Oxidation, and Against Bug Splatter and Tree Sap.

First use Feb. 7, 1964.

SN 203,814. Purex Corporation, Ltd., d.b.a. Franklin Research, Lakewood, Calif. Filed Oct. 12, 1964.

Franklin
MAINTENANCE PRODUCTS



The words "Maintenance Products" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 536,879, 715,178, and others.

For Preparation Used in Producing a High Gloss Finish on Wood Floors; a Preparation Used To Provide a Permanent Water Emulsion Seal for Floors as a Base for Wax and Other Floor Finishes; a Preparation Used To Provide a Penetrating Seal for Wood Floors, and a Preparation Used To Seal Terrazzo, Cement, and Magnesite Floors, and Floors of Like Materials.

First use Jan. 9, 1964.

Class 18—Medicines and Pharmaceutical Preparations

SN 150,213. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. Filed Aug. 1, 1962.



QUEEN NEFERTITI

For Ointment.

First use Mar. 2, 1962.

SN 184,884. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Jan. 17, 1964.

GLOBE . . . FOR THE BEST LOVED PETS IN THE WORLD

The phrase "For The Best Loved Pets In The World" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 172,680, 540,325, and 588,067.

For Veterinary and Pharmaceutical Preparations for Household Pets.

First use August 1962.

SN 187,928. John L. Kellogg & Co., Chicago, Ill. Filed Mar. 4, 1964.

KOLA VIM

"Kola" is disclaimed except in connection with the mark as shown.

For Medicinal Tonic for Improving the Appetite, Alleviating Fatigue, and Promoting Energy.

First use on or about Jan. 9, 1963.

SN 188,461. Parlam Corporation, Englewood, N.J. Filed Mar. 11, 1964.

PARLAMATE

For Anthelmintic Preparations.

First use June 1, 1956.

SN 206,962. Pharmac Laboratories, Inc., Los Angeles, Calif. Filed Nov. 25, 1964.

Ido-Pheno-Gel

Owner of Reg. Nos. 522,224 and 583,107.

For Therapeutic Agent for Use as an Aid in the Treatment of Mouth Infections, Oral Surgery, Root Canals, and General Oral Hygiene.

First use Sept. 25, 1964.

SN 209,379. Zirin Laboratories International, Inc., Hialeah, Fla. Filed Dec. 28, 1964.

DYMASOL

For Veterinary External Preparation for Pain, Soreness and Inflammation.
First use June 7, 1964.

SN 212,726. American Cyanamid Company, Wayne, N.J. Filed Feb. 25, 1965.

OBLETS

Owner of Reg. No. 574,546.
For Tablets Containing Antibiotic Preparations and Sulfonamide Preparations for Veterinary Use.
First use Apr. 12, 1948.

SN 213,239. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Mar. 3, 1965.

SUBOSE

For Antidiabetic Preparation.
First use Jan. 23, 1965.

SN 213,337. Medicinal Research Laboratories Inc., Philadelphia, Pa. Filed Mar. 4, 1965.

ZOLEX

For Pharmaceutical Preparation—Namely, a Circulatory Stimulant-Peripheral Vasodilator.
First use April 1962.

SN 213,573. Hynson, Westcott & Dunning, Inc., Baltimore, Md. Filed Mar. 8, 1965.

CG

Owner of Reg. No. 669,798.
For Diagnostic Reagent for Use on the Person.
First use Jan. 22, 1965.

SN 213,712. Richardson-Merrell, Inc., Cincinnati, Ohio. Filed Mar. 9, 1965.

NETHAPHYL

For Preparation in Tablet Form for Use in the Treatment of Allergic and Cardiovascular Conditions.
First use Apr. 26, 1944.

SN 214,162. Maudie E. Outlaw, d.b.a. Tempah Co., Grandy, N.C. Filed Mar. 15, 1965.

TEMPAH

For Skin Ointment for Temporary Relief of Minor Skin Irritations and Non-Poisonous Insect Bites.
First use Mar. 1, 1965.

SN 216,775. Polichimica Sap Farmaceutici S.p.A., Milan, Italy. Filed Apr. 5, 1965.

MACMIRROR

Owner of Italian Reg. No. 156,836, dated July 1, 1961.
For Preparation for Vaginal Infections.

SN 215,780. Reed & Carnrick, Kenilworth, N.J. Filed Apr. 5, 1965.

LULLITAL

For Pharmaceutical Sleep Inducing Preparation.
First use on or about Apr. 1, 1965.

SN 215,811. Young's Vitamin & Mineral Products Co., Roaring Spring, Pa. Filed Apr. 5, 1965.

STABLE MATE

For Vitamin-Mineral Feed Supplement for Horses.
First use on or about Nov. 1, 1963.

SN 215,829. Amfre-Grant, Inc., Brooklyn, N.Y. Filed Apr. 6, 1965.

NEO-BETA

For Anti-Anemic Pharmaceutical Preparation.
First use Dec. 21, 1942.

SN 215,845. Faith Laboratories, Inc., Pittsburgh, Pa. Filed Apr. 6, 1965.

FA-DRIN

For Chlorphenpyridamine Maleate Tablets.
First use Dec. 29, 1964.

SN 215,846. Faith Laboratories, Inc., Pittsburgh, Pa. Filed Apr. 6, 1965.

FA-VI-T

For Vitamin and Mineral Tablets.
First use Jan. 11, 1965.

SN 216,938. Cutter Laboratories, Inc., Berkeley, Calif. Filed Apr. 20, 1965.

LEVOXAN

For Local Anesthetic and Spasmolytic Agent.
First use Sept. 26, 1961.

Class 19—Vehicles

SN 207,620. Manning Marine Ltd., St. Laurent, Quebec, Canada. Filed Dec. 7, 1964.

SNO-RO

Priority claimed under Sec. 44(d) on Canadian application filed Sept. 8, 1964; Reg. No. 139,451, dated Mar. 5, 1965.
For Power-Driven Snow Sleds.

SN 209,510. Independent Protection Co., Inc., Goshen, Ind. Filed Jan. 7, 1965.

TURTLE TOP

Applicant disclaims exclusive rights to use of the word "Top" aside and apart from the mark as shown.
For Tops for Trucks and Vans.
First use Sept. 10, 1964.

Class 20—Linoleum and Oiled Cloth

SN 193,632. Congoleum-Nairn Inc., Kearny, N.J. Filed May 18, 1964.

PRESTIGE

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs, and Tiles, for Use in Homes, Apartments, and Commercial Buildings.
First use as early as January 1956.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 172,713. Automotive Associates, Inc., New York, N.Y. Filed July 10, 1963.



Applicant makes no claim to the representation of the map of the United States apart from the trademark as shown. The lines shown in the drawing form a part of applicant's trademark and are not representative of color. Owner of Reg. Nos. 701,606 and 701,607.
For Automotive Parts and Equipment—Namely, Spark Plugs, Ignition Parts (Points, Condensers, and Rotors), Voltage Regulators, Battery Chargers, and Antennas; and Electric Portable Hand Mixers.
First use Nov. 9, 1961, on spark plugs.

SN 190,505. Hugh H. Eby Co., Philadelphia, Pa. Filed Apr. 7, 1964.



Owner of Reg. No. 524,494.
For Electronic Components, Instrument Products and Parts—Namely, Crossover Connectors, Card Edge Connectors, Interbody Terminal Connectors, Relay Connectors, Back Panel Connectors, Cable Connectors, Moulded Plug Cable Connectors, Miniature Sockets, High Voltage Sockets, Compactron Sockets, Crystal Sockets, Moulded Sockets, Low Loss Sockets, Capped Male and Female Plugs, Speaker Plugs, Universal Binding Posts, Spring Binding Posts, Tube Shields, Moulded Jacks, Adaptors, Fuse Holders, Rack and Panel Connectors, Tipped Jacks, Rubber Plugs, Moulded Plugs, Female Plugs, Multiple Switches, Speaker Plugs, Terminal Strips, Printed Circuit Boards and Novar Tube Sockets.
First use July 25, 1962.

SN 199,842. Machinery Electrification, Inc., Northboro, Mass. Filed Aug. 13, 1964.

MEK

For Time-Delay Relay, Electro-Magnetic Counters, Automatic Warehousing Controls, Liquid Level Probes, Electrical Enclosures, Load Controls, Photo-Electric Relays, and Proximity Controls.
First use on or about Jan. 1, 1955.

SN 200,324. Channel Master Corporation, Ellenville, N.Y. Filed Aug. 21, 1964.

MUSTANG

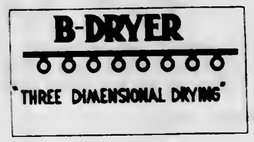
For Radio and Television Antennas, Parts Thereof and Accessories Therefor.
First use July 31, 1964.

SN 203,973. Joslyn Mfg. and Supply Co., Chicago, Ill. Filed Oct. 14, 1964.

LUMIPAC

For Outdoor Lighting Luminaires.
First use Oct. 6, 1964.

SN 204,649. Fitchburg Paper Company, Fitchburg, Mass. Filed Oct. 23, 1964.



For Apparatus for Drying Materials Through the Use of High Frequency Electric Fields.
First use Aug. 10, 1964.

SN 207,081. Ronan & Kunzl, Inc., Marshall, Mich. Filed Nov. 27, 1964.

HYDRA-SLIDE

For Door Operating Mechanism.
First use Nov. 12, 1963.

SN 208,267. E. Lowe McIntyre, Kent, Ohio. Filed Dec. 16, 1964.

l'Eau

The French word "l'Eau" signifies "the water."
For Electric Motor Driven Apparatus for Converting Salt Water and the Like To Fresh Water.
First use Oct. 30, 1964.

SN 212,686. Livingston Electronic Corporation, Montgomeryville, Pa. Filed Feb. 24, 1965.

AA

For Ammonia Activated Battery for Use in Electronic, Transmitter, Telemetry, Missile, Meteorological, Computer, Communication, Aviational, Marine Systems; Stand-by Emergency Power Sources and Flashlights.
First use Feb. 19, 1963.

Class 22—Games, Toys, and Sporting Goods

SN 192,648. Western-Hoegee Co., Los Angeles, Calif. Filed May 4, 1964.

HUCK  FINN

The drawing is lined for red and yellow, but no claim to the colors red and yellow, is made except as shown.
For Fishing Tackle, Comprising Rods, Reels, and Related Accessories.
First use November 1963.

SN 195,766. James F. Cusmano, d.b.a. Seminole Toy Company, Tampa, Fla. Filed June 16, 1964.

PIZZA TWIRL

For Twirling Toy—Namely, a Rod With a Disc at the End Thereof.
First use Apr. 10, 1964.

SN 196,505. Columbia Industries, Inc., San Antonio, Tex. Filed June 26, 1964.

Columbia 300

Owner of Reg. No. 767,851.
For Bowling Balls.
First use Feb. 24, 1964.

SN 196,662. E. S. Lowe Company, Inc., New York, N.Y. Filed June 29, 1964.

HOODWINK

For Equipment Sold as a Unit for Playing a Board-Type Game.
First use May 14, 1964.

SN 198,178. Kadets of America, Savannah, Tenn. Filed July 20, 1964.



The design figure is not a pictorial representation of any particular person or historic characterization. The rifle feature of the mark is disclaimed apart from the mark as shown.
For Toy Rifles.
First use May 19, 1964.

SN 198,524. Atlantic Lures, Inc., Providence, R.I. Filed July 27, 1964.

RAPOSA

For Fishing Lures.
First use Apr. 8, 1964.

SN 201,517. Broderna Tyskiind Aktiebolag, Insjon, Sweden. Filed Sept. 9, 1964.

<BETE>

Owner of Swedish Reg. No. 76,147, dated June 11, 1954.
For Fishing Tackle.

SN 202,254. Carl Forslund, Inc., d.b.a. Carl Forslund, Grand Rapids, Mich. Filed Sept. 21, 1964.

THE BISHOP'S GAME

Applicant disclaims the word "Game" apart from the mark shown.
For Equipment Sold as a Unit for Playing a Board Game.
First use Aug. 14, 1964.

SN 204,930. Sportsways, Inc., Paramount, Calif. Filed Oct. 27, 1964.

SPORTSWAYS

For Underwater Sports Equipment—Namely, Masks and Fins; Snorkels; Regulators; Tanks and Tank Valves and Accessories; Wet Suits and Vests; Weight Belts and Accessories; Slurp (Suction) Guns, Spear Guns and Accessories; Hookah Units and Accessories; Compressors and Pure Air Filtering Systems; Exercising Equipment—Namely, Barbells, Dumbells and Parts Thereof, Wrist and Forearm Exercisers, Head Straps, Iron Health Shoes, Shots for Shot Putting and Stretch Exercising Devices; and Surfboards.
First use August 1958.

SN 205,494. Jas. D. Easton, Inc., Van Nuys, Calif. Filed Nov. 4, 1964.

SWIFT

For Arrow Shafts.
First use Oct. 19, 1964.

SN 207,626. Mattel, Inc., Hawthorne, Calif. Filed Dec. 7, 1964.

PLASTIGOOP

For Plastic Materials for Use With a Toy Molding Set.
First use Nov. 23, 1964.

SN 208,653. Woods Bros. Mfg. Co., Westerville, Ohio. Filed Dec. 21, 1964.

LINEBACKER

For Apparatus Sold as a Unit for Playing a Simulated Football Game.
First use Sept. 21, 1964.

SN 209,878. Outdoor Supply Co., Inc., Rockville Centre, N.Y. Filed Jan. 13, 1965.

Pajama Party

For Sleeping Bags for Outdoor and Recreational Use.
First use Sept. 29, 1964.

SN 209,886. Strat-O-Matic Game Co., Inc., Great Neck, N.Y. Filed Jan. 13, 1965.

STRAT-O-MATIC

For Apparatus Sold as a Unit for Playing a Baseball-Type Board Game.
First use Mar. 7, 1961.

SN 210,094. Circle Import-Export Company, Los Angeles, Calif. Filed Jan. 18, 1965.

TREASURE PETS

For Stuffed Toys.
First use Aug. 7, 1963.

SN 210,933. Brunswick Corporation, Chicago, Ill. Filed Jan. 29, 1965.

A2

For Bowling Pinsetters, Parts Thereof and Accessories Therefor.
First use Aug. 22, 1963.

SN 211,159. Emenee Industries, Inc., New York, N.Y. Filed Feb. 2, 1965.

CASTEX 5

For Toy Casting Sets.
First use Dec. 7, 1964.

SN 211,182. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Feb. 2, 1965.

JUMPIN

For Apparatus Sold as a Unit for Playing a Board Game.
First use Nov. 19, 1964.

SN 211,184. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Feb. 2, 1965.

QUINTO

For Apparatus Sold as a Unit for Playing a Board Game.
First use Nov. 19, 1964.

SN 211,190. Pride Creations, Inc., New York, N.Y. Filed Feb. 2, 1965.

PORSIES

For Animated Wooden Doll Figures.
First use Apr. 10, 1964.

SN 211,449. Bernard J. McLoughlin, Troy, N.Y. Filed Feb. 5, 1965.

HUSTLER

For Golf Clubs.
First use in or about June 1962.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 185,233. The P. & M. Co. (England) Limited, London, England. Filed Jan. 23, 1964.

PAMMEK

Priority claimed under Sec. 44(d) on British Reg. No. 857,321, dated Dec. 2, 1963.
For Rail and Flange Lubricators of a Type or Kind Adapted to Installations in Railway Tracks.

SN 198,642. Kosch Co., Columbus, Nebr. Filed Mar. 18, 1964.

UNI-GUARD

For Mower Guard Attachment for Reciprocating Knife Mowers.
First use Apr. 16, 1957.

SN 193,734. Frits Deuschle, St. Augustine, Fla. Filed May 15, 1964.

CYCLO-HONE

For Cylinder Honing Tools.
First use Oct. 14, 1956.

SN 194,079. Sumo Pumps, Inc., Stamford, Conn. Filed May 22, 1964.

BP

For Submersible Pumps for Pumping Water.
First use Mar. 1, 1962.

SN 197,086. Clyne Brothers, Inc., Troy, Ohio. Filed July 6, 1964.

PLAS-STACKS
HSP

For Stepped Locking Blocks for Holding Workpieces or the Like in a Holder.
First use Feb. 5, 1964.

SN 200,132. Kuker Industries, Inc., Omaha, Nebr. Filed Aug. 17, 1964.

KUKER
Best Agricultural Equipment Made
Kuker Industries, Inc.
BOX 35 FLORENCE STATION OMAHA 12, NEBRASKA

All wording shown on the drawing except the word "Kuker" is disclaimed.
For Farm Crop Sprayers, Lawn Mower, Pumping Units, Brush Cutters, Hydraulic Equipment.
First use Oct. 30, 1962.

SN 201,117. Gafner Automotive & Machine, Inc., Escanaba, Mich. Filed Sept. 2, 1964.

IRON MULE

For Loading Vehicles.
First use on or before Jan. 1, 1957.

Class 26—Measuring and Scientific Appliances

SN 201,618. Rohde & Schwarz, Munich, Germany. Filed Sept. 10, 1964.

DEZIFIX

For Hi-Precision Connectors for Coaxial Cables, Especially of the Sexless Type for Accurate Measurements.
First use on or about June 1, 1951; in commerce on or about June 1, 1951.

SN 202,652. Accura, Ltd., Franklin Square, N.Y. Filed Sept. 25, 1964.

TWINLITE

For Device for Attachment to a Photographic Camera for Mounting Thereon Electronic Flash Units and Providing Electrical Connections for Operating the Flash Units from the Camera.
First use May 14, 1964.

SN 206,993. Air Products and Chemicals, Inc., Allentown, Pa. Filed Nov. 27, 1964.

VISA-BLEND

For Gas Proportioning Apparatus and Particularly Apparatus for Proportioning Gaseous Mixtures for Use in Welding.
First use Oct. 16, 1964.

Class 27—Horological Instruments

SN 212,416. Paul Jokelson, New York, N.Y. Filed Feb. 19, 1965.

Baccarat

For Watches and Clocks.
First use Jan. 20, 1965.

Class 34—Heating, Lighting, and Ventilating Apparatus

SN 186,012. John M. Lyon, d.b.a. LCS Company, Minneapolis, Minn. Filed Feb. 4, 1964.

LIGHTNING

For Charcoal Starter Chimneys.
First use Nov. 27, 1963.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 210,682. The Kelly-Springfield Tire Company, Cumberland, Md. Filed Jan. 26, 1965.

Attache

For Tires.
First use Sept. 26, 1964.

SN 210,683. The Kelly-Springfield Tire Company, Cumberland, Md. Filed Jan. 26, 1965.

Brevet

For Tires.
First use Sept. 26, 1964.

Class 37—Paper and Stationery

SN 183,096. Nekoosa-Edwards Paper Company, Port Edwards, Wis. Filed Dec. 16, 1963.

ADVANTAGE

For Paper—Namely, Bond, Duplicator, Ledger, Offset, Manifold, Copying, Mimeograph, Printing, Index, Tag, Wrapping, Opaque, and Translucent.
First use Nov. 11, 1963.

Class 38—Prints and Publications

SN 190,654. Sports Car Club of America, Incorporated, Westport, Conn. Filed Apr. 8, 1964.

SPORTS CAR

Owner of Reg. No. 672,953.
For Monthly Periodical Publication.
First use March 1945.

SN 197,314. National Spiritual Assembly of the Baha'Is of the United States, d.b.a. Baha'I Publishing Trust, Wilmette, Ill. Filed July 7, 1964.



For Publications—Namely, Magazines and Books.
First use no later than 1911.

SN 197,317. National Spiritual Assembly of the Baha'Is of the United States, d.b.a. Baha'I Publishing Trust, Wilmette, Ill. Filed July 7, 1964.



For Publications—Namely, Books, Pamphlets, House Organs, and Circulars.
First use at least as early as 1944.

SN 205,535. The Nelson Studio, Nesconset, N.Y. Filed Nov. 4, 1964.

BRANSTOCK BOOKS

The word "Books" is disclaimed apart from the mark as shown.
For Books.
First use on or about July 1, 1964.

SN 207,984. RGR Enterprises, Inc., New York, N.Y. Filed Dec. 11, 1964.

CLYDE

For Magazine.
First use Mar. 4, 1964.

SN 208,100. National Periodical Publications, Inc., New York, N.Y. Filed Dec. 14, 1964.



For Comic Magazines.
First use on or about Sept. 24, 1964.

SN 208,379. Earl E. Moore, Wynnewood, Pa. Filed Dec. 17, 1964.

COIN DETECTOR

For Printed Gauge and Registry Card for Numismatic Study and Identification of Coins and Medals.
First use Dec. 14, 1964.

SN 209,519. R. H. Macy & Co., Inc., d.b.a. Bamberger's New Jersey, New York, N.Y. Filed Jan. 7, 1965.

SHOPPER'S TELEGRAM

For Sales Promotion Circular Publishing From Time-to-Time.
First use Feb. 7, 1962.

SN 209,640. Warner Press, Inc., Anderson, Ind. Filed Jan. 8, 1965.



Owner of Reg. No. 582,251.
For Greeting Cards.
First use Jan. 2, 1963.

SN 209,732. Rohm & Haas Company, Philadelphia, Pa. Filed Jan. 11, 1965.

PLEXIGLAS WORLD

Owner of Reg. Nos. 336,539, 757,025, and others.
For Magazine.
First use in or about November 1964.

SN 210,414. W. B. Bradbury Co., Stamford, Conn. Filed Jan. 22, 1965.

MILITARY LIFE

For Magazine Supplement for Newspapers.
First use Aug. 4, 1964.

SN 210,422. East Shore Newspapers, Inc., East St. Louis, Ill. Filed Jan. 22, 1965.

METRO-EAST JOURNAL

For Daily Newspaper.
First use Nov. 1, 1964; Dec. 31, 1961, as to "Metro East."

SN 210,780. American Surgical Trade Association, Chicago, Ill. Filed Jan. 27, 1965.

AMERICAN SURGICAL DEALER

For Periodical Magazine.
First use Jan. 18, 1965.

SN 210,954. The Houston Post Company, Houston, Tex. Filed Jan. 29, 1965.

SPOTLIGHT

For Newspaper Supplement.
First use Jan. 3, 1965.

SN 211,514. Dorothy Draper, New York, N.Y. Filed Feb. 8, 1965.

ASK DOROTHY DRAPER

For Column in Syndicated Publications.
First use Sept. 15, 1959.

SN 212,617. Watt Publishing Company, Mount Morris, Ill. Filed Feb. 23, 1965.

American DAIRY REVIEW

Owner of Reg. No. 737,175.
For Trade Magazine.
First use Feb. 1, 1965.

SN 212,890. Lark Luggage Corp., New York, N.Y. Filed Feb. 26, 1965.



For Household Organ.
First use Feb. 15, 1965.

SN 212,942. American Greetings Corporation, Cleveland, Ohio. Filed Mar. 1, 1965.

JUDY JOY

For Greeting Cards.
First use Feb. 17, 1965.

SN 213,552. The General Tire & Rubber Company, Akron, Ohio. Filed Mar. 8, 1965.

GENERAL-LY SPEAKING

For House Organ.
First use 1934.

SN 214,252. The Diplomat Publishing Company, Inc., Washington, D.C. Filed Mar. 16, 1965.

DIPLOMAT

For Monthly Magazine.
First use Jan. 8, 1952.

SN 214,777. Norcross, Inc., New York, N.Y. Filed Mar. 23, 1965.

SENTIMENTAL REFLECTIONS

For Greeting Cards.
First use Oct. 14, 1964.

SN 214,779. Norcross, Inc., New York, N.Y. Filed Mar. 23, 1965.

BRIDGE-ETTE

For Greeting Cards.
First use Feb. 3, 1965.

SN 214,780. Norcross, Inc., New York, N.Y. Filed Mar. 23, 1965.

REFLECTIONS

For Greeting Cards.
First use June 10, 1964.

SN 214,782. Norcross, Inc., New York, N.Y. Filed Mar. 23, 1965.

COLLEEN

For Greeting Cards.
First use Jan. 6, 1965.

SN 215,676. National Periodical Publications, Inc., New York, N.Y. Filed Apr. 2, 1965.

DETECTIVE COMICS

For Comic Magazines and Cartoons Published in a Series.
First use Jan. 3, 1937.

SN 216,527. Norcross, Inc., New York, N.Y. Filed Apr. 14, 1965.

CURTAIN CALL

For Greeting Cards.
First use Mar. 17, 1965.

Class 39 — Clothing

SN 179,667. David H. Smith, Inc., Lynn, Mass. Filed Oct. 28, 1963.

AMY VANDERBILT

"Amy Vanderbilt" is the name of a living individual whose consent is of record.
For Dresses.
First use November 1960.

SN 182,259. Fabrica Argentina de Alpargatas Sociedad Anonima Industrial y Comercial, Buenos Aires, Argentina. Filed Dec. 3, 1963.

RUEDA

The word "Rueda" is the equivalent of the English word "wheel." Owner of Argentine Reg. No. 20,506, dated Apr. 15, 1908.
For Men's and Women's Jute or Hemp Soled Fabric Shoes.

SN 189,976. Burlington Mills, Inc., Burlington, Wis., assignee of The American Pad & Textile Company, Pittsburgh, Pa. Filed Mar. 31, 1964.

WOOD-STREAM

Owner of Reg. No. 673,144.
For Men's, Women's, and Children's Hunting and Fishing Coats, Jackets, Pants and Trousers; Shell and Fishing Vests; Covey Coats and Shooting Coats.
First use December 1951.

SN 195,835. Advance Theatrical Co., Chicago, Ill. Filed June 17, 1964.



For Leotards, Dancing Costumes, Tights, and Dancing Shoes.
First use Apr. 10, 1962.

SN 197,661. William E. Berkey, M.D., Dearborn, Mich. Filed July 13, 1964.

BREST-X

For Hospital or Medical Examiner's Gown.
First use July 7, 1964.

SN 198,321. Boss Manufacturing Company, Kewanee, Ill. Filed July 22, 1964.

COUNTRY SQUIRE

For Work Gloves of Leather, Fabric, and a Combination of Leather and Fabric.
First use Sept. 12, 1961.

SN 204,752. Blue Bell, Inc., Greensboro, N.C. Filed Oct. 26, 1964.

NEATLOK

For Men's and Boys' Shorts and Trousers.
First use Oct. 21, 1964.

SN 205,931. Jeanne Crain Fashions, Inc., Mechanicsburg, Pa. Filed Nov. 10, 1964.

Jeanne ★ Crain

"Jeanne Crain" is the name of a living individual whose consent is of record.
For House Dresses.
First use Oct. 12, 1964.

SN 207,769. Diane Young Sportswear, Inc., New York, N.Y. Filed Dec. 8, 1964.

DIANE YOUNG

The name "Diane Young" is fanciful. Owner of Reg. No. 429,916.

For Women's and Misses' Blouses and Dresses; Ladies' and Children's Skirts, Pants, Shirts, Shifts, Jackets, Sweaters, Jumpers, Suits, Shorts, and Coats; and Children's Dresses and Blouses.

First use May 8, 1945.

SN 207,898. Lewel Manufacturing Co., Inc., New York, N.Y. Filed Dec. 10, 1964.

DUO-DELIGHT

For Foundation Garments.
First use Oct. 1, 1964.

SN 208,593. The H. D. Lee Company, Incorporated, Kansas City, Mo. Filed Dec. 21, 1964.

LEE

Owner of Reg. Nos. 255,018, 709,990, and others.

For Fabrics Sold Only in Finished Apparel—Namely, Shirts, Slacks, Pants, Jackets, Coats, Gloves, Jeans, Overalls, One-Piece Work Suits, Smocks, and Work or Utility Uniforms.

First use 1916.

Class 40—Fancy Goods, Furnishings, and Notions

SN 207,241. Solomon Bros. Co., New York, N.Y. Filed Dec. 1, 1964.

SOLO STAY

Applicant disclaims the term "Stay" apart from the mark as shown.

For Supports for Shirt Collars for Use Before Wearing.
First use Sept. 24, 1962.

SN 207,610. Kleer-Vu Industries, Inc., New York, N.Y. Filed Dec. 7, 1964.

D'Orable

For False Eyelashes.
First use July 1, 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 198,717. Sun Weave Linen Corporation, New York, N.Y. Filed May 18, 1964.

PRINTS CHARMING

Without waiver to common law rights, applicant disclaims the exclusive right to the use of the word "Prints" apart from the mark as shown.

For Tablecloths, Napkins, and Toweling.
First use Sept. 13, 1963.

SN 196,877. Marcus Brothers Textile Corporation, New York, N.Y. Filed July 1, 1964.

Marbro Fabrics

Applicant disclaims the exclusive right to the use of the word "Fabrics" apart from the mark as shown. Owner of Reg. No. 502,562.

For Cotton, Rayon, Silk, Wool, and Nylon Piece Goods, and Blended Combinations Thereof.

First use May 1964; Jan. 2, 1913, as to "Marbro."

SN 197,259. Bell Industries, Inc., New York, N.Y. Filed July 7, 1964.

belgem

Owner of Reg. No. 444,338.
For Carpeting and Rugs.
First use on or about May 15, 1964.

SN 198,095. Sun Chemical Corporation, New York, N.Y. Filed July 17, 1964.

SUZI POWELL

"Suzi Powell" is not the name of a particular living individual but rather is a fictitious characterization coined for identifying applicant's goods.

For Textile Ribbons Made of Rayon, Silk, Cotton, Synthetic and Like Fibers, and Bows Made Therefrom.

First use June 10, 1964.

SN 207,595. Max Halpern & Sons, Inc., New Orleans, La. Filed Dec. 7, 1964.

OPEN-END COORDINATES

No claim is made to the word "Coordinates" apart from the mark as shown.

For Textile Fabrics for Making Into Draperies, Bedspreads, Slipcovers, Dresses, Lingerie, and the Like.

First use on or about Oct. 1, 1964.

SN 209,395. Bigelow-Sanford, Inc., New York, N.Y. Filed Jan. 6, 1965.

ARIETTA

For Textile Carpets and Rugs.
First use January 1963.

SN 210,704. Shulman Sunshine, Inc., Paterson, N.J. Filed Jan. 26, 1965.

SHULMAN SUNSHINE, INC. 386 STRAIGHT ST., PATERSON, N. J.—07509

Applicant disclaims the address "386 Straight St., Paterson, N.J. 07509."

For Fabrics in the Piece of Silk, Rayon and Cotton, and Synthetic Fibers, or Combinations Thereof.

First use Nov. 30, 1963.

Class 43—Thread and Yarn

SN 184,208. Brunswick Worsted Mills, Inc., Moosup, Conn. Filed Jan. 8, 1964.

KNIT AND RELAX

Applicant hereby disclaims its rights in and to the words "Knit and Relax."

For Knitting Yarn.
First use about Mar. 15, 1963.

Class 44—Dental, Medical, and Surgical Appliances

SN 198,810. American Sterilizer Company, Erie, Pa. Filed July 30, 1964.

PORTACLAVE

For Medical, Dental, and Surgical Sterilizers.
First use Nov. 18, 1963.

SN 198,901. S-B Power Surgical Tools, Inc., Fort Worth, Tex. Filed July 30, 1964.



For Rotary Surgical Cutting Instruments.
First use on or about Apr. 16, 1963.

SN 200,009. Marketing Laboratory, Inc., New York, N.Y. Filed Aug. 17, 1964.

SOOTHETTE

For Callous Eraser.
First use July 1964.

Class 45—Soft Drinks and Carbonated Waters

SN 193,167. H. P. Hood & Sons, Inc., d.b.a. H. P. Hood & Sons, Boston, Mass. Filed May 11, 1964.

HOOD

Owner of Reg. Nos. 144,230, 689,595, and others.

For Carbonated Soft Drinks.
First use Nov. 15, 1962.

Class 46—Foods and Ingredients of Foods

SN 128,582. Ort Bros. Bakery, Inc., Cumberland, Md. Filed Sept. 26, 1961.

SOF SPUN

For Bread.
First use August 1930.

SN 163,840. Hy-Vee Food Stores Inc., Chariton, Iowa. Filed Mar. 4, 1963.

Hy-Vee

Owner of Reg. Nos. 764,718 and 764,794.

For Merchandise Commonly Sold in Grocery Stores—Namely, Canned Vegetables and Fruits; Canned Vegetable and Fruit Juices; Coffee; Tea; Sandwich Spreads; Salad Dressing and Oils; Fluid Milk and Cheese; Breakfast Cereal; Packaged Dry Foods—Namely, Noodles, Popcorn, Spaghetti and Macaroni; Salt; Vegetable Shortening; Relishes; Flour; Cake Mix; and Ice Cream.

First use in or about March 1957.

SN 170,487. Mother Hubbard Products Company, d.b.a. G. A. Goodrich Company, Chicago, Ill. Filed June 6, 1963.

Good-n-Rich

Owner of Reg. No. 423,098.
For Gelatin Dessert Preparations, Pudding Dessert Preparations, Cake Mix, Soup Mix, Prepared Biscuit Flour, Table Syrup Mix, Ice Cream Mix, Baking Powder, Cocoa Flavored Malt Extract Preparation for Use in Milk Beverage, Flavoring Extract for Use in Soups and Gravies, and Food Flavors in Liquid Form; Pancake and Waffle Mix, Corn Muffin Mix, Pizza Mix, Frosting Mix, Cheese Cake Mix, Colored Cocoanut, Fruit Cake Mix, Colored Icing for Use in Decorating Cakes, Donut Mix (Hand), Vanilla Flavoring Extract, and Instant Mashed Potato Mix, and Hot Roll Mix.
First use May 25, 1921.

SN 177,446. Rueckert Meat Co., Inc., d.b.a. Rueckert's, St. Louis, Mo. Filed Sept. 20, 1963.



Without prejudice to common law rights, the words "Quikie Cook" are disclaimed.
For Portion Controlled Frosen Fresh Meats.
First use Aug. 19, 1963; Mar. 31, 1960, as to the design.

SN 161,076. Tree Top, Inc., Selah, Wash. Filed Nov. 13, 1963.

TREE TOP

Owner of Reg. Nos. 521,813, 557,350, and 688,815.
For Pure Frosen Concentrated Apple Juice.
First use Oct. 24, 1963.

SN 182,786. Deta GmbH, Werther, near Bielefeld, Germany. Filed Dec. 11, 1963.

Deta

Owner of German Reg. No. 619,389, dated Jan. 14, 1950.
For Tea, Cocoa, Chocolate Candies, Non-Chocolate Candies, Chocolate Pralines, and Non-Alcoholic Chocolate Food Beverage.

SN 195,318. Nutrition International Corporation, Madison, Tenn. Filed June 10, 1964.

INFA-SOY

For Liquid Infant Food Formula, Comprising Soybean Products and Other Ingredients Including Carbohydrates, Minerals, and Vitamins.
First use Jan. 14, 1964.

SN 195,355. Conserves Alimentaires Culina, Thorembais-les-Begiunes, Belgium. Filed May 7, 1964.

CULINA

For Canned Vegetables, Canned Tomatoes, and Canned Fruit.
First use 1930; in commerce Oct. 1, 1953.

SN 200,295. James Stedman Henderson's Sweets Limited, Rosebery, near Sydney, New South Wales, Australia. Filed Aug. 20, 1964.

QUALITY SWEETACRES PRODUCTS

Applicant disclaims any right in the words "Quality Products" apart from the mark as shown. Owner of Australian Reg. No. 27,211, dated Feb. 13, 1920.
For Confectionery—Namely, Chocolate and Candy.

SN 200,642. Gristede Bros., Inc., New York, N.Y. Filed Aug. 26, 1964.

GRISTEDE'S

The drawing is lined for cream or buff color and blue, and these colors are claimed. Owner of Reg. Nos. 567,431, 671,669, and others.
For Bread, Rolls, and Bottled Cocktail Cherries.
First use May 27, 1964.

SN 201,236. P. J. Ritter Company, Bridgeton, N.J. Filed Sept. 3, 1964.



Owner of Reg. Nos. 441,271 and 567,888.
For Asparagus, Pork and Beans, Mexicala Butter Beans, Catsup, Tomato Juice, Vegetable Juice, Relishes, Peppers, and Hot Ketchup.
First use October 1962 on relishes.

SN 201,374. Chocolate Products Company, Chicago, Ill. Filed Sept. 8, 1964.

DUBL-DUTCH

For Chocolate Flavored Powder Sold to Milk Dairies for Making a Chocolate or Dairy Beverage.
First use Apr. 17, 1964.

SN 201,632. Zevo, Inc., Los Angeles, Calif. Filed Sept. 10, 1964.

zevo

For Cultured Vegetable Fat Type Food Dressing.
First use July 7, 1964.

SN 202,043. River Brand Rice Mills, Inc., New York, N.Y. Filed Sept. 16, 1964.



The Arabic symbols appearing in the upper left of the mark, when translated in English, means "rocket," and the symbols at the lower right mean "brand." Applicant disclaims the Arabic symbols at the lower right of the mark, meaning "brand," apart from the mark as shown.
For Rice.
First use February 1963.

SN 202,508. Seyfert Foods, Inc., Fort Wayne, Ind. Filed Sept. 23, 1964.

Seyfert's

For Potato Chips, Popcorn (Popped and Unpopped), Peanuts (Shelled and Unshelled), Nut Meats, Corn Chips, Cheese Corn, Caramel Corn, Shoestring Potatoes, Pretsels, and Barbecue Chips.
First use in or about September 1946.

SN 203,601. Ray Moss Farms, Inc., Chattanooga, Tenn. Filed Oct. 8, 1964.

GOLDEN GALLON

No claim is made to the word "Gallon" except in association with the mark as shown.
For Fluid Milk—Namely, Homogenized, Chocolate, Skim, and Buttermilk; Orange Food Drink, Orange Juice, Grape Food Drink, Egg Nog, Fruit Punch, Whipping Cream, Sour Cream, Onion Dip, Cottage Cheese, Ice Cream, Sherbet, and Ice Milk.
First use Mar. 31, 1960.

SN 204,314. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Oct. 19, 1964.

FRUIT SHAKE

The word "Fruit" is disclaimed apart from the mark as shown, without disclaiming any common law rights therein.
For Candy in Pellet Form.
First use Sept. 2, 1964.

SN 204,450. Cooperative Feed Dealers, Inc., Chenango Bridge, N.Y. Filed Oct. 21, 1964.

CERTIFEED

The word "Feed" is disclaimed when used apart from the mark shown.
For Stock and Poultry Foods.
First use Sept. 23, 1964.

SN 205,068. Tillie Lewis Foods, Inc., Stockton, Calif. Filed Oct. 29, 1964.

PENTHOUSE

Owner of Reg. Nos. 417,234 and 575,672.
For Canned Fruit and Canned Vegetables.
First use June 3, 1936, on canned vegetables.

SN 205,368. Stoller Fisheries, Inc., Spirit Lake, Iowa. Filed Nov. 2, 1964.

STOLLER BRAND
FRIDAY FRANKS

No claim is made to the words "Brand" and "Franks" apart from the mark as shown.
For Fresh Smoked Fish in a Meatless Casing.
First use July 1, 1964.

SN 205,460. Safeway Stores, Incorporated, d.b.a. Conway Oil Co., Oakland, Calif. Filed Nov. 3, 1964.

KEEN ROLL

Owner of Reg. No. 710,023.
For Margarine.
First use September 1958.

SN 205,655. Bel-Air Food Products Co., Los Angeles, Calif. Filed Nov. 6, 1964.

Parmazette

For Cheese Flavored Seasoning for Casseroles, Soups, and Other Food Products.
First use Sept. 3, 1964.

SN 205,815. Harts Mountain Products Corp., New York, N.Y. Filed Nov. 9, 1964.

COQUETTES

For Food for Household Animal Pets, Such as Dogs, Cats, and the Like.
First use Aug. 11, 1964.

SN 205,972. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Nov. 10, 1964.

STRAWBERRY SUNDAE

Applicant disclaims "Strawberry" apart from the mark as shown, without disclaiming any common law rights therein.
For Chewing Gum.
First use Aug. 12, 1964.

SN 206,463. Minute Maid Groves Corporation, Orlando, Fla. Filed Nov. 18, 1964.

CARAVEL

For Fresh Citrus Fruits.
First use Oct. 15, 1935.

SN 207,000. Babijuice Corporation of Florida, Orlando, Fla. Filed Nov. 27, 1964.

VITA PLUS

Owner of Reg. No. 404,616.
For Canned Citrus Fruit Juices for Food Purposes, Refrigerated Citrus Fruit Sections, and Refrigerated Fruit Salad.
First use Aug. 7, 1964.

SN 207,843. The Paul Spits Company, Inc., New York, N.Y. Filed Dec. 9, 1964.

I'M THE GREATEST

For Candy.
First use Nov. 13, 1964.

SN 210,124. Hi-Line Growers Inc., East Wenatchee, Wash. Filed Jan. 18, 1965.

HI-LINE APPLES

No claim is made to the representation of the apple or to the word "Apples."
For Fresh Deciduous Fruits—Namely, Fresh Apples.
First use Dec. 16, 1964.

SN 210,857. Purity Cheese Company, Mayville, Wis. Filed Jan. 21, 1965.

PURITY

Owner of Reg. No. 171,076.
For Cheese.
First use June 1, 1922.

SN 210,665. William Klein, d.b.a. American Mercantile Company, San Francisco, Calif. Filed Jan. 26, 1965.

MYCO

Owner of Reg. No. 536,645.
For Canned Fish, Canned Shellfish, Canned Fruits, and Canned Mushrooms.
First use June 1, 1949, on canned shellfish.

SN 210,806. The Nestlé Company, Inc., White Plains, N.Y. Filed Jan. 27, 1965.

SPOON-IT

For Low Calorie Sugar Substitute.
First use Dec. 31, 1964.

SN 210,807. The Nestlé Company, Inc., White Plains, N.Y. Filed Jan. 27, 1965.

SLITE

For Low Calorie Sugar Substitute.
First use Dec. 31, 1964.

SN 210,809. The Nestlé Company, Inc., White Plains, N.Y. Filed Jan. 27, 1965.

THIN-AIRE

For Low Calorie Sugar Substitute.
First use Dec. 31, 1964.

SN 211,284. Leaf Brands, Inc., Chicago, Ill. Filed Feb. 3, 1965.

DALEKS

For Chewing Gum.
First use Jan. 22, 1965.

SN 211,285. Leaf Brands, Inc., Chicago, Ill. Filed Feb. 3, 1965.

CREEPS

For Chewing Gum.
First use Jan. 22, 1965.

SN 211,414. H. E. Butt Grocery Company, d.b.a. Harlingen Canning Co., Corpus Christi, Tex. Filed Feb. 5, 1965.

Gold Inn

For Canned Fruits, Canned Fruit Juices, Canned Vegetables, and Canned Vegetable Juices.
First use October 1940.

SN 211,452. Morrison-Quirk Grain Corporation, d.b.a. Centennial Valley Farms, Hastings, Nebr. Filed Feb. 6, 1965.

Centennial Farms

For Fresh Grapes.
First use July 29, 1964.

SN 215,762. Meridian Foods, Inc., Eaton, Ind. Filed Apr. 5, 1965.

Beany Boy

For Canned Beans, Canned Blackeyed Peas, and Canned Pork and Beans.
First use Mar. 10, 1965.

Class 49—Distilled Alcoholic Liquors

SN 186,397. Ferdinand P. Schoettle, Princeton, N.J. Filed Feb. 10, 1964.

WHIMS

For Virgin Island Rum.
First use Dec. 10, 1963.

SN 206,509. Bohemian Distributing Company, d.b.a. James MacAllen Importing Co., Los Angeles, Calif. Filed Nov. 19, 1964.

BOAR'S HEAD

For Gin.
First use June 1, 1959.

SN 206,763. Ronrico Corporation, San Juan, Puerto Rico. Filed Nov. 23, 1964.

LLUVIA DE ORO

"Lluvia de Oro" is translated as "rain of gold."
For Alcoholic Liqueurs.
First use Oct. 22, 1964.

SN 208,296. Maurice Milstone, d.b.a. Milstone's Acme Liquor Store, Washington, D.C. Filed Dec. 16, 1964.

TOM JONES

The name "Tom Jones" is fictitious.
For Whiskey.
First use Jan. 28, 1964.

Class 50—Merchandise Not Otherwise Classified

SN 186,280. Safway Steel Products, Inc., Milwaukee, Wis. Filed Feb. 7, 1964.



The word "Frame" is disclaimed apart from the mark as shown.
For Scaffold Frames.
First use June 24, 1963.

SN 202,279. John E. Lingo & Son, Inc., Camden, N.J. Filed Sept. 21, 1964.

ULTRASHEEN

For Flag Poles and Accessories With a Lustrous Surface Finish.
First use Mar. 18, 1964.

SN 209,742. Usadel Trophy Manufacturers, Inc., Los Angeles, Calif. Filed Jan. 11, 1965.



The mark consists of the letters "U" and "T."
For Trophies and Plaques.
First use Jan. 4, 1960.

SN 214,208. Vaughan's Seed Company, Downers Grove, Ill. Filed Mar. 15, 1965.

GLAMOUR TAG

The word "Tag" is disclaimed apart from the mark.
For Identification Tags for Seeds, Plants, and Growing Flowers.
First use on or about Oct. 1, 1964.

SN 215,798. Thomas Industries Inc., Louisville, Ky. Filed Apr. 5, 1965.

VISIONELL

For Chalkboards.
First use on or about Feb. 27, 1965.

SN 216,248. John Thomas Batts, Inc., Zeeland, Mich. Filed Apr. 12, 1965.

WISHBONE

Owner of Reg. No. 77,032.
For Garment Hangers.
First use in or about February 1965.

SN 216,478. Howard C. Buncher, d.b.a. Industrial Steel Fabricators Co., Easton, Pa. Filed Apr. 14, 1965.

PROTECT-O-THREAD

For Scaffolding.
First use Mar. 26, 1965.

Class 51 — Cosmetics and Toilet Preparations

SN 144,483. Mathilde Funck, nee Woersing, Munich, Germany. Filed May 14, 1962.

AMOR SKIN

Owner of German Reg. No. 661,273, dated June 21, 1954; and U.S. Reg. No. 236,424.
For Preparations for the Care of the Skin, Perfume, and Powder.

SN 196,388. Hood's Hair Products, Inc., Des Moines, Iowa. Filed June 24, 1964.

Dignicreme

For Hair Dressing.
First use Oct. 31, 1956.

SN 205,304. Les Parfums Jean Desses, Paris, France. Filed Nov. 2, 1964.

GYMKANA

Owner of French Reg. No. 521,239, dated Apr. 13, 1964 (Seine); Natl. Inst. No. 223,888.
For Perfumery, Toilet Waters, Bath Salts, Hair Lotions, and Mouthwash.

SN 206,783. Edward H. Leftwich, d.b.a. Leftwich Co., Duquesne, Pa. Filed Nov. 23, 1964.

DEEP ROSE

For Hair and Scalp Pomade, Professional Pressing Compound, and Curling Wax.
First use Aug. 15, 1963.

SN 206,811. Arrow Display Associates, Inc., Philadelphia, Pa. Filed Nov. 24, 1964.

TANYA

For Suntan Lotion.
First use June 1943.

SN 206,920. Cecilia Products, Ltd., New York, N.Y. Filed Nov. 25, 1964.

CECILIA

For Rouge and Powder Combination in Solid Form, and Eyebrow Pencils.
First use June 3, 1963.

SN 209,838. Bristol-Myers Company, New York, N.Y. Filed Jan. 13, 1965.

SCORE

Owner of Reg. Nos. 426,365 and 757,490.
For Deodorant.
First use Oct. 12, 1964.

SN 210,794. Estee Lauder, d.b.a. Estee Lauder Cosmetics, New York, N.Y. Filed Jan. 27, 1965.

Estée Lauder

Owner of Reg. No. 530,305.
For Perfumery, Cosmetics, and Toilet Preparations.
First use May 1, 1956.

SN 213,059. Stanlabs, Inc., Portland, Oreg. Filed Mar. 1, 1965.

NOVADERM

For Cosmetics and Toilet Preparations—Namely, Skin Lotions, Night Creams and Cleansing Creams.
First use Oct. 9, 1964.

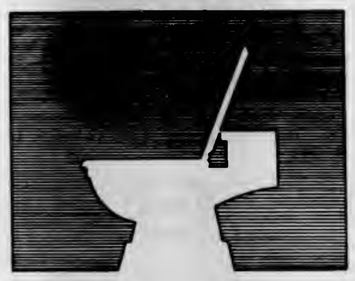
Class 52 — Detergents and Soaps

SN 45,034. Daimler-Benz Aktiengesellschaft, Stuttgart-Untertuerkheim, Germany. Filed Jan. 31, 1958.

Owner of German Reg. No. 685,072, dated July 25, 1942.
For Spot Removing Preparations, Tar Removing Preparations, and Preparations for Cleaning Chromium, Glass, and Painted Surfaces of Vehicles.
First use in 1933; in commerce in 1950.

SN 188,736. The Drackett Company, Cincinnati, Ohio. Filed Mar. 16, 1964.

NEW
DISINFECTANT
VANISH
with QK 100-15



The drawing is lined for the colors blue and red. Owner of Reg. Nos. 352,714 and 760,147.
For Toilet Bowl Cleaner Containing a Disinfecting Agent.
First use July 1962.

SN 195,925. Britex Corporation, Boston, Mass. Filed June 18, 1964.

KLOR-O-KLEEN

Owner of Reg. No. 700,756.
For Chlorinated Detergent for Industrial, Commercial, and Household Use.
First during January 1956.

SN 203,627. Synco Products, Inc., d.b.a. Synco Chemical Products, Kansas City, Mo. Filed Oct. 8, 1964.

VANTAGE

For Dishwashing Detergent for Commercial Use.
First use April 1959.

SN 208,687. L. A. Kling Enterprises, Inc., Evanston, Ill. Filed Dec. 22, 1964.

ON THE SPOT

For Spot Remover for Use on Fabrics.
First use Dec. 16, 1964.

SN 209,426. The Drackett Company, Cincinnati, Ohio. Filed Jan. 6, 1965.

QWIK-STRIP

Owner of Reg. No. 694,379.
For Floor Cleaning Compositions for Stripping Wax and Other Floor Finishes From Floors.
First use Nov. 11, 1957.

SN 209,542. Sanitol Products Corporation, Great Neck, N.Y. Filed Jan. 7, 1965.

SANITOL CELEBRITY

For Liquid Concentrate for Solution in Water for Use as a Cleaner and Stripper for Floors.
First use Dec. 30, 1964.

SN 210,650. Colgate-Palmolive Company, New York, N.Y. Filed Jan. 26, 1965.

TWICE

For Toilet Soap.
First use Jan. 12, 1965.

SN 211,165. Goya Limited, London, England. Filed Feb. 2, 1965.

FRENZY

Owner of British Reg. No. 812,051, dated Oct. 15, 1960.
For Hair Shampoos and Toilet Soaps.

SN 211,487. Alberto-Culver Company, Melrose Park, Ill. Filed Feb. 8, 1965.

RINSE AWAY

Owner of Reg. Nos. 642,420 and 688,603.
For Dandruff Shampoo.
First use Feb. 7, 1964.

SN 216,394. Emcor, Inc., Des Plaines, Ill. Filed Apr. 13, 1965.



The drawing is lined for the colors red and gold.
For Glass Cleaner.
First use Dec. 31, 1964.

SN 218,136. Products Sales, Inc., Cleveland, Ohio. Filed May 5, 1965.

LADY MACBETH

For Spot and Stain Remover.
First use Apr. 15, 1964.

SERVICE MARKS

Class 100 — Miscellaneous

SN 191,498. Blecker Beauty Shops, Inc., Chicago, Ill. Filed Apr. 20, 1964.

BEAUTY LANE

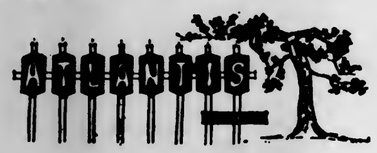
No claim is made to the word "Beauty" except as a part of the mark.
For Beauty Salon Services.
First use on or about May 1, 1963.

SN 192,396. Howard Johnson's Motor Lodges, Inc., Wollaston, Mass. Filed Apr. 30, 1964.



No claim of exclusive right is made to the words "Rapid Reservation Service." Owner of Reg. No. 714,495.
For Services Rendered to Travelers—Namely, Providing Them With Telephone Services Enabling Them To Make Advance Reservations at Motor Lodges.
First use Dec. 5, 1963.

SN 194,942. Atlantis Lodge, Inc., Atlantic Beach, N.C. Filed June 5, 1964.



For Lodging Accommodation Services.
First use June 6, 1963.

SN 196,338. Atlantis Lodge, Inc., Atlantic Beach, N.C. Filed June 24, 1964.

ATLANTIS

For Lodging Accomodation Services.
First use June 6, 1963.

Class 101 — Advertising and Business

SN 165,606. John Everett Lindrup, d.b.a. The International Miss Television Pageant Co., New York, N.Y. Filed Mar. 28, 1963.

Miss Television

For Services in Promoting Sale of the Goods and Services of Others by Means of a Beauty Contest Conducted Over Television.
First use Feb. 19, 1963.

SN 193,120. Computer Programming Concepts, Inc., Cincinnati, Ohio. Filed May 11, 1964.



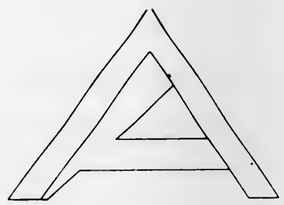
For Computing Golf Handicapping Services.
First use Dec. 30, 1963.

SN 196,345. Business Printing, Inc., Anderson, Ind. Filed June 24, 1964.



For Printing Services.
First use Jan. 11, 1963.

SN 202,913. Central Builders Supplies Company, Inc., Burr Oak, Mich. Filed Sept. 29, 1964.



For Service of Central Buying of Building Products, Materials, and Supplies for Member Lumber Yards and of Central Distribution and Centralized Advertising and Promotion.
First use during June 1964.

SN 204,674. Gold Crown Stamp Co., Inc., Shreveport, La. Filed Oct. 23, 1964.



Owner of Reg. No. 683,034.
For Promoting the Sale of Goods of Others Through the Use of Trading Stamps Which Are Redeemed for Merchandise or Money.
First use Aug. 20, 1964.

Class 102 — Insurance and Financial

SN 175,067. Union National Bank of Chicago, Chicago, Ill. Filed Aug. 14, 1963.

TELLER-VISION

For Banking, More Particularly, a Drive-In Banking Service.
First use Dec. 6, 1962.

SN 200,083. Farm Credit Administration, Washington, D.C. Filed Aug. 18, 1964. COLLECTIVE MARK.



For Financial Services—Namely, Making and Servicing for Members of a Federal Land Bank Association Farm Mortgage Loans Obtained From a Federal Land Bank as Authorized Under the Federal Farm Loan Act, as Amended.
First use March 1964.

SN 200,084. Farm Credit Administration, Washington, D.C. Filed Aug. 18, 1964. COLLECTIVE MARK.



For Financial Services—Namely, Loans to Farmers and Ranchers and Their Organisations Made or Serviced or Financed by Federal Land Banks, Federal Land Bank Associations, Federal Intermediate Credit Banks, Production Credit Associations and Banks for Cooperatives as Authorized Under Acts of Congress.
First use March 1964.

SN 200,088. Farm Credit Administration, Washington, D.C. Filed Aug. 18, 1964. COLLECTIVE MARK.



For Financial Services—Namely, Loans and Discounts for Production Credit Associations and Other Financing Institutions Made by a Federal Intermediate Credit Bank as Authorized Under the Federal Farm Loan Act, as Amended.
First use June 1964.

SN 200,411. Carefree Life Insurance Corporation of America, Phoenix, Ariz. Filed Aug. 24, 1964.

Carefree Life

For Underwriting Life Insurance.
First use Apr. 24, 1962.

SN 208,489. The Ohio National Life Insurance Company, Cincinnati, Ohio. Filed Dec. 18, 1964.

Q

For Underwriting Insurance.
First use Aug. 31, 1964.

SN 208,645. United California Bank, Los Angeles, Calif. Filed Dec. 21, 1964.

THE BANK THAT DOES A LITTLE MORE FOR YOU

Owner of Reg. No. 735,809.
For Banking Services.
First use June 14, 1963.

SN 208,820. First Colony Life Insurance Company, Inc., Lynchburg, Va. Filed Dec. 24, 1964.



For Underwriting Life Insurance.
First use Feb. 18, 1963.

SN 209,246. Evangelical Church Building Corporation, South Bend, Ind. Filed Jan. 4, 1965.

THE KEY TO GOD'S TREASURY

For Financial Guidance Service to Churches and Schools.
First use fall of 1962.

SN 211,143. The Andrew Jackson Life Insurance Company, Jackson, Miss. Filed Feb. 2, 1965.



The ANDREW JACKSON Life Insurance Company

For Underwriting of Life, Health, and Accident Insurance.
First use 1952.

Class 103 — Construction and Repair

SN 192,498. Monsanto Company, St. Louis, Mo. Filed May 1, 1964.

LION

Owner of Reg. No. 688,866.
For Automobile and Truck Maintenance and Light Repair Services.
First use at least as early as 1929.

SN 192,499. Monsanto Company, St. Louis, Mo. Filed May 1, 1964.



Owner of Reg. No. 688,866.
For Automobile and Truck Maintenance and Light Repair Services.
First use at least as early as February 1960.

Class 104 — Communication

SN 192,013. Dynamic Theatre Networks, Inc., New York, N.Y. Filed Apr. 27, 1964.

THEATREVISION

For Closed Circuit Television Viewing Services.
First use March 1962.

Class 105 — Transportation and Storage

SN 172,986. Goldman-Meyer Travel Agency, Inc., d.b.a. Open Road Tours, St. Louis, Mo. Filed July 15, 1963.

OPEN ROAD TOUR

The word "Tour" is disclaimed apart from the mark as shown.
For Arranging, Planning, and Organizing of Travel Tours Including Transportation, Accommodations, and the Like.
First use October 1959.

SN 193,880. Norman H. Kneisel, d.b.a. Kneisel's Green Carpet Tours, Portland, Oreg. Filed May 20, 1964.



For Travel Agency Service and Tours.
First use on or about Oct. 1, 1963.

SN 204,010. Ruan Transport Corporation, Des Moines, Iowa. Filed Oct. 14, 1964.



For Motor Transportation of the Goods of Others.
First use Sept. 1, 1964.

Class 106 — Material Treatment

SN 188,857. Ever-Lined Company, Inc., New York, N.Y. Filed Mar. 17, 1964.



For Laminating Synthetic Textile Fabric Lining to Cloth for Producing Lined Cloth for Making Garments.
First use Nov. 12, 1963.

Class 107 — Education and Entertainment

SN 193,312. Widening Horizons, Washington, D.C. Filed May 11, 1964.



The words "Tours for Teens" are disclaimed apart from the mark shown.
For Providing Tours of Government Agencies and Other Centers for Young People in Order To Enrich Their Cultural Life.
First use Mar. 1, 1964.

SN 200,268. Lyons Band Instrument Co., Inc., Chicago, Ill. Filed Aug. 20, 1964.

MELODY FUN

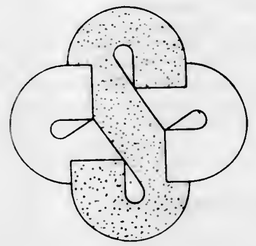
For Elementary Musical Training and Instruction Services.
First use at least as early as 1938.

SN 200,461. Media-Merchandising, Inc., Chicago, Ill. Filed Aug. 24, 1964.

"PARTY-TIME"

For Title of a Radio Program Featuring Music and Suggestions Relating to the Giving of Parties.
First use Jan. 28, 1956.

SN 206,953. National Amusements, Inc., Boston, Mass. Filed Nov. 25, 1964.



For Entertainment Services in the Nature of the Exhibition of Motion Pictures in Movie Theaters.
First use Aug. 7, 1964.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 182,568. Association of Mutual Insurance Engineers, Chicago, Ill. Filed Dec. 9, 1963.



The drawing is lined for the colors red and gold.
For Indicating Membership in Applicant.
First use July 1, 1962.

SN 202,534. American Institute of Chefs, Columbus, Ohio. Filed Sept. 24, 1964.



The lining shown on the drawing is for shading purposes only and does not represent color.
For Indicating Membership in an Honorary Division of Applicant—Namely, the "Order of The Golden Toque."
First use April 1962.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

794,962. COVINAX. The Franklin Chemical Company. SN 190,914. Pub. 6–15–65. Filed 4–13–64.

794,963. EPOLENE. Eastman Kodak Company. SN 193,003. Pub. 6–15–65. Filed 5–8–64.

794,964. MAILLISETTE. Societe Rhovyl. SN 197,342. Pub. 6–15–65. Filed 7–7–64.

794,965. MEMBER WOOD CHARCOAL BRIQUET PRODUCERS ASSOCIATION ETC. AND DESIGN. Wood Charcoal Briquet Producers Association. SN 198,016. COLLECTIVE MARK. Pub. 6–15–65. Filed 7–16–64.

794,966. IP AND DESIGN. International Paper Company. SN 201,691. Pub. 6–15–65. Filed 9–11–64.

Class 2—Receptacles

794,967. PALETTE AND BRUSH (DESIGN). Beach Products, Inc. SN 168,569. Pub. 6–15–65. Filed 5–10–63.

794,968. MINI-GRIP AND DESIGN. Flexigrip, Inc. SN 185,120. Pub. 6–15–65. Filed 1–22–64.

794,969. MEAD COLOR-CORR. The Mead Corporation. SN 187,771. Pub. 6–15–65. Filed 3–2–64.

794,970. SLING BIN. Thomas G. Peterson. SN 191,206. Pub. 6–15–65. Filed 4–15–64.

794,971. JUNE SPECIAL AND DESIGN. Aktiebolaget Jönköpings Vacuumindustri. SN 197,239. Pub. 6–15–65. Filed 7–7–64.

794,972. BATTERY-SERV. Conley E. House, d.b.a. House Manufacturing Company. SN 198,173. Pub. 6–15–65. Filed 7–20–64.

794,973. SHEATH-PAK. American Can Company. SN 200,311. Pub. 6–16–65. Filed 8–21–64.

794,974. SAL FAX AND DESIGN. Sal-Fax Corporation. SN 200,870. Pub. 6–15–65. Filed 8–28–64.

794,975. NORGE. Borg-Warner Corporation. SN 201,802. Pub. 6–15–65. Filed 9–14–64.

794,976. TRINA. Trina, Inc. SN 207,167. Pub. 6–15–65. Filed 11–30–64.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

794,977. COCKLE SHELL. Cockle Shell, Ltd. MULTIPLE CLASS (Classes 3, 28, and 39). SN 179,121. Pub. 6–15–65. Filed 10–16–63.

794,978. SH AND DESIGN. School House Products, Inc. MULTIPLE CLASS (Classes 3, 11, 13, 21, 23, 26, 29, 32, and 37). SN 190,649. Pub. 6–15–65. Filed 4–8–64.

794,979. FB. Fred Braun Workshops, Inc. MULTIPLE CLASS (Classes 3 and 39). SN 193,744. Pub. 6–15–65. Filed 5–19–64.

Class 4—Abrasives and Polishing Materials

794,980. GODDARD'S LONG SHINE. J. Goddard & Sons Limited. SN 181,588. Pub. 6–15–65. Filed 11–20–63.

794,981. HOOKER. Hooker Chemical Corporation. SN 206,543. Pub. 6–15–65. Filed 11–19–64.

Class 5—Adhesives

794,982. POLY-TAC. Tenneco Chemicals, Inc., by change of name from Heyden Newport Chemical Corporation. SN 192,720. Pub. 6–15–65. Filed 5–5–64.

794,983. KRATON. Shell Oil Company. SN 193,713. Pub. 6–15–65. Filed 5–18–64.

794,984. CLIPPER ETC. AND DESIGN. Canadian Technical Tape, Ltd. SN 195,511. Pub. 6–15–65. Filed 6–12–64.

794,985. WESTGLAS. Western Fibrous Glass Products Company. SN 197,635. Pub. 6–15–65. Filed 7–10–64.

794,986. ASBESTIK. Templar Oil Products Company, Inc. SN 203,213. Pub. 6–15–65. Filed 10–2–64.

Class 6—Chemicals and Chemical Compositions

794,987. GLOBE IN AN A. Atlas Chemical Industries, Inc. SN 125,711. Pub. 7–2–63. Filed 8–10–61.

794,988. SPRAYAWAY JETAINER. Finishine Laboratories, Inc. SN 139,064. Pub. 1–28–64. Filed 3–5–62.

794,989. F & M AND DESIGN. F & M Scientific Corporation. SN 157,985. Pub. 6–15–65. Filed 11–27–62.

794,990. ILFOPRINT. Ilford, Limited. SN 172,313. Pub. 6–15–65. Filed 7–2–63.

794,991. LOCKSPRAY-GOLD. Lockheed Aircraft Corporation. SN 180,218. Pub. 6–15–65. Filed 10–31–63.

794,992. CENEGEN. Crompton & Knowles Corporation. SN 182,045. Pub. 7–14–64. Filed 11–29–63.

794,993. ARQUAMEEN. Armour and Company. SN 192,885. Pub. 6–15–65. Filed 5–7–64.

794,994. DYKOSOL. Martin-Marietta Corporation. SN 194,056. Pub. 6–15–65. Filed 5–22–64.

794,995. MARATAX. Sterling Drug Inc. SN 194,252. Pub. 6–15–65. Filed 5–25–64.

794,996. PALIOFAST. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 194,944. Pub. 6–15–65. Filed 6–5–64.

794,997. VIVIGUARD. The Stamford Chemical Company. SN 197,042. Pub. 6–15–65. Filed 7–3–64.

794,998. SEMCO. Semco Sales & Service, Inc. SN 208,123. Pub. 6–15–65. Filed 12–14–64.

Class 8—Smokers' Articles, Not Including Tobacco Products

794,999. CLASSIC. Falcon International, Inc. SN 181,466. Pub. 6–15–65. Filed 11–19–63.

Class 11—Inks and Inking Materials

794,978. (See Class 3 for this trademark.)

Class 12—Construction Materials

795,000. EDGETITE. Big Bear Board Products, Inc. SN 169,202. Pub. 6–23–64. Filed 5–20–63.

795,001. ACRYLITE. American Cyanamid Company. SN 187,382. Pub. 6–15–65. Filed 2–25–64.

795,002. DIMENSION-ALL. Charles E. Barnes. SN 187,646. Pub. 6–15–65. Filed 2–28–64.

795,003. OVAL LINE. Blumcraft of Pittsburgh. SN 188,189. Pub. 6–15–65. Filed 3–9–64.

795,004. POLYTITE. Amsted Industries Incorporated, assignee of Griffin Pipe Products Co. SN 188,750. Pub. 6–15–65. Filed 3–16–64.

795,005. ECONO-PLY. Shakertown Corporation. SN 190,119. Pub. 6–15–65. Filed 4–1–64.

795,006. DOWPLUG. Dowman Products, Inc. SN 191,519. Pub. 6–15–65. Filed 4–20–64.

795,007. COLOR PUTTY AND DESIGN. Paul R. Kubly, d.b.a. Color Putty Co. SN 191,569. Pub. 6–15–65. Filed 4–20–64.

795,008. MARK MORRIS ASSOCIATES, INC. AND DESIGN. Mark Morris Associates, Inc. MULTIPLE CLASS (Classes 12, 38, and 46). SN 193,890. Pub. 6–15–65. Filed 5–20–64.

795,009. UCAR. Union Carbide Corporation. SN 194,083. Pub. 6–15–65. Filed 5–22–64.

795,010. MIRA-MAR. Luger Industries, Inc. SN 194,397. Pub. 6–15–65. Filed 5–27–64.

795,011. TOP 'N BOND. Harry T. Campbell Sons' Corporation. SN 196,428. Pub. 6–15–65. Filed 6–25–64.

795,012. ECS. Herman Miller, Inc. SN 196,693. Pub. 6–15–65. Filed 6–29–64.

795,013. KAL-KORNER BEAD. National Gypsum Company. SN 197,158. Pub. 6–15–65. Filed 7–29–64.

795,014. MISCELLANEOUS DESIGN. Johns-Manville Corporation. SN 197,495. Pub. 6–15–65. Filed 7–9–64.

795,015. TEMP-TITE. Johns-Manville Corporation. SN 198,741. Pub. 6–15–65. Filed 7–29–64.

795,016. RELIANCE AND DESIGN. Reliance Universal Inc. SN 198,774. Pub. 6–15–65. Filed 7–29–64.

795,017. CELO-SET. Laurence-David, Inc. SN 199,078. Pub. 6–15–65. Filed 8–3–64.

795,018. THEME LINE AND DESIGN. Bestile Manufacturing Company. SN 199,531. Pub. 6–15–65. Filed 8–10–64.

795,019. SUPERIOR NEBRASKA CEMENT COMPANY AND DESIGN. Ideal Cement Company. SN 199,564. Pub. 6–15–65. Filed 8–10–64.

795,020. INTERNATIONAL PAPER. International Paper Company. SN 199,675. Pub. 6–15–65. Filed 8–11–64.

795,021. LIGHT-TOP. Manhattan Terrazzo Brass Strip Co., Inc. SN 200,652. Pub. 6–15–65. Filed 8–26–64.

795,022. CF 1250. The Cleveland Fabricating Company, Inc. SN 200,703. Pub. 6–15–65. Filed 8–27–64.

795,023. IDEAL AND DESIGN. Certain-Teed Products Corporation. SN 201,923. Pub. 6–15–65. Filed 9–15–64.

795,024. KK AND DESIGN. Kolbe & Kolbe Millwork Co. SN 202,089. Pub. 6–15–65. Filed 9–17–64.

795,025. GYPROC. Dominion Tar & Chemical Company, Limited. SN 202,986. Pub. 6–15–65. Filed 9–30–64.

795,026. JIGTIME PRECISION DOOR WAYS AND DESIGN. B.B.B. Manufacturing Company. SN 204,747. Pub. 6–15–65. Filed 10–26–64.

795,027. TRI-O-DOCK. Triodetic Structures Limited. SN 205,873. Pub. 6–15–65. Filed 11–9–64.

795,028. SILVERLINE. Doughboy Industries, Inc. SN 207,799. Pub. 6–15–65. Filed 12–9–64.

795,029. TRI-SEAL. The Duraflex Co. SN 207,873. Pub. 6–15–65. Filed 12–10–64.

795,030. MITER-SEAL. Johns-Manville Corporation. SN 207,890. Pub. 6–15–65. Filed 12–10–64.

795,031. SEMCO. Semco Sales & Service, Inc. SN 208,124. Pub. 6–15–65. Filed 12–14–64.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

794,978. (See Class 3 for this trademark.)

795,032. VEE-BALL. Fisher Governor Company. SN 171,118. Pub. 6–15–65. Filed 6–17–63.

795,033. "REMEMBER, YOU'RE NEVER MORE THAN A FEW FEET ETC." Illinois Tool Works Inc. SN 176,194. Pub. 6–15–65. Filed 9–3–63.

795,034. FANCIFUL FIGURE OF WIRE MAN (DESIGN). Enterprise Wire Co. SN 189,454. Pub. 6–15–65. Filed 3–24–64.

795,035. ROYAL QUEEN. The West Bend Company. SN 199,936. Pub. 6–15–65. Filed 8–14–64.

795,036. VITREO. Vitreous Steel Products Company. SN 200,305. Pub. 6–15–65. Filed 8–20–64.

795,037. SILVERLINE. The Lamson & Sessions Co. SN 203,304. Pub. 6–15–65. Filed 10–5–64.

795,038. SAFE-LINE. The Lamson & Sessions Co. SN 203,305. Pub. 6–15–65. Filed 10–5–64.

795,039. STOVER. The Lamson & Sessions Co. SN 203,307. Pub. 6–15–65. Filed 10–5–64.

795,040. QUADRATED. Dieter Haubold, d.b.a. Dieter Haubold Industrielle Nagelgerate. SN 206,008. Pub. 6–15–65. Filed 11–12–64.

795,041. VARIATION. Ajax Hardware Corporation. SN 206,387. Pub. 6–15–65. Filed 11–17–64.

795,042. GV (DESIGN). General Valve Company, Inc. SN 206,713. Pub. 6–15–65. Filed 11–23–64.

795,043. UTILICOIL. Calumet & Hecla, Inc. SN 208,540. Pub. 6–15–65. Filed 12–21–64.

795,044. CONTRACK. Graber Manufacturing Company, Inc. SN 208,567. Pub. 6–15–65. Filed 12–21–64.

795,045. DEVILLE. Kinkead Industries, Incorporated. SN 209,015. Pub. 6–15–65. Filed 12–29–64.

795,046. DUO-ZIP. Waldes Kohinoor, Inc. SN 209,126. Pub. 6–15–65. Filed 12–30–64.

795,047. HYDROPANEL. The Powers Regulator Company. SN 210,352. Pub. 6–15–65. Filed 1–21–65.

Class 14—Metals and Metal Castings and Forgings

795,048. PRIMAG. Calumet & Hecla, Inc., assignee of Alabama Metallurgical Corporation. SN 199,162. Pub. 6–15–65. Filed 8–4–64.

795,049. SURE-RING. The Eastern Company. SN 203,584. Pub. 6–15–65. Filed 10–8–64.

795,050. ABEX. American Brake Shoe Company. SN 211,333. Pub. 6–15–65. Filed 2–4–65.

795,051. BLACK SATIN. The Colorado Fuel and Iron Corporation. SN 212,976. Pub. 6–15–65. Filed 3–1–65.

795,052. STAY/PREME. Chas. Pfizer & Co., Inc. SN 213,041. Pub. 6–15–65. Filed 3–1–65.

Class 15—Oils and Greases

795,053. PETRONAFT. Weisser & Co. G.m.b.H. SN 160,457. Pub. 6–9–64. Filed 1–9–63.

795,054. REPRESENTATION OF A PINEAPPLE. The Preservation Society of Newport County. SN 183,106. Pub. 6–15–65. Filed 12–16–63.

795,055. CURT'S AND DESIGN. Curt's Oil Co., Inc. SN 200,550. Pub. 6–15–65. Filed 8–28–64.

795,056. QUAKER STATE DELUXE. Quaker State Oil Refining Corporation. SN 204,092. Pub. 6–15–65. Filed 10–15–64.

Class 16—Protective and Decorative Coatings

795,057. SCOTT'S SCOTTIE AND DESIGN. Seaboard Plywood and Lumber Corporation, by merger, change of name, and assignment from Scott's Wholesale Company. SN 158,657. Pub. 6–15–65. Filed 12–4–62.

795,058. FANCIFUL T (DESIGN). Thompson and Company. SN 187,629. Pub. 6–15–65. Filed 2–27–64.

795,059. PARKERIZING. Hooker Chemical Corporation. SN 190,380. Pub. 6–15–65. Filed 4–6–64.

795,060. QUIC-SEAL AND DESIGN. The S. Obermayer Company. SN 193,203. Pub. 6–15–65. Filed 5–11–64.

795,061. MICA-WOOD. Essex Chair Company. SN 193,771. Pub. 6–15–65. Filed 5–19–64.

795,062. MIRA-DIP. Kristal Kraft, Inc. SN 194,810. Pub. 6–15–65. Filed 6–3–64.

795,063. WESTGLAS. Western Fibrous Glass Products Company. SN 197,637. Pub. 6–15–65. Filed 7–10–64.

Class 17—Tobacco Products

795,064. DELHI. Moss & Lowenhaupt Cigar Company. SN 199,592. Pub. 6–15–65. Filed 8–10–64.

795,065. KALAVA. Camacho Cigars, Inc. SN 203,861. Pub. 6–15–65. Filed 10–13–64.

Class 19—Vehicles

795,066. RIVIERA. Anchor Industries, Inc. SN 177,945. Pub. 6–15–65. Filed 9–30–63.

795,067. STARCRAFT AND DESIGN. Star Tank and Boat Co., Inc. SN 190,659. Pub. 6–15–65. Filed 4–8–64.

795,068. IRVIN PARA-SPACE CENTER ETC. AND DESIGN. Irving Air Chute Company, Inc. SN 194,982. Pub. 6–15–65. Filed 6–5–64.

795,069. SHUR OUTS AND DESIGN. Le Vert Harrison, Jr., d.b.a. Harrison. SN 196,960. Pub. 6–15–65. Filed 7–2–64.

795,070. THE CONTENTED CAMPER. Haake Mfg. Co. SN 197,489. Pub. 6–15–65. Filed 7–9–64.

795,071. VISTA CRAFT. Vista Liner Coach & Trailer, Inc. SN 199,934. Pub. 6–15–65. Filed 8–14–64.

795,072. MOTO-SKI. Les Industries Bouchard Inc. SN 200,360. Pub. 6–15–65. Filed 8–21–64.

795,073. TOMAHAWK. Tomahawk Boat Manufacturing Corporation. SN 200,678. Pub. 6–15–65. Filed 8–26–64.

795,074. SURELITE AND DESIGN. Ward Body Works, Inc. SN 203,550. Pub. 6–15–65. Filed 10–7–64.

795,075. SAILMASTER. Sailmasters, Inc. SN 204,296. Pub. 6–15–65. Filed 10–19–64.

Class 21—Electrical Apparatus, Machines, and Supplies

794,978. (See Class 3 for this trademark.)

795,076. FOTO+TROL. Davis Electronics Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 170,047. Pub. 6–15–65. Filed 5–31–63.

795,077. ITALCREM. Italcrem, S.A. SN 180,401. Pub. 6–15–65. Filed 11–4–63.

795,078. T.F. CIRCUITS AND DESIGN. Varo, Inc. SN 182,014. Pub. 6–15–65. Filed 11–27–63.

795,079. ELECTRO TECHNICAL AND DESIGN. Sun Chemical Corporation. SN 191,454. Pub. 6–15–65. Filed 4–17–64.

795,080. TRANSFERMATIC. Clark Metal Products, Inc. SN 193,751. Pub. 6–15–65. Filed 5–19–64.

795,081. R RITZ AND DESIGN. Matsushita Electric Industrial Co., Ltd. MULTIPLE CLASS (Classes 21 and 36). SN 194,057. Pub. 6–15–65. Filed 5–22–64.

795,082. AVR. FMC Corporation. SN 194,380. Pub. 6–15–65. Filed 5–27–64.

795,083. WESTON. Weston Instruments, Inc. SN 194,846. Pub. 6–15–65. Filed 6–3–64.

795,084. VIBRATONE. Federal Sign and Signal Corporation. SN 195,387. Pub. 6–15–65. Filed 6–11–64.

795,085. ROBOTGUARD. The Teleminder Co. SN 196,078. Pub. 6–15–65. Filed 6–19–64.

795,086. GAMEWELL AND DESIGN. E. W. Bliss Company. SN 198,705. Pub. 6–15–65. Filed 7–29–64.

795,087. GAMEWELL TRANSISTORIZED ALARM SYSTEM AND DESIGN. E. W. Bliss Company. SN 198,706. Pub. 6–15–65. Filed 7–29–64.

795,088. CINCINNATI. The Cincinnati Milling Machine Co. SN 200,414. Pub. 5–4–65. Filed 8–24–64.

795,089. MINICHARGER. Perrott Engineering Labs., Inc. SN 202,841. Pub. 6–15–65. Filed 9–28–64.

795,090. POLY-COMPACT. Polytronics Laboratories, Inc. SN 202,844. Pub. 6–15–65. Filed 9–28–64.

795,091. STANDARD. The Standard Transformer Company. SN 202,965. Pub. 6–15–65. Filed 9–29–64.

795,092. VH/C. McGraw-Edison Company. SN 203,107. Pub. 6–15–65. Filed 10–1–64.

795,093. HOT-SCOT. Ritchie Manufacturing Company. SN 203,336. Pub. 6–15–65. Filed 10–5–64.

795,094. TWINSTAR. Channel Master Corporation. SN 203,473. Pub. 6–15–65. Filed 10–7–64.

795,095. MAGIC HOSTESS. Magic Hostess Corporation. SN 203,668. Pub. 6–15–65. Filed 10–9–64.

795,096. RIVAL. Rival Manufacturing Company. SN 203,688. Pub. 6–15–65. Filed 10–9–64.

795,097. MODERN GODDESS OF HEALTH AND DESIGN. Matthew J. Thomas. SN 205,739. Pub. 6–15–65. Filed 11–6–64.

795,098. CINCI NATI AND DESIGN. The Cincinnati Milling Machine Co. SN 206,131. Pub. 6–15–65. Filed 11–13–64.

795,099. SEMCO. Semco Sales & Service, Inc. SN 208,125. Pub. 6–15–65. Filed 12–14–64.

795,100. SEMCO AND DESIGN. Semco Sales & Service, Inc. SN 208,129. Pub. 6–15–65. Filed 12–14–64.

Class 22—Games, Toys, and Sporting Goods

795,101. BUDDI BULL AND DESIGN. Carl Buddig & Co. SN 181,318. Pub. 6–15–65. Filed 11–18–63.

795,102. LITTLE CHIEF. The Hettrick Manufacturing Company. SN 196,665. Pub. 6–15–65. Filed 6–29–64.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

794,978. (See Class 3 for this trademark.)

795,103. SWEETHEART. Sweetheart Paper Products Company Inc., assignee of Sweetheart Plastics, Inc. SN 160,563. Pub. 6–15–65. Filed 1–11–63.

795,104. FLEXIMAN. American Machine & Foundry Company. SN 175,236. Pub. 6–15–65. Filed 8–19–63.

795,105. POWER-TWIN. Owatonna Tool Company. SN 186,753. Pub. 6–15–65. Filed 2–14–64.

795,106. VULCAN AND DESIGN. United-Greenfield Corporation. SN 190,667. Pub. 6–15–65. Filed 4–8–64.

795,107. ULTRA AND DESIGN. Geon International Corporation. SN 191,764. Pub. 6–15–65. Filed 4–22–64.

795,108. TILEX. E & M Tool Co. SN 192,876. Pub. 11–24–64. Filed 4–30–64.

795,109. SPIN-FINISH. The Grav-I-Flo Corporation. SN 193,464. Pub. 6–15–65. Filed 5–14–64.

795,110. ROCKET JET. B & J Manufacturing Company. SN 194,119. Pub. 6–15–65. Filed 5–25–64.

795,111. BRONCO. The Ohio Brass Company. SN 194,739. Pub. 6–15–65. Filed 6–2–64.

795,112. CHARGER. The Ohio Brass Company. SN 194,740. Pub. 6–15–65. Filed 6–2–64.

795,113. MUSTANG. The Ohio Brass Company. SN 194,741. Pub. 6–15–65. Filed 6–2–64.

795,114. PACK HORSE. The Ohio Brass Company. SN 194,742. Pub. 6–15–65. Filed 6–2–64.

795,115. REPRESENTATION OF A HORSE. The Ohio Brass Company. SN 194,743. Pub. 6–15–65. Filed 6–2–64.

795,116. CIRCLE BAR (DESIGN). The Ohio Brass Company. SN 194,744. Pub. 6–15–65. Filed 6–2–64.

795,117. HYDRO-THRUST. The Diversey Corporation. SN 195,287. Pub. 6–15–65. Filed 6–10–64.

795,118. MR. ATLAS AND DESIGN. Atlas Lift Truck Rentals & Sales, Inc., d.b.a. Atlas Material Handling Equipment Center. SN 195,582. Pub. 6–15–65. Filed 6–15–64.

795,119. E-Z LOK. Portable Electric Tools, Inc. SN 195,805. Pub. 6–15–65. Filed 6–16–64.

795,120. WORKHORSE. Portable Electric Tools, Inc. SN 195,806. Pub. 6–15–65. Filed 6–16–64.

795,121. PPC. Pivot Punch Corporation. SN 196,191. Pub. 6–15–65. Filed 6–22–64.

795,122. DENISON. American Brake Shoe Company. SN 196,414. Pub. 6–15–65. Filed 6–25–64.

795,123. NECO AND DESIGN. Nebraska Engineering Co. SN 196,701. Pub. 6–15–65. Filed 6–29–64.

795,124. SC AND DESIGN. Cindaco, Inc. SN 196,763. Pub. 6–15–65. Filed 6–30–64.

795,125. AIR-AID. Lord, Clark and Co., Inc. SN 196,872. Pub. 6–15–65. Filed 7–1–64.

795,126. SKK. Seiki Kogyosho Company Limited. SN 197,182. Pub. 6–15–65. Filed 7–6–64.

795,127. VIBRA-BALL. The Cleveland Vibrator Company. SN 197,265. Pub. 6–15–65. Filed 7–7–64.

795,128. BELL EASTERN CORPORATION ETC. AND DESIGN. Bell Eastern Corporation. SN 199,348. Pub. 6–15–65. Filed 8–6–64.

795,129. E AND DESIGN. Reed Electromech Corp. SN 201,146. Pub. 6–15–65. Filed 9–2–64.

795,130. PROVINCIAL WHEAT. Washington Forge, Incorporated. SN 203,905. Pub. 6–15–65. Filed 10–13–64.

795,131. AAA AND DESIGN. AAA Industrial Corporation. SN 204,037. Pub. 6–15–65. Filed 10–15–64.

795,132. HUYCK EQUIPMENT COMPANY AND DESIGN. Huyck Corporation. SN 205,504. Pub. 6–15–65. Filed 11–4–64.

795,133. CINCI NATI AND DESIGN. The Cincinnati Milling Machine Co. SN 205,572. Pub. 6–15–65. Filed 11–5–64.

795,134. ROLLO-MIXER. Continental Products Corporation. SN 206,134. Pub. 6–15–65. Filed 11–13–64.

795,135. STYLIZED C (DESIGN). Continental Products Corporation. SN 206,135. Pub. 6–15–65. Filed 11–13–64.

795,136. DESOTO. The Jos. M. Zamolski Co. SN 206,328. Pub. 6–15–65. Filed 11–16–64.

795,137. BEKUM. Bekum Berliner Kunststoff Verarbeitung GmbH. SN 206,686. Pub. 6–15–65. Filed 11–23–64.

795,138. CINCI NATI AND DESIGN. The Cincinnati Milling Machine Co. SN 206,817. Pub. 6–15–65. Filed 11–24–64.

795,139. CONVOY. United States Plywood Corporation. SN 207,248. Pub. 6–15–65. Filed 12–1–64.

795,140. STAMP SENTRY. Hughes Corporation. SN 207,295. Pub. 6–15–65. Filed 12–2–64.

795,141. SHALCO-HUTCHINSON. The National Acme Company. SN 207,319. Pub. 6–15–65. Filed 12–2–64.

795,142. STENMARK. Weber Marking Systems, Inc. SN 207,683. Pub. 6–15–65. Filed 12–7–64.

795,143. CINCI NATI AND DESIGN. The Cincinnati Milling Machine Co. SN 207,790. Pub. 6–15–65. Filed 12–9–64.

795,144. RANCH-HAND. Daffin Corporation. SN 207,949. Pub. 6–15–65. Filed 12–11–64.

795,145. GERONIMO AND DESIGN. Lear Siegler, Inc. SN 208,590. Pub. 6–15–65. Filed 12–21–64.

795,146. HYDRO BLITZ. Charek Industries, Inc. SN 208,814. Pub. 6–15–65. Filed 12–24–64.

795,147. VERTOHORT. Lee Wilson Engineering Company, Inc. SN 209,101. Pub. 6–15–65. Filed 12–30–64.

795,148. AIR-REEL. Jack L. Quinn, d.b.a. Jack's Sheet Metal Products. SN 209,193. Pub. 6–15–65. Filed 12–31–64.

795,149. K-A. Draper Corporation. SN 210,283. Pub. 6–15–65. Filed 1–21–65.

795,150. GK. GK Industries, Inc. SN 210,293. Pub. 6–15–65. Filed 1–21–65.

795,151. VIBRA SHANK. International Harvester Company. SN 210,311. Pub. 6–15–65. Filed 1–21–65.

795,152. ABEX. American Brake Shoe Company. SN 210,510. Pub. 6–15–65. Filed 1–25–65.

795,153. CM AND DESIGN. Conforming Matrix Corporation. SN 210,745. Pub. 6–15–65. Filed 1–27–65.

795,154. PICK. Swingline Inc. SN 211,208. Pub. 6–15–65. Filed 2–2–65.

Class 24—Laundry Appliances and Machines

795,155. PACER. Ametek, Inc. SN 187,549. Pub. 8–25–64. Filed 2–27–64.

795,156. JIFFY. John B. Simrell, d.b.a. Jiffy Steamer Co. SN 210,994. Pub. 6–15–65. Filed 1–29–65.

795,157. COLMAC. Colmac Industries, Inc. SN 212,974. Pub. 6–15–65. Filed 3–1–65.

795,158. PANT-A-MATIC. Colmac Industries, Inc. SN 212,975. Pub. 6–15–65. Filed 3–1–65.

Class 25—Locks and Safes

795,159. H AND DESIGN. Avis Industrial Corporation. SN 212,728. Pub. 6–15–65. Filed 2–25–65.

Class 26—Measuring and Scientific Appliances

794,978. (See Class 3 for this trademark.)

795,076. (See Class 21 for this trademark.)

795,160. THE MONEY MACHINE. Monroe International Corporation, by change of name from Monroe Calculating Machine Company. SN 166,303. Pub. 6–15–65. Filed 4–8–63.

795,161. IKOLUX. Zeiss Ikon Aktiengesellschaft. SN 175,351. Pub. 6–15–65. Filed 8–19–63.

795,162. T·W·E·C AND DESIGN. Trans-World Eyewear Corp. SN 175,699. Pub. 6–15–65. Filed 8–23–63.

795,163. ELECTRO-WITNESS. Federal Systems, Inc., assignee of James D. Wilshire. SN 180,344. Pub. 6–15–65. Filed 11–1–63.

795,164. MISCELLANEOUS DESIGN. Societa Internazionale Fonovisione, S.p.A. SN 184,260. Pub. 6–15–65. Filed 1–8–64.

795,165. MAMIYA-SEKOR. Mamiya Koki Kabushiki Kaisha, d.b.a. Mamiya Camera Co., Ltd. SN 188,893. Pub. 6–15–65. Filed 3–17–64.

795,166. VULCAN AND DESIGN. United-Greenfield Corporation. SN 190,668. Pub. 6–15–65. Filed 4–8–64.

795,167. TRAIN-AIR. Scott Aviation Corporation. SN 191,801. Pub. 6–15–65. Filed 4–22–64.

795,168. DE (DESIGN). BBN Corp., d.b.a. Data Equipment Company. SN 192,261. Pub. 6–15–65. Filed 4–29–64.

795,169. ALL SEASONS. Zylo Ware Corp. SN 194,544. Pub. 6–15–65. Filed 5–28–64.

795,170. WESTON. Weston Instruments, Inc. SN 194,847. Pub. 6–15–65. Filed 6–3–64.

795,171. ROCKET (DESIGN). Thermotron Corporation. SN 195,465. Pub. 6–15–65. Filed 6–11–64.

795,172. PYROES. Compagnie Francaise Thomson-Houston. SN 196,111. Pub. 6–15–65. Filed 6–22–64.

795,173. D-D DOLGORUKOV ETC. AND DESIGN. Gregory S. Dolgorukov, d.b.a. Dolgorukov Manufacturing Company. SN 196,362. Pub. 6–15–65. Filed 6–24–64.

795,174. MICROFERM. New Brunswick Scientific Co., Inc. SN 196,798. Pub. 6–15–65. Filed 6–30–64.

795,175. SCOPUS. Belock Instrument Corporation. SN 196,839. Pub. 6–15–65. Filed 7–1–64.

795,176. PLEOPTOPHOR. Fisba Optische Präzisions-Instrumente AG. SN 197,549. Pub. 6–15–65. Filed 7–10–64.

795,177. JERED AND DESIGN. Jered Industries, Inc. SN 198,480. Pub. 6–15–65. Filed 7–24–64.

795,178. AEROGRAPH AND DESIGN. Wilkens Instrument & Research, Inc. SN 198,617. Pub. 6–15–65. Filed 7–27–64.

795,179. MOVIPORT. J. & A. Braun KG. SN 199,265. Pub. 6–15–65. Filed 8–5–64.

795,180. GARDNER INSTRUMENTS AND DESIGN. Gardner Laboratory, Inc. SN 201,285. Pub. 6–15–65. Filed 9–4–64.

795,181. CARBOCHEK. Basic Products Corporation. SN 202,739. Pub. 6–15–65. Filed 9–28–64.

795,182. TWINBAR. Spiratone, Inc. SN 203,037. Pub. 6–15–65. Filed 9–30–64.

795,183. JUPITER. Saburo Matsumoto, d.b.a. Asahi Optical Co., Ltd. SN 203,781. Pub. 6–15–65. Filed 10–12–64.

795,184. PHOTOCHEM 1336. O. & W. Electronics Limited. SN 204,082. Pub. 6–15–65. Filed 10–15–64.

795,185. EKTAMATIC. Eastman Kodak Company. SN 205,261. Pub. 6–15–65. Filed 11–2–64.

795,186. ASPEN. Masten, Masten & Bryan, Inc. SN 205,307. Pub. 6–15–65. Filed 11–2–64.

795,187. PEN. Olympus Optical Company Limited. SN 205,449. Pub. 6–15–65. Filed 11–3–64.

795,188. HUYCK EQUIPMENT COMPANY AND DESIGN. Huyck Corporation. SN 205,505. Pub. 6–15–65. Filed 11–4–64.

795,189. SONODUR. Branson Instruments, Incorporated, assignee of Branson Instruments Incorporated. SN 205,568. Pub. 6–15–65. Filed 11–5–64.

795,190. OPTILUX. B-D Laboratories, Inc. SN 205,762. Pub. 6–15–65. Filed 11–9–64.

795,191. LOENCO AND DESIGN. Loenco, Inc. SN 205,829. Pub. 6–15–65. Filed 11–9–64.

795,192. MI MASTEREEL INDUSTRIES AND DESIGN. Mastereel Industries, Inc. SN 205,834. Pub. 6–15–65. Filed 11–9–64.

795,193. MI AND DESIGN. Mastereel Industries, Inc. SN 205,835. Pub. 6–15–65. Filed 11–9–64.

795,194. SIGMAMOTOR. Sigmamotor, Inc. SN 205,863. Pub. 6–15–65. Filed 11–9–64.

795,195. PLANATROL. The Fotomatic Corporation. SN 206,024. Pub. 6–15–65. Filed 11–12–64.

795,196. THYRIMETER. Ames Lab-Tek, Inc. SN 206,120. Pub. 6–15–65. Filed 11–13–64.

795,197. POLEXA. Beattie-Coleman, Inc. SN 206,214. Pub. 6–15–65. Filed 11–16–64.

795,198. ELECTROCORDER AND DESIGN. Electrostatic Records, Inc. SN 206,245. Pub. 6–15–65. Filed 11–16–64.

795,199. PARADE. Parade Publications, Inc. SN 206,283. Pub. 6–15–65. Filed 11–16–64.

795,200. SOUNDSTAGE. Sears, Roebuck and Co. SN 206,297. Pub. 6–15–65. Filed 11–16–64.

795,201. MISCELLANEOUS DESIGN. Liberty Optical Manufacturing Co. Inc. SN 206,632. Pub. 6–15–65. Filed 11–20–64.

795,202. VIVITROL. Stamford Chemical Industries, Inc. SN 206,768. Pub. 6–15–65. Filed 11–23–64.

795,203. GOLFYARDER. L. F. Motl & Son, Inc. SN 206,951. Pub. 6–15–65. Filed 11–25–64.

795,204. ITS AND DESIGN. The Seeburg Corporation. SN 207,086. Pub. 6–15–65. Filed 11–27–64.

795,205. MEDICAMENTA VERA PD. Parke, Davis & Company. SN 207,648. Pub. 6–15–65. Filed 12–7–64.

795,206. FLEXAGAGE. The Budd Company. SN 207,705. Pub. 6–15–65. Filed 12–8–64.

795,207. PHOTOCORDER. Adtrol Electronics, Inc., d.b.a. Adtrol Electronics Inc. and Adtrol Electronics Incorporated. SN 207,854. Pub. 6–15–65. Filed 12–10–64.

795,208. KEEPSAKE. The Lufkin Rule Company. SN 208,090. Pub. 6–15–65. Filed 12–14–64.

795,209. SEMCO AND DESIGN. Semco Sales & Service, Inc. SN 208,131. Pub. 6–15–65. Filed 12–14–64.

795,210. ABEX. American Brake Shoe Company. SN 209,898. Pub. 6–15–65. Filed 1–14–65.

Class 27 — Horological Instruments

795,211. VERMONT. Sunbeam Corporation. SN 201,057. Pub. 6–15–65. Filed 9–1–64.

795,212. LUNESA. Lunesa Watch S.A. SN 204,685. Pub. 6–15–65. Filed 10–23–64.

795,213. DEEP BLUE. Manufacture d'Horlogerie Favre-Leuba S.A. SN 210,025. Pub. 6–15–65. Filed 1–15–65.

795,214. SKEL O FLEX. World Wide Watch Co. Inc. SN 211,401. Pub. 6–15–65. Filed 2–4–65.

795,215. KND. Lonnie E. Largen, Sr., d.b.a. International Importers. SN 212,016. Pub. 6–15–65. Filed 2–15–65.

795,216. NITETIMER AND DESIGN. Syracuse Ornamental Co. Inc. SN 213,259. Pub. 6–15–65. Filed 3–3–65.

Class 28 — Jewelry and Precious-Metal Ware

794,977. (See Class 3 for this trademark.)

795,217. COUNT VELANTE. Hickok Manufacturing Co., Inc. SN 205,817. Pub. 6–15–65. Filed 11–9–64.

795,218. JEWELMONT AND DESIGN. Sydney W. Prague. SN 210,355. Pub. 6–15–65. Filed 1–21–65.

795,219. ALENCON. Gorham Corporation. SN 212,769. Pub. 6–15–65. Filed 2–25–65.

Class 29 — Brooms, Brushes, and Dusters

794,978. (See Class 3 for this trademark.)

795,220. PAK. Pellon Corporation. SN 203,804. Pub. 6–15–65. Filed 10–12–64.

795,221. PAW. Pellon Corporation. SN 203,805. Pub. 6–15–65. Filed 10–12–64.

795,222. PAN. Pellon Corporation. SN 203,806. Pub. 6–15–65. Filed 10–12–64.

795,223. PANK. Pellon Corporation. SN 203,807. Pub. 6–15–65. Filed 10–12–64.

Class 31 — Filters and Refrigerators

795,224. ROTA-CHILL. Frick Company. SN 206,025. Pub. 6–15–65. Filed 11–12–64.

795,225. FREEZ-PAK. Frick Company. SN 206,026. Pub. 6–15–65. Filed 11–12–64.

Class 32 — Furniture and Upholstery

794,978. (See Class 3 for this trademark.)

795,226. HARTER. Harter Corporation. SN 185,596. Pub. 6–15–65. Filed 1–29–64.

795,227. WARDITE. Ward Furniture Manufacturing Company. SN 189,516. Pub. 6–15–65. Filed 3–24–64.

795,228. HORIZ-O-FILE. William T. Woodhouse. SN 206,799. Pub. 6–15–65. Filed 11–23–64.

795,229. STYLE MAGIC. Haskell, Inc. SN 206,906. Pub. 6–15–65. Filed 11–24–64.

795,230. CHEROKEE AND DESIGN. Carolina Wood Turning Company, d.b.a. Cherokee Furniture Company. SN 207,006. Pub. 6–15–65. Filed 11–27–64.

795,231. MARVEL-O SPINE-LINE. Gordon Harston. SN 207,044. Pub. 6–15–65. Filed 11–27–64.

795,232. REVENOOER AND DESIGN. Burgess-Day, Inc., assignee of Burgess-Manning Company. SN 207,109. Pub. 6–15–65. Filed 11–30–64.

795,233. MEDI-CENTER. Atlantic Alloy Industries, Inc. SN 207,554. Pub. 6–15–65. Filed 12–7–64.

795,234. CORA. Restronics, Inc. SN 208,207. Pub. 6–15–65. Filed 12–15–64.

Class 33 — Glassware

795,235. PROFILIT. Moosbrunner Glasfabriks-Aktiengesellschaft, assignee, by mesne assignment, of Moosbrunner Glasfabriks-Aktiengesellschaft. SN 184,742. Pub. 6–15–65. Filed 1–16–64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

795,236. INTERNATIONAL OF UTICA AND DESIGN. International Heater Company. SN 158,713. Pub. 6–15–65. Filed 12–7–62.

795,237. CONTROL-FLO. The Patterson Kelley Co., Inc. SN 165,371. Pub. 10–6–64. Filed 3–25–63.

795,238. THE CANDLE MAN, INC. The Candle Man, Inc. SN 174,744. Pub. 6–15–65. Filed 8–9–63.

795,239. GALVAWIRE. Henry S. Rondeau, d.b.a. Henry S. Rondeau Company. SN 197,782. Pub. 6–15–65. Filed 7–13–64.

795,240. MR. HEAT AND DESIGN. Champion Heater Company, Inc. SN 203,076. Pub. 6–15–65. Filed 10–1–64.

795,241. GOODRID. Goodrid Incinerator Co. Pty. Limited. SN 205,687. Pub. 6–15–65. Filed 11–6–64.

795,242. THE SEA CHEST. Joseph G. Kadison, d.b.a. Quaker Marine Supply Co. SN 205,948. Pub. 6–15–65. Filed 11–10–64.

795,243. LINDE. Union Carbide Corporation. SN 206,315. Pub. 6–15–65. Filed 11–16–64.

795,244. CINCI NATI AND DESIGN. The Cincinnati Milling Machine Co. SN 207,569. Pub. 6–15–65. Filed 12–7–64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

795,245. SUR-SAN. Mattco, Inc. SN 203,192. Pub. 6–15–65. Filed 10–2–64.

795,246. SUPER CARRIER. The Dayton Tire & Rubber Company. SN 205,780. Pub. 6–15–65. Filed 11–9–64.

795,247. POWERBILT. VTR, Incorporated. SN 205,890. Pub. 6–15–65. Filed 11–9–64.

Class 36 — Musical Instruments and Supplies

795,081. (See Class 21 for this trademark.)

795,248. CONNOISSEUR. Mercury Record Productions, Inc. SN 165,350. Pub. 6–15–65. Filed 3–25–63.

795,249. FRANZ. Franz Manufacturing Company, Inc. SN 189,696. Pub. 6–15–65. Filed 3–26–64.

795,250. MEMOPLAY. Radio Corporation of America. SN 200,596. Pub. 6–15–65. Filed 8–25–64.

Class 37 — Paper and Stationery

794,978. (See Class 3 for this trademark.)

795,251. PALETTE AND BRUSH (DESIGN). Beach Products, Inc. SN 168,570. Pub. 6–15–65. Filed 5–10–63.

795,252. METALON. Oxford Paper Company. SN 170,418. Pub. 6–15–65. Filed 6–5–63.

795,253. SYMBOL OF ELEGANCE. Norcross, Inc. SN 172,761. Pub. 6–15–65. Filed 7–10–63.

795,254. DURAFILL. The Parker Pen Company. SN 190,024. Pub. 6–15–65. Filed 3–31–64.

795,255. PRINTMASTERS. Hunt Manufacturing Co. SN 193,012. Pub. 6–15–65. Filed 5–8–64.

795,256. HALLCO MEDALLION. The J. C. Hall Company. SN 193,362. Pub. 6–15–65. Filed 5–13–64.

795,257. HALLCO EMBLEM. The J. C. Hall Company. SN 193,363. Pub. 6–15–65. Filed 5–13–64.

795,258. LUXOTHERM. W. Koreska. SN 195,867. Pub. 6–15–65. Filed 6–17–64.

795,259. SPRINGHILL. International Paper Company. SN 197,721. Pub. 6–15–65. Filed 7–13–64.

795,260. SUPREME IMPERIAL. International Paper Company. SN 199,571. Pub. 6–15–65. Filed 8–10–64.

795,261. ALPHA AUTO ORDER AND DESIGN. Auto-Order, Inc. SN 199,787. Pub. 6–15–65. Filed 8–13–64.

795,262. ACCESS. Access Corporation. SN 210,507. Pub. 6–15–65. Filed 1–25–65.

795,263. PICK. Swingline Inc. SN 211,209. Pub. 6–15–65. Filed 2–2–65.

Class 38 — Prints and Publications

795,008. (See Class 12 for this trademark.)

795,264. THE DOROTHY CARNEGIE COURSE. Dale Carnegie & Associates, Inc. SN 199,450. Pub. 6–15–65. Filed 8–7–64.

Class 39 — Clothing

794,977. (See Class 3 for this trademark.)

794,979. (See Class 3 for this trademark.)

795,265. DAKOTA. S. Simpson Limited, assignee of 10-X Manufacturing Company. SN 145,883. Pub. 10–15–63. Filed 5–31–62.

795,266. SHEER ENCHANTMENT. Teenform, Inc. SN 171,199. Pub. 6–15–65. Filed 6–17–63.

795,267. ELASTRON. The Jackfin Company, Inc. SN 172,071. Pub. 6–15–65. Filed 6–28–63.

795,268. JJ SENIORS. Vaisey Bristol Shoe Company Incorporated. SN 175,956. Pub. 6–15–65. Filed 8–28–63.

795,269. NECKTIE (DESIGN). Superba Cravats, Inc. SN 179,371. Pub. 6–15–65. Filed 10–18–63.

795,270. COTSWOLD LTD. Horace H. Blair, d.b.a. Cotswold, Ltd. SN 186,510. Pub. 6–15–65. Filed 2–12–64.

795,271. SWIM STAR AND DESIGN. Defender Supporter Company. SN 191,516. Pub. 6–15–65. Filed 4–20–64.

795,272. HAND CUFF. Youthcraft Creations, Inc. SN 192,117. Pub. 6–15–65. Filed 4–27–64.

795,273. BEL-BRA AND DESIGN. Frank F. Idestone. SN 194,301. Pub. 6–15–65. Filed 5–26–64.

795,274. BARBIE. Mattel, Inc. SN 195,128. Pub. 1–12–65. Filed 6–8–64.

795,275. CASUAL CORNER AND DESIGN. Casual Corner Associates, Inc. SN 196,016. Pub. 6–15–65. Filed 6–19–64.

795,276. ERNESTO BELLINI. Phoenix, Inc. SN 198,875. Pub. 6–15–65. Filed 7–30–64.

795,277. DITTO KIDDO. Aris Gloves, Incorporated. SN 199,000. Pub. 6–15–65. Filed 8–3–64.

795,278. WINFIELD. Wright Manufacturing Company. SN 200,883. Pub. 6–15–65. Filed 8–28–64.

795,279. FLIP. Alexander S. Bowers. SN 201,085. Pub. 6–15–65. Filed 9–2–64.

795,280. PATEE. Raymond W. Bush and Theresa E. Bush. SN 201,655. Pub. 6–15–65. Filed 9–11–64.

795,281. MISCELLANEOUS DESIGN. Chaussures Carel. SN 201,812. Pub. 6–15–65. Filed 9–14–64.

795,282. MALE. HK Corporation. SN 202,592. Pub. 6–15–65. Filed 9–24–64.

795,283. BLUE BELL M AND DESIGN. Blue Bell, Inc. SN 202,749. Pub. 6–15–65. Filed 9–28–64.

795,284. BLUE BELL AND DESIGN. Blue Bell, Inc. SN 202,750. Pub. 6–15–65. Filed 9–28–64.

795,285. PERMASOLE. Endicott Johnson Corporation. SN 203,270. Pub. 6–15–65. Filed 10–5–64.

795,286. CIRCLE K AND DESIGN. Key Work Clothes, Inc. SN 203,768. Pub. 6–15–65. Filed 10–12–64.

795,287. NEW U. Hanes Corporation, assignee of P. H. Hanes Knitting Company. SN 203,870. Pub. 6–15–65. Filed 10–13–64.

795,288. VELPORT. Philip H. Radel & Co., Inc. SN 204,095. Pub. 6–15–65. Filed 10–15–64.

795,289. MAKER'S MARK. Joseph H. Cohen & Sons, Inc. SN 204,237. Pub. 6–15–65. Filed 10–19–64.

795,290. VALOR. City Products Corporation. SN 204,765. Pub. 6–15–65. Filed 10–26–64.

795,291. ROYAL. United States Rubber Company. SN 204,859. Pub. 6–15–65. Filed 10–26–64.

795,292. PRO UNLTD. ETC. AND DESIGN. Sol Duchovnay & Sons. SN 205,047. Pub. 6–15–65. Filed 10–29–64.

795,293. PANTS PALS. Beldoch-Popper, Inc. SN 205,654. Pub. 5–4–65. Filed 11–6–64.

795,294. SWASHBUCKLER. Geist & Geist, Inc. SN 205,685. Pub. 6–15–65. Filed 11–6–64.

795,295. STARACRIL. Bess Art, Inc. SN 205,765. Pub. 6–15–65. Filed 11–9–64.

795,296. HAND-EASE. Boss Manufacturing Company. SN 205,916. Pub. 6–15–65. Filed 11–10–64.

795,297. BABY GRAND. The Grand Union Company. SN 206,030. Pub. 6–15–65. Filed 11–12–64.

795,298. BLOUSELAND. Blouse-Land Fashions. SN 206,217. Pub. 6–15–65. Filed 11–16–64.

795,299. CASTILLOS. E. E. Taylor Corporation. SN 206,309. Pub. 6–15–65. Filed 11–16–64.

795,300. MONTAGUT. Bonneterie Cevenole, Societe Anonyme. SN 206,343. Pub. 6–15–65. Filed 11–17–64.

795,301. THE END. Blair Fashions, Inc. SN 206,410. Pub. 6–15–65. Filed 11–18–64.

795,302. OL' McDONALDS LITTLE FARM. Fun Farms, Inc. SN 206,437. Pub. 6–15–65. Filed 11–18–64.

795,303. CARICATURE OF A FARMER (DESIGN). Fun Farms, Inc. SN 206,441. Pub. 6–15–65. Filed 11–18–64.

795,304. SLEEPSKIN. Weldon, Inc., by change of name from Weldon Pajamas, Inc. SN 206,489. Pub. 5–25–65. Filed 11–18–64.

795,305. SURF BREAKER. J. C. Penney Company. SN 206,644. Pub. 6–15–65. Filed 11–20–64.

795,306. PARK EAST. Swirl, Inc. SN 206,663. Pub. 6–15–65. Filed 11–20–64.

795,307. DONCASTER. Doncaster Collar and Shirt Company, Inc. SN 208,731. Pub. 6–15–65. Filed 12–23–64.

795,308. FLY'S AND DESIGN. Fly Manufacturing Company, Inc. SN 209,253. Pub. 6–15–65. Filed 1–4–65.

795,309. FLY'S. Fly Manufacturing Company, Inc. SN 209,254. Pub. 6–15–65. Filed 1–4–65.

795,310. TEMPI-THERM. House of Worsted-Tex, Inc. SN 209,268. Pub. 6–15–65. Filed 1–4–65.

795,311. RHODIANYL. Societe Rhodiaceta. SN 209,549. Pub. 6–15–65. Filed 1–7–65.

795,312. DELECTABLE. Maidenform, Inc. SN 209,936. Pub. 6–15–65. Filed 1–14–65.

795,313. 443. Burlington Industries, Inc. SN 209,990. Pub. 6–15–65. Filed 1–15–65.

795,314. METRO-PRESS. Metro Pants Co. Inc. SN 210,028. Pub. 6–15–65. Filed 1–15–65.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

795,315. HI-D. Reeves Brothers, Inc. SN 186,022. Pub. 6–15–65. Filed 2–4–64.

795,316. CHARADE. Textile Corporation of America. SN 186,206. Pub. 3–30–65. Filed 2–6–64.

795,317. CURONELLE. Reeves Brothers, Inc. SN 189,370. Pub. 6–15–65. Filed 3–23–64.

795,318. CURONEL. Reeves Brothers, Inc. SN 189,371. Pub. 6–15–65. Filed 3–23–64.

795,319. DONNA MILLS. I. J. Saks & Company. SN 194,521. Pub. 6–15–65. Filed 5–28–64.

795,320. SWISSDOWN. United Merchants and Manufacturers, Inc. SN 195,570. Pub. 12–22–64. Filed 6–12–64.

795,321. VIBRONIC. Callaway Mills Company. SN 197,027. Pub. 6–15–65. Filed 7–3–64.

795,322. VISTAGLASS. Burlington Industries, Inc., d.b.a. Hess, Goldsmith & Co. SN 201,654. Pub. 6–15–65. Filed 9–11–64.

795,323. TURJOCO AND DESIGN. Turner Jones Company, Inc. SN 203,402. Pub. 6–15–65. Filed 10–6–64.

795,324. PARIOLI CLOTH AND DESIGN. College Hall Fashions, Inc. SN 203,482. Pub. 6–15–65. Filed 10–7–64.

795,325. KINGSPAN. Genesco Inc., d.b.a. Kingsboro Mills. SN 203,494. Pub. 6–15–65. Filed 10–7–64.

795,326. DAWBAC. W. R. Grace & Co. SN 203,499. Pub. 6–15–65. Filed 10–7–64.

795,327. STARSET. Celanese Corporation of America. SN 203,740. Pub. 6–15–65. Filed 10–12–64.

795,328. INDIAN (DESIGN). Sponge-Cushion, Inc. SN 203,896. Pub. 6–15–65. Filed 10–13–64.

795,329. "COMMA." Rayflex Fabrics, Inc. SN 204,194. Pub. 6–15–65. Filed 10–16–64.

795,330. CUSTER TWILL. Crompton Company. SN 204,358. Pub. 6–15–65. Filed 10–20–64.

795,331. MOUNTIE. Crompton Company. SN 204,362. Pub. 6–15–65. Filed 10–20–64.

795,332. PRO LEAGUER. Allen Knitting Mills, Inc. SN 204,627. Pub. 6–15–65. Filed 10–23–64.

795,333. SCULPTAFIL. Crown Rubber Company. SN 204,891. Pub. 6–15–65. Filed 10–27–64.

795,334. EARLY MORN. Danside Fabrics Inc. SN 209,674. Pub. 6–15–65. Filed 1–11–65.

795,335. DURA-TUFF. Duracote Corporation. SN 209,678. Pub. 6–15–65. Filed 1–11–65.

Class 43 — Thread and Yarn

795,336. CHATILAN. Chatillon Societa Anonima Italiana per Le Fibre Tessili Artificiali S.p.A. SN 187,557. Pub. 6–15–65. Filed 2–27–64.

795,337. HECONDA. Heberlein & Co. AG. SN 198,952. Pub. 6–15–65. Filed 7–31–64.

795,338. HANSELE. Emile Bernat & Sons Co. SN 203,847. Pub. 6–15–65. Filed 10–9–64.

Class 44 — Dental, Medical, and Surgical Appliances

795,339. IR PAK. Scott Aviation Corporation. SN 193,049. Pub. 6–15–65. Filed 5–8–64.

795,340. MAILLISETTE. Societe Rhovyl. SN 197,343. Pub. 6–15–65. Filed 7–7–64.

795,341. CURLATRON. The Songrand Corporation. SN 200,502. Pub. 6–15–65. Filed 8–24–64.

795,342. H-L-R. Brunswick Manufacturing Company, Inc. SN 208,442. Pub. 6–1–65. Filed 12–18–64.

795,343. VALMOR AND DESIGN. Standard Products Corporation. SN 210,168. Pub. 6–15–65. Filed 1–18–65.

Class 46 — Foods and Ingredients of Foods

795,008. (See Class 12 for this trademark.)

795,344. CHIP-O'S AND DESIGN. General Mills, Inc., assignee of Morton Foods, Inc. SN 106,270. Pub. 3–28–61. Filed 10–12–60.

795,345. COUNTRY CLUB. The Kroger Co. SN 148,048. CONCURRENT USE. Pub. 12–11–62. Filed 6–29–62.

795,346. HADDINGTON FARMS. E. Cherry Sons & Co. Inc. SN 190,335. Pub. 6–15–65. Filed 4–6–64.

795,347. FROSTEE HUMOR. Good Humor Corporation. SN 191,169. Pub. 1–19–65. Filed 4–15–64.

795,348. XLNT HACIENDA AND DESIGN. Nalley's, Inc. SN 191,943. Pub. 6–15–65. Filed 4–24–64.

795,349. TRIACUP AND DESIGN. Gertrude H. Ford Tea Co., Inc. SN 194,043. Pub. 6–15–65. Filed 5–22–64.

795,350. CLINHI. Standard Brands Incorporated, d.b.a. Clinton Corn Processing Company. SN 194,926. Pub. 6–15–65. Filed 6–4–64.

795,351. INKY DINK. Bayou Candy Co., Inc. SN 199,956. Pub. 6–1–65. Filed 8–17–64.

795,352. HOOKER. Hooker Chemical Corporation. SN 206,548. Pub. 6–15–65. Filed 11–19–64.

Class 49 — Distilled Alcoholic Liquors

795,353. CARNATION CLUB. London & Company, Inc. SN 166,911. Pub. 1–7–64. Filed 4–17–63.

Class 52 — Detergents and Soaps

795,354. OMNI-SPRAY. Economics Laboratory, Inc. SN 204,149. Pub. 6–15–65. Filed 10–16–64.

Service Marks

Class 100 — Miscellaneous

795,355. TOURISTS INTERNATIONAL AND DESIGN. Tourists International Establishment. SN 178,995. Pub. 6–15–65. Filed 10–14–63.

795,356. HOLIDAY INN, JR. Holiday Inns of America, Inc. SN 193,470. Pub. 6–15–65. Filed 5–14–64.

795,357. HOLIDAY INN JR. AND DESIGN. Holiday Inns of America, Inc. SN 193,471. Pub. 6–15–65. Filed 5–14–64.

Class 101 — Advertising and Business

795,358. FIRESIDE READERS' SERVICE. Keystone Readers' Service, Inc. SN 195,794. Pub. 6–15–65. Filed 6–16–64.

Class 102 — Insurance and Financial

795,359. PL AND DESIGN. Pension Life Insurance Company of America. SN 198,871. Pub. 6–15–65. Filed 7–30–64.

Class 103 — Construction and Repair

795,360. CEI. Carpet Engineers Inc. SN 176,255. Pub. 6–15–65. Filed 10–3–63.

795,361. REGAL. Regal Systems. SN 199,613. Pub. 6–15–65. Filed 8–10–64.

Class 105 — Transportation and Storage

795,362. WAIT FOR ME ETC. AND DESIGN. Erma M. Knight, d.b.a. Knight Travel Service. SN 179,240. Pub. 6–15–65. Filed 10–17–63.

795,363. AIRWAYS RENT-A-TRUCK. Airways Rent-A-Car System. SN 194,561. Pub. 6–15–65. Filed 6–1–64.

Class 106 — Material Treatment

795,364. GALESKI AND DESIGN. Galeski Photo Center, Incorporated. SN 180,008. Pub. 6–15–65. Filed 10–29–63.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 19—Vehicles

795,365. McInerney Spring & Wire Company, Grand Rapids, Mich. SN 197,737. Filed P.R. 7-13-64; Am. S.R. 6-21-65.

TRAVEL COMFORT CUSHIONS

For Spring Cushions for Automobiles and the Like.
First use Dec. 1, 1944.

TRADEMARK REGISTRATIONS RENEWED

44,431. DESIGN OF A WAITRESS. Cl. 46. 7-4-05.
44,893. SHIPOLEUM. Cl. 16. 7-25-05.
44,895. SUPREMIS. Cl. 16. 7-25-05.
44,902. CRISPIN. Cl. 23. 7-25-05
44,904. B & W. Cl. 24. 7-25-05.
46,057. ATLAS. Cl. 12. 9-5-05.
46,771. J. B. SMITH CO. Cl. 23. 10-10-05.
46,791. BLACK WORKS G. H. BARNETT AND DESIGN. Cl. 26. 10-10-05.
46,794. KEARNEY & TOOT K & F AND DESIGN. Cl. 23. 10-10-05.
46,957. CROSSED FILES (DESIGN). Cl. 23. 10-17-05.
46,969. CI AND DESIGN. Cl. 47. 10-17-05.
47,047. BORAXO. Cl. 51. 10-24-05.
47,074. JOHN DAY & CO. Cl. 23. 10-24-05.
47,233. X-F AND DESIGN. Cl. 23. 10-31-05.
47,279. MAPLE LEAF AND DESIGN. Cl. 23. 10-31-05.
48,371. DIAMOND DESIGN. Cl. 23. 12-26-05.
195,986. WM. P. HARTLEY'S. Cl. 46. 3-10-25.
198,849. BURRO. Cl. 23. 5-12-25.
198,847. YELLOTONE. Cl. 6. 5-26-25.
199,786. VICTORY TWIST. Cl. 15. 6-16-25.
200,741. TALENS. Cl. 16. 7-7-25.
201,462. AMPLUM. Cl. 43. 7-28-25.
201,943. REMBRANDT. Cl. 16. 8-11-25.
201,985. CHICAGO TRIBUNE PRESS SERVICE. Cl. 38. 8-11-25.
202,019. REPRESENTATION OF A QUAKER WITHIN A KEYSTONE FIGURE (DESIGN). Cl. 52. 8-11-25.
202,686. LITTLE SHAVERS. Cl. 39. 9-1-25.
203,957. RED AND WHITE. Cl. 46. 9-29-25.
204,148. DITZCO. Cl. 16. 10-6-25.
204,571. CLINTOSE. Cl. 46. 10-20-25.
205,474. BLACK CAT. Cl. 39. 11-10-25.
205,659. BANNER. Cl. 46. 11-10-25.
205,770. NANNETTE BABE CLO'ES AND DESIGN. Cl. 39. 11-17-25.
206,116. SAFEWAY. Cl. 29. 11-24-25.
206,133. WEDGEWOOD. Cl. 46. 11-24-25.
206,135. UNISHEAR. Cl. 23. 11-24-25.
206,144. TIGERTWIST. Cl. 39. 11-24-25.
206,908. FLO-LAC. Cl. 16. 12-15-25.
206,970. DAN VALLEY. Cl. 46. 12-15-25.
207,158. FRIENDLY. Cl. 39. 12-22-25.
207,236. HABOLINE AND DESIGN. Cl. 15. 12-22-25.
412,930. VI-THERA. Cl. 18. 4-3-45.
412,978. CLINICHROME. Cl. 6. 4-3-45.
413,603. SAMAE PRODUCTS AND DESIGN. Cl. 4. 5-1-45.
414,300. STRONGSTER AND DESIGN. Cl. 22. 6-5-45.
414,758. BROILMASTER. Cl. 21. 6-26-45.
414,870. MAN-AU-TROL. Cl. 23. 7-3-45.
414,872. BULLARD MAN-AU-TROL MASTER OF THE MACHINE AND DESIGN. Cl. 23. 7-3-45.
414,873. DESIGN OF HAND GRIPPING REPRESENTATION OF LIGHTNING. Cl. 23. 7-3-45.
414,876. AIR WEAVE. Cl. 39. 7-3-45.
415,003. DEX. Cl. 37. 7-10-45.
415,013. CONTROL-AU-MATIC. Cl. 23. 7-10-45.
415,014. MAN-AU-MATIC. Cl. 23. 7-10-45.
415,015. ROSECRAFT PLATINUM-COATE. Cl. 38. 7-10-45.
415,139. SILVER BIRCH AND LEAF DESIGN. Cl. 46. 7-10-45.
415,237. OPTRON AND DESIGN. Cl. 26. 7-31-45.
415,326. HEAVENLY. Cl. 39. 8-7-45.
415,329. SOUTH WIND. Cl. 34. 8-7-45.
415,514. WITTEMANN. Cl. 23. 8-7-45.
415,646. NUGGET AND DESIGN. Cl. 4. 8-14-45.
415,767. REM-MASTER. Cl. 37. 8-14-45.
415,854. COL-O-VIN. Cl. 42. 8-21-45.
415,925. VALDERMA. Cl. 18. 8-21-45.
416,948. PRESTIGE • • • • PLATE. Cl. 28. 10-9-45.
417,225. PAMPERED. Cl. 51. 10-16-45.
417,743. KYS-ITEMS. Cl. 38. 11-13-45.
417,750. EVANOHM. Cl. 21. 11-13-45.
418,080. MAYFLOWER AND DESIGN. Cl. 46. 12-4-45.
418,084. FISHER. Cls. 13, 23, 31, and 34. 12-4-45.
418,284. HYPNALDYNE. Cl. 18. 12-11-45.
418,490. MECALITE. Cl. 44. 12-25-45.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

501,729. TONI TODD. Cl. 39. 8-17-48.
768,085. ZIRATE. Cl. 10. 4-14-64.
773,040. FLEET HEAT AND DESIGN. Cl. 6. 7-14-64.
791,670. IMPERIAL. Cl. 13. 6-29-65.

Section 8

The following registrations issued July 14, 1959

681,647. BITE ME NOT. Cl. 6.
681,655. UNION CARBIDE NUCLEAR AND DESIGN. Cl. 6.
681,656. DY-Q-PLEX. Cl. 6.
681,657. BORANIUM. Cl. 6.
681,658. AIRKEM A AND REPRESENTATION OF RETORT. Cl. 6.
681,660. CON-O-ZELL. Cl. 6.
681,666. PERL-CRETE. Cl. 12.
681,667. PERL-AG. Cl. 12.
681,668. B-W INGERSOLL PRODUCTS ETC. AND DESIGN. Cl. 12.
681,669. HIGHLANDER AND DESIGN. Cl. 12.
681,670. LITE-LINE. Cl. 12.
681,672. TM. Cl. 12.
681,673. TEXTRON TM METALS. Cl. 12.
681,680. SUPREME. Cl. 13.
681,687. VERSA-TILE. Cl. 13.
681,696. HARAL CARE AND DESIGN. Cl. 15.
681,705. HELIODINE. Cl. 18.
681,711. ACHROSORB. Cl. 18.
681,712. MY-T-CAPS. Cl. 18.
681,713. HYPACOME. Cl. 18.
681,716. BLENDON. Cl. 18.
681,717. SCANDOCAIN. Cl. 18.
681,718. PHORAC. Cl. 18.
681,719. DEBRICIN. Cl. 18.
681,722. CLARIMACIN. Cl. 18.
681,723. TIGUVON. Cl. 18.
681,726. SEPTI-PAK. Cl. 18.
681,727. TANCAP. Cl. 18.
681,729. ABUNDALEAN. Cl. 18.
681,730. TRAVAMUL. Cl. 18.
681,731. CHYLOCAL. Cl. 18.
681,733. PLESMET. Cl. 18.
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681,999. PATIO-LITES. Cl. 21.
682,005. MISSILE ELECTRONICS. Cl. 38.
682,008. SMOOTH SET. Cl. 51.

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359,292. DILANTIN. Cl. 18. 8-9-38. Parke, Davis & Company, Detroit, Mich. Amended: In the statement, column 1, lines 9 through 11, the description of goods is deleted and *pharmaceutical preparations containing diphenylhydantoin or a salt thereof* is inserted.

681,632. "TUCK-N-MAIL." Cl. 37. 7-7-59. Curtis 1000 Incorporated, West Hartford, Conn. Corrected: In the statement, column 1, line 1, ", Incorporated" should be deleted and *Incorporated* should be inserted.

785,354. HAWAIIAN TIKI (DESIGN). Cl. 51. 2-16-65. Hawaiian Perfumers, Inc., doing business as Liana of Waikiki, Honolulu, Hawaii. Corrected: In the statement, column 2, line 1, after "For:" *Hawaiian perfumes, colognes,* should be inserted.

790,558. IMA. Cl. 2. 6-8-65. Holiday Inns of America, Inc., Memphis, Tenn. Corrected: In the statement, column 1, line 2, "Lemar" should be deleted and *Lamar* should be inserted.

792,104. VANCE AND DESIGN. Cl. 18. 7-6-65. Vance-Curtis Products, Inc., Kansas City, Mo. Corrected: In the statement, column 1, line 1, "Montana" should be deleted and *Missouri* should be inserted.

792,413. MV. Cl. 1. 7-13-65. John L. Montgomery, doing business as J. L. Montgomery & Sons, Benton, Tenn. Corrected: In the statement, column 1, line 1, "J. J." should be deleted and *J. L.* should be inserted.

792,731. WOOLCO ETC. AND DESIGN. Cl. 101. 7-13-65. F. W. Woolworth Co., New York, N.Y. Corrected: In the statement, column 2, lines 4 through 6 should be deleted and *The words "Satisfaction Guaranteed" and "Replacement or Money Refunded" are disclaimed apart from the mark as shown.* should be inserted.

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Access Corp., Cincinnati, Ohio. 795,262, pub. 6–15–65. Cl. 37.
Adtrol Electronics, Inc., d.b.a. Adtrol Electronics, Inc., and Adtrol Electronics, Inc., Philadelphia, Pa. 795,207, pub. 6–15–65. Cl. 26.
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Driver, Wilbur B., Co., Newark, N.J. 417,750, ren. 8–31–65. Cl. 21.
Duchovnay, Sol, & Sons, Philadelphia, Pa. 795,292, pub. 6–15–65. Cl. 39.
Du Pont de Nemours, E. I., and Co.: *See*—
Chicago, Varnish Co.
Duracote Corp., Ravenna, Ohio. 795,335, pub. 6–15–65. Cl. 42.
Duraflex Co., The, Miami, Fla. 795,029, pub. 6–15–65. Cl. 12.
E & M Tool Co., North Bergen, N.J. 795,108, pub. 11–24–64. Cl. 23.
Eastern Co., The, Portland, Maine. 795,049, pub. 6–15–65. Cl. 14.
Eastman Kodak Co., Rochester, N.Y. 794,963, pub. 6–15–65. Cl. 1.
Eastman Kodak Co., Rochester, N.Y. 795,185, pub. 6–15–65. Cl. 26.
Economics Laboratory, Inc., St. Paul, Minn. 795,354, pub. 6–15–65. Cl. 52.
Elastizell Corp. of America, Alpena, Mich. 681,660, canc. Cl. 6.
Electrostatic Records, Inc., Sarasota, Fla. 795,198, pub. 6–15–65. Cl. 26.
Bernat, Emile, & Sons Co., Uxbridge, Mass. 795,338, pub. 6–15–65. Cl. 43.
Emmons Jewelers, Inc., Newark, N.Y. 681,831, canc. Cl. 28.
Endicott Johnson Corp., Endicott, N.Y. 795,285, pub. 6–15–65. Cl. 39.
Enterprise Wire Co., Blue Island, Ill. 795,034, pub. 6–15–65. Cl. 13.
Essex Chair Co., Union, N.J. 795,061, pub. 6–15–65. Cl. 16.

F & M Scientific Corp., Avondale, Pa. 794,989, pub. 6–15–65. Cl. 6.
FMC Corp., San Jose, Calif. 795,082, pub. 6–15–65. Cl. 21.
Fabricated Products Co., Inc., West Newton, Pa. 681,995, canc. Cl. 13.
Falcon International, Inc., Chicago, Ill. 794,999, pub. 6–15–65 Cl. 8.
Faraday Electric Corp., Adrian, Mich., to Udico Electric Co., Los Angeles, Calif. 414,758, ren. 8–31–65. Cl. 21.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 681,723, canc. Cl. 18.
Federal Sign and Signal Corp., Blue Island, Ill. 795,084, pub. 6–15–65. Cl. 21.
Federal Systems, Inc., Atlanta, Ga., from J. D. Wilshire, Decatur, Ga. 795,163, pub. 6–15–65. Cl. 26.
Finishine Laboratories, Inc., Syracuse, N.Y. 794,988, pub. 1–28–64. Cl. 6.
Fisba Optische Prazisions-Instrumente AG, Sankt Gallen, Switzerland. 795,176, pub. 6–15–65. Cl. 26.
Fischer & Co., Inc., New York, N.Y. 415,326, ren. 8–31–65. Cl. 39.
Fisher Governor Co., Marshalltown, Iowa. 418,084, ren. 8–31–65. Multiple Class (Classes 13, 23, 31, and 34.)
Fisher Governor Co., Marshalltown, Iowa. 795,032, pub. 6–15–65. Cl. 13.
Fleet-Wing Corp., Cleveland, Ohio. 773,040, canc. Cl. 6.
Flexigrip, Inc., New York, N.Y. 794,968, pub. 6–15–65. Cl. 2.
Flickinger, S. M., Co., Inc., Buffalo, N.Y., to Red & White Foundation, Chicago, Ill. 203,957, ren. 8–31–65. Cl. 46.
Fly Mfg. Co., Inc., Shelbyville, Tenn. 795,308–9, pub. 6–15–65. Cl. 39.
Ford, Gertrude H., Tea Co., Inc., Poughkeepsie, N.Y. 795,349, pub. 6–15–65. Cl. 46.
Four Roses Distilling Co., Inc., Louisville, Ky. 681,928, canc. Cl. 49.
Four Roses Distilling Co., Inc., Louisville, Ky. 681,930, canc. Cl. 49.
Fotomatic Corp., The, Indianapolis, Ind. 795,195, pub. 6–15–65. Cl. 26.
Franklin Chemical Co., The, Columbus, Ohio. 794,962, pub. 6–15–65. Cl. 1.
Franz Mfg. Co., Inc., New Haven, Conn. 795,249, pub. 6–15–65. Cl. 36.
Frick Co., Waynesboro, Pa. 795,224–5, pub. 6–15–65. Cl. 31.
Fun Farms, Inc., Milwaukee, Wis. 795,302–3, pub. 6–15–65. Cl. 39.
GK Industries, Inc., Atlanta, Ga. 795,150, pub. 6–15–65. Cl. 23.
Galeski Photo Center, Inc., Richmond, Va. 795,364, pub. 6–15–65. Cl. 106.
Gallaway Mills Co., Lagrange, Ga. 795,321, pub. 6–15–65. Cl. 42.
Gardner Laboratory, Inc., Bethesda, Md. 795,180, pub. 6–15–65. Cl. 26.
Gebruder Vieler Gesellschaft mit beschrankter Haftung Leicht- und Schwermetall-Verarbeitungswerk, Letmathe, Westphalia, Germany. 681,804, canc. Cl. 25.
Geist & Geist, Inc., New York, N.Y. 795,294, pub. 6–15–65. Cl. 39.
General Foods Corp.: *See*—
Baker, Walter, & Co., Ltd.
General Mills, Inc., Minneapolis, Minn. 795,344, pub. 3–28–61. Cl. 46.
General Valve Co., Inc., Long Beach, Calif. 795,042, pub. 6–15–65. Cl. 13.
Genesco, Inc.: *See*—
Jarman Shoe Co.
Genesco, Inc., d.b.a. Kingsboro Mills, Nashville, Tenn. 795,325, pub. 6–15–65. Cl. 42.
Geon International Corp., Great Neck, N.Y. 795,107, pub. 6–15–65. Cl. 23.
Goddard, J., & Sons Ltd., Leicester, England. 794,980, pub. 6–15–65. Cl. 4.
Goetze, Albert F., Inc., Baltimore, Md. 681,988, canc. Cl. 107.
Gongrand Corp., The, Kansas City, Mo. 795,341, pub. 6–15–65. Cl. 44.
Good Humor Corp., Englewood Cliffs, N.J. 795,347, pub. 1–19–65. Cl. 46.
Goodrid Incinerator Co. Pty. Ltd., Sydney, New South Wales, Australia. 795,241, pub. 6–15–65. Cl. 34.
Gorham Corp., Providence, R.I. 795,219, pub. 6–15–65. Cl. 28.
Graber Mfg. Co., Inc., Middleton, Wis. 795,044, pub. 6–15–65. Cl. 13.
Grace, W. R., & Co., New York, N.Y. 795,326, pub. 6–15–65. Cl. 42.
Grand Union Co., The, East Paterson, N.J. 795,297, pub. 6–15–65. Cl. 39.
Gray-I-Flo Corp., The, Sturgis, Mich. 795,109, pub. 6–15–65. Cl. 23.
Griffin Pipe Products Co.: *See*—
Amsted Industries Inc.
Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. 414,800, ren. 8–31–65. Cl. 22.
HK Corp., Atlanta, Ga. 795,282, pub. 6–15–65. Cl. 39.
Haake Mfg. Co., De Soto, Mo. 795,070, pub. 6–15–65. Cl. 19.
Hall, J. C., Co., The, Pawtucket, R.I. 795,256–7, pub. 6–15–65. Cl. 37.
Hanes Corp., from P. H. Hanes Knitting Co., Winston-Salem, N.C. 795,287, pub. 6–15–65. Cl. 39.
Hanes, P. H., Knitting Co.: *See*—
Hanes Corp.
Haral Co.: *See*—
Haral Corp.
Haral Corp., from Harold H. Wigen, d.b.a. Haral Co., Chicago, Ill. 681,696, canc. Cl. 15.
Harrison: *See*—
Harrison, Le Vert, Jr.
Harrison, Le Vert, Jr., d.b.a. Harrison, Los Angeles, Calif. 795,069, pub. 6–15–65. Cl. 19.
Harston, Gordon, Golden, Colo. 795,231, pub. 6–15–65. Cl. 32.
Harter Corp., Sturgis, Mich. 795,226, pub. 6–15–65. Cl. 32.
Hartley, Wm. P., (London & Aintree) Ltd., Aintree, Liverpool, and London, England, to Chivers-Hartley Ltd., London, England. 195,986, ren. 8–31–65. Cl. 46.
Haskell, Inc., Verona, Pa. 795,229, pub. 6–15–65. Cl. 32.
Haubold, Dieter, d.b.a. Dieter Haubold Industrielle Nagelgerate, Hannover, Germany. 795,040, pub. 6–15–65. Cl. 13.
Haubold, Dieter, Industrielle Nagelgerate: *See*—
Haubold, Dieter.
Hawaiian Perfumers, Inc., d.b.a. Liana of Waikiki, Honolulu, Hawaii. 785,354, cor. Cl. 51.
Herberlein & Co., AG., Wattwil, Switzerland. 795,337, pub. 6–15–65. Cl. 43.
Miller, Herman, Inc., Zeeland, Mich. 795,012, pub. 6–15–65. Cl. 12.
Hettrick Mfg. Co., The, Statesville, N.C. 795,102, pub. 6–15–65. Cl. 22.
Heyden Newport: *See*—
Tenneco Chemicals, Inc.
Hi Products, Inc., Minneapolis, Minn. 681,771, canc. Cl. 21.
Hickok Mfg. Co., Inc., Rochester, N.Y. 795,217, pub. 6–15–65. Cl. 26.
Hillcrest Poultry, Inc., Lewiston, Maine. 681,922, canc. Cl. 46.
Hofheimer Brothers Co., to Hofheimers, Inc., Norfolk, Va. 205,474, ren. 8–31–65. Cl. 39.
Hofheimers, Inc.: *See*—
Hofheimer Brothers Co.
Holiday Inns of America, Inc., Memphis, Tenn. 790,556, cor. Cl. 51.
Holiday Inns of America, Inc., Memphis, Tenn. 795,356–7, pub. 6–15–65. Cl. 100.
Home Decorators, Inc., Newark, N.Y. 416,948, ren. 8–31–65. Cl. 28.
Hooker Chemical Corp., Niagara Falls, N.Y. 794,961, pub. 6–15–65. Cl. 4.
Hooker Chemical Corp., Niagara Falls, N.Y. 795,059, pub. 6–15–65. Cl. 16.
Hooker Chemical Corp., Niagara Falls, N.Y. 795,352, pub. 6–15–65. Cl. 46.
Hope Chest Co., Inc., The, Minneapolis, Minn. 681,781, canc. Cl. 23.
House, Conley E., d.b.a. House Mfg. Co., Hasen, Ark. 794,972, pub. 6–15–65. Cl. 2.
House Mfg. Co.: *See*—
House, Conley E.
House for Men, Inc., The, Chicago, Ill. 681,944, canc. Cl. 51.
House of Worsted-Tex, Inc., Philadelphia, Pa. 795,310, pub. 6–15–65. Cl. 39.
Hudnut, Richard, Morris Plains, N.J. 682,008, canc. Cl. 51.
Hughes Corp., Minneapolis, Minn. 795,140, pub. 6–15–65. Cl. 23.
Hunt Mfg. Co., Camden, N.J. 795,255, pub. 6–15–65. Cl. 37.
Huyck Corp., Rensselaer, N.Y. 795,132, pub. 6–15–65. Cl. 26.
Huyck Corp., Rensselaer, N.Y. 795,188, pub. 6–15–65. Cl. 26.
Ideal Cement Co., Denver, Colo. 795,019, pub. 6–15–65. Cl. 12.
Idestone, Frank F., Baltimore, Md. 795,273, pub. 6–15–65. Cl. 39.
Ilford Ltd., Ilford, Essex, England. 794,990, pub. 6–15–65. Cl. 6.
Illinois Tool Works, Inc., Chicago, Ill. 795,033, pub. 6–15–65. Cl. 13.
Imperial Drug Exchange, Inc., d.b.a. New York Drug Concern, New York, N.Y. 681,712, canc. Cl. 18.
Indian Refining Co., Inc., Lawrenceville, Ill., and New York, N.Y., to Texaco, Inc., New York, N.Y. 207,236, ren. 8–31–65. Cl. 15.
International Harvester Co., Chicago, Ill. 795,151, pub. 6–15–65. Cl. 23.
International Heater Co., Utica, N.Y. 795,236, pub. 6–15–65. Cl. 34.
International Importers: *See*—
Largen, Lonnie E., Sr.
International Paper Co., New York, N.Y. 794,966, pub. 6–15–65. Cl. 1.
International Paper Co., New York, N.Y. 795,020, pub. 6–15–65. Cl. 12.
International Paper Co., New York, N.Y. 795,259–60, pub. 6–15–65. Cl. 37.
Irving Air Chute Co., Inc., Lexington, Ky. 795,068, pub. 6–15–65. Cl. 19.
Italcrem, S.A., Barcelona, Spain. 795,077, pub. 6–15–65. Cl. 21.
Jackon Co., Inc., The, New York, N.Y. 795,267, pub. 6–15–65. Cl. 39.
Jack's Sheet Metal Products: *See*—
Quinn, Jack L.
Jacobson, Louis J., d.b.a. Safety First Foods Co., Chicago, Ill. 681,914, canc. Cl. 46.
Jarman Shoe Co., to Genesco, Inc., Nashville, Tenn. 207,158, ren. 8–31–65. Cl. 39.
Jarts: *See*—
Barnett, Laurence.
Jered Industries, Inc., Birmingham, Mich. 795,177, pub. 6–15–65. Cl. 26.
Jiffy Steamer Co.: *See*—
Simrell, John B.
Johns-Manville Corp., New York, N.Y. 795,014–15, pub. 6–15–65. Cl. 12.
Johns-Manville Corp., New York, N.Y. 795,030, pub. 6–15–65. Cl. 12.

Johnson & Johnson, New Brunswick, N.J. 681,719, canc. Cl. 18.
Jones, Turner, Co., Inc., New York, N.Y. 795,323, pub. 6–15–65. Cl. 42.
Kadison, Joseph G., d.b.a. Quaker Marine Supply Co., Philadelphia, Pa. 795,242, pub. 6–15–65. Cl. 34.
Kaufmann, R. & M., Inc., Aurora, Ill. 501,729, canc. Cl. 39.
Kearney & Foot Co., Paterson, N.J., to Nicholson File Co., Providence, R.I. 46,794, ren. 8–31–65. Cl. 23.
Kearney & Foot Co., Paterson, N.J., to Nicholson File Co., Providence, R.I. 47,074, ren. 8–31–65. Cl. 23.
Kemi-Kold Corp., Orlando, Fla. 681,838, canc. Cl. 31.
Key Work Clothes, Inc., Fort Scott, Kans. 795,286, pub. 6–15–65. Cl. 39.
Keyes Fibre Co., to Keyes Fibre Co., Waterville, Maine. 417,743, ren. 8–31–65. Cl. 38.
Keystone Readers' Service, Inc., Philadelphia, Pa. 795,358, pub. 6–15–65. Cl. 101.
Kingsboro Mills: *See*—
Genesco, Inc.
Kinkead Industries, Inc., Chicago, Ill. 795,045, pub. 6–15–65. Cl. 13.
Klenzade Products, Inc., Beloit, Wis. 681,965, canc. Cl. 52.
Knight, Erma M., d.b.a. Knight Ravel Service, West Jefferson, Ohio. 795,362, pub. 6–15–65. Cl. 105.
Kolbe & Kolbe Millwork Co., Wausau, Wis. 795,024, pub. 6–15–65. Cl. 12.
Koreska, W., Vienna, Austria. 795,258, pub. 6–15–65. Cl. 37.
Kraus Bros. & Co., d.b.a. Reichard Brooks & Co., New York, N.Y. 681,924, canc. Cl. 47.
Kreider's, W. L., Sons Mfg. Co., Inc.: *See*—
McGrath Shoe Co., Inc.
Kristal Kraft, Inc., Palmetto, Fla. 795,062, pub. 6–15–65. Cl. 16.
Kroger Co., The, Cincinnati, Ohio. 795,345, pub. 12–11–62. Cl. 46.
Kubly, Paul R., d.b.a. Color Putty Co., Monroe, Wis. 795,007, pub. 6–15–65. Cl. 12.
Kuppenheimer, B., & Co., Inc., Chicago, Ill. 206,144, ren. 8–31–65. Cl. 39.
La Floreal Parfums: *See*—
Simon, Harry A.
La Houd, John, Paris, France. 681,952, canc. Cl. 51.
Lamson & Sessions Co., The, Cleveland, Ohio. 795,037–9, pub. 6–15–65. Cl. 13.
Larsen, Lonnie E., Sr., d.b.a. International Importers, Winston-Salem, N.C. 795,215, pub. 6–15–65. Cl. 27.
Laurence-David, Inc., Eugene, Oreg. 795,017, pub. 6–15–65. Cl. 12.
Lear Siegler, Inc., Cleveland, Ohio. 795,145, pub. 6–15–65. Cl. 23.
Lek Trol, Inc., Arlington, Tex. 681,739, canc. Cl. 21.
Lenger, David M., d.b.a. Arlenge Laboratories, New York, N.Y. 681,647, canc. Cl. 6.
Les Industries Bouchard, Inc., La Pocatiere, Quebec, Canada. 795,072, pub. 6–15–65. Cl. 19.
Liberty Optical Mfg. Co., Inc., Newark, N.J. 795,201, pub. 6–15–65. Cl. 26.
Limpson, S., Ltd., London, England, from 10-X Mfg. Co., Des Moines, Iowa. 795,265, pub. 10–15–63. Cl. 39.
Lockheed Aircraft Corp., Burbank, Calif. 794,991, pub. 6–15–65. Cl. 6.
Loenco, Inc., Altadena, Calif. 795,191, pub. 6–15–65. Cl. 26.
Loft Candy Corp.: *See*—
Loft, Inc.
Loft, Inc., New York, to Loft Candy Corp., Long Island City, N.Y. 206,133, ren. 8–31–65. Cl. 46.
London & Co., Inc., Elizabeth, N.J. 795,353, pub. 1–7–54. Cl. 49.
Lord, Clark and Co., Inc., Boston, Mass. 795,125, pub. 6–15–65. Cl. 23.
Lufkin Rule Co., The, Saginaw, Mich. 795,208, pub. 6–15–65. Cl. 26.
Luger Industries, Inc., Minneapolis, Minn. 795,010, pub. 6–15–65. Cl. 12.
Lunesa Watch S.A., Bettlach, Switzerland. 795,212, pub. 6–15–65. Cl. 27.
Magic Hostess Corp., Kansas City, Mo. 795,095, pub. 6–15–65. Cl. 21.
Mahon, Thomas J., Inc., Englewood Cliffs, N.J. 681,884, canc. Cl. 44.
Maidenform, Inc., New York, N.Y. 795,312, pub. 6–15–65. Cl. 39.
Mamiya Camera Co., Ltd.: *See*—
Mamiya Koki Kabushiki Kaisha.
Manhattan Terrazzo Brass Strip Co., Inc., Norwalk, Conn. 795,021, pub. 6–15–65. Cl. 12.
Manufacture d'Horlogerie Favre-Leuba S.A., Lancy-Geneva, Switzerland. 795,213, pub. 6–15–65. Cl. 27.
Martin-Marietta Corp., New York, N.Y. 794,994, pub. 6–15–65. Cl. 6.
Masten, Masten & Bryan, Inc., Denver, Colo. 795,186, pub. 6–15–65. Cl. 26.
Master Fan Corp., Los Angeles, Calif. 681,848, canc. Cl. 34.
Mastereel Industries, Inc., New York, N.Y. 795,192–3, pub. 6–15–65. Cl. 26.
Matisse Ltd., Los Angeles, Calif. 681,833, canc. Cl. 28.
Matsumoto, Saburo, d.b.a. Asahi Optical Co., Tokyo, Japan. 795,183, pub. 6–15–65. Cl. 26.
Matsushita Electric Industrial Co., Ltd., Osaka, Japan. 795,081, pub. 6–15–65. Multiple Class (Classes 21 and 36).
Matteo, Inc., Houston, Tex. 795,245, pub. 6–15–65. Cl. 35.
Mattel, Inc., Hawthorne, Calif. 795,274, pub. 1–12–65. Cl. 39.
Mayfair Mfg. Co.: *See*—
Secofsky, Abe.
McGrath Shoe Co., Inc., New York, N.Y., to W. L. Kreider's Sons Mfg. Co., Inc., Palmyra, Pa. 202,636, ren. 8–31–65. Cl. 39.
McGraw-Edison Co., Elgin, Ill. 795,092, pub. 6–15–65. Cl. 21.
McInerney Spring & Wire Co., Grand Rapids, Mich. 795,365. Cl. 19.
Mead Corp., The, Dayton, Ohio. 794,969, pub. 6–15–65. Cl. 2.
Mercury Record Productions, Inc., Chicago, Ill. 795,248, pub. 6–15–65. Cl. 36.
Merritt Corp., The, Jersey City, N.J. 681,722, canc. Cl. 18.
Metro Pants Co., Inc., New York, N.Y. 795,314, pub. 6–15–65. Cl. 39.
Miami Window Corp., Hialeah, Fla. 681,669, canc. Cl. 12.
Microfit Co. of America, San Diego, Calif. 681,829, canc. Cl. 27.
Mimiya Koki Kabushiki Kaisha, d.b.a. Mamiya Camera Co., Ltd., Bunkyo-ku, Tokyo-to, Japan. 795,165, pub. 6–15–65. Cl. 26.
Mission Industries, Escondido, Calif. 681,933, canc. Cl. 50.
Monroe Calculating Machine Co.: *See*—
Monroe International Corp.
Monroe International Corp., from Monroe Calculating Machine Co., Orange, N.J. 795,160, pub. 6–15–65. Cl. 26.
Montgomery, John L., d.b.a. J. L. Montgomery & Sons, Benton, Tenn. 792,413, cor. Cl. 1.
Moosbrunner Glasfabriks-Aktiengesellschaft, from Moosbrunner Glasfabriks-Aktiengesellschaft, Vienna, Austria. 795,235, pub. 6–15–65. Cl. 33.
Morris, Mark, Associates, Inc., Topeka, Kans. 795,008, pub. 6–15–65. Multiple Class (Classes 12, 38, and 46).
Moss & Lowenhaupt Cigar Co., St. Louis, Mo. 795,064, pub. 6–15–65. Cl. 17.
Motl, L. F., & Son, Inc., Madison, Wis. 795,203, pub. 6–15–65. Cl. 26.
Naamlooze Vennootschap Nederlandsche Kunstzijdefabriek, to Algemeene Kunstzijde Unie, N.V., Arnhem, Netherlands. 201,462, ren. 8–31–65. Cl. 43.
Nalley's, Inc., Tacoma, Wash. 795,348, pub. 6–15–65. Cl. 46.
Nannette Mfg. Co.: *See*—
Rosenau, Joseph F.
National Acme Co., The, Cleveland, Ohio. 795,141, pub. 6–15–65. Cl. 23.
National Gypsum Co., Buffalo, N.Y. 795,013, pub. 6–15–65. Cl. 12.
Nebraska Engineering Co., Omaha, Nebr. 795,123, pub. 6–15–65. Cl. 23.
New Brunswick Scientific Co., Inc., New Brunswick, N.J. 795,174, pub. 6–15–65. Cl. 26.
New Jersey Wire Gooda Co.: *See*—
Berkeley Industries.
New York Drug Concern: *See*—
Imperial Drug Exchange, Inc.
New York Merchandise Co., Inc., New York, N.Y. 681,999, canc. Cl. 21.
Nicholson File Co.: *See*—
Barnett, G. & H., Co.
Kearney & Foot Co.
Nicholson File Co., Providence, R.I. 46,771, ren. 8–31–65. Cl. 23.
Nicholson File Co., Providence, R.I. 46,957, ren. 8–31–65. Cl. 23.
Nicholson File Co., Providence, R.I. 47,233, ren. 8–31–65. Cl. 23.
Nicholson File Co., Providence, R.I. 47,279, ren. 8–31–65. Cl. 23.
Norcross, Inc., New York, N.Y. 795,253, pub. 6–15–65. Cl. 37.
Nordson Pharmaceutical Lahoratories, Inc., Irvington, N.J. 681,733, canc. Cl. 18.
Nugget Polish Co. of New York, The, London, to Reckitt & Colman (Overseas) Ltd., Hull, England. 415,646, ren. 8–31–65. Cl. 4.
O. & W. Electronics Ltd., Don Mills, Ontario, Canada. 795,184, pub. 6–15–65. Cl. 26.
Obermayer, S., Co., The, Chicago, Ill. 795,060, pub. 6–15–65. Cl. 16.
O'Dea and Co., Ltd., Dublin, Ireland. 681,844, canc. Cl. 32.
Ohio Brass Co., The, Mansfield, Ohio. 795,111–16, pub. 6–15–65. Cl. 23.
Olympus Optical Co. Ltd., Shibuya-ku, Tokyo, Japan. 795,187, pub. 6–15–65. Cl. 26.
Optron Laboratory, Dayton, Ohio. 415,237, ren. 8–31–65. Cl. 26.
Owatonna Tool Co., Owatonna, Minn. 795,105, pub. 6–15–65. Cl. 23.
Oxford Paper Co., New York, N.Y. 795,252, pub. 6–15–65. Cl. 37.
Pacific Coast Borax Co., San Francisco, Calif., to United States Borax & Chemical Corp., Los Angeles, Calif. 47,047, ren. 8–31–65. Cl. 51.
Pacific Specialties, Alhambra, Calif. 681,670, canc. Cl. 12.
Parade Publications, Inc., New York, N.Y. 795,199, pub. 6–15–65. Cl. 26.
Parke, Davis & Co., Detroit, Mich. 359,292. Am. 7(d). Cl. 18.
Parke, Davis & Co., Detroit, Mich. 795,205, pub. 6–15–65. Cl. 26.
Parker Appliance Co., The: *See*—
Parker-Hannifin Corp.
Parker-Hannifin Corp., from The Parker Appliance Co., Cleveland, Ohio. 681,854, canc. Cl. 35.
Parker Pen Co., The, Janesville, Wis. 795,254, pub. 6–15–65. Cl. 37.
Patterson Kelley Co., Inc., The, East Stroudsburg, Pa. 795,237, pub. 10–6–64. Cl. 34.
Pellon Corp., New York, N.Y. 795,220–23, pub. 6–15–65. Cl. 29.
Penick, S. B., and Co., New York, N.Y. 681,705, canc. Cl. 18.

Penney, J. C., Co., New York, N.Y. 795,305, pub. 6–15–65. Cl. 39.
Pennsalt Chemicals Corp.: *See*—
Pennsylvania Salt Mfg. Co.
Pennsylvania Salt Mfg. Co., to Pennsalt Chemicals Corp., Philadelphia, Pa. 202,019, ren. 8–31–65. Cl. 52.
Penn-Union Electric Corp., Erie, Pa. 661,791, canc. Cl. 23.
Pension Life Insurance Co. of America, Newark, N.J. 795,359, pub. 6–15–65. Cl. 102.
Perrott Engineering Labs, Inc., Arlington, Va. 795,089, pub. 6–15–65. Cl. 21.
Peterson, Thomas G., Des Moines, Iowa. 794,970, pub. 6–15–65. Cl. 2.
Pfizer, Chas., & Co., Inc.: *See*—
Vitamins, Inc.
Pfizer, Chas., & Co., Inc., New York, N.Y. 795,052, pub. 6–15–65. Cl. 14.
Phillips-Jones Corp., to Phillips-Van Heusen Corp., New York, N.Y. 414,876, ren. 8–31–65. Cl. 39.
Phillips-Van Heusen Corp.: *See*—
Phillips-Jones Corp.
Phoenix, Inc., New York, N.Y. 795,276, pub. 6–15–65. Cl. 39.
Photographic Importing & Distributing Corp., Valley Stream, N.Y. 681,808, canc. Cl. 26.
Pickwick Sales Corp., Brooklyn, N.Y. 681,857, canc. Cl. 36.
Pittsburgh Plate Glass Co.: *See*—
Ditzler Color Co.
Pivot Punch Corp., North Tonawanda, N.Y. 795,121, pub. 6–15–65. Cl. 23.
Plymouth Citrus Growers Association, Plymouth, Fla. 418,080, ren. 8–31–65. Cl. 46.
Polytronics Laboratories, Inc., West Caldwell, N.J. 795,090, pub. 6–15–65. Cl. 21.
Portable Electric Tools, Inc., Geneva, Ill. 795,119–20, pub. 6–15–65. Cl. 23.
Powers Regulator Co., The, Skokie, Ill. 795,047, pub. 6–15–65. Cl. 13.
Prague, Sydney W., Bay St. Louis, Miss. 795,216, pub. 6–15–65. Cl. 28.
Preservation Society of Newport County, The, Newport, R.I. 795,054, pub. 6–15–65. Cl. 15.
Quaker Marine Supply Co.: *See*—
Kadison, Joseph G.
Quaker State Oil Refining Corp., Oil City, Pa. 795,056, pub. 6–15–65. Cl. 15.
Quinn, Jack L., d.b.a. Jack's Sheet Metal Products, Lamar, Colo. 795,148, pub. 6–15–65. Cl. 23.
Radel, Philip H., & Co., Inc., New York, N.Y. 795,288, pub. 6–15–65. Cl. 39.
Radio Corp. of America, New York, N.Y. 795,250, pub. 6–15–65. Cl. 36.
Rayflex Fabrics, Inc., New York, N.Y. 795,329, pub. 6–15–65. Cl. 42.
Reckitt & Colman (Overseas) Ltd.: *See*—
Nugget Polish Co. of New York, The.
Red & White Foundation: *See*—
Flickinger, S. M., Co., Inc.
Reed Electromech Corp., Rockford, Ill. 795,129, pub. 6–15–65. Cl. 23.
Reeves Brothers, Inc., New York, N.Y. 795,315, pub. 6–15–65. Cl. 42.
Reeves Brothers, Inc., New York, N.Y. 795,317–18, pub. 6–15–65. Cl. 42.
Regal Systems, Kansas City, Kan. 795,301, pub. 6–15–65. Cl. 103.
Reichard Brooks & Co.: *See*—
Kraus Bros. & Co.
Reis, Robert, & Co., New York, N.Y. 681,834, canc. Cl. 28.
Reliance Universal, Inc., Louisville, Ky. 795,016, pub. 6–15–65. Cl. 12.
Remington Rand, Inc., Buffalo, N.Y., to Sperry Rand Corp., New York, N.Y. 415,767, ren. 8–31–65. Cl. 37.
Restronics, Inc., Jersey City, N.J. 795,284, pub. 6–15–65. Cl. 32.
Ritchie Mfg. Co., Conrad, Iowa. 795,093, pub. 6–15–65. Cl. 21.
Rival Mfg. Co., Kansas City, Mo. 795,096, pub. 6–15–65. Cl. 21.
Rondeau, Henry S., d.b.a. Henry S. Rondeau Co., Cleveland, Ohio. 795,239, pub. 6–15–65. Cl. 34.
Rose, Roy E., d.b.a. Rosecraft Studios, Inyokern, Calif. 415,015, ren. 8–31–65. Cl. 38.
Rosecraft Studios: *See*—
Rose, Roy E.
Rosenau, Joseph F., d.b.a. Nannette Mfg. Co., to Nannette Mfg. Co., Inc., Philadelphia, Pa. 205,770, ren. 8–31–65. Cl. 39.
Safety First Foods Co.: *See*—
Jacobson, Louis J.
Sailmasters, Inc., Shelter Island, N.Y. 795,075, pub. 6–15–65. Cl. 19.
Saks, I. J., & Co., Los Angeles, Calif. 795,319, pub. 6–15–65. Cl. 42.
Sal-Fax Corp., Hot Springs, Ark. 794,974, pub. 6–15–65. Cl. 2.
Samae Products Co.: *See*—
Schoor, Samuel.
Sandoz, Inc. Hanover, N.J. 681,713, canc. Cl. 18.
Savford, Frank M., Co., Brooklyn, N.Y. 681,876, canc. Cl. 39.
Schenley Industries, Inc.: *See*—
American Wine Co.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 418,490, ren. 8–31–65. Cl. 44.
School House Products, Inc., New York, N.Y. 794,978, pub. 6–15–65. Multiple Class (Classes 3, 11, 13, 21, 23, 26, 29, 32, and 37).
Schoor, Samuel, d.b.a. Samae Products Co., to Copper Clad Products, Inc., Newark, N.J. 413,603, ren. 8–31–65. Cl. 4.
Scott Aviation Corp., Lancaster, N.Y. 795,167, pub. 6–15–65. Cl. 26.
Scott Aviation Corp., Lancaster, N.Y. 795,339, pub. 6–15–65. Cl. 44.
Scott's Wholesale Co.: *See*—
Seaboard Plywood and Lumber Corp.
Seaboard Plywood and Lumber Corp., Watertown, Mass., from Scott's Wholesale Co., Baltimore, Md. 795,057, pub. 6–15–65. Cl. 16.
Sears, Roebuck and Co., Chicago, Ill. 795,200, pub. 6–15–65. Cl. 26.
Secofsky, Abe, d.b.a. Mayfair Mfg. Co., Brooklyn, N.Y. 681,756, canc. Cl. 21.
Seeburg Corp., The, Chicago, Ill. 795,204, pub. 6–15–65. Cl. 26.
Safeway Stores, Inc., Los Angeles, to Safeway Stores, Inc., Oakland, Calif. 206,116, ren. 8–31–65. Cl. 29.
Seidelhuber Steel Rolling Mills Corp., d.b.a. Coast Sheet Metal Works, Burbank, Calif. 681,853, canc. Cl. 34.
Seiki Kogyosho Co. Ltd., Hyogo-ken, Japan. 795,126, pub. 6–15–65. Cl. 23.
Semco Sales & Service, Inc., Los Angeles, Calif. 794,998, pub. 6–15–65. Cl. 6.
Semco Sales & Service, Inc., Los Angeles, Calif. 795,031, pub. 6–15–65. Cl. 12.
Semco Sales & Service, Inc., Los Angeles, Calif. 795,099–100, pub. 6–15–65. Cl. 21.
Semco Sales & Service, Inc., Los Angeles, Calif. 795,209, pub. 6–15–65. Cl. 26.
Setterdahl, Fred N., Rock Island, Ill. 681,736, canc. Cl. 19.
Shakertown Corp., Cleveland, Ohio. 795,005, pub. 6–15–65. Cl. 12.
Shell Oil Co., New York, N.Y. 794,983, pub. 6–15–65. Cl. 5.
Sherwin-Williams Co., The, Cleveland, Ohio. 206,908, ren. 8–31–65. Cl. 16.
Sigmamotor, Inc., Middleport, N.Y. 795,194, pub. 6–15–65. Cl. 26.
Simon, Harry A., d.b.a. La Floreal Parfums, Hollywood, Calif., to The Gillette Co., Boston, Mass. 417,225, ren. 8–31–65. Cl. 51.
Simpson, Mark, Mfg. Co., Inc., Long Island City, N.Y. 681,745, canc. Cl. 21.
Simrell, John B., d.b.a. Jiffy Steamer Co., Fulton, Ky. 795,156, pub. 6–15–65. Cl. 24.
Smith, Fred E., d.b.a. Boranium Products, Santa Ana, Calif. 681,657, canc. Cl. 6.
Societa Internazionale Fonovisione, S.p.A., Milano, Italy. 795,164, pub. 6–15–65. Cl. 26.
Societe Rhodiaceta, Paris, France. 795,311, pub. 6–15–65. Cl. 39.
Societe Rhovyl, Paris, France. 794,964, pub. 6–15–65. Cl. 1.
Societe Rhovyl, Paris, France. 795,340, pub. 6–15–65. Cl. 44.
Sperry Rand Corp.: *See*—
Remington Rand, Inc.
Spiratone, Inc., Flushing, N.Y. 795,182, pub. 6–15–65. Cl. 26.
Sponge-Cushion, Inc., Morris, Ill. 795,328, pub. 6–15–65. Cl. 42.
Squire Dingee Co., to Beatric Foods Co., Chicago, Ill. 205,659, ren. 8–31–65. Cl. 46.
Stamford Chemical Co., The, Stamford, Conn. 794,997, pub. 6–15–65. Cl. 6.
Stamford Chemical Industries, Inc., Stamford, Conn. 795,202, pub. 6–15–65. Cl. 26.
Standard Brands, Inc.: *See*—
Clinton Corn Syrup Refining Co.
Standard Brands, Inc., d.b.a. Clinton Corn Processing Co., New York, N.Y. 795,350, pub. 6–15–65. Cl. 46.
Standard Oil Co., Whiting, Ind., and Chicago, Ill., to Candle-Lite, Inc., Cincinnati, Ohio. 199,786, ren. 8–31–65. Cl. 15.
Standard Products Corp., Brocton, Mass. 795,343, pub. 6–15–65. Cl. 44.
Standard Transformer Co., The, Warren, Ohio. 795,091, pub. 6–15–65. Cl. 21.
Stanley Works, The: *See*—
Unishear Co., The.
Stansbury Chemical Co., Seattle, Wash. 681,726, canc. Cl. 18.
Star Expansion Co., Mountainville, N.Y. 681,801, canc. Cl. 23.
Star Tank and Boat Co., Inc., Goshen, Ind. 795,067, pub. 6–15–65. Cl. 19.
Stauffer Chemical Co.: *See*—
Stauffer Chemical Co. of Texas.
Stauffer Chemical Co. of Texas, Houston, Tex., to Stauffer Chemical Co., New York, N.Y. 198,847, ren. 8–31–65. Cl. 6.
Sterling Drug, Inc., New York, N.Y. 681,718, canc. Cl. 18.
Sterling Drug, Inc., New York, N.Y. 794,995, pub. 6–15–65. Cl. 6.
Stewart-Warner Corp., Chicago, Ill. 415,329, ren. 8–31–65. Cl. 34.
Stoddard Bros., Inc., Hartford, Conn. 415,139, ren. 8–31–65. Cl. 46.
Storer Broadcasting Co., Miami Beach, Fla. 681,987, canc. Cl. 107.
Sun Chemical Corp., New York, N.Y. 795,079, pub. 6–15–65. Cl. 21.
Sunbeam Corp., Chicago, Ill. 795,211, pub. 6–15–65. Cl. 27.
Super Sagless Spring Corp., Hoboken, N.J. 681,846, canc. Cl. 32.
Superba Cravats, Inc., Rochester, N.Y. 795,269, pub. 6–15–65. Cl. 39.
Supro Lux Mfg. Co., Inc., New York, N.Y. 681,766, canc. Cl. 21.
Sweetheart Paper Products Co., Inc., Chelsea, Mass. 795,103, pub. 6–15–65. Cl. 23.
Sweetheart Plastics, Inc.: *See*—
Sweetheart Paper Products Co., Inc.
Swingline, Inc., Long Island City, N.Y. 795,154, pub. 6–15–65. Cl. 23.

Swingline, Inc., Long Island City, N.Y. 795,268, pub. 6–15–65. Cl. 37.
Swirl, Inc., Easley, S.C. 795,306, pub. 6–15–65. Cl. 39.
Swirly Safety Lite: *See*—
Bowers Battery and Spark Plug Co.
Syracuse Ornamental Co., Inc., Syracuse, N.Y. 795,216, pub. 6–15–65. Cl. 27.
Talens & Son, Inc., Union, N.J. 200,741, ren. 8–31–65. Cl. 16.
Talens & Son, Inc., Union, N.J. 201,943, ren. 8–31–65. Cl. 16.
Tape Production Corp., St. Petersburg, Fla. 681,971, canc. Cl. 101.
Taylor, E. E., Corp., Freeport, Maine. 795,299, pub. 6–15–65. Cl. 39.
Teenform, Inc., New York, N.Y. 795,266, pub. 6–15–65. Cl. 39.
Teleminder Co., The, Philadelphia, Pa. 795,085, pub. 6–15–65. Cl. 21.
Templar Oil Products Co., Inc., Brooklyn, N.Y. 795,986, pub. 6–15–65. Cl. 5.
Tenneco Chemicals, Inc., from Heyden Newport Chemical Corp., New York, N.Y. 794,982, pub. 6–15–65. Cl. 5.
Tennessee Corp., from Tennessee Corp., New York, N.Y. 768,085, canc. Cl. 10.
10–X Mfg. Co.: *See*—
Limpson, S., Ltd.
Texaco, Inc.: *See*—
Indian Refining Co., Inc.
Textile Corp. of America, Los Angeles, Calif. 795,316, pub. 8–30–65. Cl. 42.
Textron Industries, Inc., d.b.a. Textron Metals Co., Girard, Ohio. 681,672–3, canc. Cl. 12.
Textron Metals Co.: *See*—
Textron Industries, Inc.
Thermotron Corp., Holland, Mich. 795,171, pub. 6–15–65. Cl. 26.
Tomahawk Boat Mfg. Corp., Tomahawk, Wis. 795,073, pub. 6–15–65. Cl. 19.
Thomas, Matthew J., Los Angeles, Calif. 795,097, pub. 6–15–65. Cl. 21.
Thompson and Co., Oakmont, Pa. 795,058, pub. 6–15–65. Cl. 16.
Tourists International Establishment, Vaduz, Liechtenstein. 795,355, pub. 6–15–65. Cl. 100.
Trans-World Eyewear Corp., New York, N.Y. 795,162, pub. 6–15–65. Cl. 26.
Tribune Co., The, Chicago, Ill. 201,985, ren. 8–31–65. Cl. 86.
Trina, Inc., Fall River, Mass. 794,976, pub. 6–15–65. Cl. 2.
Triodetic Structures Ltd., Ottawa, Ontario, Canada. 795,027, pub. 6–15–65. Cl. 12.
Udico Electric Co.: *See*—
Faraday Electric Corp.
Union Carbide Corp., New York, N.Y. 681,655, canc. Cl. 6.
Union Carbide Corp., New York, N.Y. 795,009, pub. 6–15–65. Cl. 12.
Union Carbide Corp., New York, N.Y. 795,248, pub. 6–15–65. Cl. 34.
Unishear Co., The, assor. to Unishear Co., Inc., New York, N.Y., to The Stanley Works, New Britain, Conn. 206,135, ren. 8–31–65. Cl. 23.
United Merchants and Manufacturers, Inc., New York, N.Y. 795,320, pub. 12–22–64. Cl. 42.
United Shoe Machinery Corp.: *See*—
Whitcher, Frank W.
United States Borax & Chemical Corp.: *See*—
Pacific Coast Borax Co.
United States Plywood Corp., New York, N.Y. 795,139, pub. 6–15–65. Cl. 23.
United States Rubber Co., New York, N.Y. 795,291, pub. 6–15–65. Cl. 39.
United States Steel Corp.: *See*—
Atlas Portland Cement Co., The
United Wallpaper Factories, Inc., now by change of name United Wallpaper, Inc., Chicago, Ill., to De Soto Chemical Coatings, Inc., Des Plaines, Ill. 415,003, ren. 8–31–65. Cl. 37.
United Wallpaper, Inc.: *See*—
United Wallpaper Factories, Inc.
United-Greenfield Corp., Chicago, Ill. 795,106, pub. 6–15–65. Cl. 23.
United-Greenfield Corp., Chicago, Ill. 795,166, pub. 6–15–65. Cl. 26.
Universal-Rundle Corp., New Castle, Pa. 681,687, canc. Cl. 13.
Upjohn Co., The, Dover, Del., from The Upjohn Co., Kalamazoo, Mich. 681,727. Cl. 18.
Utah Radio Products Corp., Huntington, Ind. 681,759, canc. Cl. 21.
VTR, Inc., New York, N.Y. 795,247, pub. 6–15–65. Cl. 35.
Vaisey Bristo Shoe Co., Inc., Monett, Mo. 795,268, pub. 6–15–65. Cl. 39.
Vance-Curtis Products, Inc., Kansas City, Mo. 792,104, cor. Cl. 18.
Varo, Inc., Garland, Tex. 795,078, pub. 6–15–65. Cl. 21.
Vimco, Inc., d.b.a. Vimco, Inc., Centralia, Ill. 681,683, canc. Cl. 44.
Vista Liner Coach & Trailer, Inc., Tooele, Utah. 795,071, pub. 6–15–65. Cl. 19.
Vitamins, Inc., Chicago, Ill., to Chas. Pfizer & Co., Inc., New York, N.Y. 412,930, ren. 8–31–65. Cl. 18.
Vitreous Steel Products Co., Cleveland, Ohio. 795,086, pub. 6–15–65. Cl. 13.
Vogue Shoe, Inc., Los Angeles, Calif. 681,875, canc. Cl. 39.
WSAZ, Inc., Huntington, W. Va. 681,975, canc. Cl. 104.
Waldes Kohinoor, Inc., Long Island City, N.Y. 795,046, pub. 6–15–65. Cl. 13.
Ward Body Works, Inc., Conway, Ark. 795,074, pub. 6–15–65. Cl. 19.
Ward Furniture Mfg. Co., Fort Smith, Ark. 795,227, pub. 6–15–65. Cl. 32.
Ward Products Corp., The, Cleveland, Ohio. 681,752, canc. Cl. 21.
Washington Forge, Inc., Englishtown, N.J. 795,130, pub. 6–15–65. Cl. 23.
Weber-Costello Co., Chicago Heights, Ill. 681,935, canc. Cl. 50.
Weber Marking Systems, Inc., Mount Prospect, Ill. 795,142, pub. 6–15–65. Cl. 23.
Weisser & Co. G.m.b.H., Hamburg, Germany. 795,053, pub. 6–9–64. Cl. 15.
Weldon, Inc., from Weldon Pajamas, Inc., New York, N.Y. 795,304, pub. 5–25–65. Cl. 39.
Weldon Pajamas, Inc.: *See*—
Weldon, Inc.
West Bend Co., The, West Bend, Wis. 795,035, pub. 6–15–65. Cl. 13.
Western Fibrous Glass Products Co., San Francisco, Calif. 794,985, pub. 6–15–65. Cl. 5.
Western Fibrous Glass Products Co., San Francisco, Calif. 795,063, pub. 6–15–65. Cl. 16.
Weston Instruments, Inc., Newark, N.J. 795,088, pub. 6–15–65. Cl. 21.
Weston Instruments, Inc., Newark, N.J. 795,170, pub. 6–15–65. Cl. 26.
Whitcher, Frank W., to United Shoe Machinery Corp., Boston, Mass. 44,902, ren. 8–31–65. Cl. 23.
White, Martha, Mills, Inc.: *See*—
Dan Valley Mills.
Wigen, Harold H.: *See*—
Haral Corp.
Wilkens Instrument & Research, Inc., Walnut Creek, Calif. 795,178, pub. 6–15–65. Cl. 26.
Williams Furniture Corp., Sumter, S.C. 681,845, canc. Cl. 32.
Wilshire, James D.: *See*—
Federal Systems, Inc.
Wilson, Lee, Engineering Co., Inc., Cleveland, Ohio. 795,147, pub. 6–15–65. Cl. 23.
Wittemann Co., Inc., The, Buffalo, N.Y. 415,514, ren. 8–31–65. Cl. 28.
Wood Charcoal Briquet Producers Association, Chicago, Ill. 794,965, pub. 6–15–65. Cl. 1.
Woodhouse, William T., Washington, D.C. 795,228, pub. 6–15–65. Cl. 32.
Woolworth, F. W., Co., New York, N.Y. 792,731, cor. Cl. 101.
World Wide Watch Co., Inc., New York, N.Y. 795,214, pub. 6–15–65. Cl. 27.
Wright Mfg. Co., Toccoa, Ga. 795,278, pub. 6–15–65. Cl. 39.
Wyeth, Inc., Philadelphia, Pa., to Ames Co., Inc., Elkhart, Ind. 412,978, ren. 8–31–65. Cl. 6.
Youthcraft Creations, Inc., New York, N.Y. 795,272, pub. 6–15–65. Cl. 39.
Zamolski, Jos. M., Co., The, Baltimore, Md. 795,136, pub. 6–15–65. Cl. 23.
Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany. 795,161, pub. 6–15–65. Cl. 26.
Zimmerman, Jay V., d.b.a. Jay V. Zimmerman Co., Richmond Heights, Mo. 681,737, canc. Cl. 19.
Zimmerman, Jay V., Co.: *See*—
Zimmerman, Jay V.
Zonolite Co., Chicago, Ill. 681,666–7, canc. Cl. 12.
Zylo Ware Corp., Long Island City, N.Y. 795,169, pub. 6–15–65. Cl. 26.

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